WCCSL Bulk Materials Processing Center and Related Actions

November 2003

Draft Environmental Impact Report

CONTRA COSTA COUNTY

DRAFT ENVIRONMENTAL IMPACT REPORT ON THE WEST CONTRA COSTA SANITARY LANDFILL BULK MATERIALS PROCESSING CENTER AND RELATED ACTIONS

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CHAPTER 1

INTRODUCTION

This Environmental Impact Report (EIR) evaluates the impacts of the proposed West Contra Costa Sanitary Landfill (WCCSL) Bulk Materials Processing Center (BMPC) land use permit amendment changes and related actions (Project). The Lead Agency under the California Environmental Quality Act (CEQA) is the Contra Costa County (County) Community Development Department. The City of Richmond (City), Contra Costa County Health Services Department Environmental Health Division and other agencies are serving as Responsible Agencies under CEQA. The Project applicant is West Contra Costa County Sanitary Landfill, Inc. (Applicant). This chapter of the EIR provides an overview of the Project, the CEQA process, and the organization of this Draft EIR.

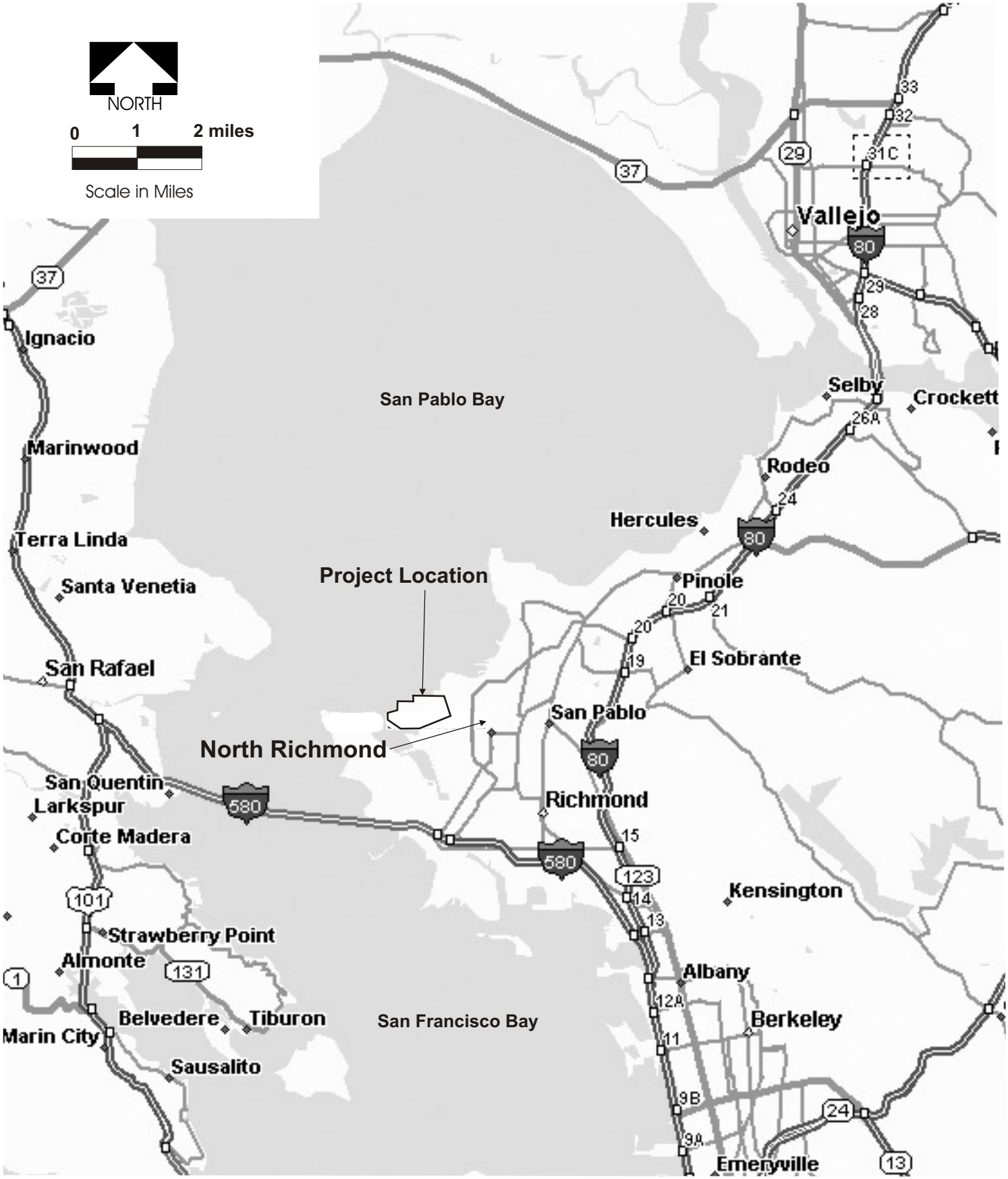
A. PROJECT OVERVIEW

The Applicant operates a Class II sanitary landfill at the foot of Parr Boulevard in Richmond, California. Figure 1-1 shows the regional location of the facility and Figure 1-2 shows the immediate vicinity surrounding the site, which is largely water and industrial uses. As indicated on Figure 1-2, the WCCSL site encompasses land in both the unincorporated area of the County and City.

Operational changes have occurred over time as new regulations, permits, and recycling operations have been implemented. Currently, the site includes several distinct operations:

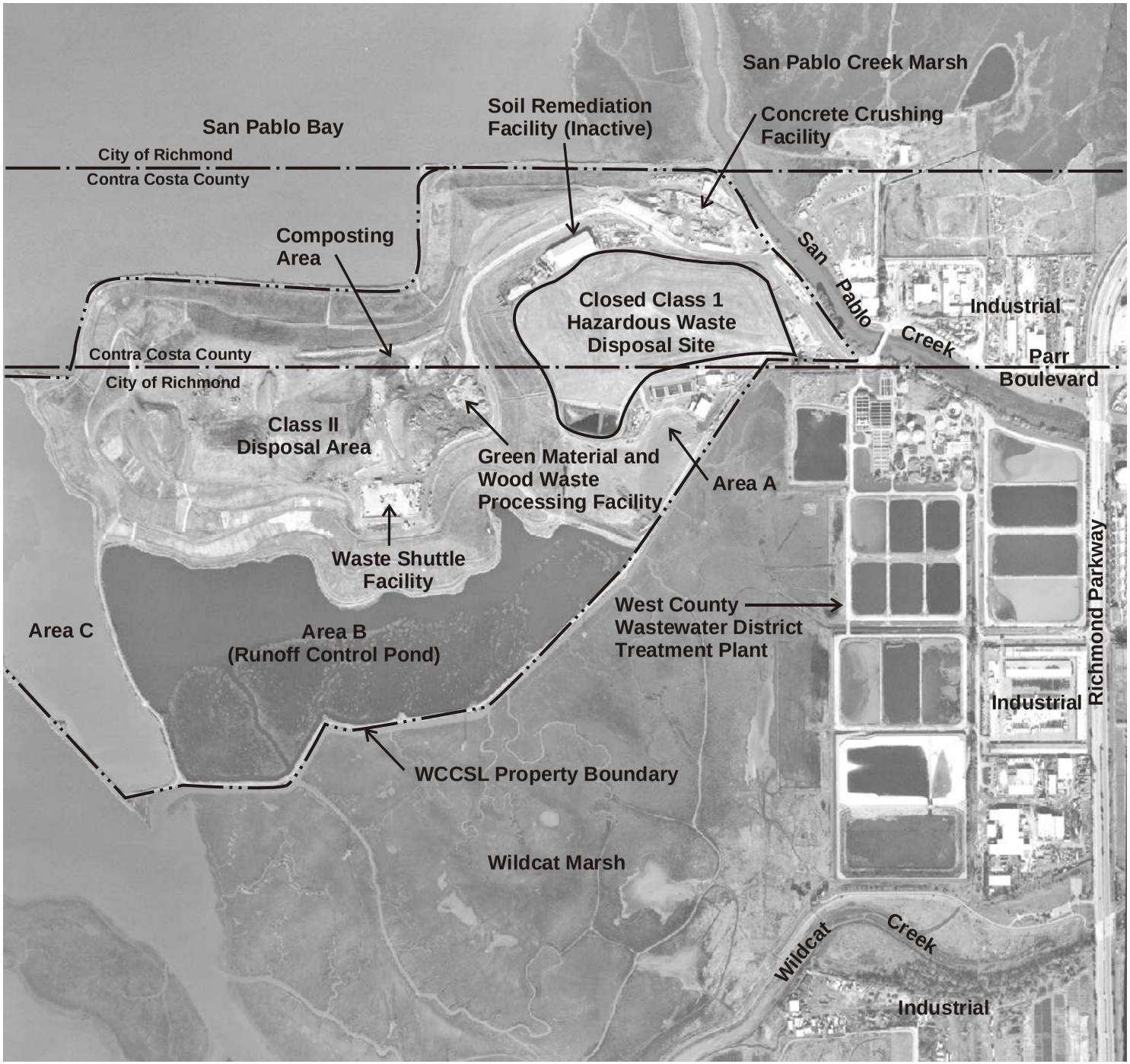
- Solid waste disposal in a Class II sanitary landfill (including a waste shuttle facility).
- BMPC (wood recycling, composting, and asphalt/concrete crushing).
- Hazardous Waste Management Facility leachate treatment plant.

The existing BMPC is one component of the West County Integrated Resource Recovery Facility (IRRF). The second component, the Central Processing Facility (Central IRRF), is a permitted material recovery facility and transfer station located at 101 Pittsburg Avenue, several blocks from the WCCSL site. In 1992, the County certified the EIR for the West County IRRF.[9] WCCSL is permitted to receive up to a maximum of 2,500 tons per day (TPD) of municipal solid waste (MSW). MSW is generated in various jurisdictions in the San Francisco Bay Area region. Wastes are delivered in a variety of vehicles, including large transfer trucks, garbage trucks, pickups, and passenger cars.



Source: Scheidegger & Associates, June 2003

Figure 1-1 Regional Location



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1" ≅ 840'

Source of aerial photo: WCL, January 2003

Figure 1-2 Vicinity Map

The Applicant is requesting amendments for their existing use permits for the BMPC. These permits were issued in 1993 by the County (under Land Use Permit [LUP] No. 2054-92, as amended by LUP 2043-94) and the City (under Conditional Use Permit [CUP} No. 92-53). Proposed changes in the BMPC include the following:

- COMPOSTING: Relocate operations and increase the amount and types of compostables processed.

- ASPHALT/CONCRETE PROCESSING: Relocate operations and increase the amount of asphalt/concrete processed.

- WASTE RECYCLING CENTER: Construction and operation of the Waste Recycling Center (WRC). The proposed WRC would be built through adaptive reuse of the former Soil Remediation Facility building to recycle, sort, and transfer for disposal of waste from self-haulers, industrial debris boxes, and other commercial customers that are not processed at the existing Central IRRF. An alternative on-site location for the WRC is being considered at Area A (see Figure 1-2) that would include construction of a new facility (in lieu of adaptive reuse of an existing building).

- WET/DUSTY MATERIAL BLENDING: Startup of a new wet waste/dusty material processing activity involving blending of high-moisture-content muds and sludges with waste soil and dusty wastes, producing a product at the WCCSL suitable for alternative daily cover, final cover, or off-site use. Possible off-site uses include ADC material for other landfills, trench backfill material or road or building subbase, and replacement backfill for brownfield sites where a soil backhaul is practiced to fill excavations where materials were excavated for treatment or disposal.

- WOOD RECOVERY: Relocate operation and increase the amount of wood waste processed and recovered.

- SOIL RECLAMATION: Startup of a new soil reclamation activity involving the reclamation of non-contaminated soils through screening and use on site, and the addition of sand and/or compost to produce top soil for off-site use.

- BIOSOLIDS/DREDGED MATERIAL SPREADING: Start up of a new activity involving the spreading of wet dredged materials and/or biosolids (sludge from wastewater treatment facilities) on the capped portions of the landfill, and the southern and eastern slopes.

- CHANGE IN FACILITY OPERATING HOURS: Expanded hours proposed for equipment maintenance, waste acceptance, materials processing, and transport.

There are also proposals included in the Project that are not part of the use permit amendments. These include an increase in the height of the landfill and the opening and maintenance of the Shoreline Public Access Trail. A revision of the Solid Waste Facilities Permit (SWFP) is required to allow an increase of the landfill height from its existing 130-foot above mean sea level (msl) elevation limit to 160 feet msl, which represents top of waste. The SWFP is issued by the County Health Services Department, Environmental Health Division, which serves as the Local Enforcement Agency (LEA), with concurrence by the California Integrated Waste Management Board (CIWMB). A 7-foot-deep soil cap (4 feet of state-required final cap plus a 3-foot protective soil layer) would be placed on top of the 160-foot msl elevation. This increased landfill height would correct unanticipated settlement problems that have occurred in the landfill's central plateau. Additional short-term disposal capacity would also result from the height increase.

Existing County and City use permits for the BMPC require the Applicant to submit plans to allow shoreline public access at the perimeter of the WCCSL. Since 1992, various iterations of the Shoreline Public Access Trail (Trail) Development Plan have been developed. The current alignment of the Trail reflects coordination with interested local citizens and agency representatives and is sensitive to other components of the proposed Project. Four phases of the Trail have been identified allowing development to progress clockwise around the landfill as final closure is completed (see Figure 3-7 in Chapter 3, Project Description).

B. INTENT OF CEQA

The EIR process as defined by CEQA requires the preparation of an objective, full-disclosure document to (1) inform agency decision makers and the general public of the direct and indirect environmental impacts of a proposed action, (2) provide mitigation measures to reduce or eliminate potential significant adverse impacts, and (3) identify and evaluate reasonable alternatives to the proposed project.

Significant adverse impacts may not always be mitigated to a less than significant level, and as such are considered significant unavoidable adverse impacts. In accordance with Section 15093(b) of the State CEQA Guidelines, if a public agency approves a project that has remaining adverse impacts which are not mitigated to insignificant levels, the agency shall state in writing the specific reasons for approving the project, based on the final EIR and any other public information. This is termed a Statement of Overriding Considerations per Section 15093 of the State CEQA Guidelines. Similarly, if a mitigation measure is available to reduce a significant impact to an insignificant level, and such a mitigation measure is not adopted, the impact would still be considered significant.

C. CEQA AND USE PERMIT PROCESSES

The County Community Development Department is the Lead Agency for the preparation of this EIR. As Lead Agency, the County has involved other government agencies having their own approval authority over the project (Responsible Agencies) so they can provide input to ensure this EIR meets their needs under CEQA. These agencies include the City, LEA, CIWMB, the Regional Water Quality Control Board (RWQCB), the Bay Area Air Quality Management District (BAAQMD), and the Bay Conservation and Development Commission (BCDC).

1. Overview of the CEQA Process

In order to solicit agency input into the CEQA process and to assist in scoping the EIR work program, the County held an agency scoping session and site tour on November 1, 2002. A Notice of Preparation (NOP) was prepared and the NOP process for this EIR was issued on October 10, 2002. The NOP was sent to Responsible Agencies and other interested parties. The purpose of the NOP process was to solicit input on areas of potential impact that should be addressed in the EIR.

The Draft EIR (circulation draft) must be available for public review by agencies, interested organizations, and individuals for at least a 45-day period following the filing of a notice of completion with the State's Office of Planning and Research, according to CEQA. During the 45-day period, the County will hold a public hearing to receive oral and written testimony on the Draft EIR. The County will accept all written comments received during the 45-day review/comment period.

Comments and questions raised during the public review period and at the public hearing relating to the project's analysis in the Draft EIR will be addressed in a Response Document unless the County, as Lead Agency, determines that a revised Draft EIR should be prepared. The Draft EIR and the Response Document will together constitute the Final EIR. The Final EIR will be considered for certification in accordance with CEQA and the State's CEQA Guidelines.

The County will certify the Final EIR as adequate and completed in compliance with CEQA. If the Project is approved, the County will certify that it has considered the information contained in the Final EIR incident to their approval of the document and findings will be made on significant impacts and the provision of the mitigation measures. When a decision is made on the proposed Project, the County will file a Notice of Determination with the State's Office of Planning and Research and the County Clerk to complete the CEQA process. As discussed in Chapter 3 Section C5, Responsible Agencies will utilize the Final EIR when considering their individual entitlements and permitting approval processes for the Project.

Public Resources Code Section 21081.6 and CEQA Guidelines Section 15097(1) require public agencies to adopt reporting or monitoring programs for projects for which findings have been adopted indicating that mitigation measures are required to reduce impacts to less than significant levels, (2) requires design of reporting or monitoring programs to ensure compliance during project implementation, and (3) provides a means by which lead or responsible agencies could require agencies "having jurisdiction over natural resources affected by the project" to also prepare and submit reporting or monitoring programs. A mitigation monitoring and reporting program will be adopted by the County in conjunction with adoption of the findings.

2. Review and Approval of the Land Use Permit Application and EIR

The WCCSL site encompasses two land use jurisdictional boundaries. Because of this, the approval process for the application for use permit amendments and issuance of a new Conditional Use Permit (CUP) will involve decision-making bodies from the County and City:

- Unincorporated portions of the WCCSL site are governed by the County's General Plan and North Richmond Shoreline Specific Plan.
- The incorporated area is governed by the City's General Plan.

The County will consider formally amending its LUP and the City will consider amending its CUP and possibly issuing a new CUP for the WCCSL site. The extent that each permit would be amended or new permit issued will depend on the final location of the proposed WRC. These use permit processes will involve public review, public hearings, and adoption by the County Board of Supervisors and Richmond City Council, respectively. The process for review and approval of the EIR and permit applications is described below:

- If the location for the proposed WRC in the unincorporated area is selected, the County will amend the LUP for the BMPC to include the new facility and related elements. If the WRC is located in the City, the County will still amend its LUP as needed to reflect the new and expanded resource recovery activities that would occur wholly, or partially, within the unincorporated area.
- If the location for the proposed WRC in the Richmond city limit is selected, the City will likely issue a new CUP to reflect the new facility and related elements. If the WRC is located in the unincorporated County area, the City will amend its CUP to reflect the new and expanded resource recovery activities that would occur wholly, or partially, within the Richmond city limit.

Table 1-1 summarizes the role of the Responsible Agencies involved in the Project as related to the Use Permit and CEQA process. The County Board of Supervisors will certify the EIR, while the City and other Responsible Agencies will consider the EIR when making decisions regarding Project entitlements. These specific entitlements are discussed in Chapter 3, Section C.

Table 1-1. Agency Roles in the Use Permit and CEQA Process

Agency	Use Permit application			Environmental Impact Report			
	Review/ comment	Public hearing/ recommend	Decision	Review/ comment	Public hearing/ recommend	Certification	Uses EIR
CONTRA COSTA COUNTY[a,b]							
County staff (various depts.)	✓	✓		✓	✓		
Zoning Administrator					✓		✓
Planning Commission		✓	✓	✓	✓		✓
Board of Supervisors		✓	✓			✓	✓
CITY OF RICHMOND[c,d]							
Planning Commission		✓		✓			✓
City Council			✓	✓			✓
LEA[d]	✓	✓		✓			✓
CIWMB[d]				✓			✓
RWQCB[d]				✓			✓
BAAQMD[d]				✓			✓
BCDC[d]				✓			✓

a. Contra Costa County will consider amending its LUP for the BMPC to allow proposed activities.

b. As Lead Agency, the County will use the EIR in making decisions about approval or implementation of the proposals in the Applicant's application for an amended use permit. The County will certify the EIR, make findings, adopt a Mitigation Monitoring Program, and file a Notice of Determination stating that the EIR complies with CEQA.

c. The City of Richmond will consider amending its CUP and possibly issuing a new CUP for the WCCSL site to allow proposed activities.

d. Per Sections 15050(b) and 15096 of the CEQA Guidelines, the City and other Responsible Agencies will use the EIR to make decisions regarding project entitlements.

Source: Community Development Department, January 2003

D. ORGANIZATION AND SCOPE OF THE DRAFT EIR

The Draft EIR is organized into 14 chapters. The chapters are as follows:

Chapter 1 - Introduction
Chapter 2 - Summary
Chapter 3 - Project Description
Chapter 4 - Land Use, Plans, and Policies
Chapter 5 - Geology, Soils, and Seismicity
Chapter 6 - Water Resources
Chapter 7 - Aesthetics and Visual Quality
Chapter 8 - Traffic and Safety
Chapter 9 - Biological Resources
Chapter 10 - Air Quality and Odor
Chapter 11 - Health Risk and Safety
Chapter 12 - Noise
Chapter 13 - Alternatives
Chapter 14 - Other Statutory Sections

Appendix 1A lists the reference sources used in the EIR. Common terms and definitions are included in Appendix 1B. Appendix 1C contains the Initial Study and Appendix 1D contains letters received from the NOP process. Appendix 1E is report preparation which lists the key individuals from the Lead Agency (County), the EIR authors and their responsibilities, and the persons and organizations consulted during EIR preparation. The remaining appendices contain various technical support information used in the environmental analysis.

E. INCORPORATION BY REFERENCE

Section 15050 of the CEQA Guidelines provides that an EIR may incorporate, by reference, all or portions of another document that is a matter of public record or is generally available to the public. Where all or part of another document is incorporated by reference, the incorporated language shall be considered to be set forth in full as part of the text of the EIR being prepared. The incorporated part of the referenced document should be briefly summarized.

CEQA documents have been prepared for previous WCCSL projects that are relevant to this EIR. These documents include:

- Draft EIR for the WCCSL Hazardous Waste Management Facility Closure and Post-Closure Plans, September 1998. State Clearinghouse Number 95063005.

- Initial Study/Mitigated Negative Declaration for the WCCSL Solid Waste Facilities Permit and Landfill Closure and Post-Closure Maintenance Plans, May 1996. State Clearinghouse Number 96052032.

- Draft EIR for the West County Integrated Resource Recovery Facility (located at 101 Pittsburg Avenue), September 1991. State Clearinghouse Number 90030940.

Where appropriate, chapters of this EIR indicate when incorporation by reference is being used. Both of the above cited documents are available for review by appointment at the following location:

Contra Costa County Community Development Department
County Administration Building
651 Pine Street
4th Floor, North Wing
Martinez, California 94553
(925) 335-1290

CHAPTER 2

SUMMARY

The Project consists of proposed Bulk Materials Processing Center (BMPC) land use permit amendment changes and related actions. Project activities provide for expanded resource recovery operations, a vertical expansion of the Class II landfill, and shoreline access. This chapter provides a summary of the proposed Project component, the environmental analyses that were conducted, and the Project alternatives that were considered.

A. PROJECT COMPONENTS

The West Contra Costa Sanitary Landfill (WCCSL) is a 340-acre site which borders San Pablo Bay and is located in the North Richmond area. West County Landfill, Inc. (Applicant) owns the property and the operator is WCCSL, Inc. The northern portion of the WCCSL is located within the unincorporated Contra Costa County (County) area and the southern portion is within the Richmond City (City) limits.

Solid waste disposal operations at the WCCSL began in 1952. Over the years, operational changes have occurred as new regulations, permits, and recycling operations have been implemented. Currently, solid waste management facilities at the WCCSL include a Class II municipal solid waste landfill, a Waste Shuttle Facility, and a BMPC which includes composting, concrete/asphalt processing, and wood waste processing. For purposes of this Environmental Impact Report (EIR), the Project consists of the Applicant's proposed amendments to their existing BMPC use permits and related actions.

1. Use Permit Changes

Use permits were issued in 1993 for the existing BMPC by the County (Land Use Permit [LUP] No. 2054-92, as amended by LUP 2043-94) and the City (Conditional Use Permit [CUP] No. 92-53). Proposed use permit changes can be summarized as follows:

- Increase in the amount and type of compostibles processed.
- Increase in the amount of concrete and asphalt rubble processed.
- Adaptive use of the former Soil Remediation Building for operation of a Waste Recycling Center (WRC) that will allow for recycling of wastes from self haulers, and industrial boxes and other commercial customers.

- Soil remediation program and wet/powdery material processing.
- Biosolids and dredged materials processing and disposal.

a. Composting. The Applicant is currently permitted to compost 10,000 tons per year of green materials using the windrow composting process. The proposed Composting Facility changes include expansion of the amount of materials processed, the handling of additional types of organic (feedstock) materials, and the ability to operate the Composting Facility in both the County and City areas. It is proposed that 164,300 tons of compostibles be processed per year. The new types of materials to be processed include food wastes, biosolids (wastewater sludge), mixed waste paper, and agricultural residues. The Applicant has allocated 20 acres for the Composting Facility, with a flexible boundary that could increase the area to 40 acres based upon market demands and needs. Finished compost may be sold to either the general public or to wholesalers, or used at the WCCSL for various purposes.

b. Concrete/Asphalt Processing. The existing WCCSL BMPC Concrete/Asphalt Crushing Facility currently processes about 125,000 tons per year of concrete and asphalt. The primary changes to the current permits for the facility are to increase the amount of material processed to 528,000 tons per year, to relocate this facility to the western plateau of the landfill's central ridge such that the majority of the operation would be located in the City and a portion of it within the County, and remove restriction on wet weather processing or storage of asphalt. As with the Composting Facility, the boundary of the facility would be flexible which would result in the physical area varying from 15 to 30 acres. Processed materials may be sold to either the general public or to wholesalers.

c. Waste Recycling Center. The Applicant proposes to construct a new Waste Recycling Center (WRC) that would replace the existing Waste Shuttle Facility. The WRC would have two components: an organic materials processing area on the landfill's central plateau with separate subareas for receipt of green waste, wood waste, food waste, agricultural waste, biosolids, mixed waste paper, and soil; and a mixed waste processing area which would provide for processing and removal of recyclables and a transfer vehicle loadout area. The existing Soil Remediation Building located within the County would be rehabilitated and expanded to accommodate the WRC mixed waste processing area. The WRC Mixed Waste Processing Area would have a design capacity of 1,000 tons per day, averaged over a 7-day period (TPD7) and would accommodate 365,000 tons of mixed waste per year.

d. Wet/Dusty Material Blending. Blending of wet/dusty materials at the BMPC would be a new activity. This process involves receiving high-moisture-content muds and sludge and blending them in containers with waste soil or dusty wastes. The blended materials could be used at the WCCSL for alternative daily cover or for final cover. About 51,100 tons per year of materials would be processed. This Wet/Dusty Material Blending Facility would be located within the City at the existing Waste Shuttle Facility and anticipated by the Applicant to be composed of existing cargo containers with a flat truss roof.

e. Wood Recovery. The Wood Recovery Facility is an existing activity at the BMPC. It is primarily a stockpiling and loadout operation. Operations would continue to occur within the Organic Materials Processing Area. The facility is currently within the City, but may expand into the County. The Wood Recovery Facility currently processes about 30,000 tons per year and this would be expanded to 131,400 tons per year under the proposed Project. Material would be shredded and products can be used in the composting process, used as boiler fuel, or as landscaping and erosion control mulch.

f. Soil Reclamation. Soil reclamation would be a new activity at the BMPC. It would involve the reclamation of non-contaminated soils in an area adjacent to the composting and wood waste recovery operations. The soils are currently delivered daily to the WCCSL site and used as landfill cover material. About 195,000 tons of soil would be processed annually.

g. Biosolids/Dredged Material Spreading. This operation would involve the spreading of wet dredged materials and/or biosolids (wastewater sludge) from the adjacent West County Wastewater District (WCWD) treatment plant on the southern or eastern sideslopes of the closed landfill. Layers of materials would be spread down the sideslopes and dried by wind and sunlight. The Applicant projects that 50,000 tons of these materials could be accommodated annually.

h. Changes in Facility Operating Hours. The proposed Project includes changes in facility operating hours as follows:

Action	Change in operation
Equipment maintenance	From: Monday-Saturday, 7 a.m. to 6 p.m. To: Monday-Saturday, 5 a.m. to 10 p.m.
Transporting of BMPC materials	From: Daily, 7 a.m. to 5 p.m. To: Daily, 24 hour
Concrete/asphalt processing	From: Monday-Saturday, 7 a.m. to 5 p.m. To: Monday-Saturday, 5 a.m. to 12 a.m.
Chipping and grinding of wood	From: Daily, 7 a.m. to 5 p.m. To: Daily, 5 a.m. to 12 a.m.
WRC operations	From: not now included To: Daily, 24 hour

Transporting materials to and from the BMPC and WRC operations on a daily basis, 24 hours per day, would be consistent with existing landfill operations where materials are allowed to be transported on this schedule.

2. Related Actions

Related actions requiring California Environmental Quality Act (CEQA) review include the Class II landfill height increase and the Public Access Trail.

a. Class II Landfill Height Increase. Between November 1996 and June 2001, the top of waste fill at the final cap area located near the center of the landfill central plateau settled or subsided about 15 feet. This greater-than-anticipated settlement created a depressed area on the landfill. If left uncorrected, continuing anticipated settlement may result in the top of the landfill cratering and forming a depressed area that would not drain properly. To correct this problem, the Applicant has been removing the final cap and placing additional fill which would allow the foundation layer, barrier layer, and top landfill cover to be placed at the correct elevation and slope.

Currently the Class II landfill is permitted to a maximum elevation (top of waste) of 130 feet above mean sea level (msl). The proposed Project would increase the maximum elevation (top of waste) to 160 feet msl to accommodate future settlement and provide for proper drainage. The implementation of the grading plan would result in an east-west ridgeline that generally would range between elevations 110 and 160 feet msl. Overlying the 160-foot elevation on the central plateau would be 7 feet of soil layer consisting of 4 feet of final cover required by State regulations and 3 feet of residual soil. This layer would protect the final cover and allow many BMPC operations to occur on top of the central plateau.

b. Public Access Trail. The concept of a Public Access Trail (Trail) surrounding the WCCSL has been envisioned for many years and has been the subject of considerable planning efforts by the Applicant, interested organizations, and local agencies. While segments of the Trail have been considered in previous CEQA documents, most of the currently proposed Phase 1 alignment has not, and none of the total alignment has been addressed in the context of other proposed Project components. Most of the Phase 2, 3, and 4 alignments were considered in the North Richmond Shoreline Specific Plan EIR.[6]

The Trail would be implemented in four phases and would generally follow existing levee roads that form the outer edge of the WCCSL property. Improvements associated with the development of the Trail include a parking area, a compacted gravel surface, fencing and access controls, appropriate signage and interpretive aids, bench and rest areas, and restroom facilities. The currently proposed development schedule is as follows:

Trail segment	Projected opening date
Phase 1	December 1, 2003
Phase 2	December 1, 2004
Phase 3	December 1, 2007
Phase 4	9 months after securing funding

B. ENVIRONMENTAL ANALYSIS

This EIR presents an analysis of the environmental effects of the proposed Project. Individual issue areas are considered in Chapters 4 through 12. This section summarizes the analysis that was conducted.

1. Areas of Known Controversy

CEQA Guidelines Section 15123 requires an EIR to identify areas of controversy known to the lead agency, including issues raised by other agencies and the public. There are several areas of known controversy for this EIR. Several of these are depicted in letters resulting from the EIR Notice of Preparation (NOP) process which are included in Appendix 1D. The areas of controversy include questions whether development of a second waste recycling/transfer station in the North Richmond area is appropriate, the need to subject the Trail to additional CEQA review, and concerns of the State Department of Fish and Game (DFG) regarding certain components of the Trail.

a. Waste Recycling/Transfer Station. The Integrated Resource Recovery Facility, Central Processing Facility (Central IRRF), is located about 1 mile form the WCCSL between Third Street and Central Avenue. It began operation in 1993 and is permitted to accept up to 1,200 TPD of franchised and commercial waste. Operations include a materials recovery facility, transfer station, a public buyback center, and household hazardous waste collection facility. It has been anticipated that once the Class II landfill closes the waste would then be diverted to the Central IRRF. Because of ongoing landfill settlement, however, continuing disposal capacity has become available and the date of closure has been extended.

The proposed Project includes a WRC, which is a recycling facility and transfer station. Thus, the area of controversy centers on locating two facilities with similar functions in close proximity to each other. Under the proposed Project, the WRC would be designed to receive 1,000 TPD7 of self-haul and non-franchised waste, plus new business (third party market opportunities). The franchised waste would then be diverted to the Central IRRF upon landfill closure in 2005. However, the franchised waste could also be diverted to the WRC. If diverted, franchise waste would not increase the design capacity of the WRC, but rather could be handled in addition to the above described waste streams within the 1,000 TPD7 design capacity. In this scenario, the Central IRRF would continue its existing resource recovery operations.

This EIR includes the proposed WRC at the site of the former WCCSL Soil Remediation Building. An alternative WCCSL site in Area A is addressed in Chapter 13, Alternatives. The purpose of this EIR is to provide CEQA coverage on both WRC sites to assess their relative environmental compatibility, thus enabling either site to be selected. The decision on waste flow scenarios discussed above is a policy decision and will be made by the West Contra Costa

Integrated Waste Management Authority (Authority), an agency composed of local jurisdictions in the west County area.

b. Public Access Trail. There is controversy also regarding the Trail and why it must again be submitted to CEQA review. Phases 2, 3, and 4 of the Trail have been considered in previous CEQA documents, including previous documents for previous WCCSL activities and the EIR for the North Richmond Shoreline Specific Plan.[6] However, the Phase 1 alignment along the outer boundary of WCCSL Area B is a recent modification resulting from additional detailed planning. Additionally, none of the Trail alignment has previously been considered in the context of currently proposed Project activities and facilities. A notable example of such activities is the Applicant's proposal to spray-apply liquid biosolids to selected final landfill sideslopes. Thus, the Trail has been included in the proposed Project by the County as a related action requiring CEQA review.

c. DFG Concerns. DFG's NOP letter included in Appendix 1D summarized various concerns on the Trail based on information available to the agency at that time. In general, concerns existed over extending the Phase 1 alignment near Wildcat Marsh, having an "upper" and "lower" alignment for Phase 3 near San Pablo Bay, the Phase 4 alignment which would extend along the outer boundary of WCCSL Area C, and the need for further detailed biological surveys. A site meeting and tour was conducted with DFG representatives on February 28, 2003, to discuss their concerns.

Chapter 9, Biological Resources, fully addresses biological issues and the concerns of DFG. Based on the site meeting and tour, and inspections of the Trail alignment and surrounding areas, it was generally concluded that (1) with appropriate site restrictions the Phase 1 alignment was acceptable because open water areas border the alignment to the south, and would provide a physical deterrent to unauthorized access; (2) given the lack of any habitat along most of the northern border of the WCCSL, the Phase 3 alignment would be acceptable; (3) the Phase 4 alignment is sensitive because the western portion of the Area C levee has habitat value; and (4) given the above, additional detailed biological surveys would not be necessary.

2. Unresolved Issues

Section 15123 of the CEQA Guidelines also requires this summary to include identification of issues to be resolved, including choice among alternatives and whether or how to mitigate significant effects of the Project. Table 2-1, located at the end of this chapter, lists mitigation measures identified for each Project component, and the Preferred Environmental Alternative, discussed below, is recommended for implementation. For purposes of this EIR, issues to be resolved include the following:

- In Chapter 5, slope deformations of the Class II landfill under severe seismic shaking is an unresolved issue. The Applicant will be preparing additional technical analyses, an earthquake response plan, and otherwise continuing to

comply with the requirements of Regional Water Quality Control Board Order (RWQCB) No. R2-2002-0066.

- Emission increases from on-site sources would exceed Bay Area Air Quality Management District (BAAQMD) significance thresholds for particulate matter less than 10 microns in diameter (PM_{10}) and this has been defined as a significant unavoidable impact in Chapter 10, Air Quality and Odor. It is anticipated that the Applicant would submit an application to the BAAQMD as part of the BAAQMD's New Source Review Process. The Project operations with potential to exceed PM_{10} thresholds established by the BAAQMD would be evaluated for application of Best Available Control Technology (BACT) and emission offsets. The Applicant would decide whether to employ the required BACT or delete the operation from the proposed Project.

- In Chapter 10, Air Quality and Odor, potential odor generation associated with the application of liquid biosolids to the southern and eastern sideslopes of the closed landfill is an unresolved issue. The Applicant would need to demonstrate, under the review and oversight of the BAAQMD and the Local Enforcement Agency (LEA), that biosolids application would not result in nuisance odor conditions under full-scale development.

- In Chapter 11, health and safety associated with application of biosolids to landfill sideslopes is an unsolved issue. The Applicant would need to (1) demonstrate to the RWQCB that lagoon storage of biosolids at the WCWD treatment plant produces Class A biosolids; or (2) demonstrate to the RWQCB that a combination of Trail closure, rotational dried biosolids spreading, and fencing can be used to conform to 40 CFR 503 regulations.

3. Overview of Impacts and Mitigation Measures

Table 2-1 summarizes the environmental analyses in this EIR. The table provides a list of impacts, Applicant control measures, and mitigation measures. In Table 2-1, measures to avoid, reduce, or eliminate environmental impacts are presented in two categories: (1) Applicant proposed control measures, and (2) recommended mitigation measures. Control measures proposed by the Applicant are those operations or procedures identified as being included in the Project, as described in Project documents and reports prepared by the Applicant. The recommended mitigation measures are those measures considered appropriate by this EIR to reduce identified impacts to less-than-significant levels. The County or City would adopt these "recommended mitigation measures" at the time of final approval.

All impacts can be reduced to a less-than-significant level except exceedances of the BAAQMD threshold value of particulate (PM_{10}) emissions associated with Project operation. For purposes of this EIR, this impact is significant and unavoidable. The proposed Project would be subject to the BAAQMD New Source Review process. During this BAAQMD

permitting process, the Project would be evaluated for application of BACT and emission offsets for reducing PM_{10} emissions to acceptable levels.

C. SUMMARY OF ALTERNATIVES

Alternatives are discussed in Chapter 13 of this EIR. Section 15126(d) of the CEQA Guidelines requires that an EIR include a discussion and analysis of alternatives. Specifically, the EIR should describe a range of reasonable alternatives to the project, or to the location of the project, which could feasibly attain the basic objectives of the project, and evaluate the comparative merits of the alternatives. Alternatives consist of the no-Project alternative, the alternative WRC site, alternative composting technology, and the Preferred Environmental Alternative.

As indicated above, part of the alternatives discussion needs to address the ability of the alternative to attain the basic objectives of the Project. The Applicant's objectives of the Project are as follows:

- To further reduce reliance on landfill disposal by expanding on-site resource recovery and recycling operations in compliance with State-required AB 939 waste diversion mandates.
- To construct and operate a WRC and transfer station to handle self-haul volumes currently landfilled in the WCCSL, as well as capacity for new business (to be developed on an ongoing basis), and to achieve even greater diversion of materials from the waste stream than is accomplished now in the Waste Shuttle Facility.
- To help facilitate development of the Trail around the WCCSL, which will provide recreational opportunities and increase access to San Pablo Bay and which will also offer a setting for wildlife viewing and environmental education.
- To correct the areas of the Class II landfill's central plateau that have experienced excessive settlement, and to restore the landfill by placing additional municipal solid waste subbase, which will allow the foundation layer, barrier layer, and the top landfill cover surface to be placed at the correct elevations and slope so that drainage can be properly managed.

1. No-Project Alternative

Under the no-Project alternative, the WRC, soil reclamation, biosolids/dredged material spreading, including the wet/dusty materials blending, and the proposed alignment for the Trail

would not be implemented. The alignment specified in the North Richmond Shoreline Specific Plan and evaluated in the EIR for that plan, however, could be implemented, but consideration should be given to the findings and conclusions in this EIR. Currently permitted activities would continue as follows:

- BMPC
  - Waste Shuttle Facility. This facility would continue to receive waste and recyclable materials at its location on the Class II landfill's central plateau while the Class II landfill disposal operations are active.
  - Composting Facility. Composting would be limited to 10,000 tons per year with existing feedstock materials.
  - Concrete/Asphalt Processing Facility. Processing of about 125,000 tons per year of concrete and asphalt would continue at the existing location. Permitted to have a maximum of 30,000 tons of concrete debris and 1,600 tons of asphalt on site at one time.
  - Wood Recovery Facility. This facility would continue to process about 30,000 tons per year of wood wastes. Permitted to have a maximum of 350 tons on site at one time.
  - While the former Soil Remediation Facility is inactive, it is permitted and, therefore, the Applicant could reinstate its permitted uses, if desired, under the no-Project alternative.
- Class II Landfill
  - The Class II landfill would continue to operate under RWQCB Order No. R2-2002-0066 and Solid Waste Facility Permit (SWFP) #07-AA-001. SWFP #07-AA-001 limits the fill height of the landfill to 130 feet above mean sea level (msl). According to the Applicant's most recent site life projections based on a landfill height of 130 msl (Table 3-5 in Chapter 3), the landfill would be filled by October 2003 if the former Soil Remediation Building remains in place, or February 2005 if the building is removed, allowing additional solid waste disposal in this area.
- Central IRRF
  - At landfill closure, wastes would be directed to the permitted Central IRRF located at 101 Pittsburg Avenue about 1 mile from the WCCSL. This waste would then be transferred for disposal to the Potrero Hills landfill in Solano County for a period of 5 years after closure of the WCCSL as determined by the Authority.

The no-Project alternative would not meet Project objectives. Over 950,000 tons per year of proposed additional waste diversion would not occur at the WCCSL, though a portion of the materials would be processed at the Central IRRF. The additional 30 feet of landfill height needed to provide "cushion" for future settlement and to provide effective drainage would also not occur.

2. Alternative WRC Site

The location of an alternative WRC site is within WCCSL Area A and within City limits. The Area A location is outside of former Class II landfill areas and has historically been used for storage of soil for subsequent use in WCCSL operations. WRC operations would be substantially the same as at the proposed site, but the facility layout would be different and a separate access would need to be constructed off the main landfill access road (Recycling Lane). Although the Area A location is close to the Phase 1 segment of the proposed Trail, an elevated landscaped berm with 6-foot cyclone fencing would be constructed in this area for security and environmental compatibility purposes.

The Area A location would meet Project objectives and would provide added benefits. Because the site has natural soils which have been "pre-loaded" due to previous soil stockpiling, it is less subject to settlement issues compared to the proposed site which is on 15 to 20 feet of buried waste. Landfill gas (LFG) migration would not be an issue associated with the Area A location, though the Title 27 of the California Code of Regulations, Section 20923 would require LFG monitoring at the structure because it is within 1,000 feet of the Class II landfill. The Area A location is also not in as close proximity to the soil-attapulgite slurry wall as is the proposed site and thus possible disturbance to the wall would not be an issue. The Area A location also provides a location for building where site planning and design are not constrained by an existing building and other physical site constraints.

3. Alternative Composting Technology

The aerated static pile composting technology is a relatively high technology approach and alternative to the windrow composting process currently in operation. Aerated static pile offers several advantages compared to windrow composting. It has reduced land area requirements for composting, is better able to accommodate the types of feedstocks proposed for the Composting Facility, and is more efficient because it provides for more precise control of oxygen and temperature conditions in the pile. Because the piles would be covered with finished compost and because exhaust air from the piles would be filtered through a biofilter composed of finished compost, the potential of nuisance odor generation can be reduced. Little, if any, pile turning is required with aerated static pile, so another source of odor, as well as particulates, is reduced.

Initially, aerated static pile would not be implemented by the Applicant on a full-scale basis. The Applicant anticipates that the initial process development would begin in 2004 after required permits are obtained. During this initial development phase, experience would be gained on processing the various feedstocks under varied climatic conditions. During the spring of 2004, aerated static pile would run in parallel with windrow composting. By the fall of 2004, the aerated static pile process would be used primarily for the wet weather season of 2004/05. By that time, the Applicant expects the business program to have been developed for the processed materials and the tipping fee economics for the regional feedstock clients.[68]

Within several years, the Applicant anticipates the aerated static pile to be almost a complete replacement process. The windrows may continue to be used during the dry season to take advantage of additional amounts of green materials produced during the growing season. Thus, the windrows could serve to provide extra seasonal processing capacity.

4. Preferred Environmental Alternative

The Preferred Environmental Alternative (PEA), as discussed in Chapter 13 of this EIR, includes the Project proposed by the Applicant, the mitigation measures discussed in Chapters 4 through 12 and summarized in Table 2-1, elimination of Phase 4 of the Trail, the Area A location and associated development plan for the proposed WRC, and the use of aerated static pile as the primary composting process, with the use of windrow composting limited to providing additional seasonal processing capacity. Significant impacts associated with the proposed Project would be reduced to less-than-significant levels, with the exception of PM_{10} emissions. The PEA would have lower PM_{10} emissions than the proposed Project because of the reliance on the aerated static pile composting process in lieu of windrow composting. A significant unavoidable PM_{10} impact would remain. As discussed earlier in this chapter, the PEA would be subject to BAAQMD's New Source Review process and would be evaluated for application of BACT and emission offsets for reducing PM_{10} emissions to acceptable levels.

Table 2-1. Summary of Impacts, Control Measures and Mitigation Measures

Impact	Applicant-proposed control measure[a]	Potential significance with control measure	EIR recommended mitigation measure[b]	Potential significance with mitigation
Chapter 4. Land Use, Plans, and Policies				
IMPACT 4-1. The proposed Project includes a variety of activities and facilities, the operation of which could make the WCCSL incompatible with surrounding land use.	None required	Less than significant	None required	Less than significant
IMPACT 4-2. Implementation of the Trail could expose users to the effects created by other Project activities.	None required	Less than significant	None required	Less than significant
IMPACT 4-3. Continuation of waste disposal and resource recovery activities could be inconsistent with the San Francisco Bay Plan.	None required	Less than significant	None required	Less than significant
IMPACT 4-4. Proposed Project components are not consistent with the County or Regional NDFE.	None	Potentially significant	a) The County and Authority would revise their NDFEs to include the proposed WRC at the BMPC as a transfer facility (non-disposal facility) pursuant to Article 7, Chapter 9, Division 7 of Title 14 of the California Code of Regulations.	Less than significant
IMPACT 4-5. Implementation of the expanded operations at the BMPC and Central IRRF, and continued landfill operations at the WCCSL through January 2006 present the potential for continued or increased illegal dumping activity in the North Richmond area.	None	Potentially significant	a) The agency(ies) with applicable permit authority (County, City, or LEA) and mitigation monitoring responsibility would require that applicable permits contain conditions of approval specifying the following: ▪ Mitigation Fee. The facility operator shall pay a mitigation fee of an amount to be determined by the applicable permitting authority(ies) to defray annual costs associated	Less than significant

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b. Mitigation measures are measures recommended by this EIR to be implemented where there is a significant impact and no Applicant-proposed control measures have been identified, or in combination with proposed control measures. Mitigation measures are designed to reduce impacts to a less-than-significant level compared to stated significance criteria.

Table 2-1. Summary of Impacts, Control Measures and Mitigation Measures (continued)

Impact	Applicant-proposed control measure[a]	Potential significance with control measure	EIR recommended mitigation measure[b]	Potential significance with mitigation
Chapter 4 (continued) IMPACT 4-5 (continued)			with collection and disposal of illegally dumped waste and associated impacts in North Richmond and adjacent areas. The mitigation fee should be subject to the joint control of the City and County and should be collected on all solid waste and processible materials received at the facility consistent with the existing mitigation fee collected at the Central IRRF. ▪ Agency Coordination. Facility operator shall participate in County or City task forces and pilot programs established to address illegal dumping in North Richmond and adjacent city areas. ▪ Off-Site Debris and Litter Policing. The facility operator shall provide weekly debris and litter clean up of Parr Boulevard from the Richmond Parkway to the facility entrance and roads within the "Hotspot Zones 1-6" identified in Table 4-3 and Figure 4-5 of this EIR, and on other access roads as directed by the permitting authority(ies). As needed, the permitting authority(ies) may require more frequent policing to control debris or litter. ▪ Littering Signs. The facility operator shall install and	

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Table 2-1. Summary of Impacts, Control Measures and Mitigation Measures (continued)

Impact	Applicant-proposed control measure[a]	Potential significance with control measure	EIR recommended mitigation measure[b]	Potential significance with mitigation
Chapter 4 (continued) IMPACT 4-5 (continued)			maintain signs noting littering and illegal dumping laws and penalties along Parr Boulevard (the main access road to the facility) and the following other access roads: o Richmond Parkway, from Parr Blvd. to Gertrude Ave. o Pittsburg Ave., from Richmond Parkway to 3rd Street o Garden Track Blvd., south of Pittsburg Ave. o Market Ave., from 1st Street to the SPRR tracks. o 3rd Street, from Market Ave. to Grove Ave. o 5th Street, from Verde Ave. to Chesley Ave. o Battery Street, from Alamo Ave. to Vernon Ave. o Kelsey Street at the SPRR tracks ▪ The permitting authority(ies) may designate other roads for signage as needed. The text on the signage should be subject to the review and approval of the permitting authority(ies). ▪ Hotline. The facility operator shall establish an Illegal	

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Table 2-1. Summary of Impacts, Control Measures and Mitigation Measures (continued)

Impact	Applicant-proposed control measure[a]	Potential significance with control measure	EIR recommended mitigation measure[b]	Potential significance with mitigation
Chapter 4 (continued) IMPACT 4-5 (continued)			Dumping Hotline phone number for use by residents and businesses to report incidences of illegal dumping in the North Richmond area. The hotline phone number shall be prominently listed on all "littering signs" described above. Reports or complaints shall be investigated within 24 hours. Verified incidents of illegal dumping or litter or debris shall be collected within 24 hours of verification. ▪ Reporting Requirements. The facility operator shall maintain records regarding all complaints/reports and actions taken to respond including locations, dates, and times. Records shall be made available to the County or City upon request.	
Chapter 5. Geology, Soils, and Seismicity IMPACT 5-1. Liquefaction occurring in sandy soil below the landfill and/or associated structures could cause ground surface settlement and/or lateral spreading at the landfill sideslopes, causing damage to the cover, environmental control systems, and buildings.	a) The liquefaction analysis for the WCCSL would be updated in late 2003 and recommendations incorporated into post-earthquake maintenance and repair plans. b) Following an earthquake, inspections of the landfill would be performed by the Site Engineer and necessary repairs made. c) Under the seismic scenarios where the barrier wall is breached, an inward hydraulic gradient would be maintained prior to and throughout the repair.	Less than significant	None required	Less than significant

a. Control measures are proposed by the Applicant as part of the proposed Project. Control measures typically are procedures know to further reduce the potential for impacts based on regulatory agency requirements, standards in the industry, and operating experience.

b. Mitigation measures are measures recommended by this EIR to be implemented where there is a significant impact and no Applicant-proposed control measures have been identified, or in combination with proposed control measures. Mitigation measures are designed to reduce impacts to a less-than-significant level compared to stated significance criteria.

Table 2-1. Summary of Impacts, Control Measures and Mitigation Measures (continued)

Impact	Applicant-proposed control measure[a]	Potential significance with control measure	EIR recommended mitigation measure[b]	Potential significance with mitigation
Chapter 5 (continued)				
IMPACT 5-2. Settlement of the landfill under proposed refuse and cover fill loads could impact site grading and runoff.	a) A program of landfill inspection, maintenance, and repair will continue to be implemented consistent with State regulations and as detailed in the RDSI and Postclosure Plan. The program will maintain the final grading at the site to prevent ponding and minimize infiltration in accordance with State regulations and will include permanent monument installation and aerial photogrammetry to develop site topography and iso-settlement maps. Repair to the cover system, if necessary, may require placement of additional fill.	Less than significant	None required	Less than significant
IMPACT 5-3. Settlement of the landfill under proposed refuse and cover fill loads could impact cover integrity.	None required	Less than significant	None required	Less than significant
IMPACT 5-4. The placement of stockpiles could cause additional landfill settlement.	a) Stockpiles would be located a minimum of 50 feet from the crest of 4:1 (horizontal:vertical) landfill sideslopes. b) Stockpiles would have maximum slopes of 6:1 for heavier materials such as concrete rubble and 5:1 for lighter materials such as wood waste. c) Maximum stockpile height would be 20 feet. d) A stockpile plan would be approved by a registered professional engineer before any stockpiling occurs.	Less than significant	None required	Less than significant

a. Control measures are proposed by the Applicant as part of the proposed Project. Control measures typically are procedures know to further reduce the potential for impacts based on regulatory agency requirements, standards in the industry, and operating experience.

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Table 2-1. Summary of Impacts, Control Measures and Mitigation Measures (continued)

Impact	Applicant-proposed control measure[a]	Potential significance with control measure	EIR recommended mitigation measure[b]	Potential significance with mitigation
Chapter 5 (continued)				
IMPACT 5-5. Settlement of the landfill under existing and/or proposed fill loads could impact existing and proposed structures supported on the landfill.	a) Adjustable height building columns and footers would be used for proposed building facilities.	Potentially significant	a) Geotechnical studies would be performed for each proposed/renovated site structure to be located on waste fill that evaluate impacts of landfill settlement on building performance, as well as additional settlement, if any, caused by new structures, and recommendations included in construction plans and specifications. b) Flexible utility connections would, if deemed necessary, be considered to reduce damage to utilities resulting from differential settlement between buildings and the surround ground. c) Settlement of buildings would be addressed in WCCSL Post-Closure Plan with monitoring and repair as needed.	Less than significant
IMPACT 5-6. Settlement of the landfill under new refuse and cover fill loads could impact lateral containment structures.	None	Potentially significant	a) If new fill is placed for construction of the proposed WRC, additional studies would be performed to evaluate settlement, slope stability, and potential impacts on the integrity of the soil-attapulgite slurry wall with recommendations included in construction plans and specifications.	Less than significant

a. Control measures are proposed by the Applicant as part of the proposed Project. Control measures typically are procedures know to further reduce the potential for impacts based on regulatory agency requirements, standards in the industry, and operating experience.

b. Mitigation measures are measures recommended by this EIR to be implemented where there is a significant impact and no Applicant-proposed control measures have been identified, or in combination with proposed control measures. Mitigation measures are designed to reduce impacts to a less-than-significant level compared to stated significance criteria.

Table 2-1. Summary of Impacts, Control Measures and Mitigation Measures (continued)

Impact	Applicant-proposed control measure[a]	Potential significance with control measure	EIR recommended mitigation measure[b]	Potential significance with mitigation
Chapter 5 (continued) IMPACT 5-6 (continued)			b) Periodic monitoring would be consistent with the recommendations of Mitigation Measure 5-6(a) to evaluate the condition of the soil-attapulgite slurry wall and appropriate repairs made as necessary.	
IMPACT 5-7. The placement of new fill could cause a static slope or cover failure that could damage the landfill cap and environmental control systems.	None	Less than significant	None required	Less than significant
IMPACT 5-8. The combination of new fill placement and seismic shaking could cause slope deformations, which could damage the landfill cap and environmental control systems.	a) Following an earthquake, an inspection program would be implemented to evaluate the extent of cracking of the cover materials, damage to LFG collection system, damage to leachate collection and pumping systems, global landfill sliding, and cracking of the barrier wall. Appropriate repairs would be pursuant to RWQCB Order No. R2-2002-0066. b) Under the seismic scenarios where the barrier wall is breached, an inward hydraulic gradient would be maintained prior to and throughout the repair (see Control Measure 5-1(c). c) A slope remediation study would be performed, or a long-term slope maintenance program would be developed to address the consequence and possible repairs resulting from large seismically-induced permanent slope displacements.	Potentially significant	a) A plan for inspection and as-needed repair of the GCL following an earthquake would be added to the Post-Closure Plan.	Less than significant

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Table 2-1. Summary of Impacts, Control Measures and Mitigation Measures (continued)

Impact	Applicant-proposed control measure[a]	Potential significance with control measure	EIR recommended mitigation measure[b]	Potential significance with mitigation
Chapter 5 (continued) IMPACT 5-8 (continued)	d) As recommended by EMCON/OWT, Inc. slope stability report, a probabilistic analysis of the permanent displacements would be performed to be used in developing a detailed earthquake response plan. The response plan would provide details on procedures to be followed for inspection of the site following major earthquakes, and on the slope maintenance requirement that may be triggered by significant displacements.			
IMPACT 5-9. Slope deformations or slope failure at the proposed WRC site could impact the soil-attapulgite slurry wall.	a) The inspection, monitoring and repair plans outlined in the Post-Closure Maintenance Plan would be followed. b) Following a significant earthquake (magnitude 6.5 or greater), the site would be inspected to evaluate the performance of the environmental control systems related to the Class I landfill. Slurry wall deformations in excess of 1 foot would require a notification to DTSC and RWQCB within 14 days and repairs made pursuant to their recommendations.	Potentially significant	a) If new fill will be placed for construction of the proposed WRC, additional studies would be performed to evaluate potential settlement, slope stability, and movement of the soil-attapulgite slurry wall and recommendations would be incorporated into construction plans and specifications.	Less than significant

a. Control measures are proposed by the Applicant as part of the proposed Project. Control measures typically are procedures know to further reduce the potential for impacts based on regulatory agency requirements, standards in the industry, and operating experience.

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Table 2-1. Summary of Impacts, Control Measures and Mitigation Measures (continued)

Impact	Applicant-proposed control measure[a]	Potential significance with control measure	EIR recommended mitigation measure[b]	Potential significance with mitigation
Chapter 5 (continued)				
IMAPCT 5-10. Ground shaking during an earthquake could affect building structures and associated improvements.	a) New buildings would be designed to meet the 1997 UBC Seismic Zone Factor 4 standards, and constructed in accordance with all applicable building codes and regulations.	Potentially significant	a) To ensure proper structural design, a geotechnical report would be prepared for all new buildings with recommendations incorporated into construction plans and specifications (see Mitigation Measure 5-5(a)). The geotechnical report would discuss the potential for differential ground surface settlement and the need for flexible utility connections (see Mitigation Measure 5.5(b)).	Less than significant
IMPACT 5-11. The construction and operation of new buildings and facilities, as well as construction of the cap itself, could cause damage to the landfill cover (cap).	a) During construction, the subgrade would be prepared properly to create a smooth surface and proper construction and quality assurance monitoring would be conducted consistent with the requirements of the Postclosure Plan. b) If the cover (including the GCL) is damaged during construction or post-closure activities, it would be repaired or replaced.	Less than significant	None required	Less than significant
Chapter 6. Water Resources				
IMPACT 6-1. Proposed Project components could result in violation of water quality standards or WDRs.	None	Less than significant	None required	Less than significant
IMPACT 6-2 Proposed Project components could generate either increased quantities of pollutants or new sources of pollutants, which could infiltrate the soil column and degrade underlying groundwater quality.	a) A minimum of 3 feet of compacted soil would be placed over the final landfill cap in the central plateau, which will underlie operations areas and serve to protect the final cap.	Less than significant	None required	Less than significant

a. Control measures are proposed by the Applicant as part of the proposed Project. Control measures typically are procedures know to further reduce the potential for impacts based on regulatory agency requirements, standards in the industry, and operating experience.

b. Mitigation measures are measures recommended by this EIR to be implemented where there is a significant impact and no Applicant-proposed control measures have been identified, or in combination with proposed control measures. Mitigation measures are designed to reduce impacts to a less-than-significant level compared to stated significance criteria.

Table 2-1. Summary of Impacts, Control Measures and Mitigation Measures (continued)

Impact	Applicant-proposed control measure[a]	Potential significance with control measure	EIR recommended mitigation measure[b]	Potential significance with mitigation
Chapter 6 (continued) IMPACT 6-2 (continued)	b) Benchmark marker layers would be established and annually monitored to determine that the upper 3-foot-thick soil buffer is not removed over time. c) Additional compacted soil would be placed as necessary to augment and maintain the 3-foot soil layer. d) Additional soil on the southern and eastern landfill slopes would be placed prior to application of dredged material and biosolids. Per control measures (a – c), establish benchmark marker layers, monitor annually, and place additional soil as necessary to protect the final cap. e) Annual soil moisture monitoring would be conducted during the initial years of dredged materials and biosolids application and, if necessary, adjustments will be made to facility operation under review and oversight of the RWQCB. f) Prior to full-scale implementation of dredged materials and/or biosolids spreading, further testing would be conducted, under LEA review and oversight, of application methods and rates to optimize operational procedures while not overloading the soil's moisture assimilation capacity. g) Prior to accepting dredged materials for disposal, the Applicant would require the project sponsor to meet specific requirements including providing specifications on material to be delivered and on-site operating			

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Table 2-1. Summary of Impacts, Control Measures and Mitigation Measures (continued)

Impact	Applicant-proposed control measure[a]	Potential significance with control measure	EIR recommended mitigation measure[b]	Potential significance with mitigation
Chapter 6 (continued) IMPACT 6-2 (continued)	protocols needed to manage the materials on site to prevent water quality impacts. h) Plan and implement a leachate removal program in accordance with the requirements of Order No. R2-2002-0066 that would provide an inward hydraulic gradient to the landfill.			
IMPACT 6-3. The proposed Project would alter the existing drainage pattern of the site or contribute increased runoff that could exceed system capacity and result in on-site or off-site flooding.	None	Less than significant	None required	Less than significant
IMPACT 6-4 The proposed Project could produce increased runoff that could result in substantial erosion or siltation on or off site, or otherwise degrade surface water quality.	a) A Notice of Intent and revised SWPPP related to proposed operations would be submitted for approval by the Executive Officer of the RWQCB; Best Management Practices would be implemented for control of storm water. b) The existing Drainage, Erosion, and Sediment Control Plan would be modified pursuant to County LUP No. 2054-92, as amended by LUP No. 2043-94, and City CUP No. 92-53. The FDIP would then be finalized and if amended use permits are obtained, the Applicant would comply with permit conditions. c) Modified or new Solid Waste Facility Permits would be obtained from the LEA and CIWMB for the landfill, Composting Facility, and WRC and permit conditions would be followed.	Potentially significant	a) Upon completion of the additional biosolids spreading trials per Control Measure 6-4(d), the Applicant would prepare a Progress Report for RWQCB review and approval. The Progress Report would include, at a minimum, the following: ▪ Purpose of Biosolids Spreading ▪ Approach and Methodology ▪ Results ▪ Environmental Controls ▪ Conclusions and Recommendations ▪ Other Components Deemed Necessary by the RWQCB	Less than significant

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Table 2-1. Summary of Impacts, Control Measures and Mitigation Measures (continued)

Impact	Applicant-proposed control measure[a]	Potential significance with control measure	EIR recommended mitigation measure[b]	Potential significance with mitigation
Chapter 6 (continued) IMPACT 6-4 (continued)	d) Further testing of biosolids spreading would be conducted prior to full-scale implementation to refine the rates and methods of application, under the review and oversight of the RWQCB. Revised permits would be obtained as necessary and the Applicant would abide by permit conditions. e) BMPs at the Composting Facility would be employed that would optimize applied water to the windrows while minimizing the generation of leachate.		The Progress Report should demonstrate the maximum acceptable biosolids loading rate, given available site area and physical constraints and the need to maximize drying and to control runoff.	
IMPACT 6-5. The proposed Trail could result in exposure of people to risk due to flooding.	a) The Trail would be closed during times of unusually wet weather when the potential exists that the Trail could be flooded.	Less than significant	None required	Less than significant
IMPACT 6-6. The Project is inconsistent with local General Plans, North Shoreline Specific Plan, and the Basin Plan.	None	Less than significant	None required	Less than significant
Chapter 7. Aesthetics and Visual Quality				
IMPACT 7-1. The proposed Project involves an increased landfill height; expanded operations on the central plateau, with several new buildings including the Wet/Dusty Material Blending Facility; dredged material and/or biosolids spreading on the southern and eastern landfill sideslopes; and a new WRC, all of which could affect the visual quality of the area.	None	Less than significant	None required	Less than significant

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Table 2-1. Summary of Impacts, Control Measures and Mitigation Measures (continued)

Impact	Applicant-proposed control measure[a]	Potential significance with control measure	EIR recommended mitigation measure[b]	Potential significance with mitigation
Chapter 7 (continued)				
IMPACT 7-2. The proposed Project involves expanded operations during nighttime hours, which would introduce new sources of light and glare and could affect views in the area.	None	Less than significant	None required	Less than significant
IMPACT 7-3. The proposed WRC/transfer station and expanded BMPC operations could introduce new sources of litter that could degrade the visual quality of the area.	a) The existing Litter Control Program would be modified pursuant to County LUP No. 2054-92, as amended by LUP No. 2043-94, and City CUP No. 92-53, the FDIP revised, and if amended use permits obtained, adherence to permit conditions. b) Revised and new SWFP's would be obtained and litter abatement requirements would be implemented. c) Provide a covered receiving structure (or building), if determined necessary by the LEA, which would be intended to manage litter as well as bird and vector control.	Less than significant	None required	Less than significant
IMPACT 7-4. Use of the Trail would introduce a new source of littering in an area of high visual and biological quality.	a) Trash and recycling receptacles would be located at specified locations along the Trail. b) The Trail would be maintained on a weekly basis, including emptying of receptacles and collection of litter.	Less than significant	None required	Less than significant
IMPACT 7-5. The Project could be inconsistent with County and City General Plans and the North Shoreline Specific Plan.	None	Less than significant	None required	Less than significant

a. Control measures are proposed by the Applicant as part of the proposed Project. Control measures typically are procedures know to further reduce the potential for impacts based on regulatory agency requirements, standards in the industry, and operating experience.

b. Mitigation measures are measures recommended by this EIR to be implemented where there is a significant impact and no Applicant-proposed control measures have been identified, or in combination with proposed control measures. Mitigation measures are designed to reduce impacts to a less-than-significant level compared to stated significance criteria.

Table 2-1. Summary of Impacts, Control Measures and Mitigation Measures (continued)

Impact	Applicant-proposed control measure[a]	Potential significance with control measure	EIR recommended mitigation measure[b]	Potential significance with mitigation
Chapter 8. Traffic and Circulation				
IMPACT 8-1. The proposed Project would generate a net increase in ADT of 970 vehicles per day in 2015, which is substantial, yet only about 1.2 percent of the ADT projected for the Richmond Parkway for that year.	a) Traffic would be limited and controlled at certain times of the day. This would not reduce the total traffic, but would shift some traffic to off-peak hours. b) Travel patterns for the WCCSL truck traffic would be managed to avoid trips during the peak commute hours, especially the AM peak. c) Management controls would be developed to limit trips through congested road systems during the AM and PM peak hours.	Less than significant	None required	Less than significant
IMPACT 8-2. Additional Project-related traffic could adversely impact traffic flow and congestion at the I-80/Richmond parkway and I-580/Garrard Boulevard interchanges.	None	Less than significant	None required	Less than significant
IMPACT 8-3. Projected increases in Project-related traffic could further deteriorate pavement conditions on Parr Boulevard.	None	Potentially significant	a) A pavement monitoring program would be undertaken by Applicant for the Parr Boulevard connection to Richmond Parkway. The program would provide before and after video evidence of pavement conditions, and may require the posting of a pavement repair bond. Applicant would coordinate with the Maintenance Division of the County Public Works Department regarding the details of the monitoring program and any requirements for road repair should they become necessary.	Less than significant
IMPACT 8-4. Additional Project-related traffic could result in on-site congestion and unsafe conditions for WCCSL users and employees.	None	Less than significant	None required	Less than significant

a. Control measures are proposed by the Applicant as part of the proposed Project. Control measures typically are procedures know to further reduce the potential for impacts based on regulatory agency requirements, standards in the industry, and operating experience.

b. Mitigation measures are measures recommended by this EIR to be implemented where there is a significant impact and no Applicant-proposed control measures have been identified, or in combination with proposed control measures. Mitigation measures are designed to reduce impacts to a less-than-significant level compared to stated significance criteria.

Table 2-1. Summary of Impacts, Control Measures and Mitigation Measures (continued)

Impact	Applicant-proposed control measure[a]	Potential significance with control measure	EIR recommended mitigation measure[b]	Potential significance with mitigation
Chapter 8 (continued)				
IMPACT 8-5. Additional Project-related traffic could result in unsafe conditions for users of the Trail.	a) A barrier (i.e., "k-rails," concrete blocks, telephone poles, or soil berms) would be placed along the Phase 3 Trail near the scale house to physically separate Trail users from vehicular traffic using the WCCSL operations areas. b) A designated crossing with signage and pavement striping would be provided for users of the Trail to safely cross the traffic on the main roadway leading to the WCCSL scale house. Signage will require motorists to stop for pedestrians. c) The Trail parking lot would have improvements consisting mainly of traffic control barriers that would designate the limits of the parking area and its entrance roadway.	Less than significant	None required	Less than significant
IMPACT 8-6. The proposed Project is consistent with transportation plans and programs in North Richmond.	None	Less than significant	None required	Less than significant
Chapter 9. Biological Resources				
IMPACT 9-1. The proposed Project could have a substantial adverse effect on habitat for special-status species.	a) Dogs would not be permitted on the Trail. b) An interpretive program would be implemented explaining the sensitivity of the surrounding marshland habitat. c) The Trail (Barrier) Planting Recommendations developed by Environmental Stewardship & Planning would be implemented to control the spread of invasive exotics and to establish a protective buffer of native	Potentially significant	a) The interpretive program proposed by the Applicant would be developed in consultation with the Bay Conservation Development Commission (BCDC) and DFG to educate Trail users of the sensitivity of the marshland and open water habitat to wildlife, the prohibition on take and harassment of special-status species, and the requirement of staying on the Trail to minimize disturbance to sensitive wildlife.	Less than significant

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Table 2-1. Summary of Impacts, Control Measures and Mitigation Measures (continued)

Impact	Applicant-proposed control measure[a]	Potential significance with control measure	EIR recommended mitigation measure[b]	Potential significance with mitigation
Chapter 9 (continued) IMPACT 9-1 (continued)	vegetation between the proposed Trail alignment and adjacent marsh and open water habitats.		b) Adequate controls would be developed as part of the interpretive program to prevent human access into the San Pablo Creek Marsh habitat along the Phase 3 segment of the Trail north of the WCCSL. This may require use of exclusionary fencing, and shall at minimum include installation of permanent signage at 100-foot intervals which states: No Trail Access Sensitive Wildlife Habitat Visitor Access Prohibited c) As currently proposed, dogs would be prohibited from using the Trail. Permanent signage would be installed as part of the interpretive program at the trailhead and as separate permanent signs within 100 yards of the beginning of the northern and southern trail segments explaining the sensitivity of the area and clearly state "No Dogs Allowed." Signage would refer users to other local shoreline parks where dogs are permitted (e.g. Berkeley Shores Park, Point Isabel). Experience gained from operation of the Trail would be used by the appropriate entities to determine whether additional enforcement	

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Table 2-1. Summary of Impacts, Control Measures and Mitigation Measures (continued)

Impact	Applicant-proposed control measure[a]	Potential significance with control measure	EIR recommended mitigation measure[b]	Potential significance with mitigation
Chapter 9 (continued) IMPACT 9-1 (continued)			measures are necessary and possible funding measures. d) As directed by appropriate agencies, the Applicant would coordinate efforts on predator control of feral cats, dogs, and red fox. e) All construction activities on the levees, including installation of any Trail improvements and the barrier landscape plantings, would be prohibited during the nesting season for salt marsh dependent bird species, from February 1 through July 31. f) Trail improvements would be restricted to uplands, the tops of existing levees, and the existing roadway along the south side of San Pablo Creek to minimize further disturbance in the adjacent marsh and riparian habitats.	
IMPACT 9-2. The proposed Project could adversely affect sensitive natural communities.	None	Less than significant	None required	Less than significant
IMPACT 9-3. The proposed Project could adversely affect wetlands.	None	Potentially significant	a) Any modifications to the shoreline of San Pablo Bay required as part of the construction of the staging area for the interpretive program at the southern end of Area C, would be coordinated with the Corps and BCDC and appropriate authorizations obtained prior to any modifications to the shoreline and open water of San Pablo Bay.	Less than significant

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Table 2-1. Summary of Impacts, Control Measures and Mitigation Measures (continued)

Impact	Applicant-proposed control measure[a]	Potential significance with control measure	EIR recommended mitigation measure[b]	Potential significance with mitigation
Chapter 9 (continued)				
IMPACT 9-4. The proposed Project could have significant impacts on wildlife habitat and wildlife movement opportunities.	None	Potentially significant	a) The Phase 4 alignment of the Public Access Trail would be eliminated from the proposed Project to avoid the required disturbance to shoreline habitat on this portion of the site and prevent the potential disruption to wildlife habitat along the existing isolated levee segment. b) Permanent signage would be installed as part of the required interpretive program at the southern end of the levee along the west side of Area C which deters visitor access to this segment of the levee. The signage would be installed at 20-foot intervals across the width of the levee, within 10 yards of the point where the levee narrows north of the proposed kayak staging area. The signage would state: No Trail Access Sensitive Wildlife Habitat Visitor Access Prohibited	Less than significant
IMPACT 9-5. The proposed Project is consistent with local plans, policies or ordinances protecting biological resources or adopted Habitat Conservation Plans or Natural Community Conservation Plans.	None	Less than significant	None required	Less than significant

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Table 2-1. Summary of Impacts, Control Measures and Mitigation Measures (continued)

Impact	Applicant-proposed control measure[a]	Potential significance with control measure	EIR recommended mitigation measure[b]	Potential significance with mitigation
Chapter 10. Air Quality and Odor				
IMPACT 10-1. The construction of various Project elements could result in dust nuisance.	None	Potentially significant	a) All active construction areas would be watered at least twice daily and more often during windy periods (20 mph or higher). b) All trucks hauling soil, sand, and other loose materials would be covered or required to maintain at least two feet of freeboard. c) All unpaved access roads, parking areas and staging areas at construction sites would be paved, watered at least twice daily or more often if windy, or receive applications of non-toxic soil stabilizers. d) All paved access roads, parking areas and staging areas at construction sites would be swept daily with water sweepers. e) Inactive construction areas would be hydroseeded or non-toxic soil stabilizers would be applied. f) Exposed stockpiles (dirt, sand, etc.) would either be enclosed, covered, watered twice daily or more often if windy, or receive application of non-toxic soil stabilizers. g) Traffic signage would limit traffic speeds on unpaved roads to 15 mph.	Less than significant

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Table 2-1. Summary of Impacts, Control Measures and Mitigation Measures (continued)

Impact	Applicant-proposed control measure[a]	Potential significance with control measure	EIR recommended mitigation measure[b]	Potential significance with mitigation
Chapter 10 (continued)				
IMPACT 10-2. Emission increases from on-site sources would exceed the BAAQMD significance thresholds for PM_{10}.	**General Measures:** a) The main access road would initially be graveled, treated with non-toxic soil stabilizers and watered at least twice daily. After land settlement, the main access road would be paved. **Waste Recycling Center:** b) Handling and sorting of mixed waste would occur within an enclosed WRC or partially enclosed structure. c) Roads, unloading areas and the processing area of the WRC would be paved, and sweepers or vacuums would be used to keep these surfaces clean. d) Periodic watering at least twice daily, or more often when windy, would be used on internal roads as needed at the WRC, and wind fences would be strategically located to control wind erosion. e) Waste would be pre-screened to avoid dusty materials. **Green Waste/Woodwaste/Composting:** f) Green material and wood shredding/screening equipment would be equipped with water sprays. g) Green waste, wood waste, and composting materials would be watered as unloaded.	Potentially significant	a) The Applicant would, at the earliest practical date, prepare applications to the BAAQMD for new sources proposed to be located at the site, obtain required BAAQMD permits, and comply with all permit conditions.	A significant unavoidable PM_{10} impact remains.

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Table 2-1. Summary of Impacts, Control Measures and Mitigation Measures (continued)

Impact	Applicant-proposed control measure[a]	Potential significance with control measure	EIR recommended mitigation measure[b]	Potential significance with mitigation
Chapter 10 (continued)				
IMPACT 10-2 (continued)	h) Green waste, wood waste, and composting materials would be pre-screened to avoid dusty materials. i) Windrows and intervening pathways would be watered prior to turning of windrow. j) Internal roads in the Organic Materials Processing Area would be watered at least twice daily, more often when windy. k) Finished stabilized compost would be screened and loaded during low wind speed conditions (less than 20 mph); handling of compost would be suspended if the wind speed increases (above 20 mph). l) Berms would be used in the Organic Materials Processing Area to provide an upwind barrier to reduce wind effects. m) Wind fences would be strategically located in the Organic Materials Processing Area to control wind erosion. **Wet/Dusty Material Blending:** n) A three-sided shelter would be constructed at the West/Dusty Material Blending Facility with fabric roof to contain dusty materials. o) Dusty materials would be blended with high moisture wastes to help control fugitive dust.			

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Table 2-1. Summary of Impacts, Control Measures and Mitigation Measures (continued)

Impact	Applicant-proposed control measure[a]	Potential significance with control measure	EIR recommended mitigation measure[b]	Potential significance with mitigation
Chapter 10 (continued) IMPACT 10-2 (continued)	p) Dusty materials would be stored in plastic bags until needed. **Soil Reclamation:** q) Water sprays would be used on the conveyor at the Soil Reclamation Facility. r) The apron on two sides of the soil reclamation storage area would be graveled to provide an all-weather surface. s) Periodic watering (at least twice daily, more often when windy) would be conducted at the soil reclamation operation areas for dust control. **Concrete/Asphalt Recycling:** t) Water sprays would be used on concrete/asphalt crushers, screens and conveyors. u) Dust suppressants would be used and regular watering (at least twice daily, more often when windy) would be conducted at the Concrete/Asphalt Recycling Facility for general dust control.			
IMPACT 10-3. Increased vehicular traffic to the WCCSL could result in increased emissions and adverse air quality and health risk impacts.	None	Less than significant	None required	Less than significant

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Table 2-1. Summary of Impacts, Control Measures and Mitigation Measures (continued)

Impact	Applicant-proposed control measure[a]	Potential significance with control measure	EIR recommended mitigation measure[b]	Potential significance with mitigation
Chapter 10 (continued)				
IMPACT 10-4. Project impacts would be consistent with the regional air quality plan.	None	Less than significant	None required	Less than significant
IMPACT 10-5. The Organic Materials Processing Area and expansion of the Composting Facility could create objectionable odors.	a) The Applicant would work with the LEA to assure facility compliance with the OIMP. b) Food processing industry materials would be rapidly incorporated (within hours) with other compostible materials, shredded materials, or compost. c) The windrows would be turned on an average of twice per week to maintain aerobic conditions. d) A monitoring program would be implemented to track the composting process and implement operational adjustments as necessary. e) The operations areas would be regraded to promote drainage and prevent ponding of compost leachate.	Potentially significant	a) The turning of the windrows would be limited when the wind is blowing inland toward potential receptors. Turning and screening operations would be curtailed when wind speeds exceed 20 miles per hour (mph) toward developed areas. b) An appropriately sited wind monitoring station would be installed with an alarm to indicate the occurrence of winds greater than 20 mph. c) A one-year composting demonstration project would be conducted under the review and oversight of the LEA and the BAAQMD. The demonstration project would focus on all feedstocks with a high nuisance odor potential and would identify composting operations and controls necessary to assure an efficient operation that would control odors under various climatic conditions. Based on the results of the demonstration project, the LEA and the BAAQMD would determine under what conditions these feedstocks could be used at the Composting Facility as part of the	Less than significant

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Table 2-1. Summary of Impacts, Control Measures and Mitigation Measures (continued)

Impact	Applicant-proposed control measure[a]	Potential significance with control measure	EIR recommended mitigation measure[b]	Potential significance with mitigation
Chapter 10 (continued) IMPACT 10-5 (continued)			Composting Facility permitting process. The demonstration project shall include, but not be limited to: ▪ The scale of the demonstration project would duplicate the pile size and operational factors of the planned facility, so that valid data are collected at full-size operation. ▪ The span of feedstock combinations would encompass the range of expected future options, concentrating on worst-case combinations from processing, operations, and odor standpoints. ▪ Monitoring during the demonstration period would include standard compost processing monitoring parameters as well as odor emission data during different operating and climate/wind conditions. Odor data would include emissions of critical constituents such as reduced sulfur compounds and reduced nitrogen compounds, as well as total odor emission data collected via odor panel with flux chamber protocols. Downwind odor data would be collected concurrent with pile or source emission data to correlate the impacts.	

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Table 2-1. Summary of Impacts, Control Measures and Mitigation Measures (continued)

Impact	Applicant-proposed control measure[a]	Potential significance with control measure	EIR recommended mitigation measure[b]	Potential significance with mitigation
Chapter 10 (continued) IMPACT 10-5 (continued)			▪ Odor impacts from demonstration scale will be extrapolated for the full-scale system through odor modeling or similar approach that achieves valid predictions of odor from the large proposed system. ▪ Odor data collection would be identified for any compost leachate liquid or storm water runoff liquid coming from the demonstration piles/area.	
IMPACT 10-6. Operation of the WRC Mixed Waste Processing Area could create objectionable odors.	a) Only wastes that are consistent with 14 CCR §17863.4 and the OIMP would be accepted. b) Loaded transfer vehicles would be covered and properly maintained to minimize odors. c) Wastes would be processed within 48 hours of receipt to prevent significant odor buildup from waste decomposition. d) Routine cleaning of floors, walls, and equipment would be conducted. e) Wastes in the processing area would be treated with odor suppressants as deemed necessary, or as otherwise required by the LEA or BAAQMD. f) Documented odor complaints by the LEA or BAAQMD would be responded to within two working days, detailing the problem and remedial action to be taken. Additional physical	Less than significant	None	Less than significant

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Table 2-1. Summary of Impacts, Control Measures and Mitigation Measures (continued)

Impact	Applicant-proposed control measure[a]	Potential significance with control measure	EIR recommended mitigation measure[b]	Potential significance with mitigation
Chapter 10 (continued) IMPACT 10-6 (continued)	improvements or management practices would be implemented as necessary under the review and oversight of the LEA and BAAQMD.			
IMPACT 10-7. Application of liquid anaerobically digested sludge to the southern and eastern sideslopes of the closed landfill could create objectionable odors.	a) Prior to full-scale implementation of liquid biosolids spreading, further testing would be conducted to refine the rates and methods of application.	Potentially significant	a) The feasibility of WCWD providing short-term lagoon storage (2 to 3 months) of anaerobically digested sludge (i.e., a slurry in a lagoon) with a liquid aerobic cap would be demonstrated and evaluated. This evaluation shall include, but is not limited to, the following measures: ▪ Short-term lagoon storage approach would be demonstrated to reduce odor impacts with spraying of sludge on the landfill sideslopes. ▪ Volatile solids reductions from lagoon feedstock to lagoon withdrawal material would be identified. ▪ Odor monitoring at the short-term lagoon storage system would be continued to confirm that this storage system in itself will not cause an odor problem. ▪ Operational criteria would be determined for lagoon feed rates and loading, sludge withdrawal, cap water maintenance, maintaining "aerobic" cap conditions, cap water covering all sludge material, lagoon supernatant handling, etc.	Less than significant

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Table 2-1. Summary of Impacts, Control Measures and Mitigation Measures (continued)

Impact	Applicant-proposed control measure[a]	Potential significance with control measure	EIR recommended mitigation measure[b]	Potential significance with mitigation
Chapter 10 (continued) IMPACT 10-7 (continued)			b) A liquid biosolids spreading demonstration project work plan would be prepared, under the review and oversight of the LEA and BAAQMD and demonstrate whether residual odor would be consistent with impact standards of the BAAQMD and this EIR. The results of Mitigation Measure 10-7(a) would determine whether the sludge, which has received short-term storage, can be integrated into the work plan. The work plan shall include, but not be limited to, the following items: ▪ Identify the types of biosolids that will be spread in the demonstration program; i.e., digested sludge direct from digesters, sludge removed from lagoon after "X" months of storage, etc. Identify the analytical work that will be completed on such material to help identify odor impacts of spreading (percent solids, percent volatile solids, pH, ammonia, temperature, total reduced sulfur compounds (TRS), etc. ▪ Identify/define data that will be collected at the spray application site including area loading rates, spray flow rates, and nozzle pressures, spray distances, and data collected during spraying such as odor monitoring in the vicinity and downwind.	

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Table 2-1. Summary of Impacts, Control Measures and Mitigation Measures (continued)

Impact	Applicant-proposed control measure[a]	Potential significance with control measure	EIR recommended mitigation measure[b]	Potential significance with mitigation
Chapter 10 (continued) IMPACT 10-7 (continued)			Spraying would be conducted in different climate/wind conditions to establish potential limitations for full-scale operation. ▪ Identify/define data that will be collected on water that runs off the application areas: quantity of water and data on BOD, SS, nutrient content (including ammonia). Fecal coliform density of any runoff solids would be determined. ▪ Identify the various conditions under which spraying will be limited such as time of day, wind/atmosphere conditions, precipitation conditions, frequency of application, and other conditions. c) The liquid biosolids spreading demonstration project would be conducted under the review and oversight of the LEA and BAAQMD, and a report of findings prepared. The Applicant would demonstrate that liquid biosolids can be spray-applied as proposed without creating nuisance odor conditions. The LEA and BAAQMD would then determine under what conditions liquid biosolids can be spray-applied to the landfill slopes to provide the required odor control. The work plan shall include, but not be limited to the following items:	

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Table 2-1. Summary of Impacts, Control Measures and Mitigation Measures (continued)

Impact	Applicant-proposed control measure[a]	Potential significance with control measure	EIR recommended mitigation measure[b]	Potential significance with mitigation
Chapter 10 (continued) IMPACT 10-7 (continued)			▪ Analysis of datawould be extrapolated to determine nearby area/downwind odor impacts from biosolids spraying operations. Atmospheric odor modeling would be used as necessary to make these predictions. ▪ Identify control measures that will provide acceptable odor, to include: limits on loading rates (liquid and solids loading), limits on type of biosolids applied, climate/wind restrictions, time of day restrictions, frequency of application, and other appropriate limits. ▪ Analyze information to identify the fate of biosolids pollutants, such as nutrients (nutrients taken up by site vegetation, or percolate downward into the final landfill cover, or contained in site runoff, transformed in gaseous release to atmosphere, etc.), and similar fate for biosolids metals and also for residual pathogens within biosolids.	
IMPACT 10-8. Application of dredged materials obtained from local Bay and harbor dredging operations to the southern and eastern sideslopes of the closed landfill could create objectionable odors.	None	Less than significant	None required	Less than significant

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Table 2-1. Summary of Impacts, Control Measures and Mitigation Measures (continued)

Impact	Applicant-proposed control measure[a]	Potential significance with control measure	EIR recommended mitigation measure[b]	Potential significance with mitigation
Chapter 10 (continued)				
IMPACT 10-9. Increased landfill capacity would extend the filling operation to about 2005, which could create objectionable odors. .	a) Highly odorous MSW loads would be rejected. b) Daily cover would be applied to landfill wastes. c) Operation of the LFG extraction system would be continued. d) Ongoing maintenance of landfill sideslope areas would be continued to seal off cracks and fill erosion channels.	Less than significant	None required	Less than significant
Chapter 11. Health and Safety				
IMPACT 11-1. Increases in the volume of incoming waste stream along with expanded site recycling and solid waste disposal activities on site could expose employees and users to increased hazards associated with exposure to the materials and the equipment used for its processing.	a) The existing WCCSL Public Health and Safety Plan required pursuant to County and City use permits would be modified, amended permits sought, and permit conditions followed. b) The requirements of the RFD, building codes, and CAL/OSHA would be incorporated into the design, construction and operation of new facilities. c) Formal training of personnel would continue to be conducted that includes the proper use of facility equipment; identification, avoidance and reporting of conditions that could potentially compromise safety; identification and management of HHW; regular safety meetings; and annual review and refresher training to ensure continued safe operation and compliance with regulations.	Less than significant	None required	Less than significant

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Table 2-1. Summary of Impacts, Control Measures and Mitigation Measures (continued)

Impact	Applicant-proposed control measure[a]	Potential significance with control measure	EIR recommended mitigation measure[b]	Potential significance with mitigation
Chapter 11 (continued) IMPACT 11-1 (continued)	d) Users of the facility would be restricted to selected areas for unloading and loading of materials through the use of temporary barriers, signage, and staff. Restricted areas or areas of potential risk would be off limits to the general public. e) Workers would be equipped with the appropriate safety clothing, safety equipment readily available for all site personnel. f) The hazardous waste screening program at the WCCSL and BMPC facilities would be continued.			
IMPACT 11-2. The proposed Project would be located within the WCCSL, adjacent to the Class I HWMF, which is a hazardous materials site and could create a significant hazard to the public and environment.	None	Less than significant	None required	Less than significant
IMPACT 11-3. Project construction and operation could result in the accidental spillage of diesel fuel and other chemicals at the site, which could impact public safety and the environment.	None	Less than significant	None required	Less than significant

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Table 2-1. Summary of Impacts, Control Measures and Mitigation Measures (continued)

Impact	Applicant-proposed control measure[a]	Potential significance with control measure	EIR recommended mitigation measure[b]	Potential significance with mitigation
Chapter 11 (continued)				
IMPACT 11-4. LFG contains methane, which is explosive in the 5 to 15 percent range under conditions of confined space with sufficient oxygen for combustion.	a) The WRC building expansion would be constructed with the necessary LFG controls consistent with the requirements of the LEA and the RFD, and the facility would continue to be included in the WCCSL LFG monitoring program. b) Ongoing monitoring of the landfill cover integrity would be conducted and necessary repairs to control LFG venting made.	Less than significant	None required	Less than significant
IMPACT 11-5. The receipt, processing and disposal of solid waste materials have the potential to create a fire hazard with associated health and safety impacts.	a) A Fire Protection Component for the WRC meeting the requirements of the RFD and the LEA to contain and extinguish fires originating at the facility would be developed and implemented. The program would be subject to the approval of the RFD and LEA and would address, but not be limited to, the following: ▪ Fire protection and suppression measures, including fire sprinkler system with hose and nozzles stationed at key locations, for the facility. ▪ Fire breaks and access roads. ▪ Fire extinguisher types and locations. ▪ Machinery and equipment inspection program. ▪ Household hazardous waste facilities specifications to meet fire	Less than significant	None required	Less than significant

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Table 2-1. Summary of Impacts, Control Measures and Mitigation Measures (continued)

Impact	Applicant-proposed control measure[a]	Potential significance with control measure	EIR recommended mitigation measure[b]	Potential significance with mitigation
Chapter 11 (continued) IMPACT 11-5 (continued)	and safety codes due to temporary storage of intercepted household hazardous wastes. ▪ Fire control training of employees. ▪ Federal OSHA employee training requirements for handling of hazardous materials/waste. ▪ Self-enforcement of the smoking prohibition by facility personnel and customers. ▪ Water truck. b) The existing Fire Protection Component for the Composting Facility would be revised as necessary under the review and oversight of the local fire districts and the LEA. The Fire Protection Component addresses the following: ▪ Use of good operating practices, fire breaks, and emergency water supply. ▪ Compost windrows would be separated by 12-foot-wide fire lane, have a 10-foot maximum height, monitored for temperature and moisture, and sprayed with water to control composting temperatures. ▪ Presence of fire extinguishers, smoking prohibitions, a water truck, an ongoing inspection program for conditions that could create a fire hazard, and limiting the depth of green materials and wood waste storage piles to 20 feet.			

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Table 2-1. Summary of Impacts, Control Measures and Mitigation Measures (continued)

Impact	Applicant-proposed control measure[a]	Potential significance with control measure	EIR recommended mitigation measure[b]	Potential significance with mitigation
Chapter 11 (continued) IMPACT 11-5 (continued)	▪ Use of on-site equipment to extinguish a fire if it occurs. c) All required permits from the RFD would be obtained and the Applicant would comply with permit conditions. d) Necessary measures at the landfill would be taken for prompt fire control at the landfill, including use of heavy equipment, stockpiled soil, and water suppression. e) Any incoming burning wastes would be deposited in a safe area and extinguished pursuant to 27 CCR §20780. f) The WCCSL Emergency Response and Evacuation Plan would be implemented as necessary.			
IMPACT 11-6. The generation of bioaerosols and endotoxins during the composting process can create health and safety issues for employees and users of the facility.	a) Water would be applied at least twice daily, more often when windy, on internal roads for dust control purposes. b) Green waste, wood waste, and composting materials would be watered as unloaded. c) Green waste, wood waste, and composting materials would be pre-screened to avoid dusty materials. d) Water spray would be applied during the shredding process to wet the material being shredded. e) Water would be applied on the compost windrows and pathways prior to aeration (turning).	Less than significant	None required	Less than significant

a. Control measures are proposed by the Applicant as part of the proposed Project. Control measures typically are procedures know to further reduce the potential for impacts based on regulatory agency requirements, standards in the industry, and operating experience.

b. Mitigation measures are measures recommended by this EIR to be implemented where there is a significant impact and no Applicant-proposed control measures have been identified, or in combination with proposed control measures. Mitigation measures are designed to reduce impacts to a less-than-significant level compared to stated significance criteria.

Table 2-1. Summary of Impacts, Control Measures and Mitigation Measures (continued)

Impact	Applicant-proposed control measure[a]	Potential significance with control measure	EIR recommended mitigation measure[b]	Potential significance with mitigation
Chapter 11 (continued) IMPACT 11-6 (continued)	f) Finished stabilized compost would be screened and loaded during low wind speed conditions (less than 20 mph); handling of compost would be suspended if the wind speed increases (above 20 mph). g) Heavy equipment would have enclosed cabs for operators, and other employees would be required to use dust masks as necessary. h) Uniforms are available to employees, and shower facilities would also be available in the proposed WRC so employees can shower and change clothes at the end of the day. i) Wind fences and berms would be strategically located in the Organics Materials Processing Area to reduce wind effects and control wind erosion.			
IMPACT 11-7. The proposed spraying or spreading of liquid biosolids (greater than 90 percent moisture) to the landfill sideslopes as well as the spreading of drier biosolids (less than 90 percent moisture) could impact WCCSL employees and users of the Trail.	a) Biosolids would not be placed in any area where the public can have contact with the materials. During biosolids application, sensitive portions of the Trail would be closed for a 4- to 6-week period and areas fenced off to prevent public access until the materials are disked into the soil surface of the landfill cover. b) Signs would be posted at the edge of biosolids application areas indicating boundaries of the area and warning unauthorized persons of the restricted access.	Potentially significant	a) WCCSL employees would have the necessary inoculations prior to their participation in the biosolids spreading program. b) The Applicant would demonstrate to the RWQCB that lagoon storage of biosolids at the WCWD produces Class A biosolids pursuant to 40 CFR 503 regulations. This demonstration shall include, but is not limited to, the following: ▪ A work plan would be prepared which defines the pathogen and related testing that will be completed on the	Less than significant

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b. Mitigation measures are measures recommended by this EIR to be implemented where there is a significant impact and no Applicant-proposed control measures have been identified, or in combination with proposed control measures. Mitigation measures are designed to reduce impacts to a less-than-significant level compared to stated significance criteria.

Table 2-1. Summary of Impacts, Control Measures and Mitigation Measures (continued)

Impact	Applicant-proposed control measure[a]	Potential significance with control measure	EIR recommended mitigation measure[b]	Potential significance with mitigation
Chapter 11 (continued) IMPACT 11-7 (continued)	c) Spray application of liquid biosolids of typically 2 to 6 percent solids would be conducted at the southwestern portion of the WCCSL site only under favorable wind conditions (e.g., less than 10 mph), when wind drift of bioaerosols to the Trail is not likely. d) Spray application of biosolids would be conducted in a downwind direction and applications would be adjusted to account for wind speeds and directions. Spraying would be suspended if necessary (wind speeds in excess of 20 mph or wind blowing toward the Trail). e) Employees would be required to use protective clothing and instructed in proper biosolids handling procedures. f) Regular follow-up observations of working practices would be conducted by the Applicant and quarterly employee retraining would be required to assure public health safeguards are met. g) An annual report would be prepared, under the review and oversight of the LEA, which summarizes the health protection procedures that were followed, any problems, and corrective measures that were or need to be taken.		biosolids. The work plan would be reviewed by the RWQCB and the EPA Region 9 Sludge Coordinator before beginning work. ▪ Upon approval of the work plan, pathogen testing work would be completed on digested sludge and sludge withdrawn from the storage lagoon to determine if Class A pathogen densities have been achieved. ▪ Lagoon operational parameters would be defined during this testing work that would then be used in the future to help define the conditions under which Class A material is produced – conditions such as length of time within lagoon storage, feeding limitations, etc. c) Lacking such a demonstration in Mitigation Measure (b) above, the Applicant would demonstrate to the RWQCB that a combination of Trail closure, rotational dried biosolids spreading, and fencing can be used to provide the necessary site restrictions to conform to 40 CFR 503 regulations and provide the necessary public health protection. The demonstration shall include, but is not limited to, the following: ▪ Identify set-back distances/ restrictions from the Trail and	

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Table 2-1. Summary of Impacts, Control Measures and Mitigation Measures (continued)

Impact	Applicant-proposed control measure[a]	Potential significance with control measure	EIR recommended mitigation measure[b]	Potential significance with mitigation
Chapter 11 (continued) IMPACT 11-7 (continued)			any other public-accessible area/locations. ▪ Define fencing, signing, and related features that will be adequate to prevent public access to areas of biosolids application under certain site conditions. ▪ Define other restrictions such as area closure during and after spreading/application, closure for certain periods of time or time of day, closure during rain, fog, or other situations. d) The Applicant would demonstrate to the RWQCB compliance with the vector attraction reduction requirements of 40 CFR 503 regulations. It is assumed Option 1, Table 11-4) would be appropriate and involves demonstrating that the mass of volatile solids (VS) in the biosolids is reduced by a minimum of 38 percent during biosolids treatment. The minimum of 38 percent VS reduction in the treatment system can be demonstrated with either of the two following methods: ▪ **Direct Calculations.** The VS concentration in its influent and effluent biosolids samples will be monitored. Influent samples would be the 24-hour composite sample paced with the influent flow rates.	

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Table 2-1. Summary of Impacts, Control Measures and Mitigation Measures (continued)

Impact	Applicant-proposed control measure[a]	Potential significance with control measure	EIR recommended mitigation measure[b]	Potential significance with mitigation
Chapter 11 (continued) IMPACT 11-7 (continued)			Effluent samples could be daily grab samples. The mass of VS reduction can be calculated directly from the flow and VS concentration data. ▪ **Sludge Production.** The VS reduction is proportionate to the sludge production. From the biochemical oxygen demand and total suspended solids concentrations and flow rate in the influent and effluent samples, the sludge production rate can be calculated and the reduction of VS mass can be verified.	
IMPACT 11-8. Biosolids and dredged materials can contain elevated levels of organic chemicals, which can make the land application or composting of these materials potentially harmful to public health and safety and the environment.	a) Prior to accepting biosolids from WCWD or other sources, or dredged materials, the Applicant would enforce WCCSL's Waste Acceptance Guidelines and require the project sponsor to provide sufficient chemical characterization data that would enable the Applicant to demonstrate to the RWQCB that the material is non-hazardous pursuant to 40 CFR Part 261 and 22 CCR, Division 4.5, Chapter 11, Article 3.	Less than significant	None required	Less than significant
IMPACT 11-9. Biosolids can contain elevated levels of pollutants, which can make land application of this material potentially harmful to public health and safety and the environment.	a) Prior to accepting biosolids from sources other than WCWD, the Applicant would enforce WCCSL's Waste Acceptance Guidelines and require the entity to provide	Less than significant	None required	Less than significant

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b. Mitigation measures are measures recommended by this EIR to be implemented where there is a significant impact and no Applicant-proposed control measures have been identified, or in combination with proposed control measures. Mitigation measures are designed to reduce impacts to a less-than-significant level compared to stated significance criteria.

Table 2-1. Summary of Impacts, Control Measures and Mitigation Measures (continued)

Impact	Applicant-proposed control measure[a]	Potential significance with control measure	EIR recommended mitigation measure[b]	Potential significance with mitigation
Chapter 11 (continued) IMPACT 11-9 (continued)	documentation (including test results) that the biosolids meet pollutant limits included in 40 CFR 503 and 14 CCR §17868.2 regulations, and testing standards under 22 CCR.			
IMPACT 11-10. Elevated pathogen and pollutant levels in the finished compost product could make its use harmful to public health and safety and the environment.	a) The Applicant would comply with Federal and State regulatory standards for compost operation, pollutant concentrations, pathogen reduction, monitoring, recordkeeping, and reporting.	Less than significant	None required	Less than significant
IMPACT 11-11. Green wastes can contain the plant pathogen *Phytophthora ramorum*, the causative agent of Sudden Oak Death. The Composting Facility and Wood Waste Recovery Facility could facilitate the spread of this pathogen.	None	Potentially significant	a) The Applicant would comply with new revised Federal rule and revised California rule regarding composting and control of *Phytophthora ramorum*, expected some time in 2003. If finished compost or mulch is transported out of the quarantined area, a Compliance Agreement would be executed with the County Agricultural Commissioner at the required time and specified conditions therein followed.	Less than significant.
IMPACT 11-12. Expansion of the incoming waste stream along with increased site recycling and solid waste disposal activities could lead to increased presence of vectors and nuisance pests which could be harmful to public health and safety.	None	Less than significant	None required	Less than significant

a. Control measures are proposed by the Applicant as part of the proposed Project. Control measures typically are procedures know to further reduce the potential for impacts based on regulatory agency requirements, standards in the industry, and operating experience.

b. Mitigation measures are measures recommended by this EIR to be implemented where there is a significant impact and no Applicant-proposed control measures have been identified, or in combination with proposed control measures. Mitigation measures are designed to reduce impacts to a less-than-significant level compared to stated significance criteria.

Table 2-1. Summary of Impacts, Control Measures and Mitigation Measures (continued)

Impact	Applicant-proposed control measure[a]	Potential significance with control measure	EIR recommended mitigation measure[b]	Potential significance with mitigation
Chapter 12. Noise				
IMPACT 12-1. The proposed Project would involve expanded activities and equipment usage, expanded hours of operation, as well as relocated operations, which could result in increased noise levels in excess of standards and/or a permanent increase in ambient noise levels.	None	Less than significant	None required	Less than significant
IMPACT 12-2. The proposed Project could expose persons to excessive noise or vibration levels.	None	Less than significant	None required	Less than significant
IMPACT 12-3. The proposed Project could result in a temporary or periodic increase in ambient noise levels.	None	Less than significant	None required	Less than significant
IMPACT 12-4. The proposed Project would increase traffic on the local street system serving the WCCSL and would extend the hours that materials could be transported to the BMPC, thereby potentially exposing sensitive land uses adjacent to the roadways to new and increased ambient noise levels.	None	Less than significant	None required	Less than significant

a. Control measures are proposed by the Applicant as part of the proposed Project. Control measures typically are procedures know to further reduce the potential for impacts based on regulatory agency requirements, standards in the industry, and operating experience.

b. Mitigation measures are measures recommended by this EIR to be implemented where there is a significant impact and no Applicant-proposed control measures have been identified, or in combination with proposed control measures. Mitigation measures are designed to reduce impacts to a less-than-significant level compared to stated significance criteria.

CHAPTER 3

PROJECT DESCRIPTION

This chapter provides a description of the proposed Bulk Materials Processing Center (BMPC) use permit amendment changes and related actions (Project). The owner of the property is West County Landfill, Inc. (Applicant). The operator of the facilities is West Contra Costa Sanitary Landfill, Inc. (WCCSL, Inc.). The Applicant and WCCSL, Inc. are subsidiaries of Republic Services, Inc. In this EIR, the West Contra Costa Sanitary Landfill site is referred to as the WCCSL. Primary sources of information for the Project were supplied by the Applicant. They include the Report of Disposal Site Information (RDSI),[1] the BMPC Final Development and Improvements Plan (FDIP),[3] the Transfer/Processing Station Report (TPR),[43] the Report of Composting Site Information (RCSI),[4] and the BMPC Land Use Permit (LUP) Application.[28] This chapter is structured to provide an introduction; a discussion of the existing facilities; the purpose and need for the proposed Project; and the description of the proposed Project, including schedule for implementation and required permits and approvals.

A. INTRODUCTION

An introduction to the proposed Project is provided below. This discussion includes a description of the site location and access, the history of the WCCSL, and a description of the West County Integrated Resource Recovery Facility.

1. Location and Access

Figures 1-1 and 1-2 show the regional location and local vicinity of the WCCSL. The 340-acre site borders San Pablo Bay and is located in the North Richmond area. The northern portion of the site is located within unincorporated Contra Costa County (County) area and the southern portion is within the Richmond City (City) limits. Access to the WCCSL is provided in the near vicinity of the landfill via Parr Boulevard leading west to the site and the Richmond Parkway leading north and south to Parr Boulevard.

2. History of the WCCSL

The original use permit for the site was issued by the County in December 1952. In early 1953, Richmond Sanitary Service, Inc. began operations at the site accepting wastes hauled by collection trucks. In 1956, full site operations commenced when public self-hauled wastes were accepted for disposal. The site now receives wastes collected by franchised haulers in the western County, and other Bay Area communities, and self-hauled wastes. In 1978, the County

Health Services Department and the State Solid Waste Management Board (now the California Integrated Waste Management Board [CIWMB]) adopted the initial Solid Waste Facility Permit (SWFP) for the site.

Operational changes have occurred over time as new regulations, permits, and recycling operations have been implemented. In 1993, WCCSL, Inc. expanded recycling operations and received City and County land use permits for the existing BMPC. The BMPC originally consisted of a composting facility, a concrete processing operation, and wood waste processing facility.

In 1996, a 4-acre soil remediation facility began operation at the WCCSL. The purpose of the facility was to thermally treat hydrocarbon-contaminated soil, which could then be used either on site or off site for various applications. The soil remediation facility operation was terminated at the end of 2001, and the processing equipment was removed in early 2003.

In December 2000, a Waste Shuttle Facility began operation on top of the landfill central plateau. The shuttle facility is part of landfill operations and consists of an outdoor asphalt pad, a portable recyclables sorting conveyor, litter fences, and debris boxes to shuttle sorted recyclables and trash residue. The Waste Shuttle Facility was developed to provide an all-weather surface for drop-off of waste and provide sorting capability to increase waste diversion.

3. West County Integrated Resource Recovery Facility

The cities of El Cerrito, Richmond, San Pablo, Pinole, and Hercules formed the West Contra Costa Integrated Waste Management Authority (Authority). The Authority has guided the development of the Integrated Resource Recovery Facility (IRRF). The IRRF consists of the processing center (BMPC) at the WCCSL and the recycling center/transfer station (Central IRRF). In 1992, the County certified the EIR for the West County IRRF.[9] The Central IRRF began operation in 1993. This facility is located at 101 Pittsburg Avenue, about 1 mile from the WCCSL between Third Street and Central Street in the unincorporated area of North Richmond. The Central IRRF is operated by West County Resource Recovery, Inc. Through SWFP No. 07-AA-0034, the Central IRRF is permitted to accept up to 1,200 tons per day (TPD) of franchised residential and commercial waste, self-hauled waste, and source-separated recyclables. Operations at the IRRF include a materials recovery facility, a transfer station, a public buyback/drop-off center, and a household hazardous waste collection facility. Residual materials are transported to the WCCSL Class II landfill for disposal and, once this landfill closes, are expected to be transported to the Potrero Hills Landfill in Solano County.

B. EXISTING FACILITY DESCRIPTION

Prior to discussing the proposed Project, a discussion of the existing facility is provided. The WCCSL site consists of several distinct operations that function as a whole.

1. Facility Boundaries

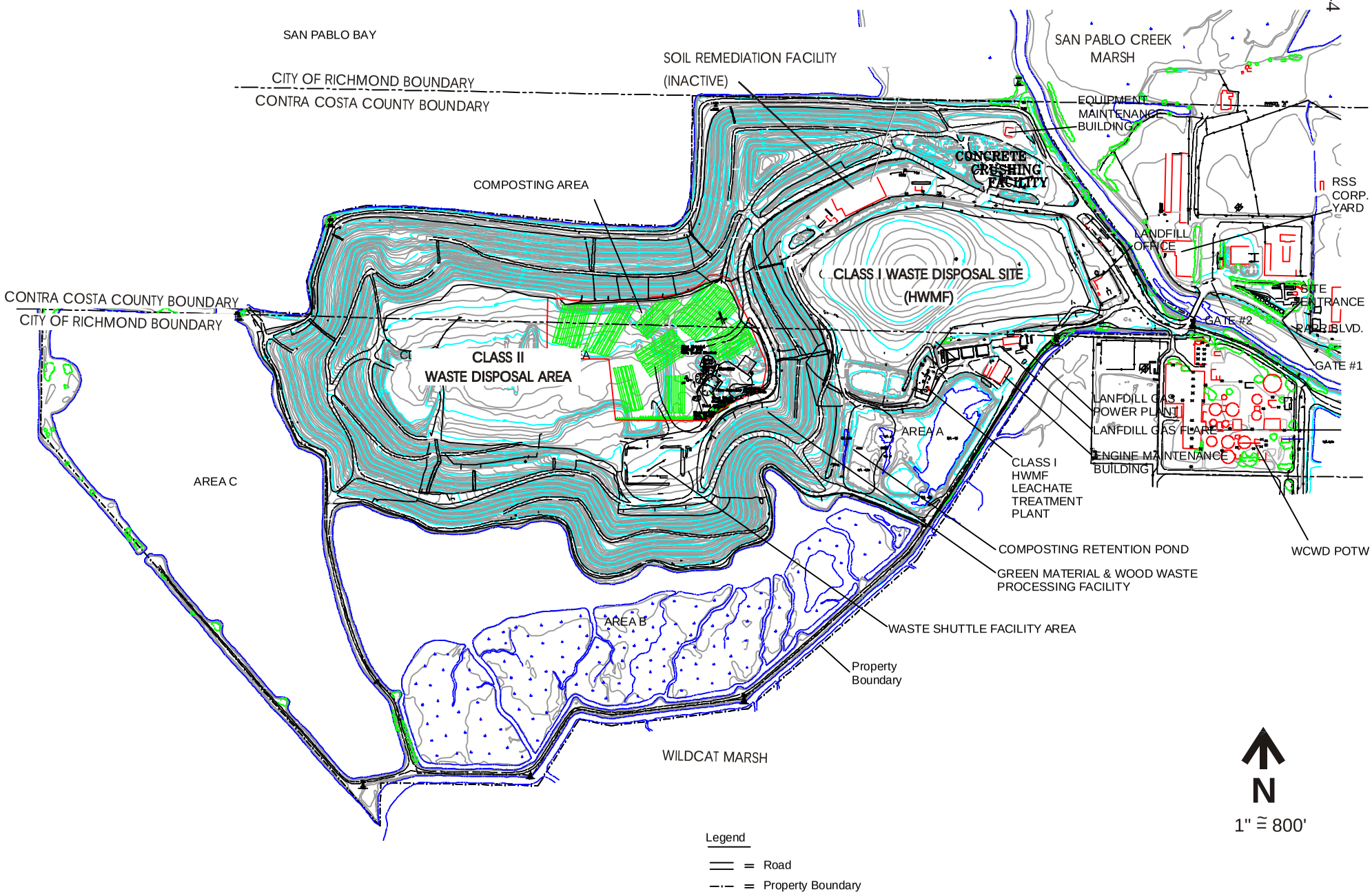
Figure 3-1 is the existing site plan for the WCCSL. The 340-acre site was originally constructed on filled marshlands and tidal land. As illustrated on Figure 3-1, the WCCSL site contains two Waste Management Units: an inactive Class I waste disposal area (Hazardous Waste Management Facility [HWMF]) and a Class II municipal solid waste (MSW) landfill. Existing BMPC operations are sited on the MSW landfill. The northern portion of the WCCSL is within the County's jurisdiction while the remainder of the site is within Richmond's city limits. The 340-acre site is composed of the following areas:

- Class II MSW landfill—160 acres
- Class I HWMF—28 acres
- Area A – Pollution control facilities and stockpile area—12 acres
- Area B – Runoff retention pond—80 acres
- Area C – Tidal water area—60 acres

2. Class II MSW Landfill

The MSW landfill is a Class II site limited to the disposal of non-hazardous solid wastes as defined by Title 27, Section 20220 of the California Code of Regulations (27 CCR §20220). The facility is equipped with State-required environmental controls for leachate (liquid that is derived from water contacting solid wastes), storm water runoff, and landfill gas (LFG), which is gas produced from the decomposition of organic solid wastes in the landfill. A leachate barrier wall surrounds the landfill to prevent leachate from migrating off site, and prevent adjacent surface water from entering the site. Leachate is collected and transported to the nearby West County Wastewater District (WCWD) plant for treatment. LFG is collected and utilized as fuel in an on-site power plant. The WCCSL is underlain by young bay sediments known locally as Bay Mud ranging from 40 to 70 feet in thickness.

The Class II landfill normally receives from 700 to 1,100 TPD of MSW from various jurisdictions in the San Francisco Bay Area region. This range in volume of waste represents approximately 650 TPD7 (365 days per year average). Wastes are delivered in a variety of vehicles, including large transfer trucks, garbage trucks, pickups, and passenger cars. As will be discussed later in this chapter, the Applicant has projected a remaining landfill life expectancy for the existing permitted landfill that ranges between November 2003 and March 2005



Source: WCL, February 2003

Figure 3-1 Existing Site Plan

depending on various assumptions. The Regional Water Quality Control Board (RWQCB) has ordered that the Class II landfill cease landfilling waste on or before January 31, 2006. Construction performance specifications regulate postclosure land uses on the final landfill cover cap and are included in Section 3.2 of the WCCSL Postclosure Maintenance Plan. Excerpts from that section are included in Appendix 3A.

Operation of the Class II landfill is governed by a variety of State regulations. 27 CCR § 20680 provides that wastes be covered by a minimum of 6 inches of compacted soil and/or alternative daily cover (ADC) material at the end of each day's operation. ADC is cover material other than earthen material that can be placed on the surface of the active face. 27 CCR § 20690 provides the general and specific requirements for use of ADC. A series of materials are identified which can be used without first conducting site specific demonstration projects. The following ADC materials are either currently used or will be used at this Class II landfill:

- Treated auto shredder waste which is shredded on-site. (existing)
- Wastewater treatment plant sludge (biosolids) mixed with soil. (existing)
- Construction and demolition (C&D) debris which includes mixtures of building materials such as wood, plaster, sheet rock, shingles, metal, bricks, concrete, and dirt. (proposed)
- Other materials such as geomembrane blanket tarp fabrics, sprayed on waste paper fiber form, diatomaceous earth filter cake sludge, and possibly excess or off-spec compost. (existing)

These ADC materials are identified in 27 CCR § 20690 and their use must meet CIWMB standards. The ADC types and methods of use are detailed in the Applicant's proposed revisions to their RDSI and Postclosure Plan.[69] Use of any materials identified above which require processing (shredding or grinding) at the WCCSL is temporarily suspended by the CIWMB and the County Environmental Health Department serving as the Local Enforcement Agency (LEA). Wood and yard debris and compost are still allowed to be processed on site and used as ADC.

3. Waste Shuttle Facility

As discussed earlier, the shuttle facility began operation in 2001 and resulted in several improvements to WCCSL waste disposal operations, including increased efficiency in processing recyclables, better litter control, increased diversion of recyclables, improved public safety of customers unloading wastes, improved safety of WCCSL personnel, better control of stormwater runoff, and streamlined operations at the working face of the landfill. Vehicles accessing the shuttle facility stop at the scale house and then proceed along "Recycling Lane." Traffic control personnel are on site at the shuttle facility to direct users to the unloading points. The proposed WRC would replace operations now conducted at the Waste Shuttle Facility.

4. Bulk Materials Processing Center

The BMPC occupies about 50 acres of the Class II MSW landfill area. The location of the BMPC on top of the capped Class II landfill results in these operations being governed by the landfill Postclosure Plan and a variety of regulations that stipulate allowable and prohibited activities. The BMPC facilities must be in conformance with the landfill Closure and Postclosure Plan and the landfill cap grading and integrity must be preserved. Components of the existing BMPC are discussed below.

a. Composting Facility. The WCCSL Composting Facility has been developed in phases and is one component of the BMPC. Initially, the Composting Facility began as a demonstration project, which operated between the summer of 1993 and November 1994 and handled about 6,000 tons of yard debris annually. Interim operations continued until Phase 2 began in November 1995, when the Composting Permit was issued. Phase 2 operations handled 10,000 tons of green materials annually, or 27 tons per day, 7 days per week (TPD7) average. These materials are temporarily stockpiled, shredded, placed in windrows, and monitored for 2 to 3 months. After the necessary aeration and watering, the finished compost is screened and most is sold for use off site. The existing composting operations area is approximately 18 acres in size. Wood wastes are also processed into mulch and boiler fuel (biofuel). Phase 3 of the Composting Facility is one component of the proposed Project.

b. Soil Remediation Facility. This facility operated for about 5 years, beginning in 1996 and terminating in 2001. In 2000, about 35,000 cubic yards (CY) of hydrocarbon-contaminated soils were treated at the facility. The treated soils were used as landfill cover, off-site select backfill soil, or reclaimed by combining with other soil material. Equipment from the building has been removed and the facility steam-cleaned to remove contaminants. This building is the proposed site for the waste recycling center discussed later in this chapter.

c. Concrete/Asphalt Crushing Facility. As shown on Figure 3-1, this facility is currently located near the entrance of the WCCSL. About 350 TPD of inert materials are crushed and screened into different sizes of rock and gravel products. The proposed Project involves relocating this facility to the landfill central plateau adjacent to the Composting Facility.

5. Class I Hazardous Waste Management Facility

The HWMF has not received wastes since November 1985. The Closure Plan for this site was approved in 2000 by the State Department of Toxic Substances Control and final cap construction has been completed. The HWMF Closure Plan involves no disturbance to underlying hazardous materials, placement of a soil and fabric cap over the entire site, and processing of the leachate and LFG. Treatment of the leachate collected from the HWMF is provided by an adjacent (on-site) facility that treats approximately 20 gallons per minute. Following treatment and testing, the leachate is conveyed to the nearby WCWD treatment plant

in accordance with the provisions of the WCWD Sewer Use Ordinance No. 9-19-89 and permit No. 011 issued by WCWD to the Applicant.

6. West County Landfill Power Plant

The power plant, as shown on Figure 3-1, is located along the southern border of the HWMF. This plant generates about 3 megawatts of electricity from LFG, enough to power about 3,000 homes. Electricity is used on site with the excess marketed to the local power grid.

C. PROJECT DESCRIPTION

For purposes of this EIR, the Project consists of the Applicant's proposed amendments to their existing BMPC use permits and related actions, including a vertical expansion (height increase) of the landfill and a Public Access Trail (Trail). These permits were issued in 1993 by the County (LUP No. 2054-92, as amended by LUP 2043-94) and the City (under Conditional Use Permit [CUP] No. 92-53). These permit changes, which are discussed further in this section, can be summarized as follows:

- COMPOSTING: Relocate operations and increase the amount and types of compostables processed.
- ASPHALT/CONCRETE PROCESSING: Relocate operations and increase the amount of asphalt/concrete processed.
- WASTE RECYCLING CENTER: Construction and operation of the Waste Recycling Center (WRC). The proposed WRC would be built through adaptive reuse of the former Soil Remediation Facility building to recycle, sort, and transfer for disposal of waste from self-haulers, industrial debris boxes, and other commercial customers that are not processed at the existing Central IRRF. An alternative on-site location for the WRC is being considered at Area A (see Figure 1-2) that would include construction of a new facility (in lieu of adaptive reuse of an existing building).
- WET/DUSTY MATERIAL BLENDING: Startup of a new wet waste/dusty material processing activity involving blending of high-moisture-content muds and sludges with waste soil and dusty wastes, producing a product at the WCCSL suitable for alternative daily cover, final cover, or off-site use. Possible off-site uses include ADC material for other landfills, trench backfill material or road or building subbase, and replacement backfill for brownfield sites where a soil backhaul is practiced to fill excavations where materials were excavated for treatment or disposal.

- WOOD RECOVERY: Relocate operation and increase the amount of wood waste processed and recovered.

- SOIL RECLAMATION: Startup of a new soil reclamation activity involving the reclamation of non-contaminated soils through screening and use on site, and the addition of sand and/or compost to produce top soil for off-site use.

- BIOSOLIDS/DREDGED MATERIAL SPREADING: Start up of a new activity involving the spreading of wet dredged materials and/or biosolids (sludge from wastewater treatment facilities) on the capped portions of the landfill, and the southern and eastern slopes.

- CHANGE IN FACILITY OPERATING HOURS: Expanded hours proposed for equipment maintenance, waste acceptance, materials processing, and transport.

The Project also consists of proposed actions, not subject to the use permit amendments. Because of greater amounts of unanticipated settlement along portions of the east-west ridgeline of the landfill's final cap, the Applicant is seeking to increase the existing permitted landfill elevation from 130 feet mean sea level (msl) to 160 feet msl, which would be consistent with the Waste Discharge Requirements for the WCCSL recently adopted by the RWQCB on June 19, 2002.[29] These elevations represent top of wastes and do not reflect the soil cap that would be placed on top of this elevation. In general, a 4-foot cap will overtop the wastes, but a 7-foot cap will be provided in the postclosure operations area. A revision to the Applicant's SWFP No. 07-AA-0001 is necessary to allow for this height increase. No increase in permitted disposal rates is proposed with the landfill height increase. It is intended that this Environmental Impact Report (EIR) provide the necessary California Environmental Quality Act (CEQA) documentation that would enable the LEA and the CIWMB to consider issuance of the revised SWFP.

Finally, the 1993 County LUP and City CUP for the BMPC required the Applicant to submit a Public Access Plan outlining an approach for developing a trail that allows public access to the shoreline on the WCCSL site. Reports were prepared in 1994 and 1995 conceiving of a trail around the perimeter of the property. During 2000 and 2001, more details were developed that are reported in the Applicant's FDIP that address phasing, construction, and maintenance.[2] While previous CEQA documentation for projects at the WCCSL has generally recognized the Trail, no CEQA document has been prepared to support implementation of its currently proposed alignment in the context of proposed Project facilities. Because further details on the Trail now exist, the proposed alignment has changed, and its implementation requires approval by the LEA as part of their SWFP, it is intended that this EIR also include the trail as part of the Project. A copy of the Applicant's Public Access Plan is included as Appendix 3K.

A summary of the proposed Project Description is provided below. Details not otherwise presented below or in technical appendices may be found in appropriate chapters of this EIR.

1. Purpose and Need for Proposed Project

The Applicant has identified the following purpose and need for the proposed Project:

- To further reduce reliance on landfill disposal by expanding on-site recycling operations and help comply with State-required AB 939 waste diversion mandates.

- To operate a WRC and transfer station to handle self-haul volumes currently landfilled in the WCCSL, as well as capacity for new business (to be developed on an ongoing basis), and to achieve even greater diversion of materials from the waste stream than is accomplished now in the Waste Shuttle Facility.

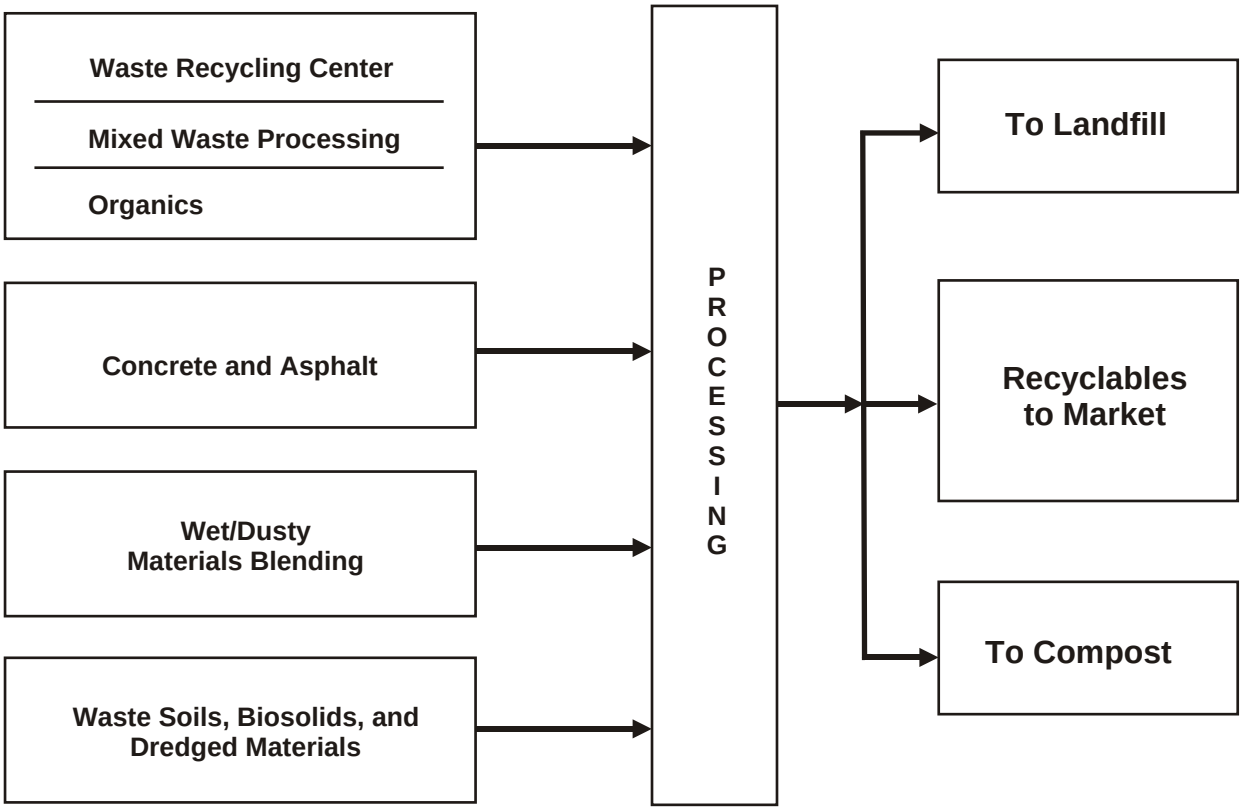
- To help facilitate development of the Trail around the WCCSL, which will provide recreational opportunities and increase access to the Bay and which will also offer a setting for wildlife viewing and environmental education.

- To correct the areas of the Class II landfill's central plateau that have experienced excessive settlement, and to restore the landfill by placing additional MSW subbase, which will allow the foundation layer, barrier layer, and top landfill cover surface to be placed at the correct elevations and slope so that drainage can be properly managed.

2. Proposed Use Permit Changes

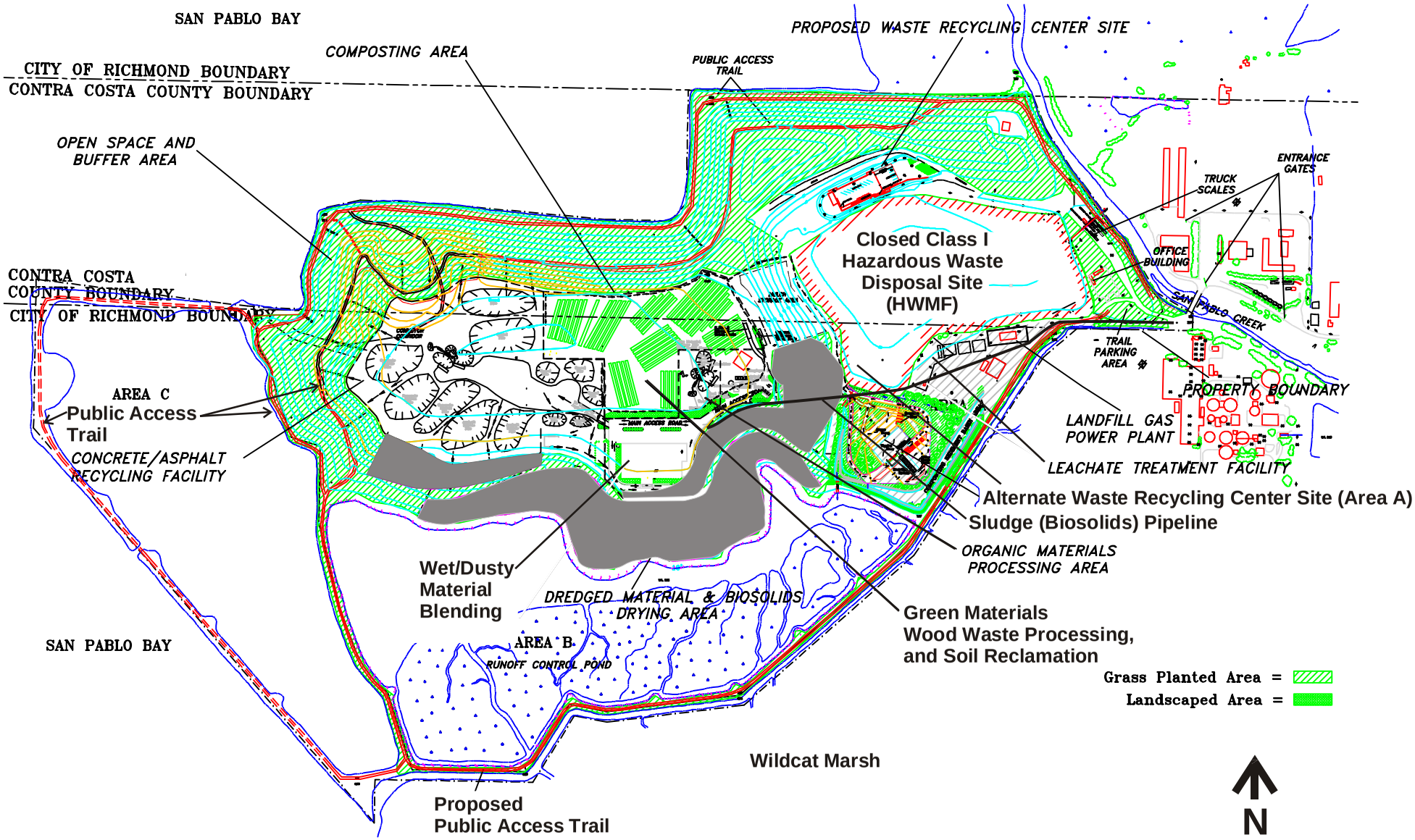
Figure 3-2 is a simplified material flow diagram for the BMPC showing the incoming materials, processing, and ultimate deposition of the products. Discussion on the proposed use permit changes is provided below. Figure 3-3 shows the site development plan. Table 3-1 summarizes the proposed use permit changes while Table 3-2 summarizes the proposed changes in facility operating hours. Table 3-3 summarizes the average and peak daily waste quantities proposed to be received at the BMPC for each of the operations areas. For the total BMPC, the average would be 3,935 TPD7 and the peak would be 5,509 TPD.

a. Composting. The WCCSL BMPC Composting Facility consists of several main components, including the composting area, screening area, and loadout area. The primary changes to the current permits for this facility are to increase the amount and types of materials processed, which will require a physical expansion of site operations. The Composting Facility is currently within the City and would be expanded into both jurisdictions. Full details of the Composting Facility are included in the RCSI.[4] A summary of the composting operations plan is included in Appendix 3B.



Note: Adapted from Appendices 3B through 3H.

Figure 3-2 Simplified Material Flow Diagram for BMPC



Source: WCL,February 2003

Figure 3-3 Site Development Plan

Table 3-1. Summary of Proposed Changes to Quantities and Location for WCCSL Bulk Materials Processing Center Operations

Action	Existing permitted quantities	Proposed permitted quantities[b,c]	Approximate incremental change	Proposed location on site
Composting: Expand the volume of compostibles and mulch to be processed; process compost and mulch in both City and County area; change composting permit to handle mixed wastes, biosolids and ag wastes.	10,000 tons of compostibles received per year (EIR); 11,600 CY of materials undergoing composting on site at one time (SWFP); 5,000 tons of compost on site at one time (RCUP).[a]	150,000 CY or 56,000 tons of materials undergoing composting; 32,000 CY or 12,800 tons of unscreened compost in storage; 64,000 CY of 25,600 tons of finished screened compost product in storage; 164,300 tons of compostibles processed per year.	• 5 X increase in material undergoing composting • 8 X increase in material stored (finished and unscreened) • 16 X increase in compostibles processed per year	• Currently in City and County; would be expanded in area mostly in City.
Concrete/Asphalt Processing: Move location of concrete processing facility to west end of landfill central plateau; expand the volume of concrete/asphalt materials to be processed and remove restriction on wet weather processing or storage of asphalt.	Maximum tons of concrete and asphalt rubble received per year not specified; maximum of 30,000 tons or 24,000 CY of concrete debris on site at one time; (CLUP), and maximum of 1,600 tons or 800 CY of asphalt on site at one time (CLUP).	110,000 CY or 175,000 tons of unprocessed broken concrete or asphalt rubble in storage; 60,000 CY or 95,000 tons of crushed concrete and asphalt products in storage; 528,000 tons of concrete and asphalt processed per year.	• 8.5 X increase in storage of processed and unprocessed concrete and asphalt (to 270,000 tons).	• Majority of operation in City, some in County.
Waste Recycling Center: Construct and operate Waste Recycling Center in Soil Remediation Building on Class II landfill; recycling of mixed solid wastes; loadout of nonrecovered materials into transfer trailers.	Not now included	1,000 tons of mixed solid wastes temporarily stored on site; 1,600 CY of recycled materials in storage (cardboard, wood, metals, glass, plastic); 365,000 tons of mixed wastes handled per year.	• New operation to serve customers that previously utilized Waste Shuttle Facility and Class II landfill.	• In County (alternative location proposed in City).

Table 3-1. Summary of Proposed Changes to Quantities and Location for WCCSL Bulk Materials Processing Center Operations (continued)

Action	Existing permitted quantities	Proposed permitted quantities[b,c]	Approximate incremental change	Proposed location on site
Wet/Dusty Material Blending: (County and City Permits) Add new operation to BMPC.	Not now included	5,000 tons and 10,000 gallons of unprocessed materials in storage; 44,900 tons and 1.5 million gallons of materials processed per year; 25,400 tons of dry and 25,700 tons of wet wastes processed annually.	• New operation to replace placing these materials in landfill.	• In County or City.
Wood Recovery: Expand the volume of wood wastes to be processed; process wood in both City and County areas.	Maximum tons of wood wastes received per year not specified; maximum of 350 tons or 1,750 CY of materials on site at one time (RCUP and CLUP).[a]	10,000 CY or 25,000 tons of unprocessed wood waste in storage; 55,000 CY or 22,000 tons of shredded wood and mulch products in storage; 131,400 tons or 330,000 CY of wood wastes processed per year.	• 70 X increase in storage of processed and unprocessed wood waste (to 24,500 tons).	• In City; possible expansion into County.
Soil Reclamation: Add new operation and Biosolids/Dredged Material Spreading.	Not now included	20,000 tons of material awaiting processing in storage; 6,500 tons of processed material in storage; 195,000 tons processed annually.	• New operation; adjunct to composting and wood waste recovery.	• Shared area with wood recovery and compostin g operation (in City).
All Facilities:	Total materials on site not to exceed 46,950 tons or 47,500 cubic yards (RCUP and CLUP).[a]	Delete the all-encompassing total.		

a. RCUP = City of Richmond Conditional Use Permit; CLUP = Contra Costa County Land Use Permit

b. Conversion factors

Material	lb/cu yd
Compostables	747
Finished and unscreened compost	800
Concrete and asphalt	3175
Wood waste	500
Shredded wood and mulch	800

Note: The County is the Lead Agency under the California Environmental Quality Act (CEQA); the City of Richmond, County Environmental Health (LEA) and others are Responsible Agencies under CEQA. The LEA currently has permitting authority over the following proposed BMPC operations: Composting, Waste Recycling Center, and Wood Recovery.

Source: Land Use Permit Application, reference 28.

Table 3-2. Proposed Changes in Facility Operating Hours

Action	Existing timing of activities	Proposed permitting timing of activities
Equipment Maintenance: Change of hours of equipment maintenance	Maintenance, repair and servicing of construction equipment are currently restricted to the period from 7:00 a.m. to 6:00 p.m., Monday through Saturday.	Allow these activities to occur between 5:00 a.m. and 10:00 p.m.
Facility Operations: Change of hours of facility operations	Current transporting of BMPC materials schedule of 7:00 a.m. to 5:00 p.m., 7 days per week. Operation of concrete processing equipment; currently 7:00 a.m. to 5:00 p.m., Monday through Saturday Chipping and grinding of wood (fines are composted), currently 7:00 a.m. to 5:00 p.m. 7 days per week Waste Recycling Center not now included	Change to 24-hour transporting of materials as now allowed for the landfill operation. Change to 5:00 a.m. to midnight Change to 5:00 a.m. to midnight All activities associated with the Waste Recycling Center would be allowed on a 24-hour-per-day basis.

Source: Land Use Permit Application, reference 28.

Table 3-3. Summary of Proposed Waste Quantities to be Received at the BMPC

BMPC operations area	Average, tons/yr (365 days/yr)	Average, tons/day (TPD7)	Peak, tons/day (TPD)
1. Waste Recycling Center			
▪ Mixed waste area			
Public self-haul mixed waste	109,500	300	420
Commercial haulers mixed waste	255,300	700	980
Subtotal	365,000	1,000	1,400
▪ Organics processing area			
Public self-haul green waste[a]	8,200	22	31
West County commercial green waste[a]	57,500	158	221
Regional organics commercial haulers[a]	98,600	270	378
Wood waste haulers	131,400	360	504
Subtotal	295,700	810	1,134
Total Waste Recycling Center	660,700	1,810	2,534
2. Other Bulk Materials[b]			
▪ Concrete and asphalt materials	528,000	1,447	2,026
▪ Waste soil and dredged materials	195,000	534	748
▪ Wet wastes and powdery materials	51,100	140	196
Total Other Processing Facilities	774,100	2,121	2,970
TOTAL BMPC	1,434,800	3,931	5,504

a. Compostibles processed per year = 164,300 tons/yr or 450 TPD7.

b. Totals do not include biosolids from the WCWD treatment plant. About 24 MG of digested sludge per year would be piped to the landfill for spraying or spreading. About 12 tons per year of dried lagooned sludge is extracted from the treatment plant's drying lagoons during August and September and disposed of at the WCCSL as described in Section C2(g).

Source: West County Landfill, Inc. July 2003.

Composting at the WCCSL has been a phased development program, as follows:

- Phase 1 was a demonstration project completed in 1994 that provided water quality information regarding compost area runoff and offered observations regarding composting on the surface of the landfill.
- Phase 2 is a 27 TPD (365 days per year average or TPD7) project, which is the existing phase that began in November 1995. Initially, this project was conducted on the intermediate covered dormant portion of the landfill on the eastern end of the central mound, and later on portions of the final capped central mound. Only compostible green materials (yard debris) and wood waste were processed.
- Phase 3 is the larger-sized regional composting facility that is discussed below and is proposed as a component of this project. This phase is proposed to occur initially on the intermediate covered portions of the landfill and later on the final capped area of the WCCSL.

Current Permit Capacity. Currently allowed permit capacities under the County LUP No. 2054-92, City CUP No. 92-53, and SWFP No. 07-AA-0044 are as follows:

- 10,000 tons of compostibles received per year (specified in West County IRRF EIR).
- 11,600 CY of materials undergoing composting on site at one time (specified in SWFP).
- 5,000 tons of compost on site at one time (specified in City CUP).

The average daily throughput of compostibles is currently about 27 TPD7 (approximately 9,855 tones per year [365 days x 27 TPD7]).

Proposed Revised Permit Capacity. The proposed Composting Facility changes include expansion of the amount of materials processed, the handling of additional types of organic materials, and the ability to operate the Composting Facility in both the County and City areas. The new types of materials to be processed include food wastes, biosolids (wastewater sludge), mixed waste paper, and agricultural residues.

The Applicant has allocated a total of 20 acres for the Composting Facility. This includes the total amount of space available for the receiving area, grinding area, composting area, screening area, loadout area, wood waste processing area, and a soils reclamation area. (Note: The organics receiving area and grinding area are part of the WRC.) Directly adjacent to the Composting Facility is the Concrete/Asphalt Processing Facility (Figure 3-3), which has been allocated about 15 to 20 acres by the Applicant. The Applicant would like the flexibility to adjust the amount of space dedicated to the Composting Facility and to the Concrete/Asphalt Processing Facility based upon market demands and needs of the jurisdictions served to reach the AB 939 diversion goals.

The Applicant, therefore, proposes that the permits be amended such that the Composting Facility can be a maximum of 40 acres that could be located in both the City and County. This "flexible boundary" would allow for 94,400 total tons of all materials (green waste, wood waste, food waste, agricultural wastes, biosolids, mixed waste paper, soil, and finished products awaiting sale) on site at the Composting Facility at one time. The total tonnage of 94,400 includes 56,000 tons of materials undergoing composting; 12,800 tons of unscreened compost product in storage; and 25,600 tons of finished screened compost product in storage. As indicated in Table 3-1, 164,300 tons of compostibles are proposed to be processed per year. This is equivalent to about 450 TPD7. The Applicant further proposes that the permits limit the maximum number of tons on site instead of placing a limit on the number of tons that can be received in any given day. For example, some materials (such as compostibles) may be on site for over 90 days, while other materials (such as wood wastes or soil) may be on site for less than one week. The boundary available for composting and concrete debris recycling is shown on Figure 3-3, with more detail included in Appendix 3B.

Proposed Expanded Facility Description. The Composting Facility would utilize the organics receiving and processing area that is located adjacent to the composting operations and considered a part of the WRC (Figure 3-3). Materials to be composted would be moved from the organics area and placed into windrows. The windrows would be watered and turned as needed to optimize the decomposition process. Materials may be mechanically processed through a variety of screens, trommels, conveyors, sorters, blenders, baggers, colorizers, or mixers and stockpiled prior to being sold. Materials may be sold to either the general public or to wholesalers. Materials may be shipped off site in bags, pallets, pickup trucks, private vehicles, dump trucks, debris boxes, or transfer vehicles. Materials may also be used on the WCCSL site for various landscaping, operational, or alternative daily cover purposes.

b. Concrete/Asphalt Processing. The WCCSL BMPC Concrete/Asphalt Processing Facility consists of several main components, including a receiving area, crushing area, screening area, and a loadout area. The primary changes to the current permits for this facility are to increase the amount of material processed, for this facility to be relocated to the western plateau of the landfill's central ridge such that the majority of it would be located in the City and a portion of it within the County, and remove restriction on wet weather processing or storage of asphalt. A summary of the operations plan is included in Appendix 3C.

Current Permit Capacity. The following are the currently allowed permit capacities for the existing facility:

- Concrete debris – maximum of 30,000 tons or 24,000 CY on site at one time (specified in County LUP).
- Asphalt rubble – maximum of 1,600 tons or 800 CY on site at one time (specified in County LUP).

Proposed Revised Permit Capacity. The proposed Concrete/Asphalt Processing Facility changes include expansion of the amount of materials processed. According to the Applicant, recent facility operating experience indicates that more concrete debris will be stored at the WCCSL facility than the unprocessed asphalt. About 528,000 tons of rubble and debris can be processed per year.

Approximately 15 to 20 acres are identified for the Concrete/Asphalt Processing Facility, which will be relocated to the western end of the landfill central plateau. This includes the total amount of space allocated by the Applicant for the receiving area, crushing area, screening area, and a loadout area. Directly adjacent to the Concrete/Asphalt Processing Facility is the Composting Facility, which is about 20 acres (Figure 3-3). As discussed above, the Applicant would like the flexibility to adjust the amount of space dedicated to the Composting Facility and to the Concrete/Asphalt Processing Facility based upon market demands and needs of the jurisdictions served to reach the AB939 diversion goals.

The Applicant, therefore, proposes that the permits be amended to allow the Concrete/ Asphalt Processing Facility to occupy a flexible amount of the site area similar to the Composting Facility. The proposed County and City use permit changes would allow for 270,000 total tons (170,000 CY) of all materials (concrete rubble, asphalt rubble, brick rubble, and various sizes of reclaimed crushed rock) on site at one time. As indicated in Table 3-1, 528,000 tons of concrete and asphalt would be processed per year, which is equivalent to 1,438 TPD7. The Applicant believes that having a permit limit of the maximum number of tons on site is preferable to a limit on the number of tons that can be received in any given day. Some materials, such as concrete rubble, may be on site for over 60 days, while other materials, such as asphalt grindings, may be on site for less than one week. The boundary available for composting and concrete debris recycling is shown on Figure 3-3, with more detailed included in Appendix 3C.

Proposed Expanded Facility Description. The Concrete/Asphalt Processing Facility would have one primary receiving area that would consist of separate subareas for receipt of concrete rubble, asphalt rubble, and brick rubble. WCCSL personnel would direct traffic to the proper unloading spot, inspect the incoming materials, and remove any contaminants.

Depending on the type of incoming material and the amount of possible contamination, mechanized sorting conveyors, crushers, screens, trommels, and other equipment may be used to process the incoming materials. Loaders, conveyors, and other equipment may be used to move the material from each processing subarea and to load out finished products.

Materials may be mechanically processed through a variety of screens, trommels, conveyors, sorters, and stockpiled prior to being sold. Materials may be sold to either the general public or to wholesalers. Materials may be shipped off site in private vehicles,

dump trucks, or trailer trucks. Materials may also be used on the WCCSL site for various operational purposes.

c. Waste Recycling Center. The Applicant also proposes to construct a new WRC. The WRC would serve customers currently utilizing the Waste Shuttle Facility described previously in this chapter. Operations at the Waste Shuttle Facility would continue until the WRC is completed. In addition to relocation of this operation, the main difference between the WRC and the Waste Shuttle Facility would be the volume of materials handled and the addition of a loadout chute or a conveyor system to load non-recovered wastes into transfer vehicles.

The Applicant's primary purposes for developing the WRC is to (1) operate a waste recycling center and transfer station to handle self-haul volumes currently landfilled in the WCCSL, as well as capacity for new business (to be developed on an ongoing basis); and (2) achieve even greater diversion of materials from the waste stream than is accomplished now in the Waste Shuttle Facility. The design capacity of the WRC mixed waste processing area would be 1,000 TPD7, which would be intended by the Applicant to handle the existing self-haul and non-franchised wastes now received at the WCCSL, plus new business.

Under the proposed Project, the Central IRRF would receive the West County franchised wastes (subject to decision of the Authority) hauled by the packer collection service trucks and the roll-off box trucks. Alternatively, the franchised waste could be processed at the proposed WRC and reduce capacity available for the new business component within the facility's proposed design capacity. Any waste residues remaining after processing for recyclables would be hauled to Potrero Hills Landfill in Solano County once the WCCSL Class II landfill has reached capacity and is no longer receiving wastes for disposal (for a period of at least 5 years, disposal location to be used after that is subject to decision of the Authority through 2014).

The WRC has two parts in separate locations on the landfill: the mixed waste processing area and the organic materials processing area (Figure 3-3). The WRC mixed waste processing area would consist of several main components—a receiving area, a sorting floor where wastes would be sorted into trash and recyclables, an elevated picking line where the recyclables would be sorted, and a transfer vehicle loadout area. The WRC would also include the organic materials processing area, which is located adjacent to the composting operations. That area would consist of separate subareas for receipt of green waste, wood waste, food waste, agricultural wastes, biosolids, mixed waste paper, and soil. An operations summary for the WRC is included in Appendix 3D.

Current Permit Capacity. The Applicant has existing permits for some of the components of the WRC, including recovering recyclables from incoming waste, using mechanized processing equipment, and permits to move waste and processing residues from the processing area to the working face. Most of the mixed waste operations envisioned for the WRC are currently taking place at the landfill Waste Shuttle Facility. The Applicant proposes that the Soil Remediation Facility be revised from a contaminated soil processing operation to a waste recycling and transfer facility. The

organics processing operation (receiving and grinding green material and wood wastes) now occurs at the existing Composting Facility and wood waste processing area.

Proposed Permit Capacity. The former Soil Remediation Facility was approved to process up to 1,200 TPD7 of hydrocarbon-contaminated soil. Based on preliminary design information, and through adaptive reuse of an existing permitted facility, the design capacity of the WRC would be 1,000 TPD7, or sufficient capacity to handle 365,000 tons of mixed wastes per year.

Proposed Facility Description. The former Soil Remediation Building is the proposed location for the WRC. An alternative location and layout for the WRC (Figure 3-3) is in WCCSL Area A which is discussed in Chapter 13. The existing Soil Remediation Building is a long, narrow structure that has some constraints for adaptive reuse. Settlement of portions of the existing structure has occurred. The slurry wall bordering the Class I HWMF is about 38 feet to the south of the building, and proposed improvements to the building must consider the presence of the HWMF and its environmental containment features. For preliminary design purposes, the following features and improvements are considered for the WRC at this location:

- Adaptive reuse of the former 31,200-square-foot Soil Remediation Building (approximately 260 feet in length and 125 feet in depth).
- Extending the building about 110 feet to the east (13,200 feet) to create a dedicated commercial vehicle tipping area.
- Installation of a modular building for offices, employee restrooms, and a break room.
- Installation of an eight-bay recycling system.
- Site improvements for paving, drainage, and employee parking.
- Addition of perimeter landscaping.

The WRC would have two waste receiving and handling areas: the mixed waste processing area and the organic materials processing area. The mixed waste processing area would consist of separate subareas for receipt of recyclables, trash, and mixed loads of recyclables and trash. There would be several areas for the processing and removal of recyclables. Recyclables or recovered materials would be sorted and stored until shipped to markets or end users. WCCSL personnel would direct traffic to the proper unloading spot, inspect the incoming materials, and remove any contaminants. Loads containing all trash and any trash residue remaining after processing would be loaded into roll-off boxes, dump trucks, or transfer trailers to be hauled to the disposal site (either the working face at the WCCSL Class II landfill or Potrero Hills Landfill).

The size or volume reduction procedures that may be included in the WRC facility near the mixed waste processing area include two stationary compactors which may be installed for storage of recyclables such as cardboard and paper. Balers may be installed in the future. A low-speed, shear-type shredder may be included to preprocess non-recovered residuals prior to bailing them for transport to the landfill for burial. Trash and processing residues would be removed from the WRC on a daily basis, and the mixed waste area floor will be swept clean each night. If there are any partial loads of recyclables or trash, they will be containerized and stored until further processing.

The organic materials processing area is an existing open-air facility located adjacent to the Composting Facility and wood waste processing (mulch/biofuel) operation (Figure 3-3). This portion of the final capped landfill has been overtopped with a layer of crushed concrete and asphalt rubble to form a stable, all-weather access pad. Site users unload yard debris and wood waste on the access pad. Separate areas are maintained for wood and yard debris and, through a floor sorting operation, contaminants (e.g., metals, plastics, rocks, etc.) are removed prior to grinding the organic materials. The processed ground materials are then moved to either the Composting Facility or the wood mulch/biofuel production operation. WCCSL personnel would direct traffic to the proper unloading spot, inspect the incoming materials, and remove any contaminants prior to processing. Depending on the type of incoming material and the amount of possible contamination, mechanized sorting conveyors, grinders, screens, trommels, blenders, and other equipment may be used to process the incoming materials.

d. Wet/Dusty Material Blending. Processing of wet/dusty materials at the BMPC would be a new activity. The proposed new soil venture involves receiving high-moisture-content muds and sludges and blending them with waste soil to result in a mixture containing less than 50 percent moisture. In addition, dusty wastes would be mixed with the high-moisture-content materials, thus binding the dust-sized particles into the mixture. Most of the mixed material could be used at the WCCSL for alternative daily cover or for final cover. An operations summary for this process is included in Appendix 3E.

Current Permit Capacity. Wet/dusty material blending is not now included in either the City or County use permits. In 2001, operation of the Soil Remediation Facility was terminated by the Applicant. The volume of material proposed to be utilized in the wet/dusty materials process would be no more than what was authorized for hydrocarbon-contaminated soil in the former Soil Remediation Facility.

Proposed Permit Capacity. The amount of unprocessed wet wastes in storage on site would be up to 5,000 tons in stockpiles and 10,000 gallons contained in tanks. The quantity of wet wastes to be handled annually would be up to 25,700 tons and 1.5 million gallons. The dry dusty materials would be placed in the processing area at the time of delivery, unless special storage arrangements were taken. Annually, approximately 25,400 tons of these materials would be processed.

Proposed Facility Description. Two modes of operation are proposed, depending upon the availability of the former Soil Remediation Building. If the building were available prior to its use for the proposed WRC, the high-moisture-content wastes would be spread over a layer of dry soil placed previously on the asphalt floor of the building. Then, a rubber-tired loader or grader would mix the wet materials with dry soil until the proper moisture consistency is reached. The loader would be used to load the transport trucks. If mixing takes place on top of the landfill, it may occur inside a structure erected for that purpose. The facility is anticipated by the Applicant to be a 50-foot by 125 foot "U" shaped footprint composed of existing cargo containers appropriately painted and stacked two high with a flat truss roof. Otherwise, smaller amounts of the wet materials would be mixed with the dry soil in batches inside large metal bins. The bins would be located on top of the landfill plateau at the existing Waste Shuttle Facility. The mixing would be accomplished using an excavator equipped with a toothless bucket. After the mixing, the excavator would be used to load the transport trucks.

e. Wood Recovery. The Wood Recovery Facility is an existing activity of the BMPC. It is primarily a stockpiling and loadout operation. These operations would continue to occur within the Organic Materials Processing Area, which is within the larger Composting/Wood Waste Processing Area (Figure 3-3). This facility is currently within the City, but may expand into the County. An operations summary for this process is included in Appendix 3F.

Current Permit Capacity. County LUP No. 2054-92 and City CUP No. 92-53 do not specify the maximum tons of wood wastes to be received each year. Both permits specify, however, a maximum of 350 tons or 1,750 CY of materials on site at one time.

Proposed Permit Capacity. The wood waste receiving area shares the access area and unloading area used for the green materials. Approximately 25,000 tons (10,000 CY) of unprocessed wood waste material can be stored in the wood waste area. Approximately 10,000 CY of shredded wood products also can be stored in the wood waste area. Another 45,000 CY can be stored on the east slope of the landfill central plateau for a total of 55,000 CY or 22,000 tons in stockpile. Using this facility, about 131,400 tons of wood wastes can be processed each year (330,000 CY).

Proposed Facility Description. The Wood Recovery Facility operation involves receiving tree branches, woody vegetation materials and selected wooden construction debris that is shredded at the WCCSL. The shredded wood chip material may be screened to separate the sawdust-sized particles that can be composted. The wood chips can be used as boiler fuel (biofuel) or as landscaping and erosion control mulch. These materials would be temporarily stored and subsequently loaded out in transport trucks or used on site at the WCCSL.

f. Soil Reclamation. Soil reclamation would be a new activity at the BMPC. It would involve the reclamation of non-contaminated soils, which are currently delivered daily to

the WCCSL site and used as landfill cover material in an area adjacent to the composting and wood waste recovery operations.

Current Permit Capacity. As indicated above, the Soil Reclamation Facility would be a new component of the BMPC and no current permit limits exist.

Proposed Permit Capacity. The Applicant projects that about 26,500 tons of soil materials (20,000 tons of unprocessed and 6,500 tons of processed) may be temporarily stored on site, with excess soils used to augment the landfill cap during the postclosure period. About 195,000 tons of soil would be processed annually.

Proposed Facility Description. After closure, the WCCSL will continue to accept soil. Current procedures used to test soils for hazardous substance contamination would be continued. The primary soil reclamation operations would entail mechanical screening of soil to remove rock and debris. The screened soil would be separated into material suitable for trench backfill or building pad engineered fill, and also soil to be blended with sand, compost or dried biosolids to produce topsoil for off-site use. The soil reclamation would be conducted on the unused portions of the composting and wood waste recovery areas (Figure 3-3). About 2 acres are available for the soil reclamation operation sharing area with the composting operation.

g. Biosolids/Dredged Material Spreading. This operation would involve the spreading of wet dredged materials and/or biosolids (wastewater sludge) from the adjacent WCWD treatment plant on the southern or eastern slopes of the closed landfill (Figure 3-3). An operations summary for the reclamation of non-contaminated soils is included in Appendix 3G. The Applicant has been working with the WCWD to evaluate the technical aspects of applying biosolids from their treatment plant. A summary of the biosolids management plan is included in Appendix 3H.

Current Permit Capacity. As indicated above, spreading liquid (greater than 90 percent moisture) biosolids/dredged material would be a new component of the BMPC and no current permit limits exist. Current methods of handling the sludge include (a) use as ADC; (b) mixing with vegetative soil for the Class II site final cap during the cap construction; and (c) soil amendment to enhance the fertility of the in-place vegetative soil for both the entire Class II site and HWMF, through spreading of the biosolids as a thin layer on the existing final cap surface and tilling in or track walking it into the shallow surface layer of the cap as a single application for that year. Relative to soil amendment purposes, the RDSI and Closure Plans indicate that biosolids are to be applied one time per season on specified areas at agronomic rates to improve soil tilth and provide nutrients for enhanced vegetative growth.[1,126,127] Moisture content can be as high as 85 percent.

Proposed Permit Capacity. For the dredged material and biosolids drying area, the Applicant projects that 50,000 tons of these materials could be accommodated annually.

Proposed Facility Description. A second planned soil reclamation program is the spreading of wet dredged materials and/or biosolids (wastewater sludge) on the southern and eastern slopes of the capped landfill. The biosolids would be from the WCWD treatment plant and be greater than 90 percent moisture. Layers of materials would be spread down the hillside and dried by the wind and sunlight. Other soils may be alternately spread down the slope to be mixed when the biosolidsl/dredgings materials are removed for on- or off-site use. Potential off-site uses for removed sideslope materials include topsoil dressing for projects such as freeway landscaping and slide repairs, and replacement backfill for brownfield (remediation and redevelopment) sites where a soil backhaul is practical to fill excavations where materials were excavated for treatment or disposal.

The Applicant is continuing their program of working with the WCWD in management of the biosolids generated from the WCWD wastewater treatment plant. In 1999, the Applicant and WCWD executed a long-term agreement involving annual cleanout and disposal of dried biosolids from the treatment plant lagoons. The two entities have been working cooperatively to investigate possible ways that areas of the WCCSL could be used for biosolids drying, thus allowing for replacement or reduction of use of the existing WCWD biosolids lagoons. The Applicant's biosolids management program consists of the following:

- Use of the southern and eastern MSW landfill slopes as locations for the spraying or spreading and drying of high-moisture-content biosolids, involving multiple applications per year. Spread material would be left in place.
- Continuation of existing practice involving annual spreading of biosolids on final capped areas of the Class II landfill and the HWMF final cover to improve the growing conditions for erosion control vegetation.
- Processing of a portion of the biosolids in the Composting Facility.
- Blending of dried biosolids with soil at the Soil Remediation Facility to create specified fortified soil products.

The Applicant's biosolids management summary in Appendix 3H addresses primarily the application of biosolids to side slope areas, providing current information on segregation, storage, spreading, processing of the materials, and environmental controls. The plan includes options for transporting the biosolids to the WCCSL by truckload or a pipeline system for application during the dry season (April 15 through October 15). If by pipeline, the pipeline would be buried in a utility corridor alignment from the WCWD to the landfill's central plateau (Figure 3-3) where aboveground storage would be necessary.

High-moisture-content biosolids would be spray applied by tanker trucks or sprinklers in a uniform manner over the southern and eastern landfill slopes (Figure 3-3). After the

application has dried, additional biosolids would be applied. Drying would be accomplished by the sun and wind. Prior to full-scale implementation of the biosolids spreading, adjustments to the rates and methods of application would be made as needed to optimize the spreading process.

Dredged materials may be delivered to the WCCSL by barge or truck. If by barge, the barge would be temporarily anchored at the west end of the landfill and the dredged materials would be pumped or hauled by truck to the southern and eastern landfill slopes for spreading and drying. Runoff from the spreading areas would be controlled with on-site ditches and use of the Area B siltation control capability. The dried silt materials, if not left in place to provide a thicker landfill cap, would be pushed to the bottom of the slope and loaded onto trucks for off-site use, described earlier in this subsection.

At the WCCSL, receipt and application of liquid biosolids and dredged materials would be regulated by RWQCB Order No. R2-2002-0066 and the Applicant's Waste Acceptance Guidelines (Guidelines). These Guidelines are included in Appendix 3I. Prior to receiving the dredged material at the WCCSL, the project sponsor must supply the following information to the Applicant:

- Source area name, or project name as an identifier.
- Date of probable delivery of the material.
- Quantity of material to be delivered.
- Moisture content and manner of delivery (truck or barge).
- Chemical characterization (see Appendix 3I).
- Identification of any special conditions involved (odors, free moisture runoff, equipment needed to spread material, location of receiving area at WCCSL).
- Specification of specific operating protocols for the material to provide guidance for transportation agent and site personnel and contracted equipment operators needed to manage the material at the WCCSL.

h. Waste Diversion. County and City use permits required the Applicant to implement a resource recovery and recycling program at the BMPC facility to divert from landfills by January 1, 1995, not less than 25 percent of materials received at the facility and 50 percent by January 1, 2000. The WCCSL landfilling activities were not applicable. Adjustments to these diversion requirements can be made by either the County Board of Supervisors or the Authority. The resource recovery and recycling program includes not only the facilities proposed at the WCCSL, but also includes the Central IRRF operated by West County Resource Recovery Corporation, Inc.

Assuming implementation of the proposed Project, the projected diversion at the WCCSL and the Central IRRF is summarized in Table 3-4. At full capacity of the proposed Project facilities, 78 percent would be diverted from landfill disposal at the WCCSL, 85 percent at the Central IRRF, and 78 percent total (the Central IRRF tonnages do not affect the total due to their relative proportions to the WCCSL quantities). Thus, waste diversion at the WCCSL and Central IRRF would continue to be considerably above existing permit requirements.

Table 3-4. Projected Diversion Provided by Facilities at the WCCSL

Facility component	Waste received, TPD	Recycle/reuse, TPD	Remaining waste landfilled, TPD	Amount diverted, percent
WRC – Mixed waste area	1,000	250	750	25
WRC – Organics processing area	Included in composting or wood waste			
Composting	450	504	45	90
Wood waste recovery	360	324	36	90
Concrete/asphalt processing	1,450	1,450	0	100
Soil reclamation (soil reclamation + biosolids/dredged materials)	535	510	25	95
Wet/dusty materials	140	130	10	93
WCCSL Totals	**3,935**	**3,069**	**866**	**78**
Central IRRF (2002) Totals	150	128	22	85
West County Processing Totals	**4,085**	**3,197**	**888**	**78**

Source: WCL and Brown and Caldwell, January 2003.

i. **Traffic Generation and On-Site Equipment.** Traffic generation characteristics (average daily trips [ADTs] – total of both inbound and outbound trips) of the proposed Project are as follows:

Baseline conditions (2003), ADTs	2008, ADTs		2015 ADTs	
	Daily traffic	Net Project increase	Daily traffic	Net Project increase
2,250	2,580	330	3,220	970

Daily traffic count data represents the average 24-hour traffic during a peak month of landfill activity. The data was derived from a combination of vehicle counts at the WCCSL scales and manual traffic counts taken by Abrams Associates on the WCCSL access road. In 2005, it is assumed the landfill will close. By 2008, it is projected by the Applicant that the WRC would be at 85 percent capacity and other BMPC operations would be at 75 percent capacity. As can be seen, 330 ADTs could be added by 2008 over current conditions, and 970 ADTs by 2015. More detailed information is included in Chapter 8, Traffic and Circulation. In addition, a variety of equipment is currently used at the WCCSL. This information is included in Appendix 3J along with their projected usage with implementation of the Project.

j. Building Locations. Currently, there are 11 buildings located, or in the final planning phase, at the WCCSL. Figure 3-4 shows their locations. The five that are part of the proposed Project include the following:

- Relocated Office Building. A 20-foot by 60-foot wood-sided building that would house the operations manager of the BMPC.
- Modified WRC Building. Modified soil remediation building discussed earlier in this chapter.
- Relocated Equipment Maintenance Building. Approximately a 60-foot by 80-foot metal-sided, pre-engineered building surrounded by gravel roads and parking areas.
- Employee Break Building. An approximate 1,200-square-foot modular building for BMPC employees.
- Concrete Recycling Facility Office Building. A 15-foot by 40-foot wood-sided building for on-site office use.

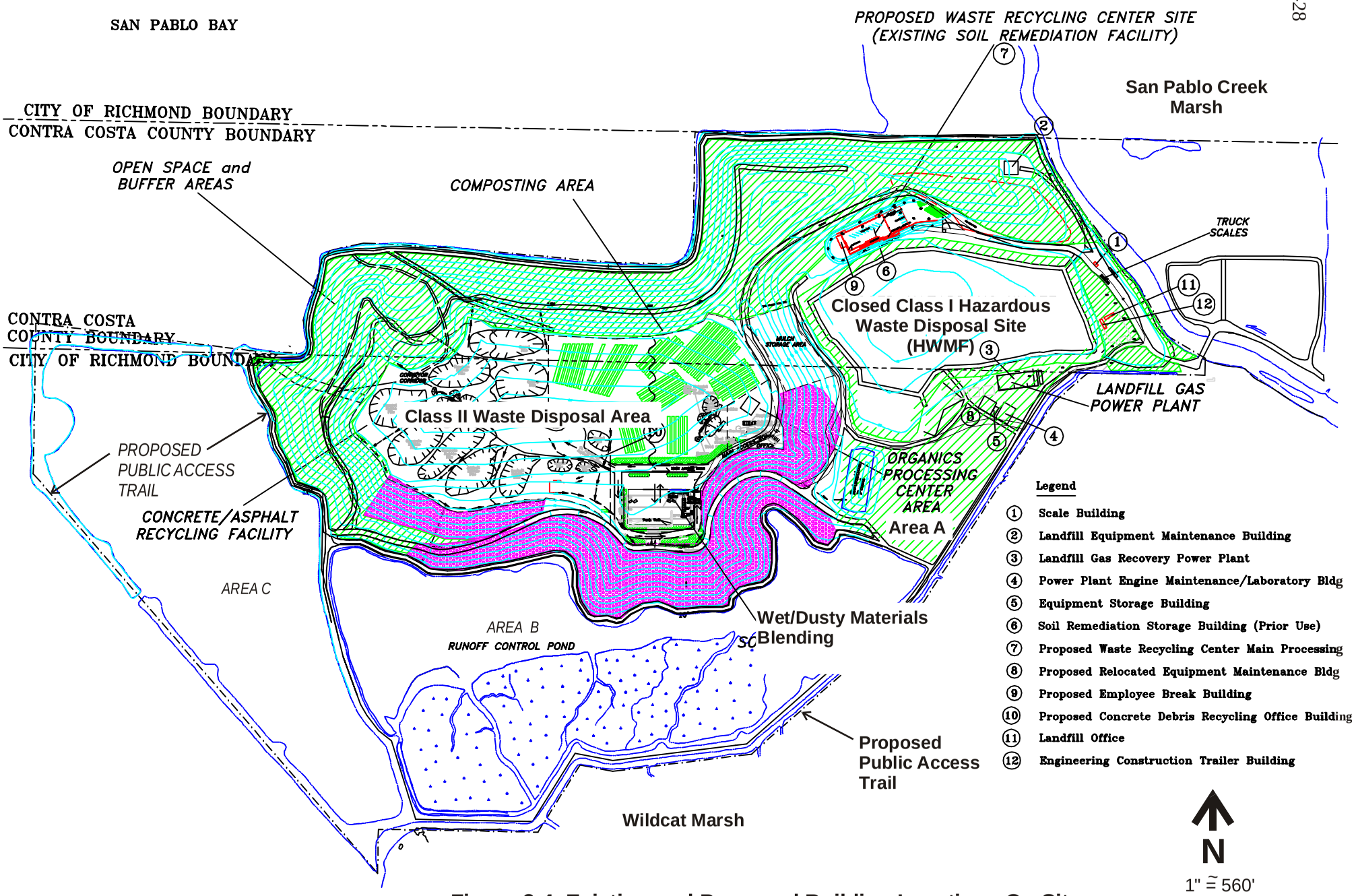
k. Control Measures. A summary of control measures included in the BMPC Project by the Applicant is included in Table 3-5. Control measures typically are procedures known to further reduce the potential for impacts based on regulatory agency requirements, standards in the industry, and operating experience. These control measures relate to hydrology and water quality, public safety, traffic and circulation, air quality, and noise. Further discussion of these control measures is included in the appropriate chapters of this EIR.

l. Site Circulation Plan. The site circulation plan for the WCCSL is shown on Figure 3-5. A transportation and circulation plan is a component of the FDIP and required by City and County use permits.

As required, key on-site roads are constructed for all-weather use and of sufficient width to accommodate two-way traffic. The internal roads that are used by the public are kept in safe condition, maintained such that vehicle access and unloading can be carried on during inclement weather. These roads are identified with suitable signage showing directions to the operating areas and speed limits are posted. The other roads used for landfill maintenance generally involve limited, one-way traffic.

3. Related Actions Requiring CEQA Review

Related actions requiring CEQA review include the Class II landfill height increase and the Public Access Trail.



Source: WCL. February 2003

Figure 3-4 Existing and Proposed Building Locations On Site

Table 3-5. Summary of Operational Control Measures Included in the BMPC Project

Potential impact	Operational control
Hydrology and Water Quality	
Composting and Concrete/Asphalt Processing Facilities	• Control drainage flows and provide silt collection
Waste Recycling Center	• Sweep unloading area at end of operating day • Prepare spill prevention control and countermeasure plan to address potential impacts • Runoff from impervious paved areas with potential pollutants contained in runoff and directed to oil/water separator or equivalent treatment system
Public Safety	
Waste Recycling Center	• Install LFG control system for processing building area in compliance with applicable regulations and permits
All BMPC Facilities	• Submit a project description to WCCSL Site Engineer and obtain approval before beginning any activity that could disturb or penetrate the landfill cap
Traffic and Circulation	
All BMPC Facilities	• Implement facility traffic circulation plan • Construct roadways of sufficient width and grade for safe vehicle travel • Install signs and barriers as designated in site signage plans • Comply with traffic and roadway maintenance activities identified in HWMF EIR

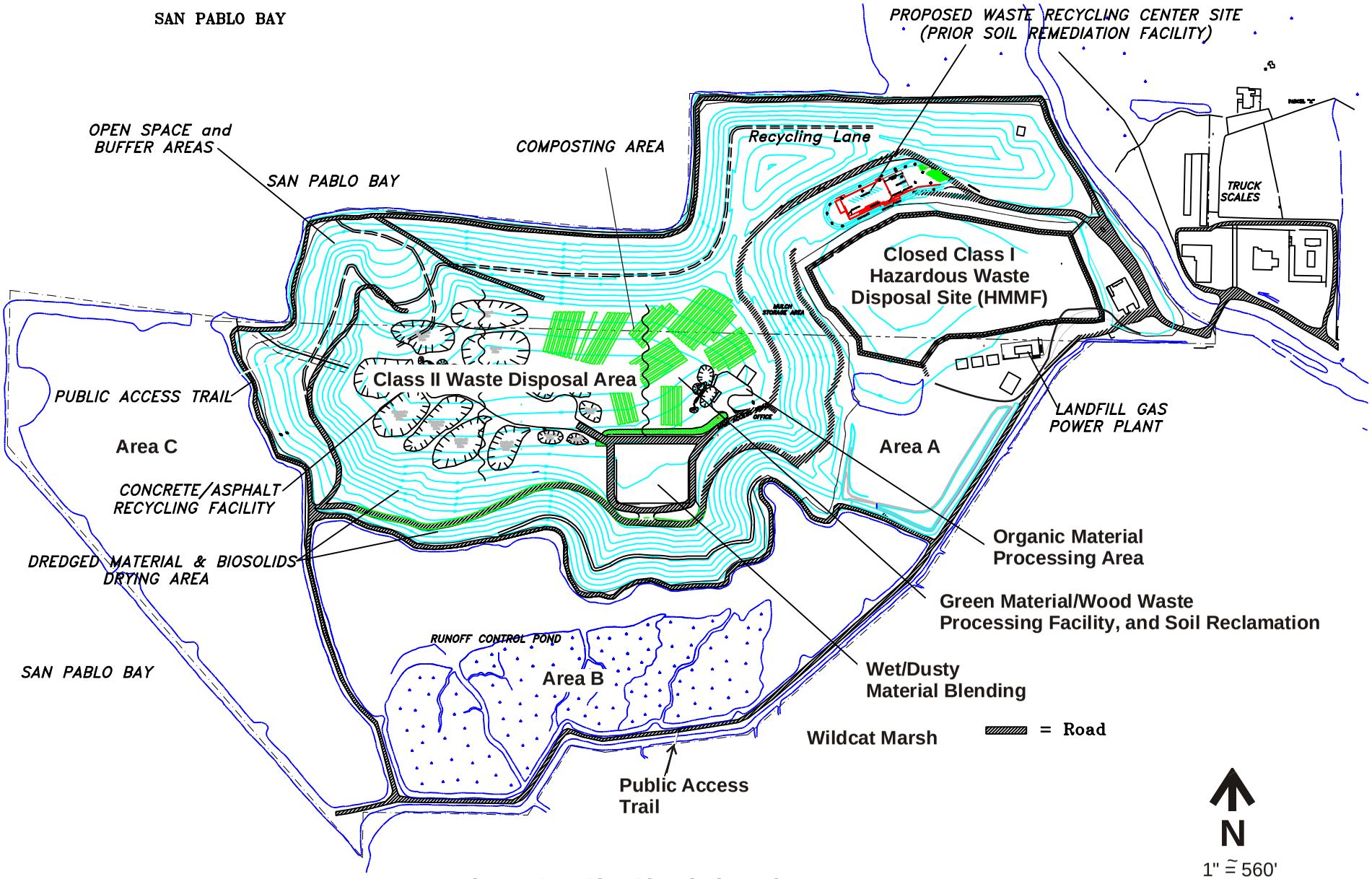
Table 3-5. Summary of Operational Control Measures Included in the BMPC Project (continued)

Potential impact	Operational control
Air Quality	
Composting and Wood Waste	• Routine facility fugitive dust and PM_{10} control measures will be implemented • Screening of finished compost will be suspended during highest winds if conveyor discharge shrouds or other wind blocking methods are insufficient measures • Screening equipment are subject to BAAQMD permit and oversight
Concrete/Asphalt Processing	• Routine facility fugitive dust and PM_{10} control measure will be implemented • Crushing and conveying equipment are subject to BAAQMD permit and oversight
Soil Reclamation and Biosolids/Dredged Material Spreading	• Routine facility fugitive dust and PM_{10} control measures will be implemented
Wet/Dusty Material Blending	• Routine facility fugitive dust and PM_{10} control measures will be implemented
Waste Recycling Center	• Routine facility fugitive dust and PM_{10} control measures will be implemented • Processing operation is subject to BAAQMD permit and oversight • Waste unloading and operations areas will be paved, or graveled and watered to prevent dust occurrence • Dusty waste materials will not be received or will be pre-wetted • Shredding equipment to be used in organics material processing area is subject to BAAQMD permit and oversight

Table 3-5. Summary of Operational Control Measures Included in the BMPC Project (continued)

Potential impact	Operational control
Noise	
All BMPC Facilities	• All operations equipment will be equipped with mufflers in good operating condition • Equipment operators will use appropriate hearing protection • Noise sources will be shielded by placement of storage piles or other measures if necessary to result in sound levels at the property line to be in compliance with permit conditions.

Source: Land Use Permit Application, reference 28.



Source: WCL, February 2003

Figure 3-5 Site Circulation Plan

a. Class II Landfill Height Increase. The 1996 Class II landfill final cap area located near the center of the central plateau was originally constructed with the ridgeline of the top-of-MSW fill at the 130-foot msl elevation. In June 2001, the level of the top-of-MSW in this area was found to be at an elevation of 115 feet. Thus, between November 1996 and June 2001, the top of waste fill had settled or subsided about 15 feet.

Over the 30-year postclosure period, it was originally anticipated by the Applicant that the final cap slope would subside at the same relative rate and, thus, the slope would be preserved and proper drainage conditions would continue to exist. However, the greater-than-anticipated settlement occurred underlying the ridgeline, creating a flat area on the landfill. If left uncorrected, continued anticipated settlement may result in the top of the landfill cratering and forming a depressed area that would not drain properly.

To correct this problem, the Applicant has been removing the final cap and placing additional MSW subbase fill. This will allow the foundation layer, barrier layer, and top landfill cover surface to be placed at the correct elevation and slope.

Proposed Final Grades. Figure 3-6 shows the proposed final grades of the landfill. The elevations shown represent the top of the landfill wastes. The final cover cap, consisting of 7 feet of soil, would lie above these elevations. The implementation of the grading plan would result in an east-west ridgeline that generally ranges between elevations 110 and 160 feet msl. It is projected by the Applicant that 10 to 15 years after site closure, the elevations of the ridgeline will decrease by 20 feet due to waste settlement and consolidation of underlying Bay Mud, and removal of leachate from the base of the liner within the Class II disposal area.

The east-west ridge will appear as a long mound with a small valley or drainage swale between the Class I and Class II sites. Drainage details are shown on Figure 3-6. Ultimate final perimeter slopes of 4:1 (horizontal:vertical) will be established between elevations 10 and 110 feet msl. Above elevation 110 feet msl, a maximum slope of 10:1 will be created for subsurface soil stability, as recommended by the Applicant's soil engineering consultant. To achieve the planned slopes, the exterior lifts are overbuilt to allow for expected settlement and consolidation.

Site Life. The history of site life estimates for the landfill has shown that a variety of factors contribute to extending the landfill life. These factors include: the weight of the stockpiled soil compacting the buried wastes, leachate pumping (removal), landfill diversion through materials recovery, ongoing decomposition of underlying wastes, compaction by heavy compactor tractors, and use of ADC to reduce soil use and save some air space (landfill capacity).

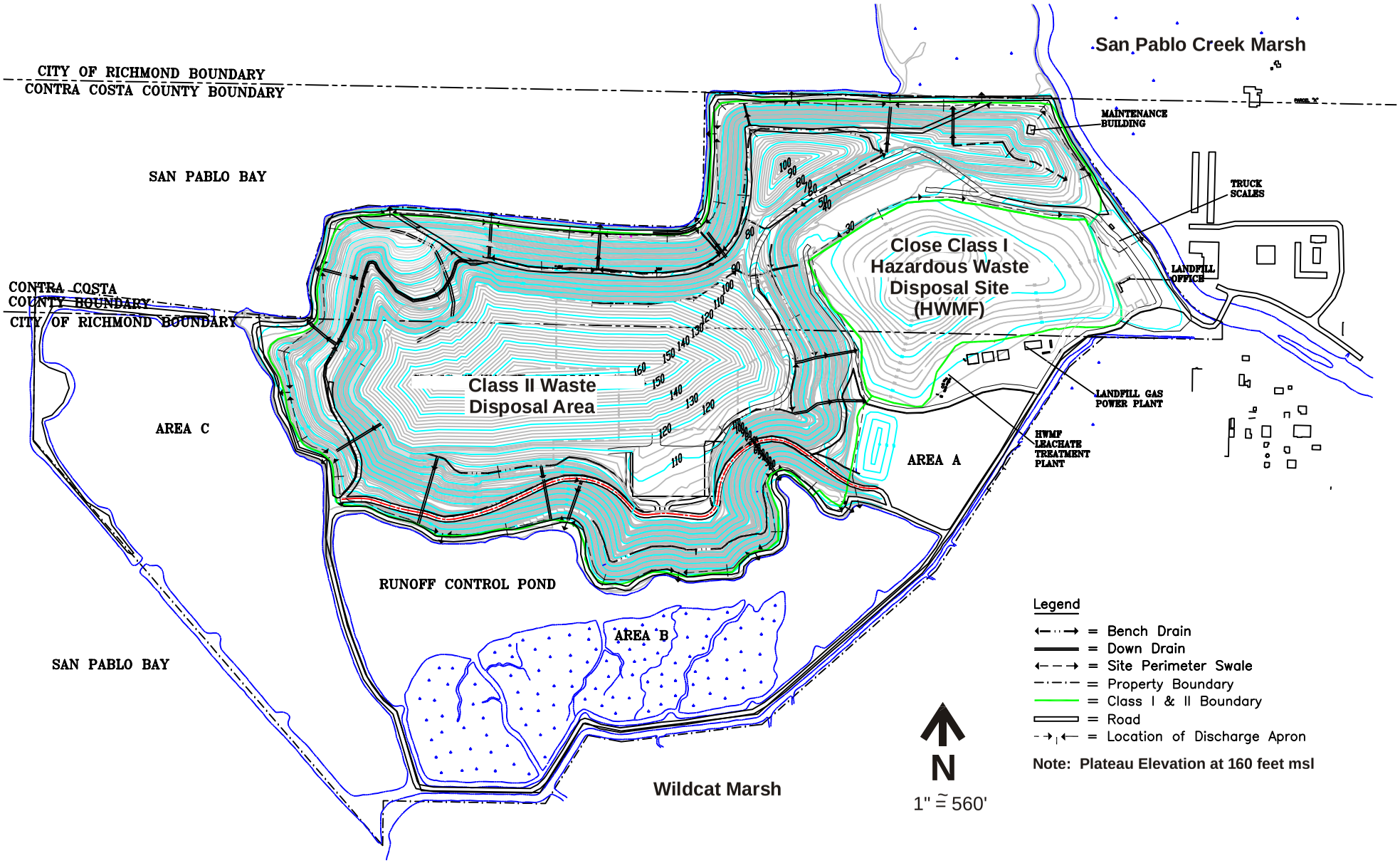


Figure 3-6 Proposed Final Grading Plan

Source: WCL, February 2003

The most recent landfill site life estimate indicates that the total amount of wastes estimated to be in place in the Class II site was about 19,299,000 CY or 10.6 million tons as of May 31, 2002.[38] Remaining waste capacity exists across the central plateau area where the final cap areas are being adjusted, and in the northeastern corner of the landfill where the former Soil Remediation Building is located. This is the location of the proposed WRC. If the Applicant were to fill in this area in lieu of using it for the WRC,the volume of available disposal space is about 510,600 CY. Two alternative filling plans for this area are being developed for this area and will be included as Figure III.A-7 of the RDSI.

Table 3-6 summarizes the current site life estimate for the Class II landfill for various scenarios that include different assumptions for landfill height, disposal rate, density, and whether the former Soil Remediation Building remains in place for use as the WRC. The 130-foot height is the currently permitted height, while the 150- and 160-foot heights are variations of the proposed vertical expansion. As can be seen from the table, with no vertical expansion and keeping the building in place as of June 2003, only 5 months of disposal capacity remain and the site would be filled by the end of October 2003. If, however, the permitted height were increased to 160 feet and the building were removed, then about 44 months of disposal capacity would exist and the site would be filled by September 2006. The RWQCB has ordered that the WCCSL Class II landfill cease burying waste on or before January 31, 2006.

Table 3-6. Remaining Life of West County Landfill (From June 1, 2003)

Landfill height, feet	With building, months[a]		Without building, months[b]	
	Months	Date site filled	Months	Date site filled
130	5	Oct. 2003	20	Feb. 2005
150	17	Nov. 2004	33	Mar. 2006
160	22	Apr. 2005	39	Sept. 2006

a. Assumes a disposal rate of 850 TPD7 and a landfill density of 1,100 lbs/CY.
b. Assumes a disposal rate of 800 TPD7 and a landfill density of 1,200 lbs/CY.

Note: The two different disposal rates and densities are part of a sensitivity analysis used in the site life analysis process. This provides a range in the site life which is applicable since the tonnage and density may vary during the following years.

Source: WCCSL, Inc., reference 121, as updated by the Applicant in June 2003.

On-Site Processing Areas and Construction Specifications. According to the Applicant's RDSI, the final cover cap consists of a minimum of 4 feet of soil consisting of:[1]

- Two feet of foundation cover soil.
- One foot of clayey soil with a maximum in permeability of $1x10^{-6}$ centimeters per second (cm/sec). (An equivalent or better low permeability engineered final cap containing geosynthetic clay (GCL) is proposed by the Applicant to the RWQCB to be substituted for the 1-foot-thick clayey soil layer.)
- One foot of soil suitable for vegetative growth.

All permanent processing locations would be underlain by the final landfill cover. An additional 3 feet of protective soil will be provided in these postclosure BMPC operations areas.

Construction performance specifications regulate postclosure land uses on the final landfill cover cap to assure that the integrity of the final cover, drainage and erosion control systems, and gas monitoring and control systems are maintained (Appendix 3A). Pursuant to 27 CCR §21190, proposed postclosure land uses shall be designed and maintained to:

- Protect public health and safety and prevent damage to structures, roads, utilities and gas monitoring and control systems;
- Prevent public contact with waste, LFG, and leachate; and
- Prevent explosions from LFG accumulation.

To guide the planning of future site uses, performance standards have been developed by the Applicant for the WCCSL that embrace the intent of 27 CCR §21190 (a) through (f). The following performance standards are considered for each proposed BMPC Project component:

- Final cover inspection and maintenance—The final cover underlying the zone to be occupied by the proposed BMPC Project components will be inspected annually under the landfill postclosure monitoring. Specific potential impacts to the landfill cap are listed and specific monitoring activities or construction inspection and observation protocols are developed. After construction is completed, as-built drawings are prepared and filed as part of the postclosure plan background details. No subsequent construction or grading that may penetrate the cap will be allowed without prior approval of the WCCSL Site Engineer. Annual

inspections by the WCCSL Site Engineer shall include observations to detect any non-approved site modifications.

- Landfill grading and drainage system inspection and maintenance—Within the zone to be occupied by the proposed BMPC Project components, the annual landfill monitoring program will include observation of the final grading and drainage pattern within the zone. The development plans are required to evaluate the potential for occurrence of settlement of the landfill surface. The development plans must accommodate the anticipated settlement. Any regrading shall be approved by the WCCSL Site Engineer. Areas of differential settlement that interfere with the planned drainage concept will be identified and scheduled for regrading.

- Slope protection and vegetation inspection and maintenance—The proposed BMPC Project components will be evaluated to determine if special slope protection is required. The annual landfill monitoring program will observe the condition of the slope protection devices and installations and the status of planted erosion control vegetation. The activities associated with the land use are reviewed to determine if such activities are interfering with the slope protection or if the vegetation growth is being impaired. Any areas requiring erosion correction or replanting will be identified and scheduled.

- Leachate control and treatment system operation, inspection and maintenance—The potential use of water is estimated by the Applicant and the control of the water is evaluated. Annual reports of the amount of water utilized shall be reported to the WCCSL Site Engineer. Annually, the proposed BMPC Project components will be evaluated to assure that water usage, drainage, or disposal is not penetrating the landfill cap or is causing leachate generation.

- Gas control system inspection and maintenance—Within the zone occupied by the proposed BMPC Project components, LFG monitoring is established as necessary. The LFG monitoring details are ascertained and implemented during construction of the facilities. LFG migration controls also are planned and built into the facilities as deemed necessary. The monitoring is included in the existing standard WCCSL LFG monitoring program for on-site structures.

- Groundwater monitoring network inspection and maintenance—All proposed land use developments are reviewed to determine none of the groundwater monitoring wells will be damaged by construction or operation activities.

b. Public Access Trail. The concept of creating a shoreline Trail has been envisioned for many years, and has been referenced in several regional and site-specific planning documents, including the County and City use permits and the North Richmond Shoreline Specific Plan and associated EIR.[5,6] The Trail at the WCCSL would be a segment of the San Francisco Bay Trail, a planned 400-mile recreation and transportation corridor that will encircle the entire Bay, linking the shorelines of nine counties and 47 cities.

City and County use permits for the BMPC included requirements for conducting a feasibility analysis and preliminary planning for public access along the WCCSL site perimeter to allow access to the Bay shoreline, and for implementing the access as it is determined to be feasible. From 1992 to present, planning for the Trail was conducted and various iterations of the Public Access Trail Development Plan were developed. The current version of the Public Access Trail Development Plan is included in Appendix 3K. A brief summary is included below.

Phased Development and Trail Alignment. The Trail is proposed to be developed in phases. The purpose of phasing the development of the Trail would be as follows:

1. To allow access to portions of the Trail while the landfill is still accepting wastes for disposal.

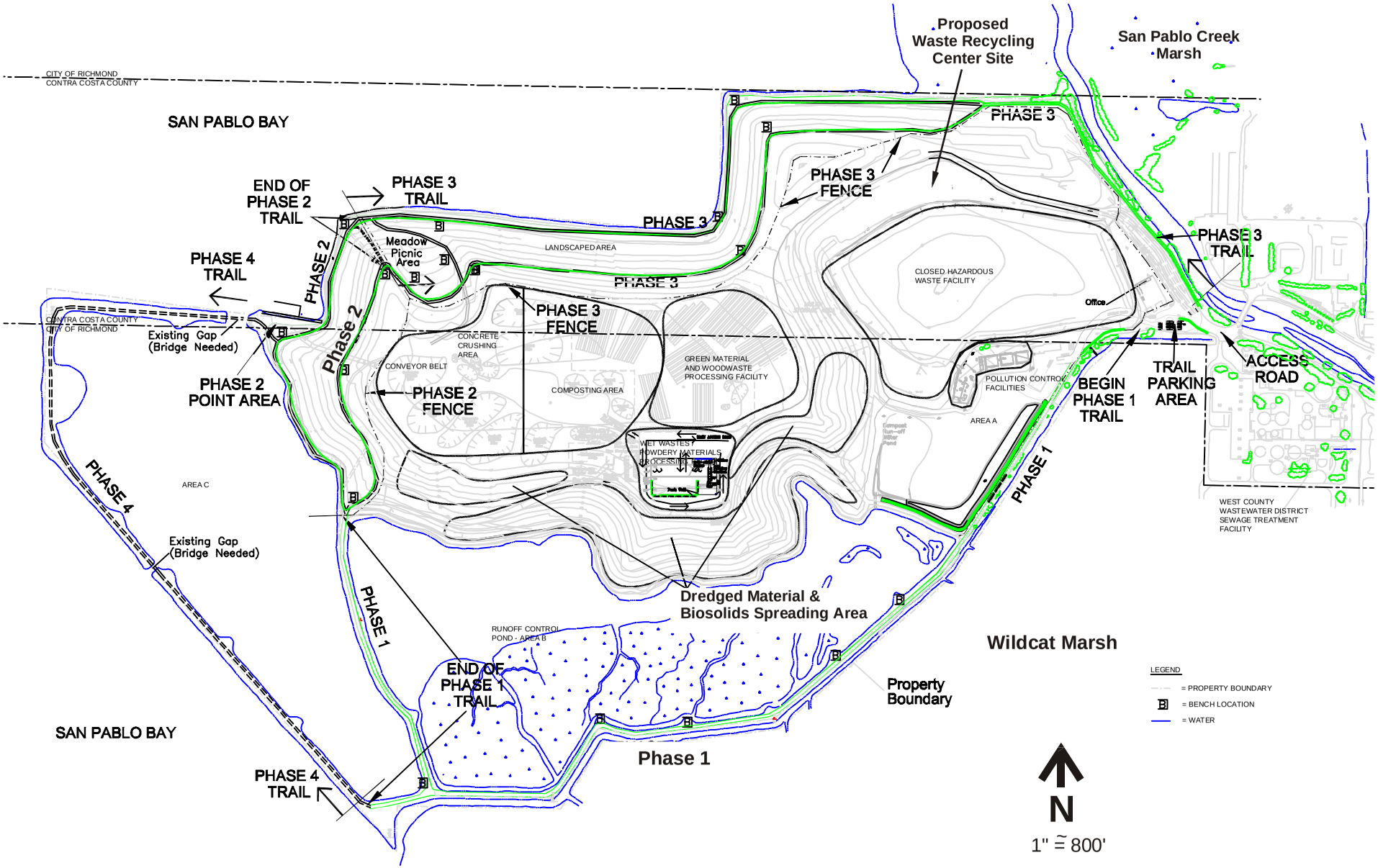
2. To provide access to portions of the Trail while funds are located and permits are secured that will allow for Trail extension in the future.

3. To initially gain operations experience on a smaller portion of the Trail so that the later phases of the Trail can be developed based on experience gained.

The Applicant would modify the development plan in order to comply with permit limitations or operational issues as they are identified.

Figure 3-7 shows the alignment of the Trail and its four proposed phases of development. The alignment would be along the existing levee roads that form the outer edge of the landfill and that delineate the WCCSL property. Bench locations for Trail users are also shown on the figure.

- **Trail Parking Area.** A graveled Trail parking area would be located at the eastern end of the landfill property (Figure 3-7). Visitors would park within the designated parking area, which would meet code requirements for handicapped parking. Improvements would consist mainly of traffic control barriers that would designate the limits of the parking area and its entrance roadway. There would be space for 15 vehicles and a bike rack would be provided. Restroom facilities may also be located in this area.



Source: WCL. February 2003

Figure 3-7 Proposed Public Access Plan Conceptual Design

- **Phase 1 Alignment.** The Phase 1 Trail would extend from the parking area in a westerly direction, initially along some of the currently active operations areas of the landfill. These areas include the Class I HWMF, the Landfill Gas Power Plant, a maintenance building, and a soil stockpile area in Area A. The soil stockpile area in Area A is an alternative site for the WRC, which is discussed in Chapter 13 of this EIR. Along this section of the alignment, the northern edge of the Trail would be bounded by a berm and permit-required chain link fence topped with barbed wire to prevent access by Trail users to landfill operations.

  The Phase 1 Trail would extend along the existing southerly levee roadway, which separates Area B and marshland to the south. Near Area C, a side spur trail would extend a short distance where a potential kayak and canoe launching area would be located. From this point, the Trail would extend north to the southwest corner of the Class II landfill, where it would terminate and Trail users would turn around to return to the parking area. The Phase 1 Trail is about 1.3 miles (one way).

- **Phase 2 Alignment.** The Phase 2 Trail alignment has a lower Phase 2 segment and an upper Phase 2 segment. The lower Phase 2 segment would be about 0.3 mile in length and would run along the western perimeter of the landfill's shoreline at about the 15-foot elevation. This segment of the Trail would end at a fence adjacent to areas where the Applicant will continue to landfill solid waste and where the final landfill cap would be placed during 2004 and 2005. A second potential kayak landing would be located in this area. Trail users would double back at this point and return to the parking area. The total length of the Phase 1 and Phase 2 Trail is about 1.6 miles. The Applicant would endeavor to open the lower Phase 2 Trail at the same time as the Phase 1 Trail if feasible from a technical and public safety standpoint.

  The upper Phase 2 Trail segment would be about 0.2 miles in length and would parallel the lower Phase 2 Trail at an elevation of about 50 to 60 feet above the Bay level. There would be a short connector trail to link the lower and upper Phase 2 Trails, which would enable Trail users to loop rather than double back. As shown on Figure 3-7, cyclone fencing would be installed to prevent Trail users from accessing landfill operations.

- **Phase 3 Alignment.** The Phase 3 Trail alignment would complete the loop around the WCCSL property and would also have two levels. The upper Phase 3 Trail would continue along the 60-foot elevation for 0.5 mile and rejoin the Phase 3 shoreline Trail. The upper Phase 3 Trail would also contain a contoured west wind-protected "meadow" area which could be used as a picnic area and vista point for Trail users

(Figure 3-7). At the northeast corner of the property, the Trail would turn and proceed along San Pablo Creek and pass by the WCCSL scale house and terminate at the Trail parking area. A designated crossing would be provided in this area. The length of the Phase 3 shoreline level Trail segment would be about 0.8 mile.

- **Phase 4 Alignment.** As shown on Figure 3-7, the Phase 4 Trail alignment would loop around Area C. Because the levee around Area C has been breached to allow for tidal action, two pedestrian bridges would need to be constructed. The Phase 4 Trail alignment would be expensive and more complicated from a permitting standpoint and, thus, the timing of its development is uncertain. The length of the Phase 4 segment is about 0.4 mile.

Trail Improvements. The following Trail improvements have been identified and are discussed more thoroughly in Appendix 3K:

- The Trail surface would be compacted gravel and routine maintenance would be provided. Trail construction would not involve extending into adjacent marshlands or open water areas and no discharge of materials to these areas would be allowed.

- An interpretive program is being developed by the Applicant which would require access to the shoreline at the southern end of Area C. A staging area is being considered by the Save the Bay Association at this location which would be used for canoers and kayakers as part of an educational program for school children.

- Planting recommendations are being developed by the Applicant to control the spread of invasive exotics and to establish a protective buffer of native vegetation between the proposed alignment and adjacent marsh and open water habitats. The Applicant may plant suitable landscaping in the meadow picnic area (Phase 3 Trail) to enhance this area. Permanent fencing would be landscaped appropriately.

- Fencing and access control features would be installed to provide for the safety of Trail users and the protection of landfill environmental control systems. An entry gate would be installed to preclude access to the Trail by horses and motorized vehicles. Fencing materials would be selected to minimize visual impacts.

- Appropriate signage and interpretive aids would be installed along the Trail alignment.

- Several bench and rest areas would be created and trash and recycling cans would be placed at these locations. Picnic tables may be placed in some areas.

- Restroom facilities may be placed in the parking area and the Phase 2 Trail point area.

- The Trail alignments are landfill maintenance routes and when equipment is utilized on sections of the Trail appropriate safety measures would be taken to protect or exclude Trail use at that time.

Development Schedule. The Trail would be developed in phases, as discussed above, to enable segments of the Trail to open prior to landfill operations ceasing. The currently proposed Trail development schedule is as follows:

Trail Segment	Projected opening date
Phase 1	December 1, 2003
Phase 2	December 1, 2004
Phase 3	December 1, 2007
Phase 4	9 months after securing funding

Actual opening dates for Phases 2 and 3 could vary depending on the progress of landfill filling and closure. It is expected that the lower section of Phase 2 could be opened at the same time as Phase 1.

Hours of Trail Operation. The Trail would be open from dawn until dusk during those days business operations (e.g., the landfill, Composting Facility, proposed WRC) are open. The Applicant reserves the right to limit access to the Trail or to close the Trail at any time as may be required for public safety, Trail maintenance, and for landfill management. The WCCSL currently closes on New Years Day, 4th of July, Thanksgiving and Christmas.

4. Schedule

According to the most recent remaining capacity analysis by the Applicant, the landfill will close in 2005, assuming the landfill height is increased to 160 feet msl and the WRC is sited as proposed[58]. The WRC would be opened in 2005, as well. By 2008, it is anticipated that the WRC would be at 85 percent capacity and other BMPC operations would be at 75 percent of capacity. By 2015, all BMPC activities would be at full capacity.[55]

5. Permits and Approvals

Numerous permits regulate activities at the WCCSL. The following list shows which existing permits will be affected by the proposed Project application:

Permit title and number	Issuing agency
Conditional Use Permit, 1993 No. 92-53	City of Richmond
Land Use Permit, 1993 No. 2054-92, 1995 No. 2043-94	Contra Costa County
Solid Waste Facility Permit, Landfill, 1998 No. 07-AA-001	LEA/CIWMB
Composting Facility Permit, 1996 No. 07-AA-0044	LEA/CIWMB
Waste Discharge Requirements, 2002 Order No. R2-2002-0066	RWQCB
NPDES Permit No. 2 07S005532	RWQCB
Authority to Construct/Operate (annual) Plant No. 1840	BAAQMD

A new LEA/CIWMB Solid Waste Facility Permit will be issued (in addition to the two shown above) to include the regulated operations of the WRC. SWFP No. 07-AA-001 will be revised to include the landfill modifications as well as all other BMPC additions and changes, exclusive of the Composting Facility and the WRC. Tables 3-1 to 3-3 summarized the permit changes that would be required. In addition, a permit would be required from the Bay Conservation and Development Commission for development of the Trail.

CHAPTER 4

LAND USE, PLANS, AND POLICIES

This chapter addresses land use impacts and the consistency of the proposed Bulk Materials Processing Center (BMPC) use permit amendment changes and related actions (Project) with local use plans and policies. The following analysis is based on updated surveys of existing and future land uses at and near the West Contra Costa Sanitary Landfill (WCCSL) site, and a review of applicable land use plans and policies.

A. SETTING

The characteristics of the WCCSL 340-acre site are described in detail in Chapter 3 of this Environmental Impact Report (EIR). The regional setting of the WCCSL, Project site land use, and immediately surrounding land uses are discussed below. For purposes of this discussion, the EIR for closure of the Hazardous Waste Management Facility (HWMF, State Clearinghouse No. 95063005) is incorporated by reference pursuant to Section 15150 of the California Environmental Quality Act (CEQA) Guidelines.[33]

1. Regional

The WCCSL borders San Pablo Bay and is surrounded by the bay and marshland to the north, west, and south, and by various industrial and commercial uses to the east. Land use within 1 mile of the WCCSL consists of the following:

- 49 percent open water, marsh, and field
- 18 percent light industry
- 21 percent landfill and adjacent West County Wastewater District (WCWD) Wastewater Treatment Plant
- 9 percent agriculture
- 3 percent residential.

Within the residential category, there are two homes located next to a chemical manufacturing plant along Goodrick Avenue between Parr Boulevard and Protectocoat Lane. These homes are the nearest residences to the WCCSL and are approximately 1 mile to the east. The nearest neighborhood is located also about 1 mile southeast of the WCCSL.

2. Project Site

Figure 4-1 shows existing land use near the WCCSL. As shown on Figure 4-1, the northern portion of the WCCSL is within the unincorporated Contra Costa County (County) area, while the remainder of the site is within Richmond City (City) limits. The WCCSL contains two Waste Management Units—an inactive Class I waste disposal area (HWMF) which has been closed pursuant to Federal and State regulations, and the Class II municipal solid waste landfill. Existing BMPC recycling activities include a green and wood waste processing area, a composting area, and facilities for concrete/asphalt crushing and recycling.

Area A contains the Class II landfill gas (LFG) power plant, a plant for treatment of leachate from the HWMF, and a former area for stockpiling clay soils. Area B is a totally enclosed pond south of the Class II landfill that receives surface drainage from the WCCSL. Area C, west of the landfill, is a lagoon open to San Pablo Bay. Area C was originally intended to be used for expansion of the Class II landfill, but such plans were subsequently abandoned by WCCSL.

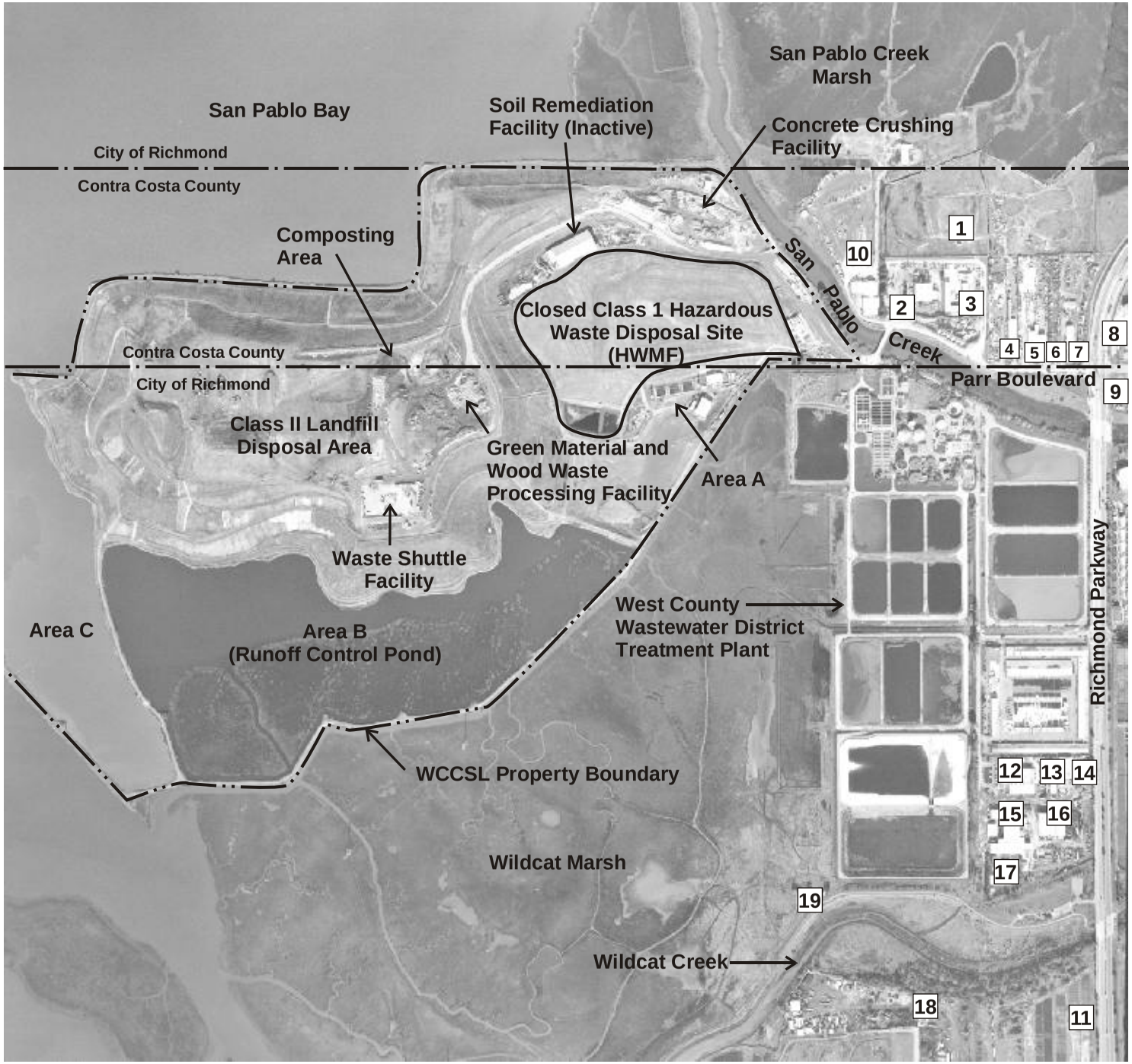
3. Surrounding Land Use and Development

Industrial, commercial, and some residential developments exist in the vicinity of the WCCSL. More detailed discussions of existing and future land use are given below.

a. Existing. A variety of commercial and industrial land uses exist near the WCCSL (Figure 4-1). The WCWD Wastewater Treatment Plant occupies the greatest land area. Treated leachate from the HWMF and untreated leachate from the Class II landfill are piped to the WCWD facility for treatment and/or disposal. The facility would also be the source of biosolids for the Applicant's proposed Soil Reclamation and Biosolids/Dredged Material Spreading activities.

The Richmond Sanitary Service Corporation Yard is to the east, and San Pablo Creek comes within 30 feet of the WCCSL to the east and southeast. The major industries in the area include horticultural growers (Color Spot), a material recycling plant (Central IRRF), and the Chevron Refinery. The Richmond Parkway is a major roadway in the area that extends from Interstate 580 near the east approach to the Richmond-San Rafael Bridge northeasterly to Interstate 80 near Hilltop Drive.

The Richmond Parkway is the major approach roadway to the WCCSL. Figure 4-2 shows the alignment of the Parkway along with locations of adjoining residential land uses. Appropriate sections of this EIR consider these residential land uses relative to compatibility with proposed Project operations and/or projected increases in Project-related traffic. To the south of Parr Boulevard, several areas of older residential uses exist with the closest to the WCCSL (about 1 mile away) being a two-story apartment building on the north side of the Gertrude Avenue/Richmond Parkway intersection. Approximately 7- to 8-foot-high sound walls were installed in these areas when the Parkway was constructed to lower noise levels. To the



Legend of Owners

1. Vacant
2. Fahy
3. Bayview Refuse Services, Inc.
4. Tru Green Land Care
5. Hertz Equipment Rental
6. Carlos Auto Wreckers
7. Freeman's Towing
8. Al Cal Piggyback Service Co.
9. EBMUD North Richmond Water Reclamation Plant
10. Richmond Sanitary Service
11. Color Spot
12. Maggiara Baking Company Shamrock Exports
13. Arnolds Cabinets, Inc.
14. Commercial Seed Co., Inc.
15. EPIC Plastics Urban Resource Recycling
16. C.W. Trucking
17. Lucky Cup
18. Auto Wreckers
19. Wildcat Creek Viewpoint

N

1" ≅ 840'

Source of aerial photo: WCL, January 2003

Figure 4-1 Existing Land Uses Near the WCCSL

Source: Scheidegger & Associates, July 2003

Figure 4-2 Residential Land Use Adjoining the Richmond Parkway

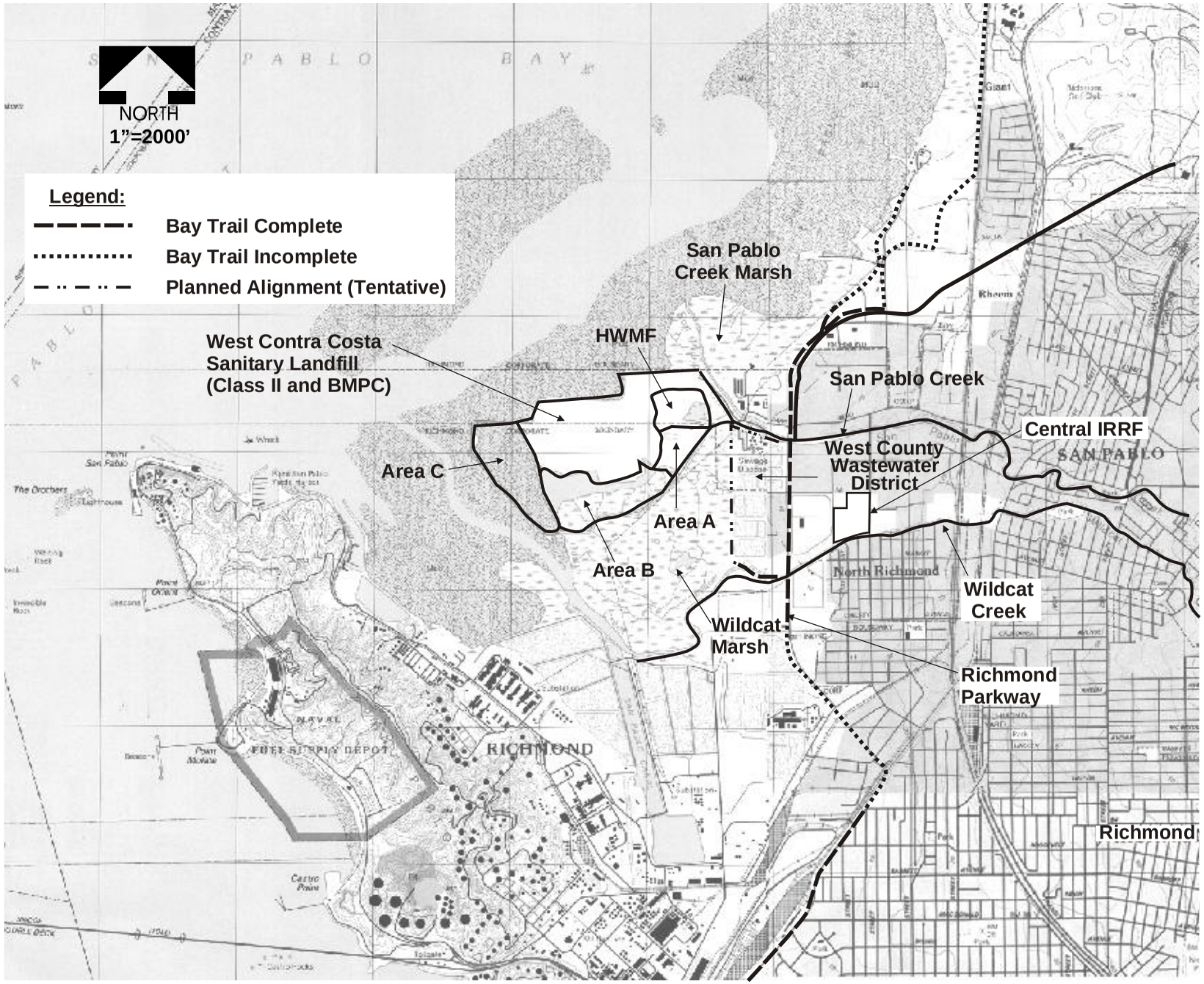
north of Parr Boulevard, newer residential uses exist with the closest being about 1.7 miles from the WCCSL. With the exception of the residential use along the north side of the Hilltop Drive/Richmond Parkway extension, these residential uses are either set back from the Parkway about 100 feet with sound walls, or below grade. These features help to reduce exposure to traffic-generated noise from the Parkway. The residential land use at the Hilltop Drive/Richmond Parkway extension is not significantly set back nor is there a sound wall.

b. Future. To assess the potential impacts associated with future development, a cumulative projects list was developed. The list was developed in consultation with County and City Planning Department staffs, as well as from a review of recent EIR documents. As provided for in Section 15130(b) of the CEQA Guidelines, either these projects or appropriate planning projections are used as a basis for the cumulative impact assessment in this EIR. The cumulative projects list includes the following:

- Central IRRF
- EBRPD Regional Trail System
- San Francisco-to-Stockton (S.F. Baldwin) Ship Channel Phase III Deepening Project
- Richmond Marine Link Pipeline Project
- Miscellaneous residential/commercial/industrial projects.

Brief descriptions of these projects are presented below.

Central IRRF. A discussion of the Central IRRF was included in Chapter 2, Section B2(a) and in Chapter 3, Section A3. The Central IRRF, located at 101 Pittsburg Avenue about 1 mile from the WCCSL (Figure 4-3), is a recycling center/transfer station operated by West County Resource Recovery, Inc. Operations at the Central IRRF include a materials recovery facility, a transfer station, a public buyback/drop-off center, and a household hazardous waste collection facility. Through Solid Waste Facilities Permit (SWFP) No. 07-AA-0034, the Central IRRF is permitted to accept up to 1,200 tons per day (TPD) of franchised residential and commercial waste, self-hauled waste, and source separated recyclables. Given the Applicant's proposed Waste Recycling Center (WRC), there is uncertainty over the fate of waste flow once the Class II landfill closes and whether the Central IRRF's full design capacity will be utilized. The decision on waste flow is a policy decision and will be made by the West Contra Costa Integrated Waste Management Authority (Authority).



Source: ABAG-BayTrail December 2002

Figure 4-3 Central IRRF Location and Bay Trail Alignment

EBRPD Regional Trail System. The East Bay Regional Park District's (EBRPD's) Master Plan calls for the development of a regional bay trail system that will provide an East Bay link on the proposed continuous shoreline trail around the San Francisco Bay. The shoreline trail, which is meant to be sited in natural settings where possible, will be primarily for pedestrian, equestrian, and bicycling uses. For management and planning purposes, EBRPD's regional trail system is divided into a number of Trail Links. The District's 1989 Master Plan calls for one of these links (No. 46) to extend from the Point Pinole Regional Shoreline Park south to Wildcat Creek. The alignment of the trail in this area is subject to change. In addition, spur alignments are being evaluated by EBRPD to provide for greater public access to the shore environment.[40] A tentative planned alignment extends from the Wildcat Marsh viewing platform area north along the western boundary of the WCWD treatment plant property (Figure 4-3).

San Francisco-to-Stockton (S.F. Baldwin) Ship Channel Phase III Deepening Project. The concept of deepening the S.F. Baldwin ship channel section has been considered since the early 1990s. A 10-foot deepening of the S.F. Baldwin ship channel from North San Francisco Bay to the vicinity of Pacheco Creek along the Carquinez Strait was originally proposed to meet the needs of refineries and terminals in north Contra Costa County and southern Solano County, allowing deeper draft vessels to access those facilities. An Administrative Draft EIR/Environmental Impact Statement (EIS) on this project was prepared in October 1995. Environmental concerns, however, led the beneficiaries of the proposed dredging (the oil industry) to develop an alternative approach to transporting petroleum products to and from the affected refineries and terminals in the North Bay as described below.

Richmond Marine Link Pipeline Project. This alternative involved proposed construction of a new marine terminal in the Point San Pablo area for receiving the oil, and use of an existing PG&E pipeline that would serve the refineries and terminals. Substantial dredging would be required (up to 40,000 cubic yards [CY] for the terminal/pipeline project or up to 9 million CY for the channel deepening project). This alternative has also been abandoned.

More recently, the Port of Stockton has been working with the Army Corps of Engineers to gauge potential for a 5-foot deepening of the Baldwin Channel, as well as the Stockton Channel, to enable larger ships to access the port. Studies are in progress to assess various environmental and technical issues. There is the potential that dredged material could be used at the WCCSL as part of the Biosolids/Dredge Material Spreading operation; however, the implementation of this channel deepening project is uncertain and still years away.[41]

Miscellaneous Residential/Commercial/Industrial Projects. Figure 4-4 shows the locations of reasonably foreseeable future development projects in the vicinity of the WCCSL. These projects were obtained from the Administrative Draft EIR for the Richmond Parkway Commerce Center.[28] Brief descriptions of these projects are as follows:

Source: Environmental Science Associates, reference 128

Figure 4-4 Locations of Reasonably Foreseeable Future Development Projects

- **Richmond Parkway Commerce Center**—Light industrial development on a 22.5-acre site with 250,000 square feet of development at build-out, located between the Richmond Parkway and Giant Road.

- **Bayview Business Park**—A five-building, 553,000-square-foot office project located at the northerly terminus of Goodrick Avenue.

- **Acacia**—A 60-acre site consisting of 504 apartment units and a 103,000-square-foot retail center located at Richmond Parkway at San Pablo Center.

- **Pinole Pointe**—A project consisting of 211 single-family dwellings located at Atlas Road and Richmond Parkway.

- **Jack Parker Truck Site**—Up to 200 units of housing with some ancillary commercial (20,000 square feet) buildings located along Giant Road in the City of San Pablo.

B. REGULATORY AND PLANNING FRAMEWORK

The regulatory and planning framework is discussed below. Local plans and policies are reviewed and a discussion of applicable regional plans is provided.

1. Local Plans and Policies

The HWMF provides a thorough discussion of local plans and policies and that discussion is herby incorporated by reference pursuant to Section 15090 of the CEQA Guidelines.[33] In summary, the County General Plan land use designation for the WCCSL is open space (OS) and Class I Waste Disposal;[12] zoning is P-1 Planned Unit Development (North Richmond P-1). The County Board of Supervisors adopted the "North Richmond P-1" zoning in December 1994. This zoning pulls together all of the down development criteria that would be required to review a variety of applications related to planning ordinances and other regulations. The North Richmond P-1 provides that the Integrated Resource Recovery Facility BMPC Land Use Permits (LUP) 2054-92 and 2053-92 and amendments shall govern uses permitted for the BMPC project sites rather than this ordinance.[33] The County General Plan and the North Richmond P-1 provide for the continuation of waste disposal and recyclables processing at the WCCSL Class II landfill site for an unspecified interim period. The WCCSL is located outside the Urban Limit Line as designated in the County General Plan.

The WCCSL is within the North Richmond Shoreline Planning Area. In 1993, the North Richmond Shoreline Specific Plan was prepared to guide and regulate development in the area.[5] The WCCSL Class II landfill area is designated as Parks and Open Space as the long-term future

use of the site. This designation allows continued use of the site for recycling purposes for an interim period up to 30 years. A key objective of the North Richmond Shoreline Specific Plan is to:

- Provide for public access along the shoreline, which includes pedestrian and bicycle facilities and is consistent with EBRPD and Association of Bay Area Governments' alignments both north and south of the plan area for the Bay Trail. The plan will also coordinate with pedestrian/bicycle provisions included in the design of the Richmond Parkway and provide convenient links to inland areas.

2. Regional Plans

There are several regional planning documents related to land use that are relevant to the proposed Project. These include the Bay Conservation and Development Commission (BCDC) San Francisco Bay Plan, the EBRPD Master Plan, and Waste Management Plans, which are discussed below. The Regional Water Quality Control Plan and applicable regional air quality plans are discussed in Chapters 6 and 10, respectively.

a. San Francisco Bay Plan. The original San Francisco Bay Plan (Bay Plan) was completed and adopted by BCDC in 1968.[18] The Bay Plan has since been amended on numerous occasions. The Bay Plan was prepared by BCDC over a 3-year period pursuant to the McAteer-Petris' Act of 1965. The McAteer-Petris Act directs BCDC to exercise its authority to issue or deny permit applications for placing fill, extracting materials, or changing the use of any land, water, or structure within the area of its jurisdiction, in conformity with the provisions and policies of both the McAteer-Petris Act and the Bay Plan.

BCDC jurisdiction is defined as the band of land 100 feet shoreward from the line of highest tidal action, and specified tributary creeks. In addition, BCDC has advisory policies relating to activities in diked historic baylands for consistency with their policies, and submits its comments to the U .S. Army Corps of Engineers for the Corps' consideration. Relative to the WCCSL, BCDC's jurisdiction includes Area A (policies are advisory in this area), and a 100-foot band of land that extends from the southwest corner of Area A north along the western and northern border of the WCCSL site. Thus, the proposed Public Access Trail (Trail) would require a BCDC permit.

Map No. 3 of the Bay Plan designates the WCCSL site as a "Waterfront Park, Beach" priority use area. BCDC's policy is that priority consideration be given to beach development after the landfill closes. Such a policy minimizes the necessity for future Bay fill to create new sites for these uses. Further, Section 66602 of the McAteer-Petris Act and the Bay Plan policies on public access require that maximum feasible public access consistent with a project be provided to and along the shoreline of the Bay.

b. EBRPD Master Plan. The EBRPD acquires, preserves, protects, develops, and operates regional parklands in Alameda and Contra Costa Counties in perpetuity for public use.

The original EBRPD Master Plan was prepared in 1973 and later revised in 1980. The latest revision to the Master Plan was prepared in 1989.[34] The Master Plan presents the appropriate policies, goals, guidelines, and programs for meeting the EBRPD objectives and for achieving optimum service to the public.

EBRPD facilities nearest to the WCCSL include the Point Pinole Regional Shoreline Park, 2½ miles to the northeast; and the Wildcat Creek Viewpoint, located about 4,000 feet (3/4 mile) southeast of the Project (Figure 4-1). The EBRPD regional trail system in the North Richmond area was discussed previously in this chapter.

c. Waste Management Plans. In 1989, the California Legislature enacted AB 939, the California Integrated Waste Management Act (Public Resources Code 40000 et seq.), a statute that laid out extensive new solid waste planning responsibilities and waste diversion requirements for cities and counties in California.

Under this statute, cities are required to prepare two documents. The first required document is a Source Reduction and Recycling Element (SRRE) demonstrating how by 1995 each city will achieve a 25 percent rate of waste diversion from landfill disposal and by 2000 a 50 percent rate of waste diversion. The second required document is a Household Hazardous Waste Element (HHWE) indicating how each city will comprehensively manage its household hazardous waste.

Counties must also prepare SRREs and HHWEs. The county SRRE document must show how the same rates of waste diversion will be achieved in the unincorporated area of a county; and the county HHWE must show how hazardous wastes generated by households in the unincorporated area will be managed. Counties, moreover, must also prepare two additional documents. The first of these is a Countywide Siting Element (CSE), a document that will demonstrate how a county can guarantee a minimum of 15 years of solid waste disposal capacity for the cities and unincorporated area within its boundaries; the second additional required document is the Countywide Integrated Waste Management Plan (CIWMP). This document summarizes key solid waste issues and programs identified in the SRREs, HHWEs, and the CSE prepared by the County and its cities. AB 3001 also required jurisdictions to submit a Non-Disposal Facilities Element (NDFE).

SRREs and HHWEs have been prepared by local communities. The County's CIWMP was approved by the CIWMB on December 15, 1993. The required 5-year review of the CIWMP was approved by the CIWMB on November 19, 2002. The County's CIWMP consists of the CSE, the SRRE, the HHWE, and the NDFE. The WCCSL and the BMPC are designated in the CIWMP (pages I-34 and I-35). The WCCSL is also designated in the NDFE (Table II). In the NDFE, the BMPC is described as providing composting of vegetative wastes and processing of inert solids, while the Central Facility of the IRRF is designated as a transfer station, materials recovery facility, public buyback center, and an optional household hazardous waste collection facility.

Amendments to AB 939 enacted in 1992 allow cities and counties to form regional agencies to implement the requirements of the law. The West Contra Costa Integrated Waste Management Authority (Authority) was formed on April 2, 1991, as a joint powers agency by the cities of El Cerrito, Hercules, Pinole, Richmond, and San Pablo. The Member Cities authorized the Authority to prepare a single Regional Integrated Waste Management Plan (Regional Plan) and a single Regional Education and Public Information Program (Program) for the area within the boundaries of the Authority. The Final Regional Plan and Program was published in August 1995 and subsequently approved by the CIWMB in December 1995.[118]

The individual SRREs for all Member Cities referenced above are replaced and superseded by the Regional Plan and Program. The WCCSL Class II landfill is designated in the Disposal Facility Capacity Component (Chapter 7) of the Regional Plan and Program. The Central IRRF is designated in the NDFE (Chapter 8). The WCCSL Composting Facility, BMPC, and former Soil Remediation Facility are described in Chapter 1, Introduction, as additional Non-Disposal Facilities which may or may not be selected for receipt of potentially divertible materials received at the IRRF. The BMPC is described as providing concrete, asphalt, and wood waste processing and recycling.

C. SIGNIFICANCE CRITERIA

Guidance for assessing the significance of potential environmental impacts is found in Appendix G of the Guidelines for Implementation of the CEQA. Relative to this chapter, a project will typically have a significant effect on the environment if it will:

- Physically divide an established community.
- Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect.
- Conflict with any applicable habitat conservation plan or natural community conservation plan.
- Displace substantial numbers of existing housing or people necessitating the construction of replacement housing elsewhere.
- Be incompatible with existing land use in the vicinity.

D. IMPACTS AND MITIGATION MEASURES

Land use, plan, and policy issues associated with the proposed Project are discussed in this section.

1. Impacts Considered not to be Significant

The Project would not divide an established community, not conflict with a habitat conservation plan or natural community conservation plan, or displace substantial numbers of existing housing or people. County and City planning documents provide for the continuation of waste disposal and resource recovery activities at the WCCSL. Increased shoreline public access is specifically identified in the North Richmond Shoreline Specific Plan and are conditions of approval in the County and City use permits. The proposed Project is consistent with local plans and policies. The proposed Trail increases public access to the Bay and would be a major addition to the Bay Trail. The proposed Project is consistent with the EBRPD Master Plan.

2. Land Use

IMPACT 4-1. The proposed Project includes a variety of activities and facilities the operation of which could make the WCCSL incompatible with surrounding land use. This impact is considered to be less than significant.

The WCCSL has been operating in compliance with State and local permits for many years without conflicting with surrounding land use. This area of North Richmond is predominately industrial and open space land uses. The nearest residential land use is about 1 mile from the WCCSL and well buffered by this distance and intervening development. In the remaining chapters of this EIR, with one exception no significant impacts have been identified for the proposed Project which cannot be reduced to a less-than-significant level. The one exception is exceedance of the Bay Area Air Quality Management District (BAAQMD) threshold value for particulate (PM_{10}) emissions. As discussed in Chapter 10, Air Quality and Odor, for purposes of this EIR, this impact is significant and unavoidable. The proposed Project would be subject to BAAQMD's New Source Review. During this BAAQMD permitting process, the Project would be evaluated for application of Best Available Control Technology (BACT) and emission offsets for reducing PM_{10} emissions to acceptable levels.

MITIGATION MEASURE 4-1. None required. Mitigation measures for identified Project impacts are included in remaining EIR chapters.

IMPACT 4-2. Implementation of the Trail could expose users to the effects created by other Project activities. This impact is considered to be less than significant.

The proposed Trail has been in the planning stages for many years and has been referenced in several regional and site-specific planning documents, including County and City use permits and the North Richmond Shoreline Specific Plan and associated EIR.[5,6] The Trail is proposed to be implemented in three or four phases and would circle the WCCSL. It would provide numerous benefits including increased shoreline public access, and recreational and educational opportunities.

Users of the Trail are generally not considered to be "sensitive receptors" in this EIR because their presence is elective and short-term in nature. However, the presence of users is considered in appropriate impact categories in other chapters of this EIR. The issues of greatest importance to the Trail users are as follows:

- **Noise.** At the beginning of the Phase 1 alignment, Trail users would be exposed to a variety of operations in WCCSL Area A, such as the LFG power plant, and the leachate treatment plant for the closed HWMF. In this area, users would be exposed to a noise level up to 80 decibels (80 dBA). However, this exposure is temporary and would not be an annoyance. Based on the discussion in Chapter 12, Noise, the vast majority of the Trail users would be exposed to noise levels consistent with the requirements of the County and City General Plans.

- **Odor.** The application of liquid biosolids to closed Class II landfill sideslopes has the potential to create nuisance odor conditions that would be detectable by Trail users. However, as discussed in Chapter 10, Air Quality and Odor, a liquid biosolids spreading demonstration project would be conducted that must demonstrate, prior to full-scale implementation, that liquid biosolids can be spray applied without creating nuisance odors.

- **Public Health**. The end of the Phase 1 alignment, and the Phase 2 and 3 alignments, would have exposure to landfill areas where either liquid or dried biosolids would be applied to sideslopes. Thus, Trail users would potentially be exposed to bioaerosols as well as direct contact with these materials. However, as discussed in Chapter 11, Health and Safety, land application of biosolids is subject to Federal and State regulations. A variety of site controls and use restrictions would be implemented to reduce public health concerns to less-than-significant levels (described in Chapter 11).

- **Traffic and Safety**. As the Phase 3 Trail alignment returns to the proposed parking area, users would be exposed to WCCSL traffic at the entrance area and must cross the main roadway leading to the scale house. A barrier would be placed along the entrance to provide physical separation between the WCCSL entrance and the Phase 3 alignment, and a designated crossing with signage and pavement striping would be

provided for the safety of Trail users. Chapter 8, Traffic and Circulation, includes discussion of other traffic issues.

MITIGATION MEASURE 4-2. None required. Mitigation measures for identified Project impacts are included in remaining EIR chapters.

3. Plans and Policies

IMPACT 4-3. Continuation of waste disposal and resource recovery activities could be inconsistent with the San Francisco Bay Plan. This impact is considered to be less than significant.

Map No. 3 of the San Francisco Bay Plan designates the WCCSL Class II landfill as a Waterfront Park/Beach priority land use area. The Bay Plan has identified upland areas adjacent to the Bay which should be reserved for essential water-oriented land uses, such as a waterfront park, thereby minimizing the necessity for future Bay fill to create new sites for these uses. The proposed Project involves several years of additional disposal capacity at the Class II landfill and expanded resource recovery activities. The ultimate long-term land use for the closed Class II landfill remains as park/open space.

Section 66602 of the McAteer-Petris Act and the Bay Plan policies on public access require the maximum feasible public access consistent with a project be provided to and along the shoreline of the Bay. The proposed Trail would be consistent with these policies.

The proposed Project also includes provisions for applying dredged materials from the Bay to the closed landfill sideslopes. Deposition of dredged materials to upland sites is encouraged by BCDC and is consistent with Bay Plan policies.

Control Measures Incorporated by Applicant: None.

EIR Recommendations:

MITIGATION MEASURE 4-3 None required.

IMPACT 4-4. Proposed Project components are not consistent with the County or Regional NDFE. This impact is considered potentially significant.

The existing BMPC at the WCCSL is included in the County NDFE as a material recovery facility, but not as a transfer station. The existing BMPC is included in the Regional Plan and Program as additional Non-Disposal Facilities which may or may not be selected for receipt of potentially divertible materials received at the Central IRRF.

Control Measures Incorporated by Applicant: None.

EIR Recommendations:

MITIGATION MEASURE 4-4

a) The County and Authority would revise their NDFEs to include the proposed WRC at the BMPC as a transfer station (non-disposal facility) pursuant to Article 7, Chapter 9, Division 7 of Title 14 of the California Code of Regulations.

IMPACT 4-5. Implementation of expanded operations at the BMPC and Central IRRF, and continued landfill operations at WCCSL through January 2006 present the potential for continued or increased illegal dumping activity in the North Richmond area. This impact is considered potentially significant.

At WCCSL, expansion of BMPC operations is proposed along with continued landfilling operations until January 2006. With the possible full operation of the permitted Central IRRF the potential exists for continued, or increased, illegal dumping activity in North Richmond (both City and County areas) on private lots and in the public right-of-way (e.g. roadways).

Starting with WCCSL in the early 1950s and later operation of the Central IRRF in the early 1990s, North Richmond is host to two solid waste facilities within one-half to three-quarters of a mile part. It is the only community in the County that hosts two facilities in such close proximity. Illegal dumping of debris and litter is a persistent problem in North Richmond. Illegal dumping is unsightly and potentially unsanitary. Illegal dumping creates a negative image for the community of North Richmond and is a source of concern among its residents.

Factors that contribute to illegal dumping in the North Richmond area include, but are not limited to:

- Less convenient facility operating hours
- Disposal rates some consider too costly
- Willful dumping by unscrupulous individual haulers
- Lack of customer awareness of the acceptable waste that can be disposed at local facilities. When a load is rejected, it may be illegally dumped in the community.

The fact remains that North Richmond, the lowest income neighborhood in Contra Costa County, bears a disproportionate burden of illegal dumping. While North Richmond has less than 2 percent of the County roadways, the costs to clean-up illegally dumped waste

on North Richmond roadways comprised 20 percent of the total County-wide costs in fiscal year 2002/2003.

Illegal Dumping can be an Environmental Justice Issue

In October 2000, the County Board of Supervisors endorsed the application of environmental justice as defined in the California Government Code Section 65040.12, which states, "…'environmental justice' means the fair treatment of people of all races, cultures and incomes with respect to the development, adoption, implementation and enforcement of environmental laws, regulations and policies."

Illegal dumping can be an environmental justice issue. Illegal dumping "hot spots" are often found in low-income, minority communities such as North Richmond located near landfills. The original siting of many landfills, including the WCCSL, was accomplished long before the concept of environmental justice was considered.

Costs of Illegal Dumping

The collection of debris represents a substantial cost to the County for clean-up. Contra Costa County Public Works Department (PWD) provided cost figures for fiscal years 1997-1998 through 2002-2003 for collection of debris. The tracking of debris collection costs specifically to the North Richmond area was initiated in fiscal year 2000-2001. County PWD maintains approximately 640 centerline miles of roadway in the county, of which 180 centerline roadway miles are in West County (10.1 miles are in North Richmond). Maintenance responsibilities include collection of debris and litter illegally dumped on County roads. A summary of the cost data is presented in Table 4-1.

Table 4-2 shows debris pickup cost data for North Richmond as a portion of West County and County-wide costs. For fiscal year 2002-2003, the North Richmond debris cost of $209,895 represented about 45 percent of the total West County area debris cost of $463,039, and about 20 percent of the total debris cost county-wide of $1,045,203. Compared to centerline miles of roadway and population, the North Richmond area contains about 1.6 percent of county centerline roadway miles, and the West County area contains about 28 percent of county centerline roadway miles, respectively.

Of the $209,895 expended in fiscal year 2002-2003, approximately 81 percent was spent on labor and equipment, and 19 percent was spent on disposal fees. Costs for North Richmond litter/debris pickup increased from $83,252 in fiscal year 2000-2001 to $209,895 in fiscal year 2002-2003, which is an increase of $127,643 or 153 percent during this three-year period.

Table 4-1. County Public Works Department Debris Pick Up Costs FY 1997/98 to FY 2001/02

Activity description	Fiscal year 2002-2003[a]	Fiscal year 2001-2002[b]	Fiscal year 2000-2001[b]	Fiscal year 1999-2000[b]	Fiscal year 1998-1999[b]	Fiscal year 1997-1998[b]
Debris pickup – Countywide	$360,717	$299,085	$259,724	$203,485	$ 84,360	$44,577
Low level hazardous waste – roadside*	17,432	12,635	8,411			
North Richmond litter/debris pickup**	209,895	142,564	83,252			
Workfare G21 West County	142,953	79,240	90,103	207,474	76,734	21,914
Workfare G31 North County	36,013	40,110	32,653	27,221	12,868	9,695
Workfare G36 East County	242,183	110,528	120,338	65,512	11,417	4,795
Workfare G41 South County	36,010	54,447	17,777	19,343	11,931	2,106
Totals	$1,045,203	$738,609	$612,258	$523,035	$197,310	$83,087

*Environmental Health discontinued the collection of low level hazardous materials for the roadway after fiscal year 1999-2000.

**The tracking of debris collection costs specifically to the North Richmond area was initiated in fiscal year 2000-2001.

Source: a. CCPWD, Joe Yee, E-mail Communication, September 2003.
b. CCPWD, Greg Connaughton, E-mail communication, August 2003.

Table 4-2 County-wide Debris Pickup Costs for Fiscal Year 2002-2003

Work order no.	Activity description	2002-2003 Public Works/General Services costs, dollars		
		Total	Labor, overhead and equipment	Dump fees
2304	Debris pickup - countywide	360,717	330,307	30,410
2315	Low level hazardous waste – roadside[a]	17,432	2,335	15,098
2318	N. Richmond litter/debris pickup[b]	209,895	170,765	39,130
2409	Workfare G21 West County	142,953	132,817	10,137
2410	Workfare G31 Central County	36,013	34,126	1,887
2411	Workfare G36 East County	242,183	233,986	8,196
2412	Workfare G41 South County	36,010	33,475	2,535
Total		1,045,203	937,811	107,392

a. Environmental Health discontinued the collection of low level hazardous materials for the roadway after fiscal year 1999-2000.
b. The tracking of debris collection costs specifically to the North Richmond area was initiated in fiscal year 2000-2001.

Detail of debris pickup – countywide	2002-2003 costs, dollars		
	Total	Labor, overhead and equipment	Dump fees
G21 West County	110,191	103,904	6,286
G31 Central County	109,011	97,063	11,948
G36 East County	131,081	121,104	9,977
G41 South County	8,012	7,326	686
Specialty crews	2,421	908	1,513
Total	360,717	330,306	30,410

Source: CCPWD, Joe Yee Email Communication, September 2003.

Illegal Dumping Hotspots

County Public Works and General Services staff identified locations where illegal dumping occurs most frequently in the North Richmond area. These locations were identified by staff with many years of experience in collection of litter/debris in North Richmond. Some additional sites were identified based on information from the North Richmond community. For purposes of this EIR, locations were grouped into six zones. Each zone contains multiple sites where illegal dumping has occurred. Table 4-3 describes the areas/streets comprising each zone. This listing should not be considered all-inclusive, as illegal dumping patterns are known to change over time. Figure 4-5 shows the location of these hotspots.

Mitigation Fee

At the time the Central IRRF was permitted in 1993, the facility was expected to process all solid waste in West County after the landfill closed. The Central IRRF is required to pay a Host Community Mitigation Fee as a condition of County Land Use Permit 2053-92. This fee is to be paid on solid waste/processible materials received at the facility to mitigate the general impacts of the IRRF on the adjoining community of North Richmond. Currently, the amount of the fee is $2.72 per ton. The fee was initially $2.00 per ton and has since been adjusted annually to reflect the Consumer Price Index.

Control Measures Incorporated by Applicant: None

EIR Recommendations:

MITIGATION MEASURE 4-5.

a) The agency(ies) with applicable permit authority (County, City, or LEA) and mitigation monitoring responsibility would require that applicable permits contain conditions of approval specifying the following:

- **Mitigation Fee.** The facility operator shall pay a mitigation fee of an amount to be determined by the applicable permitting authority(ies) to defray annual costs associated with collection and disposal of illegally dumped waste and associated impacts in North Richmond and adjacent areas. The mitigation fee should be subject

Table 4-3. Illegal Dumping Hotspots in North Richmond Area

Zone[a]	Zone description
1	Area bounded by Harrold St., Market Ave., **7th** Street , north to Wildcat Creek
2	Area bounded by Silver, North Jade, West Ruby Ave., and 2nd Street
3	Area bounded by Market Avenue, 2nd Street, Chesley Ave., and 7th Street.
4	Market Ave. at, and east of, the SPRR tracks
5	Area bounded by Gertrude Ave., Battery Street, Sanford Ave., and York Street.
6	Area bounded by Alamo Ave., Filbert Street, and the S.P.R.R. tracks

a. See Figure 4-5 for location of zones.

Source: County PWD and GSD and North Richmond Beautification Committee, September 2003.

Figure 4-5 Illegal Dumping Hotspots in the North Richmond Area

to the joint-control of the City and County and should be collected on all solid waste and processible materials received at the facility consistent with the existing mitigation fee collected at the Central IRRF.

- **Agency Coordination.** Facility operator shall participate in County or City task forces and pilot programs established to address illegal dumping in North Richmond and adjacent city areas.

- **Off-Site Debris and Litter Policing.** The facility operator shall provide weekly debris and litter clean-up of Parr Boulevard from the Richmond Parkway to the facility entrance and roads within the "Hotspot Zones 1-6" identified in Table 4-3 and Figure 4-5 of this EIR, and on other access roads as directed by the permitting authority(ies). As needed, the permitting authority(ies) may require more frequent policing to control debris or litter.

- **Littering Signs.** The facility operator shall install and maintain signs noting littering and illegal dumping laws and penalties along Parr Boulevard (the main access road to the facility), and the following other access roads:

  - Richmond Parkway, from Parr Blvd. to Gertrude Avenue
  - Pittsburg Avenue, from Richmond Parkway to 3rd Street
  - Garden Tract Boulevard, south of Pittsburg Avenue
  - Market Avenue, from 1st Street to the S.P.R.R. tracks
  - 3rd Street, from Market Avenue to Grove Avenue
  - 5th Street, from Verde Avenue to Chesley Avenue
  - Battery Street, from Alamo Avenue to Vernon Avenue
  - Kelsey Street at the S.P.R.R. tracks

  The permitting authority(ies) may designate other roads for signage as needed. The text on the signage should be subject to the review and approval of the permitting authority(ies).

- **Hotline.** The facility operator shall establish an Illegal Dumping Hotline phone number for use by residents and businesses to report incidences of illegal dumping in the North Richmond area. The hotline phone number shall be prominently listed on all "littering signs" described in the above Item (c). Reports or complaints shall be investigated within 24 hours. Verified incidents of illegal dumping of litter or debris shall be collected within 24 hours of verification.

- **Reporting Requirements.** The facility operator shall maintain records regarding all complaints/reports and actions taken to respond including locations, dates, and times. Records shall be made available to the County or City upon request.

Implementation of these measures would reduce impacts from illegal dumping to a less-than-significant level.

4. Impacts of Mitigation Measures

Implementation of Mitigation Measure 4-4 would require the County and Authority to revise their NDFEs in conformance with Article 7, Chapter 9, Division 7 of Title 14 of the California Code of Regulations. The required steps for amending the NDFE include preparation of the facility amendments and review by the Local Task Force, adoption of the facility amendments by the local governing body after a public hearing, incorporation of the facility amendment by the County and Authority into the CIWMP and Regional Plan and Program, and transmittal of the facility amendments to the CIWMB for consideration and adoption. Implementation of Mitigation Measure 4-5 would create added work activities and cost for the Applicant, but an environmental benefit would result by helping to address illegal dumping in the North Richmond Area.

E. CUMULATIVE IMPACTS

As with existing land uses, the proposed Project would not be incompatible with the approved or proposed future development in the Project vicinity. As illustrated on Figure 4-4, reasonably foreseeable future development projects are located well to the northwest of the WCCSL. All potential physical environmental effects of the proposed Project on adjacent land uses are addressed and mitigated to the extent feasible in their respective chapters in this EIR. The Trail component of the proposed Project is consistent with EBRPD's regional trail system. Appropriate chapters of this EIR also address the cumulative impacts of the Central IRRF operating at its full design capacity with implementation of the proposed Project. As indicated earlier in this chapter, the decision on waste flow is a policy decision which will be made by the Authority. The County and Authority would need to revise their NDFEs to include the WRC at the BMPC as a transfer station (non-disposal facility). The main environmental issue relates to further traffic congestion at the ramps of I-80 during the commuter peak hours, but managing the Central IRRF and proposed Project-related traffic to avoid the commuter peak hour would mitigate this impact.

CHAPTER 5

GEOLOGY, SOILS, AND SEISMICITY

The geologic, soil and seismic impact evaluation of the proposed Bulk Materials Processing Center (BMPC) use permit amendment changes and related actions (Project) are addressed in this chapter. The geologic environment of the West Contra Costa County Sanitary Landfill (WCCSL) plays a major role in the design and construction of the improvements and in the analysis of issues in this chapter.

A. SETTING

1. Regional

The regional setting of the WCCSL area is discussed in this section. Discussion is included on the physiography, geology, faults, earthquakes, and soils.

a. Physiography. The San Francisco Bay estuary extends from the Golden Gate Bridge to the Sacramento - San Joaquin Delta and includes San Pablo, Richardson, and Suisun Bays. The shorelines of the estuary margins are characterized by low elevation marsh and tide lands that are dominated by marsh flats and meandering creek channels with few isolated areas of higher elevations. Prior to 1850, marshes covered an area of about 860 square miles. Since the Gold Rush era, most pre-existing marshes have been levied or filled; these activities have promoted the erosion of some of the existing marshes and have assisted in the creation of other new marshes by both accident and design. All but approximately an area of 33 square miles of these marshes have been levied or filled during the past 125 years. Concurrently, human activities have caused the delivery of enormous quantities of sediment to the bays, thereby contributing to the creation of nearly 29 square miles of marsh.[70]

b. Geology. The San Francisco Bay Area lies within the Coast Ranges geologic and physiographic province. This province is characterized by northwest-southeast trending valleys and intervening mountain ranges that are structurally controlled by faulting and folding, the result of the collision of the Farallon and North American Plates, which is recorded by rocks of the Franciscan Complex of Cretaceous and Jurassic age (100 to 65 million years old). The subsequent right lateral shearing occurred between the Pacific and North American Plates and is recorded by the younger (Tertiary, 60 to 3 million years old) sedimentary and volcanic rocks of the Berkeley and Oakland Hills and marks a transition to the strike slip faulting that characterizes the present day movement of the San Andreas fault system.

To the west of the San Andreas Fault System lies a less well defined surface feature at the boundary of the Coast Ranges and the Central Valley also associated with seismicity. The Coast

Ranges-Central Valley (CRCV) geomorphic boundary is formed by an active fold and thrust fault zone that generally does not break the surface.[85]

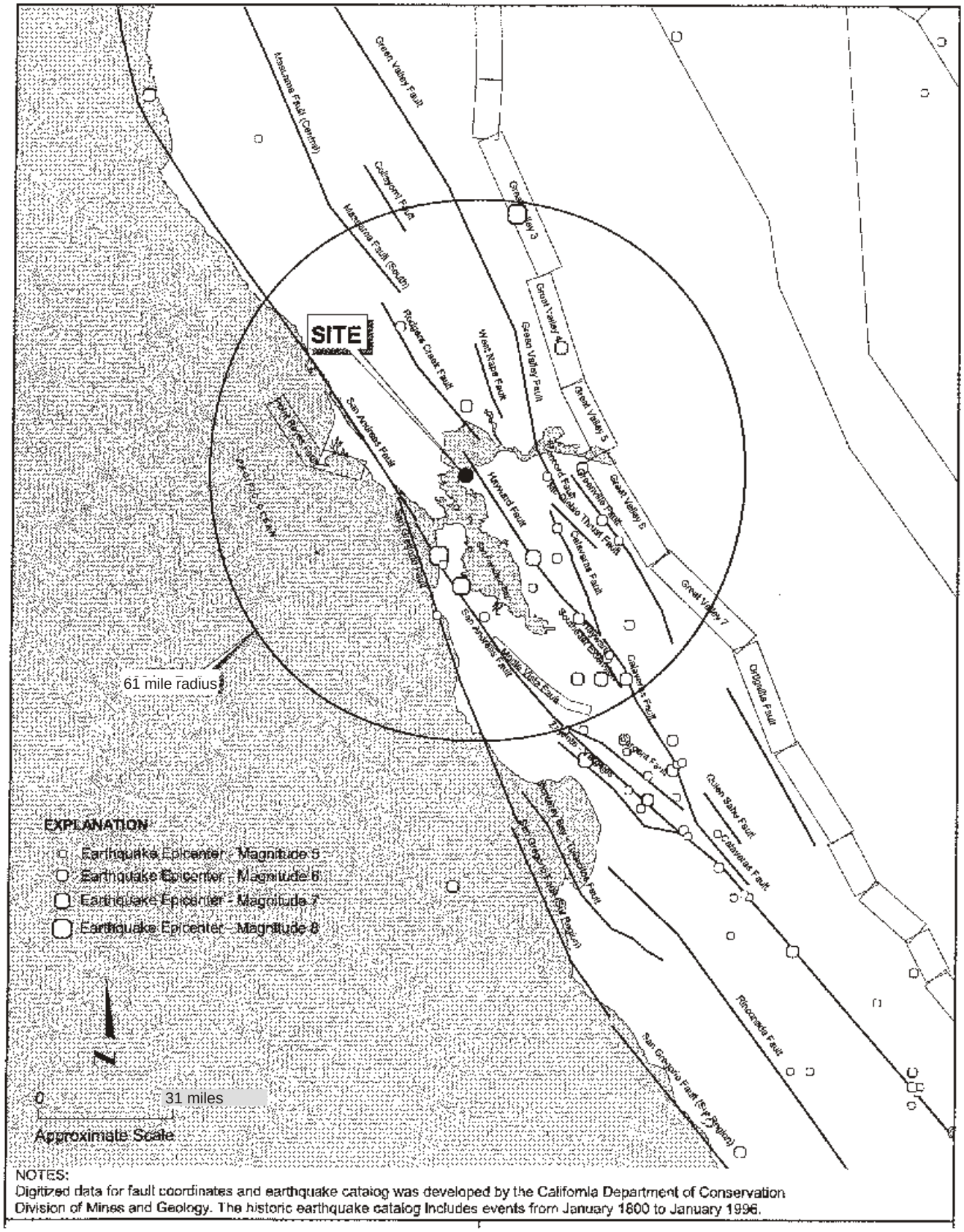
Although the bedrock record indicates a long history of deformation, the present day topography is controlled by movement of the San Andreas fault zone and abrupt changes in the climate. The geology of the San Francisco and San Pablo Bay margins is controlled by the interactions of the Quaternary (past 2 million years) climatological sea level fluctuations and the vertical tectonic deformation of the shorelines. This interaction of tectonics and sea level has controlled the advance and retreat of the Bay's shorelines resulting in their very distinct sequence of sediments.

The Soil Survey of Contra Costa County (County) indicates the native soils in the vicinity of the WCCSL site are Reyes Silty Clay.[97] These soils are found in salt marsh environments affected by tides and are characterized by very poor drainage. Natural slopes are less than 1 percent and elevation is at or near sea level. Vegetation is pickelweed, saltgrass, and some sedges. These soils are always moist with a high water table and are subject to inundation by tides.

c. Faults. The WCCSL is located within the San Francisco Bay Area, which lies at the edge of a major plate tectonic boundary between the North American and Pacific Plates. This boundary is defined by the San Andreas fault zone. There are several known active faults in the vicinity of the project site. Active faults, as included in the Alquist Priolo Earthquake Fault Zones, are characterized by displacement of Holocene deposits (soil or rock less than 11,000 years old), evidence of fault creep and/or well defined seismic activity on traces of known faults.

The major active, strike-slip faults in the area are part of the San Andreas Fault System, which includes the San Andreas, Hayward, Greenville, Green Valley-Concord, and the Calaveras faults. These and other faults of the region are shown on Figure 5-1. For the active faults within a 61-mile radius, the distance from the central Class II Landfill area and estimated maximum Moment magnitude event, are summarized in Table 5-1.[74,91] Moment magnitude is an energy-based scale and provides a physically meaningful measure of the size of a faulting event. Moment magnitude is directly related to average slip and fault rupture area.

Seismicity. The WCCSL is located in one of the most seismically active regions in the nation. A listing of earthquakes of magnitude 5.0 and greater occurring since 1800 in the San Francisco Bay area are presented in Table 5-2.



NOTES:
Digitized data for fault coordinates and earthquake catalog was developed by the California Department of Conservation Division of Mines and Geology. The historic earthquake catalog includes events from January 1800 to January 1996.

Source: reference 74 and 91.

Figure 5-1 Map of Major Faults and Earthquake Epicenters in the San Francisco Bay Area

Table 5-1. Regional Faults and Seismicity

Fault	Approximate distance from WCCSL, miles	Direction from WCCSL	Maximum magnitude (maximum credible earthquake)
Hayward (Total)	2.6	Northeast	7.1
Hayward (North)	2.6	Northeast	6.6
Rodgers Creek	9	North	7.1
San Andreas (1906 Event)	15	Southwest	7.9
San Andreas (Peninsula)	15	Southwest	7.2
West Napa	15	Northeast	6.5
San Gregorio (North)	16	West	7.3
Hayward (South)	17	Southeast	6.9
Concord	17	East	6.5
Green Valley (South)	17	East	6.5
Mount Diablo Thrust	20	East	6.7
Calaveras (North)	21	East	7.0
Point Reyes	24	West	6.8
Greenville (North)	31	East	6.6
Green Valley (North)	25	Northeast	6.3
Great Valley – 6	27	East	6.7
Great Valley – 5	28	Northeast	6.5
Great Valley – 4	29	Northeast	6.6
Greenville (Central)	33	East	6.7
Hunting Creek – Berryessa	35	North	6.9
Monte Vista	37	South	6.8
Greenville (South)	44	Southeast	6.9
Hayward (Southeast Extension)	44	Southeast	6.4
Maacama (South)	44	North	6.9
Great Valley – 7	47	Southeast	6.7
Calaveras (Central)	48	Southeast	6.6
Great Valley – 3	48	North	6.8
Collayomi	57	North	6.5
San Andreas (Santa Cruz Mountains)	58	South	7.2

Source: References 74 and 91.

Table 5-2. Post-1800 Earthquakes with Magnitudes Larger than 5.0 in the Greater Bay Area

Date	Approximate distance from WCCSL, miles	Approximate magnitude
June 1, 1838	25	7.5
January 2, 1856	33	5.3
February 15, 1856	33	5.5
November 26, 1858	42	6.1
July 4, 1861	24	5.6
February 26, 1864	70	5.9
March 5, 1864	28	5.7
May 21, 1864	29	5.3
October 8, 1865	53	6.3
October 21, 1868	24	7.0
May 19, 1889	26	6.0
April 19, 1892	36	6.4
March 31, 1898	16	6.2
April 18, 1906	19	7.9
July 1, 1911	56	6.6
September 5, 1955	52	5.5
October 24, 1955	18	5.4
March 22, 1957	21	5.3
October 2, 1969	37	5.7
January 24, 1980	33	5.8
January 27, 1980	38	5.4
April 24, 1984	59	6.2
March 31, 1986	50	5.7
June 13, 1988	52	5.3
June 27, 1988	64	5.3
August 8, 1989	62	5.4
October 17, 1989	69	6.9

Source: reference 82.

Since 1800, four major earthquakes have been recorded on the San Andreas Fault as follows:

- In 1836, an earthquake with an estimated maximum intensity of VII on the Modified Mercalli (MM) scale occurred east of Monterey Bay on the San Andreas Fault. The estimated Moment magnitude (M_w) for this earthquake is about 6.3. [82]

- In 1838, an earthquake occurred with an estimated intensity of about VIII-IX (MM), corresponding to a M_w of about 7.5.

- The San Francisco earthquake of 1906 caused the most significant damage in the history of the Bay Area in terms of loss of lives and property damage. This earthquake created a surface rupture along the San Andreas Fault from Shelter Cove to San Juan Bautista approximately 250 miles in length and a maximum lateral displacement of 21 feet. It had a maximum intensity of XI (MM), an M_w of about 7.9 with an epicenter approximately 15 miles southwest of the WCCSL, and was felt 344 miles away in Oregon, Nevada, and Los Angeles.

- The most recent earthquake to affect the Bay Area was the Loma Prieta earthquake of October 17, 1989, in the Santa Cruz Mountains with a M_w of 6.9, approximately 69 miles south of the WCCSL.

The Vacaville-Winters earthquake of 1892 occurred on the CRCV boundary approximately 29 miles north of the WCCSL, and had an estimated magnitude of 6.8 (M_w).[75,83] Two after shocks were reported in 1892 of magnitudes 5.8 and 6.4 in the vicinity of Vacaville. Other activity on the CRCV includes a magnitude 6.3 event near Antioch, approximately 12 miles northeast of the site in 1889, and a magnitude 5.9 event in Paterson, approximately 45 miles southeast of the site in 1866.

In 1999, the Working Group on California Earthquake Probabilities (WGCEP) of the United States Geological Survey compiled the earthquake fault research for the San Francisco Bay Area in order to estimate the probability of fault segment rupture. They have estimated that the overall probability of a Richter magnitude 6.7 or greater earthquake occurring within the next 30 years is 70 percent. The highest probabilities are assigned to the San Francisco Peninsula segment of the San Andreas Fault and the northern Hayward/Rodgers Creek Faults (21 and 32 percent, respectively). The Calaveras Fault was assigned a probability of 18 percent, and the Greenville and Concord-Green Valley faults were each assigned probabilities of 6 percent.[91]

Ground Rupture. The WCCSL site is located in the tectonically active San Francisco Bay region where historic ground rupture associated with earthquakes has occurred on several active faults and/or faults subsidiary to the main active traces. These ground ruptures were

extensively documented for the 1906 San Francisco Earthquake and for earthquakes since that time. However, several earthquakes that occurred during the early establishment of San Francisco Bay area are poorly documented.

Seismic Effects. Earthquakes have primary and secondary effects, which are important considerations in the evaluation of the proposed Project. Primary effects include fault creep, the slow accumulation of strain sometimes measurable at the ground surface, and rapid earthquake-induced fault rupture and strong ground shaking. In the case of the strike slip faults of the San Francisco Bay Area, fault rupture and creep affect a narrow, roughly linear area of the ground surface. Strong ground shaking is the result of large magnitude earthquakes and can be felt over wide areas extending for tens to several hundred miles from the epicentral region.

The secondary effects of earthquakes include vibrational damage to structures, liquefaction, landslides, fissuring, lurching and lateral spreading. The active faults in the region that are capable of producing the most significant ground shaking at the WCCSL site are the Hayward and San Andreas faults. EMCON/OWT (consultants for West County Landfill, Inc. [Applicant]) presented median peak ground accelerations (PGAs) for rock of 0.52g and 0.22g for maximum credible earthquake (MCE) events on the Hayward (M_w=7.1) and San Andreas Faults (M_w=7.9).[52]

Intense groundshaking during a large earthquake should be expected at the WCCSL site. The actual ground motions depend on the magnitude of the earthquake, the distance to the source, and the local soil conditions. For sites within a few miles of a fault rupture, the intensity of the ground shaking also depends on the direction of fault rupture relative to the site. These are discussed further in the next section.

Liquefaction is a “quicksand” condition that occurs when a loose, water-saturated sandy soil is subjected to dynamic loading that results in an increase of the pore water pressure and subsequent loss of shear strength and liquid behavior. The sandy soils most susceptible to liquefaction are situated at shallow (less than about 50 feet) depths. The temporary high pore water pressures sometimes result in sandy material being transported along horizontal or vertical conduits through the surficial soils as sand boils or volcanoes. The consequences of liquefaction include vertical and lateral deformation, and loss of bearing. Normally firm, but wet, ground materials take on the characteristics of liquids. Liquefaction-induced lateral deformation can occur on sloping ground and along embankment slopes. Liquefaction potential of a saturated granular soil is dependent on its relative density, fines content, earthquake magnitude, and the level of shaking. A discussion of liquefaction relative to the Class II landfill site is included in Section D of this chapter.

Maximum Credible Earthquakes. The MCE is the maximum earthquake magnitude that could occur under the presently known geologic framework. The probability of occurrence of that event is not considered. State regulations (California Code of Regulations, Title 27 [27 CCR]) require Class II Landfill facilities be designed to withstand the MCE without

damage to the building foundations or to structures which contain leachate, surface drainage, extracted groundwater, or landfill gas (LFG). A summary of the MCE for nearby active faults is included in Table 5-1.

2. Project Site

More site-specific information on the geologic setting of the WCCSL site is presented in this section.

a. Geology. The WCCSL lies within a geologic province of the San Francisco Bay named the "Richmond Basin," bounded by the San Pablo and Hayward faults. Differential movement along these bounding faults has down dropped the area now occupied by the Bay and uplifted the blocks containing the Berkeley and Oakland Hills. This differential uplift probably occurred approximately 2 to 3 million years ago, during the early stages of movement on the Hayward fault. Interaction between the eroding sediments of the uplifting hills and fluctuating sea levels caused deposition of the multiple alluvial fans that coalesced to form the Bay marginal plain.[70,71] Bedrock "islands" that occur within this plain are the result of differential weathering caused by the rivers that intermittently flowed across the Bay floor during periods of lower sea level.

b. Subsurface Conditions. As discussed below, the geologic units at the WCCSL site are typical for the areas of the bay margin, and include fill material (including Landfill deposits), Younger Bay Mud, Old Bay Mud and other sediments, overlying Franciscan Bedrock. This section presents a synopsis of the site stratigraphy (the order and position of strata, a bed or formation of sedimentary rock). The primary significance of the site stratigraphy for the proposed height increase and other improvements relates to compression, consolidation and strength of the waste and Young Bay Mud, which can result in settlement and slope stability problems.

Numerous studies at the WCCSL have provided subsurface geotechnical and geologic data. The reported data include exploratory soil boring logs, well installation logs, and cone penetrometer test (CPT) soundings. CPTs are used to measure the relative stiffness of soil. Borings and CPTs were performed by various consultants, as referenced by Wahler (1994), and EMCON/OWT, Inc. (2003). The general stratigraphy beneath the Class II landfill, including the existing and proposed waste, is discussed below.[52]

Fill Material. The artificial fill materials at the Class II landfill primarily include municipal solid waste (including construction demolition debris and self-hauled waste), industrial waste, and sewage sludge. However, municipal solid waste (MSW) accounts for approximately 70 percent of the waste disposed. Clean soil is also present within the fill that was placed as intermediate and final cover layers. The landfill is presently permitted for fill placement up to elevation 110 feet mean sea level (msl) on side slopes, gradually sloping up to a topdeck elevation of 130 feet msl. The fill was originally placed directly over the Bay Mud around elevation 0 feet msl, but it has since settled downward. The base of the refuse is currently between about elevation 0 and –20 feet msl. Therefore, the thickness of fill/waste

at the site ranges from zero at the landfill perimeter to about 150 to 160 feet near the central-west side of the landfill.

Refuse thickness at the former Soil Remediation Building, as reviewed by Woodward-Clyde Consultants in 1995, is on the order of 15 to 30 feet, corresponding to between about elevations 18 and –5 feet msl.[90] Since that time, a fill pad about 17 feet high reinforced with geogrid was placed over the refuse for construction of the building. Significant settlement of the ground surface occurred, resulting in an irregular ground surface and damage to the building floor slab.[78]

Refuse is not present at Area A as it is outside of the Class II landfill (Figure 3-1). Very little site-specific subsurface information is available for this location.

A perimeter berm of clean fill surrounds the Class II landfill site. The berm is on the order of 10 feet above adjacent grade. The bottom of the berm extends several feet below grade, as it has settled due to consolidation of the underlying compressible Bay Mud.

Young Bay Mud. Young Bay Mud underlies the artificial fill beneath the Class II landfill and is interbedded with sandy stream deposits. The Young Bay Mud (from here forth referred to as Bay Mud) consists of gray, soft and poorly consolidated, compressible, weak, organic-rich clayey silt to silty clay with moderate to high shrinkage potential. The age of the Bay Mud varies from approximately 9,600 years old to the most recent deposits which are still forming in the Bay.[70] The granular materials within the Bay Mud were deposited as streams flowed into standing water of San Pablo Bay. The sandy zones consist of fine silty sand to fine sand.

The maximum known thickness of the Bay Mud at the Class II landfill site is approximately 70 feet at the east and northeast sides. The thickness is approximately 60 feet under the northern and western parts, and it varies from 40 to 50 feet along the southern parts of the landfill. The Bay Mud is about 45 feet thick at the Soil Remediation Building location. The Bay Mud is generally interbedded with sand layers along the east, north, and western portions of the landfill. The sand layers were not observed along most of the southern side of the site. Sand layers up to 20 feet thick occur at depths greater than 100 feet below the site. Clean sands were primarily observed on the north side of the WCCSL site along San Pablo Creek.

Old Bay Mud, Sediments, and Bedrock. The Young Bay Mud at the site is underlain by a stiffer clay unit and other sediments. The clay unit likely corresponds to the unit known locally as Old Bay Mud or Old Bay Clay, however, there is some disagreement as to whether it is actually Old Bay Mud, or an older Holocene clay unit.[84] The Old Bay Mud extends from the bottom of the Young Bay Mud to an Elevation of about –135 feet msl, and varies from approximately 80 to 100 feet in thickness. It is primarily composed of clay and silty clay, and for the purpose of the settlement studies, is considered to be incompressible.

The Old Bay Mud is underlain by old consolidated sediments consisting of alternating sequences of estuarine and alluvial deposits. These sediments are heterogeneous sequences of silt, clay, and sand. The sediments are underlain by Franciscan bedrock at depths of about 150 to 300 feet below the original ground surface (approximately sea level); the actual bedrock depth at the Class II landfill is not well defined.

Groundwater. Groundwater levels within the landfill range from about elevation 0 feet msl at the edges of the landfill to about elevation 20 feet msl near the center of the landfill. The water within the landfill is composed of both natural groundwater and leachate from the MSW. Though desirable, an inward groundwater gradient toward the landfill has not yet been achieved because the Applicant has been unable to pump high volumes of leachate to the West County Wastewater District (WCWD) Treatment Plant due to concerns over elevated levels of chloride salts. As discussed in Chapter 6, Section D3, however, a separate Class II landfill leachate line to the WCWD sludge lagoons will be completed in late 2003. Class II leachate flows will then be routed directly to the City of Richmond Wastewater Treatment Plant. This will enable about 100,000 gallons per day of leachate to be pumped to the plant, thus greatly facilitating the establishment of an inward hydraulic gradient at the Class II landfill.

Leachate Containment Structures. The Bay Mud prevents the downward vertical migration of landfill leachate. Horizontal migration of leachate is prevented by a low-permeability vertical barriers, including a soil-attapulgite slurry wall separating the Class I and Class II landfills, and a Bay Mud barrier wall that surrounds the entire WCCSL site.

The soil-attapulgite slurry wall is 8 to 10 feet south of the former Soil Remediation Building site proposed for the location of the WRC. The wall was built in 1986 as a barrier between the Class I and Class II landfill sites. The slurry wall was constructed to be about 5 feet wide, with the bottom of the wall keyed into the Bay Mud at elevation –10 feet msl.[90]

The Bay Mud barrier wall was constructed in 1977-78 and surrounds the entire WCCSL site. Because subsequent investigations indicated the presence of sand channels beneath the mud barrier, sections of the original Bay Mud barrier were replaced by a soil-cement-bentonite barrier. The Bay Mud barrier and the soil-cement-bentonite barrier have hydraulic conductivities of 1×10^{-6} cm/s or less, a minimum thickness of 3 feet, and are keyed into the underlying Bay Mud at a minimum of 5 feet.[29] Hydraulic conductivities are a measure of a material's ability to transmit water. A lower conductivity value indicates the migration of liquids is substantially restricted.

Fault Occurrence. Active and potentially active faults that could have a significant impact on the Project facilities were previously discussed in Section A1.c of this chapter. However, another fault, the San Pablo Fault, has been mapped in the site vicinity based on bedrock outcrops and offshore features. This fault does not show any geomorphic features associated with Holocene surface displacements, has no seismicity associated with its trace and is not

considered active or potentially active by the California Geological Survey geologists and is, therefore, not considered seismogenic.

B. REGULATORY AND PLANNING FRAMEWORK

There are State of California, County, and City of Richmond (City) policies and regulations that form the regulatory and planning framework for geology, soils, and seismicity. A discussion of these policies and regulations is provided in this section. Because a Class II landfill is a State of California designation, the California code supercedes the Federal code for this Project.

1. State and Regional

Applicable regulations from the 27 CCR and the Regional Water Quality Control Board (RWQCB) are summarized below.

a. California Code of Regulations (27 CCR):

- **§20240(d).** All engineered structures constituting any portion of a waste management unit shall have a foundation capable of providing support for the structures, capable of withstanding hydraulic pressure gradients to prevent failure due to settlement, compression, or uplift, and all effects of ground motions resulting from at least the MCE for Class II units.

- **§20250(b).** Landfills shall be immediately underlain with geologic materials with a hydraulic conductivity of not more than 1×10^{-6} cm/sec and are sufficiently thick to prevent vertical movement of fluid to waters of the state. Natural or artificial barriers shall be used to prevent lateral movement of fluid.

- **§20250(d).** New and expanded Class II units shall have a 200-foot setback from any known Holocene fault. [A Holocene-active fault has experienced movement within about the past 11,000 years.]

- **§20250(e).** New and existing Class II units can be located within areas of potential rapid geologic change only if the RWQCB finds the unit's containment structures can resist failure.
- **§20310(a).** Class II units shall be designed and constructed to prevent migration of wastes from the Unit to adjacent geologic materials, groundwater, or surface water.

- **§20310(d).** New and existing landfills shall be fitted with subsurface barriers, and shall have precipitation and drainage control facilities.

- **§20323.** Construction for all liner systems and final cover systems to be carried out in accordance with a CQA (Construction Quality Assurance) program. This article details the CQA requirements for reports, documentation, laboratory testing, field testing, earthen materials, and geosynthetic membranes.

- **§20330(b).** Clay liners for a Class II unit shall be a minimum of 2 feet thick (except synthetic liners).

- **§20360(b).** Cutoff walls meeting the requirements of this section are required at Class II units where there is potential for lateral movement of fluid, including waste or leachate, and the hydraulic conductivity of natural geologic materials is used for waste containment in lieu of a liner.

- **§20370(a).** Class II units shall be designed to withstand the maximum credible earthquake without damage to the foundation or to the structures which control leachate, surface drainage, or erosion, or gas.

- **§21090(a).** Final cover slopes shall not be steeper than a horizontal to vertical ratio of one and three quarters to one, and shall have a minimum of one 15-foot-wide bench for every 50 feet of vertical height. Other final cover requirements of this section must be met.

- **§21190.** Postclosure land uses must meet the requirements of this section (see Appendix 3A for the Applicant's Postclosure Development Performance Standard).

- **§21750(f)(5).** The discharger should provide a stability analysis, including a determination of the expected peak ground acceleration at the unit associated with the MCE (Class II units). An updated stability analysis (if the original analysis no longer reflects the conditions at the unit) shall be included as part of the final closure and post-closure maintenance plan. The stability analysis must meet the requirements of this section.

b. California Regional Water Quality Control Board. Additional requirements are set forth by the RWQCB in Order No. R2-2002-0066, Updated Waste Discharge Requirements for the WCCSL Class II Waste Management Facility.[29] This order states that in addition to the applicable provisions in 27 CCR and Division 7 of the California Water Code, additional specifications should apply. These specifications, with the same numerical designations as in the Order, are summarized below:

5. The structures that control leachate, surface drainage, erosion and gas should be constructed and maintained to withstand conditions generated during the maximum probable earthquake. [Title 27 supercedes this specification and requires the improvements to be designed to a higher level, consistent with the MCE.]

11. A minimum of two surveyed permanent monuments should be provided near the landfill to determine the location and elevation of wastes, containment structures, and monitoring facilities.

Order No. R2-2002-0066 also requires the Applicant to comply with the following provisions, which are relevant to the analysis in this chapter:

1. December 1, 2002—Submittal of a technical report evaluating landfill stability, including a determination of whether unstable landfill conditions may result form filling until January 2006.[52]

2. March 1, 2003—Submittal of a technical report providing an independent peer review of the landfill slope stability evaluation. This peer review is ongoing.

3. May 1, 2003—Submittal of a technical report that provides responses to all comments and recommendations in the peer review.

4. September 1, 2003—Submittal of a technical report including a work plan and schedule of actions necessary to establish an inward hydraulic gradient at the Class II landfill.

5. 120 days prior to any material change in site operations or features—Submittal of a technical report describing any material changes in site development, redevelopment projects, site features, or site operations at the landfill, including a specification of design components necessary to maintain the integrity of the final cap and prevention of water quality impacts.

6. 30 days after initial notification—Notify the RWQCB of any flooding, ponding, settlement, equipment failure, slope failure, exposure of waste, or other changes in site conditions that could impair the integrity of the landfill cap, waste or leachate containment facilities, and/or drainage control structures and immediately make repairs. Within 30 days, a technical report shall be submitted documenting the corrective measures taken.

2. County/City of Richmond

The County General Plan, the City of Richmond (City) General Plan, and North Richmond Shoreline Specific Plan all contain goals, policies, and implementation measures relative to seismic and geologic hazards.[5,7,12] These measures are summarized in the Hazardous Waste Management

Facility (HWMF) EIR (State Clearinghouse No. 95063005), which is incorporated by reference pursuant to Section 15150 of the California Environmental Quality Act (CEQA) Guidelines. The local mechanism of complying with these measures is through the use permit process.

In summary, the General Plan goals, policies, and implementation measures relate to seismic and geologic hazards to the construction of new facilities. The goals emphasize the protection of human life, property, and mitigation of environmental damage. Policies and implementation measures address facility siting, the need for geologic reports and engineering studies as necessary, the use of safeguards during design and construction, and County/City review of development applications.

The Safety Element of the County General Plan includes maps that show the estimated damage susceptibility from seismic ground response, estimated liquefaction potential, and landslide hazard areas for the County. The WCCSL is located in Damage Susceptibility Zone 4, which is most susceptible for damage from seismic ground response.

Areas classified as Zone 4 are typically underlain by saturated unconsolidated deposits, such as Bay Mud, bay sand, and artificial fill. The site is shown as an area of generally high liquefaction potential. The Safety Element defines liquefaction as a specialized form of ground failure caused by earthquake ground motion. It is a “quicksand” condition occurring in water-saturated, unconsolidated, relatively clay-free sands and silts caused by hydraulic pressure (generated from earthquake ground shaking), which forces apart soil particles and creates a quicksand-like liquid suspension. In the process, normally firm, but wet, ground materials, take on the characteristic of liquids.

The Safety Element of the City General Plan includes maps that show relative ground response to seismic shaking, liquefaction potential, and landslide hazard areas for the City. The WCCSL site is located in Zone D, which can experience significant levels of shaking. Areas classified as Zone D are typically underlain by marine deposits of Bay Mud with possible inter-layering of sands and silts near the shoreline. The Bay Mud is underlain by alluvial deposits of sand, clay and gravel to depths in excess of 200 feet. The site is also shown to be located in areas where liquefaction potential is either present or possibly present.

C. SIGNIFICANCE CRITERIA

Appendix G of the CEQA Guidelines indicates a project will normally have a significant effect on geology and soils if it will:

- Expose people or structures to rupture of a known earthquake fault; strong seismic groundshaking; or seismic-related ground failure, including liquefaction; or landslides.

- Result in substantial soil erosion or the loss of topsoil.
- Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the Project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse.
- Be located on expansive soil, creating substantial risks to life or property.

Significant impacts would also result if proposed improvements conflict with Title 27 or adopted County or City policies and regulations that relate to geology, soils, and seismicity. These regulations, discussed in Section B, require proper foundation support of the landfill, cutoff walls for lateral migration of leachate, design in accordance with the MCE, stability of slopes under static and dynamic conditions, and proper design of the final cover, appurtenant structures, and underground utilities.

D. IMPACTS AND MITIGATION MEASURES

This section includes a discussion of impacts associated with the proposed Project and associated improvements as they relate to geology, soils, and seismicity. Principal issues relate to settlement, liquefaction, slope stability, earthquake-associated ground shaking, and protection of the landfill cover.

1. Impacts Considered not to be Significant

Significance criteria applicable to geology, soils, and seismicity are discussed in Section C. Criteria that are not applicable or are not considered significant include the following:

- Fault rupture – Fault rupture or surface rupture occurs in the immediate vicinity of an earthquake trace or fault line during a seismic event. There are no known or active earthquake faults located in the immediate vicinity of the WCCSL site, the nearest active fault is the Hayward Fault located approximately 2.6 miles from the WCCSL site.
- Expansive soil – Expansive soil is not known to exist at the site.
- Cover design – The proposed cover design incorporating a geosynthetic clay liner (GCL) is suitable from a geotechnical standpoint.

Issues related to erosion are discussed in Chapter 6, Water Resources. No geotechnical, soil, or seismic issues are associated with the Public Access Trail.

The regulations discussed in Section C require emphasis on seismic and geologic factors for siting, design, and construction projects. The Applicant and their consultants have performed detailed studies on seismic and geologic aspects during the initial and subsequent landfill planning process. Impacts that may be potentially significant have been identified and are discussed in the following sections.

2. Liquefaction

IMPACT 5-1 Liquefaction occurring in sandy soil below the landfill and/or associated structures could cause ground surface settlement and/or lateral spreading at the landfill sideslopes causing damage to the cover, environmental control systems and buildings. The impact is considered to be less than significant.

Liquefaction of loose saturated sandy soils during earthquakes is an important issue related to the proposed modifications at the site. Liquefaction is a phenomenon in which saturated (submerged), cohesionless soil can be subjected to a temporary loss of strength because of the build up of pore water pressure, especially during cyclic loadings such as those induced by earthquakes. Soil most susceptible to liquefaction is loose, clean, saturated, uniformly graded, fine-grained sand. Consequences of liquefaction include: sand boils, vertical settlement, lateral deformation or flow slides. The County General Plan (Section B.2) shows the site as being located in a "high liquefaction potential" area.[12]

Based on the results of previous analyses by the Applicant, it was concluded that most of the sand layers present at the site (primarily within the Bay Mud) are sufficiently dense, have sufficient clay content, and/or are overlain by a sufficient thickness of Bay Mud, such that the potential for liquefaction is low.[84] The greatest potential for liquefaction is on the north side of the Class II landfill adjacent to San Pablo Creek. Limited slumping or lateral spreading along the creek could occur. Wahler (1994) recommended the potential for liquefaction be accounted for in the design of improvements to the Class II containment barrier wall and the lining of San Pablo Creek.[84] EMCON evaluated the Wahler recommendations during the evaluation of the Class II site slurry wall performance reviews and the HWMF stability studies. Liquefaction potential was not re-evaluated by EMCON/OWT in their analysis regarding Class II landfill slope stabilization completed in January 2003, but recommended that past liquefaction analyses be updated. That work is scheduled to be completed in late 2003 and recommendations in the post-earthquake maintenance and repair plans.

The post-earthquake maintenance and response plan includes visual observations of the landfill cover and lateral containment areas immediately after a seismic event to determine, at the earliest possible time, if any damage has occurred to the landfill's containment structures. The repairs required in any given instance will depend upon the degree to which any damage to containment systems has occurred. The post-earthquake inspection plan must be of necessity flexible in this regard since it is not possible to predict what type of seismic

event will occur and how long it will take to assess damage, if any. The same is true of repair plans. Once any damage was observed, the plan will require the expeditious repair of the area(s) in question.

Liquefaction-induced ground deformation could result in localized failure of the cover system, irregular cover settlement, and localized distress to the perimeter barrier wall. However, because the barrier wall is several feet wide, a complete breach of the slurry wall is not considered likely.

Control Measures Incorporated by Applicant:

a) The liquefaction analysis for the WCCSL would be updated in late 2003 and recommendations incorporated into post-earthquake maintenance and repair plans.

b) Following an earthquake, inspection of the landfill would be performed by the Site Engineer and necessary repairs made.

c) Under the seismic scenarios where the barrier wall is breached, an inward hydraulic gradient would be maintained prior to and throughout the repair.

The impacts of such movements on the cover and lateral containment system would be reduced to less than significant by adhering to the inspection, monitoring and repair plans.

EIR Recommendations:

MITIGATION MEASURE 5-1. None required.

3. Settlement

IMPACT 5-2. Settlement of the landfill under proposed refuse and cover fill loads could impact site grading and runoff. This impact is considered to be less than significant.

Settlement is an important issue for the proper operation of the Class II landfill and associated facilities during the active and post-closure periods. As discussed in Chapter 3, Section C1, the purpose of the landfill height increase is to remediate the excessive settlement that has occurred on the central plateau. Restoring the landfill by placing additional MSW subbase will allow the foundation layer, barrier layer, and top landfill cover surface to be placed at correct elevations and slope so that drainage can be properly managed. If not properly addressed during design, excessive total and differential settlements can occur, which may cause significant changes in the surficial slopes of the landfill.

Settlement can occur as a result of consolidation of the Bay Mud underlying the landfill, as well as degradation, decomposition, and compression of the waste within the landfill. The consequences of settlement-induced changes of the final design slopes include the reduction of the final grades to slopes less than the required 3 percent minimum slope gradient, creation of local low regions on the final cover that would allow ponding of surface water, and could result in potential cracking and failure of the cover system. Hence, adverse impacts associated with settlement and subsidence would be significant.

One of the Applicant's consultants, EMCON/OWT (2003), evaluated settlement of the landfill at the topdeck for a final elevation of 150 to 160 feet.[52] Settlements due the loads imposed by the placement of new waste and the final cover include: (1) compression of the waste materials (2) primary consolidation settlement of the Bay Mud, and (3) settlement due to secondary compression of the Bay Mud.

Total expected settlements are in the range of 20 to 25 feet. The expected settlement after 10 ears is about 10 feet at the perimeter and 20 feet at the center for a 150-foot final elevation (settlements for a final elevation of 160 feet appear to be similar). In the subsequent 20 years, 3 to 5 feet of additional settlement is expected. The impacts of these relatively large total and differential settlements will be to reduce the slopes of the closed final cover surfaces. Final design of topdeck slopes are 10 percent (at the time of final cover placement). Minimum topdeck slopes, after a 30-year post-closure period, are expected to be about 5 percent, though average slopes are expected to be at least 8 percent. Therefore, even under the worst predicted settlement, topdeck slopes should be steeper than the required 3 percent minimum slope gradient.

Control Measures Incorporated by Applicant:

a) A program of landfill inspection, maintenance, and repair will continue to be implemented consistent with State regulations and as detailed in the RDSI and Postclosure Plan. The program will maintain the final grading at the site to prevent ponding and minimize infiltration in accordance with State regulations and will include permanent monument installation and aerial photogrammetry to develop site topography and iso-settlement maps. Repair to the cover system, if necessary, may require the placement of additional fill.

Cover design and maintenance as proposed as part of the Project are sufficient to reduce settlement impacts to a less-than-significant level.

EIR Recommendations:

MITIGATION MEASURE 5-2. None required.

IMPACT 5-3. Settlement of the landfill under proposed refuse and cover fill loads could impact cover integrity. This impact is considered to be less than significant.

As discussed in Impact 5-2, the settlements along the perimeter of the landfill would be less than the settlements near the center of the landfill where the fill loads would be greater. Plans are to use a GCL in lieu of a compacted clay layer that has been approved and constructed over portions of the site. The differential settlement over the landfill cap can cause strain within the GCL. However, the GCL has an allowable strain of about 10 percent (compared to the one to two percent tensile strain that can cause cracking in compacted clay). According to the study by EMCON/OWT (January 2003), strains induced by differential settlements are less than one percent and should have no impact on the integrity of the final cover system.[52]

Control Measures Incorporated by Applicant: None.

EIR Recommendations:

MITIGATION MEASURE 5-3. None required.

IMPACT 5-4. The placement of stockpiles could cause additional landfill settlement. This impact is considered to be less than significant.

Materials including concrete rubble, finished rock products, and wood waste could be stockpiled over the landfill and could cause settlement and differential settlement over the cap. The "Proposed WCL Report of Disposal Site Information Changes" allows for alternative daily cover (ADC) materials to be stockpiled near the landfill active face. In addition, ADC stockpile heights are limited to 20 feet for biosolids mixtures, 15 feet for Construction and Demolition (C&D) debris, and 30 feet for treated auto shredder waste.[69]

Control Measures Incorporated by Applicant:

a) Stockpiles would be located a minimum of 50 feet from the crest of 4:1 (horizontal:vertical) landfill sideslopes.

b) Stockpiles would have maximum slopes of 6:1 for heavier materials such as concrete rubble and 5:1 for lighter materials such as wood waste.

c) Maximum stockpile height would be 20 feet.

d) A stockpile plan would be approved by a registered professional engineer before any stockpiling takes place.

The proposed control measures would reduce the impact to a less-than-significant level.

EIR Recommendations:

MITIGATION MEASURE 5-4. None required.

IMPACT 5-5. Settlement of the landfill under existing and/or proposed fill loads could impact the existing and proposed structures supported on the landfill. This impact is considered potentially significant.

New facilities constructed at the proposed site (former Soil Remediation Building) may experience settlement as a result of consolidation of the underlying Bay Mud, as well as compression of the waste, if they are located over the waste fill(s). Structures could experience differential settlement across the building footprint, and between the building and exterior grades. Underground utilities connecting to the buildings could experience breakage if they are not properly designed.

The former Soil Remediation Building is constructed over a portion of the Class II landfill (Figure 5-2). Because of previous fill placement in the area and resulting differential settlement, the east end of the building is about 1.3 feet lower than west end, and the north side is about 1.6 feet lower than the east end. The sag is approximately 3 feet below the finish floor at the west end.[79] Before this building can be converted to the proposed WRC, portions of the building may need renovation prior to occupancy. From a future settlement standpoint, the Soil Remediation Building is located on a closed area of the Class II landfill,

where about 95 percent of decomposition of the refuse has already occurred.[13] Therefore, future settlement and soil stability would not constitute a significant impact.

Control Measures Incorporated by Applicant:

a) Adjustable height building columns and footers would be used for proposed building facilities.

Figure 5-2 Settlement of the Former Soil Remediaton Building. This building would be rehabilitated and expanded for the proposed WRC. It is located on fill which has experienced substantial differential settlement since it was constructed in 1996.

EIR Recommendations:

MITIGATION MEASURE 5-5

a) Geotechnical studies would be performed for each proposed/renovated site structure to be located on waste fill that evaluate impacts of landfill settlement on building performance, as well as additional settlement, if any, caused by new structures, and recommendations included in construction plans and specifications.

b) Flexible utility connections, if determined to be necessary by the geotechnical studies, would be used in areas of waste fill to reduce damage to utilities resulting from differential settlement between buildings and the surrounding ground.

c) Settlement of buildings located on waste fill would be addressed in the WCCSL Post-Closure Plan with monitoring and repairs as needed.

Implementation of these measures would reduce settlement impacts to renovation of existing and proposed new structures on the landfill to a less-than-significant level.

IMPACT 5-6. Settlement of the landfill under new refuse and cover fill loads could impact lateral containment structures. This impact is considered potentially significant.

The proposed WRC site is within about 8 to 10 feet of the soil-attapulgite slurry wall separating the Class I and Class II landfills. An additional barrier wall (Bay Mud and soil-cement-bentonite) surrounds the entire WCCSL. Large settlements could cause ground deformations, which may impact the integrity of the hydraulic barrier properties of these walls. However, the magnitudes of the expected settlements are not likely to be large enough to breach the walls.

Control Measures Incorporated by Applicant: None.

EIR Recommendations:

MITIGATION MEASURE 5-6

a) If new fill is placed for renovation of the proposed WRC site, additional geotechnical studies would be performed by the Applicant to evaluate settlement, slope stability, and potential impacts on the integrity of the soil-attapulgite slurry wall with recommendations included in construction plans and specifications.

b) Monitoring would be performed consistent with the recommendations of Mitigation Measure 5-6(a) to evaluate the condition of the soil-attapulgite slurry wall and appropriate repairs made as necessary.

Implementation of these measures would reduce settlement impacts to lateral containment structures to a less-than-significant level.

4. Slope Stability under Static and Dynamic Conditions

Static stability is a measure of the ability of a natural or made slope and its foundation to withstand movements due to imposed loads. Stability is expressed in terms of a "factor-of-safety" (F.S.). An F.S. is the ratio of strength of the resisting material divided by the imposed loads due to gravity and any external forces, if present. An F.S. of less than one represents a condition where the imposed loads are greater than the resisting forces, which will result in deformation, while an F.S. greater than one indicates that the resisting forces are larger than the imposed loads. Typically, a factor-of-safety of 1.5 or greater is considered to provide adequate margin of safety against a slope failure in a static condition.

Dynamic stability is the ability of slopes to withstand the loads imposed during an earthquake event. There are two primary impacts that could affect the foundation or cover of the Class II landfill during a seismic loading condition: (1) deformation of the foundation soils due to liquefaction, and (2) deformation of the foundation materials due to shear failure. Liquefaction was discussed in Section D2 of this chapter and is not a likely mechanism for causing significant deformation over the majority of the site during earthquake loading. Dynamic slope deformation due to shear failure has been evaluated by EMCON/OWT.[52] Typically, the result of such an analysis is an estimate of the amount of deformation a particular slope will undergo as a result of an earthquake shaking. The level of acceptable deformation is generally considered to be the amount of deformation that can occur without affecting the cover and other environmental control systems.

Global Landfill Stability. EMCON/OWT, Inc. (January 2003) performed slope stability analyses to evaluate the stability of the Class II Landfill.[52] This analysis was conducted pursuant to RWQCB Order No. R2-2001-0066 and the peer review of the analysis as required by the Order is ongoing. The results of this ongoing process with the RWQCB may further refine the preliminary conclusions summarized below as well as the control measures that may be required by the RWQCB due to the results of the analysis.
The slope stability analyses were performed using the two-dimensional limit equilibrium computer program PCSTABL. Three cross sections designated 1-1, 2-2, and 3-3 were used to analyze the global stability that took into account critical locations with respect to various loading conditions. The locations of the cross sections are shown on Figure 5-3. The Bay Mud at the southern perimeter of the site (cross section 3-3) appears to have single drainage (i.e. it can only drain upward into the waste), and is therefore likely partially consolidated, while on the northern and western slopes (cross sections 1-1 and 2-2) the Bay Mud has double-drainage boundary conditions, resulting in a faster rate of consolidation. However, filling history suggests fill placement at the northern boundary was more recent than in the south, and the slope configuration on the north and west sides is more critical. On the southeastern slope (cross section 3-3), the existing waste slope is the steepest, the Bay Mud has single-drainage, and the time of

consolidation is shorter than on the south side. EMCON/OWT concludes the south slope cross section (1-1) represents the worst critical slope for end-of-filling conditions.

Previous and new borings, laboratory data, and historic plots of waste profiles were used to evaluate the degree of consolidation of the Bay Mud, which is related to the strength. The static slope stability analysis was performed for the end-of-filling conditions corresponding to the Bay Mud strength in the year 2002 for a maximum waste elevation of 160 feet. The static slope stability analysis was performed assuming both circular and sliding block-type failure surfaces. For all cases evaluated, the factor of safety is greater than the acceptable value of 1.5, except at cross-section 3-3 for a circular failure mode. For this analysis, the factor of safety was 1.46, however, if 3-dimensional effects are considered (the location is in a valley), EMCON/OWT concludes the factor of safety would be higher than 1.5.

Pseudo-static slope stability analyses were performed to evaluate the yield acceleration of the failure surfaces during an earthquake. These analyses included a strength increase in Bay Mud due to the rapid nature of loading during an earthquake. 27 CCR requires that Class II landfills be designed to withstand ground motions from the MCE. An average horizontal equivalent acceleration (HEA) for the critical failure mass associated with the yield acceleration was computed for each of seven acceleration-time histories. Associated displacements were then estimated using a Newmark (1964) type dynamic slope deformation analysis. The coupled analyses performed by Professor Jonathan Bray, a consultant to EMCON/OWT, resulted in average seismic displacements of about 1 to 3 feet for MCEs on the Hayward and San Andreas faults. The largest displacements occurred at cross-section 1-1. However, for cases where degraded material properties were used, seismic deformations exceeded 5 feet for five of the seven analyzed cases. The largest computed deformation was 25 feet for the synthetic input earthquake motion simulating the 1906 San Andreas event.

Cover Stability. Stability of the cover under both static and dynamic conditions was also evaluated by EMCON/OWT (January 2003) as related to maintaining slopes.[52] Information provided by EPA Subtitle D (incorporated by CCR) was used to establish F.S. criteria for cover design. Slope stability analyses were then performed using an infinite slope method and a peak ground acceleration (PGA) of 0.5g. The maximum required slopes to meet the F.S. criteria based on the analyses are summarized below:

- The minimum required F.S. for the static condition, without including seepage forces, is 1.5; analyses show a 4:1 (horizontal:vertical) slope (25 percent) is sufficient to meet the criteria.
- The minimum required static F.S. for the static condition, including full seepage forces, is 1.0; analyses show a 5:1 slope (20 percent) is sufficient to meet the criteria.

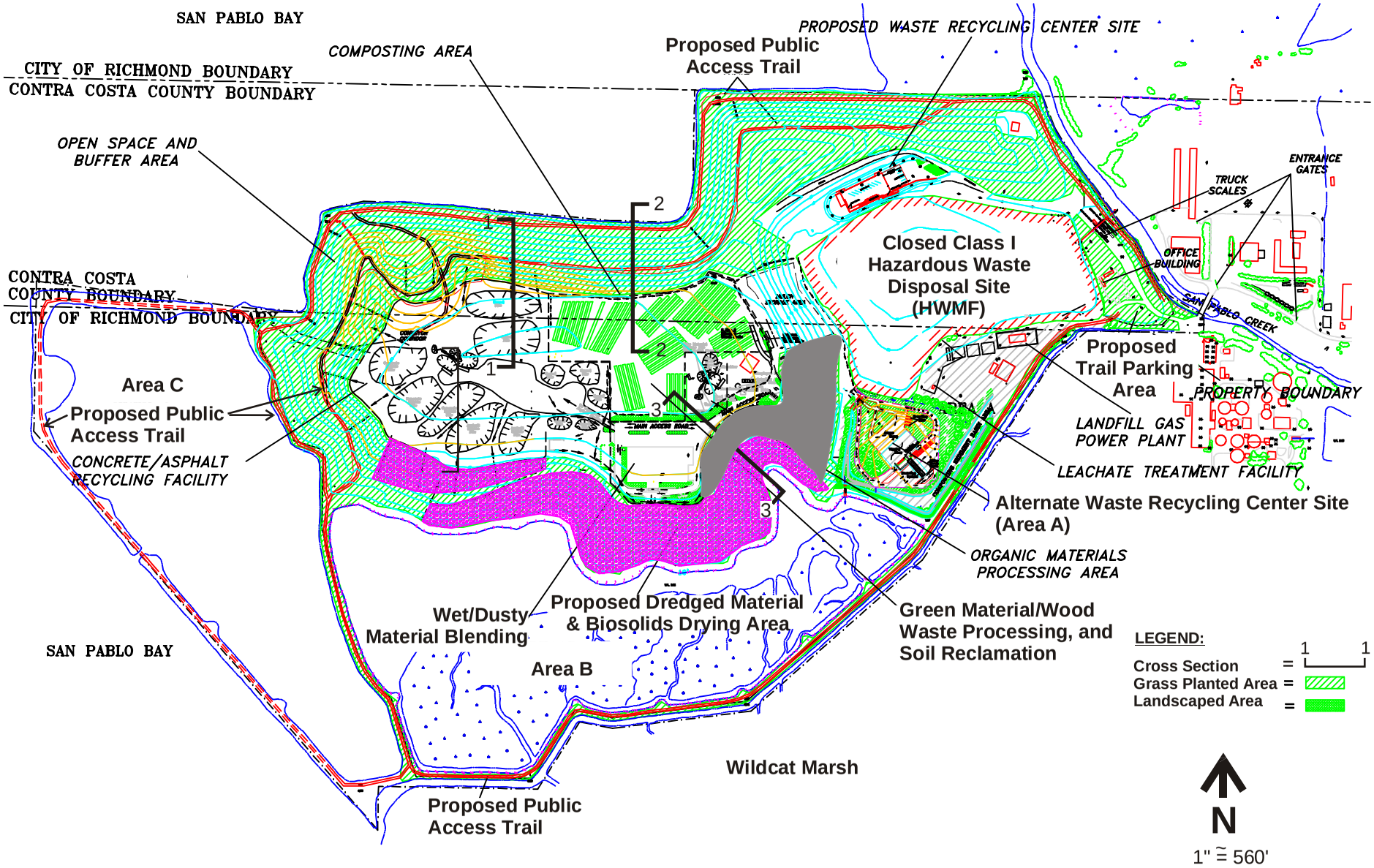


Figure 5-3 Location of Slope Stability Cross Sections

Source: WCL, February 2003

- The maximum allowable cover displacement during an earthquake is one foot; analyses indicate this criteria can be met using a 7:1 slope (14 percent), or flatter.

Therefore, a proposed topdeck slope of 10:1 (10 percent) or flatter will meet both the static and seismic slope stability criteria. The predicted post-settlement slope of 5 percent also meets the cover stability and drainage criteria.

IMPACT 5-7. The placement of new fill could cause a static slope or cover failure that could damage the landfill cap and environmental control systems. This impact is considered to be less than significant.

The analyses performed by EMCON/OWT for the cover and general landfill indicate the factors of safety are sufficient to resist sliding of the cover or failure of the landfill in a static condition. Therefore, impacts associated with the static stability are not significant and no mitigation measures are required.

Control Measures Incorporated by Applicant: None.

EIR Recommendations:

MITIGATION MEASURE 5-7. None required.

IMPACT 5-8. The combination of new fill placement and seismic shaking could cause slope deformations, which could damage the landfill cap and environmental control systems. This impact is considered potentially significant.

EMCON/OWT has concluded the probability of an MCE event occurring on the Hayward Fault or San Andreas Fault is low, which is in general agreement with the 30-year probabilities presented in the USGS Group (1999) discussed earlier. The analyses performed indicate lateral slope displacements on the landfill cover could be on the order of 12 inches, while displacements of the landfill sideslopes could be as much as 25 feet (see discussion above).[52] This landfill slope deformation would likely result in damage to the landfill cap and GCL, irregular surface and related drainage issues, and potential distress to the containment structures (Figure 5-4). As discussed under Impact 5-1, a post-earthquake maintenance and repair plan would be implemented by the Applicant. If the barrier wall is breached under seismic conditions, an inward hydraulic gradient would be maintained to control off-site migration of leachate or waste prior to and throughout the repair. Due to the relatively low permeability of the subsurface materials, it is unlikely large-scale, off-site migration of leachate or waste would occur.

Control Measures Incorporated by Applicant:

a) Following an earthquake, an inspection program would be implemented to evaluate the extent of cracking of the cover materials, damage to LFG collection system, damage to leachate collection and pumping systems, global landfill sliding, and cracking of the barrier wall. Appropriate repairs would be made pursuant to RWQCB Order No. R2-2002-0066.

b) Under the seismic scenarios where the barrier wall is breached, an inward hydraulic gradient would be maintained prior to and throughout the repair (see Control Measure 5.1(c)).

c) A slope remediation study would be performed, or a long-term slope maintenance program would be developed to address the consequence and possible repairs resulting from large seismically-induced permanent slope displacements.

d) As recommended in the EMCON/OWT, Inc. slope stability report, a probabilistic analysis of the permanent displacements would be performed to be used in developing a detailed earthquake response plan. The response plan would provide details on procedures to be followed for inspection of the site following major earthquakes, and on the slope maintenance requirement that may be triggered by significant displacements.

EIR Recommendations:

MITIGATION MEASURE 5-8:

a) A plan for inspection and as-needed repair of the GCL following an earthquake would be added to the Postclosure Plan.

Implementation of this mitigation measure would reduce impacts associated with slope deformations to a less-than-significant level.

IMPACT 5-9. Slope deformations or slope failure at the proposed WRC site could impact the soil-attapulgite slurry wall. This impact is considered potentially significant.

The stability of the fill pad at the former Soil Remediation Building and related effects on the soil-attapulgite slurry wall separating the Class I and Class II Landfills were evaluated by Woodward-Clyde Consultants in 1995.[90] The building design uses geogrid reinforcement within the fill pad and a downslope berm. The expected lateral deformation of the pad during a seismic event would be limited to 3 to 4 inches. This level of displacement is not likely to significantly impact the 5-foot-wide slurry wall.

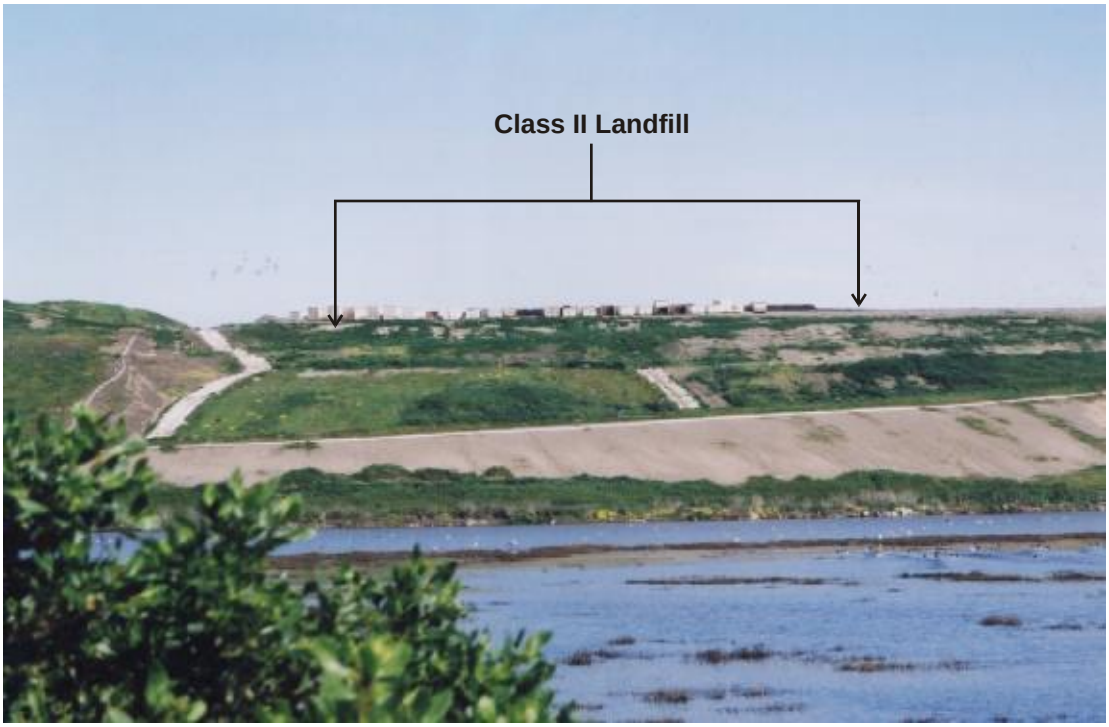


Figure 5-4 Landfill Seismic Displacements. The Southern area of the Class II landfill shown here is less stable than other areas under certain seismic conditions. A detailed earthquake response plan will be developed by the Applicant (Control Measure 5.7 (d))

However, localized repair of the soil-attapulgite slurry wall (and the cover system) may be required.

Control Measures Incorporated by Applicant:

a) The inspection, monitoring and repair plans outlined in the Post-Closure Maintenance Plan would be followed.

b) Following a significant earthquake (magnitude 6.5 or greater) the site would be inspected to evaluate the performance of the environmental control systems related to the Class I Landfill. Slurry wall deformations in excess of 1 foot would require notification to the State Department of Toxic Substances Control (DTSC) and RWQCB within 14 days and repairs made pursuant to their recommendations.

EIR Recommendations:

MITIGATION MEASURE 5-9:

a) If new fill will be placed for renovation of the proposed WRC site, additional studies would be performed to evaluate potential settlement, slope stability, and movement of the soil-attapulgite slurry wall and recommendations would be incorporated into construction plans and specifications (see Mitigation Measure 5.6(a)).

Implementation of these measures would reduce seismic shaking impacts to a less-than-significant level.

5. Seismic Shaking of Building Structures and Associated Improvements

IMPACT 5-10. Ground shaking during an earthquake could affect building structures and associated improvements. This impact is considered potentially significant.

An earthquake on a nearby fault would cause ground shaking at the landfill site. If new structures are not designed to resist earthquake ground motions, damage could be sustained. Ground shaking with respect to liquefaction and slope stability were discussed in previous sections.

Control Measures Incorporated by Applicant:

a) New buildings would be designed to meet the 1997 Uniform Building Code (UBC) Seismic Zone Factor 4 standards, and constructed in accordance with all applicable building codes and regulations.

EIR Recommendations:

MITIGATION MEASURE 5-10:

a) To ensure proper structural design, a geotechnical report would be prepared for all new buildings to be located on waste fill with recommendations incorporated into construction plans and specifications (see Mitigation Measure 5-5(a)). The geotechnical report would discuss the potential for differential ground surface settlement and the need for flexible utility connections (see Mitigation Measure 5.5(b)).

Implementation of these measures would reduce seismic shaking impacts to buildings and site improvements to a less-than-significant level.

6. Cover Protection

IMPACT 5-11. The construction and operation of new buildings and facilities, as well as construction of the cap itself, could cause damage to the landfill cover (cap). This impact is considered to be less than significant.

The cover, and in particular the GCL, must not sustain damage during construction or post-closure activities to allow it to function properly. The GCL could be damaged during placement due to puncture by underlying materials or the cover soil, or by ripping. The landfill cap would be overlain by an additional 3 feet of protective soil in post-closure operations areas. At the former Soil Remediation Building, a regulatory-compliant landfill cover system was installed before construction of the building. A 60-mil high density polyethylene (HDPE) (plastic) liner provides a barrier between the soil underlying the building foundation and the landfill cap.

Control Measures Incorporated by Applicant:

a) During construction, the subgrade would be prepared properly to create a smooth surface and proper construction and quality assurance monitoring would be conducted consistent with the requirements of the Postclosure Plan.

b) If the cover (including the GCL) is damaged during construction or post-closure activities, it would be repaired or replaced.

Implementation of these measures would reduce impacts to the landfill cap to less-than-significant levels. Other control measures to assure the integrity of the final landfill cap are discussed in Chapter 6, Water Resources (Control Measures 6-2 (a, b, c).

EIR Recommendations:

MITIGATION MEASURE 5-11: None required.

7. Impacts of Mitigation Measures

None of the mitigation measures discussed above will have any significant adverse impacts.

E. CUMULATIVE IMPACTS

The proposed Project would not have any geologic, soil, or seismic impacts that cannot be mitigated to less-than-significant levels. The Applicant must comply with State requirements as well as the recommendations in this EIR to ensure the geologic compatibility of the proposed Project and the WCCSL site. Similarly, all future development projects discussed in Chapter 4, Section A3(b) would be subject to the requirements of the CEQA and State and local agency requirements in regard to the identification and protection against geologic, soil, and seismic hazards. For most projects, soil studies are required through the building permit process in order to mitigate impacts from soil problems such as liquefaction, unstable soils, and soils with a large degree of shrink/swell. Mitigation measures for potential impacts from such problem soils include proper foundation construction and soil anchors. All buildings and other facilities must be constructed to meet specified earthquake requirements contained in the Uniform Building Code. As a result, there are no cumulative geologic, soil, or seismic impacts that would result from the proposed Project and other cumulative projects in the area.

CHAPTER 6

WATER RESOURCES

Issues related to surface water and groundwater resources related to proposed Bulk Material Processing Center (BMPC) use permit amendment and related actions (Project) are discussed in this chapter. As discussed in Chapter 3, the proposed Project components associated with the BMPC would be constructed on the final landfill cover. The reader is referenced to Chapter 5 for a discussion of the geologic environment of the West Contra Costa Sanitary Landfill (WCCSL) site.

A. SETTING

This section provides an overview of the water resource setting of the WCCSL. Pursuant to Section 15150 of the California Environmental Quality Act (CEQA) Guidelines, the Environmental Impact Report (EIR) for closure of the Hazardous Waste Management Facility (State Clearinghouse No. 95063005) and the Initial Study/Mitigated Negative Declaration for the WCCSL Solid Waste Facilities Permit and Landfill Closure and Postclosure Maintenance Plans (State Clearinghouse No. 96052032) are incorporated by reference.[23, 33] Pertinent information is summarized below.

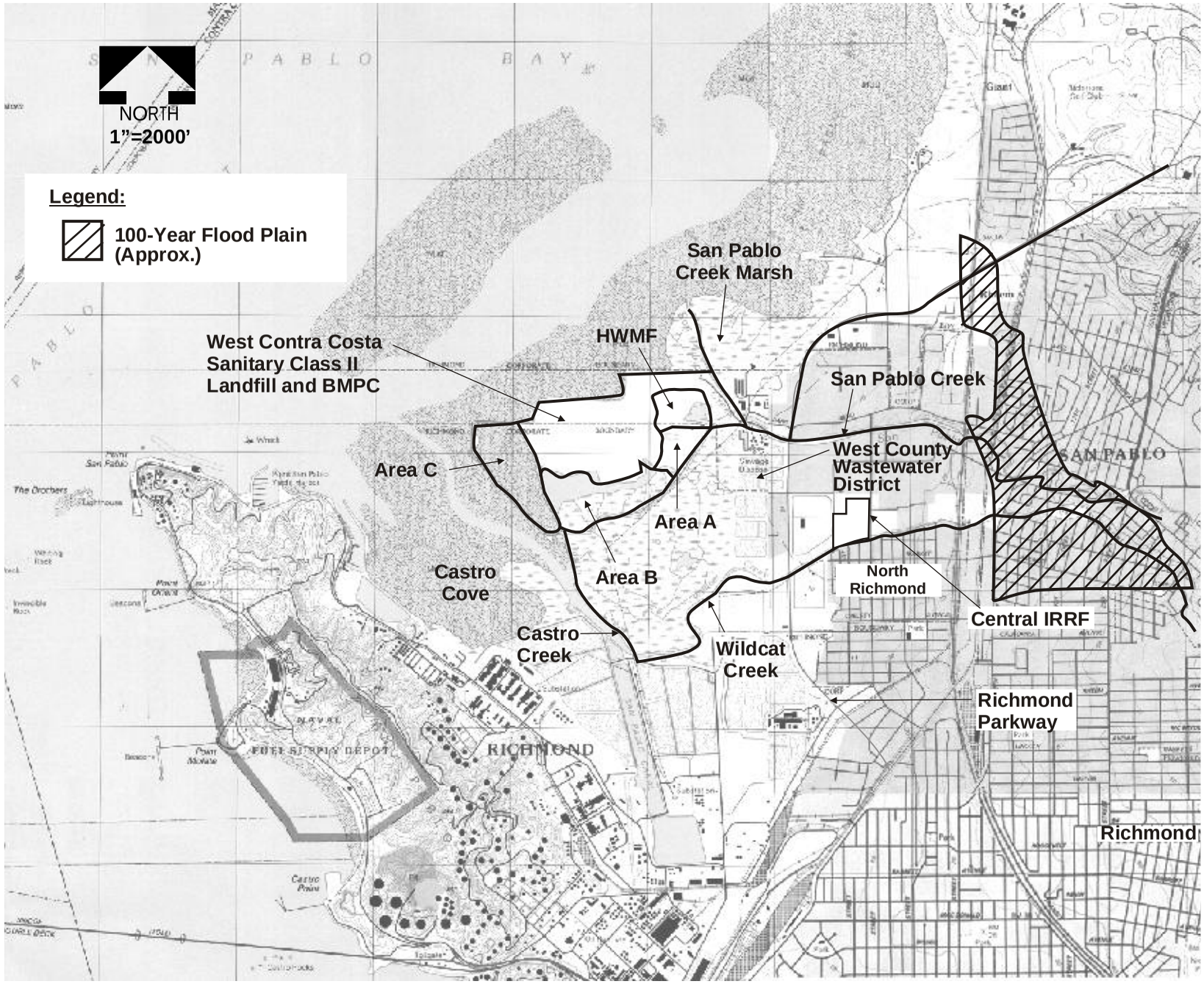
1. Watershed and Drainage Characteristics

The WCCSL is on lands adjacent to San Pablo Bay (Figure 6-1). The following surface water bodies are at or within 1 mile of the site:

- Lagoon Area B, a lagoon along the southern perimeter of the WCCSL Class II landfill. Lagoon Area B contains trapped bay water, surface runoff, and groundwater that recharges the area. The lagoon is enclosed by dikes, and water levels are controlled by rainfall and evaporation.

- Lagoon Area C, a saltwater lagoon along the western perimeter of the Class II landfill. Open to San Pablo Bay, the lagoon is generally flooded except at low tide, when some tidal flats are exposed.

- San Pablo Creek, a perennial tidally influenced estuarine stream immediately east of the facility. Fresh water in the creek is tidally mixed with salt water from San Pablo Bay in a zone that extends over 1,000 feet upstream of the WCCSL site.



Source: Draft EIR on HWMF Closure, reference 33

Figure 6-1 Surface Water Features

- Wildcat Creek, a perennial tidally influenced estuarine stream, enters Wildcat Marsh about 0.8 miles south of the facility.

- Castro Creek, an estuarine stream about 0.75 miles southwest of the facility. The brackish water creek flows northwest to San Pablo Bay in the general area of Lagoon Area C.

- San Pablo Bay immediately to the west and north of the facility.

- Many small tributaries that drain and feed the brackish marshlands northeast and south of the facility.

Figure 6-1 shows the limits of the 100-year floodplain. The 100-year flood flows in San Pablo Creek near the WCCSL would be totally contained in the channel.[33]

2. Stratigraphy

The WCCSL overlies Bay Mud sediments in the Richmond Basin, which is bounded by the San Pablo and Hayward Faults. Bay Mud is composed primarily of inter-fingering alluvial fan/stream channel and estuarine deposits. Locally, the Bay Mud is divided into Old and Young Bay Mud. The Young Bay Mud generally occurs between the surface and depths of about 50 to 70 feet below mean sea level (msl). It is distinguished from the underlying and Old Bay Mud deposits by its higher clay content and lower strength. The Old Bay Mud occurs at depths ranging from 50 to 70 feet below msl to a depth of about 100 feet. Below the Old Bay Mud, sand layers up to 20 feet thick occur. Bedrock is estimated at a depth of about 300 feet beneath the WCCSL site.[29]

3. Groundwater Occurrence

Groundwater beneath the landfill has been classified into four water-bearing zones (WBZs):

- Surficial WBZ—uppermost zone, occurring between +20 and -10 feet msl. Within the landfill, much of the surficial zone flows through refuse and fill.

- Shallow WBZ—underlies the surficial WBZ between -10 and -30 feet msl. Contains mostly naturally occurring Bay Mud sediments, but also some waste fill in the areas that have exhibited the largest settlement.

- Medium WBZ—underlies the shallow zone and extends from -30 to -60 feet msl. Contains only naturally occurring Bay Mud sediments which are composed mostly of clay and silty clay, with occasional sand lenses or layers.

- Deep WBZ—underlies the medium zone and extends from -60 to -135 feet msl. Consists of mostly clays and silts, with occasional sand lenses or layers.

According to Regional Water Quality Control Board (RWQCB) Order No. R2-2002-0066, the surficial, shallow, and medium WBZs and the uppermost portion of the deep WBZ beneath the WCCSL contain brackish to saline water and typically exhibit extremely low yields and, therefore, have not been used as a source of drinking water.[29] Groundwater in the lower portion of the deep WBZ (sand units between -113 and -132 feet msl) has total dissolved solids (TDS) and yield values sufficient to qualify as a potential drinking water source, though there is no current use of the site's groundwater, nor any anticipated plans for its use.

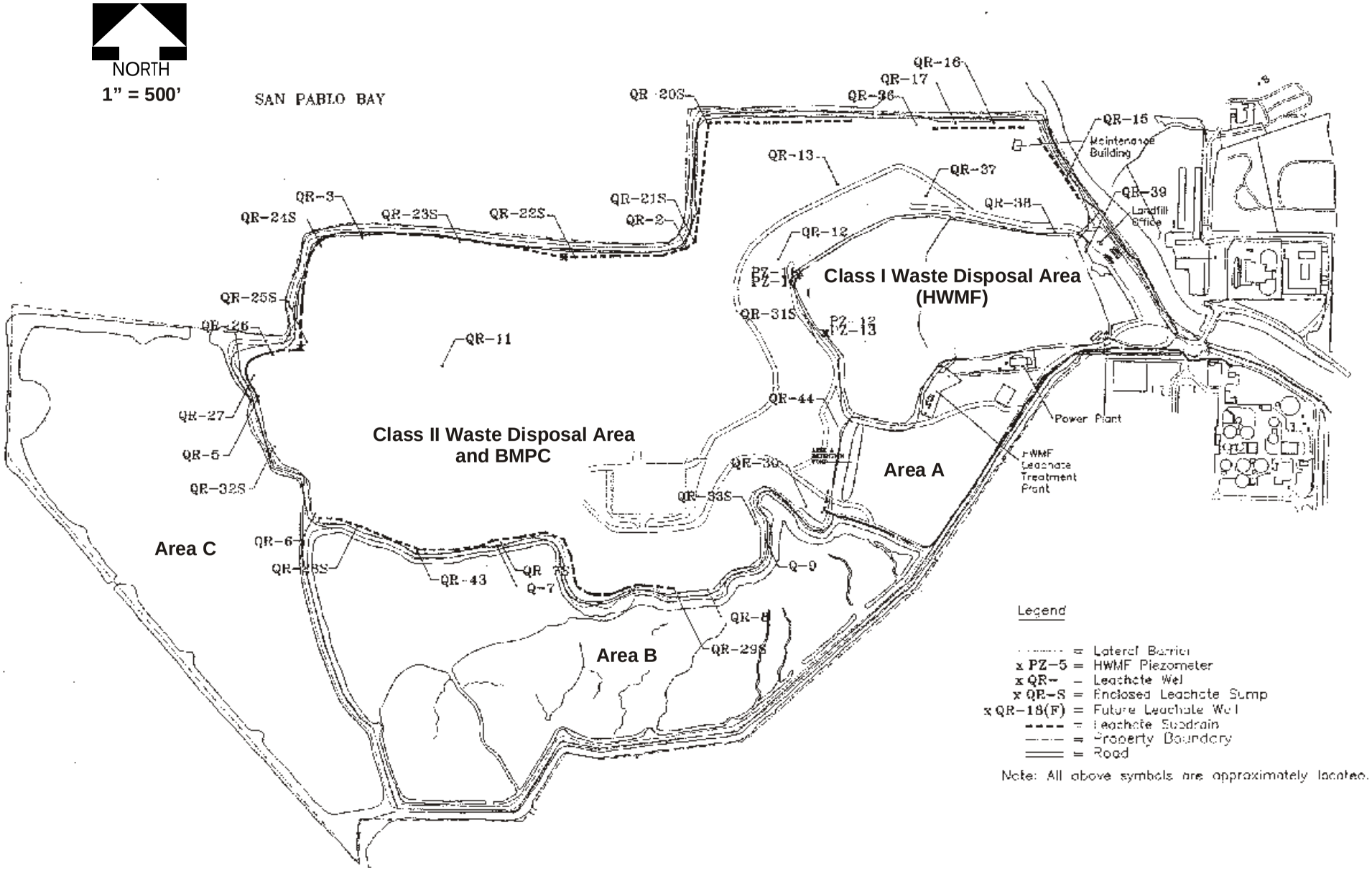
4. Leachate Collection and Removal System

Figure 6-2 shows the components of the leachate collection and removal system (LCRS). Components include the leachate containment barrier, leachate wells, subdrains, enclosed leachate sumps, the leachate header pipelines, and the computerized control system. These components comprise a system to monitor, collect, contain, and remove leachate collected within the landfill. Leachate migrates to the leachate sumps and French drains where it is collected through vertical pipes and pumped via the leachate header pipelines to the storage mixing tank located near the landfill gas power plant in Area A. Leachate is then pumped to the West County Wastewater District (WCWD) treatment plant where the leachate is either treated or bypassed to the City of Richmond treatment plant.

No bottom liner was installed beneath the landfill, consistent with landfill practices at the time of filling. The underlying Bay Mud, composed primarily of clay and clayey silt of low permeability, prevents the downward vertical migration of leachate.[29]

A low-permeability Bay Mud/soil-cement-bentonite barrier wall surrounds the entire WCCSL site to prevent horizontal migration of leachate.[29] The barrier wall has hydraulic conductivities of 1×10^{-6} centimeters per second (cm/s) or less, a minimum thickness of 3 feet, and is keyed into the underlying Bay Mud a minimum of 5 feet.

The LCRS is designed to create an inward hydraulic gradient, wherein the groundwater levels outside the barrier are higher than inside; however, this gradient has not been established because the Applicant has been unable to pump high volumes of leachate to the WCWD treatment plant due to concerns over elevated levels of chloride salts because it could affect use of treated wastewater from WCWD by Chevron for use in their cooling towers. Currently, it is estimated that about 150 million gallons of leachate have accumulated within the landfill.[29] However, with construction of a separate Class II leachate line to the WCWD sludge lagoons scheduled to be completed by late 2003, leachate flows will then be routed directly to the City's



Source: WCL, February 2002

Figure 6-2 Leachate Collection and Removal System

Wastewater Treatment Plant. This will enable greater quantities of leachate to be extracted from the Class II landfill (approximately 100,000 gallons per day) and the inward gradient to be created.[29,39] It is expected that the total volume of leachate generated at the landfill will be reduced when final closure is completed.

Leachate routed to the City's treatment plant must meet the requirements of City Ordinance No. 3-00 which regulates pollutant limitations and permits for discharges to the wastewater treatment system. An agreement was executed between the West County Landfill, Inc. (Applicant) and the City on April 24, 2001, regarding acceptance of the Class II landfill leachate.[46]

5. Leachate Monitoring

Leachate is analyzed on a monthly and quarterly basis and compared to water quality parameters, pursuant to the requirements of RWQCB Order No. R2-2002-0066.[29] A total of 30 leachate wells located within the interior of the landfill are used to monitor landfill leachate elevations. A subset of the leachate wells is used to monitor chemical concentrations and determine whether landfill waste materials are leaching and impacting groundwater. Additionally, 39 groundwater monitoring wells are located at the landfill perimeter and in interior areas to monitor the surficial, shallow, and medium water-bearing zones.[29]

6. Site Contamination and Water Quality

Groundwater beneath the landfill contains volatile and semi-volatile chlorinated solvents, benzene, toluene, xylene, and petroleum hydrocarbons as gas and diesel. Levels of metals are generally low. According to RWQCB Order No. R2-2002-0066, contaminants consisting of tetrohydrofuran (THF), tert-butyl alcohols (TBA), and low levels of volatile organic solvents have been detected recently outside the landfill beyond the barrier walls.[29] Contamination is generally limited to the surficial and shallow groundwater zones along the southeastern portion of the site. According to the Applicant, the installation of the barrier wall involved an alignment that went through original waste and wells outside of the wall were installed in the waste.[39] Thus, the contamination may be pre-existing prior to barrier wall installation and residual in nature. Order No. R2-2002-0066 provides the regulatory mechanism for addressing this issue.[36]

Order No. R2-2002-0066 requires the Applicant to comply with the following provisions relative to groundwater contamination:

1. February 1, 2003—submittal of a technical report which proposes a work plan to define groundwater contamination originating from the Class II landfill and extending beyond the leachate barrier wall. This report was submitted to the RWQCB on January 30, 2003, and is entitled "Groundwater Investigation Workplan Corrective Action Groundwater Monitoring Program."

2. June 1, 2003—submittal of a technical report which documents the results of the investigation specified in Item 3.

3. September 1, 2003—submittal of a technical report including a workplan and schedule for actions necessary to establish an inward hydraulic gradient at the Class II landfill.

4. September 1, 2004—submittal of a technical report documenting the implementation of actions necessary to establish an inward hydraulic gradient.

5. September 1, 2004—submittal of a technical report which evaluates and proposes remedial methods for addressing groundwater pollution beyond the leachate barrier wall.

A San Pablo Creek surface water monitoring program was conducted between 1987 and 1996 that involved quarterly sampling of the creek water and sediments at five locations upstream and downstream of the WCCSL. In October 1996, the RWQCB authorized the elimination of the creek monitoring program because of the barrier wall in that area and because the ongoing well monitoring program would provide an early indication of any contaminants that could be moving toward the creek.

The Applicant has monitored the Area B pond since 1990 to develop background information on water quality. These data are contained in Appendix L of the Report of Disposal Site Information (RDSI) and show that the pond is highly saline due to evaporation, but does not contain significant contaminants.[1] The water level in the pond fluctuates during the year, responding to seasonal rainfall accumulation and evaporation. Area B normally has no discharge to the Bay.

A special water quality study was conducted by the Applicant during the Phase I composting demonstration project from 1993 to 1995. This study characterized the substances that could be released during rainfall runoff from the composting area if sludge were to be used as an additive or if sludge composting was anticipated as currently proposed. Laboratory analyses of samples collected are included in Appendix G of the Report of Composting Site Information (RCSI). No significant contaminants were identified.[14]

7. Drainage Management

In accordance with the provisions of General Permit No. CAS000001 for Water Quality Order No. 91-13-DWQ and updated by No. 97-03-DWQ National Pollutant Discharge Elimination System (NPDES), the Applicant has prepared and implemented a Storm Water Pollution Prevention Plan (SWPPP). The SWPPP (December 1996) is included in Appendix N of the RDSI.[1] The Applicant's policy is to fully comply with the requirements of NPDES Order No. 91-13-DWQ and updated by No. 97-03-DWQ. The Applicant has certified that all non-

storm water discharges to storm water conveyance systems have been eliminated. NPDES Permit No. 2 07S005532 was issued to the WCCSL in October 1992.

Rip-rapped surfaces protect the outside edges of the landfill that are adjacent to the Bay or the diked pond. A blanket of concrete rubble rip-rap has been placed around the external surfaces of the landfill where water wave action must be controlled to prevent erosion of the landfill edge. The riprap is maintained annually with additional materials placed where severe wave action or settlement has moved some of the previously placed materials.

The general concept of the WCCSL surface drainage plan is shown on Figure 3-6, the final grading plan. The drainage plan for the WCCSL will accommodate the 100-year storm event. The WCCSL is managed to prevent the infiltration of surface water into the waste materials and to maximize and control the amount of surface water that runs off via overland flow. The interior area of the site has been graded to handle all runoff from the adjacent slopes and to minimize erosion. Facilities include temporary and permanent berms, bench drains, down drains, etc. Storm water runoff from the Class I Hazardous Waste Management Facility (HWMF) and the composting area is directed into separate retention basins in Area A (Figure 6-3). If necessary, excess storm water may be directed to Area B after testing. Storm water runoff from other areas of the Class II landfill may discharge via rip-rapped outlets into San Pablo Creek, San Pablo Bay, Area A, or Area B. Silt retention areas and grassy slopes are used to filter out silt and debris prior to discharge into Area B and San Pablo Bay.

The SWPPP requires an ongoing surface water monitoring program at selected locations within the WCCSL. The objectives of this program are to:

- Ensure that all storm water discharges are in compliance with the Discharge Prohibitions, Effluent Limitations and Receiving Water Limitations specified in the General Industrial Activities Storm Water Permit (general permit) – Water Quality Order Numbers 91-13-DWQ and 92-12-DWQ (NPDES CAS000001).

- Ensure that practices at the facility to control pollutants in storm water discharges are evaluated and revised to meet changing conditions.

- Aid in the implementation of the SWPPP required by Section “A” of the general permit.

- Measure the effectiveness of best management practices in removing pollutants in storm water discharge.

The SWPPP also requires site inspections and a preventive storm water control maintenance program. In the event that the monitoring program detects a release of contaminants, the Applicant would notify the RWQCB and be required to develop and implement an evaluation monitoring program and a corrective action program under RWQCB review and oversight pursuant to State regulations.

Figure 6-3 Retention Basin. This retention basin receives storm water runoff from the closed Class I hazardous waste disposal site and the composting area.

B. REGULATORY AND PLANNING FRAMEWORK

The regulatory and planning framework for the proposed Project relative to water resources exists at the state and local levels. The broader regulatory context related to development and approval of the Project is discussed in Chapter 3, Section C6.

1. State and Regional

The State Water Resources Control Board (SWRCB) and RWQCB are the state agencies responsible for the management and protection of the State of California's water resources. Relevant regulations are discussed briefly below.

a. California Code of Regulations. The primary state regulatory programs governing municipal solid waste landfills were formerly split between Title 14 California Code of Regulations (14 CCR, California Integrated Waste Management Board [CIWMB]) and 23 CCR (SWRCB). The primary water quality protection regulations, including groundwater requirements, were (and still are) in 23 CCR, with the RWQCB having jurisdiction over the WCCSL.

In recognition of the overlapping regulatory programs for solid wastes, California Assembly Bill 1220 (AB 1220, California Statutes of 1993) mandated regulatory reforms by consolidation of the solid waste regulatory requirements of the CIWMB and the SWRCB. Those regulations were finalized in 1997 and they are codified in 27 CCR "Environmental Protection" Division 2 "Solid Wastes." Titles 14 (CIWMB) and 23 CCR (SWRCB) remain in effect and they govern a wider range of subjects than the consolidated 27 CCR Division 2 regulations, which address exclusively nonhazardous solid waste issues.

b. Basin Plan. The Porter-Cologne Water Quality Control Act requires the SWRCB or individual RWQCBs adopt water quality control plans, often referred to as basin plans, for the protection of water quality. The RWQCB (San Francisco Bay Region) adopted a revised Basin Plan on June 21, 1995.[17] The Basin Plan defines beneficial uses and water quality objectives for waters of the state, including surface waters and groundwaters. Beneficial uses of local water resources, as specified in RWQCB Order No. R2-2002-0066, include the following:

Groundwater beneath the Class II landfill:

- Domestic and municipal supply (deeper than -100 feet msl)
- Agricultural supply (deeper than -100 feet msl)
- Industrial process and service supply (deeper than -100 feet msl)
- Discharge to San Pablo Bay and wetlands surrounding the site.

San Pablo Creek in the vicinity of the landfill:

- Wildlife and estuarine habitat
- Non-contact water recreation
- Fish migration and spawning
- Preservation of rare and endangered species
- Shellfish harvesting.

San Pablo Bay in the vicinity of the landfill:

- Industrial service supply
- Navigation
- Contact and non-contact recreation
- Commercial and sport fishing
- Wildlife and estuarine habitat
- Preservation of rare and endangered species
- Fish migration and spawning
- Shellfish harvesting.

c. RWQCB Order No. R2-2002-0066. Order No. R2-2002-0066 represents updated Waste Discharge Requirements (WDRs) for the WCCSL Class II landfill. This Order was adopted by the RWQCB on June 19, 2002. The purpose of the Order was to update WDRs for the WCCSL to include general provisions and tasks necessary to (1) complete final landfill closure; (2) modify the dischargers named; (3) evaluate and implement upgrades to the leachate collection and removal system; (4) evaluate the extent of groundwater contamination detected outside the landfill footprint and implement remedial measures necessary; (5) conduct studies necessary to evaluate stability of landfill materials; and (6) bring the landfill into compliance with the appropriate portions of 27 CCR.

Selected specifications in Order No. R2-2002-0066 that relate to protection of surface and groundwater resources at the WCCSL site include the following:

- The site shall be protected from any washout or erosion of wastes or cover material and from inundation that could occur as a result of a 100-year, 24-hour precipitation event, or as the result of flooding with a return frequency of 100 years.

- Surface drainage from tributary areas and internal site drainage from surface or subsurface sources shall not contact or percolate through wastes during the life of the site.

- The existing containment, drainage, and monitoring systems at the facility shall be maintained as long as leachate is present and poses a threat to water quality.

- The dischargers shall assure that the structures, which control leachate, surface drainage, erosion and gas are constructed and maintained to withstand conditions generated during the maximum probable earthquake.

- The final cap system shall be graded and maintained to promote lateral runoff and prevent ponding and infiltration of water.

- The dischargers shall analyze the samples from any groundwater or leachate wells as outlined in the Discharge Monitoring Program.

- The dischargers shall install any reasonable additional groundwater and leachate monitoring devices required to fulfill the terms of any future Discharge Monitoring Program issued by the Executive Officer.

- The dischargers shall maintain all devices or designed features installed in accordance with this Order, such that they continue to operate as intended without interruption.

- The RWQCB shall be notified immediately of any failure occurring in the waste management unit. Any failure that threatens the integrity of containment features or the landfill shall be promptly corrected after approval of the method and schedule by the Executive Officer.

- The dischargers shall maintain the facility so as to prevent a statistically significant increase in water quality parameters at points of compliance as provided in 27 CCR §20420.

d. RWQCB Order No. 96-098. Order No. 96-098 addresses waivers of WDRs for composting operations. Composting facilities which compost green waste, agricultural waste, food processing waste, or paper wastes are waived from needing to obtain WDRs, though a Report of Waste Discharge (ROWD) must still be submitted.

Co-composting with sewage sludge (biosolids), such as proposed by the Applicant, is not exempt from needing WDRs. The Applicant would need to address biosolids in their ROWD with proposed environmental controls and the RWQCB would determine the need for WDRs. Similarly, the land application (spreading) of biosolids would need to be included in the ROWD and RWQCB would determine whether the existing landfill WDRs (Order no. R2-2002-0066) would need to be revised.[57]

e. Storm Water Control Plans. As discussed earlier in this chapter, the Applicant has prepared an SWPPP for the existing WCCSL facility in accordance with the provisions of General Permit No. CAS000001 for Water Quality Order No. 91-13-DWQ, as updated by No. 97-03-DWQ NPDES. Because proposed Project activities exceed 5 acres in size, the Applicant must submit a Notice of Intent to the SWRCB, prepare and submit a revised SWPPP

acceptable to the RWQCB Executive Officer, and implement Best Management Practices for control of storm water.

2. County/City

The Contra Costa County (County) General Plan, the City General Plan and North Richmond Shoreline Specific Plan all contain water resource goals, policies, and implementation measures relative to water resources.[5,7,12] Those measures which are relevant to the WCCSL site are included in the HWMF EIR.[33]

In summary, the goals, policies, and implementation measures of the County and City General Plans relate to conservation, enhancement, and management of water resources to assure their beneficial uses are met. Policies and implementation measures address facility sitings in areas of high percolation rates; control of peak drainage flows; management of grading, filling, and construction activity near watercourses; regulation of development that is potentially destructive to the natural quality of the creeks; groundwater monitoring for large-scale commercial and industrial facilities; rejection of any development proposals which would deplete groundwater supply; and review of project applications to determine their conformance with the General Plan policies.

The local mechanism of complying with these measures is through the use permit process. As discussed in Chapter 3, the existing BMPC at the WCCSL is subject to County Land Use Permit (LUP) 2054-92, as amended by LUP 2043-94, and City Conditional Use Permit (CUP) 92-53. Both permits required the Applicant to submit a Final Development and Improvements Plan (FDIP) for the BMPC for County and City approval. Such a document was submitted for approval by these jurisdictions.[3]

The use permits are specific regarding the content of the FDIP. One of the required sections is the BMPC Drainage, Erosion, and Sediment Control Plan. This plan addresses drainage system capacity requirements and drainage and erosion control, including control devices and the surface water monitoring program. Both use permits would need to be revised and amended to reflect the proposed Project. The Applicant will likely be required to update the Plan in a revised FDIP as a condition of both use permits. For discharge of Class II leachate directly to the City's treatment plant, the Applicant would comply with City Ordinance No. 3-00 and the agreement executed with the City on April 24, 2001.[48]

C. SIGNIFICANCE CRITERIA

Appendix G of the CEQA Guidelines indicates a project will normally have a significant effect on water resources if it will:

- Violate any water quality standards or waste discharge requirements.
- Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level that would not support existing land uses or planned uses for which permits have been granted).
- Otherwise substantially degrade water quality.
- Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on or off site.
- Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on or off site.
- Create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff.
- Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map.
- Place within a 100-year flood hazard area structures which would impede or redirect flood flows.
- Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam.
- Inundation by seiche, tsunami, or mudflow.

D. IMPACTS AND MITIGATION MEASURES

Water resource issues associated with the proposed Project are discussed in this section. Issues discussed in this section relate to water quality standards and waste discharge requirements, depletion of groundwater supplies, water quality, and drainage and runoff.

1. Impacts Considered not to be Significant

Significance criteria applicable to potential water resource impacts are discussed in Section C. Criteria that are either not applicable, or not significant based on the discussion in Section A of this chapter, include the following:

- Substantially deplete groundwater supplies or interfere with groundwater recharge.
- Placement of housing within a 100-year flood hazard area.
- Placement of structures within a 100-year flood hazard area which would impede or redirect flood flows.
- Inundation by seiche, tsunami, or mudflow.

The proposed Project facilities do not require the use of groundwater so there is no impact to groundwater supplies. Water supply needs are met through use of potable water from East Bay Municipal Utility District, treated effluent from the WCWD treatment plant, or reuse of runoff water. The WCCSL is outside of the 100-year flood hazard area and does not involve placement of housing or structures within such an area.

2. Water Quality Standards and Waste Discharge Requirements

IMPACT 6-1. Proposed Project components could result in a violation of water quality standards or WDRs. This impact is considered to be less than significant.

The WCCSL Class II landfill and the BMPC site and operations are subject to RWQCB Order No. R2-2002-0066.[29] The updated WDRs were recently adopted by the RWQCB on June 19, 2002. This Order contains specific requirements the Applicant must comply with to protect local surface water and groundwater resources. Violations may result in enforcement actions, including RWQCB orders or court orders requiring corrective action or imposing civil monetary liability, or in modification or revocation of the WDRs by the RWQCB.

The proposed Project may require Order No. R2-2002-0066 to be revised depending on the RWQCB's determination regarding land application of biosolids. A ROWD would need to be submitted to the RWQCB.[42] A landfill elevation of 160 feet above msl is included in the WDRs. Provision No. 19 of the Order requires the Applicant to submit a technical report 120 days prior to any material change in site operation or features describing any material proposed changes to site development, redevelopment projects, site features, or site operations for the landfill. The technical report must describe the project, identify key changes to the design that may impact the landfill, and specify components of the design necessary to maintain integrity of the landfill cap and prevent

water quality impacts. No material changes to the site shall be made without approval by the Executive Officer of the RWQCB.

As indicated earlier, Order No. 96-098 does not exempt composting facilities from obtaining WDRs if sewage sludge is used. The Applicant's ROWD submitted to the RWQCB would also need to include co-composting of biosolids. The RWQCB would then determine if WDRs would need to be issued for the Applicant's Composting Facility.[57]

Control Measure Incorporated by Applicant: None.

EIR Recommendation:

MITIGATION MEASURE 6-1. None required.

3. Groundwater Quality

IMPACT 6-2. Proposed Project components could generate either increased quantities of pollutants or new sources of pollutants, which could infiltrate the soil column and degrade underlying groundwater quality. This impact is considered less than significant.

The WCCSL has a range of existing control measures associated with existing facilities, proposed Project components, and potential effects on groundwater resources. As discussed in Chapter 3 and earlier in this chapter, the Class II landfill is equipped with an LCRS, is surrounded by a barrier wall, and is regulated pursuant to the requirements of RWQCB Order No. R2-2002-0066 for the protection of surface water and groundwater quality.

The proposed vertical height increase would provide more waste that produces leachate during decomposition and increased weight that would cause the release of more groundwater from the underlying sediments. However, these increases would be accommodated within the existing leachate management system that is designed to remove the approximately 150 million gallons of leachate that has accumulated over time. With the new connection to the City's wastewater treatment plant in late 2003, although the rate at which leachate can move through waste will be the limiting factor, approximately 100,000 gallons per day of leachate would be pumped to the plant. This pumping rate would be expected to remove a sufficient quantity of the stored leachate to provide an inward hydraulic gradient to the landfill. Following lowering of leachate levels and the establishment of the inward hydraulic gradient, the leachate removal capacity would exceed the leachate generation and groundwater release rates.

Additionally, the proposed BMPC facilities on the landfill's central plateau would be located on the final landfill cover; postclosure land uses are subject to the requirements of the WCCSL Postclosure Maintenance Plan; and the proposed WRC site and building floor are paved and is underlain by 3 feet of soil and clay with a 60-millimeter-thick high density polyethylene (HDPE) geomembrane liner, and topped with 2 feet of sand designed to State final cap standards.

Given the safeguards discussed above, concerns would exist over preservation of the final cap integrity and over proposed activities that would introduce new sources of high-liquid wastes. The latter would include the proposed spreading of dredged material and biosolids on portions of the southern and eastern landfill slopes (Figure 3-3). Drying of this material on the landfill slopes would occur via solar drying and wind action.

The Applicant has conducted on-site evaluations at the Class II landfill on the effectiveness of the final cap in limiting infiltration of water. Tests conducted showed the cap is effective in limiting water infiltration and that vegetative growth serves to remove the moisture. Data collection and observation at the Potrero Hills Landfill in Solano County, also owned by Republic Services, Inc., show that the deeper soils (18 inches to 60 inches in depth) have relatively unchanged moisture levels after 5 years of rainfall (Appendix 3H).

Control Measures Incorporated by Applicant:

a) A minimum of 3 feet of compacted soil would be placed over the final landfill cap in the central plateau, which will underlie operations areas and serve to protect the final cap.

b) Benchmark marker layers would be established and annually monitored to determine that the upper 3-foot-thick soil buffer is not removed over time.

c) Additional compacted soil would be placed as necessary to augment and maintain the 3-foot soil layer.

d) Additional soil on the southern and eastern landfill slopes would be placed prior to application of dredged material and biosolids. Per control measures (a – c), establish benchmark marker layers, monitor annually, and place additional soil as necessary to protect the final cap.

e) Annual soil moisture monitoring would be conducted during the initial years of dredged materials and biosolids spreading and, if necessary, adjustments will be made to facility operation under review and oversight of the RWQCB.

f) Prior to full-scale implementation of dredged materials and/or biosolids spreading, further testing would be conducted, under RWQCB review and

oversight, of application methods and rates to optimize operational procedures while not overloading the soil's moisture assimilation capacity.

g) Prior to accepting dredged materials for disposal, the Applicant would require the project sponsor to meet specific requirements, including providing specifications on material to be delivered and on-site operating protocols needed to manage the material on site to prevent water quality impacts.

h) Plan and implement a leachate removal program in accordance with the requirements of Order No. R2-2002-0066 that would provide an inward hydraulic gradient to the landfill.

Control measures discussed above as part of the Project would reduce potential impacts to groundwater quality to a less-than-significant level.

EIR Recommendations:

MITIGATION MEASURE 6-2. None required.

4. Drainage, Runoff, and Surface Water Quality

IMPACT 6-3. The proposed Project would alter the existing drainage pattern of the site or contribute increased runoff that could exceed system capacity and result in on-site or off-site flooding. This impact is considered to be less than significant.

The required closure standard for the WCCSL Class II facility is based on the maximum probable 100-year, 24-hour precipitation. Therefore, any drainage controls, such as down drains, bench drains, channels, and culverts must be designed to accommodate a 100-year, 24-hour storm event. Additionally, under RWQCB composting facility policy, all areas used must be protected from inundation by surface flows associated with the 24-hour, 25-year storm event. The Applicant's design basis for drainage controls is included in Section III.B.6.b of the RDSI and in Appendix H of the FDIP.[1, 2]

Figure 3-6, the final landfill grading plan, shows the main drainage facilities. More detailed drawings for each of the BMPC Project components with drainage patterns and control features are included as Chapter 3 appendices (Figures 3B-1, 3C-1, 3D-1, 3F-1, and 3H-1). The Project does not propose development of new paved surfaces that would increase storm water runoff volumes. Several new buildings are proposed (Figure 3-4), but these are limited in size. The proposed WRC would be located in the former Soil Remediation Building, which is an improved site with respect to pavement, drainage control, and availability of utilities. The Soil Remediation Building would be expanded by about 0.32 acres (13,940 sq. ft.) to accommodate the WRC. Increased storm water flows resulting from construction of additional impervious areas would be conveyed

away from the site by appropriately sized down-gradient channels with respect to pavement, drainage control, and availability of utilities.

Control Measures Incorporated by Applicant: None.

EIR Recommendation:

MITIGATION MEASURE 6-3. None required.

IMPACT 6-4. The proposed Project could produce increased runoff or new sources of polluted runoff that could result in substantial erosion or siltation on or off site, or otherwise degrade surface water quality. This impact is considered potentially significant.

The proposed Project involves several new activities, but generally comprises an expansion of existing operations in the context of increased waste streams and expanded hours of operation. The WCCSL is regulated under NPDES Permit No. 207S005532 and the Applicant has implemented a SWPPP for the site. The Applicant has also certified that all non-storm water discharges to storm water conveyance systems have been eliminated.[1] The general concept of the WCCSL's surface drainage plan is shown on Figure 3-6, the final grading plan.

Expanded operations would expose more materials to rainfall and thus potentially degrade the quality of the storm water runoff. Water that comes into contact with these materials could be affected by the following constituents:

- Nitrate from organic material.
- Sulfate and sulfur from construction debris and organic material
- Residual pesticides remaining on organic material
- Metals from organic material and construction debris
- Increased TDS levels from organic and construction debris
- Petroleum hydrocarbons associated with cleaning of equipment and inks and glues contained within paper products.

Composting/Wood Recovery. Figure 3B-1 in Appendix 3B shows the drainage plan for the Composting/Wood Waste Processing Area. The plan includes berms, down drain systems, storm drain systems, the location and direction of flow in perimeter drainage channels, and the discharge points for runoff water. Facility design includes a minimum grade of 5 percent in the windrow areas and a minimum of 1 percent grade in the facility's perimeter drainage channel.

The Composting Facility would continue to have two sources of drainage water that require management. These include storm water, which generally occurs from rainfall events, and leachate, which is water that infiltrates and drains from the compost windrows and curing piles. According to the Applicant's RCSI, the composting operation would not use any significant amendments or additives except for a minor amount of fertilizer material to stimulate the composting process on an as-needed basis. Such materials normally would not exceed 1 percent by volume.[4]

As shown on Figure 3B-1, down slope berms would be placed along the perimeter of the composting/wood waste processing area. Any compost leachate flowing from the windrow or curing piles or the wood recovery area would be retained by this berm. The berms would be about 3 feet high and 8 feet wide. The 3-foot-deep channel formed by the berm design runs for a length of about 1,000 feet along the northern edge, about 600 feet along the eastern edge, and about 1,000 feet along the southern edge of the Composting Facility, with the channels sloped to drain to the siltation control pond in Area A.

The maximum size of the Composting Facility would be 40 acres. For purposes of annual runoff calculations, the Applicant calculated that 29 acres of the total 40 acres would generate 5 million gallons of runoff, which includes 335,000 gallons per year of compost leachate. Normally, compost leachate would be collected and re-used to add moisture in the composting process. Alternatively, compost leachate collected into the Area A basin can be discharged to the WCWD treatment plant and eventually the City of Richmond plant with the Class II landfill leachate. The drainage runoff from major storms would flow to the Area A retention basin. The diluted overflow runoff from the Area A basin would be directed to the 68-acre diked Area B pond.

The remaining 11 acres of the Compost Facility that does not drain eastward would either not be used during wet weather, and hence there would be no runoff, or the materials placed in that area would include the finished compost or wood chips where the runoff would have low pollutant potential. This drainage would sheet-flow off the area, pass through the gravel filter (the same material used for siltation control for the concrete rubble processing runoff around the southern, western and northern perimeter of the facility), and then runoff would sheet-flow down the grassy landfill slope. The drainage arrows shown on Figure 3-3 show the flow directions.

Concrete/Asphalt Processing. Figure 3C-1 in Appendix 3C shows the drainage plan for the concrete/asphalt recycling operation to be located at the western end of the landfill's central plateau. Facility operations could be a source of sediment and other pollutants. The Applicant proposes to control sediment through the use of defined drainage grading and use of silt barriers (geofabric fences, straw and shredded wood mulch, and hay bales). As illustrated, surface drainage would be a combination of sheet flow over southern, western, and northern landfill slopes to the Bay or Area B; and discharge to the Area A retention pond. Vegetative growth on the landfill slopes would serve to filter

sediment and silt particles. The County LUP No. 2053-92 limits asphalt crushing to the dry weather season and the stored and crushed asphalt is to be covered during the wet season. The Applicant has proposed as part of this Project that these requirements be removed from the LUP.

Waste Recycling Center. The drainage plan for the Waste Recycling Center (WRC) is shown on Figure 3D-1 of Appendix 3D (alternative WRC site drainage plan shown on Figure 3H-1 of Appendix 3H). The WRC is proposed to be located in the former Soil Remediation Building. Drainage at the front of the building would be diverted to the western and eastern sides. Because rainfall drainage waters from the front apron would be considered to be potentially contaminated from oil dripping off vehicles and when waste unloading overflows into this area, oil/water separators would be provided to receive these drainage waters. The separators would discharge to the south bench drain that leads eastward to the Area A retention pond. The roof gutter drains for the processing building would be designed to appropriately discharge the water around the building. The wash down wastewater from cleaning the tipping floor would be processed through an oil/water separator.

Wet/Dusty Material Blending. The wet/dusty material blending would first occur at the former Soil Remediation Building, if sufficient time is available prior to the building's use for the WRC, or on the landfill's central plateau at the Waste Shuttle Facility. These materials would be hauled in covered trailers and placed in the building and stockpiled to be protected from the rain and prior to processing. The drainage plan for the Soil Remediation Building is shown on Figure 3D-1 of Appendix 3D. Berms and channels divert runoff from the building with most of it diverted to the Area A siltation control pond and some to San Pablo Creek. The drainage from the building and apron area would be directed to oil/water separators located at the end of the facility and then to the Area A basin.

At the landfill central plateau, runoff controls would be established to direct runoff to the Area A basin. The Applicant proposes to conduct mixing operations under controlled conditions. During wet weather, mixing would be done either under a roofed area, in a large metal mixing chamber that could be tarped, or the mixing would be temporarily suspended.

Soil Reclamation Facility. The Soil Reclamation Facility would involve the reclamation of non-contaminated soils in an area adjacent to the composting and wood recovery operations. Drainage would be managed as discussed above for that area.

Biosolids/Dredged Material Spreading. This proposed activity involves the spreading of wet dredged materials and/or biosolids from the WCWD treatment plant on the southern or eastern slopes of the closed landfill during the dry season, which is about a 6-month period, April through October. These materials may also be used as a soil

amendment on the final capped areas of the landfill. Figure 3H-1 shows the drainage plan for landfill slope spreading operation.

Liquid biosolids application to the southern and eastern landfill sideslope areas would require the application and disposal of large quantities of water. It is proposed that 24 million gallons (mg) of digested sludge (94 to 98 percent moisture) be land applied per year on about 22.5 acres. The Applicant has evaluated two application rates, 1 gallon per 5 square feet (sq. ft.) and 1 gallon per 15 sq. ft.[25] Using these application rates, the following analysis is possible:

Application rate	Depth of applied liquid, in.	Gal. per application per 22.5 acres	In. of depth to apply 24 mg	No. of applications per year	No. of applications per 6 months
1 gal/5 sq. ft.	0.32	196,000	39.2	122	244
1 gal/15 sq. ft.	0.11	65,340	39.2	367	734

As shown, in order to dry 24 million gallons (MG) of liquid biosolids on 22.5 acres, a total depth of 39.2 inches would need to be applied. On a annual basis, there would need to be 122 or 367 applications per year. Over a 6-month drying period, such as is proposed, these applications would be doubled to 244 to 734 (1.4 to 4 applications per day). It can be concluded that either a much larger drying area is needed, or projected quantities of liquid biosolids would need to be reduced, in order to avoid conditions of over saturation, increased runoff, and water quality impacts.

Drainage control would be provided to prevent water from entering the processing areas and to allow it to flow around and away from the areas. As illustrated on Figure 3H-1 in Appendix 3H, an existing berm at the base of the slopes would be raised in height to contain runoff and direct the water to sump pumps. Grasses would be planted in the ditches behind the berms to transpire water and for nutrient absorption. During the latter part of the wet weather season, the Applicant may be able to pump the runoff back to the top of the slopes and reapply it to the areas where it would evaporate. Otherwise, the runoff water would be pumped into the leachate piping system used for the Class I HWMF treated leachate discharge to the WCWD sewer. No Class I leachate would be pumped during this time. Currently, at the WCWD biosolids drying lagoons, plant operators decant rainwater off the lagoons and pump it back to the treatment plant headworks.

Biosolids may also be used as a soil amendment on final capped areas of the landfill that have vegetative cover, serving to absorb nutrients and consume moisture. Excess moisture, however, may result in run off. For those areas where the biosolids have been placed in that year as a soil amendment, the Applicant would establish and maintain an unscreened compost windrow or shredded green material (about 8 feet wide and 2 feet deep) at the base of the spreading area for moisture and nutrient absorption. In the following season, the windrowed materials would be spread on the slope as a thin mulch

layer. The application of biosolids on the final capped slope areas would follow a 5- to 10-year rotational pattern. The Applicant would monitor the biosolids application areas to verify that the drainage system is functioning as required.

Control Measures Incorporated by Applicant:

a) A Notice of Intent and revised SWPPP related to proposed operations would be submitted for approval by the Executive Officer of the RWQCB; Best Management Practices (BMPs) would be implemented for control of storm water.

b) The existing Drainage, Erosion, and Sediment Control Plan would be modified pursuant to County LUP No. 2054-92, as amended by LUP No. 2043-94, and City CUP No. 92-53. The FDIP revisions would be finalized, if amended use permits are obtained, and the Applicant would comply with permit conditions.

c) Modified or new Solid Waste Facility Permits would be obtained from the LEA and CIWMB for the landfill, Composting Facility, and WRC and permit conditions would be followed.

d) Further testing of biosolids spreading would be conducted prior to full-scale implementation to refine the rates and methods of application, under the review and oversight of the RWQCB. Revised WDRs would be obtained as necessary and the Applicant would abide by permit conditions.

e) BMPs at the Composting Facility would be employed that would optimize applied water to the windrows while minimizing the generation of leachate.

EIR Recommendations:

MITIGATION MEASURE 6-4.

a) Upon completion of the additional biosolids spreading trials per Control Measure 6.4(d) above, the Applicant would prepare a Progress Report for RWQCB review and approval. The Progress Report would include, at a minimum, the following:

- Purpose of Biosolids Spreading
- Approach and Methodology
- Results
- Environmental Controls
- Conclusions and Recommendations
- Other Components Deemed Necessary by the RWQCB

The Progress Report should demonstrate the maximum acceptable biosolids loading rate, given available site area and physical constraints and the need to maximize drying and to control runoff.

Implementation of this mitigation measure would reduce potential surface water quality impacts to a less-than-significant level.

5. Flooding

IMPACT 6-5. The proposed Public Access Trail (Trail) could result in exposure of people to risk due to flooding. This impact is considered to be less than significant.

The alignment of the Trail along existing levees, which border WCCSL Areas B and C, make it susceptible to flooding at times of extremely high tides and stormwater runoff. According to the Applicant, flooding has occurred only once in recent times.

Control Measures Incorporated by Applicant:

a) The Trail would be closed during times of extremely high tides in conjunction with unusually wet weather when the potential exists that the Trail could be flooded.

Closure of the Trail during extreme wet weather periods would reduce the potential impact associated with flooding to a less-than-significant level.

EIR Recommendation:

MITIGATION MEASURE 6-5. None required.

6. Planning Consistency

IMPACT 6-6. The Project is consistent with local General Plans, North Shoreline Specific Plan, and the Basin Plan. This impact is considered to be less than significant.

The analysis of potential water resource impacts indicates that adverse impacts are not expected to occur. The Applicant will revise their FDIP to reflect the proposed Project, obtain amended use permits from the County and City, comply with relevant provisions of RWQCB Order No. R2-2002-0066, and will also comply with requirements of NPDES Order No. 91-13-DWQ as updated by No. 97-03-DWG. Therefore, the Project is consistent with the County and City General Plans, the North Shoreline Specific Plan, and the Basin Plan.

Control Measures Incorporated by the Applicant: None.

EIR Recommendation:

MITIGATION MEASURE 6-6. None required.

7. Impacts of Mitigation Measures

None of the mitigation measures would have an adverse environmental impact.

E. CUMULATIVE IMPACTS

The Applicant must comply with various State and local requirements for the WCCSL that address the protection of surface water and groundwater resources. Leachate and drainage would continue to be managed on site without influence from off-site land uses. Drainage associated with each of the Project components would be managed separately, but in the context of the overall site drainage plan and an updated and approved SWPPP. Similarly, all future development projects discussed in Chapter 4, Section A3(b) would be subject to regulatory review by the RWQCB and local agencies for the protection of surface water and groundwater resources and appropriate permits would need to be obtained and requirements followed. As a result, there are no cumulative surface water or groundwater impacts that would result from the proposed Project and other cumulative projects in the area.

CHAPTER 7

AESTHETICS AND VISUAL QUALITY

The aesthetics and visual quality evaluation of the proposed Bulk Materials Processing Center (BMPC) use permit amendment changes and related actions (Project) is presented in this chapter. The focus of the analysis is on local aesthetics and visual quality, and potential changes in landform associated with new and/or expanded facilities and operations, and the landfill height increase.

A. SETTING

The regional and site-specific settings of the West Contra Costa Sanitary Landfill (WCCSL) are discussed in this section. A variety of waste management and resource recovery activities are occurring at the WCCSL. Environmental reviews under the California Environmental Quality Act (CEQA) have been conducted on all these activities with the common finding that none of them would significantly affect the visual quality of the facility.[9,13,23,33] For purposes of this discussion, the Environmental Impact Report (EIR) for closure of the Hazardous Waste Management Facility (HWMF, State Clearinghouse No. 95063005) is incorporated by reference pursuant to Section 15150 of the CEQA Guidelines. Pertinent information is summarized below.

1. Regional Setting

The regional area consists of a low-lying and relatively flat coastal plain that very gradually slopes down to the edge of San Pablo Bay. The gentleness of the transition results in three distinct zones: uplands, marshlands, and bay waters. A mix of land uses contribute to the area's character. Heavy commercial and industrial uses are clustered in the vicinity of the WCCSL, and undeveloped open areas exist to the north and west (Figure 4-1). The closest residences are about 0.9 mile south and east of the WCCSL. Vegetation in the area consists primarily of grassland in the upland areas with few trees, and salt marsh vegetation along the shoreline.

Overall, the regional area is marked by sharp contrasts in visual character. The shoreline area provides a highly scenic setting with views out to San Pablo Bay (Figures 7-1 and 7-2) and the existing development introduces elements with low visual quality. Positive visual characteristics of the area are related primarily to the area's natural setting. The area's existing negative visual characteristics are almost solely attributable to the man-made environment. With the completion of the Richmond Parkway, access to the area has been improved, which should improve the economics and aesthetics of developments. The Richmond Parkway, by enhancing

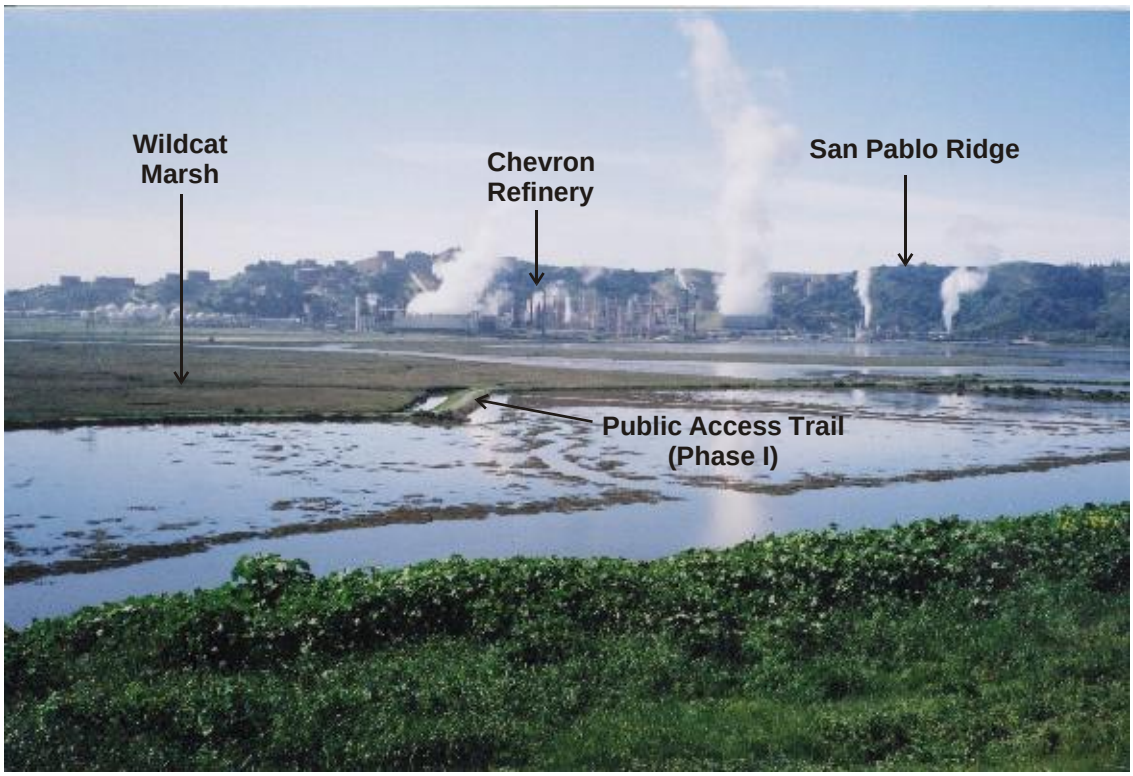


Figure 7-1 Southwestern View. This panoramic view from the landfill central plateau shows the open space/marsh in the foreground with a portion of Phase I of the proposed Public Access Trail. Chevron Refinery and San Pablo Ridge are in the distant background.

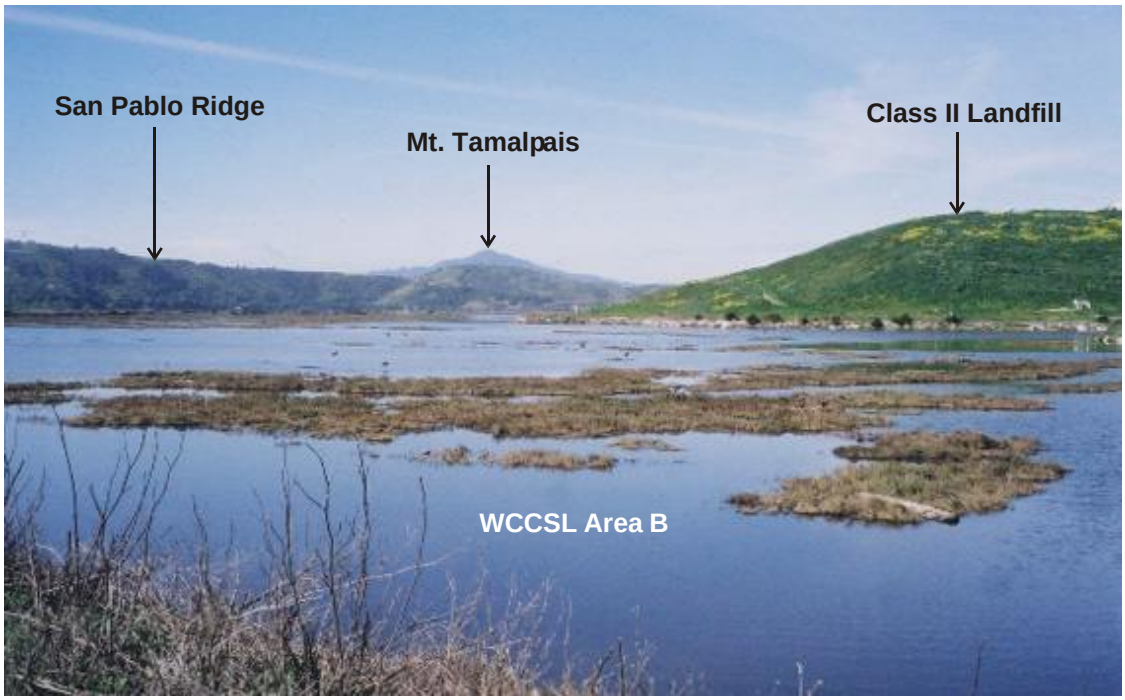


Figure 7-2 Northwestern View. This panoramic view from the Phase I segment of the Public Access Trail opens to San Pablo Bay with Mt. Tamalpais in the background.

public access to the regional area, creates new vantage points for the public to view the North Richmond shoreline, San Pablo Bay, and the distant shoreline. Further access would be provided by the proposed WCCSL Shoreline Public Access Trail (Trail).

2. Project Site Setting

The developed area near the WCCSL is an industrial landscape consisting of materials container and equipment storage yards; greenhouses; warehouses; auto wrecking yards; metal storage sheds; and concrete tilt-up buildings (Figure 4-1). According to the North Richmond Shoreline Specific Plan EIR,[60] existing visual conditions in the area are of low quality. However, policies and design guidelines of the North Richmond Shoreline Specific Plan are intended to protect and enhance existing visual resources and regulate new development such that the overall visual character of the area will improve.

The WCCSL differs from the rest of the regional area in that it has more topographic variation. One of the byproducts of ongoing WCCSL operations is that hill forms are being created. The hill forms have an east-west trending ridgeline, portions of which have a current elevation of 130 feet above mean sea level (msl). Due to the constant grading, the majority of the WCCSL has little or no vegetation or distinctive visual features. The major exceptions to this are the pond and diked wetlands that are located along the western and southern edges of the WCCSL. Despite the absence of significant visual values within the WCCSL itself, the site provides extensive views in all directions. Unobstructed panoramic views of San Pablo Bay and adjacent marshes (i.e., both the San Pablo Creek Marsh and Wildcat Marsh) are provided. The additional elevation provides more distant views to the south and east, toward Point Richmond and the downtown Richmond area.

B. REGULATORY AND PLANNING FRAMEWORK

A regulatory and planning framework exists for the proposed Project relative to aesthetic issues. An overview is provided below.

1. State Regulations

Both Title 14 of the California Code of Regulations (14 CCR) and 27 CCR address minimum standards for solid waste handing and disposal. Important provisions that relate to littering and aesthetics include the following:

- 14 CCR §17676 (27 CCR §20631)—requires the landfill working face where solid waste is disposed to be as small as possible, one benefit of which is to more efficiently control litter generation.

- 14 CCR §17408.1 (27 CCR §20830)—requires litter to be controlled, routinely collected, and disposed of properly on site (or other specified location).

- 14 CCR §17682 and 17258.21 (27 CCR §20680)—require landfill operators to cover disposed solid waste with a minimum of 6 inches of compacted earthen material or approved alternative daily cover at the end of each operating day.

Currently, Solid Waste Facility Permit (SWFP) No. 07-AA-001 regulates the Class II landfill and Composting Facility Permit No. 07-AA-0044 regulates the Composting Facility. In addition, 27 CCR §21090(a) and (a.3) provide requirements for the final landfill cover. The final exterior surface must not be steeper than a horizontal: vertical ratio of 1 3/4:1, and vegetated, though mechanically erosion-resistant layers are permissible.

Other regulations pertaining to litter include California Penal Code Section 3746, which prohibits littering or dumping on public or private highways, and California Vehicle Code Sections 23112a and 23115, which prohibit the depositing of trash or glass on highways and require refuse-hauling vehicles to be covered to prevent spilling their loads.

2. Local Requirements and Planning Framework

The Contra Costa County (County) General Plan, the City of Richmond (City) General Plan, and the North Richmond Shoreline Specific Plan all contain scenic resource goals, policies, and implementation measures.[5,7,12] Those measures that are relevant to the WCCSL site are summarized in the HWMF EIR.[33] In general, goals, policies and implementation measures address preservation and improvement of areas of high scenic values including individual sites, adjacent properties, the neighborhoods, and the entire City. Particularly relevant objectives of the North Richmond Shoreline Specific Plan include the following:

- Enhance the visual experience along the proposed Richmond Parkway by creating an attractive entrance way image for the plan area, including view corridors through to the Bay and shoreline.

- Use open space and effective visual buffers between areas with incompatible or unattractive land use activities.

- Protect views of San Pablo Bay and its shoreline as a unique, high-quality resource.

- Maintain the shoreline as a varied and valuable visual and recreational resource.

- Require that any new development preserves the unique view opportunities of the shoreline, and makes these views available to the public to the maximum extent feasible.

- Encourage local industries to improve the appearance of their facilities and integrate them into an overall plan.

- Encourage new development to establish a distinctive character through the external design of buildings and open space, and their relationship to the terrain and shoreline.

The North Richmond Shoreline Specific Plan was adopted in 1993 to regulate development in the 1,951-acre North Richmond Shoreline in which the WCCSL is located.[5] The Specific Plan is a joint County/City plan that is used by each jurisdiction to regulate development in the unincorporated and incorporated areas of the planning area.

The local mechanism of complying with the provisions of the Specific Plan is through the use permit process. The existing BMPC at the WCCSL is subject to County Land Use Permit (LUP) 2054-92, as amended by LUP 2043-94, and by City Conditional Use Permit (CUP) 92-53. Both permits required the Applicant to submit a Final Development and Improvements Plan (FDIP) for the BMPC for County and City approval. The FDIP was submitted for approval by these jurisdictions.

The use permits require the Applicant to implement an approved litter control program to prevent the accumulation of facility-generated litter on and off site. The program is included in the existing FDIP, with the following components:

- Anti-litter screening for all transfer trucks.
- An anti-littering program for collection vehicles and large trucks.
- A litter screening system to prevent litter from blowing off site.
- On-site litter policing at least once per day.
- Off-site litter policing of designated areas.
- Signs posted noting littering and illegal dumping laws.
- Uncovered load surcharge for uncovered loads arriving at the WCCSL.

According to Contra Costa Environmental Health (a Division of the County Health Services Department), the Local Enforcement Agency (LEA), which enforces the landfill SWFP and Composting Facility SWFP, at the WCCSL, these practices are effective in controlling litter on site.[46]

Other required sections of the FDIP include an architectural design and a landscaping plan. The architectural design plan addresses building and installation dimensions and elevations, construction materials and colors. The landscaping plan addresses details of WCCSL landscaping and lighting, and encourages participation with the East Bay Regional Park District (EBRPD) in the development of a landscaping plan along the Wildcat Creek/WCCSL boundary, when the Public Access Trail is implemented in that area.

C. SIGNIFICANCE CRITERA

Appendix G of the CEQA Guidelines indicates a project will normally have a significant effect on aesthetics if it will:

- Have a substantial adverse effect on a scenic vista.
- Substantially damage scenic resources including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway.
- Substantially degrade the existing visual character of the site and its surroundings.
- Create a new source of substantial light or glare that would adversely affect day or nighttime views in the area.

D. IMPACTS AND MITIGATION MEASURES

Potential aesthetic impacts associated with the proposed Project are discussed below.

1. Impacts Considered not to be Significant

A significance criterion that is not applicable to this evaluation includes direct damage to scenic resources.

2. Methodology

The methodology employed for assessing aesthetic impacts includes consideration of the viewshed and development of computer-generated visual simulations (photomontages). A discussion of these items is included below:

a. Viewshed Analysis. A viewshed analysis was included in the HWMF closure EIR which is applicable to the WCCSL in general.[33] Potential viewshed refers to areas that may have visual access to and from the WCCSL site location. From the WCCSL, the view reaches across San Pablo Bay to Pt. San Pedro, northward to the mouth of the Petaluma River, and eastward to the mouth of the Napa Slough. The primary viewshed is located to the south and east of the site and is composed of the north facing hillsides extending from Point Richmond to Point San Pablo (located 2 to 4 miles to the south); and portions of San Pablo Ridge, El Sobrante Ridge, and Pinole Ridge (located 4 to 8 miles to the east).

Residential and industrial areas located in close proximity to the site, to the south and to the east, may have occasional views of the WCCSL. However, since these vantage points are on the North Richmond flats at or slightly below the elevation of the WCCSL, views are usually blocked by buildings, other man-made features or landscaping. Nevertheless, views from any of the few tall buildings within the viewshed area may have direct views of the WCCSL.

b. Generation of Photomontages. Photomontages were prepared to evaluate potential visual impacts of the proposed Project. Photomontages are computer-generated visual simulations of a project appearance after construction. The process consists of selection of viewpoints, field photographs, construction of a computer model, and creation of the photomontages portraying the proposed Project in the visual context of the site. Figure 7-3 shows the location of the two viewpoints that were used in the photomontage analysis. These locations are to the south and southwest of the WCCSL in areas where public access is expected to be provided in the future. The viewpoints are as follows:

- **Viewpoint 1.** Viewpoint 1 is located on the levee that forms the southern boundary of WCCSL Area B. This portion of the levee would be within the Phase 1 segment of the proposed Public Access Trail (Trail). The viewpoint location is about 2,700 feet southwest of the proposed Trail parking area. Viewpoint 1 was selected as a representative location to compare and contrast the Waste Recycling Center (WRC) at the proposed location (in this chapter) versus the alternative site (discussed in Chapter 13.)

- **Viewpoint 2.** Viewpoint 2 is at the Wildcat Creek viewing platform located at the mouth of Wildcat Creek about 3,000 feet south of the WCCSL site. This location provides a close unobstructed view of the WCCSL site and proposed Project facilities. As discussed in Chapter 4 (Figure 4-2), a tentative alignment for extending the Bay Trail (trail spur) would follow the western boundary of the WCWD treatment plant property (near Viewpoint 2), north to Parr Boulevard from where it would proceed east.

3. Scenic Vistas and Visual Character

IMPACT 7-1 The proposed Project involves an increased landfill height; expanded operations on the central plateau, with several new buildings including the Wet/Dusty Material Blending Facility; dredged material and/or biosolids spreading on the southern and eastern landfill sideslopes; and a new WRC, all of which could affect the visual quality of the area. This impact is less than significant.

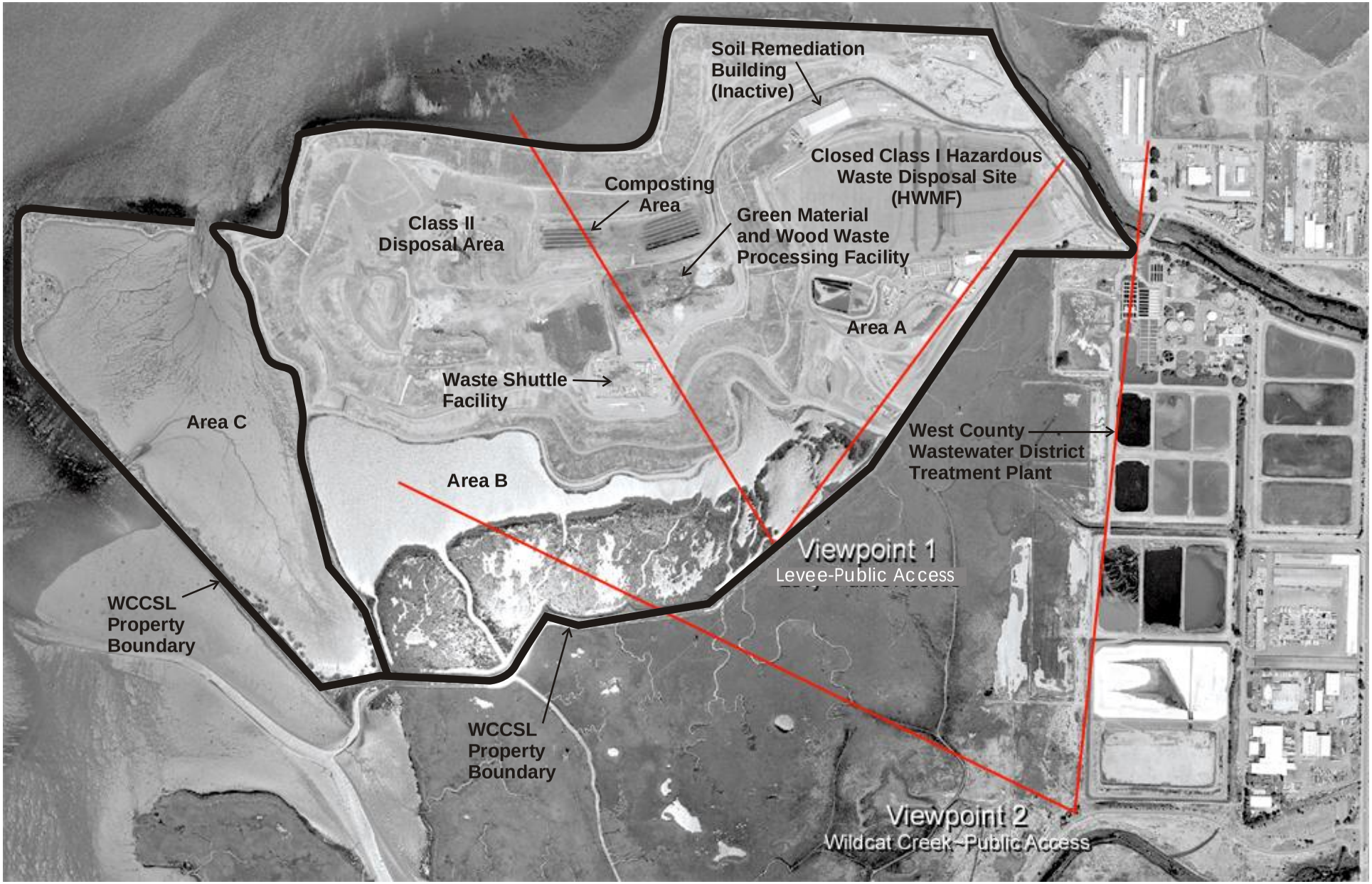


Figure 7-3 Location of Viewpoints

Before and after views from the viewpoints are shown on Figures 7-4 through 7-7. The reader should compare Figures 7-5 to 7-4 and 7-7 to 7-6 to distinguish the features of the proposed Project from existing features.

The current permitted height of the Class II landfill is 130 feet above msl (top of waste). One component of the proposed Project involves increasing the landfill height to 160 feet above msl (top of waste). A 4-foot-thick final landfill cap plus a 3-foot soil protective layer would be placed on top of the waste, making the actual final elevation of the landfill central plateau to be 167 feet above msl. Various Project activities would occur at this new increased elevation. Over time, this height would decrease as landfill settlement occurs.

The WCCSL and Project site setting has been well chronicled in previous CEQA documents and is described in Section A2 of this chapter. The WCCSL is located in an industrial setting of North Richmond. It is an integrated solid waste management and disposal facility and does not have significant visual values. According to the North Richmond Shoreline Specific Plan EIR, existing visual conditions in the area are of low quality.[6] However, with conservation of existing visual resources and the regulation of new development, the overall visual character of the area should improve. Accessibility to the area has been increased by the Richmond Parkway. Public access is also being enhanced as segments of the Bay Trail are completed. The development of the Trail, as part of the proposed Project and a segment of the Bay Trail, would substantially increase public access to the shoreline area and visibility of the WCCSL.

The WCCSL is well located relative to visual quality issues. In addition to being in an industrial setting, sensitive receptors in the area are very limited with the nearest residences located about 0.9 miles to the east and southeast where views of the WCCSL are blocked by trees and existing developments. For purposes of this EIR and visual quality issues, users of the Trail are not considered to be sensitive receptors, as their presence would be elective and short term. Increased public access around the WCCSL is an integrated component of the Project that expands shoreline access while allowing users to observe, from a safe distance, the implementation of some recycling activities that conserve natural resources.

Views from inland areas are distant and limited where specific activities at the WCCSL are difficult to distinguish. Northbound motorists on the Richmond Parkway can view the WCCSL, but views are limited and sometimes obscured or blocked by median landscaping or intervening trees and buildings. The profile of the WCCSL is not clearly distinguishable due to San Pablo ridge and Mt. Tamalpaias to the west (Figure 7-8). A similar setting is viewable by southbound motorists, except for a short segment of the Richmond Parkway which is oriented directly towards the WCCSL north of Parr Boulevard. Again, the view is distant and short term.

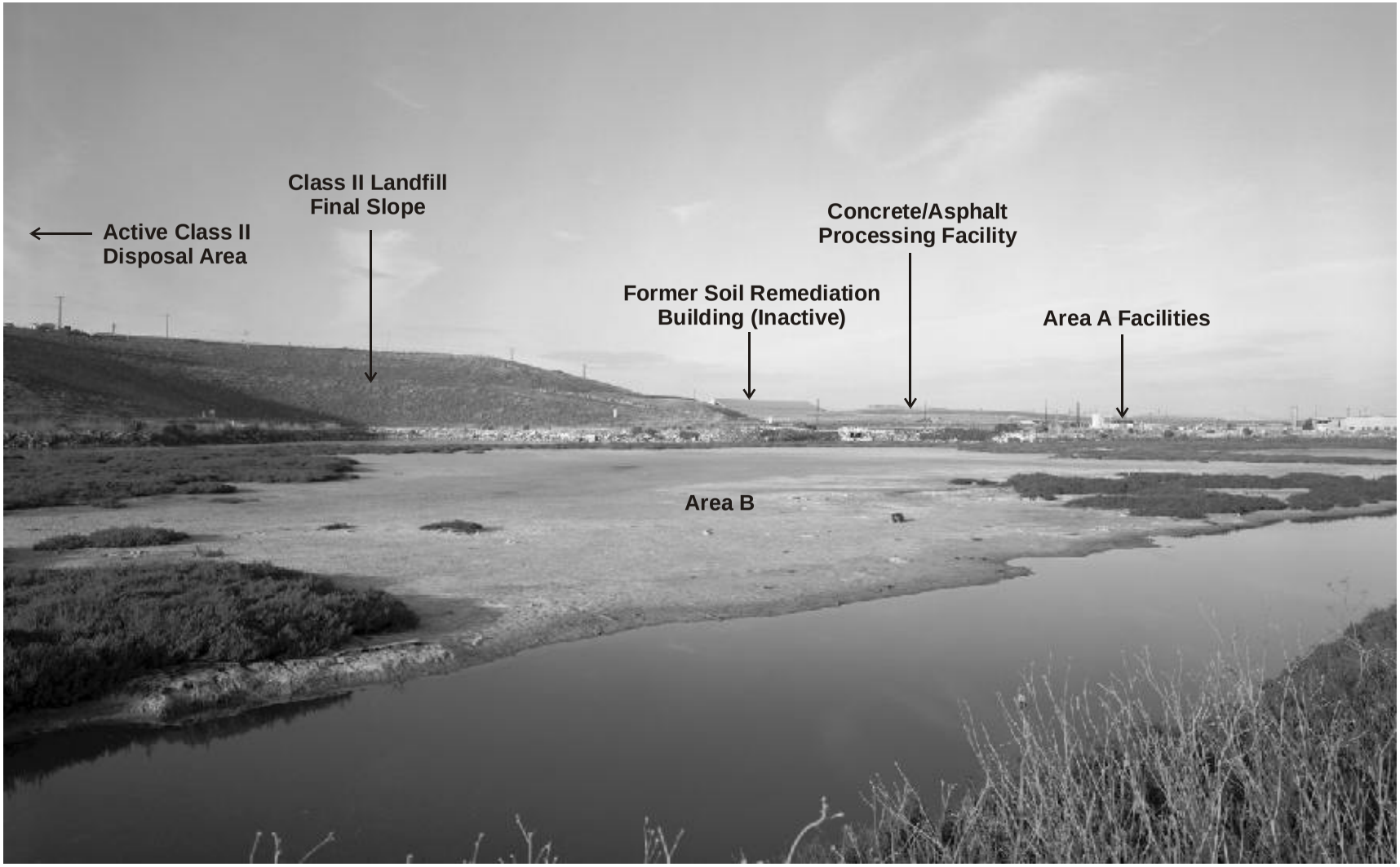


Figure 7-4 Existing Conditions from Viewpoint 1, Levee, Looking Northwest

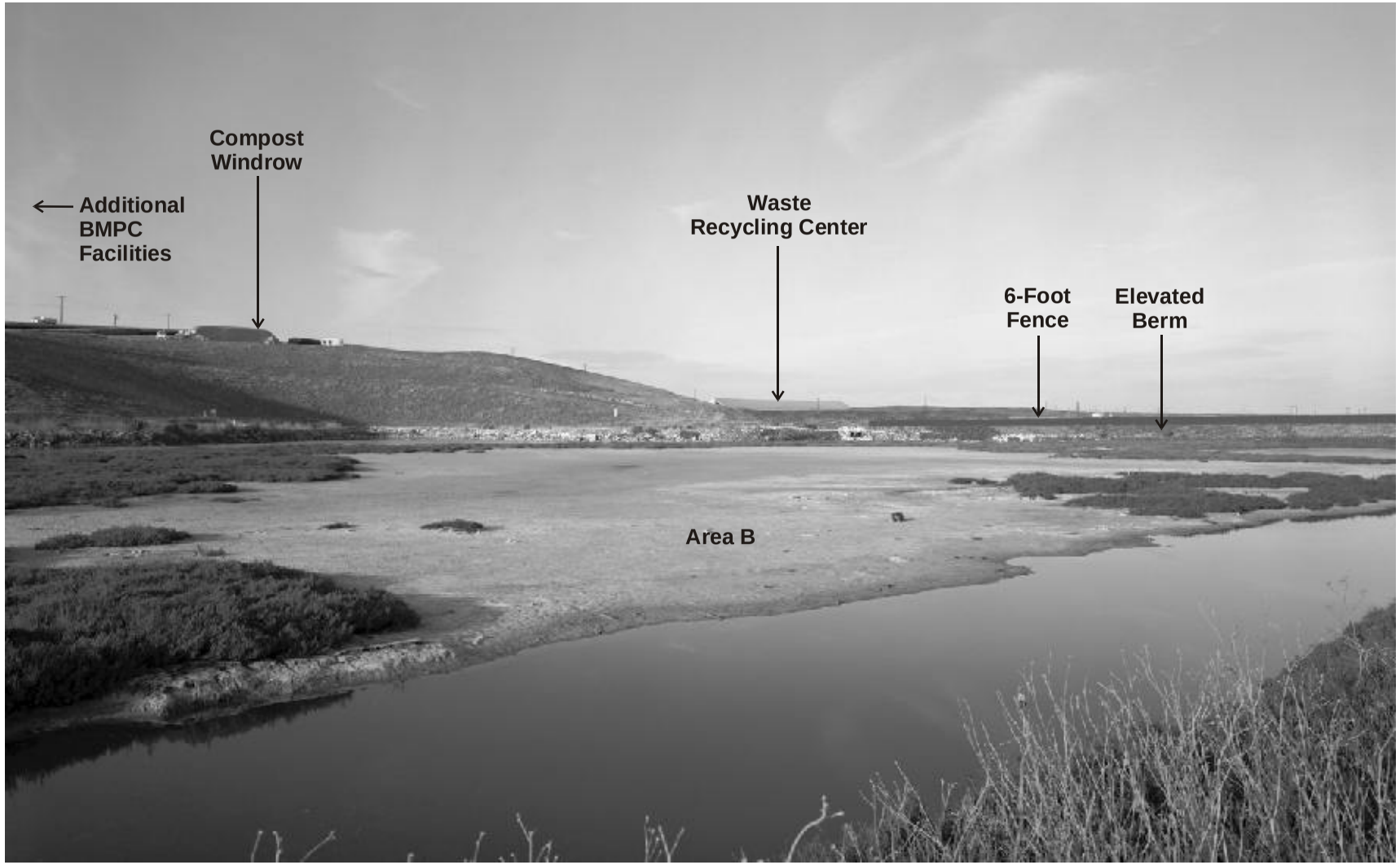


Figure 7-5 Proposed Conditions from Viewpoint 1, Levee, Looking Northwest

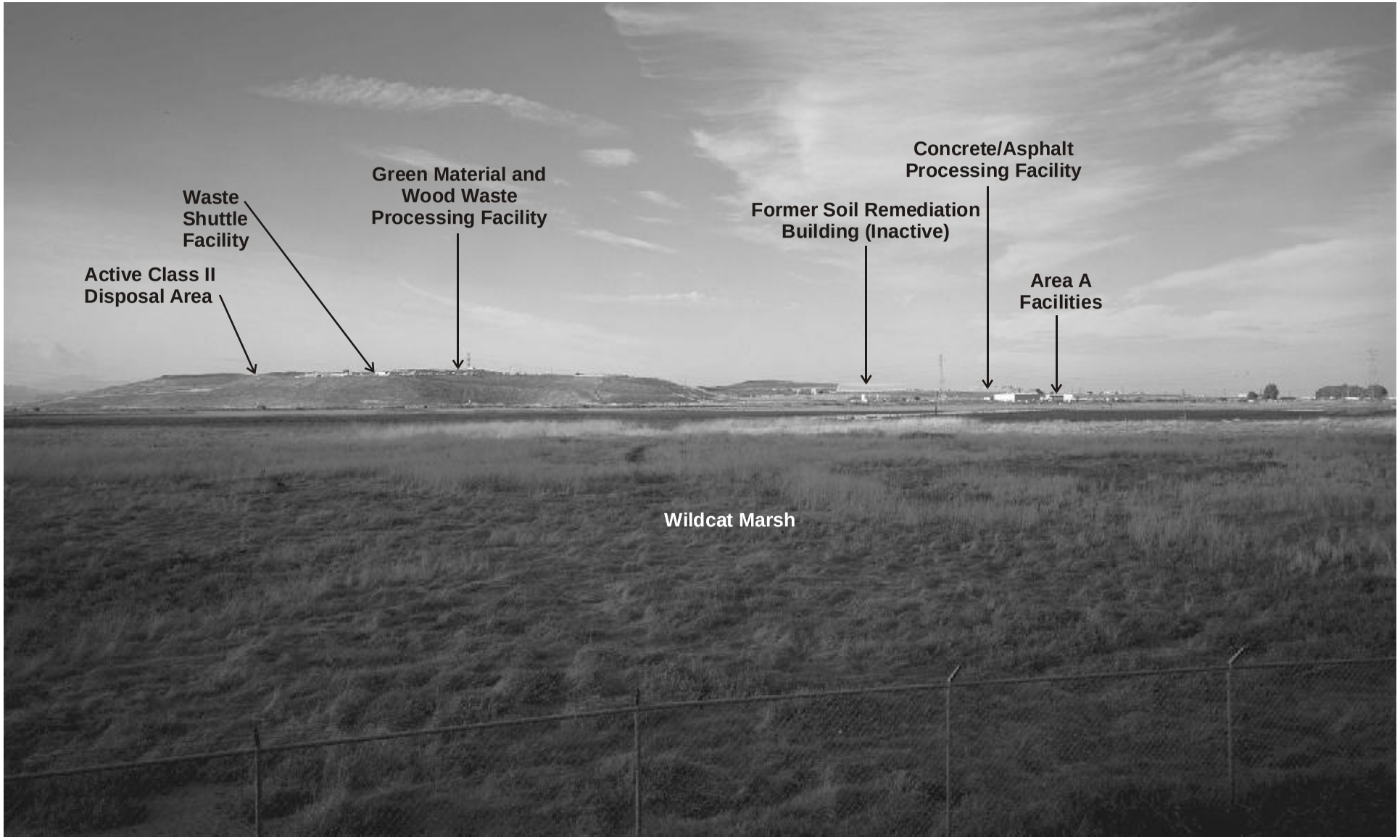


Figure 7-6 Existing Conditions from Viewpoint 2, Wildcat Creek, Looking Northwest

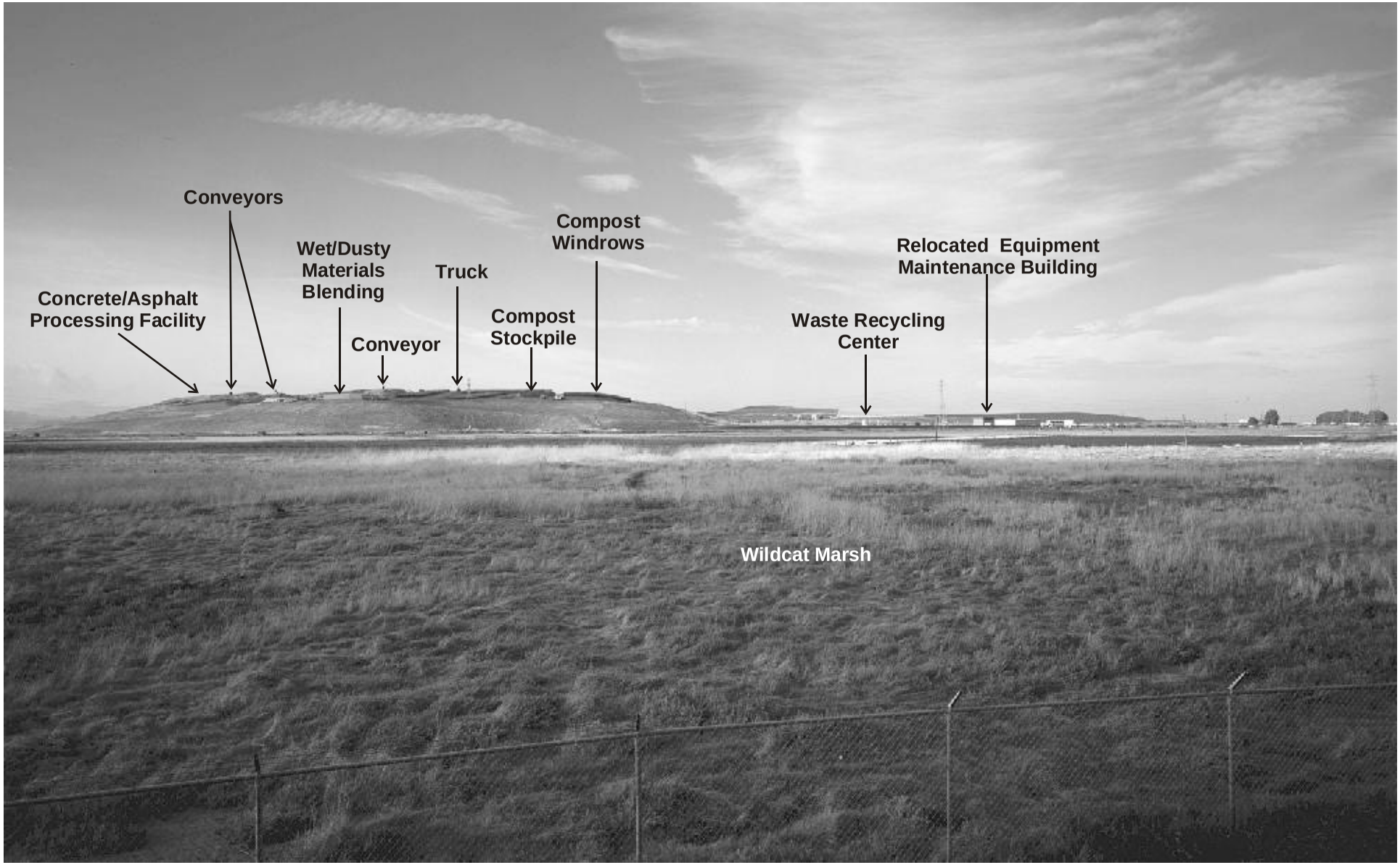


Figure 7-7 Proposed Conditions from Viewpoint 2, Wildcat Creek, Looking Northwest

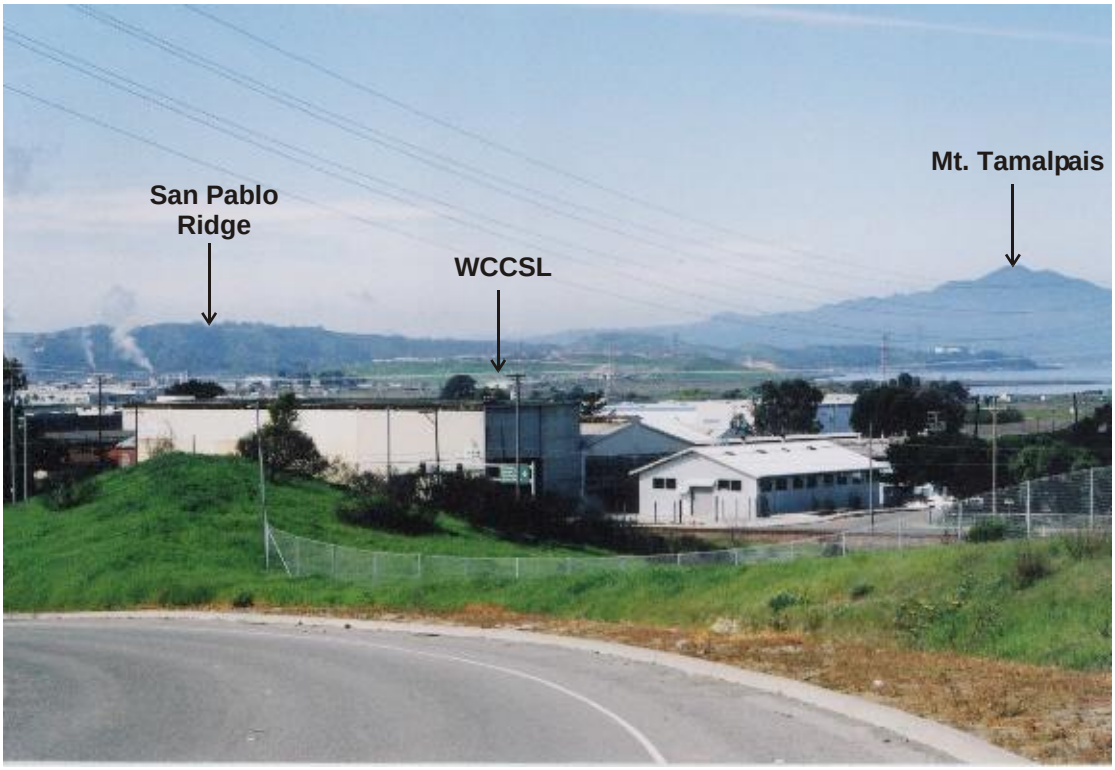


Figure 7-8 View From Near the Richmond Country Club Looking Southwest. From this location, the WCCSL is difficult to discern with the San Pablo Ridge in the background. Mt. Tamalpais provides a similar effect for areas south of this photo location.

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The proposed relocated Concrete/Asphalt Processing Facility to the western end of the landfill's central plateau would be a visible identifiable activity. As many as twelve 18-foot-high raw and processed concrete/asphalt piles would be created, raising the maximum topography to approximately 185 feet. Also included would be two 30-foot-high conveyor belt assemblies and various ancillary equipment. Thus, the maximum height depicted in the photomontage (Figure 7-7) is 197 feet (30 feet on top of the 167-foot final landfill height). As demonstrated by Figures 7-6 and 7-7, this facility would not significantly impact scenic vistas or substantially degrade the visual quality of the area.

Figure 7-7 also illustrates the proposed Wet/Dusty Material Blending operations area, expanded composting operations, and a relocated equipment maintenance building to Area A. The Wet/Dusty Material Blending area would ultimately be located at the location of the existing Waste Shuttle Facility (Figure 7-9) and anticipated by the Applicant to be a 50-foot by 125-foot "U" shaped footprint composed of existing cargo containers appropriately painted, and stacked two high with a total height of 17 feet above the ground surface. A flat truss roof would span between the containers thus resembling a flat-roof building without any windows . The Wet/Dusty Material Blending may be operated initially in the former Soil Remediation Building prior to its use as the WRC. The expanded Composting Facility would feature windrows 6 to 8 feet in height and stockpiles no higher than 20 feet. The relocated equipment maintenance building would be about an 60-foot by 80-foot metal-sided pre-engineered building. The figures demonstrate that these facilities would not cause adverse aesthetic impacts.

The WRC would involve an upgrade and expansion of the former Soil Remediation Building (Figure 7-10). The lateral expansion of the building would be 110 feet to the east. As shown on Figures 7-4/7-5 and 7-6/7-7, that building is located within the topography of the WCCSL, its presence is consistent with the industrial character and visual quality of the area, and views from off site are distant and limited. Additionally, the original CEQA document for the Soil Remediation Building indicated it would not have significant aesthetic impacts.[13]

Figure 7-7 also shows an elevated berm with a 6-foot fencing along the southern and western borders of WCCSL Area A. The Applicant would make these improvements to provide site security, soften the appearance of the various Area A facilities, and buffer them from users of the Trail. Though not shown on the photomontages, the berm would be planted with groundcover, shrubs, and compact trees to provide vegetative cover and the fencing may have slats to aid in visual screening.

Figure 7-9 Waste Shuttle Facility. The proposed Wet/Dusty Material Blending Facility would replace the existing Waste Shuttle Facility at the location shown. Activities currently occurring at the Waste Shuttle Facility (material drop-off and sorting) would be conducted at a new WRC.

Figure 7-10 Proposed WRC Location. The former Soil Remediation Building would be upgraded and expanded to the far (east) side. The site is situated within the WCCSL topography. The existing Concrete/Asphalt Processing Facility would be relocated to the landfill central plateau.

Aesthetic impacts would not be significant, and the Applicant would be subject to the requirements of existing Use Permits. Accordingly, the Applicant would modify their existing Architectural Design Plan and Landscaping Plan pursuant to County LUP No. 2043-94 and City CUP No. 92-53, finalize the FDIP and, if issued amended use permits, abide by permit conditions.

Control Measures Incorporated by Applicant: None.

EIR Recommendation:

MITIGATION MEASURE 7-1: None required.

4. Light and Glare

IMPACT 7-2 The proposed Project involves expanded operations during nighttime hours, which would introduce new sources of light and glare and could affect nighttime views in the area. This impact is less than significant.

Table 3-2 in Chapter 3 compares existing WCCSL facility operating hours to proposed changes in operating hours. Many existing BMPC activities are currently permitted to occur from 7:00 a.m. to 5:00 p.m., 7 days per week (concrete processing is Monday through Saturday). The Class II landfill is allowed to accept incoming solid waste 24 hours per day, 7 days per week, though incoming materials during late evening hours are normally limited to only a few loads of dried sludge from the WCWD or loads of alternative daily cover. The following changes are proposed by the Applicant:

- Transport of materials to BMPC – increase to 24 hours per day, consistent with permitted landfill operating hours.
- Concrete processing equipment – change to 5:00 a.m. to midnight.
- Chipping and grinding of wood – change to 5:00 a.m. to midnight.
- Operation of WRC – 24 hours per day, 7 days per week.

WRC self-haul wastes would be accepted daily from 7:00 a.m. to 8:00 p.m., which is intended for customer convenience.

For existing operations, County and City use permits require the Applicant to design and locate the lighting system to reduce glare and to not substantially impact area residents. Directional shading is installed on all outdoor lamps for night operation. In addition, focused security lamps with directional shading are required. Currently, outdoor operational lighting is reduced to security and entrance lighting by 8:30 p.m.

Although the proposed Project does involve the introduction of some new sources of light or glare, it is unlikely to affect nighttime views for residents in the area. Future activities may require additional lighting, but would not substantially alter lighting from current conditions. Existing use permits require lights to be focused and shaded and the Applicant would implement these requirements for new lighting sources. One or two additional portable flood lights on the landfill central plateau may be necessary. The concrete/asphalt crushing equipment normally have their own small directional flood lights. The WRC would include 24-hour-per-day operation and would be the main source of nighttime lighting at the WCCSL, but, as discussed earlier, this site is located within the topography of the WCCSL, and the prior use of the Soil Remediation Building was permitted to operate 24 hours per day. Existing use permit lighting requirements would apply to the proposed Project and would be stipulated in the revised Landscaping Plan discussed under Impact 7-1. Proposed operations may involve an additional 30 to 50 vehicle trips during the nighttime hours, but the light and glare impact would not be significant.

Control Measures Incorporated by Applicant: None.

EIR Recommendations:

MITIGATION MEASURE 7-2. None required.

5. Littering

IMPACT 7-3. The proposed WRC/transfer station and expanded BMPC operations could introduce new sources of litter that could degrade the visual quality of the area. This impact is considered to be potentially significant.

Existing operations are regulated for litter abatement. As discussed in Section B, SWFPs No. 07-AA-001 and No. 07-AA-0044 currently implement the litter abatement requirements included in 14 CCR and 27 CCR. The County and City use permits require the Applicant to have a Litter Control Program for the existing BMPC operations and such a program is included in the current FDIP.

The main sources of litter in the proposed Project include the WRC and extended landfill operations afforded by the height increase and additional capacity. The materials managed in other components of the BMPC, such as concrete and asphalt crushing, wet/dusty material blending, composting, wood recovery, and soil reclamation and biosolids/dredged material spreading, are not expected to be significant sources of litter.

Continued and expanded operations at the WCCSL could potentially result in increased illegal dumping in the North Richmond neighborhoods, which would be an added source of litter. This issue is addressed in Chapter 4, Impact 4-5.

Litter abatement requirements will continue to be implemented at the WCCSL by the Applicant pursuant to their SWFPs and Litter Control Program. Without controls, the proposed WRC would be a significant litter source. However, the Applicant would implement their Litter Control Program which includes various control measures at the WRC, intended to minimize litter:

- Anti-littering plan for self-haul vehicles, collection trucks and other large trucks.
- Uncovered load surcharge for uncovered trucks.
- Use of litter fences at appropriate locations on the WCCSL site.
- Transfer trailers equipped with anti-litter screening that is regularly maintained and replaced as needed.
- Possible use of a covered receiving structure (or building) for receipt of compostables which would be intended to manage litter, as well as bird and vector control

Control Measures Incorporated by Applicant:

a) The existing Litter Control Program would be modified pursuant to County LUP No. 2054-92, as amended by LUP No. 2043-94, and City CUP No. 92-53, the FDIP revised and, if amended use permits obtained, adherence to permit conditions.

b) Revised and new SWFP's would be obtained and litter abatement requirements would be implemented.

c) Provide a covered receiving structure (or building), if determined necessary by the LEA, which would be intended to manage litter as well as bird and vector control.

Implementation of these measures would reduce potential litter impacts to a less-than-significant level.

EIR Recommendation:

MITIGATION MEASURE 7-3: None required. See Mitigation Measure 4-5.

IMPACT 7-4 Use of the Trail could introduce a new source of littering in an area of high visual and biological quality. This impact is considered to be less than significant.

The Trail would be a recreational facility. With public use, the potential for littering would exist. Littering would be offensive to the visual open space and biological quality of the area.

Control Measures Incorporated by the Applicant:

a) Trash and recycling receptacles would be located at specified locations (e.g., near benches) along the Trail.

b) The Trail would be maintained on a weekly basis, including emptying of receptacles and collection of litter.

Implementation of the Applicant's control measures would reduce litter impacts to a less-than-significant level.

EIR Recommendations:

MITIGATION MEASURE 7-4. None required.

6. Planning Consistency

IMPACT 7-5. The Project could be inconsistent with County and City General Plans and the North Shoreline Specific Plan. This impact is considered to be less than significant.

The analysis of potential aesthetic and visual quality impacts indicates that adverse impacts are not expected to occur. The WCCSL is recognized in local planning documents as a solid waste recycling and disposal facility. The Applicant would be required to revise their FDIP to reflect their proposed Project and has applied for amended County and City Use Permits. The Project is consistent with the relevant aesthetic policies in County and City General Plans and the North Shoreline Specific Plan.

Control Measures Incorporated by the Applicant: None.

EIR Recommendations:

MITIGATION MEASURE 7-5: None required.

7. Impacts of Mitigation Measures

The mitigation measures specified in this chapter will be beneficial in nature and will not have adverse environmental impacts. If a building were constructed to partially enclose the

compostable receiving area, the Applicant anticipates it would be about 80 feet by 100 feet in size, a pre-engineered metal structure, with a height of about 30 feet. Alternatively, the metal cargo container structure described in Impact 7-1 for the Wet/Dusty Material Blending activity could be used. The structure would be located within or next to (west or south) the Organic Materials Processing Area. In the context of the analysis in this chapter, such a building or structure in this location would not have significant adverse aesthetic implications.

E. CUMULATIVE IMPACTS

There are no cumulative aesthetic and visual quality impacts that would result from the proposed Project and other cumulative projects in the area. The miscellaneous development projects discussed in Chapter 4, Section A3(b) would be consistent with local general plan and zoning ordinances and would be subject to requirements that relate to architecture, lighting, and landscaping. The Central IRRF is an existing structure, the operation of which could be expanded in the future. Any facility modifications would be subject to County and City use permits relative to aesthetic considerations. Expanded operations would also serve as an additional source of litter in the area. However, as with the proposed Project, litter abatement at the Central IRRF would be achieved through compliance with County and City use permits and the facility's Solid Waste Facilities Permit.

CHAPTER 8

TRAFFIC AND CIRCULATION

This chapter of the Environmental Impact Report (EIR) addresses the traffic and circulation impacts of the proposed Bulk Materials Processing Center (BMPC) use permit amendment changes and related actions (Project). The focus of the analysis is on quantifying Project-generated traffic over a reasonable time horizon and evaluating impacts to local approach roadways. Appendix 8A includes relevant support technical information.

A. SETTING

The West Contra Costa Sanitary Landfill (WCCSL) is located in the North Richmond area to the west of Richmond Parkway at the end of Parr Boulevard. All vehicle access to the WCCSL is from Parr Boulevard. Discussion is included below on existing roadway conditions, traffic volumes, and volume/capacity relationships. Pursuant to Section 15125 of the California Environmental Quality Act (CEQA) Guidelines, the description of the setting conforms to the timeframe when the EIR Notice of Preparation (NOP) was published (October 10, 2002).

1. Roadway Conditions

The local roadway network in the vicinity of the WCCSL is shown on Figure 8-1. The only local roadways that are affected by the proposed Project would be Garden Tract Road and Parr Boulevard. Parr Boulevard carries the vast majority of the landfill traffic, while a few trips use Garden Tract Road to and from the facilities of the Richmond Sanitary Service. Most of the proposed Project traffic would travel on Richmond Parkway and would access I-80 to the north or I-580 to the south.

Parr Boulevard is a two-lane, east-west roadway that connects to Giant Highway on the east and extends across Richmond Parkway and past Garden Tract Road on the west and terminates at the WCCSL site. The WCCSL access to the local roadway system is located at the western end of Parr Boulevard. Richmond Parkway is a four- to six-lane expressway and freeway.

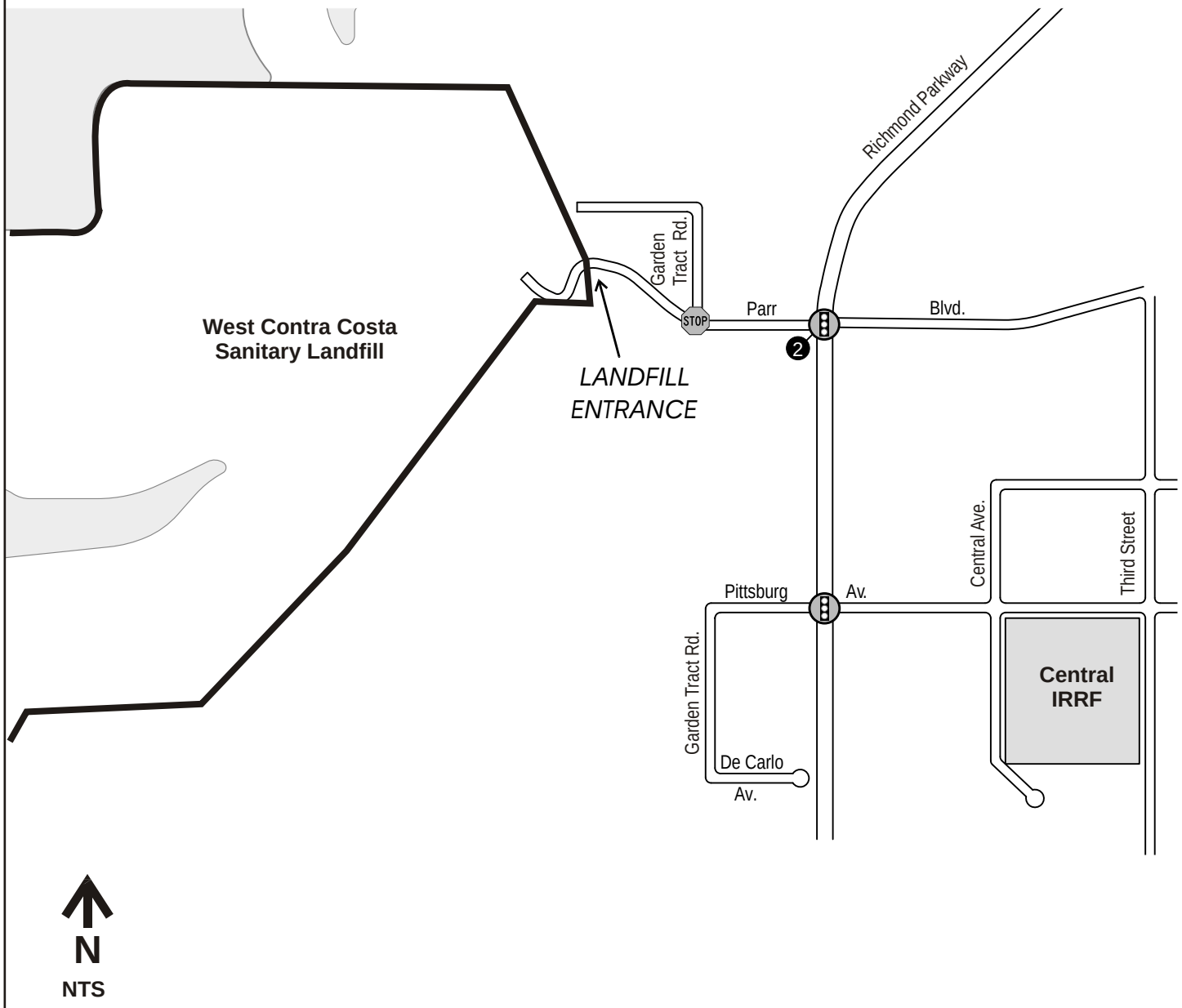


Figure 8-1 Local Roadway Network

Source: Abrams Associates, March 2003

2. Traffic Volumes

Existing traffic volumes at the WCCSL entrance were counted for a 3-day period in November 2002, and again for a 2-day period in February 2003. In addition, turning movement counts were also conducted at the two major affected intersections. These intersections are at:

- Richmond Parkway and Parr Boulevard (signalized intersection), and
- Parr Boulevard and Garden Tract Road (stop sign control).

As part of this data collection effort, traffic was characterized as (1) large, multi-axle trucks (including transfer trucks), (2) other trucks (including collection vehicles), and (3) small hauling vehicles and autos. The existing traffic volumes during the morning and afternoon peak hours at the intersection of Parr Boulevard and Richmond Parkway are shown on Figure 8-2.

The total amount of traffic on Parr Boulevard west of Richmond Parkway has not changed significantly over the past few years. The through movements on Richmond Parkway have been steadily growing, however. As shown in Table 8-1, all of the streets affected by the WCCSL operate at acceptable Level of Service (LOS) without any unusual delay or congestion.

3. Volume/Capacity Relationships

Traffic conditions at intersections are the principal measure of traffic performance for a project. Table 8-2 summarizes the existing intersection capacity in the vicinity of the WCCSL. In each case, the existing intersection capacity conditions are at LOS A, which shows that there is a large amount of traffic capacity available on these roads.

B. REGULATORY AND PLANNING FRAMEWORK

For unsignalized intersections such as at Garden Tract Road, the Highway Capacity Manual (HCM) procedures have been used.[93] For unsignalized intersections, the input data includes geometric conditions and peak-hour traffic volumes. The methods used are the Transportation Research Board (TRB) Circular 373 for all-way stop intersections,[95] and the 1985 HCM Critical Gap Method for other unsignalized intersections. The capacity computations result in a determination of the average vehicle delay at the intersection. The criteria that have been used to define LOS at unsignalized intersections are illustrated in Table 8-3.

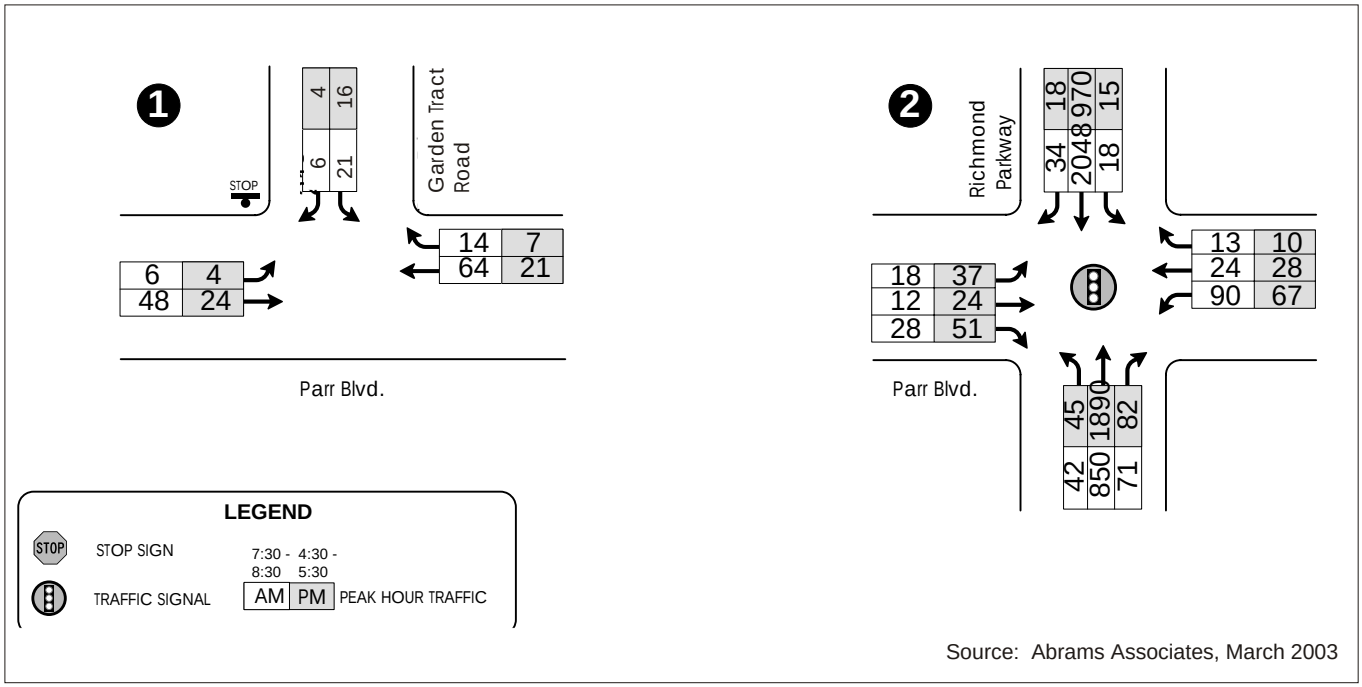


Figure 8-2 Existing Weekday Traffic Conditions for Approach Intersections

Table 8-1. Existing Traffic Volume Conditions

Location	Existing daily traffic (vehicles per day)	Peak-hour traffic (vehicles per hour)	Level of service[a]
Parr Boulevard – west of Richmond Parkway	2,500	250	A
Richmond Parkway – south of Parr Boulevard (six lanes)	32,000	3,000	A
Richmond Parkway – north of Parr Boulevard (six lanes)	32,000	3,000	A

a. Level of Service A is defined as no delay. See Table 8-3.
Source: Abrams Associates, CalTrans, November 2002.

Table 8-2. Existing Intersection Capacity in the Vicinity of the WCCSL

Intersection[a]	Traffic control	AM peak capacity[b]	PM peak capacity[b]
Parr Boulevard at Richmond Parkway	Traffic signal	LOS = "A" v/c = 0.52	LOS = "A" v/c = 0.49
Parr Boulevard at Garden Tract Road	Stop sign on Garden Tract	LOS = "A" Average delay = 1.9 sec	LOS = "A" Average delay = 4.7 sec

a. See Figure 8-1 for location of intersections.
b. LOS is Level of Service and v/c is volume to capacity ratio.
Source: Abrams Associates, March 2003.

Table 8-3. LOS Criteria for Unsignalized Intersections

LOS	Average control delay (seconds per vehicle)	Traffic condition
A	0-10	No delay
B	>10-15	Short delay
C	>15-25	Moderate delay
D	>25-35	Long delay
E	>35-50	Very long delay
F	>50	Volume > capacity

Source: Highway Capacity Manual, 2000 Update, Chapter 17, Unsignalized Intersections

As with signalized intersections, there are six LOS's, A through F, which represent conditions from best to worst, respectively. Table 8-3 shows the corresponding average total delay per vehicle for each LSO category from A to F. The unsignalized intersections were analyzed for the peak hours using Synchro, Version 5.0.

This traffic analysis has been completed according to the Contra Costa Transportation Authority (CCTA) Technical Procedures.[93] Traffic counts were conducted at each of the study intersections where current data were not available.

For unsignalized intersections, LOS A, B and C reflect clearly acceptable conditions. LOS D reflects the existence of delays within a generally tolerable range, while LOS E and F indicate delays often increasing into unacceptable conditions. The County does not have standards or policies for unsignalized intersections. However, LOS E and F for particular critical movements indicate the need for consideration of traffic signals or other physical improvements.

For signalized intersections, such as the intersection of Parr Boulevard and Richmond Parkway, the AM and PM peak hours were analyzed using the CCTA methodology.[92] This methodology also applies to all state highways operated by Caltrans, such as the Richmond Parkway. The results presented in Table 8-2 show that the intersection operates at LOS A in both the AM and PM peak hours. At signalized intersections, the LOS is defined in terms of volume to capacity (V/C) ratio as follows:

LOS	V/C ratio
A	<0.60
B	0.61 – 0.70
C	0.71 – 0.80
D	0.81 – 0.90
E	0.91 – 1.00
F	>1.00

Contra Costa County (County) Measure C requires that a traffic study be performed and submitted to the CCTA for all projects that generate 100 or more peak-hour trips during the AM or PM peak commute hours. Caltrans uses a comparable standard. If a traffic study is required, then the study intersections should include any signalized intersection to which at least 50 peak-hour Project trips would be added. Evaluation for an unsignalized intersection should also be considered for all locations that could meet traffic warrants within 5 years. As will be discussed later in this chapter, the proposed Project in 2015 would generate a maximum hourly traffic volume of 30 trips during the AM peak commute hour and about 15 vehicles trips during the PM peak commute hour, which is well below the CCTA threshold. In addition, there are no intersections that are affected by the proposed Project that are candidates for future traffic signals.

C. SIGNIFICANCE CRITERIA

Appendix G of the California Environmental Quality Act (CEQA) Guidelines indicates a project will normally have a significant effect on the environment if it will:

- Cause an increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the V/C ratio on roads, or congestion at intersections).
- Exceed, either individually or cumulatively, an LOS standard established by the county congestion management agency for designated roads or highways.
- Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks.
- Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).
- Result in inadequate emergency access.
- Result in inadequate parking capacity.

In the County, increases in traffic volumes that worsen intersection capacity by more than one LOS or reduce the LOS to LOS E are considered to be significant adverse impacts. Increases in traffic volumes of more than 2 percent for intersections currently at LOS E or F are also considered significant adverse impacts. CCTA guidelines call for the conduct of a traffic study if over 100 trips per hour are generated during AM or PM peak commute hours at a signalized intersection. The standards used by Caltrans are comparable. Estimated traffic from the proposed Project is below this standard, but a traffic impact analysis has, nonetheless, been conducted for this EIR.

D. IMPACTS AND MITIGATION MEASURES

Potential traffic and circulation impacts are discussed below.

1. Impacts Considered not to be Significant

Changes in air traffic patterns are not relevant to the proposed Project. Other types of traffic impacts that would typically be evaluated in an EIR are not applicable or significant when considered in the context of the proposed Project. There are no public transit or bus transportation issues. There is adequate emergency access and parking that would be provided

for the Public Access Trail (Trail). Transportation Demand Management (TDM), which involves such techniques as carpooling, ridesharing, and staggered hours, is not an issue. There are no neighboring developments that would be directly affected by the new traffic generated by the proposed Project activities as traffic would use the Parr Boulevard and Richmond Parkway thoroughfare.

Roadway and intersection safety is a concern for a project such as this. However, there are no specific problems that have been identified. Each of the intersections studied have the most appropriate traffic control for the current traffic volumes. Sight distance is adequate at all intersections as there is a lack of intervening features that would obscure visibility.

2. Methodology

Prior to assessing the impacts, it is important to characterize existing and future Project traffic volumes and trip distribution.

a. Existing Traffic Volumes. As discussed in Section A2 of this chapter, weekday traffic volumes at the landfill entrance were counted for a 3-day period in November 2002, and again for a 2-day period in February 2003. Weekend traffic conditions were estimated based on counts at the entry gates. In addition, turning movement counts were also conducted on weekdays at the two major affected intersections located at:

- Richmond Parkway at Parr Boulevard (signalized intersection), and
- Parr Boulevard at Garden Tract Road (stop sign control).

Based on these counts, the total traffic on an average day at the WCCSL is estimated to be 2,250 vehicles per day (Table 8-4). This total represents traffic volumes during the season of peak activity at the landfill, which occurs during the spring and the fall. Traffic can be further subdivided, as shown in the table, by the type of activity at the landfill and also by the type of vehicle involved. A summary of the traffic count data for Parr Boulevard at the Project entrance is shown on Figure 8-2. Appendix 8A includes detailed traffic count data.

Figure 8-3 illustrates that the WCCSL inbound and outbound traffic peaks occur between about 9:00 AM and 3:00 PM during the day with the highest peak hour occurring between 10:00 AM and 11 AM. These peaks are well outside the morning and afternoon commuter traffic peaks on local roadways.

b. Project Traffic in 2008. To analyze the traffic impacts of the proposed Project, it is assumed that the relative distribution of automobiles, transfer trucks, and packer trucks would remain constant in the future. Trip generation estimates have been made by using counts of existing traffic and trucks, and extrapolating these data to the future.

Table 8-4. Existing Traffic Volumes at the WCCSL

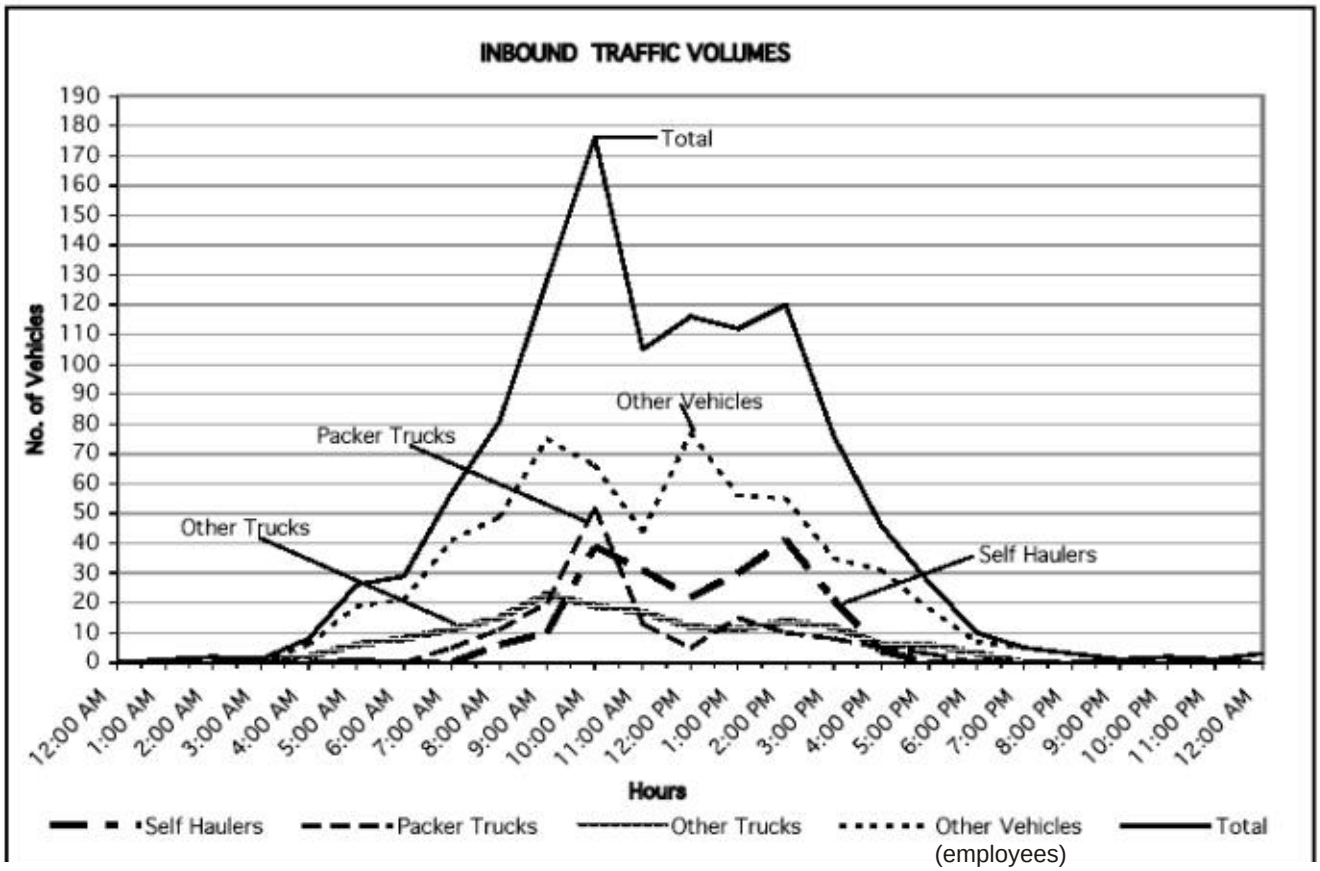
Existing conditions (2003)	Daily traffic by type of activity,[a] (vehicles per day)	Daily traffic by type of vehicle,[a] (vehicles per day)
Activities include the Class II landfill, composting, concrete/asphalt processing, importing landfill cover soil, and various minor activities.	Landfill – 1,200 Composting – 296 Conc.-asphalt – 100 Landfill cover – 350 Other/miscellaneous[b] – 304	Collection trucks – 460 Other large trucks – 320 Self-haulers – 850 All other vehicles[b] – 620
Total	2,250	2,250

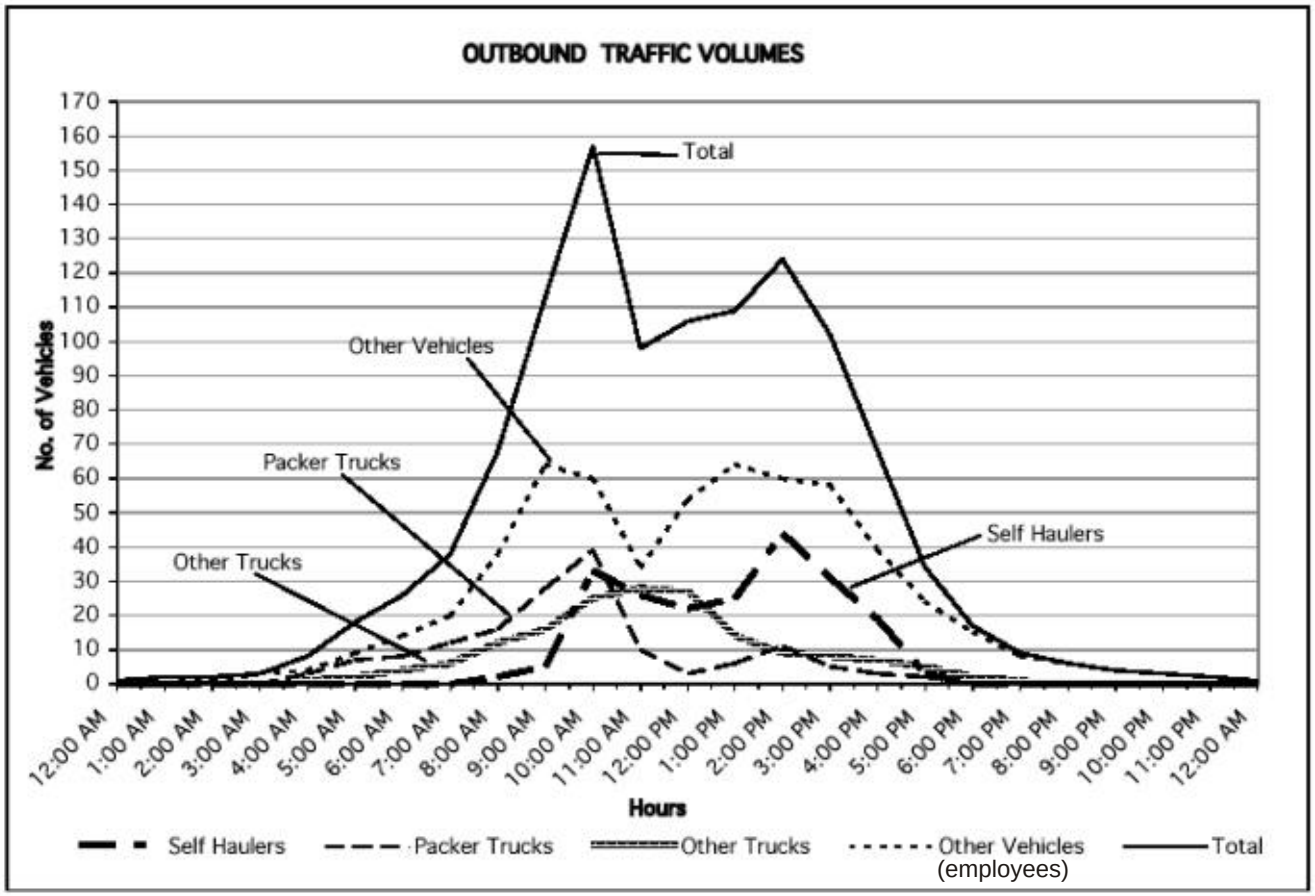
a. Daily traffic count represents the average 24-hour traffic during a peak month of landfill activity. Data derived from a combination of vehicle counts at the WCCSL scales and manual traffic counts taken by Abrams Associates on the WCCSL access road (Parr Boulevard).

b. Other/miscellaneous includes traffic by site employees, visitors and suppliers.

c. All counts reflect the actual number of vehicles and have not been adjusted to account for passenger car equivalents (PCE) for trucks, which are not typically used for intersection capacity analyses.

Source: Abrams Associates, March 2003.





Source: Abrams Associates, March 2003

Figure 8-3 Existing Hourly Traffic (Inbound and Outbound) at the WCCSL Entrance

Traffic volumes at the landfill entrance would change over time as the landfill is closed and as the WRC begins operations and resource recovery activities are increased. In the short term, it is assumed that the total traffic count would be stable from now until the landfill is closed, estimated to be in 2005. At that point, the traffic volumes would drop and traffic volumes from the BMPC WRC and expanded resource recovery operations would increase. By 2008, it is expected that traffic conditions would stabilize, and the traffic volumes are assumed to be as shown in Table 8-5. By 2008, it is estimated by the Applicant that the WRC would be operating at about 85 percent of its maximum capacity, and other BMPC operations would be at 75 percent of capacity. Based on these assumptions, during the AM commute peak hour the Project would add 30 vehicle trips. The AM peak commute hour is the hour of greatest traffic on Richmond Parkway.

Table 8-5. Projected Traffic Volumes at the WCCSL (2008)

Future condition	Daily traffic,[a] (vehicles per day)	Average waste quantities received, TPD7[d]	Daily traffic,[a] (vehicles per day)
Post landfill closure in 2008	Landfill – 0 Waste recycling – 1,180 Composting – 440 Conc.-asphalt – 340 Wood recovery – 160 Landfill cover – 0 Soil reclamation – 130 Other/miscellaneous[b] – 330	0 850 338 1,088 270 0 195 --	Collection trucks – 270 Other large trucks – 610 Self-haulers – 1,240 All other vehicles[b] – 460
Total	2,580	--	2,580

a. Daily traffic count represents the average 24-hour traffic during a peak month of landfill activity. Data derived from a combination of vehicle counts at the WCCSL scales and manual traffic counts taken by Abrams Associates on the WCCSL access road (Parr Boulevard).
b. Other/miscellaneous includes traffic by site employees, visitors and suppliers.
c. All counts reflect the actual number of vehicles and have not been adjusted to account for PCE for trucks, which are not typically used for intersection capacity analyses.
d. TPD7 = tons per day 7 is annual waste quantities divided by 365 days.
Source: Abrams Associates, March 2003.

Table 8-6 summarizes the Project-related average daily and peak hour traffic generation for 2008. By 2008, the proposed Project would generate an additional 330 ADTs more than in the year 2003. During the AM commute peak hour, the Project would generate an additional 30 vehicles trips, and an additional 10 vehicles trips during the PM commute hour.

Table 8-6. Projected Average Daily and Peak-Hour Project Traffic Generation (2008)

Traffic parameter	Existing traffic	After implementation of the Project (2008)	Net new Project traffic
Average daily traffic	2,250	2,580	330
AM commute peak hour (7:30 – 8:30 AM)	160	190	30
PM commute peak hour (5:00 – 6:00 PM)	50	60	10
WCCSL peak hour (10:00 - 11:00 AM)	280	340	60

Note: Traffic represents vehicles per hour – both directions (inbound and outbound).
Source: Abrams Associates, March 2003.

c. Project Traffic in 2015. The year 2015 was selected as the year to analyze the traffic impacts of the fully operational facility. By 2015, the Applicant anticipates that the WRC would be at its design capacity of 1,000 tons per day (TPD), and the other BMPC resource recovery operations would also be at 100 percent capacity. By 2015, it is estimated that the WCCSL will be accommodating a daily traffic volume of 3,220 trips per day. This summary is shown in Table 8-7.

Table 8-7. Projected Traffic Volumes at the WCCSL (2015)

Future condition	Daily traffic,[a] (vehicles per day)	Average waste quantities received, TPD7[c]	Daily traffic,[a] (vehicles per day)
Post landfill closure in 2008	Landfill – 0 Waste recycling – 1,370 Composting – 560 Conc.-asphalt – 380 Wood recovery – 180 Landfill cover - 0 Soil reclamation – 170 Other/miscellaneous[b] – 560	0 1,000 450 1,450 360 0 260 --	Collection trucks – 340 Other large trucks – 820 Self-haulers – 1,480 All other vehicles[b] – 580
Total	3,220	--	3,220

a. Daily traffic count represents the average 24-hour traffic during a peak month of landfill activity. Data derived from a combination of vehicle counts at the WCCSL scales and manual traffic counts taken by Abrams Associates on the WCCSL access road (Parr Boulevard).
b. Other/miscellaneous includes traffic by site employees, visitors and suppliers.
c. TPD7 = tons per day 7 is annual waste quantities divided by 365 days.
Source: Abrams Associates, March 2003.

Table 8-8 summarizes the projected average daily and peak hour traffic generation for 2015. By 2015, the proposed Project would generate an additional 970 ADTs more than in the year 2003. During the AM commute peak hour, the Project would generate an additional 50 vehicle trips, and an additional 30 vehicles trips during the PM commute peak hour.

Table 8-8. Projected Average Daily and Peak-Hour Project Traffic Generation (2015)

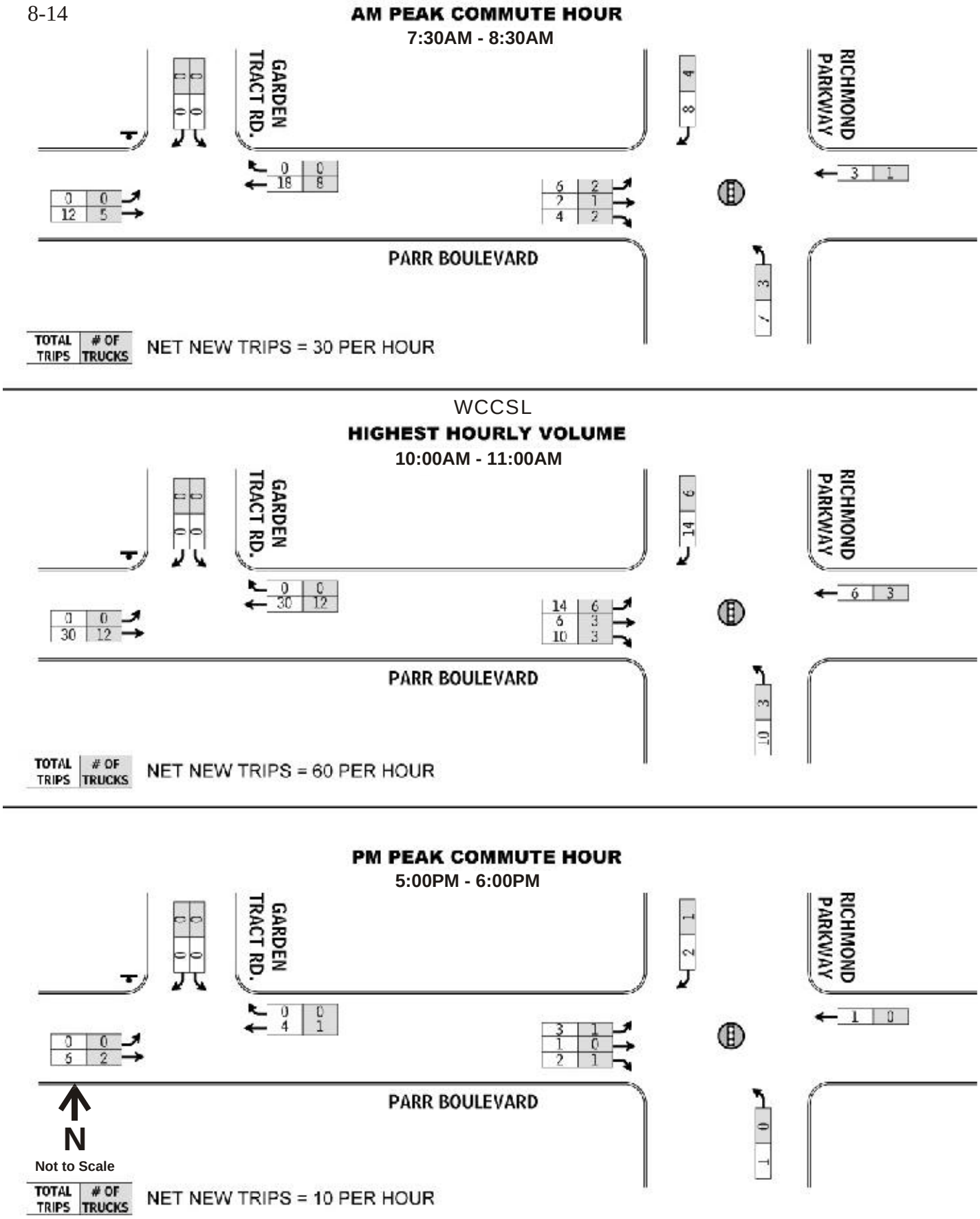
Traffic parameter	Existing traffic	After implementation of the Project (2015)	Net new Project traffic
Average daily traffic	2,250	3,220	970
AM commute peak hour (7:30 – 8:30 AM)	160	210	50
PM commute peak hour (5:00 – 6:00 PM)	50	80	30
WCCSL peak hour (10:00 - 11:00 AM)	280	380	100

Note: Traffic represents vehicles per hour –both directions (inbound and outbound).
Source: Abrams Associates, March 2003.

d. Trip Distribution. Once the traffic leaves the WCCSL, 100 percent of the traffic would then travel on Parr Boulevard and then split onto Richmond Parkway. It is estimated that the traffic would be split as shown below. This trip distribution is based on an average of the existing turning movement of traffic at Parr Boulevard and the Richmond Parkway, and the relative geographic distribution of landfill users.

- North on Richmond Parkway – 50 percent
- South on Richmond Parkway – 40 percent
- East on Parr Boulevard – 10 percent

Figure 8-4 shows the resulting net new traffic volumes during the AM and PM peak commute hours for 2008, and also the traffic during the peak hour for WCCSL traffic that occurs from 10:00 to 11:00 AM. To illustrate the numbers on Figure 8-4, in the AM peak commute hour, there are a total of 18 inbound trips and 12 outbound trips at the WCCSL. Of the outbound trips, 6 trips would turn north toward I-80, and 4 trips would turn south toward I-580. Of the new inbound trips to the WCCSL, 8 trips would come from the north from the direction of I-80, and 7 trips would come from the south from I-580. Again, this amount of traffic would not be considered significant and would not be noticeable.



Source: Abrams Associates, March 2003

Figure 8-4 Net New Traffic Generated by the Proposed Project (2008)

3. Roadway and Intersection Capacity

IMPACT 8-1. The proposed Project would generate a net increase in ADT of 970 vehicles per day in 2015, which is substantial, yet only about 1.2 percent of the ADT projected for the Richmond Parkway for that year. This impact on roadway capacity is considered to be less than significant.

Table 8-9 summarizes the Project-related traffic increases for 2008 and 2015. Average daily Project traffic would increase by 330 vehicles per day by 2008 (which would be 15 percent greater than current WCCSL traffic) and 970 vehicles per day by 2015 (which would be about 43 percent greater than current WCCSL traffic). As will be discussed in Section D, the ADT of the Richmond Parkway in 2015 north of Parr Boulevard would be 43,500 and south of Parr Boulevard would be 37,800. The increase in Project-related ADT would represent about 1.2 percent of the Richmond Parkway ADT in 2015.

During the WCCSL peak hour (10:00 – 11:00 a.m.), there would be an increase of 60 vehicles per hour by 2008 and 100 vehicles per hour by 2015. The 100-vehicle-per-hour increase during the WCCSL peak hour does not trigger the CCTA requirements discussed earlier because the increase would not occur during either the AM or PM commute peak hours.

Table 8-10 presents the intersection capacity conditions for projected traffic flows for the years 2008 and 2015. For Richmond Parkway, the data reflect increases in baseline traffic volumes as projected by the County and CCTA (see Section E). In the year 2008, at Parr Boulevard and Richmond Parkway, the LOS would remain at LOS A. At Parr Boulevard and Garden Tract Road, the LOS would decrease from LOS A to LOS B during the PM peak. In the year 2015, at Parr Boulevard and Garden Tract Road, the LOS would decrease from LOS A to LOS B during the PM peak; and at Parr Boulevard and Richmond Parkway, the LOS would decrease from LOS A to LOS B during the AM peak, and LOS C during the PM peak. These are not significant changes that are caused by the Project; therefore, the proposed Project would not have a significant adverse impact on traffic flow and circulation at these locations. Similarly, the proposed Project would not adversely impact the intersection capacity on Richmond Parkway.

Figure 8-5 shows the net new traffic that would be generated at the Project intersections in 2015. The data are presented for the AM and PM peak commute hours, as well as the Project peak hour, between 10:00 AM and 11:00 PM. The intersection capacity conditions at Parr Blvd and Garden Tract Road would not change. At the Richmond Parkway and Parr Blvd, the PM peak LOS would change from LOS A to LOS C. However, the changes are due to increases in the background traffic on Richmond Parkway for the years 2008 and 2015, not as a result of Project traffic. This condition is within County traffic standards and is not considered to be a significant impact.

Table 8-9. Summary of Projected Traffic Increases

Traffic parameter	Project traffic[a]	
	2008	2015
Average daily traffic	330	970
Morning commute peak hour (7:30 – 8:30)	30	50
Afternoon commute peak hour (5:00 – 6:00)	10	30
WCCSL peak hour (10:00 – 11:00 a.m.)	60	100

a. Traffic represents vehicles per hour – both directions (inbound and outbound).

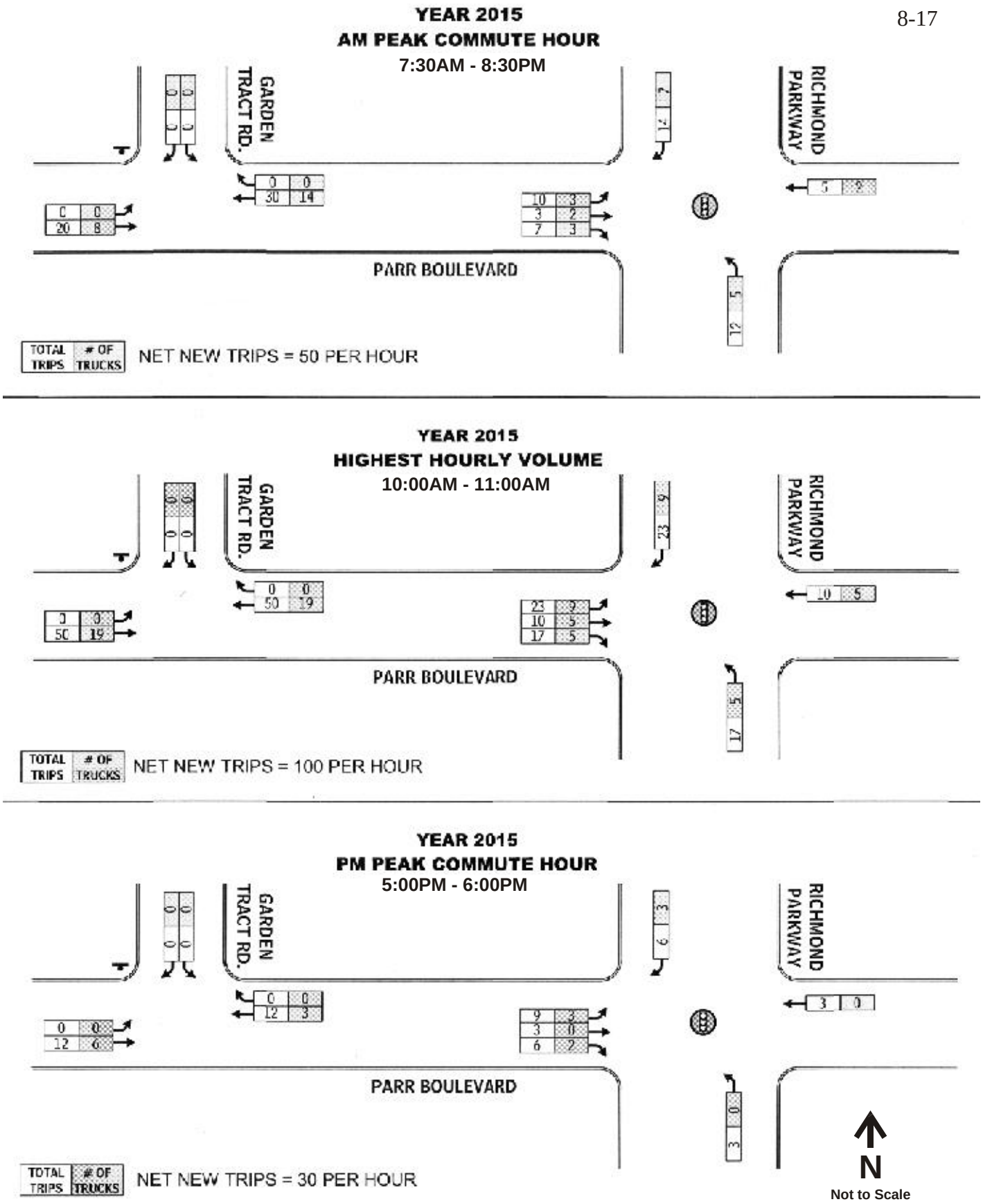
Source: Abrams Associates, March 2003.

Table 8-10. Intersection Capacity Conditions in the Vicinity of the WCCSL Existing plus Project Conditions

Intersection[a]	Traffic control	2008		2015	
		AM peak capacity	PM peak capacity	AM peak capacity	PM peak capacity
Parr Boulevard and Richmond Parkway	Traffic signal	LOS = A v/c = 0.54	LOS = A v/c = 0.50	LOS = B v/c = .68	LOS = C v/c = 72
Parr Boulevard and Garden Tract Road	Stop sign on Garden Tract	LOS = A Average delay = 2.5 seconds	LOS = B Average delay = 5.4 seconds	LOS = A Average delay = 2.8 seconds	LOS = B Average delay = 5.6 seconds

a. See Figure 8-1 for location of intersections.

Source: Abrams Associates, March 2003



Source: Abrams Associates, March 2003

Figure 8-5 Net New Traffic Generated by the Proposed Project (2015)

There would also be no affected intersections that would require a traffic signal as a result of the proposed Project. The only unsignalized intersection that would be affected would be at Parr Boulevard and Garden Tract Road, and this location would continue to function most effectively with stop sign control.

Control Measures Incorporated by Applicant. The proposed Project would not result in any significant traffic capacity impacts. However, certain traffic management and scheduling techniques would continue to be implemented by the Applicant to reduce the effect of Project traffic during the peak commute hours on Richmond Parkway and on Eastshore Freeway (I-80):

a) Traffic would be limited and controlled at certain times of the day. This would not reduce the total traffic, but would shift some traffic to off-peak hours.

b) Travel patterns for the WCCSL truck traffic would be managed to avoid trips during the peak commute hours, especially the AM peak.

c) Management controls would be developed to limit trips through congested road systems during the AM and PM peak hours.

EIR Recommendation

MITIGATION MEASURE 8-1. None required.

IMPACT 8-2. Additional Project-related traffic could adversely impact traffic flow and congestion at the I-80/Richmond Parkway and I-580/Garrard Boulevard interchanges. This impact is considered to be less than significant.

CalTrans would be concerned if the proposed Project-generated traffic affected traffic circulation and congestion at the I-80/Richmond Parkway and I-580/Garrard Boulevard interchanges. The highest traffic generated by the Project would not occur during the AM or PM commute. Project-generated traffic would be greater in the AM commute peak hour than the PM commute peak hour. Based on the information on Figure 8-4, for 2008 the Project would add a maximum of 14 (inbound and outbound) trips to the I-80 interchange during the 7:30 to 8:30 AM commute peak hour. Of these trips, about 6 trips per hour would be by large trucks. In 2015 (Figure 8-5), the Project would add a maximum of 24 trips (inbound and outbound) to the I-80 interchange during the 7:30 to 8:30 AM commute peak hour and about 10 trips per hour would be trucks.

Similarly, in 2008 the proposed Project would add a maximum of 11 vehicles trips to the south at the I-580/Garrard Boulevard interchange during the 7:30 to 8:30 AM commute peak hour of which about 5 of these would be by large trucks. The corresponding numbers for 2015 are 19 and 8, respectively. These traffic additions are well below any threshold that would have a measurable impact on traffic conditions at either interchange.

Control Measures Incorporated by the Applicant: None.

EIR Recommendation

MITIGATION MEASURE 8-2. None required.

4. Pavement Deterioration

IMPACT 8-3. Projected increases in Project-related traffic could further deteriorate pavement conditions on Parr Boulevard. This impact is considered potentially significant.

The need for future pavement improvements should be based on calculations of the Traffic Index (TI). The TI is a logarithmic scale, which indicates the ability of the pavement structure to support repetitive wheel and axle-loads of large trucks. TI ratings of 7.0 or less are utilized on local streets, which are not expected to carry appreciable amounts of truck traffic. Higher values of up to 9.0 or 9.5 are used on major arterial streets, such as Richmond Parkway with heavy truck traffic. In California, TI values are calculated in accordance with procedures specified by CalTrans.

While the number of trucks added by the proposed Project is not significant from a traffic capacity standpoint, the addition of just a few heavy trucks may cause deterioration of pavement conditions to some pavements.

The local public roadways that would be affected by the proposed Project are Parr Boulevard and the Richmond Parkway. The existing pavement conditions on Parr Boulevard appears to be substandard and in need of pavement maintenance. The County Public Works Department reports that Parr Boulevard was repaved with a double-chip seal in 1987.[33] Prior to this action, there were pavement improvements to Parr Boulevard in 1975 and again in 1983. With the exception of some minor patching, there have been no other changes in this section of Parr Boulevard and Garden Tract Road since 1987.

The Richmond Parkway, including Castro Street, was constructed with a TI of 10.5 and 11.0.[33] As such, the roadway is designed to handle high volumes of truck traffic, and meets the TI requirements. Due to this high level of design standard, pavement impacts on the Parkway due to the proposed Project would not be significant.

Control Measures Incorporated by Applicant: None

EIR Recommendations:

MITIGATION MEASURE 8-3

a) A pavement monitoring program would be undertaken by the Applicant for the Parr Boulevard connection to the Richmond Parkway. The program would provide before and after video evidence of pavement conditions, and may require the posting of a pavement repair bond. The Applicant would coordinate with the Maintenance Division of the County Public Works Department regarding the details of the monitoring program and any requirements for road repair should they become necessary.

Mitigation Measure 8-3(a) was also included in the EIR for closure of the HWMF.[33]

5. On-Site Traffic Control and Safety

IMPACT 8-4. Additional Project-related traffic could result in on-site congestion and unsafe conditions for WCCSL users and employees. This impact is considered to be less than significant.

Title 27 of the California Code of Regulations Section 20860 (27 CCR §20860) requires the Applicant to have an approved Traffic Control Plan for the WCCSL. Such a plan is included in the Report of Disposal Site Information[1] and in the Applicant's Final Development and Improvements Plan.[3] Figure 3-5 illustrates the site circulation plan.

At the intersection of Parr Boulevard and Richmond Parkway, signs are posted directing WCCSL-bound traffic onto Parr Boulevard heading westward. The main gate of the WCCSL is located one block west of the intersection of Parr Boulevard and Garden Tract Road. These access roads are public roads (County) and are two-lane roads of sufficient width to allow safe passage of large trucks.

Queuing of traffic occurs along the foot of Parr Boulevard early in the morning prior to the opening of the main gate at 6:00 AM. To reduce the length of the stacked traffic awaiting site entry, the outer gate is opened about 30 minutes before the facility opening to allow traffic to queue primarily within the length of the on-site landfill access road. This is not considered to be a significant issue.

Inside the main gate, the access road, including the bridge across San Pablo Creek, is of suitable width. Once traffic is across the bridge, the inbound and outbound roads are separated by a divider to maintain the stacking lanes in a manageable order. Three lanes are available at the landfill pay station (scale house); one for the first in-bound weigh scale, one for the second in-bound scale, and the third is adjacent to the station where vehicles are not weighted but instead gate fees are charged on the basis of the estimated

load volume. A bypass lane is available for trucks delivering clean soil that do not have to stop at the landfill pay station (scale house).

As required by 27 CCR §20540, key on-site roads are constructed for all-weather use and of sufficient width to accommodate two-way traffic. The internal roads that are used by the public are kept in safe condition and maintained such that vehicle access and unloading can be carried on during inclement weather. These roads are identified with suitable signage showing directions to the operating areas. The other roads used by employees for site maintenance generally involve limited, one-way traffic. Traffic speed limit signs are posted and staff acting as traffic spotters direct the patrons to appropriate operation areas.

From the main gate, the road (Recycling Lane) passes northward, swings west and climbs the eastern leg of the Class II landfill, and passes along the north side of the proposed WRC site. On top of the plateau, the road turns west and enters the intersection to the Green Materials and Wood Wastes unloading area and Composting Facility. As shown on Figure 3-5, another intersection would lead west to the Concrete/Asphalt Processing Facility.

Control Measures Incorporated by the Applicant: None.

EIR Recommendation

MITIGATION MEASURE 8-4. None required.

IMPACT 8-5. Additional Project-related traffic levels could result in unsafe conditions for users of the Trail. This impact is considered to be less than significant.

Chapter 3, Section C.3(b) summarizes the proposed Trail and Appendix 3J includes the Trail Development Plan. The Trail includes a new parking lot near the WCCSL entrance gate (Figure 3-7) with space for 15 vehicles, and a phased alignment which extends around the WCCSL. The Phase 3 Trail would proceed along the northern border of the WCCSL, along San Pablo Creek, pass by the WCCSL scale house, cross the traffic lanes of the landfill access road, and terminate at the Trail parking area. Thus, a potential safety conflict exists relative to the presence of Trail users and increased truck traffic.

Control Measures Incorporated by Applicant:

a) A barrier (i.e., “k-rails,” concrete blocks, telephone poles, or soil berms) would be placed along the Phase 3 Trail near the scale house to physically separate Trail users from vehicular traffic using the WCCSL operations areas.

b) A designated crossing with signage and pavement striping would be provided for users of the Trail to safely cross the traffic on the main roadway leading to the WCCSL scale house. Signage will require motorists to stop for pedestrians.

c) The Trail parking lot would have improvements consisting mainly of traffic control barriers that would designate the limits of the parking area and its entrance roadway.

EIR Recommendation:

MITIGATION MEASURE 8-5. None required. The Applicant's control measures would reduce potential safety impacts to less-than-significant levels.

6. Transportation Plans and Programs

IMPACT 8-6. The proposed Project is consistent with transportation plans and programs in North Richmond. This impact is considered to be less than significant.

The West Contra Costa County Travel Demand Forecasting Model incorporates changes to the roadway network serving the area. The major change in the 2015 model is that the existing Richmond Parkway and San Pablo Avenue at-grade intersection will be modified to a full interchange. The Model also shows the extension of Hilltop Drive being connected to the Richmond Parkway in 2015. In addition, according to the County Transportation Planning Division, additional roadway improvement projects have been identified in the North Richmond area in future years.[134] These include the following:

- Widen and overlay Parr Boulevard between the Richmond Parkway and railroad tracks.
- Construct an eastbound auxiliary lane on the Richmond Parkway between I-80 and Appian Way.
- Widen and realign Goodrick Avenue or Third Street between the City of Richmond to the north and Brookside Drive to the south.
- Extend Pittsburg Avenue eastward and extend either Soto Street or 7th Street northward to connect with the Pittsburg Avenue extension.
- Widen existing 2-lane Garrard Boulevard from I-580 to Pennsylvania Avenue to 4-lane divided arterial with bike lanes.
- Add bike lanes along Richmond Parkway.

The proposed Project is consistent with transportation plans and programs for local traffic circulation.

Control Measures Incorporated by the Applicant: None.

EIR Recommendation

MITIGATION MEASURE 8-6. None required.

E. CUMULATIVE IMPACTS

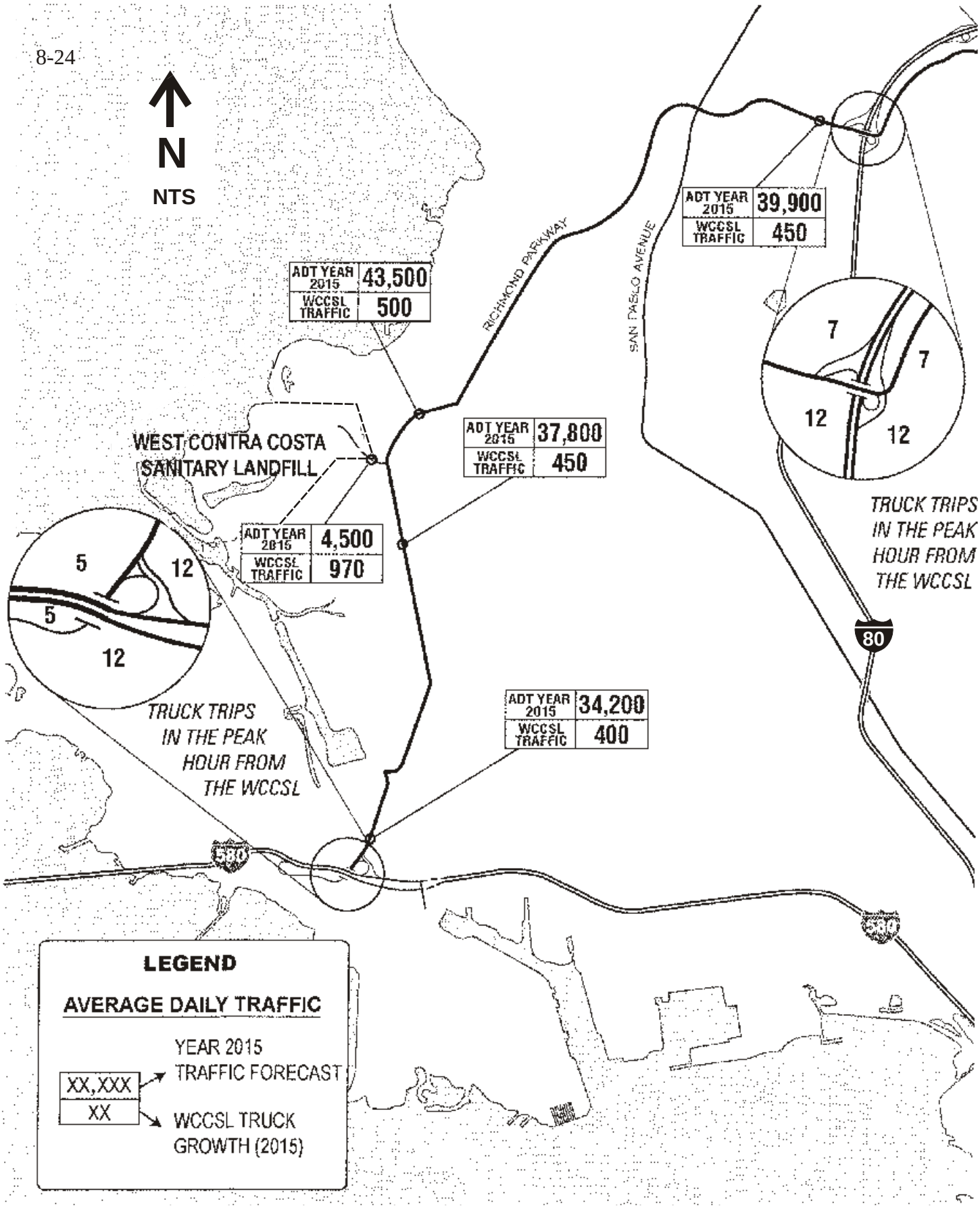
The analysis of cumulative traffic conditions is based on several sources for future traffic projections. Regional traffic forecasts have made by Contra Costa County, in coordination with the CCTA for the West Contra Costa County Travel Demand Forecasting Model (Model) based on 2015 land use assumptions and forecasts that have been made for the Richmond Parkway. These forecasts predict about a 40 percent increase in the through traffic volumes on the Richmond Parkway in the section between I-80 and I-580. The actual percent change varies on each segment of the Richmond Parkway. In the vicinity of Parr Boulevard, the ADT is forecast to change from the current ADT of 28,000 vehicles per day to an ADT of 39,000 vehicles per day (a 39 percent increase) in the year 2015.

In addition to changes in land use development in the corridor, the Model incorporates changes to the roadway network serving the area. As discussed earlier, the major change in the 2015 Model is that the existing Richmond Parkway and San Pablo Avenue at-grade intersection would be modified to a full interchange. The Model also shows the extension of Hilltop Drive being connected to the Richmond Parkway in 2015. There are no planned roadway changes in the immediate vicinity of the WCCSL.

With these roadway changes, the intersection conditions at Parr Boulevard will decrease from LOS “A” to LOS “C”, but the overall roadway capacity conditions would be well within CCTA and City of Richmond standards. This decrease in LOS is due to the growth in regional traffic and is not attributable to proposed activities at the WCCSL. Cumulative traffic conditions in the year 2015 are not expected to adversely impact local or regional roadways that provide access and egress to the WCCSL Project.

1. Project Cumulative Impacts

Figure 8-6 shows the future traffic forecasts (ADT) for the Richmond Parkway between I-580 and I-80 for cumulative conditions (estimated to be the year 2015). Also shown are the estimated number of additional trips (two-way traffic) that would be generated by the proposed Project in the year 2015. The Project would generate about 970 additional trips per day (ADT)



Source: Abrams Associates, August 2003

Figure 8-6 Year 2015 Cumulative Traffic Impacts of Proposed Project

compared to existing conditions. These trips are assumed to be distributed 50 percent to the north, 40 percent to the south and 10 percent onto other local streets. Using this distribution, on the Richmond Parkway at I-580, the proposed Project would add about 400 trips to the background traffic of 34,200 trips per day; on the Richmond Parkway at I-80, the proposed Project would add 450 trips to the background traffic of 39,900 vehicles per day; and about 120 trips would occur on local streets. During the PM commute peak hour of 5:00 to 6:00 PM, when the WCCSL traffic is very low, the proposed Project would add a total of about 10 truck trips in both directions, with no more than about 2 or 3 trucks per hour added to any individual ramp movement. This degree of impact is not considered to be significant. An additional 2 or 3 truck trips per hour would not have a measurable impact on roadway capacity, intersection capacity, or ramp operations, and it would not affect pavement maintenance (Traffic Index) calculations.

The potential cumulative impacts due to the proposed Project would also not be significant on any segment of Parr Boulevard. There are established industrial land uses that front both sides of Parr Boulevard west of the Richmond Parkway, and it is not anticipated that any land use changes would occur that would substantially change background traffic levels. Traffic forecasts for Parr Boulevard west of the Richmond Parkway do not include any significant growth in local traffic except for the WCCSL operations.

2. Future Use of the Central IRRF

As discussed in Chapter 4, Section A3(b), the Central Integrated Resource Recovery Facility (Central IRRF) located at 101 Pittsburg Avenue about 1 mile from the WCCSL is a permitted recycling center/transfer station. The Central IRRF currently receives about 150 TPD, but it is permitted to accept up to 1,200 TPD of franchised residential and commercial waste, and source-separated recyclables. In 1992, the County certified the EIR for the facility.[9]

For purposes of cumulative analysis in this EIR, a scenario is analyzed in which the Central IRRF and proposed WRC would operate jointly at their full design capacities. This scenario forms the basis for an additional component of the cumulative impact assessment for this EIR. However, to assess the traffic impacts of their combined operations, it is first necessary to quantify the traffic generating characteristics of the Central IRRF at its full design capacity against current projections of background traffic.

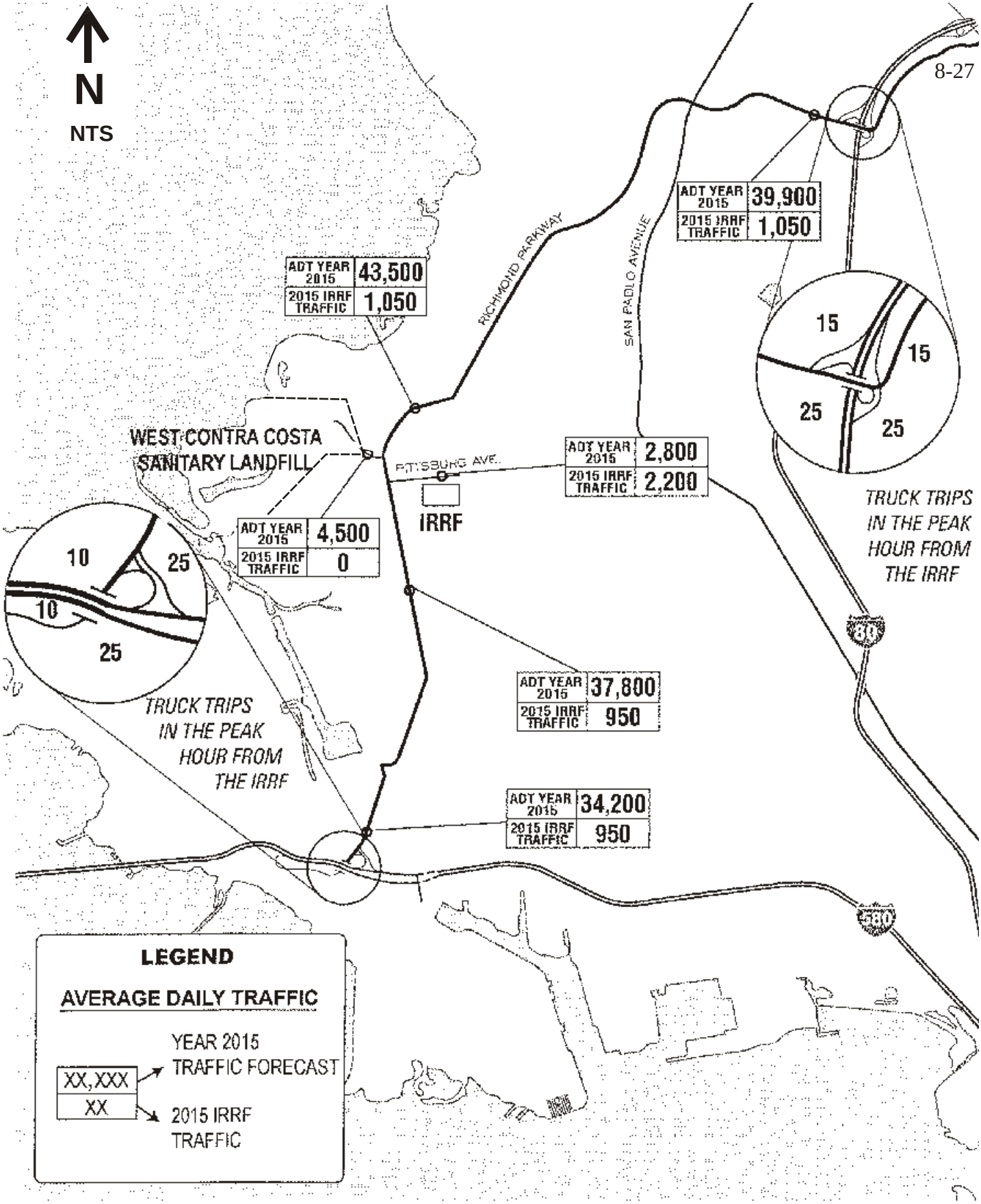
a. Central IRRF Traffic. With the Central IRRF currently operating at about 150 TPD, an additional 1,050 TPD of waste and recyclables would need to be hauled to the facility to attain the permitted tonnage of 1,200 TPD. For purposes of this analysis, it is assumed that the 1,050 TPD would be entirely new traffic on the regional roadway system. The specific impacts of this Central IRRF traffic cannot be quantified without knowing more details of the expanded use of the facility. These details, which are not known at this time, include such items as the origin and destination of the new traffic and the expected hourly distribution of the traffic.

An additional 1,050 TPD at the Central IRRF would equate to an ADT of about 2,100 two-way vehicles trips per day, of which about 600 two-way vehicles per day would be heavy trucks. Based on the same distribution in traffic that was used in the traffic forecasts for the proposed Project, this increase in the Central IRRF operations would result in 1,050 two-way vehicles trips on the Richmond Parkway north of the WCCSL, and 850 trips to the south of the WCCSL. The remaining 200 vehicle trips per day would be distributed to the local roadway system. These estimates have been shown on Figure 8-7, which provides a comparison of the Central IRRF traffic to the 2015 background cumulative traffic. On the Richmond Parkway near I-80, the IRRF traffic would amount to about 2.5 percent of the total traffic. Such an increase would not affect the overall operation of the Richmond Parkway, but it could have a significant impact on intersection operations along the Richmond Parkway and on the interchange ramps at I-80 and I-580.

Figure 8-7 also shows the number of additional truck trips that could be generated by the Central IRRF on each interchange ramp during a typical peak hour of traffic. Some of the ramp movements could have up to 25 trips from trucks during the highest hour. This traffic could be accommodated on most of the ramps without impact. During the AM peak hour at I-80, however, the ramps to and from the south are very congested, and this number of additional truck trips could further add to this congestion. Similarly, the ramps to and from the north could be impacted in the PM peak hour. These assumptions assume the worst condition and could be mitigated by controlling and managing the number of peak hour trucks entering and leaving the Central IRRF.

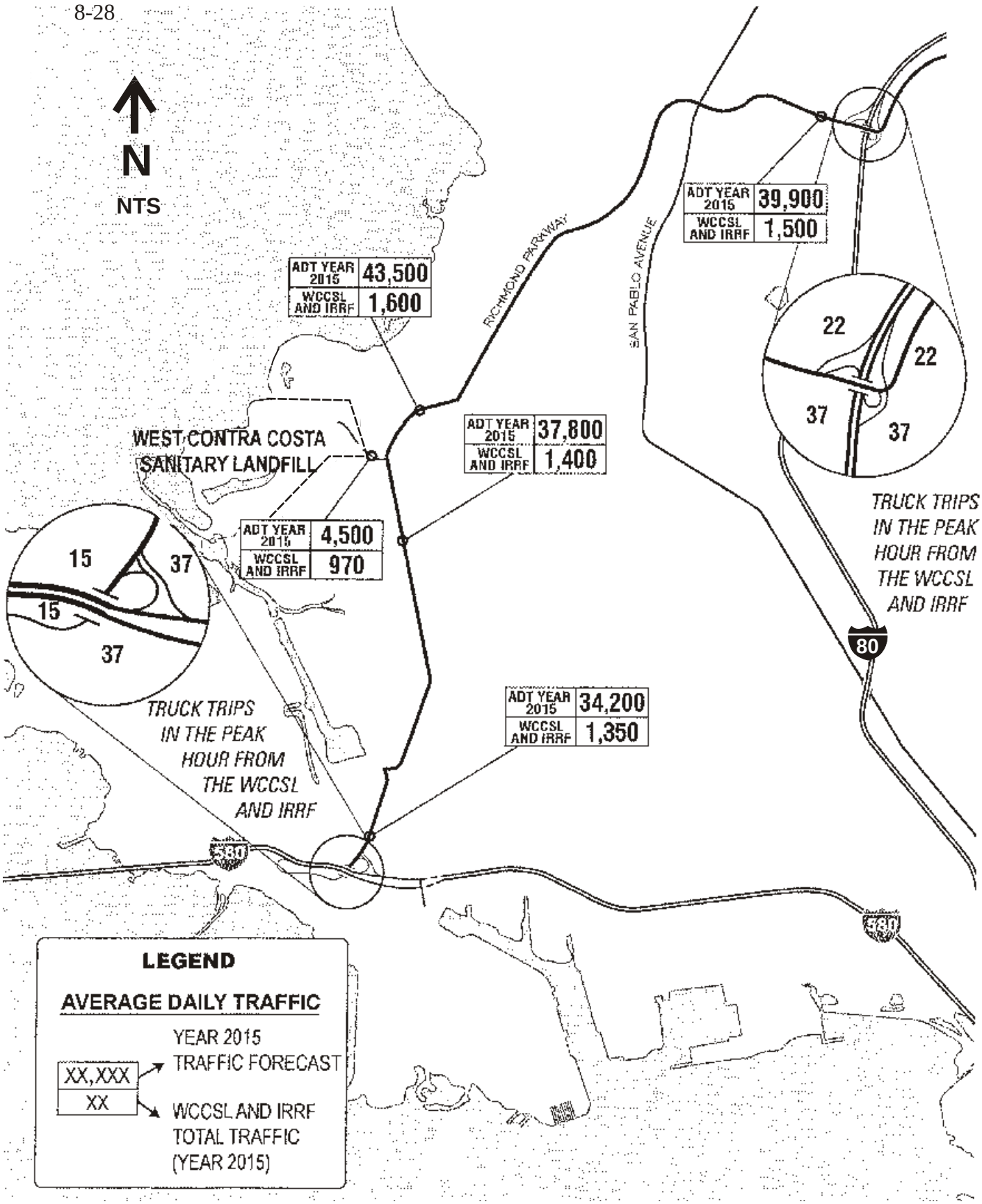
Operation of the Central IRRF at full capacity could also result in changes or increases in the number of turning movements on the Richmond Parkway at Parr Boulevard and at Pittsburg Avenue, but these impacts would not be significant. Both of these signalized intersections have excess capacity that can accommodate these increased traffic volumes or turning movements. The relative change in traffic would not be enough to change the LOS results to critical levels. With operation of the Central IRRF at its 1,200 TPD design capacity, it is possible that the left turn lane on Richmond Parkway at Pittsburg Avenue would need to be extended. It is also possible that the additional truck traffic could affect pavement condition on Pittsburg Avenue. These issues should be monitored in the future.

b. Central IRRF and Proposed Project Combined. Figure 8-8 shows the total traffic from both the WCCSL and IRRF and compares this data to the traffic forecasts (ADT) for segments of the Richmond Parkway. For example, on the Richmond Parkway near I-80, the future ADT is estimated to be 39,900 vehicles per day (total both directions). Traffic volume from operating the Central IRRF at full capacity with the proposed Project would amount to about 3.8 percent of the total daily traffic in 2015. Such an increase would most likely not affect the overall operation of the Richmond Parkway, but further congestion of the ramps at I-80 would be expected during the commuter peak hours. Managing the Central IRRF and proposed Project-related traffic to avoid the commuter peak hours would mitigate this impact.



Source: Abrams Associates, August 2003

Figure 8-7 Year 2015 Cumulative Traffic Impacts of the Central IRRF



Source: Abrams Associates, August 2003

Figure 8-8 Year 2015 Cumulative Traffic Impacts of the Proposed Project and Central IRRF

CHAPTER 9

BIOLOGICAL RESOURCES

The biological resource evaluation of the proposed Bulk Materials Processing Center (BMPC) use permit amendment changes and related actions (Project) is presented in this chapter. Broad consideration is given for the proposed Project, though emphasis is given to the Public Access Trail (Trail) component of the Project because of its proximity to sensitive habitat and species.

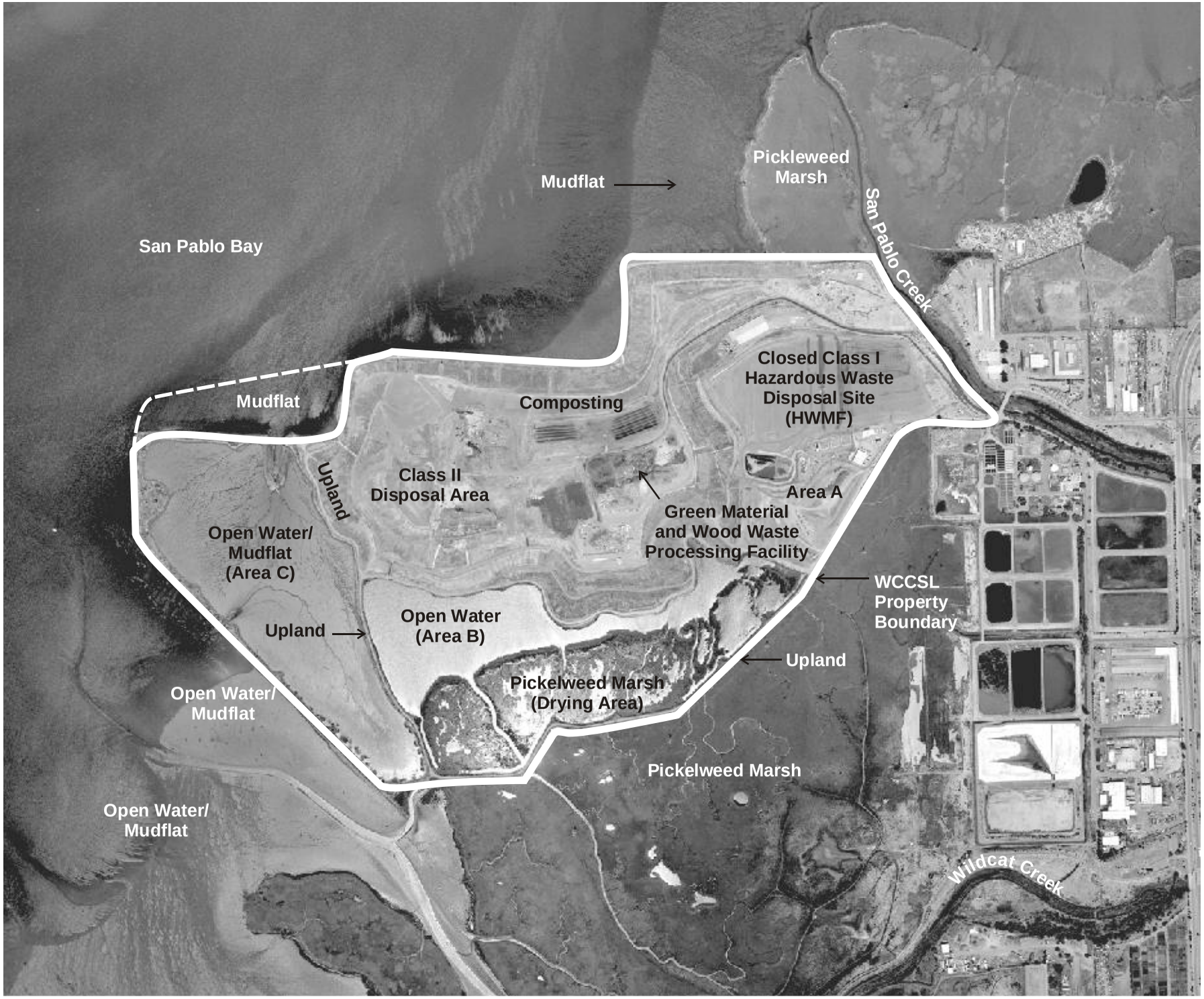
A. SETTING

This section provides a discussion of the setting of the West Contra Costa Sanitary Landfill (WCCSL) relative to the vegetation and wildlife habitat characteristics of the WCCSL and immediately surrounding open space areas.

1. Biological Resources

Biological resources were identified through the review and compilation of existing information and conduct of field reconnaissance surveys of the site. The review provided information on general resources in the area and the distribution and habitat requirements of special-status species which have been recorded from or are suspected to occur in the vicinity, including: records on occurrences of special-status species and sensitive natural communities maintained by the California Natural Diversity Data Base (CNDDB) of the Department of Fish and Game (DFG); the California Native Plant Society's (CNPS) *Inventory of Rare and Endangered Plants of California*;[105] DFG's list of special animals and plants;[103] the *California Statewide Wildlife Habitat Relationships System*,[101] and a study on bird activity at the site conducted for West County Landfill, Inc.[117] Figure 9-1 provides an overview of the existing habitat conditions within and around the WCCSL.

Field reconnaissance surveys of the site were conducted for this Environmental Impact Report (EIR) on October 25, 2002, and February 28, 2003. The site was inspected by automobile, with periodic ground inspections. The reconnaissance on February 28, 2003, was conducted with the local wildlife biologist of the DFG, Mr. John Krause, to determine any specific concerns and need for any detailed surveys for special-status species. The reconnaissance surveys served to confirm vegetation and wildlife habitat, and potential for occurrence of special-status species and wetlands. No detailed surveys were conducted, or are believed necessary based on the conditions of the site and methods proposed to minimize disturbance to sensitive resources in the vicinity.[106]



Source: LSA Associates, reference 117.

Figure 9-1 Existing Habitat Conditions

a. Vegetation and Wildlife Habitat. The site is located along the shoreline of San Pablo Bay, bordered by the open channel and tidal marshland of San Pablo Creek to the north and the more extensive marshlands found at the mouth of Wildcat Creek to the south. Although the WCCSL site has been extensively disturbed by past and on-going landfill operations, it is surrounded by sensitive marshland, mudflat, and open water habitat that support a wide variety of plant and animal species, including a number of special-status species with legal protective status under the Federal and State Endangered Species Acts (ESAs) (Figure 9-2).

An estimated 200 acres of the 340-acre WCCSL site consists of disturbed uplands formed as part of the past and ongoing Class I and II landfill activities, which generally now support a cover of non-native grassland and ruderal species. The remainder of the WCCSL (Areas B and C) consists of open water, exposed mudflat, and disturbed northern coastal saltmarsh, with limited brackish and willow scrub along the upper banks of San Pablo Creek. Areas of well-preserved coastal salt marsh occur to the north and south of the site along the shoreline of San Pablo Bay, providing important feeding, resting and nesting habitat for numerous birds and small mammals.

Open Water and Mudflats. Open water and mudflat comprise approximately 140 acres of the WCCSL, consisting of WCCSL Area C and approximately 50 percent (40 acres) of the Drying Area in WCCSL Area B (runoff retention pond). Area C and the open water of San Pablo Bay are under tidal influence, exposing shallow mudflats along the shoreline at low tides. The Area B Drying Area is no longer under tidal influence, but the pond provides foraging opportunities as surface water slowly evaporates through summer. The remainder of the Area B Drying Area supports approximately 40 acres of common pickleweed (*Salicornia virginica*), which provides protective cover for wildlife.

The open water and mudflats provide important resting and feeding habitat for gulls, shorebirds, and waterfowl. Migratory waterfowl and shorebirds comprise the majority of the bird species using the site,[117] due to the abundance of open water and exposed mudflat habitat available. Species observed include canvasback, scaup, bufflehead, ruddy duck, American avocet, willet, and sandpipers. Large flocks of primarily California and western gulls congregate over the landfill and use the surrounding waters for roosting and feeding. A resource of particular importance to birds is the isolated levee segment along the northwestern edge of Area C. Because this levee has been breached in two locations, human access to the isolated portion requires a boat, which contributes to its sensitivity and importance as resting, roosting, and nesting substrate for numerous birds.

Non-Native Grassland/Ruderal. The uplands on the WCCSL are either devoid of vegetation from on-going landfill operations and roadways, or are dominated by non-native grasses and forbs. Common plant species in the grassland include: Italian ryegrass (*Lolium multiflorum*), ripgut grass (*Bromus diandrus*), and wild oaks (*Avena* spp.).

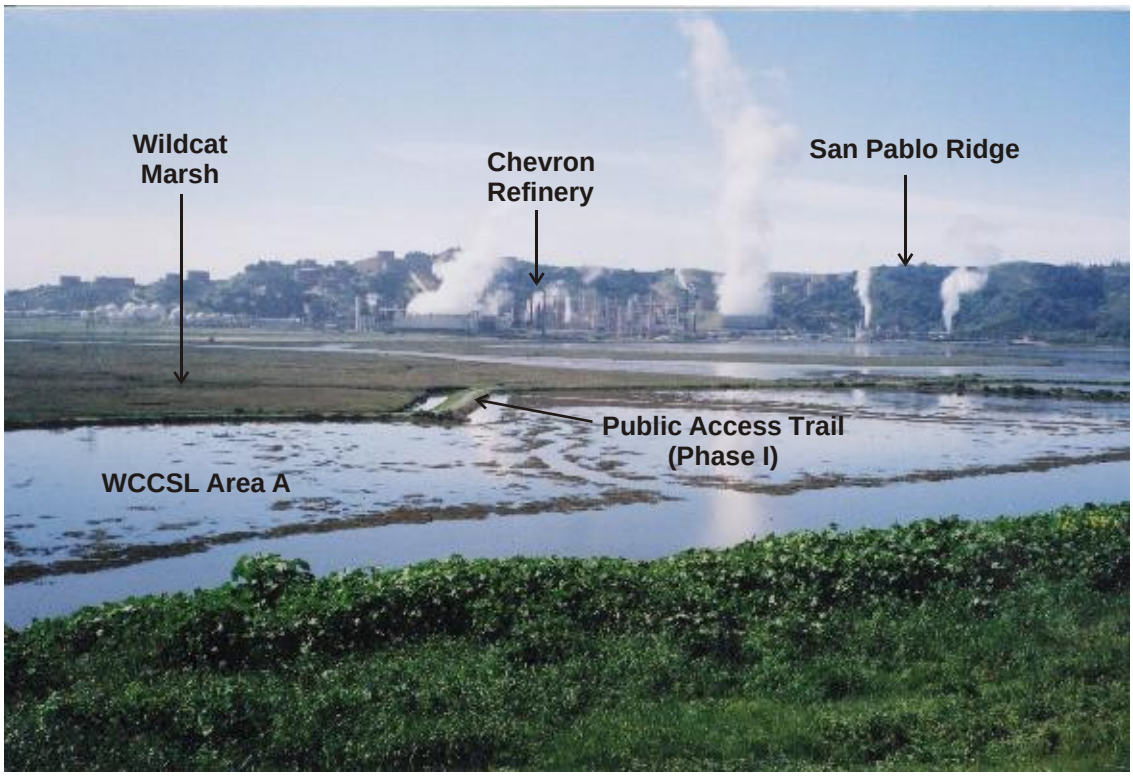


Figure 9-2 Open Space to the South. This panoramic view from the landfill central plateau shows a portion of Wildcat Marsh, a portion of WCCSL Area A, and the Phase 1 alignment of the proposed Public Access Trail.

Several weedy species are also present, including sweet fennel (*Foeniculum vulgare*), wild radish (*Raphanus sativus*), mustard (*Brassica* sp.), and poison hemlock (*Conium maculatum*). Clumps of native coyote brush scrub (*Baccharis pilularis*) are scattered through the grasslands, road margins, and upper edge of the marshlands and levees.

Species associated with the uplands on the WCCSL tend to be common in grassland and disturbed habitat, including the gulls attracted to the landfill for feeding, European starlings, red-winged blackbirds, sparrows, Bottae pocket gopher, and California vole. Several species of raptors forage on the gopher and vole population in the reclaimed grasslands, including red-tailed hawk, northern harrier, and American kestrel.

Northern Coastal Salt Marsh. Marshland habitat on the WCCSL is limited to the narrow band of marshland species along the upper levee banks and the stand of pickleweed in the Drying Area of Area B. Native stands of marshland habitat extend across the tidelands to the north and south of the site, dominated by pickleweed at mid-elevations, California cord grass (*Spartina foliosa*) at the lower elevations on the bayward edge of the mudflats, and a number of transitional species such as salt grass (*Distichlis spicata*), salt bush (*Atriplex patula* var. *Hastata*), and gum plant (*Grindelia humilis*) at the higher elevations. These species also occur within their respective elevational zones on the outboard edge of the levees on the WCCSL.

The large stands of northern coastal salt marsh to the north (San Pablo Creek Marsh) and south (Wildcat Marsh) of the site have been mapped as a sensitive natural community by the CNDDB (Figure 4-1). Sensitive natural communities are recognized as important natural habitat by the DFG because of the cumulative loss of these habitat types and their vulnerability to further loss and degradation. The stand of pickleweed in the Drying Area on the site is not included in the mapped occurrence of northern coastal salt marsh, most likely due to the artificial conditions in the diked pond and use of the area for runoff control.

Shorebirds, waterfowl, and other wildlife use the marsh and mudflats for foraging and resting. Higher elevations of the marsh typically provide important refuge for small mammals and birds during storms and high tides. However, the extent of existing adjacent development, the narrow band of cover along the levee slopes, and the intensity of human activity limits the opportunities for upland retreat habitat on the WCCSL.

b. Special-Status Species. A number of special-status animal species have been reported from the San Pablo Creek Marsh and Wildcat Marsh north and south of the WCCSL, and from the remaining grasslands along the lower segment of San Pablo Creek. These include: the State and Federally-endangered salt marsh harvest mouse *(Reithrodontomys raviventris*), the State and Federally-endangered California clapper rail (*Rallus longirostris obsoletus*), the State-threatened California black rail (*Laterallus jamaicensis coturniculus*), and many other species considered to be Federal Special Concern species and California Special Concern species.

Table 9-1 provides a list of special-status animal species known or suspected to occur in the WCCSL vicinity, together with their status and preferred habitat types.

Due to the extent of past development, essential habitat for special-status animal species on the WCCSL is considered unlikely. While many of these species may occasionally disperse or forage on portions of the site, essential breeding habitat is absent and these species are more likely to be associated with areas of well-developed marshland on the adjacent lands to the north and south, the open water habitat of the San Pablo Bay, and the aquatic habitat of the nearby creek channels.

Several special-status plant species are known from the uplands and coastal salt marsh habitats along the shoreline of San Francisco and San Pablo Bays, but none have been reported from the vicinity of the WCCSL. A single occurrence of fragrant fritillary (*Fritillaria liliaceae*) was reported from the Point Richmond area in 1900, but this occurrence is believed to have been extirpated by development, and suitable habitat is absent on the site. Other special-status plant species known from marshland habitat along the shoreline of San Pablo Bay include: the State-rare soft-haired bird's beak (*Cordylanthus mollis* ssp. *mollis*), mason's lilaeopsis (*Lilaeopsis masonii*), and San Francisco gumplant (*Grindelia hirsutula* var. *maritima*). All three of these species are maintained on List 1B of the CNPS *Inventory*,[105] and are considered rare under Section 13580 of the California Environmental Quality Act (CEQA) Guidelines. None have been reported from the WCCSL, and suitable habitat is absent on portions of the site proposed for improvements.

c. Wetlands. Jurisdictional wetlands and unvegetated waters exist off site that extend over the northern coastal salt marsh, open water habitat, and San Pablo Creek channel. The levees on the site have been designed and maintained to exceed flood levels and the upper portions are located outside of Corps jurisdiction. The upland portions of the site do not support wetlands, and the man-made basins designed for runoff control and leachate treatment are exempt from Corps jurisdiction. The sloughs, creek channel, and bay shoreline which border the site are not subject to jurisdiction by DFG pursuant to Section 1603 of the Fish and Game Code because all of these areas are under tidal influence.

B. REGULATORY AND PLANNING FRAMEWORK

In addition to the environmental protection provided by CEQA, other state and federal regulations have been enacted to provide for the protection and management of sensitive biological resources. Implementation of policies contained in the local general plans and specific plans also serve to regulate development and provide for conservation of important resources at the local level.

Table 9-1. List of Special Status Animal Species Known or Suspected to Occur in the WCCSL Vicinity

Species	Status Federal/State[a]	Preferred habitat type
Reptiles/fish:		
Northwestern pond turtle	FSC/CSC, CP	Freshwater ponds, rivers, and streams
Steelhead	FT/-	Open water of Bay and Delta, tributary rivers and streams
Winter- run chinook salmon	FE/SE	Open water of Bay and Delta, tributary rivers and streams
Birds:		
White-tailed kite	-/CP	Grassland
Burrowing owl	FSC/CSC	Grassland
California black rail	FSC/ST, CP	Salt marsh
California clapper rail	FE/SE	Salt marsh
Cooper's hawk	-/CSC	Riparian and grassland
Double-crested cormorant	-/CSC	Bays, rivers and lakes (communal roosts protected)
Loggerhead shrike	-/CSC	Grassland with shrubs
Northern harrier	-/CSC	Salt marsh and grassland
Peregrine falcon	Delisted/SE,CP	Open water and grassland
Prairie falcon	-/CSC	Grassland
Salt marsh common yellowthroat	FSC/-	Salt and brackish water marsh
Sharp-shinned hawk	-/CSC	Riparian and grassland
Short-eared owl	-/CSC	Grassland and open marshland
Suisun song sparrow	FSC/CSC	Salt and brackish water marsh
Tricolored blackbird	FSC/CSC	Freshwater marsh and fields
Mammals:		
Salt marsh harvest mouse	FE/SE	Salt marsh and adjacent grassland
San Pablo vole	-/CSC	Salt marsh and adjacent grassland
Suisun shrew	FSC/CSC	Salt marsh
Salt marsh wandering shrew	FSC/-	Salt marsh

a. Federal Status:
FE = Listed as "endangered" under the FESA.
FT = Listed as "threatened" under the FESA.
C = A candidate species under review for federal listing. Includes species for which the USFWS currently has sufficient biological information to support listing as endangered or threatened. No candidate species are known to occur on the WCCSL site.
FSC = Federal Special Concern species.
State Status:
SE = Listed as "endangered" under CESA.
ST = Listed as "threatened" under CESA.
CP = California fully protected or protected species; individual may not be possessed or taken at any time.
CSC = California Special Concern species by the DFG; taxa have no formal legal protection but nest sites and communal roosts are generally recognized as significant biotic features.

Source: Environmental Collaborative, April 2003.

State and federal agencies have a lead role in the protection of biological resources under their permit authority set forth in various statues and regulations. The U.S. Fish and Wildlife Service (USFWS) is responsible for implementing the Federal ESA and the Migratory Bird Treaty Act, while the U.S. Army Corps of Engineers (Corps) has primary responsibility for protecting wetlands under Section 404 of the Clean Water Act. At the State level, the DFG is responsible for administration of the California ESA, and for protection of streams, waterbodies, and riparian corridors through the Streambed Alteration Agreement process under Section 1601-1606 of the California Fish and Game Code. Certification from the California Regional Water Quality Control Board (RWQCB) is also required when a proposed activity may result in discharge into navigable waters, pursuant to Section 401 of the Clean Water Act and Environmental Protection Agency (EPA) 404(b)(1) Guidelines.

1. Special-Status Species and Sensitive Natural Communities

Special-status species are plants and animals that are legally protected under the State and/or Federal ESAs or other regulations, as well as other species that are considered rare enough by the scientific community and trustee agencies to warrant special consideration, particularly with regard to protection of isolated populations, nesting or denning locations, communal roosts, and other essential habitat. Species with legal protection under the ESAs often represent major constraints to development, particularly when they are wide ranging or highly sensitive to habitat disturbance and where proposed development would result in a "take" of these species. “Take” as defined by the Federal ESA means “to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect” a threatened or endangered species.

The primary information source on the distribution of special-status species in California is the CNDDB inventory, which is maintained by the Natural Heritage Division of the DFG. Occurrence data are obtained from a variety of scientific, academic, and professional organizations, private consulting firms, and knowledgeable individuals, and entered into the inventory as expeditiously as possible. The presence of a population of species of concern in a particular region is an indication that an additional population may occur at another location within the region, if habitat conditions are suitable. However, the absence of an occurrence in a particular location does not necessarily mean that special-status species are absent from the area in question, only that no data have been entered into the CNDDB inventory. Where suitable habitat is present, detailed field surveys are generally required to provide a conclusive determination on presence or absence of sensitive resources from a particular location.

In addition to species-oriented management, protecting habitat on an ecosystem-level is increasingly recognized as vital to the protection of natural diversity in the State. The DFG maintains occurrence information in the CNDDB inventory of those natural communities which are considered particularly rare or threatened. Although these natural communities have no legal protective status under the State or Federal ESAs, they are provided some level of protection under the CEQA Guidelines. Further loss of a sensitive natural community could be interpreted as substantially diminishing habitat, depending on the relative abundance, quality and degree of

past disturbance, and the anticipated impacts to a known occurrence of a specific community type with a high inventory priority.

2. Wetlands

Although definitions vary to some degree, wetlands are generally considered to be areas that are periodically or permanently inundated by surface or ground water, and support vegetation adapted to life in saturated soil. Wetlands are recognized as important features on a regional and national level due to their high inherent value to fish and wildlife, use as storage areas for storm and flood waters, and water recharge, filtration, and purification functions. Technical standards for delineating wetlands have been developed by the Corps and the USFWS, which generally define wetlands through consideration of three criteria: hydrology, soils, and vegetation.

The DFG and Corps have jurisdiction over modifications to stream channels, river banks, lakes, and other wetland features. Jurisdiction of the Corps is established through the provisions of Section 404 of the Clean Water Act, which prohibits the discharge of dredged or fill material into "waters" of the United States without a permit, including wetlands and unvegetated "other waters". All three of the identified technical criteria must be met for an area to be identified as a wetland under Corps jurisdiction, unless the area has been modified by human activity. The USFWS classification system is used by DFG to determine wetlands. This classification system is generally more encompassing then that used by the Corps, requiring that only one of the criteria be met for an area to be considered wetlands, rather than all three as required by the Corps. Jurisdictional authority of DFG over wetland areas is established under Section 1601-1606 of the Fish and Game Code, which pertains to activities that would disrupt the natural flow or alter the channel, bed, or bank of any lake, river, or stream. The Fish and Game Code stipulates that it is "unlawful to substantially divert or obstruct the natural flow or substantially change the bed, channel or bank of any river, stream or lake" without notifying the Department, incorporating necessary mitigation, and obtaining a Streambed Alteration agreement.

3. Local Plans and Policies

Policies in the Conservation Element of the Contra Costa County (County) General Plan, the City of Richmond (City) General Plan, and the North Richmond Shoreline Specific Plan are all relevant to the protection and management of sensitive biological and wetland resources on the site.[5,7,12] Relevant policies are summarized in the Hazardous Waste Management Facility (HWMF) EIR,[33] (State Clearinghouse No. 95063005) which is incorporated by reference pursuant to Section 15150 of the CEQA Guidelines.

In summary, the General Plan goals, policies, and implementation measures relate to preservation and restoration of significant habitats, and protection of rare, threatened and endangered plant and animal species. Policies and implementation measures address new

development and resource protection; the use of setbacks from the edge of any wetland area, creek, or stream for any new structure; the protection of marshes, wetlands, and riparian corridors from the effects of potential industrial spills; and County/City review of development applications.

C. SIGNIFICANCE CRITERIA

Appendix G of the CEQA Guidelines identifies potentially significant environmental effects on biological resources to include:

- A substantial adverse effect, either directly or through habitat modifications, on any special-status species;
- A substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by the DFG or USFWS.
- A substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act through direct removal, filling, hydrological interruption, or other means;
- Substantial interference with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites;
- Conflict with any local policies or ordinances protecting biological resources, such as a creek preservation policy or ordinance.

D. IMPACTS AND MITIGATION MEASURES

1. Habitats and Special-Status Species

IMPACT 9-1. The proposed Project could have a substantial adverse effect on habitat for special-status species. This impact is considered potentially significant.

Proposed BMPC operations and the Class II landfill height increase are not expected to have any significant adverse impacts on essential habitat for special-status species. No special-status plant species are suspected to occur on portions of the WCCSL site proposed for improvements, including the levee system where the Phase 1, 2, and 3 segments of the Trail are proposed. The activities associated with the continuance of landfill activities would be contained on previously disturbed upland portions of the

WCCSL that do not provide important habitat for special-status species. Raptors and other bird species that may forage on the uplands of the WCCSL are acclimated to human activity associated with the ongoing landfill and BMPC operations. No significant impacts on these species are anticipated.

Portions of the Trail would be located adjacent to sensitive marshlands and riparian areas known to support special-status species. The improvements associated with Phases 1, 2 and 3 of the Trail would follow the existing maintenance road on the levee along the south and west edge of Area B, the maintenance road along the north side of the Class II landfill, and the south side of San Pablo Creek. No direct impacts on special-status species are anticipated as a result of Trail improvement construction for Phases 1, 2, and 3. However, the indirect effects of increased human activity, and particularly any access by dogs accompanying Trail users, could result in a significant impact to sensitive species that utilize the marshland and open water habitat. Measures are required to control possible disturbance and take of a listed species.

An existing slough south of, and adjacent to, the Phase 1 alignment serves as a barrier to human access to Wildcat Marsh (Figure 9-3). The San Pablo Creek channel prevents human access to the sensitive marshlands north of the creek. A segment of the Phase 3 Trail on the north side of the WCCSL site borders sensitive marshlands in the San Pablo Creek Marsh for a distance of approximately 600 feet. This marsh is known to support salt marsh harvest mouse, salt-marsh wandering shrew, San Pablo vole, California clapper rail, and other sensitive wildlife species. Unless adequate measures are taken to secure the area, informal access may lead to increased disturbance, trampling of marsh vegetation, and possibly loss of listed species.

Several control measures have been proposed by the Applicant, as part of the Project to address potential indirect impacts on sensitive habitat and wildlife associated with the Trail. These include a prohibition on any dogs along the trail, an interpretive program explaining the sensitivity of the surrounding marshland habitat, and implementation of *Bayside Trail (Barrier) Planting Recommendations* intended to control the spread of invasive exotics and establish a protective buffer of native vegetation between the proposed trail and adjacent marsh and open water habitats (Appendix 9-A). The barrier plantings would be installed along the upper elevations of the levee along the south side of Areas B and C to discourage any access into the adjacent marsh and mudflats at low tide. Species used in the plantings would include thorny shrubs and vines such as wild rose and blackberry, and possibly poison oak, to discourage human access and also provide protective cover for wildlife. No specific measures have been proposed as part of the Project to prevent access to the San Pablo Creek Marsh area north of the WCCSL along the south side of San Pablo Creek. However, adequate controls are provided for by Mitigation Measure 9-16 pertaining to this segment of the Trail system; therefore, no significant adverse impacts on special-status species are anticipated for the Phases 1, 2 and 3 portions of the alignment.

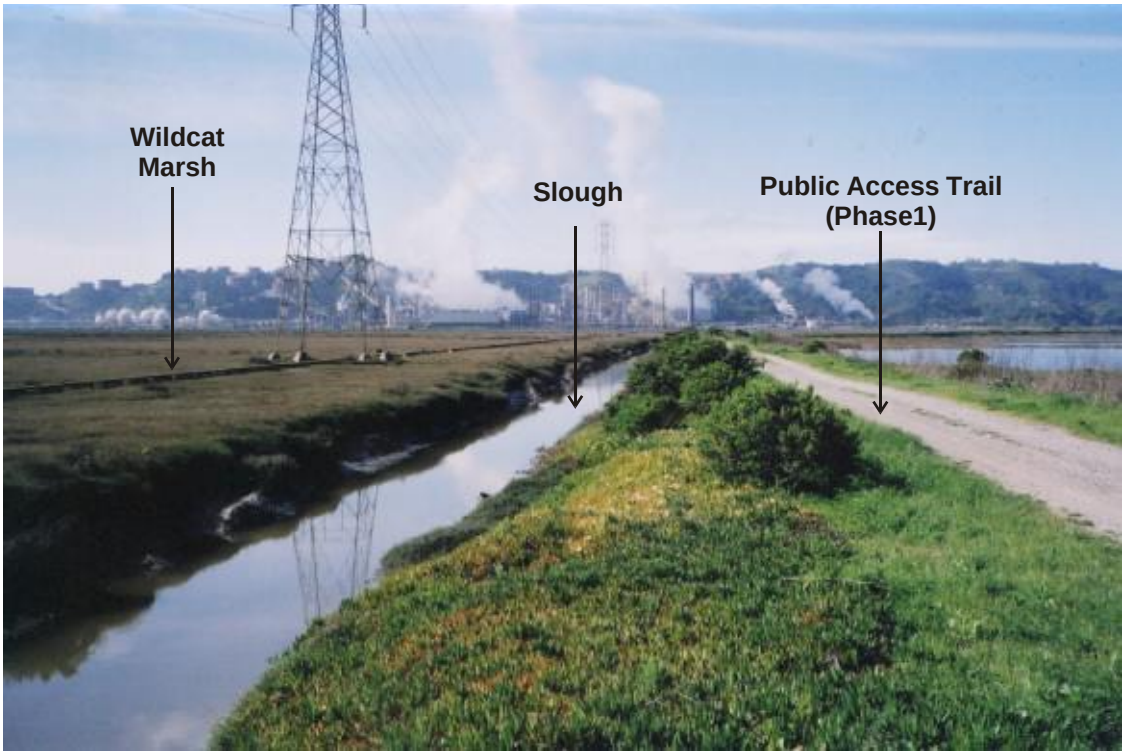


Figure 9-3 Slough Protects Wildcat Marsh. This slough, bordering the Phase I Public Access Trail alignment, would be an effective barrier to unwanted access by humans to the Wildcat Marsh.

The Phase 4 Trail alignment would follow the outer levee around the southwest and north sides of Area C, and would require two new bridge crossings over existing breaches in the levee system. While details on this segment of the trail plans have not yet been developed, it would most likely require some modifications to the shoreline to improve the levee and accommodate the new bridge structures. It would also allow human access to the portion of the levee now separated from the mainland that is used as protected resting, roosting, and nesting habitat by a large number of birds. Human access along this segment of the Trail would have a significant impact on the habitat value of the isolated levee to wildlife, as discussed under Impact 9-4.

Control Measures Incorporated by Applicant:

a) Dogs would not be permitted on the Trail.

b) An interpretive program would be implemented explaining the sensitivity of the surrounding marshland habitat.

c) The Trail (Barrier) Planting Recommendations developed by Environmental Stewardship & Planning would be implemented to control the spread of invasive exotics and to establish a protective buffer of native vegetation between the proposed Trail alignment and adjacent marsh and open water habitats.[109]

EIR Recommendations:

MITIGATION MEASURE 9-1

a) The interpretive program proposed by the Applicant would be developed in consultation with the Bay Conservation Development Commission (BCDC) and DFG to educate Trail users of the sensitivity of the marshland and open water habitat to wildlife, the prohibition on take and harassment of special-status species, and the requirement of staying on the Public Access Trail to minimize disturbance to sensitive wildlife.

b) Adequate controls would be developed as part of the interpretive program to prevent human access into the San Pablo Creek Marsh habitat along 600 feet of the Phase 3 segment of the Trail north of the WCCSL. This may require use of exclusionary fencing, and shall at minimum include installation of permanent signage at 100 foot intervals which states:

No Trail Access Sensitive Wildlife Habitat Visitor Access Prohibited

c) As currently proposed, dogs would be prohibited from using the Trail. Permanent signage would be installed as part of the interpretive program at the trailhead and as separate permanent signs within 100 yards of the beginning of the northern and southern trail segments explaining the sensitivity of the area and clearly state "No Dogs Allowed." Signage would refer users to other local shoreline parks where dogs are permitted (e.g. Berkeley Shoreline Park, Point Isabel). Experience gained from operation of the Trail would be used by the appropriate entities to determine whether additional enforcement measures are necessary and possible funding mechanisms.

d) As directed by appropriate agencies, the Applicant would cooperate with efforts on predator control of feral cats, dogs, and red fox.

e) All construction activities on the levees, including installation of any Trail improvements and the barrier landscape plantings, would be prohibited during the nesting season for salt marsh dependent bird species, from February 1 through July 31.

f) Trail improvements would be restricted to uplands, the tops of existing levees, and the existing roadway along the south side of San Pablo Creek to minimize further disturbance in the adjacent marsh and riparian habitats.

Implementation of these measures would reduce potential impacts to habitat for special-status species to less-than-significant levels.

IMPACT 9-2. The proposed Project could adversely affect sensitive natural communities. This impact is less than significant.

The proposed Project is not expected to directly affect any riparian habitat, northern coastal salt marsh or other natural communities considered sensitive by the DFG, County, or City. San Pablo Creek Marsh and Wildcat Marsh to the north and south of the WCCSL are recognized as sensitive natural communities by the CNDDB, but no disturbance or modification are proposed to these areas. Trail improvements and barrier plantings would be restricted to the upper elevations of the levee avoiding any salt marsh habitat, and along the existing entrance to the road along the northern edge of the site outside the brackish marsh and riparian scrub along San Pablo Creek.

Control Measures Incorporated by Applicant: None.

EIR Recommendation:

MITIGATION MEASURE 9-2. None required. Mitigation Measure 9-1 a through h would ensure that disturbance to the local sensitive natural communities (salt marsh and riparian habitat) is avoided.

IMPACT 9-3. The proposed Project could adversely affect wetlands. This impact is considered to be less than significant.

No jurisdictional wetlands would be affected by the proposed Project. Improvements associated with the BMPC and the Class II landfill height increase would be restricted to the existing landfill area. Improvements for the Phase 1, 2, and 3 segments of the Trail would be sited along the top of the existing levee system, service road along the north side of the landfill, and existing access road along the south side of San Pablo Creek, avoiding direct disturbance to jurisdictional habitat. Implementation of a required Stormwater Pollution Prevention Plan for the proposed Project, as discussed in Chapter 6, Section A.7, would serve to adequately mitigate any potential indirect impacts on wetlands as a result of proposed Project activities.

If Phase 4 of the Trail were to be implemented in the future, improvements would include modifications to the shoreline to accommodate two new bridge crossings and possibly improvements to the existing levee segment which has not been maintained. Fill may be required to increase the top of the levee and protect this segment of the Trail from erosion. Implementation of the Phase 4 alignment would have a significant impact on wildlife use of this area, as discussed under Impact 9-4. Any modifications to the shoreline would require authorization from the Corps and BCDC.

An interpretive program is currently being developed in conjunction with the Trail as part of the Project that would provide access to the shoreline at the southern end of Area C. A staging area is proposed at this location for use by kayakers as part of an educational program for school children administered by the Save the Bay Association. School children would be escorted by guides on kayaks through the surrounding tidal sloughs and open water of the San Pablo Bay. No dock or pier is currently proposed as part of the staging area. If these types of improvements are proposed in the future they would require modifications to the jurisdictional waters along the shoreline of the San Pablo Bay. The proposed staging area currently has little or no wetland vegetation and the levee slope is covered with concrete riprap. Any modifications to the shoreline and open water of San Pablo Bay must be coordinated with the Corps and BCDC.

Control Measures Incorporated by Applicant. None.

EIR Recommendations:

MITIGATION MEASURE 9-3

a) Any modifications to the shoreline of San Pablo Bay required as part of the construction of the staging area for the interpretive program at the southern end of Area C, would be coordinated with the Corps and BCDC and appropriate authorizations obtained prior to any modifications to the shoreline and open water of San Pablo Bay.

Implementation of this measure would reduce potential impacts to wetlands to less-than-significant levels.

IMPACT 9-4. The proposed Project could have significant impacts on wildlife habitat and wildlife movement opportunities. This impact is considered potentially significant.

Proposed BMPC operations and the Class II landfill height increase are not expected to have any significant adverse impacts on wildlife use of the WCCSL. Improvements associated with the BMPC and landfill operations would be restricted to the disturbed uplands on the site. Wildlife associated with this portion of the site are relatively common and are already acclimated to intensive human and vehicle activity in this area, and no significant adverse impacts are anticipated.

Most of the proposed Trail improvements would be limited to the existing levees, maintenance roads and access road onto the site. Although some segments of the Trail system would border sensitive marshland habitat, the interpretive program, prohibition on dog use, and barrier plantings described under Impact 9-1 would serve to minimize any disturbance to special-status animal species and other wildlife associated with the adjacent marshland and the riparian corridor of San Pablo Creek. With appropriate controls that are either proposed as a part of the Project or included as mitigation measures, no long-term significant adverse impacts on wildlife use are anticipated with the Phase 1, 2, and 3 Trail alignments.

As discussed under Impacts 9-1 and 9-3, improvements associated with the Phase 4 segment of the Trail would require construction of two new bridges and would create new human access to the currently isolated levee. This isolated levee provides important resting, roosting, and nesting habitat for birds. Human access associated with the Phase 4 Trail improvements would greatly diminish and possibly eliminate use of this levee by many species, which would be a significant adverse impact of the Project (Figure 9-4).

The proposed staging area and education program at the southern end of Area C would be supervised by interpretive guides associated with the Save the Bay Association. Kayaking in the sloughs and open water of San Pablo Bay could result in birds flushing and moving to another location further from the disturbance. However, the program would be supervised by interpretive guides explaining the sensitivity of the surrounding marsh and San Pablo Bay ecosystems, would be of short duration and relatively infrequent in occurrence, and is not expected to have a significant impact on wildlife use in the area.

Control Measures Incorporated by Applicant. None.

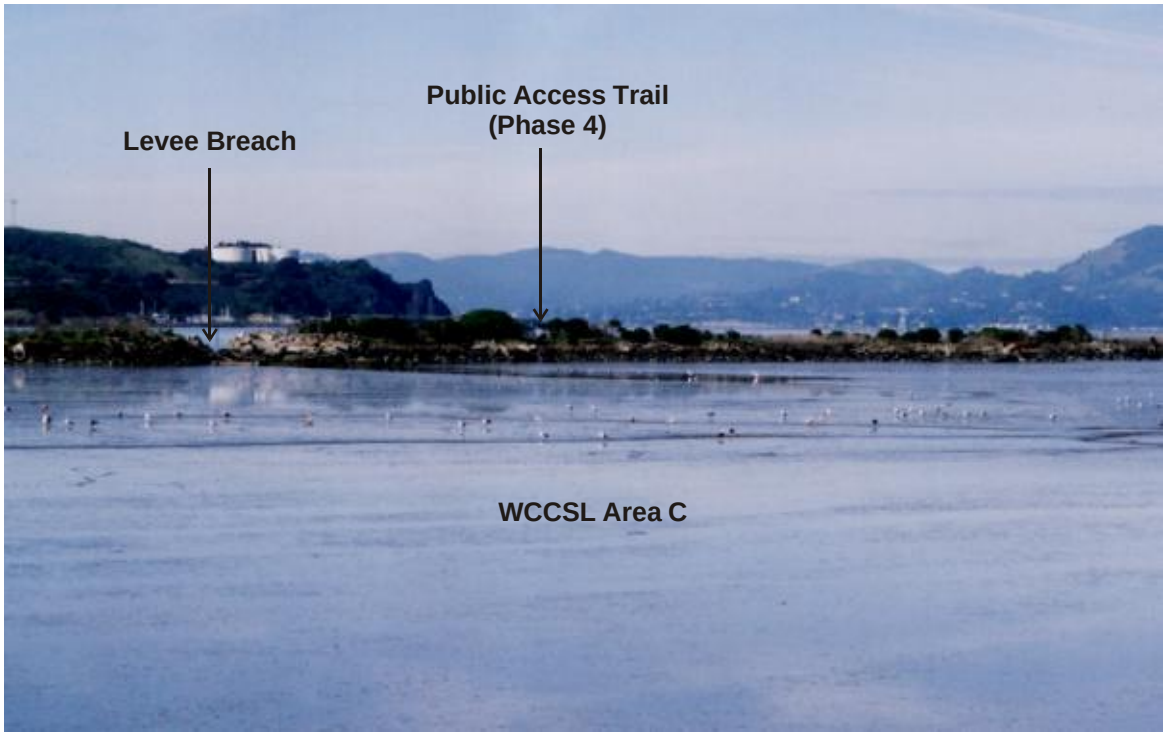


Figure 9-4 Elimination of Phase 4 Alignment. The levee breach shown is one of two that has restored tidal action to WCCSL Area C, limited human access, and helped create an area of value for numerous birds. This EIR recommends the Phase 4 Public Access Trail alignment be eliminated.

EIR Recommendations:

MITIGATION MEASURE 9-4

a) The Phase 4 alignment of the Trail would be eliminated from the proposed Project to avoid the required disturbance to shoreline habitat on this portion of the site and prevent the potential disruption to wildlife habitat and movement along the existing isolated levee segment.

b) Permanent signage would be installed as part of the required interpretive program at the southern end of the levee along the west side of Area C which deters visitor access to this segment of the levee. The signage would be installed at 20-foot intervals across the width of the levee, within 10 yards of the point where the levee narrows north of the proposed kayak staging area. The signage would state:

No Trail Access Sensitive Wildlife Habitat Visitor Access Prohibited

Implementation of these measures would reduce potential impacts to wildlife habitat and movement to less-than-significant levels.

2. Local Plans and Policies

IMPACT 9-5. The proposed Project is consistent with local plans, policies or ordinances protecting biological resources or an adopted Habitat Conservation Plans or Natural Community Conservation Plans. This impact is considered to be less than significant.

The proposed Project is consistent with the biological resources goals and policies of the County and City General Plans, and the North Shoreline Specific Plan. The proposed Public Access Trail alignment is a refinement of the shoreline trail alignment included in the Specific Plan as a result of additional planning by the Applicant, local organizations, and agencies.

Several goals and policies in the County General Plan, City General Plan and the North Richmond Shoreline Specific Plan address protection of marsh habitat and avoidance of sensitive wetlands and ecologically significant habitats. The proposed Project is not expected to conflict with the intent of these goals and policies. Mitigation measures recommended above to avoid sensitive habitat and minimize potential adverse effects of the Project (including elimination of the Phase 4 alignment of the Trail) are consistent with adopted goals and policies. The Trail would implement policies intended to

promote nature study such as Policy OSC-Q in the City General Plan. The prohibition of dogs on the Trail exceeds the mitigation requirements specified in Mitigation Measure BIO-6 from the EIR on the North Richmond Shoreline Specific Plan.[6]

The Project would not conflict with any adopted Habitat Conservation Plan, Natural Community Conservation Plan or other approved conservation plan. No such conservation plans have been adopted encompassing the site vicinity, and no impact is therefore anticipated.

Control Measures Incorporated by Applicant: None.

EIR Recommendations:

MITIGATION MEASURE 9-5. None required.

3. Impacts of Mitigation Measures

Mitigation measures have been developed to avoid sensitive habitat and minimize potential adverse effects of the Project. Thus, these measures are beneficial in nature and would not have adverse impacts. Elimination of the Phase 4 alignment of the Trail would not be consistent with the Trail alignment in the North Richmond Shoreline Specific Plan and would reduce the total trail length available to users; however, it is necessary to ensure protection of documented wildlife values. The trail would still encircle the WCCSL and provide new recreational opportunities and increased shoreline access without adversely impacting biological resources. As mentioned above, elimination of the Phase 4 Trail alignment as a mitigation measure is consistent with wildlife protection goals and policies of the North Richmond Shoreline Specific Plan.

E. CUMULATIVE IMPACTS

The proposed Project without recommended mitigation measures would contribute to cumulative impacts on biological resources, including salt march and riparian natural communities and the associated habitat of these areas provide to sensitive wildlife and special-status species. Construction of the Trail would increase human activity along the shoreline of San Pablo Bay and could contribute to increased disruption to wildlife in the area. However, research conducted on the effects of public access on wildlife use along segments of the San Francisco Bay Trail Project indicate little or no correlation between trail use and bird abundance or change in species diversity.[98] With adequate controls, increased public access to the shoreline of San Pablo Bay should not contribute to any significant adverse impacts on sensitive biological and wetland resources. Mitigation measures recommended above in conjunction with Applicant-proposed control measures would serve to mitigate any project contribution to cumulative

impacts on sensitive resources on the site and surrounding marshland and open water habitat of San Pablo Bay. Potential cumulative impacts to biological resources could occur with additional projects planned for the Point Pinole/Goodrick Avenue/Richmond Parkway area as described in Chapter 4, Section A3(b). However, while these projects are extensive, they predominantly involve lands which are not now natural habitats and the cumulative impact is considered less than significant.[128]

CHAPTER 10

AIR QUALITY AND ODOR

The evaluation of potential air quality and odor impacts of the proposed Bulk Materials Processing Center (BMPC) use permit amendment changes and related actions (Project) is presented in this chapter. The assessment of potential air quality impacts focuses on proposed Project emission sources associated with vehicular traffic and construction/operational equipment. The odor evaluation focuses on the potential for nuisance odor associated with proposed Project activities

A. SETTING

The West Contra Costa Sanitary Landfill (WCCSL) lies in the western most portion of Contra Costa County (County) in the San Francisco Bay Area Air Basin (Air Basin). The site is within the jurisdictional boundaries of the Bay Area Air Quality Management District (BAAQMD). The existing environment in the vicinity of the Project is presented below and includes climate and meteorology, ambient air quality standards, existing air quality, sensitive receptors, and previous odor complaints.

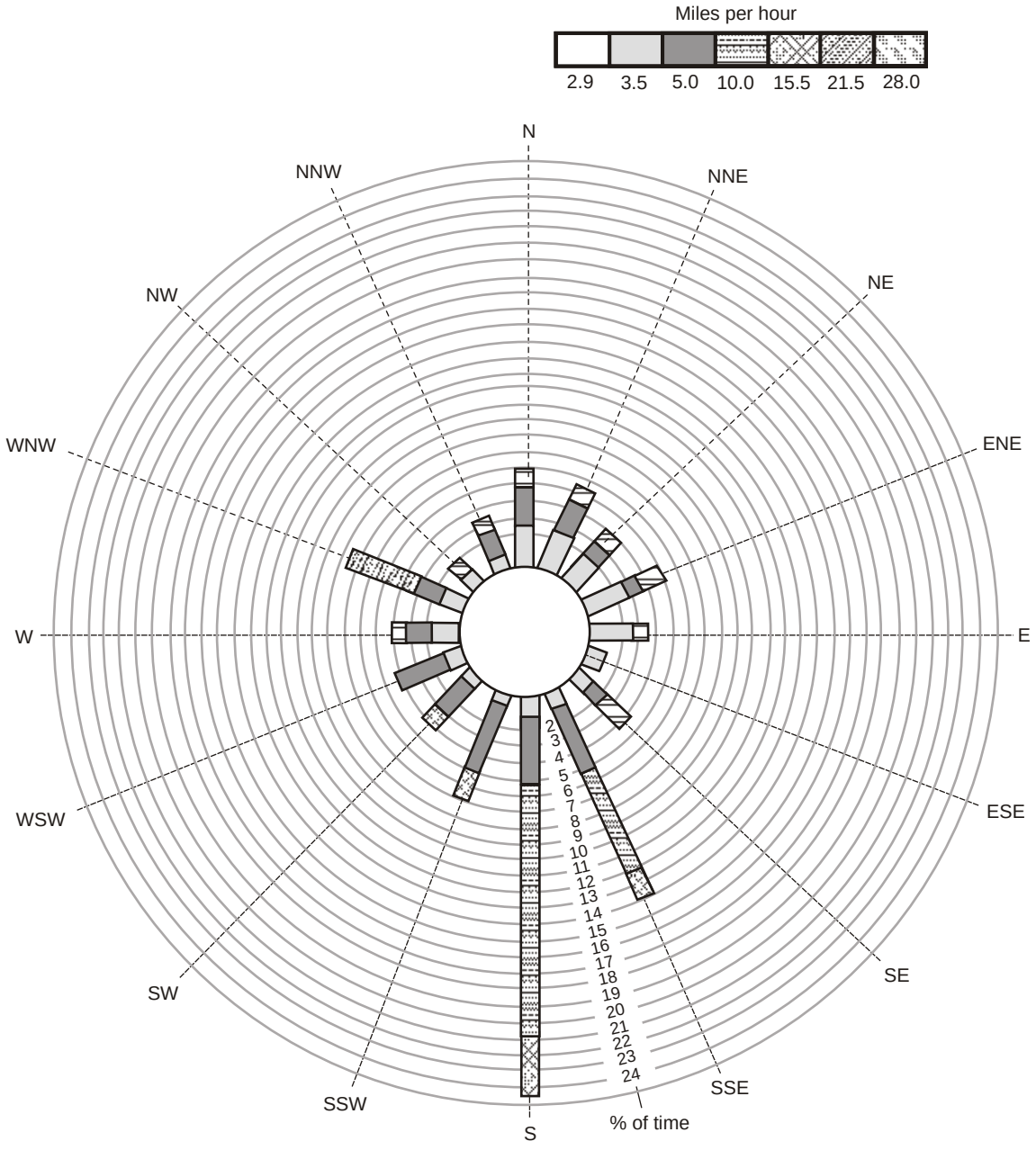
1. Climate and Meteorology

The WCCSL is located on the shore of San Pablo Bay. Seabreezes dominate the area during the spring and summer months. The dominance of the seabreeze results in a mild, relatively cool climate. Low clouds and fog are common in spring and summer.

Figure 10-1 shows a wind rose (illustrating wind speed by direction) from the nearby Chevron Refinery meteorological station. The prevailing wind direction is from the south. Average wind speed at the site is approximately 8.0 miles per hour. The pollution potential of the site area is relatively low compared to other portions of the Bay Area. Ventilation is relatively good, and there is limited transport of pollutants from other upwind urban areas. However, during periods of light or calm winds, which typically occur in the fall and winter months, the entire Air Basin is subject to stagnation and poor air quality.

2. Ambient Air Quality Standards

Both the U.S. Environmental Protection Agency (USEPA) and the California Air Resources Board (CARB) have established ambient air quality standards for common pollutants. These ambient air quality standards are levels of contaminants which represent safe levels that avoid specific adverse health effects associated with each pollutant. The ambient air quality



Note: Wind direction is the direction the wind is blowing from.
Wind rose for all stabilities 100.00 percent occurrence.

Source: RCSI, reference 1.

Figure 10-1 Wind Rose for Chevron Refinery Meterological Station 1981-1983 Data

standards cover what are called "criteria" pollutants because the health and other effects of each pollutant are described in criteria documents. Table 10-1 identifies the major criteria pollutants, characteristics, health effects and typical sources.

The Federal and State ambient air quality standards are summarized in Table 10-2 for important pollutants. The Federal and State ambient standards were developed independently with differing purposes and methods, although both processes attempted to avoid health-related effects. As a result, the Federal and State standards differ in some cases. In general, the State standards are more stringent. This is particularly true for ozone and PM_{10} (particulate matter less than 10 microns in size).

The USEPA established new national air quality standards for ground-level ozone and for fine particulate matter in 1997. The existing 1-hour ozone standard of 0.12 parts per million (PPM) is to be phased out and replaced by an 8-hour standard of 0.08 PPM. Implementation of the 8-hour standard was delayed by litigation, but was determined by the U.S. Supreme Court to be valid and enforceable in a decision issued in February of 2001. However, the new Federal ozone standard is not yet in effect pending final resolution of this litigation and adoption of implementing regulations.

In 1997, new national standards for fine Particulate Matter (diameter 2.5 microns or less) were adopted for 24-hour and annual averaging periods. The current PM_{10} standards were to be retained, but the method and form for determining compliance with the standards were to be revised. Implementation of this standard was delayed by litigation and will not occur until the USEPA has issued court-approved guidance.

In addition to the criteria pollutants discussed above, Toxic Air Contaminants (TACs) are another group of pollutants of concern. TACs are injurious in small quantities and are regulated despite the absence of criteria documents. The identification, regulation and monitoring of TACs is relatively recent compared to that for criteria pollutants.

3. Existing Air Quality

The BAAQMD operates a network of monitoring sites throughout the Bay Area. The closest monitoring site to the WCCSL is located in San Pablo (a few miles west of the WCCSL site). Table 10-3 summarizes air quality data from this monitoring site during the period 1999-2001. The table shows the number of days that the Federal or State standard was exceeded for four criteria pollutants.

Table 10-1. Major Criteria Pollutants

Pollutant	Characteristics	Health effects	Major sources
Ozone	• A highly reactive photochemical pollutant created by the action of sunshine on ozone precursors (primarily reactive hydrocarbons and oxides of nitrogen). Often called photochemical smog.	• Eye irritation • Respiratory function impairment.	• Combustion sources such as factories and automobiles, and evaporation of solvents and fuels.
Carbon monoxide	• Carbon monoxide is an odorless, colorless gas that is highly toxic. It is formed by the incomplete combustion of fuels.	• Impairment of oxygen transport in the bloodstream. • Aggravation of cardiovascular disease. • Fatigue, headache, confusion, dizziness. • Can be fatal in the case of prolonged exposure to very high concentrations.	• Automobile exhaust, combustion of fuels, combustion of wood in woodstoves and fireplaces.
Nitrogen dioxide	• Reddish-brown gas formed during combustion that discolors the air.	• Increased risk of acute and chronic respiratory disease.	• Automobile and diesel truck exhaust, industrial processes, fossil-fueled power plants.
Sulfur dioxide	• A colorless gas with a pungent, irritating odor.	• Aggravation of chronic obstruction lung disease. • Increased risk of acute and chronic respiratory disease.	• Diesel vehicle exhaust, oil-powered power plants, industrial processes.
Particulate matter (e.g., $PM_{2.5}$, PM_{10})	• Solid and liquid particles of dust, soot, aerosols and other matter that are small enough to remain suspended in the air for a long period of time.	• Aggravation of chronic disease and heart/lung disease symptoms.	• Combustion, automobiles, field burning, earthmoving, factories and unpaved roads. Also a result of photochemical processes.

Source: BAAQMD, reference 11.

Table 10-2. Federal and State Ambient Air Quality Standards

Pollutant	Averaging time	Federal primary standard[a,b]	State standard[a,b]
Ozone	1-hour	0.12 PPM	0.09 PPM
	8-hour	0.08 PPM	--
Carbon monoxide	1-hour	9.0 PPM	9.0 PPM
	8-hour	35.0 PPM	20.0 PPM
Nitrogen dioxide	Annual average	0.05 PPM	--
	1-hour	--	0.25 PPM
Sulfur dioxide	Annual average	0.03 PPM	--
	24-hour	0.14 PPM	0.05 PPM
	1-hour	--	0.25 PPM
PM_{10}	Annual average	50 $\mu g/m^3$	20 $\mu g/m^3$
	24-hour	150 $\mu g/m^3$	50 $\mu g/m^3$
$PM_{2.5}$	Annual average	15 $\mu g/m^3$	12 $\mu g/m^3$
	24-hour	65 $\mu g/m^3$	--

a. PPM = Parts per million
b. $\mu g/m^3$ = Micrograms per cubic meter
Source: California Air Resources Board, reference 65.

Table 10-3. Air Quality Data Summary for San Pablo BAAQMD Monitoring Site, 2000-2002

Pollutant	Standard	Days standard exceed in:		
		2000	2001	2002
Ozone	Federal 1-hour	0	0	0
Ozone	State 1-hour	0	0	0
Ozone	Federal 8-hour	0	0	0
Sulfur dioxide	Federal 24-hour	0	0	0
Sulfur dioxide	State 24-hour	0	0	0
Carbon monoxide	State/Federal 8-hour	0	0	0
Nitrogen dioxide	State 1-hour	0	0	0

Source: California Air Resources Board, Aerometric Data Analysis and Management (ADAM), 2003.

Table 10-3 shows that the ambient air quality standards are met in the Project area. PM_{10} and $PM_{2.5}$ are not monitored in western Contra Costa County. The closest monitoring site for these pollutants is in Concord. At the Concord monitoring site, the Federal PM_{10} standard was not exceeded during the period 2000-2002. The State PM_{10}standard was exceeded on 0-2 days per year, and the Federal $PM_{2.5}$ was exceeded twice during the 3-year period. The Federal and State standards for ozone are also exceeded in other portions of the Air Basin, as is the State PM_{10} standard.

4. Sensitive Receptors

The BAAQMD defines sensitive receptors as facilities where sensitive receptor population groups (children, the elderly, the acutely ill and the chronically ill) are likely to be located. These land uses include residences, schools, playgrounds, childcare centers, retirement homes, convalescent homes, hospitals and medical clinics.

Land uses near the Project site, as discussed in Chapter 4, are largely open space and industrial uses. The nearest sensitive receptors are residences approximately 1 mile to the east and southeast of the WCCSL.

B. REGULATORY AND PLANNING FRAMEWORK

An overview of the regulatory framework for air quality and odor is presented in this section. Discussion is included on attainment status and regional air quality plans, rules and regulations of the BAAQMD, the California Code of Regulations, and County and City of Richmond (City) requirements.

1. Attainment Status and Regional Air Quality Plans

The Federal Clean Air Act and the State Clean Air Act of 1988 require that CARB, based on air quality monitoring data, designate portions of the state where the Federal or State ambient air quality standards are not met as “nonattainment areas”. Because of the difference between Federal and State standards, the designation of nonattainment areas is different under the Federal and State legislation.

The Bay Area has attained all Federal standards with the exception of ozone. In June of 1998, the USEPA reclassified the Bay Area from “maintenance area” to nonattainment for ozone based on violations of the Federal standards at several locations in the Air Basin. This decision reversed the Air Basin’s reclassification to a maintenance area for ozone in 1995. Reclassification required an update to the region’s federal air quality plan.

Under the California Clean Air Act, the County is a nonattainment area for ozone and PM_{10}. The County is either attainment or unclassified for other pollutants. The Act requires local air pollution control districts to prepare air quality attainment plans. These plans must provide for district-wide emission reductions of five percent per year averaged over consecutive three-year periods or if not, provide for adoption of "all feasible measures on an expeditious schedule".

The California Legislature, when it passed the California Clean Air Act in 1988, recognized the relative intractability of the PM_{10} problem with respect to the State ambient standard and excluded it from the basic planning requirements of the Act. The Act did require CARB to prepare a report to the Legislature regarding the prospect of achieving the State ambient air quality standard for PM_{10}. This report recommended a menu of actions, but did not recommend imposing a planning process similar to that for ozone or other pollutants for achievement of the standard within a certain period of time.

2. Bay Area Air Quality Management District

Air quality and odor regulation in the Bay Area is provided by the BAAQMD.

a. Air Quality. BAAQMD regulates the emissions of stationary sources in the Bay Area. Additionally, the BAAMD is responsible for development and enforcement of regional air quality plans required by Federal and State air quality legislation.

The WCCSL operates under permits from the BAAMQD. The landfill operation, gas collection system, landfill gas (LFG)-powered generators and leachate treatment and storage equipment are regulated under one permit (No. 1840). The existing concrete, asphalt, wood recycling and composting operations are regulated under a different permit (No. 198). In both cases, the permits provide throughput limitations, performance standards for abatement or emission control devices, and include record-keeping requirements of amounts of material processed.

The BAAQMD administers the Title V program authorized by the U.S. Congress in the 1990 Amendments to the Federal Clean Air Act. The intent of the program is to enhance inventories and provide a standard means to implement other programs in the Federal Clean Air Act regarding Hazardous Air Pollutants, periodic monitoring and acid rain. The WCCSL was issued its Title V permit in May of 2002.[31]

BAAQMD Regulation 2, Rule 2 normally requires that Best Available Control Technology (BACT) be applied to new or modified sources (including stationary and mobile sources). BACT is potentially applicable to any new or modified source and requires stringent emission controls if a source's emissions exceed a threshold. BAAQMD requires BACT for any source of air emissions that results in more than 10 pounds of a pollutant per day (on a worst case day).

Emissions offsets (reduction credits)for a project may also be required under Regulation 2, Rule 2. Emission reduction credits can be generated either by the shut down of an existing source or by controlling the emissions from an existing source above and beyond any control levels required by BAAQMD, the State, or Federal regulations. Emission reduction credits for a project are only supplied (granted by the BAAQMD) once and are not required to be supplied annually even though they are expressed in terms of tons per year. In the same manner that emission increases are charged to a facility once (upon issuance of an Authority to Construct) with the emissions considered to continue indefinitely, emission reduction credits are also required once (before the issuance of an Authority to Construct) with the emission reduction credits considered to continue for the life of the project.

b. Odor. The BAAQMD has enacted an odorous substance control program as part of its effort to control the use and emission of odorous substances within the Bay Area. This program places general limitations on odorous substances and provides the BAAQMD with authority to respond to public complaints about offensive odors. The regulation is intended to help the public identify and control offensive odors that are not otherwise controlled by other federal or state air quality laws.

Regulation 1-301 is a general public nuisance standard that is used to address odors. The standard states "No person shall discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance or annoyance to any considerable number of persons or the public; or which causes or has a natural tendency to cause injury or damage to business or property." The BAAQMD established a policy and defined "considerable number of persons or the public." This policy states that if there are five confirmed (confirmed by a BAAQMD Air Pollution Control Officer [APCO]) odor complaints within 24 hours, the BAAQMD will take action.

Regulation 7, Odorous Substances, establishes general limitations on odorous substances and specific limitations on certain odorous compounds. Regulation 7-302 stipulates that a person shall not discharge any odorous substances that cause the ambient air at or beyond the property line to be odorous and remain odorous after dilution with four parts of odor-free air. Regulation 9-2-301 places limitations on hydrogen sulfide emissions because of its human toxicity and environmental effects on vegetation. The rule states that hydrogen sulfide shall not be emitted during any 24-hour period in such quantities as to result in ground-level concentrations in excess of 0.06 PPM over 3 consecutive minutes or 0.03 PPM averaged over 60 consecutive minutes.

Regulation 7-102 addresses odor complaints. Regulation 7-102 is triggered when the APCO receives odor complaints from ten or more complainants within a 90-day period, alleging that a person has caused odors perceived at or beyond the property line of such person and deemed to be objectionable by the complainants in the normal course of their work, travel, or residence. When the limits of Regulation 7-102 become effective as a result of citizen complaints described above, the limits shall remain effective until such time as no citizen complaints have been received by the APCO for 1 year. The limits of Regulation 7-102 shall

become applicable again when the APCO receives odor complaints from five or more complainants within a 90-day period.

3. California Code of Regulations.

Existing requirements in Title 14, of the California Code of Regulations (14 CCR) and 27 CCR address facility operation and control as follows:

- 14 CCR §17408.5. Each transfer/processing station shall be operated and maintained to prevent the creation of a nuisance.
- 27 CCR §17867. All composting activities shall be conducted in a manner that minimizes odor impacts.
- 27 CCR §20680. Except as otherwise provided, the owners or operators of all municipal solid waste landfill units shall cover disposed solid waste with a minimum of 6 inches of compacted earthen material or alternative daily cover (ADC) at the end of each operating day, or at more frequent intervals if necessary, to control vectors, fires, odors, blowing litter and scavenging.
- 27 CCR §20760. Each disposal site shall be operated and maintained so as not to create a public nuisance.

Solid Waste Facility Permit (SWFP) No. 07-AA-001 and Composting Facility Permit No. 07-AA-0044 currently apply these requirements to the WCCSL.

14 CCR, Division 7, Chapters 3.1 and 5 are currently undergoing revision by the California Integrated Waste Management Board (CIWMB). The revised regulations were adopted by the CIWMB at its November 19-20, 2002, meeting. CIWMB staff are currently preparing the final rulemaking file for submittal to the Office of Administrative Law. Chapter 3.1 addresses composting operations regulatory requirements. Section 17863.4 of Chapter 3.1 requires all compostable material handling operations and facilities to prepare, implement, and maintain a site-specific odor impact minimization plan (OIMP). The Applicant's OIMP is included as Appendix 10B. Key elements of the OIMP include the following:

- Odor monitoring protocol that describes the proximity of possible odor receptors and a method for assessing odor impacts at the location of the possible odor receptors.
- Description of meteorological conditions.
- Complaint response protocol.
- Design measures and operational measures for minimizing odor.

- Mechanism for OIMP revision.
- Annual review by the operator to determine if any revisions are necessary.
- Use by the Local Enforcement Agency (LEA) to determine facility compliance with the OIMP.
- Provisions for the LEA to force operator compliance with the OIMP or for the operator to take necessary additional measures to minimize odors.

4. County and City

County and City Use Permits for the existing BMPC require the Applicant to comply with the terms of the Authority to Construct and Permit to Operate entitlements issued by the BAAQMD, and to operate the facility in a manner that prevents odors from being detected off site. Under the terms of the existing permits, either the County or City may require physical improvements or management practices, as necessary, to alleviate any confirmed odor problem at the BMPC. All odor complaints received by the County or City must be responded to within 2 working days, detailing the problem and remedial action taken. Both the County and City have the authority through the use permits to require the Applicant to cease operations of part or all of the facility to control odors. The Applicant has requested that both use permits be amended to allow development and operation of the proposed Project.

C. SIGNIFICANCE CRITERIA

The BAAQMD California Environmental Quality Act (CEQA) Guidelines provides the following definitions of a significant air quality impact[11].

- A project contributing to carbon monoxide (CO) concentrations exceeding the State Ambient Air Quality Standard of 9 PPM averaged over 8 hours or 20 PPM for 1 hour would be considered to have a significant impact.
- A project that generates criteria air pollutant emissions in excess of the BAAQMD annual or daily thresholds would be considered to have a significant air quality impact. The current thresholds are 15 tons/year or 80 pounds/day for Reactive Organic Gases (ROG), Nitrogen Oxides (NO_x) or PM_{10}. Any proposed project that would individually have a significant air quality impact would also be considered to have a significant cumulative air quality impact.
- Any project with the potential to frequently expose members of the public to objectionable odors would be deemed to have a significant impact. According to

the BAAQMD CEQA Guidelines, a significant odor impact exists where there has been:[11]

- More than one confirmed complaint per year averaged over a 3-year period, or
- Three unconfirmed complaints per year averaged over a 3-year period.

- Any project with the potential to expose sensitive receptors or the general public to substantial levels of TACs would be deemed to have a significant impact. For substances that are carcinogenic, an exposure is significant if the probability of contracting cancer for the Maximally Exposed Individual (MEI) exceeds 10 in one million. For purposes of evaluating potential non-cancer health effects related to diesel exhaust, the chronic inhalation Reference Exposure Level (REL) is 5 micrograms per cubic meter ($\mu g/m^3$). The REL is the concentration at or below which no adverse non-cancer health effects are anticipated.

The BAAQMD significance threshold for construction dust impact is based on the appropriateness of construction dust controls. The BAAQMD guidelines provide feasible control measures for construction emission of PM_{10}. If the appropriate construction controls are to be implemented, then air pollutant emissions for construction activities would be considered less-than-significant.

D. IMPACTS AND MITIGATION MEASURES

Potential air quality and odor impacts and mitigation measures are discussed in this section.

1. Impacts Considered not to be Significant

The Project is considered to not have a significant impact on exposure to emissions of TACs from within the Project site because of the lack of substantial TAC emission sources, on-site control measures, favorable wind conditions (winds frequently blow away from sensitive receptors as indicated on Figure 10-1), and distance to sensitive receptors (about 1 mile to the closest residence). The anaerobic decomposition of refuse in solid waste landfills creates LFG, which can be a source of TAC emissions. As LFG passes through the refuse, it carries ROG and other air pollutants present in the refuse to the surface. The composition of LFG is roughly 50 percent methane and 50 percent carbon dioxide with trace constituents of ROG. The ROG fraction may contain traces of TACs[66]. However, LFG is collected and combusted in a LFG power plant at the WCCSL, with only a very small fraction of the ROG fraction and TAC emissions being emitted. The volume of LFG production will decrease over time as will diesel exhaust particulates from on-site equipment, another source of TAC emissions.

2. Methodology

Existing operations and processes at the WCCSL site are a source of several different types of emissions. Each of these emissions were identified and quantified. Future emissions associated with the proposed Project were forecast for two future years (2008 and 2015). The methodology used for each source is described below.

a. Process Emissions. This source includes LFG combustion, emissions from equipment used in the crushing and screening of concrete and asphalt, emissions from mechanical handling of compost materials, and emissions from material handling in the soil reclamation, biosolids/dredged material spreading, and wet/dusty material blending operations. Future emissions from the collection and combustion of LFG were estimated by factoring BAAQMD estimates of existing emissions to reflect anticipated gas production in 2008 and 2015 as estimated by the Applicant. Similarly, BAAQMD estimates of existing emissions from equipment used in the concrete/asphalt recycling and composting operations were adjusted to reflect the proposed increased annual throughputs (amount of material processed) for those operations. Emissions from the soil reclamation, biosolids/dredged material spreading, and wet/dusty materials blending operations were calculated using BAAQMD emission factors for soil handling.

Limited air sampling at green material composting facilities in southern California has demonstrated that such facilities are a source of ammonia and Volatile Organic Compounds (VOC).[129,130] The emissions data are in the form of emissions flux measurements (in lbs per hour per 1,000 square feet of surface) for various components found at a composting facility (e.g., tipping pile, static pile, fines and windrows). In general, ammonia emission levels were extremely low, and VOC emissions varied widely. Since these emission factors are in emission fluxes, emission estimates would require a thorough site engineering analysis. The BAAQMD has not adopted the use of these factors. Therefore, emissions from green waste are not included in the inventory of on-site emissions presented in this EIR.[131]

VOC and ammonia emissions from green waste decomposition are a natural or biogenic source of pollutants that will occur whether or not green waste is collected and composted on the site. These emissions have not been considered additive to the regional inventory of emissions as they are a component of biogenic emissions whose magnitude would be unaffected whether the Project were approved or not.

b. On-Site Mobile Equipment/Vehicle Exhaust. Existing and future emissions from various mobile equipment and vehicles used on the site were estimated using the Applicant's estimates of the number and daily usage of mobile equipment vehicles for the existing site, and full operation under the proposed Project in 2015. Appendix 3I summarizes existing and proposed equipment usage at the WCCSL. Equipment/vehicle usage in 2008 is based on operation of the proposed Waste Recycling Center (WRC) at 85 percent and other BMPC operations at 75 percent of capacity.

Emission factors for each type of equipment or vehicle were multiplied by appropriate emission factors reflecting the anticipated number and type of equipment/vehicles in 2003, 2008 and 2015 to produce estimates of emissions in pounds per day.[60]

c. On-Road Vehicle Exhaust. On-road emissions associated with Project vehicle use were calculated using EMFAC-2002 emission factors and estimated vehicle miles traveled (VMT) for each vehicle classification. Daily VMT was estimated using estimated daily trip generation (see Chapter 8) and assumed average one-way trip length of 10 miles for collection trucks, 20 miles for other large trucks, 10 miles for self haulers and 15 miles for all other vehicles.

d. Fugitive Emissions. Fugitive emissions refer to dust generated by vehicles/ equipment moving over unpaved surfaces. An emission factor for construction sites was used as a conservative approximation of emissions from the operation of vehicles and equipment on unpaved areas. The published emission factor was reduced by 75 percent to reflect the implementation of BAAQMD's required dust control practices. The proposed maximum acreages of the composting and concrete/asphalt operations in 2003 and 2015 were multiplied by the emission factor to estimate emissions. Emissions were calculated based on the estimated average acreage of the area of operation regardless of the proposed flexible boundary (changing location) within the site. Emissions from this source in 2008 were taken as 75 percent of the emission at full capacity in 2015.

The resulting estimates of current and future emissions are shown in Tables 10-4, 10-5, and 10-6 for existing, 2008, and 2015, respectively. Spreadsheet printouts showing the calculation of these emissions are included in Appendix 10A.

e. Diesel Health Risk Assessment. Diesel exhaust consists of a complex mix of substances formed in the combustion processes of a diesel engine. The mix includes compounds in a vapor phase and very fine particles with a carbon core coated by condensed organic compounds.[135]

For the proposed Project, a diesel health risk assessment was prepared focusing on two residential areas bordering Richmond Parkway. Diesel exhaust exposure in these areas results from diesel exhaust from Project-related trucks approaching and leaving the WCCSL and other truck traffic on Richmond Parkway. The exposure scenario used in this assessment represents worst-case exposure to new diesel particulate matter from both Project and cumulative traffic increases.

A risk assessment is a technical procedure that combines data on how people and the environment potentially come into contact with chemicals in the air, water, or soil (exposure) with data from health effects studies (toxicology) into a mathematical or statistical estimate of the "risk" or potential for adverse health effects. Although the risk assessment produces numerical estimates of risk, these estimates do not necessarily predict actual health outcomes.

Table 10-4. Existing Project-Generated Emissions

Emission source	ROG[a]	NO_X[a]	PM_{10}[a]
On-site emissions, pounds/day			
Process emissions			
Landfill gas collection	0.2	0.0	144.0
Landfill gas combustion	9.0	57.1	9.0
Concrete crushing	0.0	0.0	5.0
Asphalt crushing	0.0	0.0	5.0
Concrete screening	0.0	0.0	13.0
Concrete/asphalt storage	0.0	0.0	61.0
Wood shredder	0.0	0.0	52.0
Wood waste screener	0.0	0.0	20.0
Soil handling	0.0	0.0	0
Dusty material handling	0.0	0.0	0
Mobile equipment/ vehicle exhaust	39.8	296.6	12.3
Fugitive emissions	--	--	91.7
On-site total	49.0	353.7	413.0
Off-site emissions, pounds/day			
Off-site road vehicle exhaust	44.5	366.6	9.2
Total emissions, pounds/day			
Grand total, on and off site	93.5	720.3	422.2

a. ROG = Reactive Organic Gases
NO_x = Nitrogen Oxides
PM_{10} = Particulate Matter, 10 Microns

Source: Don Ballanti, Air Quality Consultant, March 2003.

Table 10-5. Year 2008 Project-Generated Emissions

Emission source	ROG[a]	NO_X[a]	PM_{10}[a]
On-site emissions, pounds/day			
Process emissions			
Landfill gas collection	0.0	0.0	0.0
Landfill gas combustion	8.2	52.0	8.2
Concrete crushing	0.0	0.0	62.3
Asphalt crushing	0.0	0.0	62.3
Concrete screening	0.0	0.0	162.0
Concrete/asphalt storage	0.0	0.0	760.1
Wood shredder	0.0	0.0	218.4
Wood waste screener	0.0	0.0	84.0
Soil handling	0.0	0.0	4.2
Dusty material handling	0.0	0.0	17.0
Mobile equipment/ vehicle exhaust	26.8	156.1	4.4
Fugitive emissions	--	--	96.2
On-site total	35.0	208.1	1179.0
Off-site emissions, pounds/day			
Off-site road vehicle exhaust	39.1	425.8	11.2
Total emissions, pounds/day			
Grand total, on and off site	74.1	633.9	1490.2
Change from existing	-19.3	-86.4	+1068.0

a. ROG = Reactive Organic Gases
NO_x = Nitrogen Oxides
PM_{10} = Particulate Matter, 10 Microns

Source: Don Ballanti, Air Quality Consultant, March 2003.

Table 10-6. Year 2015 Project-Generated Emissions

Emission source	ROG[a]	NO_X[a]	PM_{10}[a]
On-site emissions, pounds/day			
Process emissions			
Landfill gas collection	0.0	0.0	0.0
Landfill gas combustion	5.3	34.0	5.4
Concrete crushing	0.0	0.0	83.0
Asphalt crushing	0.0	0.0	83.0
Concrete screening	0.0	0.0	215.8
Concrete/asphalt storage	0.0	0.0	1012.6
Wood shredder	0.0	0.0	291.2
Wood waste screener	0.0	0.0	352.8
Soil handling	0.0	0.0	6.0
Dusty material handling	0.0	0.0	22.6
Mobile equipment/ vehicle exhaust	32.6	189.3	5.3
Fugitive emissions	--	--	128.3
On-site total	37.9	261.2	2206.0
Off-site emissions, pounds/day			
Off-site road vehicle exhaust	29.9	267.2	10.2
Total emissions, pounds/day			
Grand total, on and off site	67.8	528.4	2216.2
Change from existing	-25.6	-191.9	+1794.0

a. ROG = Reactive Organic Gases
NO_x = Nitrogen Oxides
PM_{10} = Particulate Matter, 10 Microns

Source: Don Ballanti, Air Quality Consultant, March 2003.

The estimates are hypothetical, and include many conservative assumptions. As estimates, numbers generated by risk assessment methods represent probabilities, not present realities. In fact, there may be no actual adverse health effects.

The health risk assessment for this EIR was prepared to estimate diesel exhaust risk at two residential areas. These locations are at the northeast corner of the intersection of Richmond Parkway and Gertrude Avenue and along the west side of Richmond Parkway, both south and north of its intersection with Hilltop Drive. The analysis was conducted using a meteorological file from a monitoring site at the Chevron Refinery that was provided by the BAAQMD. Appendix 10B provides technical support information for this analysis.

The health risk assessment utilized estimated new daily heavy-duty diesel truck trip volumes in 2015. Two separate models were constructed. The model used in this assessment was the U.S. EPA-approved guideline model, Industrial Source Complex for Short-Term Impacts (ISCST3).[132] At the Richmond Parkway/Gertrude Avenue intersection, a single receptor was utilized, located at the closest corner of what is the closest residential building. Near Hilltop Drive, a series of eight receptors were located along the western edge of the Richmond Parkway right-of-way.

The maximum annual concentration values obtained from each model was used in the calculation of potential cancer risk. The methodology for the analysis followed the guidelines developed for the preparation of health risk assessments required under the Air Toxics "Hot Spots" Information and Assessment Act of 1987 (Health and Safety Code Section 44360 et seq.) and guidance provided by the BAAQMD.

3. Construction Emissions

IMPACT 10-1. The construction of various Project elements could result in dust nuisance. This impact is considered potentially significant.

The proposed Project would result in temporary construction emissions (equipment exhausts and fugitive dust) during closure of the Class II landfill and development of improvements and structures required for proposed operations and uses on the Project site. Impacts related to closure of the Class II landfill were evaluated in an Initial Study/Negative Declaration completed in 1996.[23] Impacts would be localized and variable. Construction impacts might last for a period of weeks or months for any one Project element. Construction dust impacts are considered to be potentially significant on a localized basis, but normally mitigable.

Control Measures Incorporated by Applicant: See control measures proposed by the Applicant presented under Impact 10-2.

EIR Recommendations:

MITIGATION MEASURES 10-1

a) All active construction areas would be watered at least twice daily and more often during windy periods (20 mph or higher).

b) All trucks hauling soil, sand, and other loose materials would be covered or required to maintain at least two feet of freeboard.

c) All unpaved access roads, parking areas and staging areas at construction sites would be paved, watered at least twice daily or more often if windy, or receive applications of non-toxic soil stabilizers.

d) All paved access roads, parking areas and staging areas at construction sites would be swept daily with water sweepers.

e) Inactive construction areas would be hydroseeded or non-toxic soil stabilizers would be applied.

f) Exposed stockpiles (dirt, sand, etc.) would either be enclosed, covered, watered twice daily or more often if windy, or receive application of non-toxic soil stabilizers.

g) Traffic signage would limit traffic speeds on unpaved roads to 15 mph.

The above measures include all feasible measures for construction emissions identified by the BAAQMD. Based on the BAAQMD threshold of significance for construction impacts, implementation of these measures would reduce construction impacts of the proposed Project to a less-than-significant level.

4. Operation Emissions

IMPACT 10-2: Emission increases from on-site sources would exceed the BAAQMD significance thresholds for PM_{10}. This impact is considered potentially significant.

Tables 10-4 through 10-6 (presented previously) shows the estimated existing and future Project-generated emissions for 2008 and 2015 from on-site and off-site activities. On-site emissions consist of process emissions (from stationary equipment and facilities), mobile equipment, and vehicles operating on and off the site and fugitive dust generated by the action of vehicles and equipment on unpaved surfaces. Emissions of ozone precursors (ROG and NO_x) would decline from existing levels primarily due to a gradual decline in the LFG generation and current and future State-mandated emissions standards

for heavy duty off-site road vehicles and equipment. Existing on-site PM_{10} emissions were calculated to be about 413 pounds per day. The proposed Project would result in an increase in on-site emissions of PM_{10}, primarily due to the proposed increase in throughput (materials processed) for the asphalt and concrete recycling operations and composting. PM_{10} emissions are calculated to increase from the existing 413 pounds per day to 1,179 pounds per day in 2008, and 2,206 pounds per day in 2015. The net increase of PM_{10} for both on and off site of 1,068 pounds per day in 2008 and 1,794 pounds per day in 2015 (Tables 10-5 and 10-6) would exceed the BAAQMD's threshold of significance of 80 pounds per day.

Control Measures Incorporated By Applicant:

General Measures:

a) The main access road would initially be graveled, treated with non-toxic soil stabilizers and watered at least twice daily. After land settlement, the main access road would be paved.

Waste Recycling Center:

b) Handling and sorting of mixed waste would occur within an enclosed or partially enclosed WRC structure.

c) Roads, unloading areas and the processing area of the WRC would be paved, and sweepers or vacuums would be used to keep these surfaces clean.

d) Periodic watering at least twice daily or more often when windy would be used on internal roads at the WRC as needed, and wind fences would be strategically located to control wind erosion.

e) Waste would be pre-screened to avoid dusty materials.

Green Waste/Woodwaste/Composting:

f) Green material and wood shredding/screening equipment would be equipped with water sprays.

g) Green waste, wood waste, and composting materials would be watered as unloaded.

h) Green waste, wood waste, and composting materials would be pre-screened to avoid dusty materials.

i) Windrows and intervening pathways would be watered prior to turning of windrow.

j) Internal roads in the Organic Materials Processing Area would be watered at least twice daily, more often when windy.

k) Finished stabilized compost would be screened and loaded during low wind speed conditions (less than 20 mph); handling of compost would be suspended if the wind speed increases (above 20 mph).

l) Berms would be used in the Organic Materials Processing Area to provide an upwind barrier to reduce wind effects.

m) Wind fences would be strategically located in the Organic Materials Processing Area to control wind erosion.

Wet/Dusty Material Blending:

n) A three-sided shelter would be constructed at the Wet/Dusty Material Blending Facility with fabric roof to contain dusty materials.

o) Dusty materials would be blended with high moisture wastes at the Wet/Dusty Material Blending Facility to help control fugitive dust.

p) Dusty materials at the Wet/Dusty Material Blending Facility would be stored in plastic bags until needed.

Soil Reclamation:

q) Water sprays would be used on the conveyor at the Soil Reclamation Facility.

r) The apron on two sides of the soil reclamation storage area would be graveled to provide an all-weather surface.

s) Periodic watering (at least twice daily, more often when windy) would be conducted at the soil reclamation operation areas for dust control.

Concrete/Asphalt Recycling:

t) Water sprays would be used on concrete/asphalt crushers, screens and conveyors.

u) Dust suppressants would be used and regular watering (at least twice daily, more often when windy) would be conducted at the Concrete/Asphalt Recycling Facility for general dust control.

The above controls were reflected in the on-site emissions estimates shown in Tables 10-4 through 10-6.

EIR Recommendations:

MITIGATION MEASURE 10-2

a) The Applicant would, at the earliest practical date, prepare applications to the BAAQMD for new sources proposed to be located at the site, obtain required BAAQMD permits, and comply with all permit conditions.

The Composting/Wood Waste and Concrete/Asphalt processing operations currently operate under an existing BAAQMD permit. There are specific limitations on the throughput of individual pieces of equipment and onsite storage of materials. For example, the current limitation on throughput for the concrete/asphalt operation is 30,000 tons per year of concrete and 5,000 tons per year for asphalt. Since the Project at full operation proposes a combined throughput of 528,000 tons per year for these materials, the increased throughput envisioned with the proposed Project would require the modification of existing permits and/or issuance of new permits for additional equipment on the Project site. The LFG collection and combustion system (Figure 10-2) would not be affected by the Project and it appears the Project would not require a modification to its LFG system permit.

New or modified sources of air pollutants are subject to the New Source Review process of the BAAQMD. Each individual source will be evaluated for potential to emit pollutants. Sources emitting more than 10 pounds per day of PM_{10} or other specified pollutants would require the application of Best Available Control Technology (BACT) as defined by the BAAQMD at the time of application. Existing sources that require a permit modification, such as the composting and concrete/asphalt operations, may be required to update to current definitions of BACT.

Application of enclosure and baghouse technology is more than 99 percent efficient in controlling PM_{10} emissions, but it cannot be applied to the major particulate emitters with the Project (concrete/asphalt storage and composting). If applied to the Project, it would not be able to reduce Project PM_{10} impacts to below the BAAQMD significance threshold. The definition of BACT for Project sources cannot be ascertained until the BAAQMD conducts their permitting process. It is unclear which, if any, Project components may be required by the BAAQMD to utilize baghouse technology. For purposes of this EIR, Project impacts are assumed to remain above 80 pounds per day of PM_{10} emissions and would represent a significant, unavoidable impact.

IMPACT 10-3. Increased vehicular traffic to the WCCSL could result in increased emissions and adverse air quality and health risk impacts. The impact is considered to be less than significant.

Figure 10-2. LFG Power Plant. Located in WCCSL Area A, this plant generates about 3 megawatts of electricity from LFG, enough to power about 3,000 homes.

Off-site emissions would be created by vehicle trips to and from the Project site. Existing off-site emissions were calculated to be 44.5 pounds per day of ROG; 366.6 pounds per day of NO_X; and 9.2 pounds per day of PM_{10}. The number of vehicles trips would be increased by the Project, but this would be offset by the introduction and use of cleaner vehicles in the future. The net effect would be a decline in ROG, and a slight increase (16 percent) in NO_X emissions, despite forecasts of increased trips. PM_{10} emissions from off-site vehicle use would increase by 2.0 pounds per day at 2008, and then decrease by 1.0 pound per day in 2015 to an emission level of 10.2 pounds per day (1.0 pound per day greater than existing levels). These emissions levels would not exceed the BAAQMD threshold of significance.

The proposed Project would increase diesel truck traffic traveling on Richmond Parkway near two residential neighborhoods near the intersection of Richmond Parkway with Gertrude Avenue and Hilltop Drive. The maximum calculated cancer risk near the intersection at Richmond Parkway and Gertrude Avenue is 1.25 in one million. The maximum calculated cancer risk near the intersection of Richmond Parkway and Hilltop Drive is 1.62 in one million. These risk estimates were based on a continuous 70-year exposure. Appendix 10B provides technical support for this analysis.

The above calculated risks are below the BAAQMD significance threshold of 10 in one million. The Annual Average Concentrations of 0.00418 $\mu g/m^3$ at Richmond Parkway/Gertrude Avenue and 0.00541 $\mu g/m^3$ at Richmond Parkway/Hilltop Drive) are also well below the chronic inhalation REL for diesel exhaust particulate of 5 $\mu g/m^3$. As discussed earlier, the REL is the concentration at or below which no adverse non-cancer health effects are anticipated. For perspective, the California Air Resources Board (CARB) has estimated that the average annual ambient concentration of diesel exhaust to which Californians are exposed is 1.54 $\mu g/m^3$ which includes both indoor and outdoor exposure.[135]

The Applicant does not own or operate fleet vehicles that deliver wastes and recyclable materials to the site. This component of the vehicle traffic comprises a wide variety of hauling companies and self-haul individuals. The Applicant cannot require or otherwise dictate emission abatement modifications of these vehicles utilizing the proposed Project facilities, or their timeframe for implementation. However, mobile source emissions are within the regulatory purview of the CARB. CARB's implementation of the Federal CAA and the State CAA requirements will result in the introduction of cleaner fuels and vehicles in the State. CARB has developed a Diesel Risk Reduction Plan that includes more stringent emission standards for off-road, heavy-duty equipment.[133] The Risk Reduction Plan is expected to result in reductions in diesel exhaust particulates of 75 percent by 2010 and 85 percent by 2020.

Control Measures Incorporated by Applicant: None.

EIR Recommendations:

MITIGATION MEASURE 10-3. None required.

5. Planning Consistency

IMPACT 10-4. Project impacts would be consistent with the regional air quality plan. This impact is considered to be less than significant.

The Air Basin is currently non-attainment for ozone (Federal and State ambient standards) and PM_{10} (State ambient standard). While air quality plans exist for ozone, none exists (or is currently required) for PM_{10}. The *Revised San Francisco Bay Area Ozone Attainment Plan for the 1-Hour National Ozone Standard* is the current ozone air quality plan required under the Federal Clean Air.[63] The State-mandated regional air quality plan is the *Bay Area Clean AirPlan*.[64] These plans contain mobile source controls, stationary source controls and transportation control measures to be implemented in the region to attain the Federal and State ozone standards within the Air Basin.

A project would be judged to conflict with or obstruct implementation of the regional air quality plan if it would be inconsistent with the growth assumptions for population, employment or regional growth in vehicle miles traveled. The proposed Project would neither conflict with any of the growth assumptions made in the preparation of these plans nor obstruct implementation of any of the plan's proposed control measures. Therefore, the proposed Project does not conflict with the Bay Area Clean Air Plan.

Control Measures Incorporated by Applicant: None.

EIR Recommendations:

MITIGATION MEASURE 10-4. None required.

6. Odors

IMPACT 10-5. The Organic Materials Processing Area and expansion of the Composting Facility could create objectionable odors. This impact is considered potentially significant.

Currently at the WCCSL, the average daily throughput of compostibles is about 27 tons per day (365 days per year average or TPD7), or about 10,000 tons of compostibles received per year. Under the proposed Project, up to 164,300 tons of compostibles could be processed per year, which is equivalent to about 450 TPD7. The physical size of the

Composting Facility would be increased from the existing 18 acres up to 40 acres to allow flexibility in the operating boundary with the proposed relocated concrete/asphalt processing area (see Figure 3-3 in Chapter 3, Project Description). Additionally, composting feedstock materials would be expanded to also include food wastes, food processing industry wastes, biosolids (wastewater sludge), mixed waste paper, and agricultural residues (Appendix 3B).

The increase in types and quantities of feedstock to be processed, as well as the physical expansion of the composting operations, would increase the potential for nuisance odors at the Composting Facility. Of the various composting technologies in use, windrow composting method in place at the WCCSL, has a greater risk of odor production. However, there is long-term experience with full-scale operation in the United States. Additionally, the WCCSL is well buffered in this industrial setting of North Richmond. Wind conditions are also favorable. As shown on Figure 10-1, about 70 percent of the time, wind at the site is blowing away from developed areas. Seasonally, the wind at the WCCSL is predominantly from the south during February through November. During December and January, the winds are predominantly from the north. BAAQMD enforcement records over the last 5 years indicate the WCCSL has not received any violation notices, no confirmed odor complaints, and one unconfirmed odor complaint.[45] Thus, pursuant to the BAAQMD criteria, the WCCSL has not caused a significant odor impact.

The composting process is proposed continue to be conducted year-round. As described in Appendix 3B, initial composting operations include the use of shredding, conveyors, and screening equipment. The shredded materials are then formed into windrows approximately 14 to 18 feet wide at the base and 6 to 8 feet high. An 8- to 12-foot-wide equipment access road separates the windrows. Active composting in the windrows requires 8 to 12 weeks, during which time water is applied, the windrows are turned for aeration, and the necessary operation monitoring (such as checking temperature within the windrows) is conducted. Following the 8- to 12-week period, the composted materials are placed in maturing piles and, when sufficiently matured for its intended end-use purpose, the compost is screened and removed from the site.[4]

Moisture, temperature, pH, nutrient concentration and availability, and oxygen concentration are the principal factors that affect the efficiency and biological conditions of composting, as follows:[49]

Temperature:	Most effective compost operation and destruction of pathogens is provided when temperature is between 125 and 150 degrees Fahrenheit. Temperatures above this range reduce the activity and diversity of microorganisms, thereby slowing the composting process.

pH	Optimum pH range is 6.0 to 7.5 for bacteria, and 5.5 to 8.0 for fungi. The pH of the pile is essentially self-regulating.
Nutrient concentration	Nitrogen is required as a nutrient for the degradation of biodegradable carbon. Carbon/nitrogen (C/N) ratios between 25 and 35 provide the best conditions. Generally, carbon is from woody wastes and nitrogen is from green material.
Oxygen supply	An oxygen concentration in the composting mix of at least 5 percent by volume is generally required to ensure continuous aerobic conditions.

The main odor sources at the Composting Facility relate to the following: initial receipt, storage, and processing of the feedstock materials; active compost windrows and, to a lesser extent, the compost maturing piles; and ponding of water in the operations area that has infiltrated the storage piles and windrows during the wet season (compost leachate). Odors from composting are principally the result of reduced nitrogen and sulfur compounds caused by partial anaerobic conditions. Storage of runoff water in the Area A retention basin would also be an odor source, but this water is expected to be substantially diluted and has not been and should not be a source of nuisance odors in the future.

The Applicant's Draft Report of Composting Site Information (RCSI) addresses a variety of subject matter, including the design, operation, monitoring, and site improvements associated with the proposed Composting Facility.[4] According to the draft RCSI, the Applicant would utilize best management practices, including rapid incorporation of food wastes and food processing industry waste with other compostible materials, and use shredded materials or compost to prevent nuisance odors; frequently turn the windrows to promote aeration; and frequently regrade the operations area to promote drainage and prevent ponding of compost leachate. The Applicant's OIMP is included as Appendix 10C.

The Applicant is proposing to expand the windrow composting operation from green and wood waste and unprocessed food waste (e.g., uncooked fruits and vegetables) to include feedstocks with a high nuisance odor potential, such as food wastes, biosolids, agricultural residues and waste (including manure and stable waste). Composting of these materials during the rainy season would be of particular concern as rainfall could saturate the windrows and possibly lead to creation of anaerobic conditions. Turning the windrows in the early stages of the composting process has a high odor potential since the internal portion of the pile can turn anaerobic due to lack of oxygen. All necessary operational details have not yet been developed by the Applicant that can assure nuisance conditions related to odor do not occur. Further operational experience is needed with these feedstocks to address the needed mix of these feedstocks with processed green and wood waste to achieve the optimum C/N ratio; the need for processing restrictions; the

need for seasonal use restrictions; the need to consider alternative composting technologies; as well as any other needed measures to control odors. Therefore, mitigation measures are recommended below.

Control Measures Incorporated by Applicant:

a) The Applicant would work with the LEA to assure facility compliance with the OIMP.

b) Food processing industry materials would be rapidly incorporated (within hours) with other compostible materials, shredded materials, or compost.

c) The windrows would be turned on an average of twice per week to maintain aerobic conditions.

d) A monitoring program would be implemented to track the composting process and implement operational adjustments as necessary.

e) The operations areas would be regraded as needed to ensure drainage and prevent ponding of compost leachate.

EIR Recommendations:

MITIGATION MEASURE 10-5

a) The turning of the windrows would be limited when the wind is blowing inland toward potential receptors. Turning and screening operations would be curtailed when wind speeds exceed 20 miles per hour (mph) toward developed areas.

b) An appropriately sited wind monitoring station would be installed with an alarm to indicate the occurrence of winds greater than 20 mph.

c) A one-year composting demonstration project would be conducted under the review and oversight of the LEA and BAAQMD. The demonstration project would focus on all feedstock materials with a high nuisance odor potential and would identify composting operations and controls necessary to ensure an efficient operation that would control odors under various climatic conditions. Based on the results of the demonstration project, the LEA and BAAQMD would specify the conditions these feedstocks could be used at the Composting Facility as part of the Composting Facility permitting process. The demonstration project shall include, but not be limited to, the following items:

- The scale of the demonstration project would duplicate the pile size and operational factors of the planned facility, so that valid data are collected at full-size operation.

- The span of feedstock combinations would encompass the range of expected future options, concentrating on worst-case combinations from processing, operations, and odor standpoints.

- Monitoring during the demonstration period would include standard compost processing monitoring parameters as well as odor emission data during different operating and climate/wind conditions. Odor data would include emissions of critical constituents such as reduced sulfur compounds and reduced nitrogen compounds, as well as total odor emission data collected via odor panel and with flux chamber protocols. Downwind odor data would be collected concurrent with pile or source emission data to correlate the impacts.

- Odor impacts from demonstration scale will be extrapolated for the full-scale system through odor modeling or similar approach that achieves valid predictions of odor from the large proposed system.

- Odor data collection would be identified for any compost leachate liquid or storm water runoff liquid coming from the demonstration piles/area.

Implementation of these measures would reduce potential odor impacts associated with the Organics Material Processing Area and Composting Facility to a less-than-significant level.

IMPACT 10-6. Operation of the WRC Mixed Waste Processing Area could create objectionable odors. This impact is considered to be less than significant.

The WRC would serve customers currently using the existing Waste Shuttle Facility, located on top of the landfill's central plateau (Figure 3-1). The Waste Shuttle Facility operations began at the end of 2000 and are conducted in an open-air environment on a paved asphalt pad. With the proposed WRC, mixed waste processing operations would be in an enclosed structure (see Appendix 3D, Figure 3D-1). The former Soil Remediation Building would be modified and expanded to accommodate the WRC.

The Applicant has prepared a WRC Transfer/Processing Report which details design and operational measures, and environmental safeguards [43.] The WRC Mixed Waste Processing Area would be a combination of solid waste materials recovery facility and transfer station. The facility would receive non-hazardous solid wastes, consisting of putrescible and non-putrescible solid wastes including garbage, and mixed construction and demolition debris. The processing of these materials would be a source of unpleasant odors. However, because of the various controls that are proposed as part of the Project,

objectionable odors should not be detectable beyond the boundary of the site. Consistent with the requirements of 14 CCR §17406.2(d), the Applicant would implement an odor control program that will comply with Regulation 7 of the BAAQMD.

Control Measures Incorporated by Applicant:

a) Only wastes that are consistent with 14 CCR §17863.4 and the OIMP would be accepted.

b) Loaded transfer vehicles would be covered and properly maintained to minimize odors.

c) Wastes would be processed within 48 hours of receipt to prevent significant odor buildup from waste decomposition.

d) Routine cleaning of floors, walls, and equipment would be conducted.

e) Wastes in the processing area would be treated with odor suppressants as deemed necessary, or as otherwise required by the LEA or BAAQMD.

f) Odor complaints documented by the LEA or BAAQMD would be responded to by WCCSL within 2 working days, detailing the problem and remedial action to be taken. Additional physical improvements or management practices would be implemented as necessary under the review and oversight of the LEA and BAAQMD.

Implementation of the odor control program would reduce potential impacts to a less-than-significant level.

EIR Recommendations:

MITIGATION MEASURE 10-6. None required.

IMPACT 10-7. Application of liquid anaerobically digested sludge to the southern and eastern sideslopes of the closed landfill could create objectionable odors. This impact is considered potentially significant.

Application of high-moisture-content biosolids obtained from the adjacent West County Wastewater District (WCWD) Wastewater Treatment Plant to closed landfill sideslopes is a proposed activity within the proposed Biosolids/Dredged Material Spreading operation. The biosolids would be anaerobically digested at the WCWD plant with a moisture content typically ranging from 94 to 98 percent (2 to 6 percent solids). It is proposed that 24 million gallons (MG) of these biosolids would be spray-applied during the dry months of the year (April to October) to about 22.5 acres of the southern and

eastern sideslopes of the landfill (Figure 3-3 and 3H-1). In the past, the Applicant has accepted dried sludge from the WCWD plant's sludge drying lagoons (20 to 60 percent moisture) for use as Alternative Daily Cover and to enhance the landfill's final cover soils without odor impact. It is expected this activity would continue without creation of nuisance odor conditions.

The Applicant conducted limited investigations in 2002 that included limited applications of liquid biosolids to landfill sideslope areas and a progress report was prepared.[25] According to the Applicant, no offensive odors were noted. Prior to full-scale implementation of biosolids spreading, the Applicant proposes to conduct further testing to refine the rates and methods of application. Analyses included in Section D of Chapter 6, however, indicate that the disposal of the large quantity of water included in 24 MG of sludge (about 22.5 to 23.5 MG) may not be feasible as proposed and that either more land area would be required, or the quantities of biosolids would need to be reduced.

The continued acceptance of dried lagoon sludge from the WCWD at the landfill could be operated to prevent nuisance odor conditions because that sludge, which has been anaerobically digested, has been stored in the lagoons for many months. This storage provides a large amount of stabilization of the sludge material where volatile solids and other odor-producing components of the sludge are further degraded. As a result, the odor nuisance of the dried product is substantially reduced because the dried sludge is much more stable. BAAQMD enforcement records over the last 5 years indicate the WCWD treatment plant has not received any violation notices, and one confirmed odor complaint.[45] Thus, pursuant to the BAAQMD criteria, the treatment plant has not caused a significant odor impact.

Anaerobic digestion is an effective sludge treatment process that serves to destroy typically 40 to 52 percent of the volatile solids, stabilizes remaining sludge, destroys pathogens, and reduces odor and vector attraction potential. However, even with 30 days or more of retention time in the digesters (the amount of time most sludge particles remain in the digesters for treatment) as commonly obtained at the WCWD plant, the spray application of this material at full-scale implementation on about 22.5 acres would have the potential to create nuisance odor conditions that would be experienced by surrounding land uses, including users of the proposed Public Access Trail (Trail). Additional evaluations of this concept are necessary, not only to refine various technical parameters, but also to evaluate water pollution potential and other potential environmental consequences.

Control Measures Incorporated by Applicant:

a) Prior to full-scale implementation of liquid biosolids spreading, further testing would be conducted to refine the rates and methods of application.

EIR Recommendations:

MITIGATION MEASURE 10-7

a) The feasibility of WCWD continuing to provide short-term lagoon storage (2 to 3 months) of anaerobically digested sludge (i.e., a slurry in a lagoon) with a liquid aerobic cap would be demonstrated and evaluated. This evaluation shall include, but is not limited to, the following measures:

- The proposed short-term lagoon storage approach would be demonstrated to reduce odor impacts with spraying of sludge on the landfill sideslopes.
- Volatile solids reductions from lagoon feedstock to lagoon withdrawal material would be identified.
- Odor monitoring at the short-term lagoon storage system would be conducted to confirm that this storage system in itself will not cause an odor problem.
- Operational criteria would be determined for lagoon feed rates and loading, sludge withdrawal, cap water maintenance, maintaining "aerobic" cap conditions, cap water covering all sludge material, lagoon supernatant handling, etc.

b) A liquid biosolids spreading demonstration project work plan would be prepared, under the review and oversight of the LEA and BAAQMD, and demonstrate whether residual odor would be consistent with impact standards of the BAAQMD and this EIR. The results of Mitigation Measure 10-7(a) would determine whether the sludge, which has received short-term storage, can be integrated into the work plan. The work plan shall include, but not be limited to, the following items:

- Identify the types of biosolids that will be spread in the demonstration program; i.e., digested sludge direct from digesters, sludge removed from lagoon after "X" months of storage, etc. Identify the analytical work that will be completed on such material to help identify odor impacts of spreading (percent solids, percent volatile solids, pH, ammonia, temperature, total reduced sulfur compounds (TRS), etc.
- Identify/define data that will be collected at the spray application site including area loading rates, spray flow rates and nozzle pressures, spray distances, and data collected during spraying such as odor monitoring in the vicinity and downwind. Spraying would be conducted in different climate/wind conditions to establish potential limitations for full-scale operation.

- Identify/define data that will be collected on water that runs off the application areas: quantity of water and data on BOD, SS, nutrient content (including ammonia). Fecal coliform density of any runoff solids would be determined.

- Identify the various conditions under which spraying will be limited such as time of day, wind/atmosphere conditions, precipitation conditions, frequency of application, and other conditions.

c) The liquid biosolids spreading demonstration project would be conducted under the review and oversight of the LEA and BAAQMD, and a report of findings prepared. The Applicant would demonstrate that liquid biosolids can be spray-applied as proposed without creating nuisance odor conditions. The LEA and BAAQMD would then determine under what conditions liquid biosolids can be spray-applied to the landfill slopes to provide the required odor control. The work plan shall include, but not be limited to, the following items:

- Analysis of data would be extrapolated to determine nearby area/downwind odor impacts from biosolids spraying operations. Atmospheric odor modeling would be used as necessary to make these predictions.

- Identify control measures that will provide acceptable odor control, to include: limits on loading rates (liquid and solids loading), limits on type of biosolids applied, climate/wind restrictions, time of day restrictions, frequency of application, and other appropriate limits.

- Analyze information to identify the fate of biosolids pollutants, such as nutrients (nutrients taken up by site vegetation, or percolate downward into the final landfill cover, or contained in site runoff, transformed into gaseous release to atmosphere, etc.), and similar fate for biosolids metals and also for residual pathogens within biosolids.

Implementation of these measures would reduce potential odor impacts associated with liquid biosolids application to less-than-significant levels.

IMPACT 10-8. Application of dredged materials obtained from local Bay and harbor dredging operations to the southern and eastern sideslopes of the closed landfill could create objectionable odors. This impact is considered to be less than significant.

Dredged materials are silty and sandy deposits that would require substantial drying time on the landfill slopes. These materials can include sulfide-containing organic materials that produce nuisance odors when exposed to air. Dredged materials are currently trucked periodically to the WCCSL, stockpiled , and dried prior to use as landfill cover

without odor incident. According to the Port of Oakland, about 5 million cubic yards have been dredged under their program and applied to upland sites over the last 15 years without an odor problem.[61]

Control Measures Incorporated by Applicant: None.

EIR Recommendations:

MITIGATION MEASURE 10-8. None required.

IMPACT 10-9. Increased landfill capacity would extend the filling operation to about 2005, which could create objectionable odors. This impact is considered to be less than significant.

The proposed Project includes a 30-foot height increase, thereby increasing landfill capacity. According to the most recent site life estimates, additional landfill capacity would extend landfill operations an additional 17 months or until 2005, assuming the WRC is sited at the former Soil Remediation Building as proposed (Table 3-4, Chapter 3). SWFP No. 07-AA-0001 for the WCCSL allows a maximum of 2,500 TPD at the landfill disposal site. This permit limitation would not be exceeded.

Extended landfill disposal would be a source of odor but, as noted in Section A5 of this chapter, the BAAQMD has no confirmed odor complaints or violations for the WCCSL for the last 5 years. According to the Applicant's Report of Disposal Site Information,[1] a variety of odor abatement measures will continue to be used at the landfill, as follows.

Control Measures Incorporated by Applicant:

a) Highly odorous MSW loads would be rejected.

b) Daily cover would be applied to landfilled wastes.

c) Operation of the LFG extraction system would be continued.

d) Ongoing maintenance of landfill sideslope areas would be continued to seal off cracks and fill erosion channels.

Implementation of these control measures would reduce odors associated with extended filling operations to a less-than-significant level.

EIR Recommendations:

MITIGATION MEASURE 10-9. None required.

7. Impacts of Mitigation Measures

The mitigation measures discussed in this section are beneficial in nature and are intended to reduce potentially significant adverse impacts to less-than-significant levels. Implementation if these mitigation measures would not result in any significant adverse impacts.

E. CUMULATIVE IMPACTS

Discussion in Section D addressed the air quality, health risk and odor issues associated with the proposed Project. Table 10-4 shows the existing combined emissions from both on-site and off-site activities. Total emissions for ozone precursors (ROG and NO_x) would decline, so the Project would have a less-than-significant cumulative impact on ozone. Combined on-site and off-site emissions of PM_{10} would exceed the BAAQMD significance threshold of 80 pounds per day, so the Project would have a significant unavoidable cumulative impact for PM_{10}.

The cumulative effect of increased diesel truck traffic from the proposed Project and the Central IRRF on diesel particulate health risk was analyzed for two residential neighborhoods near the intersections of Richmond Parkway at Gertrude Avenue and Hilltop Drive. The maximum calculated cumulative cancer risk near the intersection at Richmond Parkway and Gertrude Avenue was 4.23 in one million. The maximum calculated cancer risk near the intersection of Richmond Parkway and Hilltop Drive was 5.02 in one million. These risk estimates were based on a continuous 70-year exposure.

The above calculated risks are below the BAAQMD significant threshold of 10 in one million. The Annual Average Concentration (0.014 $\mu g/m^3$ at Richmond Parkway/Gertrude Avenue and 0.0167 $\mu g/m^3$ at Richmond Parkway/Hilltop Drive) are also below the chronic inhalation REL for diesel exhaust particulate of 5 $\mu g/m^3$.

The discussion in Section D included an analysis of the nuisance odor potential associated with individual Project operations. Areas of concern are associated with an expanded Composting Facility using open windrow composting, additional and new feedstock materials, and the application of liquid anaerobically digested sludge (biosolids) to the closed southern and eastern sideslopes and the landfill. Individually, and particularly on a cumulative basis, significant odor nuisance impacts could occur. Mitigation measures, however, would be implemented by the Applicant to conduct demonstration projects under the review and oversight of the LEA and BAAQMD, and to demonstrate that these activities can occur without creating nuisance odor conditions. The BAAQMD regulatory framework for odor abatement would require the correction of any odor problems in the future if they were to occur. Thus, potential Project and cumulative odor impacts would be reduced to a less-than-significant level.

CHAPTER 11

HEALTH AND SAFETY

The health and safety evaluation of the proposed Bulk Materials Processing Center (BMPC) use permit amendment changes and related actions (Project) is presented in this chapter. A variety of issues are addressed that relate to general health and safety issues as well as issues specific to Project activities.

A. SETTING

Current operations at the West Contra Costa Sanitary Landfill (WCCSL) include the Class II sanitary landfill; a waste shuttle facility; existing BMPC activities, which include wood recycling, composting, and asphalt/concrete processing; and various control systems. All operations are permitted and regulated by various permits and regulatory agencies. A closed Class I Hazardous Waste Management Facility (HWMF) is located adjacent to the Class II sanitary landfill. This chapter, however, addresses only the setting and potential impacts of the proposed Project.

1. Fire Hazard Abatement

The WCCSL is located within both the City of Richmond (City) and the unincorporated area of Contra Costa County (County) and is in the jurisdiction of the Richmond Fire Department (RFD). The RFD has a staff of 120 and provides fire fighting and prevention services to the incorporated areas of the City. The RFD also manages the West County Fire District, which serves San Pablo, El Sobrante, and unincorporated areas of Western Contra Costa County, including North Richmond. There are seven RFD stations in the City, five stations in neighboring communities, two companies in Chevron's refinery, and a Navy unit at Point Molate. Two fire stations are within the West County Fire District, that are administered by the RFD under contract.[8]

Station 62, located at 1065 7th Street, North Richmond, is the closest fire station to the WCCSL. The RFD estimates a 4-minute response time to an emergency at the WCCSL.[33] The second closest fire station is Station 70, located at 13928 San Pablo Avenue, San Pablo, and would respond within 5 minutes of an emergency at the WCCSL. An East Bay Municipal Utility District (EBMUD) water system hydrant is located one block off site near the intersection of Parr Boulevard and Garden Tract Road.[1] American Medical Response is the emergency ambulance service dispatched through RFD. The RFD has a hazardous materials team at Station 64, located at 4801 Bayview Avenue, Richmond. The RFD's estimated response time to a hazardous materials emergency at the WCCSL would be within 6 minutes.[33]

The WCCSL Emergency Response and Evaluation Plan is included in Appendix K of the Report of Disposal Site Information (RDSI).[1] Emergency fire control procedures are also included in the composting and wood waste recycling operations plans.

Pursuant to Title 27 of the California Code of Regulations (27 CCR) §20780, the Applicant is prepared to take the necessary measures for prompt fire control as required by local fire authorities (Figure 11-1). The landfill equipment operators have been trained in the methods of handling accidental fires on the active face of the landfill. Soil or other suitable cover material is stockpiled near the active face of the landfill for fire suppression. Water is available on site via two water trucks. A firebreak of cleared soil is maintained around the active faces of the landfill during the summer and fall fire hazard seasons, and defoliants (herbicides) are also sprayed along the gas and leachate lines. If smoldering wastes are received, they are deposited in a safe area and extinguished. Equipment operators have two-way radios to contact the landfill office. The weighmaster at the Landfill Office Building has a telephone available for contacting the local fire department or other emergency services.

Four fires have occurred at the WCCSL over the last two years. Fires in the green material and wood waste stockpiles occurred on August 26, 2001 (with a reoccurrence on August 28), and on September 22, 2002. On August 27, 2002, a small fire occurred at the landfill working face. In all cases, the specific causes of the fires were unknown, although the stockpiles fires could have resulted from spontaneous combustion or the careless discard of a cigarette. Appropriate procedures were followed and assistance from the local fire department was obtained for the stockpile fires. No injuries and only minor property damage occurred.[53,54]

2. Site Security

The WCCSL security barrier is composed of gates and fencing and topographical barriers. The landfill site is bounded by water on three sides and the facility is fully fenced on the fourth side.

The main security gate is at the main entrance to the WCCSL. During the evening hours and for early morning access, the gate at the Richmond Sanitary Service (RSS) corporation yard is used. Contact must first be made with the RSS night watchman, who also maintains a security watch over the WCCSL property. Safety and security lighting is provided at the main gate and WCCSL scale facility.

Figure 11-1 On-site Equipment. On-site equipment at the Class II landfill is available for fire suppression if necessary.

3. Employee and User Safety

The WCCSL has an established safety program that addresses employee and user safety. As indicated above, the WCCSL Emergency Response and Evacuation Plan has been prepared for the site and is included as Appendix K to the RDSI.[1] Main elements of the employee safety program include the following:

- Annual safety training and as needed.
- Use of safety equipment such as respirator masks and hearing protection devices.
- Daily inspections to identify and remediate any unsafe work practices.
- Use of safe working activities and practices, including methods for handling special waste.
- Provisions for necessary emergency response equipment such as a portable eyewash station and fire extinguishers located at appropriate locations.
- Backup alarms on all equipment used at the site.

Customer access is limited at the WCCSL. Once in the facility, appropriate signage and traffic spotters are used to restrict customers to designated unloading areas.

The Applicant (West County Landfill, Inc. [WCL]) was acquired by the national firm, Republic Services, Inc. (RSI) in mid-2001. One of the high-level activities at RSI facilities and operations is the expansion of safety training programs. As part of ongoing emphasis on safe work practices and in light of the recent increase in insurance costs, RSI and its affiliates expanded safety training programs in 2002. RSI signed a multi-year agreement with DuPont Safety Resources to assist in successfully completing the safety program initiative. This includes updating and upgrading existing safety training programs through more visible management commitment, setting aggressive safety goals and objectives, establishing high standards of performance, providing supportive safety personnel, conducting more effective two-way communication, and conducting safety audits.

4. Hazardous Waste

No hazardous wastes are accepted at the WCCSL. Under State and Federal laws, the Class II landfill is permitted to accept non-hazardous wastes only. However, the municipal solid waste stream does contain small quantities of hazardous wastes that result from disposal of household waste and waste from small quantity generators, such as auto repair, auto dealers, and gas stations. Many of these materials are encountered on a day-to-day basis in the home and working environment and include such items as bleach, oven cleaners, hairspray, and antifreeze.

The occurrence of household hazardous waste (HHW) in the municipal solid waste stream is low, often comprising less than 0.5 percent in incoming waste.[59]

The Applicant has implemented a load-checking program at the WCCSL in accordance with 27 CCR §20870. Key elements of the hazardous waste screening program include the following:

- Signage at the landfill entrance prohibiting disposal of hazardous wastes.
- Initial load screening by gate attendants who are trained in hazardous waste recognition.
- Random inspection of packer trucks and roll-off box trucks.
- Monitoring of the wastes being unloaded.
- Storage of intercepted or recovered hazardous materials in labeled, lockable containers until pickup.
- Notification of the Local Enforcement Agency (LEA) of the identification, segregation, acceptance, and disposition of any unlawful delivery of hazardous materials identified through the load-check program. Any such items are handled and disposed of by trained personnel in accordance with applicable laws and regulations.

5. Landfill Gas

Landfill gas (LFG) is a gas produced from a landfill during the anaerobic (without oxygen) decomposition of organic materials. LFG typically contains 50 to 60 percent methane, 40 to 50 percent carbon dioxide, and small percentages of trace gases. If not controlled, LFG can represent a significant fire and worker/customer safety hazard at a landfill.

a. Composition. The methane gas component of LFG is explosive in the 5 to 15 percent range of concentrations when confined in a closed space with sufficient oxygen for burning. Methane may also asphyxiate vegetation through oxygen starvation in the root zone. In confined or semi-confined enclosures, methane gas and carbon dioxide may accumulate and create an asphyxiation hazard through displacement of oxygen. Also, carbon dioxide, the second most abundant component of LFG, may impact vegetation through chlorosis, or yellowing, of specific plant types. Carbon dioxide may also cause groundwater quality impairment by increasing the groundwater acidity. This promotes chemical solubilization of minerals and increases the hardness of the water.

The methane component of the LFG generated at municipal waste landfills is about one-half as dense as natural soil air. Thus, the methane in LFG tends to migrate upwards

through the landfill cover or, if the surface is poorly permeable, laterally to the edges of the filled area. Venting of the methane and lighter LFGs to the atmosphere can occur at the fill perimeter where settlement cracks and "scarps" may create a break in the integrity of the final surface cover. LFG also may be forced out the sides of a landfill into and through adjacent, more permeable soil/rock units if the landfill liner has ruptured or was improperly constructed.

b. Control and Monitoring. The Class II landfill, as well as the closed Class I HWMF, have collection and recovery systems for LFG control. The systems include a combination of vertical and horizontal wells and collection piping, which convey the Class II LFG to an on-site power plant in WCCSL Area A. Although a passive LFG control system was originally anticipated for the Class I HWMF, the Applicant is currently discussing alternatives with the Bay Area Air Quality Management District (BAAQMD), including (1) combustion of the HWMF LFG in the on-site power plant with the Class II LFG; (2) use of the existing LFG flare; and (3) installation of another LFG flare for the HWMF, with additional gas provided from the Class II system to assure proper combustion conditions.[125]

As will be discussed in Section B, regulatory requirements exist in 27 CCR for the control and monitoring of LFG. Because of topographical restrictions, such as being bounded by water on three sides, the WCCSL LFG monitoring program includes four wells at the southeast corner of the property on a quarterly basis. To date, LFG has not been detected in wells outside the surrounding slurry wall.[55]

Two structures within the WCCSL have been the focus of LFG control and monitoring efforts, because they were intended to be on the Class II landfill after closure.[1] These buildings include the following:

- Soil Remediation Building. This facility is now inactive and is the proposed location for the Waste Recycling Center (WRC). Controls at this location include gas collection pipes adjacent to the site, and the building with a subfloor ventilation space beneath the office area and with a synthetic fabric liner underneath the soil storage building floor. LFG monitoring at this building continues but LFG has not been detected.[55]

- Landfill Equipment Maintenance Building. This building was constructed with perforated drain (vent) pipes placed in the gravel blanket underlying the building slabs. The drain pipes are used for monitoring for LFG occurrence and can be used in a gas migration control system. Similarly, no LFG has been detected at this location.[55]

6. Vectors and Nuisance Pests

Solid waste facilities have the potential to provide food, cover, and breeding ground for disease vectors (a vector is an organism that carries pathogens from one host to another) such as certain insects (e.g., flies and mosquitoes) and nuisance pests such as gulls.

Local agency requirements and State regulations require the Applicant to take the necessary steps prevent or control the propagation, harborage, or attraction of flies, rodents or other vectors, and minimize bird problems. The routine crushing, compaction, and covering of the wastes effectively eliminates the potential for insect and rodent problems which can be vectors of disease transmission. Noise-nuisance control techniques are used for gulls at the WCCSL.

The LEA regularly inspects WCCSL operations, including for vector and nuisance pest control. Over the last two years, the LEA has issued only one Area of Concern (AOC) for vectors and nuisance pests at the WCCSL.[47] In early January 2001, an unusually large number of gulls were present at the WCSL and no bird determent measures were being used. Otherwise relative to vector and nuisance pest control, WCCSL operations have been in compliance with LEA requirements and Solid Waste Facility Permit (SWFP) No. 07-AA-001 and Composting Facility Permit No. 07-AA-0044.

B. REGULATORY AND PLANNING FRAMEWORK

This chapter addresses a range of issues related to health and safety. Accordingly, the regulatory and planning framework is extensive. An overview is provided below by subject matter. Relevant information is included from the CCR, the County and City Use Permits, and the Code of Federal Regulations (CFR).

1. Fire Hazard

- 14 CCR §17867b(1): The operator of a composting facility shall provide fire prevention, protection and control measures, including, but not limited to, temperature monitoring of windrows and piles, adequate water supply for fire suppression, and the isolation of potential ignition sources from combustible materials. A fire lane of a minimum of 12 feet in width shall be provided to allow access to all operation areas.

- 14 CCR §17407.1: (a) If burning wastes are received at a transfer/processing facility, they shall be separated from other wastes and deposited in a safe area, spread and extinguished, and (b) open burning of solid waste . . . except as otherwise approved by the LEA, local air district, and location fire department, is prohibited.

- 27 CCR §20780: (a) Open burning of solid waste, except for the infrequent burning of agricultural wastes, silvicultural wastes, landclearing debris, diseased trees, or debris from emergency cleanup operations, is prohibited at all solid waste landfills; and (b) If burning wastes are received, they shall be deposited in a safe

area and extinguished. If burning wastes have been placed in an active face, they shall be immediately excavated, spread and extinguished.

- Implement requirements of the Richmond Fire Department.

2. Site Security

- 14 CCR §17867a(5): Requires that unauthorized human or animal access be prevented.
- 14 CCR §17418.1: Requires a transfer/processing facility to be designed to discourage unauthorized access by persons or vehicles through the use of either a perimeter barrier or topographic constraint.
- 27 CCR §20530: A landfill site shall be designed to discourage unauthorized access by persons and vehicles by using a perimeter berm or topographic constraint. The LEA may require other areas of the site to be fenced to create an appropriate level of security.
- County and City use permits for the BMPC require adequate site security measures consistent with State requirements.

3. Employee and User Safety

- 14 CCR §17867a(6): Provides that traffic flow into, within, and out of the composting operation or facility shall be controlled in a safe manner.
- 14 CCR §17868: Details the environmental health standards for all composting operations relative to sampling, maximum metal concentrations, pathogen reduction, and clean green material processing requirements.
- 14 CCR §17408.7: Requires that an Injury, Illness, and Prevention Program be prepared for transfer and processing facilities and made available for local and State inspectors.
- 14 CCR §17408.8: Requires that a transfer and processing facility be designed, operated, and maintained to minimize contact between the public and solid waste.
- 14 CCR §17410.3: Provides for adequate training of transfer and processing facility personnel.
- 27 CCR §20590: Requires landfill operation and maintenance personnel to use appropriate safety equipment.

- 27 CCR §21130: Requires the landfill operator to maintain a written postclosure emergency response plan. The plan is required to identify and describe procedures to minimize hazards to protect public health and safety.

- County and City use permits require the Applicant to have an approved public health and safety plan and to comply with all design measures, safety precautions, and emergency response procedures as required by Federal, State, and local agencies.

4. Hazardous Wastes

- 14 CCR §17409.5 and 27 CCR §20870: Requires a load-checking program be implemented at material recovery facilities (MRFs) and landfills to assure that any discharge of unacceptable materials is minimized.

- County and City use permits for the BMPC require the Applicant to implement a program for checking loads at the WCCSL/BMPC gatehouse for smoldering loads, hazardous and other ineligible wastes, and implement appropriate procedures for their handling and disposal.

5. Landfill Gas

- 27 CCR §20919: Where the LEA, the local fire control authority, or the California Integrated Waste Management Board (CIWMB) have cause to believe a hazard or nuisance may be created by landfill decomposition gases, they shall so notify the owner. Thereafter, the site owner shall cause the site to be monitored for presence and movement of gases and shall take necessary action to control such gases.

- 27 CCR §20921: (1) The concentration of methane gas must not exceed 1.25 percent by volume in air within on-site structures; (2) The concentration of methane gas migrating from the landfill must not exceed 5 percent by volume in air at the facility property boundary or an alternative property boundary consistent with 27 CCR §20923; and (3) Trace gases shall be controlled to prevent adverse, acute, and chronic exposure to toxic or carcinogenic compounds, or both. The program implemented pursuant to 27 CCR §20921 shall continue for a period of 30 years or until the operator receives written authorization to discontinue by the LEA and the CIWMB.

6. Composting

Also see additional composting requirements in sections related to Fire Hazard and Employee and User Safety.

- 14 CCR §17867: General Operating Standards

  (a)(2)—All composting activities shall be conducted in a manner that minimizes vectors . . . hazards . . . human contact with, inhalation, congestion and transportation of dust, particulates, and pathogen organisms.

  (a)(3)—Random load checks of feedstock, additives, and amendments for contaminants shall be conducted.

  (b)(1)—The operator shall provide fire prevention, protection and control measures, including, but not limited to, temperature monitoring of windrows and piles, adequate water supply for fire suppression, and the isolation of potential ignition sources from combustible materials. A fire lane of a minimum of 12 feet shall be provided to allow access to all operations areas.

- 14 CCR §17868.2: Maximum Pollutant Concentrations

  Compost that contains any pollutant in amounts that exceed acceptable pollutant concentrations in Table 11-1 shall be designated for disposal, additional processing, or other use as approved by State or Federal agencies having appropriate jurisdiction.

Table 11-1. Compost Maximum Pollutant Concentrations

Pollutant	Concentration (mg/kg) on dry weight basis
Arsenic	41
Cadmium	39
Chromium	1200
Copper	1500
Lead	300
Mercury	17
Nickel	420
Selenium	36
Zinc	2800

Source: 14CCR §17868.2

- 14 CCR §17868.3: Pathogen Reduction

  (b)(1)—The density of fecal coliform in compost, that is or has at one time been active compost, shall be less than 1,000 Most Probable Number (MPN) per gram of total solids (dry weight basis) or the density of *Salmonella* bacteria in compost shall be less than three (3) MPN per four (4) grams of total solids (dry weight basis).

  (b)(3)—For the windrow composting process, active compost shall be maintained under aerobic conditions at a temperature of 131 degrees Fahrenheit or higher for a pathogen reduction period of 15 days or longer. During the period when the compost is maintained at 131 degrees Fahrenheit or higher, there shall be a minimum of five (5) turnings of the windrow.

  (d)(1)—Each day during the pathogen reduction period, at least one temperature reading shall be taken per 150 feet of windrow, or fraction thereof, or for every 200 cubic yards of active compost, or fraction thereof.

  (d)(2)(A)—Windrow composting process shall be monitored twelve (12) to twenty-four (24) inches below the pile surface.

- 14 CCR §17868.1: Sampling Requirements

  All composting operations that sell or give away greater than 2,500 cubic yards of compost annually, and all facilities shall meet the following requirements:

  (a) Operators shall verify that compost meets the maximum acceptable pollutant concentration limits specified in §17868.2 and pathogen reduction requirements specified in §17868.3. Verification of pathogen reduction requirements shall occur as close as possible to the point at which compost is sold and removed from the site, bagged for sale, given away for beneficial use and removed from the site, or otherwise beneficially used. This verification shall be performed by taking and analyzing at least one composite sample of compost, following the requirements of this Section as follows:

    (1) An operator who composts green material, or mixed solid waste shall take and analyze one composite sample for every 5,000 cubic yards of compost produced.

    (2) An operator who composts sewage sludge shall meet the sampling schedule in Table 11-2.

Table 11-2. Frequencies of Compost Sampling for Sewage Sludge Composting Facilities

Amount of sewage sludge compost feedstock (metric tons per 365 day period)	Frequency
Greater than zero, but fewer than 290	Annually
Equal to or greater than 290 but fewer than 1,500	Quarterly
Equal to or greater than 1,500 but fewer than 15,000	Bi-monthly
Equal to or greater than 15,000	Monthly

Source: 14CCR §17868.1

7. Land Application of Biosolids

The proposed Project includes use of biosolids from the West County Wastewater District (WCWD) treatment plant at the WCCSL for:

- Spreading or spraying liquid biosolids with greater than 90 percent moisture on the southern and eastern landfill sideslopes for drying, involving multiple applications per year.
- Spreading of biosolids with less than 90 percent moisture on the southern and eastern sideslopes for drying and for building up the cap thickness through sequential applications per season.
- Incorporation of biosolids into the composting process.
- Blending of dried biosolids with soil at the Soil Reclamation Facility to create specified fortified soil product.

Figure 11-2 shows the sideslope areas of the Class II landfill where biosolids would be applied. A host of regulations apply to biosolids handling and its land application. Land application is defined as the distribution of biosolids on, or just below, the surface of the land to improve the soil characteristics for plant growth.

a. Pollutant Concentration Limits. Biosolids land application is regulated at the Federal level by the EPA through the 40 CFR Part 503 regulations. The 40 CFR 503 regulations establish standards to protect public health and the environment from adverse effects that may result from the land application of biosolids.

Figure 11-2 Land Application of Biosolids. The application of biosolids to landfill side slopes shown here is subject to Federal and State regulations.

The 40 CFR 503 regulations establish standards for pollutant limits, operational standards, management practices, and monitoring, recordkeeping, and reporting requirements. The 40 CFR 503 regulations are self-implementing and impose requirements on the generators and persons who further treat, distribute, or use the biosolids. Persons not complying with the requirements are in violation of the 40 CFR 503 regulations and can be subject to enforcement action from the EPA. Compliance with the 40 CFR 503 regulations was required by February 19, 1994.

The 40 CFR 503 regulations have established limits for ten pollutants as listed in Table 11-3 for land application of biosolids. Biosolids with pollutant levels greater than the Ceiling Concentrations cannot be applied to land. Biosolids with pollutant levels below the Ceiling Concentration, but above the Pollutant Concentration can be applied to land, but are subject to the annual and cumulative pollutant loadings in the 40 CFR 503 regulations. Biosolids with pollutant levels below Pollutant Concentration can be applied to land without regard to annual or cumulative loading restrictions.

Table 11-3. EPA 40 CFR 503 Pollutant Concentration Limits

Pollutant	503.13 Table 1 Ceiling Concentrations (mg/kg)[a]	503.13 Table 3 Pollutant Concentrations (mg/kg)[a]
Arsenic	75	41
Cadmium	85	39
Chromium	3,000	1,200
Copper	4,300	1,500
Lead	840	300
Mercury	57	17
Molybdenum	75	N/A[b]
Nickel	420	420
Selenium	100	36
Zinc	7,500	2,800

Notes:
a. Dry weight basis
b. Temporarily suspended by EPA pending further consideration. Value was 18 mg/kg.
Source: 40 CFR Part 503

b. Pathogen Reduction. In addition to pollutant concentrations, biosolids must not pose a public health risk from pathogens. The 40 CFR 503 regulations therefore stipulate that biosolids applied to land must be treated to reduce pathogens. The 40 CFR 503 regulations give both performance-based standards and technology-based standards for methods to reduce pathogens.

The 40 CFR 503 regulations identify two levels of pathogen reduction requirements, Class A and Class B, which may be satisfied by certain treatment methods and/or by meeting pathogen limitation standards. The goal of Class A requirements is to reduce pathogens to below detectable limits. Class B biosolids meet adequate pathogen reduction requirements but rely upon environmental factors at the use or disposal site to further reduce pathogens. Therefore,

sites that use Class B biosolids must follow additional site restrictions and management practices concerning public access, animal grazing, and crop harvesting.

The WCWD treatment plant currently produces Class B biosolids through the anaerobic digestion process. Windrow composting such as included in the proposed Project is a Part 503-defined process to further reduce pathogens (PFRP). It would produce a Class A material that would be considered pathogen free, providing the temperature of the biosolids in the windrows is maintained at 131 degrees Fahrenheit (55 degrees Celsius) or higher for 15 days or longer as required by 14 CCR §17868.3(b)(3). During the period when the compost is maintained at 131 degrees Fahrenheit or higher, there should be a minimum of five turnings of the windrow. There are other defined processes that can be used to achieve Class A biosolids. These include: heat drying, pasteurization, and high pH/high temperature methods. Even unusual methods such as long-term storage in sludge lagoons or thermophilic digestion could be used to achieve Class A biosolids through certain specific operational methodologies, if approved by regulatory authorities.

c. Biosolids Non-Hazardous Classification. The 40 CFR 503 regulations require that biosolids applied to land be non-hazardous. Federal regulations that address waste classification are found in 40 CFR Part 261, which characterizes a material to be hazardous if it exhibits any one of the following four characteristics: ignitability, corrosivity, reactivity, and toxicity. Biosolids are generally not ignitable, corrosive, or reactive. The most critical criterion for biosolids is toxicity, as defined by the Toxicity Characteristic Leaching Procedure (TCLP). This test includes 40 compounds consisting primarily of organics.

The State of California also references the Federal regulations in classifying biosolids and has additional and more restrictive tests to characterize biosolids. In California, the CCR Title 22, Division 4.5, Chapter 11, Article 3 (22 CCR) describes characteristics of hazardous wastes and provides means of testing whether a material is hazardous. Similar to the Federal regulations, biosolids are considered hazardous by California standards if they exhibit any one of the four characteristics: ignitability, corrosivity, reactivity, and toxicity. Under 22 CCR, the toxicity of a material may be tested by several methods including the TCLP (consistent with the Federal regulations), the Total Threshold Limit Concentration (TTLC) test, and the Soluble Threshold Limit Concentration (STLC) test.

d. Vector Attraction Reduction. Vector attraction is any characteristic or project activity that attracts disease vectors. Disease vectors are insects or animals that are capable of transporting and transmitting infectious agents. Some common vectors include flies, mosquitoes, and rodents. Their interaction with humans provides a pathway for transmission of disease. Vectors themselves are not pathogenic. The 40 CFR 503 regulations specify options for meeting the vector attraction reduction related to biosolids as shown in Table 11-4. The WCWD plant would normally meet Option 1—38 percent volatile solids reduction—in its anaerobic digesters as part of its normal treatment process.

Table 11-4. 40 CFR 503 Vector Attraction Reduction Requirements

Option	Process
(1)	The mass of volatile solids in the biosolids shall be reduced by a minimum of 38 percent during biosolids treatment.
(2)	When the 38 percent volatile solids reduction requirement cannot be met for an anaerobically digested biosolids, vector attraction reduction can be demonstrated by digesting a portion of the previously digested biosolids anaerobically in the laboratory in a bench-scale unit for 40 additional days at a temperature between 86 to 99 degrees Fahrenheit (30 and 37 degrees Celsius). When, at the end of the 40 days, the volatile solids in the biosolids at the beginning of that period is reduced by less than 17 percent, vector attraction reduction is achieved.
(3)	When the 38 percent volatile solids reduction requirement cannot be met for an anaerobically digested biosolids, vector attraction reduction can be demonstrated by digesting a portion of the previously digested biosolids that has a percent solids of 2 percent or less aerobically in the laboratory in a bench-scale unit for 30 additional days at 68 degrees Fahrenheit (20 degrees Celsius). When, at the end of the 30 days, the volatile solids in the biosolids at the beginning of that period is reduced by less than 15 percent, vector attraction reduction is achieved.
(4)	The specific oxygen uptake rate (SOUR) for biosolids treated in an aerobic process shall be equal to or less than 1.5 milligrams of oxygen per hour per gram of total solids (dry weight basis) at a temperature of 68 degrees Fahrenheit (20 degrees Celsius).
(5)	Biosolids shall be treated in an aerobic process for 14 days or longer. During that time, the temperature of the biosolids shall be higher than 40 degrees Celsius and the average temperature of the biosolids shall be higher than 113 degrees Fahrenheit (45 degrees Celsius).
(6)	The pH of biosolids shall be raised to 12 or higher by alkali addition and, without the addition of more alkali, shall remain at 12 or higher for 2 hours and then at 11.5 or higher for an additional 22 hours at 77 degrees Fahrenheit (25 degrees Celsius).
(7)	The percent solids of biosolids that does not contain unstabilized solids shall be equal to or greater than 75 percent based on the moisture content and total solids prior to mixing with other materials.
(8)	The percent solids of biosolids that contains unstabilized solids generated in a primary wastewater treatment process shall be equal to or greater than 90 percent based on the moisture content and total solids prior to mixing with other materials.
(9)	Biosolids shall be injected below the surface of the land. No significant amount of the biosolids shall be present on the land surface within 1 hour after the biosolids are injected. When the biosolids that are incorporated into the soil are Class A with respect to pathogens, the biosolids shall be injected below the land surface within 8 hours after being discharged from the pathogen treatment process.
(10)	Biosolids applied to the land surface or placed on a surface disposal site shall be incorporated into the soil within 6 hours after application to or placement on the land. When biosolids that are incorporated into the soil are Class A with respect to pathogens, the biosolids shall be applied to or placed on the land within 8 hours after being discharged from the pathogen treatment process.
(11)	Biosolids placed on a surface disposal site shall be covered with soil or other material at the end of each operating day.
(12)	The pH of domestic septage shall be raised by 12 or higher by alkali addition and, without the addition of more alkali, shall remain at 12 or higher for 30 minutes at 77 degrees Fahrenheit (25 degrees Celsius).

Source: 40 CFR, Part 503.

- 14 CCR §17867. All composting facilities shall be conducted in a manner that minimizes vectors, odor impacts, litter, hazards, nuisances, and noise impacts, and minimizes human contact with inhalation, ingestion, and transportation of dust, particulates, and pathogenic organisms.

- 14 CCR §17408.5. Each transfer/processing facility and operation shall be conducted and maintained to prevent the creation of a nuisance.

- 14 CCR §17410.4. The operator shall take adequate steps to control or prevent the propagation, harborage, and attraction of flies, rodents, or other vectors, and animals, to minimize bird attraction.

- 27 CCR §20680. Except as otherwise provided, the owners or operators of all municipal solid waste landfill units shall cover disposed solid waste with a minimum of 6 inches of compacted earthen material or Alternative Daily Cover at the end of each operating day, or at more frequent intervals if necessary, to control vectors, fires, odors, blowing litter, and scavenging.

- 27 CCR §20810. The operator shall take adequate steps to control or prevent propagation, harborage or attraction of flies, rodents, or other vectors, and to minimize bird problems.

- The LEA has broad authority through the SWFPs and Composting Facility Permit to require operational changes at the proposed WRC and Class II landfill to correct any problems associated with vectors and nuisance pests.

- County and City use permits require the Applicant to have an approved Vector Control Program implemented at the BMPC.

- The Contra Costa Mosquito and Vector Abatement District has abatement powers and is authorized to take all necessary or proper steps for the control of mosquitoes, flies, or other vectors.

C. SIGNIFICANCE CRITERIA

Appendix G of the California Environmental Quality Act (CEQA) Guidelines indicates a project will normally have a significant effect on health and safety if it will:

- Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.

- Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment.
- Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school.
- Be located on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would create a significant hazard to the public or the environment.
- For a project located within an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, result in a safety hazard for people residing or working in the project area.
- Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.
- Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands.

D. IMPACTS AND MITIGATION MEASURES

Potential health and safety impacts of the proposed Project and recommended mitigation measures are discussed in this section.

1. Impacts Considered not to be Significant

Significance criteria applicable to health and safety impacts are discussed in Section C. Criteria which are not applicable include the following:

- Emit hazardous emission or handle hazardous wastes within one-quarter mile of a school.
- Result in a safety hazard for a project located within an airport land use plan or within the vicinity of a private airstrip.

Additionally, the Project would not interfere with an adopted emergency response plan or evacuation plan.

2. General Health and Safety

IMPACT 11-1. Increases in the volume of incoming waste stream along with expanded recycling and solid waste disposal activities on site could expose employees and users to increased hazards associated with exposure to the materials and the equipment used for its processing. This impact is considered to be less than significant.

Under the proposed Project, existing waste streams would be increased, new materials would be added, and site recycling and disposal operations would expand. With an increased waste stream, increased amounts of HHW may be present. Examples of new materials and operations include new composting facility feedstocks, the new wet/dusty material blending activity, soil reclamation, and biosolids/dredged material spreading. The use of mobile and stationary material sorting and handling equipment such as shears, shredders, flatteners, conveyor belts, skip loaders, and forklift trucks under conditions of increased traffic and confined space present potential health and safety problems.

Control Measures Incorporated by Applicant:

a) The existing WCCSL Public Health and Safety Plan required pursuant to County and City use permits would be modified, amended permits sought, and permit conditions followed.

b) The requirements of the RFD, building codes, and CAL/OSHA would be incorporated into the design, construction and operation of new facilities.

c) Formal training of personnel would continue to be conducted that includes the proper use of facility equipment; identification, avoidance and reporting of conditions that could potentially compromise safety; identification and management of HHW; regular safety meetings; and annual review and refresher training to ensure continued safe operation and compliance with regulations.

d) Users of the facility would be restricted to designated areas for unloading and loading of materials through the use of temporary barriers, signage, and staff. Restricted areas or areas of potential risk would be off limits to the general public.

e) Workers would be equipped with the appropriate safety clothing. Safety equipment would be readily available for all site personnel.

f) The hazardous waste screening program in place at the WCCSL and BMPC facilities would be continued.

Implementation of the Applicant's control measures would reduce general health and safety impacts to a less-than-significant level.

EIR Recommendations:

MITIGATION MEASURE 11-1. None required.

3. Facility Siting

IMPACT 11-2. The proposed Project would be located within the WCCSL, adjacent to the closed Class I HWMF, which is a hazardous materials site and could create a significant hazard to the public and environment. This impact is considered to be less than significant.

The Class I HWMF has been closed pursuant to State and Federal regulations. The HWMF is a totally enclosed facility with required environmental control systems. The Applicant would continue existing practices of incorporating biosolids (up to 85 percent moisture content) into the HWMF final cap for enhancement of the soils. Project activities would not encroach upon the HWMF site.

Control Measures Incorporated by Applicant: None.

EIR Recommendations:

MITIGATION MEASURE 11-2: None required

4. Spills

IMPACT 11-3. Project construction and operation could result in the accidental spillage of diesel fuel and other chemicals at the site, which could impact public safety and the environment. This impact is considered to be less than significant.

The Applicant has a spill control contingency plan, which is included in the WCCSL Emergency Response and Evacuation Plan as Appendix K to the RDSI.[1] Equipment available for use in containing and cleaning up spilled hazardous materials or wastes at the WCCSL consists of ten mobile pumps and nine tractors. The mobile pumps are used for large spills. The tractors can be used to excavate contaminated soil and materials. Spill cleanup kits are located at each hazardous waste storage area. These kits contain absorbent pillows, pads and booms or granular absorbent, appropriate hazardous waste labels, plastic collection bags and sealing ties, polylaminated Tyvek coveralls and boot covers, green nitrile gloves, latex gloves, splash gloves and caution barricade tape.

The following is the WCCSL policy on the subject of accidental spillage of diesel fuel and other chemicals at the site. The policy is based upon (1) the criteria identified in Federal release reporting under the Emergency Planning and Community Right-to-Know

Act (EPCRA), and (2) the California Office of Emergency Services (OES) policy on hazardous material releases.

> "Federal release reporting under EPCRA and previous Federal law is based on reporting an incident when the reportable quantity or "RQ" is exceeded within a specified period of time and chemical listed in 40 CFR 302.4 and 355.40, or a petroleum or petroleum product release exceeds 40 gallons.
>
> Title 22 CCR §66265.50, California Health and Safety Code §25500, and the regulatory clarification issued by OES have established that reporting is required immediately of any release of hazardous materials, except when there is a reasonable belief by the person required to report that there is no present or potential hazard to human health, the environment or property. This criterion has been adopted by the OES in Regulation 19 CCR §2703."

Existing precautions and procedures to contain spills are adequate for the potential on-site risks.

Control Measures Incorporated by Applicant: None.

EIR Recommendations:

MITIGATION MEASURE 11-3: None required

5. Landfill Gas Migration

IMPACT 11-4. LFG contains methane, which is explosive in the 5 to 15 percent range under conditions of confined space with sufficient oxygen for combustion. This impact is considered to be less than significant.

There are several systems and components of the Project and existing LFG control that serve to reduce the potential impacts of LFG at the WCCSL. The Class II LFG collection and recovery system and existing LFG monitoring program will continue to operate during the landfill's postclosure period (estimated to be 30 years). Many of the Project activities would occur on the landfill's central plateau, which will have a 4-foot-thick final cap with an additional 3 feet of soil to protect the final cap. Thus, vertical migration of LFG should be effectively controlled in these areas.

As described in Chapter 3 (Figure 3-4), the Project would involve construction or expansion of the following buildings:

- Waste Recycling Center (WRC). The WRC is proposed to be sited in the former Soil Remediation Building with rehabilitation and expansion of that structure.

- A new 1,200-square-foot modular employee break building would also be added adjoining the WRC structure.

- Concrete Debris Recycling Office Trailer. This would be a 15-foot by 40-foot wood-sided construction trailer on wheels or stilts for on-site office use to be located in the concrete/asphalt area or the landfill's central plateau.

- Relocated Equipment Maintenance Building. This approximately 60-foot by 80-foot metal-sided, pre-engineered building would be located in WCCSL Area A.

There should not be a significant increase in risks from LFG migration at the relocated equipment office building and the concrete/asphalt recycling office. This is because existing Area A buildings are not included in the WCCSL LFG monitoring program because they are not located on solid waste fill and the closed HWMF with associated soil attapulgite slurry wall lies between the Class II landfill and these buildings. Thus, LFG is not anticipated to migrate to this area. In addition, the concrete/asphalt office would be located on a 7-foot-thick final landfill cap and protective soil layer, would be elevated, and there would not be any subsurface electrical hookups.

The former Soil Remediation Building was originally constructed with LFG controls as discussed in Section A5. LFG collection pipes were also installed adjacent to the building. The structure itself was constructed with a subfloor ventilation space beneath the soil remediation facility's office building and with a synthetic impervious fabric liner underneath the soil storage building floor. LFG monitoring at the facility continues to be conducted by the Applicant, even though the facility is out of service and no occurrences of LFG at that location have been detected.

Control Measures Incorporated by Applicant:

a) The WRC building expansion would be constructed with the necessary LFG controls consistent with the requirements of the LEA and the RFD, and the facility would continue to be included in the WCCSL LFG monitoring program.

b) Ongoing monitoring of the landfill cover integrity would be conducted and necessary repairs made to control LFG venting.

The Applicant's control measures would reduce health and safety impacts associated with LFG migration to a less-than-significant level.

EIR Recommendations:

MITIGATION MEASURE 11-4: None required.

6. Fire Hazards

IMPACT 11-5. The receipt, processing and disposal of solid waste materials has the potential to create a fire hazard with associated health and safety impacts. This impact is considered to be less than significant.

There are components of the Project that do not have a substantial fire hazard risk, although lesser events such as equipment fires may occasionally occur. Project activities that do not have a substantial fire hazard risk include concrete/asphalt processing, wet/dusty material blending, soil reclamation, biosolids/dredged material spreading, and the Public Access Trail (Trail).

Compost and Wood Waste Recovery Facilities. Both of these facilities involve processing and storage of combustible materials. The Wood Waste Recovery Facility located in the Organics Materials Processing Area, adjacent to the composting area, is primarily a stockpiling and loadout operation (Figure 11-3). Operations involve receiving tree branches, woody vegetation materials, and selected wooden construction debris that is shredded and possibly screened. Products of this operation would be used either as boiler fuel or as landscaping and erosion control mulch. Temporary storage of these materials would be necessary. Sources of fire hazard include an ignition source such as a cigarette or equipment fire, spontaneous combustion from extended storage, or the accidental deposition of a "hot load."

The Composting Facility involves placement of shredded materials from the Organics Materials Processing Area into windrows for a period of 8 to 12 weeks. The windrows are anticipated to be 14 to 18 feet wide at the base and 6 to 8 feet high (10 feet maximum). Then, composted materials are mechanically processed through a variety of screens, trommels, conveyors, blenders, baggers, colorizers, or mixers and stockpiled prior to being sold. During composting, if the compost material dries out and becomes too hot, there is a potential for spontaneous combustion to occur. Organic material can ignite spontaneously at a moisture content of between 25 and 45 percent. This is unlikely, however, unless the material reaches temperatures higher than 199 degrees Fahrenheit (93 degrees Celsius), which typically requires a pile over 12 feet high. Limiting the windrows to a maximum height of 10 feet and turning the compost when temperatures exceed 140 degrees Fahrenheit (60 degrees Celsius) will prevent fires.[49]

Figure 11-3 Wood Waste Recovery Facility. Stockpiling wood waste materials is a potential fire hazard but compliance with Richmond Fire Department requirements would mitigate this impact.

According to the Applicant's RCSI, fire control would be accomplished through use of good operating practices, firebreaks, and emergency water supply.[1] Compost windrows would be separated by a 12-foot-wide fire lane, have a 10-foot maximum height, monitored for temperature and moisture, and turned and sprayed with water to control composting temperatures. Other fire control features include the presence of fire extinguishers, smoking prohibitions, a water truck, an ongoing inspection program for conditions that could create a fire hazard, limiting the depth of green materials and wood waste storage piles to 20 feet, and the use of on-site equipment to extinguish a fire if it occurs.

Waste Recycling Center. The mixed waste processing area within the WRC also presents a fire hazard risk. A fire resulting from the use of heavy equipment and the processing of mixed solid waste could occur. Ignition sources include cigarettes, the equipment, or the accidental disposal of "hot loads." Key fire control features of the WRC include installation of a fire sprinkler system in the main processing building and trailer loadout areas with hose and nozzles stationed at key locations, presence of fire extinguishers and a water truck, prohibition of smoking, an ongoing inspection program for conditions that could create a fire hazard, and use of personnel trained in fire control techniques.

Landfill Height Increase. The proposed landfill height increase would provide several years of additional disposal capacity, so filling operations would continue. Fires that may start at landfills are typically small and of short duration, and usually limited to the working face and tipping area. The potential of subsurface combustion of buried refuse triggered by accidental burial of "hot loads," uncontrolled or improper operation of the LFG control system (not proposed by the Applicant), or inadvertent burial of chemical wastes is also a possibility. Refuse inside a truck being transported to the WCCSL can also catch fire. The Applicant would continue to utilize proven, effective fire control and suppression procedures that are currently in use at the landfill.

Control Measures Incorporated by Applicant:

a) A Fire Protection Component for the WRC meeting the requirements of the RFD and the LEA to contain and extinguish fires originating at the facility would be developed and implemented. The program would be subject to the approval of the RFD and the LEA and would address, but not be limited to, the following:

- Fire protection and suppression measures, including fire sprinkler system with hose and nozzles stationed at key locations, for the facility.
- Fire breaks and access roads.
- Fire extinguisher types and locations.
- Machinery and equipment inspection program.

- Household hazardous waste facilities specifications to meet fire and safety codes due to temporary storage of intercepted household hazardous waste.
- Fire control training of employees.
- Federal OSHA employee training requirements for handling of hazardous materials/waste.
- Self-enforcement of the smoking prohibition by facility personnel and customers.
- Water truck.

b) The existing Fire Protection Component for the Composting Facility would be revised as necessary under the review and oversight of the local fire districts and the LEA. The Fire Protection Component addresses the following:

- Use of good operating practices, fire breaks, and emergency water supply.
- Compost windrows would be separated by a 12-foot-wide fire lane, have a 10-foot maximum height, monitored for temperature and moisture, and sprayed with water to control composting temperatures.
- Presence of fire extinguishers, smoking prohibitions, a water truck, an ongoing inspection program for conditions that could create a fire hazard, and limiting the depth of green materials and wood waste storage piles to 20 feet.
- Use of on-site equipment to extinguish a fire if it occurs.

c) All required permits from the RFD would be obtained and the Applicant would comply with permit conditions.

d) Necessary measures at the landfill would be taken for prompt fire control at the landfill, including use of heavy equipment, stockpiled soil, and water suppression.

e) Any incoming burning wastes would be deposited in a safe area and extinguished pursuant to 27 CCR §20780.

f) The WCCSL Emergency Response and Evacuation Plan would be implemented as necessary.

Implementation of the Applicant's control measures, which includes conformance with the requirements of the RFD, would reduce impacts to a less-than-significant level.

EIR Recommendations:

MITIGATION MEASURE 11-5: None required.

7. Bioaerosols

IMPACT 11-6. The generation of bioaerosols and endotoxins during the composting process can create health and safety issues for employees and users of the facility. This impact is considered to be less than significant.

Bioaerosols are suspensions of particles in air consisting partially or wholly of microorganisms. A variety of bioaerosols can be generated during composting. Both outdoor and indoor air in the natural environment contain all of the microorganisms, in variable amounts, that are associated with composting.[123] The bioaerosols of concern include actinomycetes, bacteria, viruses, molds and fungi. *Aspergillus fumigatus* is a common fungus that is naturally present in decaying organic matter. Both outdoor and indoor air in the natural environment contain all of the microorganisms, in variable amounts, that are associated with composting.[123] The spores of this fungus can be inhaled or can enter the body through cuts and abrasions in the skin. Although the fungus is not considered a hazard to healthy individuals, it can, in susceptible individuals, inhabit the lungs and produce fungal infections. *Aspergillus fumigatus* is readily dispersed from dry and dusty compost piles during and after mechanical agitation. However, it is documented that levels of this fungus decrease rapidly only a short distance from the source or a short time after activity stops.[49] Another health concern at composting facilities is exposure to endotoxins. Endotoxins are toxins produced within a microorganism and released upon the destruction of the cell in which it is produced. Like *Aspergillus fumigatus*, these bacteria are found everywhere in the natural environment. They then can be carried by airborne dust particles.

Several documents have been prepared which address health related effects of *Aspergillus* and bioaerosols in general from composting facilities. CIWMB LEA Advisory No. 6 provides guidance on *Aspergillus* and composting operations in California.[122] LEA Advisory No. 6 notes that *Aspergillus fumigatus* spores are very common in our everyday environment in North America and that everyday activities account for most of the exposures to this fungus. CIWMB concludes that a properly operated composting facility should not present a health risk from *Aspergillus fumigatus.* Sound management practices include maintaining moisture, temperature and pH levels, aerating, turning, and mixing. Reducing the dispersal of dust and spores best controls exposure. The use of water sprays or mists while turning piles, and refraining from turning on windy days will help accomplish this. Employees must be provided with appropriate personal protective equipment in accordance with OSHA regulations.

In 1999, the California Department of Health Services (DHS) prepared a report on bioaerosols and green-waste composting in California.[123] In reviewing previous studies, DHS noted a panel of international experts on bioaerosols, risk assessment and composting was recently assembled to consider whether bioaerosols associated with the operation of biosolids or solid waste composting facilities endanger the health and welfare of the public and the environment. Although this group also recognized that data regarding levels of bioaerosols exposure are incomplete, the group did not find epidemiological evidence to support increased risk of allergic, asthmatic or acute or chronic respiratory disease in the general public at or around the several open air and one enclosed composting sites that were evaluated. The major basis for this conclusion was the fact that workers were regarded as the most exposed part of the community and, where worker health was studied, no significant adverse health impacts were found.

Current CIWMB regulatory requirements do not recommend a minimum buffer zone width between composting operations and the nearest building or public use area. Previous state regulations required a minimum 300-foot buffer zone (for green waste composting facilities only) from active compost materials to any residence, school, or hospital. In the DHS study, buffer zone requirements in some selected U.S. states and Canadian provinces were summarized, as follows:

- Illinois: compost facilities must have at least 660 feet (1/8 mile) between the facility property line and the nearest residence.

- Tennessee: minimum 100 feet from compost to facility property lines, minimum 500 feet from compost to any residence, unless owners agree in writing to a shorter distance.

- Texas: minimum 50 feet from all property boundaries if greater than 2,000 CY is processed and if grinding occurs on site. No setback if grinding does not occur. No buffer distance required between facility property boundary and adjacent occupied spaces.

- Saskatchewan: minimum 1,640 feet between compost site and any sensitive neighboring land use.

- British Columbia: minimum 164 feet between composting operation and property boundary of which 50 feet closest to the property boundary must be reserved for natural or landscaped screening.

Most of these buffer distances were defined to address odors and aesthetics. By contrast, the WCCSL Composting Facility is centrally located within the 340-acre WCCSL site and is about 1 mile to the closest residence.

In summary, the DHS report concluded that studies to date that have evaluated the relationship between compost bioaerosol release, levels of bioaerosols off site and health effects in adjacent communities indicate:

- No increased risk for infection from exposure to *Aspergillus fumigatus* among healthy persons in the general population or the composting work force.
- Sensitive subpopulations including persons with compromised or suppressed immune systems may be at increased risk of infection by *Aspergillus fumigatus* from any source, not just composting.
- Asthmatics and those with allergic predisposition may be at increased risk for developing allergic reactions to one or several compost bioaerosols, as well as a variety of common ambient air components such as pollen and house dust.
- Compost worker exposure to bioaerosols may be high enough in some facilities to increase risk of some types of health problems. Previous studies of U.S. compost workers have not documented an increase in risk with occupational exposure, but limitations in the number and design of the studies make drawing firm conclusions difficult.

Because bioaerosols and endotoxins are both carried as dust, dust control measures will be incorporated into the design and operation of the facility.

Control Measures Incorporated by Applicant:

a) Water would be applied at least twice daily, more often when windy, on internal roads for dust control purposes.

b) Green waste, wood waste, and composting materials would be watered as unloaded.

c) Green waste, wood waste, and composting materials would be pre-screened to avoid dusty materials.

d) Water spray would be applied during the shredding process to wet the material being shredded.

e) Water would be applied on the compost windrows and pathways prior to aeration (turning).

f) Finished stabilized compost would be screened and loaded during low wind speed conditions (less than 20 mph); handling of compost would be suspended if the wind speed increases (above 20 mph).

g) Heavy equipment would have enclosed cabs for operators, and other employees would be required to use dust masks as necessary.

h) Uniforms are available to employees, and shower facilities would also be available in the proposed WRC so employees can shower and change clothes at the end of the day.

i) Wind fences and berms would be strategically located in the Organics Materials Processing Area to reduce wind effects and control wind erosion.

The use of standard dust control measures as proposed would reduce the impact to a less-than-significant level.

EIR Recommendations:

MITIGATION MEASURE 11-6: None required.

IMPACT 11-7. The proposed spraying or spreading of liquid biosolids (greater than 90 percent moisture) to the landfill sideslopes as well as the spreading of drier biosolids (less than 90 percent moisture) could impact WCCSL employees and users of the Trail. This impact is considered to be potentially significant.

The Applicant's proposed biosolids/dredged material spreading includes spraying or spreading of high moisture content biosolids (greater than 90 percent moisture) obtained from the WCWD to the southern and eastern sideslopes of the Class II landfill. The biosolids are anaerobically digested wastewater (sewage) sludge. Drier biosolids (less than 90 percent moisture) from the WCWD lagoons could also be applied to all of the landfill final slope areas.

The biosolids are considered to be Class B under 40 CFR 503 regulations, which is not pathogen free. However, Class B biosolids do have adequate pathogen reduction requirements which, along with use of site restrictions to prevent human contact, would enable it to be used at certain sites.

The spray application of biosolids would produce bioaerosols. Potential receptors of the bioaerosols include WCCSL employees and customers, and users of the Trail. As can be seen from Figure 3-7, the alignment of portions of the Phase 1 and 2 Trail is near (about 500 feet) the proposed biosolids spray application area, near the southwestern corner of the Class II landfill. Additionally, the Phase 2 and 3 Trail segments would proceed through the western and northern landfill sideslope areas that will receive annual applications of biosolids, which is a continuation of an existing authorized practice to improve soil tilth and provide nutrients for plant growth. While some of the technical details of the proposed biosolids spreading program still need to be evaluated further by

the Applicant, the Applicant has acknowledged that public health protection is a prerequisite for this activity to be permitted and implemented.

Control Measures Incorporated by Applicant:

a) Biosolids would not be placed in any area where the public can have contact with the materials. During biosolids application, sensitive portions of the Trail would be closed for a 4- to 6-week period and areas fenced off to prevent public access until the materials are disked into the soil surface of the landfill cover.

b) Signs would be posted at the edge of biosolids application areas indicating boundaries of the area and warning unauthorized persons of the restricted access.

c) Spray application of liquid biosolids of typically 2 to 6 percent solids would be conducted at the southwestern portion of the WCCSL site only under favorable wind conditions (e.g., less than 10 mph), when wind drift of bioaerosols to the Trail is not likely.

d) Spray application of biosolids would be conducted in a downwind direction and applications would be adjusted to account for wind speeds and directions. Spraying would be suspended if necessary (wind speed in excess of 20 mph or wind blowing toward the Trail).

e) Employees would be required to use protective clothing and instructed in proper biosolids handling procedures.

f) Regular follow-up observations of working practices would be conducted by the Applicant and quarterly employee re-training would be required to ensure public health safeguards are met.

g) An annual report would be prepared, under the review and oversight of the LEA, which summarizes the health protection procedures that were followed, any problems, and corrective measures that were or need to be taken.

EIR Recommendations:

MITIGATION MEASURES 11-7:

a) WCCSL employees would have the necessary inoculations prior to their participation in the biosolids spreading program.

b) The Applicant would demonstrate to the RWQCB that lagoon storage of biosolids at the WCWD produces Class A biosolids, pursuant to 40 CFR 503 regulations. This demonstration shall include, but is not limited, to the following:

- A work plan would be prepared which defines the pathogen and related testing that will be completed on the biosolids. The work plan would be reviewed by the RWQCB and the EPA Region 9 Sludge Coordinator before beginning work.

- Upon approval of the work plan, pathogen testing work would be completed on digested sludge and sludge withdrawn from the storage lagoon to determine if Class A pathogen densities have been achieved.

- Lagoon operational parameters would be defined during this testing work that would then be used in the future to help define the conditions under which Class A material is produced – conditions such as length of time within lagoon storage, feeding limitations, etc.

c) Lacking such a demonstration in EIR Mitigation Measure 11-7(b) above, the Applicant would demonstrate to the RWQCB that a combination of Trail closure, rotational biosolids spreading, and fencing can be used to provide the necessary site restrictions to conform to 40 CFR 503 regulations and provide the necessary public health protection. The demonstration shall include, but is not limited to, the following:

- Identify set-back distances/restrictions from the Trail and any other public-accessible area/locations.

- Define fencing, signing, and related features that will be adequate to prevent public access to areas of biosolids application under certain site conditions.

- Define other restrictions such as area closure during and after spreading/ application, closure for certain periods of time or time of day, closure during rain, fog, or other situations.

d) The Applicant would demonstrate to the RWQCB compliance with the vector attraction reduction requirements of 40 CFR 503 regulations. It is assumed Option 1 (Table 11-4) would be appropriate and involves demonstrating that the mass of volatile solids (VS) in the biosolids is reduced by a minimum of 38 percent during biosolids treatment. The minimum of 38 percent VS reduction in the treatment system can be demonstrated with either of the two following methods:

- **Direct Calculations.** The VS concentrations in its influent and effluent biosolids samples will be monitored. Influent samples would be the 24-hour composite sample paced with the influent flow rates. Effluent samples could be daily grab samples. The mass of VS reduction can be calculated directly from the flow and VS concentration data.

- **Sludge Production.** The VS reduction is proportionate to the sludge production. From the biochemical oxygen demand and total suspended solids concentrations and flow rate in the influent and effluent samples, the sludge production rate can be calculated and the reduction of VS mass can be verified.

Implementation of these measures would reduce public health and safety impacts associated with land application of biosolids to a less-than-significant level.

8. Chemical and Biological Quality of Biosolids and Compost

IMPACT 11-8. Biosolids and dredged materials can contain elevated levels of organic chemicals, which can make the land application or composting of these materials potentially harmful to public health and safety and the environment. This impact is considered to be less than significant.

Discussion earlier in this chapter (see Section B7) indicated that 40 CFR 503 regulations require biosolids to be non-hazardous for land application. Both Federal and State regulations consider biosolids to be hazardous if they exhibit any one of the four characteristics: ignitability, corrosivity, reactivity, and toxicity. The most critical criterion for biosolids is toxicity as measured against standards for a variety of organic chemicals. The pollutant content of WCWD biosolids is considered low as discussed in Impact 11-9 below. Similarly, it is expected that the biosolids would be non-hazardous, but no data are available to support this assumption at this time. Sources of biosolids other than WCWD could also be secured by the Applicant.

Dredged materials from San Francisco Bay could also contain elevated pollutant levels. However, according to the Corps of Engineers and the Port of Oakland, the "hot spots" within the Bay are well known and the vast majority of dredged material from the Bay is relatively clean material from maintenance dredging operations.[119,120] The actual dredging operation is subject to the Corps permitting process with some level of material characterization, either from actual testing or through use of data from previous dredging operations in the area. This level of screening is required to ensure that dredged material is of suitable quality for its intended disposal location.

At the WCCSL, the receipt and application of biosolids and dredged materials would be regulated by RWQCB Order No. R2-2002-0066 and by the Applicant's Waste Acceptance Guidelines. Order No. R2-2002-0066 would consider these materials to be non-hazardous pursuant to Federal and State criteria, and the materials managed to prevent water quality impacts. The Applicant's Waste Acceptance Guidelines are included in Appendix 3I and detail the level of characterization required prior to receipt of various waste materials.

Control Measures Incorporated by Applicant:

a) Prior to accepting biosolids from WCWD or other sources, or dredged materials, the Applicant would enforce WCCSL's Waste Acceptance Guidelines and require the project sponsor to provide sufficient chemical characterization data that would enable the Applicant to demonstrate to the RWQCB that the material is non-hazardous pursuant to 40 CFR Part 261 and 22 CCR, Division 4.5, Chapter 11, Article 3.

Compliance with WCCSL's Waste Acceptance Guidelines and demonstrating to the RWQCB that biosolids and dredged materials are non-hazardous would reduce potential impacts to a less-than-significant level.

EIR Recommendations:

MITIGATION MEASURE 11-8: None required.

IMPACT 11-9. Biosolids can contain elevated levels of pollutants which can make land application of this material potentially harmful to public health and safety and the environment. This impact is considered to be less than significant.

Discussion earlier in this chapter summarized 40 CFR 503 regulations and 14 CCR §17868.2 standards for pollutant limits and biosolid characterization tests under 22 CCR. The standards for ten heavy metals are included in Table 11-5 and compared with available data for WCWD wet and dry sludge. Because the WCWD data are below regulatory limits, biosolids from the facility can be land applied without annual or cumulative loading restrictions. However, if biosolids from sources other than WCWD are secured, the quality of the sludge would be unknown.

Control Measures Incorporated by Applicant:

a) Prior to accepting biosolids from sources other than WCWD, the Applicant would enforce WCCSL's Waste Acceptance Guidelines and require the entity to provide documentation (including test results) that the biosolids meet pollutant limits included in 40 CFR 503 and 14 CCR §17868.2 regulations, and testing standards under 22 CCR.

Compliance with WCCSL's Waste Acceptance Guidelines and requiring documentation that regulatory standards will be met would reduce this impact related to pollutants to a less-than-significant level.

EIR Recommendations:

MITIGATION MEASURE 11-9: None required.

Table 11-5. Comparison of WCWD Biosolids Chemical Quality With Regulatory Standards

Pollutant	503.13 Table 1 ceiling concentration (mg/kg)[a]	503.13 Table 3 pollutant concentration (mg/kg)[a,b,c]	WCWD[a]	
			Lagoon dried sludge (mg/kg)	Lagoon wet sludge (mg/kg)
Arsenic	75	41	16	4.6
Cadmium	85	39	2.25	1.5
Chromium	3,000	1,200	42	5.35
Copper	4,300	1,500	280	45.5
Lead	840	300	65.5	3.2
Mercury	57	17	1.45	0.04
Molybdenum	75	N/A[d]	5.85	0.4
Nickel	420	420	49	7.5
Selenium	100	36	ND	12.7
Zinc	7,500	2,800	475	189

a. Dry weight basis, values are averages for 2001 and 2002 data.

b. Except for molybdenum, values are also maximum pollutant concentrations for compost included in 14 CCR §17868.2.

c. These pollutant concentrations correspond to maximum acceptable pollutant concentrations for compost included in 27 CCR §17868.2.

d. Temporarily suspended by EPA pending further consideration. Value was 18 mg/kg.

Source: 40 CFR 503 and WCWD.

IMPACT 11-10. Elevated pathogen and pollutant levels in the finished compost product could make its use harmful to public health and safety and the environment. This impact is considered to be less than significant.

Incoming compost feedstock materials could contain trace levels of chemical and biological contaminants. Through the composting process, microorganisms decompose the composting feedstock into simpler compounds. At the end of the curing process, the compost is considered "stabilized" or "mature." An efficient composting process requires careful monitoring and control of the windrow process to assure adequate turning, temperature, moisture and carbon-to-nitrogen ratios. While pollutant levels would be dependent on the quality of the feedstock, as discussed above, the quality and suitability of the finished product are dependent on the completeness of the composting process.

Discussion earlier in this chapter summarized the regulatory standards for the control of the chemical and biological quality of the finished compost product. Standards exist for operation, maximum metal concentrations, pathogen reduction, and sampling. 40 CFR Part 503 regulations recognizes the windrow composting process as a Class A pathogen reduction method for biosolids if the temperature of the biosolids is maintained at 131 degrees Fahrenheit (55 degrees Celsius) or higher for 15 days or longer and there is a minimum of five turnings of the windrow during that period as required by 14 CCR §17868.3. The finished compost would then be considered pathogen free. If regulatory standards for temperature and turning are not met, then the compost shall be designated for disposal, processed further, or otherwise managed as approved by appropriate Federal and State agencies.

Control Measures Incorporated by Applicant:

a) The Applicant would comply with Federal and State regulatory standards for compost operation, pollutant concentrations, pathogen reduction, monitoring, recordkeeping, and reporting.

Compliance with Federal and State regulatory standards would reduce health and safety impacts associated with finished compost quality to a less-than-significant level.

EIR Recommendations:

MITIGATION MEASURE 11-10: None required.

IMPACT 11-11. Green wastes can contain the plant pathogen *Phytophthora ramorum*, the causative agent of Sudden Oak Death. The Composting Facility and the Wood Waste Recovery Facility could facilitate the spread of this pathogen. This impact is considered to be potentially significant.

Sudden Oak Death is an oak-killing disease first discovered in California in 1995. In California, Sudden Oak Death has been reported from Sonoma Valley in the north to Big Sur in the south, a 190-mile range, as well as east to the Napa County border, about 25 miles inland. In October 2001, Alameda County became the tenth California county to be infested with the pathogen.[50] Contra Costa County is one of 12 counties in the State that were quarantined by the Federal government on February 14, 2002, thus regulating the interstate movement of regulated or restricted articles.[56] Quarantined counties include the following:

Humboldt	Solano
Mendocino	Alameda
Sonoma	Santa Clara
Napa	San Mateo
Marin	Santa Cruz
Contra Costa	Monterey

Research on Sudden Oak Death and the regulatory framework for composting facilities continues to evolve. The CIWMB is helping to sponsor a research project at the University of California at Berkeley to verify that composting is effective at destroying this pathogen. In 2003, a new revised Federal interim rule and revised California rule are expected to be issued to address composting and accepting potentially contaminated wood waste. Under the anticipated regulatory environment, requirements will differ for existing permit holders, such as the Applicant, depending on whether or not finished products are transported out of the quarantined area, as follows:[92]

1. If materials such as compost or mulch stay within the quarantined area, no restrictions would apply.

2. If materials are transported out of the quarantined area, then the following would apply:

   - Finished compost could be beneficially used, but the Applicant would need to execute a Compliance Agreement with the respective County Agricultural Commissioner, as the agent of the California Department of Food and Agriculture, which would contain certain specified conditions.

   - Wood waste such as mulch which has not undergone the composting process could only go to a specific permitted facility. The Applicant, as well as the transporter, would be required to execute compliance agreements with the respective Agricultural Commissioner.

Control Measures Incorporated by Applicant: None.

EIR Recommendations:

MITIGATION MEASURE 11-11:

a) The Applicant would comply with new revised Federal rule and revised California rule regarding composting and control of *Phytophthora ramorum,* expected some time in 2003. If finished compost or mulch are transported out of the quarantined area, a Compliance Agreement would be executed with the County Agricultural Commissioner at the required time and specified conditions therein would be followed.

Implementation of this measure would reduce this impact related to Sudden Oak Death to a less-than-significant level.

9. Vectors and Nuisance Pests

IMPACT 11-12. Expansion of the incoming waste stream along with increased site recycling and solid waste disposal activities could lead to increased presence of vectors and nuisance pests which could be harmful to public health and safety. This impact is considered to be less than significant.

The Project does involve expansion of existing activities and waste streams as well as certain new activities which could be attractive to vectors and nuisance pests. However, vectors and nuisance pests have not been a problem at the WCCSL, according to the LEA. Pursuant to the SWFP and Composting Facility Permit for the WCCSL, the LEA would continue to regularly inspect operations. If problems are identified, corrective measures would be enforced.

Many of the conditions that could lead to proliferation of vectors and nuisance pests are addressed elsewhere in this EIR in the context of drainage management and odor control. Regrading the operations area of the Composting Facility (Chapter 6 Section D) would facilitate drainage and it would eliminate areas of standing water that could be breeding areas for mosquitoes. Compaction and daily cover of waste at the landfill's working face provides odor control and is effective at vector and nuisance pest abatement. Employment of good operational and housekeeping practices at the WRC and Composting Facility would be effective at odor control (Chapter 10 Section D) but also eliminates conditions that could lead to vector and nuisance pest problems.

The main new proposed composting feedstock that could attract vectors and pests would be food wastes. As discussed in Chapter 10 Section D, these materials would be incorporated with other compostible materials, shredded materials, or compost which should substantially reduce their attraction potential. A mitigation measure is also recommended in Chapter 10 Section D (EIR Mitigation Measure 10.5(b)) for a 1-year

composting demonstration project which would, in part, address control measures for vectors and nuisance pests associated with composting food wastes.

Control Measures Incorporated by Applicant: None.

EIR Recommendations:

MITIGATION MEASURE 11-12: None required.

10. Impacts of Mitigation Measures

The mitigation measures discussed in this section are beneficial in nature and are intended to reduce potentially significant adverse impacts to less-than-significant levels. Implementation of these mitigation measures would not result in any significant adverse impacts.

E. CUMULATIVE IMPACTS

Discussion of Project impacts and mitigation measures in Section D addressed general health and safety issues associated with the Project as well as a series of specific issues associated with individual Project activities. For some Project activities, less than significant impacts were identified when either Applicant control measures or recommended mitigation measures would reduce impacts to less-than-significant levels. In the context of the total Project site, specific control and mitigation measures, which include a combination of continued use of health and safety programs of the Applicant; Federal, State, and local regulatory requirements; and EIR recommendations, would serve to reduce potential cumulative impacts to less-than-significant levels.

In the context of cumulative projects in the area, the expanded operation of the Central IRRF would share some of the same health and safety issues associated with the proposed Project because of similar solid waste handling and resource recovery operations. These issues include general health and safety issues, spills, fire hazards, and vectors and nuisance pests. However, both the proposed Project and expanded Central IRRF would be regulated similarly with permit conditions that reduce project-related as well as cumulative impacts to less-than-significant levels.

CHAPTER 12

NOISE

Issues related to potential noise impacts from the proposed Project are discussed in this chapter. As discussed in Chapter 3, the proposed Project includes the Bulk Materials Processing Center (BMPC) use permit changes and related actions. The analysis and evaluation of potential impacts includes a review of surrounding land use, discussion of potential sensitive receptors, and characterization of existing and projected noise levels.

A. SETTING

The discussion in this section includes a review of the basic characteristics of environmental noise and a summary of surrounding land use and existing noise environment. For purposes of this discussion, the Environmental Impact Report (EIR) for closure of the West Contra Costa Sanitary Landfill (WCCSL) Hazardous Waste Management Facility (HWMF) is incorporated by reference pursuant to Section 15150 of the California Environmental Quality Act (CEQA) and summarized below.[33] The HWMF is located within the WCCSL adjacent to the Class II landfill/BMPC site.

1. Fundamental Concepts of Environmental Noise

Noise may be defined as unwanted sound. Noise is usually objectionable because it is disturbing or annoying. The objectionable nature of sound could be caused by its *pitch* or its *loudness*. *Pitch* is the height or depth of a tone or sound, depending on the relative rapidity (frequency) of the vibrations by which it is produced. Higher pitched signals sound louder to humans than sounds with a lower pitch. *Loudness* is intensity of sound waves combined with the reception characteristics of the human ear. Intensity may be compared with the height of an ocean wave in that it is a measure of the amplitude of the sound wave.

In addition to the concepts of pitch and loudness, there are several noise measurement scales, that are used to describe noise in a particular location. A *decibel (dB)* is a unit of measurement that indicates the relative amplitude of a sound. The zero on the decibel scale is based on the lowest sound level that the healthy, unimpaired human ear can detect. Sound levels in decibels are calculated on a logarithmic basis. An increase of 10 dB represents a ten-fold increase in acoustic energy, while 20 dB is 100 times more intense, 30 dB is 1,000 times more intense, etc. There is a relationship between the subjective noisiness or loudness of a sound and its intensity. Each 10 dB increase in sound level is perceived as approximately a doubling of loudness over a fairly wide range of intensities. Technical acoustical terms are defined in Table 12-1.

Table 12-1. Definitions of Acoustical Terms

Term	Definitions
Decibel, dB	A unit describing the amplitude of sound, equal to 20 times the logarithm to the base 10 of the ratio of the pressure of the sound measured to the reference pressure, which is 20 micropascals (20 miscronewtons per square meter).
Frequency, Hz	The number of complete pressure fluctuations per second above and below atmospheric pressure.
A-Weighted Noise Level, dBA	The sound pressure level in decibels as measured on a sound level meter using the A-weighting filter network. The A-weighting filter de-emphasizes the very low and very high frequency components of the sound in a manner similar to the frequency response of the human ear and correlates well with subjective reactions to noise. All sound levels in this report are A-weighted, unless reported otherwise.
L_{01}, L_{10}, L_{50}, L_{90}	The A-weighted noise levels that are exceeded 1 percent, 10 percent, 50 percent, and 90 percent of the time during the measurement period.
Equivalent Noise Level, L_{eq}	The average A-weighted noise level during the measurement period.
Community Noise Equivalent Level, CNEL	The average A-weighted noise level during a 24-hour day, obtained after addition of 5 dB in the evening from 7:00 p.m. to 10:00 p.m. and after addition of 10 dB to sound levels measured in the night between 10:00 p.m. and 7:00 a.m.
Day/Night Noise Level, L_{dn} or DNL	The average A-weighted noise level during a 24-hour day, obtained after addition of 10 dB to levels measured in the night between 10:00 p.m. and 7:00 a.m.
L_{max}, L_{min}	The maximum and minimum A-weighted noise level during the measurement period.
Ambient Noise Level	The composite of noise from all sources near and far. The normal or existing level of environmental noise at a given location.
Intrusive	That noise which intrudes over and above the existing ambient noise at a given location. The relative intrusiveness of a sound depends upon its amplitude, duration, frequency, and time of occurrence and tonal or informational content as well as the prevailing ambient noise level.

Source: Illingworth & Rodkin, Inc., February 2003.

There are several methods of characterizing sound. The most common in California is the *A-weighted sound level or dBA.* This scale gives greater weight to the frequencies of sound to which the human ear is most sensitive. Representative outdoor and indoor noise levels in units of dBA are shown in Table 12-2. Because sound levels can vary markedly over a short period of time, a method for describing either the average character of the sound or the statistical behavior of the variations must be utilized. Most commonly, environmental sounds are described in terms of an average level that has the same acoustical energy as the summation of all the time-varying events. This energy-equivalent sound/noise descriptor is called L_{eq}. The most common averaging period is hourly, but L_{eq} can describe any series of noise events of arbitrary duration.

The scientific instrument used to measure noise is the sound level meter. Sound level meters can accurately measure environmental noise levels to within about plus or minus 1 dBA. Various computer models are used to predict environmental noise depending upon the distance the receptor is located from the noise source. Close to the noise source, the models are accurate within about plus or minus 1 or 2 dBA. As a general guideline, a 6 dBA reduction in noise level can occur for every doubling of distance, depending on land uses and weather conditions.

New noise is evaluated by comparing it to the existing noise environment, called the "ambient noise level."[6] In general, the more a new noise exceeds the previously existing ambient noise level, the less acceptable the new noise will be judged by the hearers.

Changes in A-weighted noise level are perceptible as follows:

- Except in carefully controlled laboratory experiments, a change of 1 dB cannot be perceived.
- Outside the laboratory, a 3 dB change is considered a just-perceivable difference.
- A change in level of at least 5 dB is required before any noticeable change in community response would be expected.
- A 10 dB change is subjectively heard as approximately a doubling in loudness, and would almost certainly result in community response, recognizing an adverse change in their environment.

Since the sensitivity to noise increases during the evening and at night—because it is quieter than the day and excessive noise interferes with the ability to sleep—24-hour descriptors have been developed that incorporate artificial noise penalties added to quiet-time noise events. The *Community Noise Equivalent Level, CNEL,* is a measure of the cumulative noise exposure in a community, with a 5 dB penalty added to evening (7:00 p.m. to 10:00 p.m.) and a 10 dB addition to nocturnal (10:00 p.m. to 7:00 a.m.) noise levels. The *Day/Night Average Sound Level*, L_{dn}, is essentially the same as CNEL, with the exception that the evening time period is excluded and all occurrences during this 3-hour period are grouped into the daytime period.

Table 12-2. Typical Sound Levels Measured in the Environment and Industry

At a given distance from noise source	A-weighted sound level in decibels (dBA)	Noise environments	Subjective impression
	140		
Civil defense siren (100’)	130		
Jet takeoff (200’)	120		Pain threshold
	110	Rock music concert	
Diesel pile driver (100’)	100		Very loud
	90	Boiler room	
Freight cars (50’)		Printing press plant	
Pneumatic drill (50’)	80		
Freeway (100’)		In kitchen with garbage	
Vacuum cleaner (10’)	70	disposal running	Moderately loud
	60	Data processing center	
Light traffic (100’)	50	Department store	
Large transformer (200’)			
	40	Private business office	Quiet
Soft whisper (5’)	30	Quiet bedroom	
	20	Recording studio	
	10		Threshold of hearing
	0		Silent

Source: Illingworth & Rodkin, Inc., February 2003

2. Existing Conditions

The WCCSL is located partially in the City of Richmond (City) and partially in the North Richmond unincorporated area of Contra Costa County (County) at the end of Parr Boulevard near San Pablo Bay. As discussed in Chapter 4, the site is surrounded by non-noise sensitive activities, including a variety of industrial facilities and open space. The nearest residential development is located in North Richmond, approximately 1 mile to the southeast. Implementation of the Public Access Trail (Trail) would expose users to Project activities at varying distances around the perimeter of the facility. Finally, there are residences (single and multi-family) scattered along Richmond Parkway north and south of the WCCSL (Figure 4-2).

A variety of measurements were taken in 1996 in support of the noise impact assessment for the HWMF EIR.[33] Noise levels along the Trail ranged from 50 to 58 dBA (L_{eq}), 52 to 72 dBA along the south side of the WCCSL near Area A, 70 to 78 dBA near the landfill gas (LFG) power plant, and 51 to 56 dBA at the residential area about 1 mile from the WCCSL to the southeast. Activities at the WCCSL have not changed significantly since 1996. Therefore, these noise data are relevant.

A visit to the existing single-family residential neighborhood located about 1 mile to the southeast of the site during December 2002 revealed that noise from the existing WCCSL operation is not audible at this location. Noise levels nearer the WCCSL are dominated by various activities that take place on site and in other facilities near the WCCSL. Chief among these are the sound of trucks driving to and from the WCCSL, the sound of large earthmoving equipment operating in the landfill, the sound of the existing LFG power plant, and the sound of the existing concrete/asphalt processing facility.

For this EIR on the proposed Project, spot noise measurements were taken at various locations along the southern and western property boundaries to characterize the existing noise environment at the WCCSL. It was not possible to access the north boundary of the site because extremely wet conditions made this area impassable. Along the south boundary (and Phase 1 alignment of the Public Access Trail [Trail]), approximately 1,365 feet from the LFG power plant, the average sound level was 57 to 58 dBA with the noise level dominated by the sound of the generators at the LFG power plant. Farther west along the southerly boundary (and Phase 1 Trail alignment), approximately 3,900 feet from the LFG power plant, average noise levels were about 50 dBA. At this location, the sound of backup beepers from equipment operating on top of the landfill reached 53 dBA, and the sound of the equipment at the LFG power plant was about 45 dBA. In this southern area, noise levels generated by aircraft overflights, distant equipment at the Chevron Refinery, and traffic on Richmond Parkway generated as much noise as activity at the WCCSL.

Noise levels along the northerly perimeter of the site would be similar to those along the west boundary except near the existing concrete/asphalt processing facility. In this area, noise levels would be expected to reach about 85 dBA at a distance of 100 feet from the facility. In

summary, noise levels at the WCCSL operation are significant only in the close proximity and do not impact any existing noise sensitive receptors.

Continuous 24-hour measurements were also made along Richmond Parkway north and south of Parr Boulevard to provide information on the existing noise levels due to truck and automobile traffic on the Parkway. One measurement was made south of Parr Boulevard at Gertrude Avenue near a residential use at a distance of 210 feet from the centerline of Richmond Parkway and the other measurement was made along Goodrick Avenue north of Parr Boulevard at a distance of 350 feet from the centerline of Richmond Parkway. Noise measurements at these locations indicate that there is a high level of activity on Richmond Parkway, even during the nighttime hours. The DNL at these locations was 66 dB. The hourly average noise level ranged from 60 to 66 dBA in the daytime and from 53 to 60 dBA at nighttime.

B. REGULATORY AND PLANNING FRAMEWORK

The state and local regulatory and planning framework for noise abatement is provided below.

1. State

Title 14 of the California Code of Regulations (14 CCR) and 27 CCR provide regulatory framework for noise abatement at landfills, and composting and transfer/recycling facilities, as follows:

- 27 CCR §20840. Noise at landfills shall be controlled to prevent health and safety hazards to persons using the site and nearby residents.
- 14 CCR §17867. All composting activities shall be conducted in a manner that minimizes noise impacts.
- 14 CCR §17408.3. Noise shall be controlled at transfer/processing facilities to prevent health hazards and to prevent nuisance to nearby residents. Measures to control noise include, but are not limited to: posting of warning signs that recommend or require hearing protection; separation by barriers that limit access to authorized personnel only; or enclosures to reduce noise transmission. Compliance with specific provisions regarding noise control in a local land use approval, such as a conditional use permit or CEQA mitigation measures, shall be considered compliance with this standard.

2. Local

The Project vicinity is subject to both the requirements of the County General Plan and the City General Plan. These general plans contain noise elements that describe the goals and policies of the County and City for controlling noise, as summarized below. The North Richmond Shoreline Specific Plan does not contain a planning framework for noise as does the County and City General Plans, but rather specifies that all activities and uses in the plan area must meet the standards of operation which are detailed in the City Zoning Ordinance. The Zoning Ordinance is discussed in subsection c.

a. County General Plan Noise Element. The Noise Element of the County General Plan contains the following policies applicable to the Project:

- 11.1 New projects shall be required to meet acceptable exterior noise level standards as established in the Noise and Land Use Compatibility Guidelines.
- 11.2 The standard for outdoor noise levels in residential areas is a DNL of 60 dB.
- 11.3 Public projects shall be designed and constructed to minimize long-term noise impacts on existing residents.
- 11.8 Construction activities shall be concentrated during the hours of the day that are not noise sensitive for adjacent land uses and should be commissioned to occur during normal work hours of the day to provide relative quiet during the more sensitive evening and early morning periods.

The Noise Element does not contain guidelines for the amount of noise considered compatible with open space or trails. The closest category contained in the Noise Element would be playgrounds and neighborhood parks, which are considered to be compatible with an L_{dn} of up to 70 dB without mitigation.

b. City General Plan Noise Element. The City's General Plan Noise Element contains goals and policies similar to those in the Noise Element of the County General Plan:

- NE-A.1 Discourage development, where such development will significantly increase existing noise levels, unless mitigation measures are designed as part of the project to limit noise emissions to an acceptable level compared to the existing sound level.
- NE-A.6 Require new commercial and industrial development with potential noise and vibration-producing activities to provide noise study reports

by a qualified professional with demonstrated experience in noise control engineering.

- NE-A.9 Seek to limit the impact of nuisance noise sources upon noise-sensitive land uses and consider noise and vibration impacts to land use planning decisions.

- NE-A.10 Require parties responsible for noise producing sources or activities to limit noise that affects nearby noise-sensitive land uses.

As with the County General Plan Noise Element, the City General Plan Noise Element contains the same guidelines for establishing the compatibility of land uses with various noise environments. Public trails are not included in the matrix, but again, playgrounds or neighborhood parks, which are the closest similar use to the Trail, are considered to be compatible up to an L_{dn} of 70 dB without mitigation.

c. City Zoning Ordinance. The City Zoning Ordinance sets forth the following standards applicable to the BMPC:

- Zoning Section 15.04.840.170, Hours of Operation Standards: Industrial and manufacturing operations close to residential land uses shall discontinue operations which produce noise levels above 60 dBA between 10 p.m. and 7 a.m.

- Zoning Section 15.04.840.190, Construction Operation Standards: All construction and transport equipment shall be muffled in accordance with state and federal laws. Grading and pile driving operations shall be limited to between 7 a.m. and 7 p.m.

- Zoning Section 15.04.840.020, Noise Standards: This performance standard identifies the maximum noise levels not to be exceeded at various types of land uses for more than 30 minutes in an hour. The standards are based on 21 CCR and 24 CCR. For residential land uses, the maximum allowable noise level is 60 dBA, L_{50}. The maximum allowable noise levels are lowered by 10 dBA between 10 p.m. and 7 a.m. Noise generated by movement of railroad equipment and warning devices are excluded from this performance standard.

The City has adopted the above performance standards from the City Zoning Ordinance into the Municipal Code.

d. County and City Use Permits. County and City Use Permits for the BMPC require the Applicant to manage the BMPC in the manner that minimizes noise impacts to sensitive receptors in the area. If noise complaints are received, the Applicant is required to conduct monitoring and, if necessary, implement noise reduction measures. BMPC vehicles are required to be equipped with the best available noise suppressing equipment to minimize sound generation.

C. SIGNIFICANCE CRITERIA

Appendix G of the CEQA Guidelines indicates a project will normally have a significant noise and vibration impact if it will:

- Expose persons to or generate noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.
- Expose persons or generate excessive groundborne vibration or groundborne noise levels.
- Create a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project.
- Create a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project.
- For a project located within an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, expose people residing or working in the project area to excessive noise levels.
- For a project within the vicinity of a private airstrip, expose people residing or working in the area to excessive noise levels.

For purposes of this evaluation, 3 dB increase in ambient noise levels over those existing without the Project at a sensitive land use would be considered a significant impact.

D. IMPACTS AND MITIGATION MEASURES

Potential noise impacts associated with the proposed Project are discussed below. It should be noted that previous CEQA documents on existing WCCSL and BMPC activities have not identified significant noise impacts or required mitigation. These documents include the EIR on the West County Integrated Resource Recovery Facility (1991),[9] Initial Study and Mitigated Negative Declaration (IS/MND) on the WCCSL Soil Remediation Facility (1995),[13] the IS/MND on the WCCSL Solid Waste Facilities Permit and Landfill Closure and Postclosure Plans (1996),[23] and the EIR on the WCCSL HWMF Closure and Postclosure Plans (1998).[33] Health and safety issues associated with increased noise levels are discussed in Chapter 11 of this EIR.

1. Impacts Considered not to be Significant

Significance criteria applicable to noise impacts are discussed in Section C. Criteria that are not applicable to the proposed Project relate to a project's location within an airport land use plan or in the vicinity of a private airstrip.

2. Noise and Vibration

IMPACT 12-1. The proposed Project would involve expanded activities and equipment usage, expanded hours of operation, as well as relocated operations, which could result in increased noise levels in excess of standards and/or a permanent increase in ambient noise levels. This impact is considered to be less than significant.

The proposed Project includes expanded operations (hours, material types, and quantities) of existing facilities, several new operations, relocation of the concrete/asphalt processing facility to the western portion of the landfill's central plateau, a new Waste Recycling Center (WRC), and extended landfill operations (height increase). Table 3-2 summarizes the proposed facility operating hours. Appendix 3-J provides detailed information on existing and proposed equipment usage.

It can be seen from the data in Appendix 3-J that, with the exception of three crawler tractors associated with the WCCSL operation, future equipment to be operated on site would be essentially the same as it is today. The elimination of the crawler tractors would not result in a measurable change in noise emissions generated at the site. Similarly, the proposed relocation of the Concrete/Asphalt Processing Facility to the landfill plateau would not result in any significant changes in offsite noise levels and not at any existing noise-sensitive receptors. This is due to the fact that this equipment is located already at a considerable distance (over a mile) away from the nearest existing residential area and that the slight change in distance associated with relocating this activity would make no difference in sound levels a mile away. The mixed waste processing area would be operated within the WRC building and similar operations now occurring in an exposed area (e.g. the Waste Shuttle Facility) on the landfill's central plateau would cease. Also, the noise generated by the LFG power plant is the most likely facility to be noise heard off site, and the noise at this facility would not change as a result of the proposed Project.

During 1993, the Applicant completed a noise assessment for the Composting Facility involving an operating grinder, the loudest individual piece of equipment operated at the WCCSL. Table 12-3 summarizes the noise measurements that were recorded.

Table 12-3. Noise Measurements at the Composting Facility (1993)

Noise	20-foot distance	40-foot distance	1,700-foot distance[a]
Operating grinder and track-hoe excavator	95 dBA[b]	86.2 dBA[c]	69.7 dBA[d]
Background without grinder or excavator operation	--	--	71.7 dBA

Notes:

a. Monitoring location was at the bottom boundary of the WCCSL site and within line-of-sight of the equipment. The background measurement was taken when operation of the composting equipment and all landfill operations on the south side of the landfill were temporarily suspended. Off-site activities may have contributed to the slightly higher noise measurement for background sources.

b. 30-second measurement.

c. 5-minute measurement.

d. 10-minute measurement.

Source: Harding Lawson Consultants, reference 4.

The measurement made at the 1,700-foot distance without the grinder or excavator operation indicates that other equipment in the area (most likely the LFG power plant) is dominating the noise environment. Accounting for standard noise reduction with distance, the grinder operation would have generated a noise level of approximately 53 dBA at this distance. This noise level is far below the noise generated off site due to the combination of other non-WCCSL activities and the LFG power plant noise.

Extending the hours of operation of the onsite activity will result in no change in the noise levels measured at the nearest sensitive receptors a mile away because noise levels emanating from the site would continue to be dominated by the noise generated at the LFG power plant which operates 24 hours per day. The LFG power plant noise is not audible in the nearest neighborhood. It is concluded that the extension of the operating hours and the relocation of some activities on the site would result in no audible change in off-site noise levels or exposure.

Noise levels along the proposed Trail around the perimeter of the WCCSL site would be greatest along the portion of the Phase 1 Trail closest to the LFG power plant where noise levels of about 80 dBA would be expected. However, this would be only a temporary exposure for a few minutes as Trail users walk past this area. It is important to note that this Trail is required by the City and County use permits and specified in the North Richmond Shoreline Specific Plan. Otherwise, the vast majority of the Trail would be exposed to an L_{dn} of less than 70 dBA. This noise level is consistent with the

requirements of the County and City Noise Elements. Lower noise levels would be experienced along the Trail alignment that borders the western and northern portions of the WCCSL due to the distance from operating equipment and noise buffering afforded by site topography.

The 340-acre WCCSL is a large area within an even larger industrial zone of North Richmond. Noise attenuation is afforded by the distance to sensitive areas as well as shielding provided by local topography. The Applicant maintains equipment mufflers in good operating condition as required by County and City use permits.

Control Measures Incorporated by Applicant: None.

EIR Recommendations:

MITIGATION MEASURE 12-1. None required.

IMPACT 12-2. The proposed Project could expose persons to excessive noise or vibration levels. This impact is considered to be less than significant.

Based on the above discussion in Impact 12-1, excessive noise levels would not be generated. Appropriate hearing protection devices would continue to be used by WCCSL personnel as required by OSHA regulations (Chapter 11). Based on a site reconnaissance, WCCSL operations do not generate perceptible ground vibration off site and this would not be expected to change as a result of the proposed Project (Richmond Parkway is a major industrial thoroughfare designed to accommodate truck traffic).

Control Measures Incorporated by Applicant: None.

EIR Recommendations:

MITIGATION MEASURE 12-2. None required.

IMPACT 12-3. The proposed Project could result in a temporary or periodic increase in ambient noise levels. This impact is considered to be less than significant.

Operation of the grinding equipment could be viewed as an occasional noise generating source, as discussed under Impact 12.1. Otherwise, various construction activities would be required for the proposed Project. These include rehabilitation and expansion of the Soil Remediation Building for the WRC and relocation of the concrete/asphalt processing operation and equipment maintenance building. These activities would temporarily increase ambient noise levels near the construction sites but these would not be audible off site. Potential impact on ambient noise level from Project traffic is discussed in Impact 12-4.

Control Measures Incorporated by Applicant: None.

EIR Recommendations:

MITIGATION MEASURE 12-3. None required.

IMPACT 12-4. The proposed Project would increase traffic on the local street system serving the WCCSL and would extend the hours that materials could be transported to the BMPC, thereby potentially exposing sensitive land uses adjacent to the roadways to new and increased ambient noise levels. This impact is considered to be less than significant.

Richmond Parkway and I-80/I-580 are designated truck routes. Traffic to and from the WCCSL site thereby avoid sensitive land uses. This roadway system serves the existing industrial facilities in the area, including during nighttime hours. Project facility operating hours are proposed to change as follows:

Maintenance, repair, and servicing of construction equipment	Change from 7:00 a.m. to 6:00 p.m. Monday through Saturday to 5:00 a.m. to 10:00 p.m.
Transporting of BMPC materials	Change from 7:00 a.m. to 5:00 p.m. daily to 24-hour
Operation of concrete processing equipment	Change from 7:00 a.m. to 5:00 p.m. Monday through Saturday to 5:00 a.m. to midnight
Chipping and grinding of wood	Change from 7:00 a.m. to 5:00 p.m. daily to 5:00 a.m. to midnight
WRC	All activities to occur 24 hours per day, 7 days per week.

The Applicant is proposing the same facility operating hours for the WRC as now permitted for the landfill (24 hours per day, 7 days per week).

Chapter 8, Traffic and Circulation, includes an analysis of traffic impacts associated with the proposed Project. As illustrated on Figure 8-5, during the WCCSL peak hour (10:00 a.m. to 11:00 a.m.) in 2015, the Project would generate 18 trucks per hour on the Richmond Parkway north of Parr Boulevard and 10 trucks per hour south of Parr Boulevard. At night, the Applicant estimates that the current 10 trucks per night would likely increase to over 30 trucks per night and occasionally more on a short-term basis, depending on the needs of the Applicant's customers.

A conservative "worst-case" scenario for nighttime truck traffic was developed by the Applicant involving little or no waste diversion at the WRC, resulting in the need to

transfer haul 1,000 TPD of waste to the Potrero Hills landfill in Solano County. Five-hundred TPD could be hauled during daytime and 500 TPD would need to be hauled during nighttime. The travel route for the trucks would be Parr Boulevard and then northbound on Richmond Parkway to I-80. This scenario would involve eight transfer trucks leaving the WRC every third hour, beginning at 7:00 p.m., two every 15 minutes or eight per hour.

The Caltrans LEQV2 traffic noise prediction model was used to calculate the noise level increase expected due to the added truck traffic. Calculations indicate that hourly noise levels even during the quietest daytime or nighttime hour along Richmond Parkway would not increase by a measurable amount (less than 1 dBA) due to the additional truck trips. This is because noise levels at night are already substantial and the amount of acoustic energy added by the additional trucks would not be noticeable to the human ear. Thus, this impact is considered to be less than significant. Similarly, on the projected peak day of the year (Chapter 3, Table 3-3), noise levels are calculated to increase by 1 dBA, a less-than-significant impact.

Control Measures Incorporated by Applicant: None.

EIR Recommendations:

MITIGATION MEASURE 12-4. None required.

3. Impacts of Mitigation Measures

No mitigation measures were required in this section.

E. CUMULATIVE IMPACTS

The discussion and analysis of potential noise impacts in Section D addressed individual Project components as well as the entire Project in the context of the local setting. The WCCSL noise environment is dominated by the existing LFG power plant, and would not change as a result of the proposed Project. An operating grinder used at the Composting Facility is considered to be the loudest piece of equipment associated with existing and proposed Project activities. Measurements indicate that its continued use would not change offsite noise exposure at the nearest residential area. No significant cumulative impacts related to noise at the WCCSL would occur.

The traffic projections included under the cumulative traffic impact discussion (Chapter 8, Traffic and Circulation) was also evaluated for potential noise impacts. The projected noise level increases for the cumulative traffic in the study area, even under conditions

of an expanded Central Integrated Resource Recovery Facility (Central IRRF), are calculated to be less than 3 dBA along the Richmond Parkway and, therefore, less than significant.

CHAPTER 13

ALTERNATIVES

Section 15126(d) of the Guidelines for Implementing the California Environmental Quality Act (CEQA) requires that an Environmental Impact Report (EIR) include a discussion and analysis of alternatives. Specifically, the EIR should (1) describe a range of reasonable alternatives to the Project, which would feasibly attain most of West County Landfill, Inc.'s (Applicant's) basic objectives of the proposed Project, but would avoid or substantially lessen any of the significant effects of the proposed Project, (2) describe the no-Project alternative, and (3) evaluate the comparative merits of the alternatives.

The range of alternatives is governed by the "rule of reason" that requires the EIR to set forth only those alternatives necessary to permit a reasoned choice (Section 15126.6(f)). Evaluation of a no project alternative is required, as well as an environmentally superior alternative if the no project alternative is the environmentally superior alternative. The significant effects of the alternatives shall be discussed, but in less detail than the significant effects of the proposed project (Section 15126.6(d)).

This chapter addresses alternatives to the proposed Bulk Materials Processing Center (BMPC) use permit amendment changes and related actions (Project). Alternatives include the no-Project alternative, an alternative location for the Waste Recycling Center (WRC) on the West Contra Costa Sanitary Landfill (WCCSL) site, an alternative composting process (aerated static pile), and the preferred environmental alternative. These alternatives represent the full range of alternatives that were considered by the Lead Agency (Contra Costa County Community Development Department). The WCCSL is owned by the Applicant.

Part of the alternatives discussion must address the ability of the alternative to attain the Applicant's basic objectives of the proposed Project. The Applicant's objectives of the proposed Project (Chapter 3, Section C1) are as follows:

- To further reduce reliance on landfill disposal by expanding on-site recycling operations and help comply with State-required AB 939 waste diversion mandates.

- To operate a WRC and transfer station to handle self-haul volumes currently landfilled in the WCCSL, as well as capacity for new business (to be developed on an ongoing basis), and to achieve even greater diversion of materials from the waste stream than is accomplished now in the Waste Shuttle Facility.

- To help facilitate development of the Trail around the WCCSL, which will provide recreational opportunities and increase access to the Bay and which will also offer a setting for wildlife viewing and environmental education.

- To correct the areas of the Class II landfill's central plateau that have experienced excessive settlement, and to restore the landfill by placing additional MSW subbase, which will allow the foundation layer, barrier layer, and top landfill cover surface to be placed at the correct elevations and slope so that drainage can be properly managed.

A. FACTORS IN SELECTION OF ALTERNATIVES

The CEQA Guidelines also require an EIR to briefly describe the rationale for selecting the alternatives to be discussed (Section 15126.6(a)). The alternatives addressed in this EIR were selected in consideration of one or more of the following factors:

- The extent to which the alternative would accomplish most of the basic objectives of the Project.
- The extent to which the alternative would avoid or lessen any of the identified significant adverse environmental effects of the Project.
- The feasibility of the alternative, taking into account site suitability, economic viability, availability of infrastructure, consistency with regulatory limitations, and the reasonability of the Applicant controlling the site.
- The appropriateness of the alternative in contributing to a "reasonable range" of alternatives necessary to permit a reasoned choice.
- The requirement of CEQA Guidelines to consider a no-project alternative, as well as an environmentally superior alternative if the no-project alternative is the environmentally superior alternative (Section 15126.6).

Further discussion of the rationale in selecting the alternatives is included in the subsections that follow.

B. NO-PROJECT ALTERNATIVE

This section discusses the mandatory "no-Project" alternative. Unlike some instances where no-project means no activities will occur on a given site, current operations at the WCCSL are permitted facilities. Under the no-Project alternative, currently permitted operations would continue subject to existing permit conditions.

1. Description

Under the no-Project alternative, the WRC, soil reclamation, biosolids/dredged material spreading, including the wet/dusty materials blending, and the proposed alignment for the Trail would not be implemented. Relative to the Trail, the alignment specified in the North Richmond Shoreline Specific Plan and evaluated in the EIR for that plan could be implemented, but consideration should be given to the findings and conclusions in this EIR. The following operations, however, could continue under existing permits without increasing the amounts or types of materials processed, changing operating hours, relocating operations/ structures, or increasing the height of the landfill:

- BMPC
  - Waste Shuttle Facility. This facility would continue to receive waste and recyclable materials at its location on the Class II landfill's central plateau while the Class II landfill disposal operations are active.
  - Composting Facility. Composting would be limited to 10,000 tons per year with existing feedstock materials.
  - Concrete/Asphalt Processing Facility. Processing of about 125,000 tons per year of concrete and asphalt would continue at the existing location. Permitted to have a maximum of 30,000 tons of concrete debris and 1,600 tons of asphalt on site at one time.
  - Wood Recovery Facility. This facility would continue to process about 30,000 tons per year of wood wastes. Permitted to have a maximum of 350 tons on site at one time.
  - While the former Soil Remediation Facility is inactive, it is permitted and, therefore, the Applicant could reinstate its permitted uses, if desired, under the no-Project alternative.
- Class II Landfill
  - The Class II landfill would continue to operate under Regional Water Quality Control Board (RWQCB) Order No. R2-2002-0066 and Solid Waste Facility Permit (SWFP) #07-AA-001. SWFP #07-AA-001 limits the fill height of the landfill to 130 feet above mean sea level (msl). According to the Applicant's most recent site life projections based on a landfill height of 130 msl (Table 3-5 in Chapter 3), the landfill would be filled by October 2003 if the former Soil Remediation Building remains in place, or February 2005 if the building is removed, allowing additional solid waste disposal in this area. The RWQCB has ordered that disposal cease at the WCCSL Class II landfill by January 31, 2006. At landfill closure, wastes would be directed to the permitted Integrated Resource

Recovery Facility Central Processing Facility (Central IRRF) located at 101 Pittsburg Avenue about 1 mile from the WCCSL. This waste would then be transferred for disposal to the Potrero Hills Landfill in Solano County (also owned by Republic Services, Inc.) for a period of 5 years after closure of the WCCSL as determined by the West Contra Costa Integrated Waste Management Authority (Authority).

- Central IRRF

  - The Central IRRF would be expanded to its full design capacity. The Central IRRF comprises the land and improvements of the primary transfer station and waste processing site. It is located at 101 Pittsburg Avenue, between Third Street and Central Street, and between Brookside Drive and Wildcat Creek in the unincorporated area of North Richmond. The Central IRRF is open for business 7 days a week, except for Christmas, Thanksgiving, and New Years Day holidays. Operations may begin as early as 6:00 a.m. and continue until 2:00 a.m. for some specialized operating functions. The Central IRRF may receive a maximum of 1,200 tons per day (TPD) of materials/waste from all combined sources. The Central IRRF is operated by West County Resource Recovery, Inc., pursuant to an agreement with the Authority. Operations are regulated by Contra Costa County (County) Use Permit 2053-92, and Solid Waste Facilities Permit No. 07-AA-0034.

    The Central IRRF was designed and constructed to a building capacity and loadout capacity to receive, upload, handle, store, and load onto transfer vehicles a maximum of 170,300 tons per year (peak day maximum of 683 tons) for disposal primarily at the Potrero Hills Landfill in Solano County. Eligible wastes include:

    - Franchised waste consisting of residential, commercial, or industrial solid waste or construction and demolition debris delivered in collection vehicles subject to a franchise or contract between the Authority and a member agency.

    - County area waste consisting of residential, commercial or industrial solid waste or construction and demolition debris delivered in collection vehicles subject to a contract between the Authority and County.

    - Affiliate waste consisting of acceptable waste from operating company affiliate operations.

- Processing residues resulting from the processing of separated materials and acceptable waste containing recoverable materials or separated materials which cannot be processed.

- Under the terms of a service agreement between the Authority and WCCSL in 1996, and as amended in 1998, self-haul of waste by private vehicles is precluded at the Central IRRF. Self-hauled waste is accepted and processed at the WCCSL and transferred for disposal primarily at the Potrero Hills Landfill in Solano County.

2. Environmental Considerations

The no-Project alternative would not meet the Applicant's Project objectives presented earlier in this chapter that relate to restoring areas of the landfill central plateau, expanding recycling operations while further reducing reliance on landfill disposal, establishing a facility for self-haul and new business, and facilitating improved alignment of the Trail. In view of the substantial settlement that has occurred on the landfill plateau, limiting the Class II landfill to a maximum fill height of 130 feet msl would not provide a needed "buffer" to maintain acceptable slopes after anticipated future settlement. More effective drainage management would not be provided. Under the no-Project alternative, the significant unavoidable adverse impact associated with particulate matter less than 10 microns in diameter (PM_{10}) emissions discussed in Chapter 10 would not occur. Emission levels associated with existing permitted WCCSL and BMPC operations would continue.

With the no-Project alternative, a large increase in resource recovery processing capacity would not occur (also considered "unrealized") at the WCCSL. Table 13-1 summarizes the unrealized resource recovery processing capacity under the no-Project alternative. The table shows the proposed increase in permit limits for the BMPC, their corresponding estimated diversion efficiencies, and the unrealized resource recovery processing capacity in tons per year. Approximately 957,150 tons per year of waste materials are proposed to be processed through the Project. This material would have to be processed at other existing or proposed facilities. A portion of the materials would be processed at the Central IRRF, which is permitted for 438,000 tons per year (TPY) (1,200 TPD) and currently receives about 55,000 TPY. The municipal solid waste proposed for the WRC (365,000 TPY) would be handled at the Central IRRF within this permitted capacity under the no-Project alternative. Currently, the Authority's Self-Haul Agreement with Richmond Sanitary Services prohibits acceptance of self-haul waste at the Central IRRF. The remaining waste material of about 519,150 TPY would need to be processed/disposed of at other facilities, resulting in a possible loss of new diversion for some jurisdictions.

Table 13-1. Unrealized Resource Recovery Processing Under the No-Project Alternative

Proposed BMPC activity	Proposed increase in permit limits, tons/year	Waste diversion efficiencies, percent[a]	Unrealized resource recovery processing capacity, tons/year
WRC	365,000	25	91,250
Concrete/asphalt	403,000	100	403,000
Composting	154,300	90	138,870
Wood waste	101,400	90	91,260
Soil reclamation and biosolids/ dredged materials	195,000	95	185,250
Wet/dusty materials	51,100	93	47,520
Total	1,265,000	--	957,150

a. Estimates provided by Applicant.

Source: Brown and Caldwell, April 2003.

The Trail has been in the planning stage for many years, with support of local agencies and organizations. The Trail is specified in the North Richmond Shoreline Specific Plan and required by the County and City of Richmond (City) use permits. Under the no-Project alternative, the proposed realignment of a portion of the Trail designated as Phase 1 would not be implemented and a means of enhancing recreational and educational opportunities by improving the location of Phase 1 of the Trail would not occur.

3. Comparison to Proposed Project

The features of the no-Project alternative do not provide for expanded recycling at the WCCSL and would not result in improved views and experience for Trail users afforded by the proposed realignment of the Phase 1 portion of the Trail. Under the no-Project alternative, maintaining the required slopes at the Class II landfill through post-closure would be difficult due to settlement and a lack of a drainage management plan that would comply with RWQCB Order No. R2-2002-0066. A fill height of 160 feet msl is already permitted in RWQCB Order No. R2-2002-0066, but not in SWFP No. 07-AA-001. The WCCSL is a permitted integrated solid waste management facility in a suitable location where expanded resource recovery activities can be implemented in an efficient manner. Under the no-Project alternative, and without considering the benefit that would be available from the nearby Central IRRF, quantities of waste materials may need to be processed, used as alternative daily cover (ADC), or disposed of at other existing or new facilities, which could be less efficient and is more uncertain regarding timing and environmental compatibility.

C. ALTERNATIVE WRC LOCATION ON THE WCCSL SITE

The proposed Project includes a WRC with two waste/materials acceptance areas at separate locations: the Organic Materials Processing Area located adjacent to the Composting Facility on top of the landfill central plateau, and the Mixed Waste Processing Area proposed to be located within the former Soil Remediation Building (Figure 3-3). An alternative location for the Mixed Waste Processing Area is evaluated in this section because it is a location for building where site planning and design are not constrained by an existing structure or other physical site constraints, and because issues associated with settlement, landfill gas (LFG) migration, or proximity to the HWMF soil-attapulgite slurry wall are either avoided or minimized. For the alternative WRC, location of the proposed activities at the Organic Materials Processing Area would remain unchanged. In the following discussion, reference to the WRC applies only to the Mixed Waste Processing Area.

1. Description

A description of the issues related to the alternative WRC location is included below. Discussion is included on its location, concept, access, design, and operational considerations.

a. Location. The location of the alternative WRC site within the WCCSL is also shown on Figure 3-3 and is within WCCSL Area A (Area A location). A view of the building site is shown on Figure 13-1. The site is within the Richmond city limits. The Area A location is outside of the Class II landfill disposal area and has historically been used for stockpiling of soil for use in WCCSL operations and location of the existing composting sedimentation basin. All stockpiled soil has been removed from this location.

b. Concept. Whether the WRC is implemented at the proposed location or within the Area A location, the facility would serve the same purpose. At each location, the WRC would have a design capacity of 1,000 TPD, 7-day average (TPD7). Under the Applicant's proposal, this design capacity would be sufficient to accommodate the existing 650 TPD7 self-haul and non-franchised wastes now received at the WCCSL (estimated by the Applicant), plus new business (350 TPD7). It is assumed that the Central IRRF, located at 101 Pittsburg Avenue about 1 mile from the WCCSL, would receive the West County franchised wastes (subject to decision of the Authority), which would be hauled by the packer collection service trucks and the roll-off box trucks (estimated to be 350 TPD7) in addition to the approximate 150 TPD7 currently received. Thus, a total of about 1,500 TPD7 would be handled collectively by the WRC and Central IRRF.

Figure 13-1 View of Alternative WRC Location in Area A Looking Southwest

There is also a scenario where the Central IRRF would continue to be used as a materials recovery facility and franchised wastes would be diverted to the WRC. The design capacity of the WRC would remain at 1,000 TPD7 and the franchised waste would reduce the capacity available for new business waste. If the Applicant were to develop new business in excess of the 1,000 TPD7 and desired to handle this waste at the WRC, then additional environmental review and permitting would be necessary.

The decision on the scenarios discussed above will be based on a variety of factors and will be made by the Authority, which is composed of five voting member jurisdictions (cities of El Cerrito, Hercules, Pinole, Richmond, and San Pablo). The purpose of this EIR is to provide CEQA evaluations on both WRC sites to assess their relative environmental compatibility, thus disclosing potential impacts associated with either location to agencies and interested parties.

c. Access. The Area A location would be reached via the WCCSL main access road across the San Pablo Creek bridge (Recycling Lane). This road passes through the entrance gate and scale house, swings west and crosses the south flank of the Class II landfill (eastern leg), and then passes along the north side of the former Soil Remediation Building. An intersection is proposed by the Applicant where the road swings to the south as it climbs to the landfill central plateau. From this location, a new road would be constructed along the closed eastern sideslopes of the Class II landfill to the Area A location.

d. Design. Figure 13-2 is the site plan for the WRC at the Area A location. An operations summary detailing design and operational considerations is included in Appendix 13A.

A new building would be constructed to accommodate the Mixed Waste Recycling Area. While detailed design of the building would need to be completed, the Applicant anticipates a building size of approximately 37,500 square feet (250 feet in length and 150 feet in depth). The design of the building would include all the necessary components of a waste recycling facility and transfer facility. The processing building would likely be a metal-clad, steel frame structure on a spread footing foundation and concrete floor. Initially, the building is being conceived as walled on three sides with the doorways left open to the north (Figure 13-2) away from Trail users. Ultimately, roll-up doors could be added.

The WRC at the Site A location would include an office, restrooms, and a break room. The Applicant is considering several options for locating these facilities. One option would be a building on the west side of the processing building that would house the office and restrooms. This structure would be a separate building connected with a covered walkway and could be stick-built or a modular structure. The break room may be in this building, or it may be in the first floor area on the south side of the sorting area building for convenience of employees.

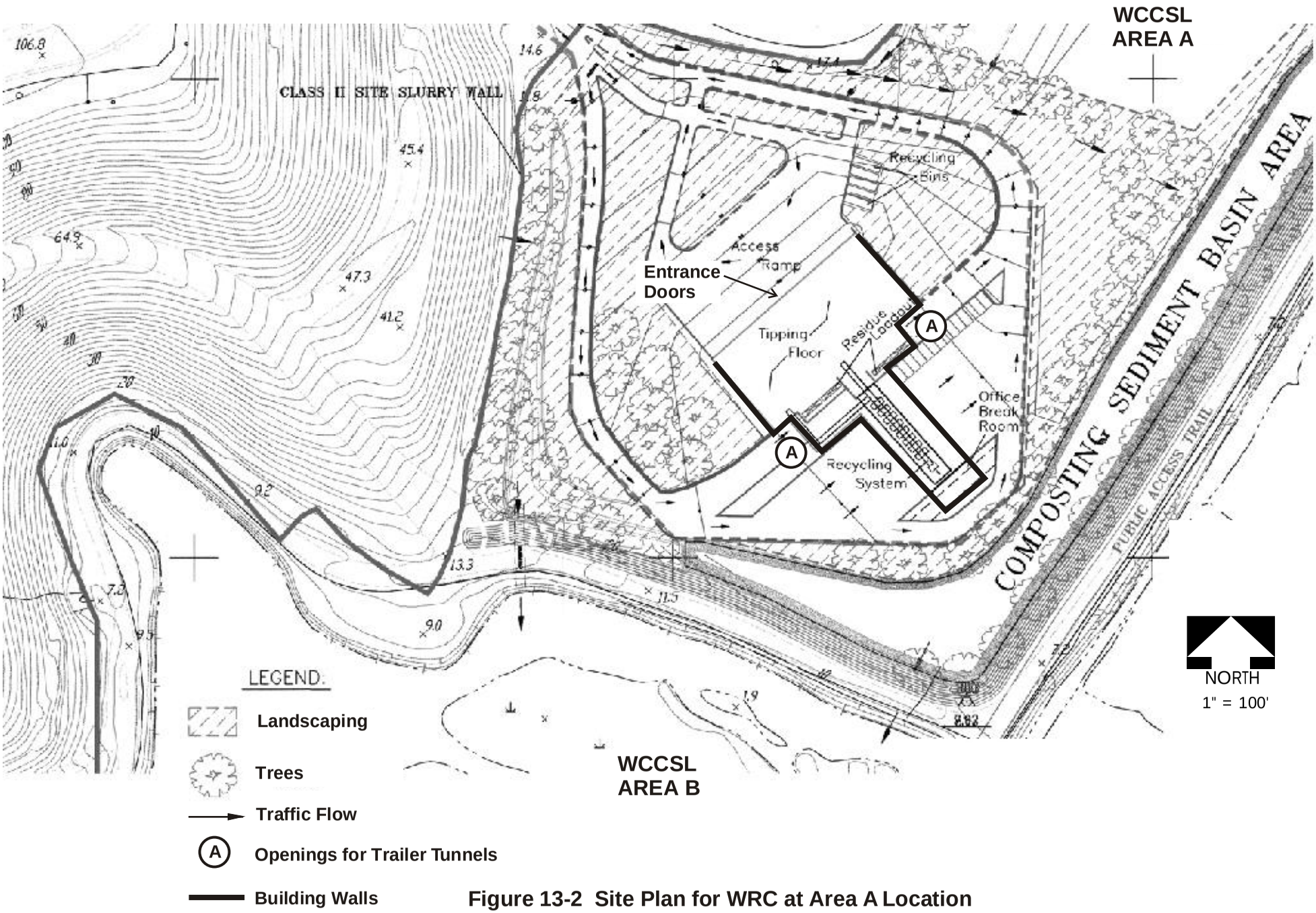


Figure 13-2 Site Plan for WRC at Area A Location

Source: WCL, Inc., January 2003

The Mixed Waste Processing Area would consist of several main components, including a receiving area, a sorting floor where wastes would be sorted into trash and recyclables, an elevated picking line where the recyclables would be sorted, and a transfer vehicle loadout area. There would be separate subareas for receipt of recyclables, trash, and mixed loads of recyclables and trash, and there would be several subareas for processing and removal of recyclables. The loadout area would be housed inside a building attached to the south side of the processing building. The transfer trailers would be positioned inside of this side structure. The ceiling would be high enough to allow a tamping crane to reposition wastes inside the trailers if necessary.

The WRC would be sited in the southwestern corner of Area A, requiring the relocation of the existing composting sedimentation basin. As shown on Figure 13-2, the relocated basin would border the southern and eastern portion of the WRC. The proposed Phase I segment of the Trail also borders the WRC in this area. An elevated landscaped berm with 6-foot cyclone fencing would be constructed in this area for security and environmental compatibility purposes.

The height of the berm above the Trail is proposed at 8 feet. The levee elevation is about 12 feet above mean sea level (MSL), hence the top of the berm would be at 20 feet MSL, and the maximum elevation of the top of the fence would be about 26 feet MSL. The fence actually may be located several feet down the slope on the trail side, so it may top out at about 24 feet. The chain link fence would include slats, or vegetation would be grown on it to screen the area behind the fence and soften its appearance.

e. Traffic Flow. Figure 13-2 illustrates traffic flow at the WRC. At the building, the residential and commercial waste collection vehicles would back to the western end. The self-haul traffic would follow the same route as the collection vehicles, but enter the building at the east end. The transfer trucks would pass southward along the west side of the building, turn at the southwest corner, and enter the loading stall in the eastern direction. Removal of the recyclable materials would follow the same path as the transfer trucks.

f. Operations. Operations at the alternative WRC location would be the same as at the proposed location. Recyclables would be removed through floor sorting, while selected materials would be processed by sorting the materials passing down a conveyor belt picking line or sorting station. All recyclable materials would be placed in roll-off boxes or designated areas. A roll-off truck would deliver the boxes of recovered materials to the appropriate on-site or off-site facilities.

2. Environmental Considerations

Environmental considerations associated with developing and operating the WRC at the Area A location are discussed below. Use of the Area A location and associated development plan would meet the Applicant's Project objectives.

a. Drainage. The surface drainage plan for the Area A location is shown on Figure 13-3. The apron would be sloped from the processing building and direct drainage to WCCSL's runoff retention pond in Area B. That portion of the drainage that may contact wastes or the recycled material storage areas would be intercepted and routed to oil/water separators. Roof drainage from the building would be directed to downspouts with discharge directed to the storm drain system and Area B. Use of the Area A location for the WRC would require the relocation of the composting sedimentation basin (as shown on Figure 3-1) to along the southern and eastern perimeter of the WRC building (Figure 13-3). No impacts are anticipated due to this basin relocation.

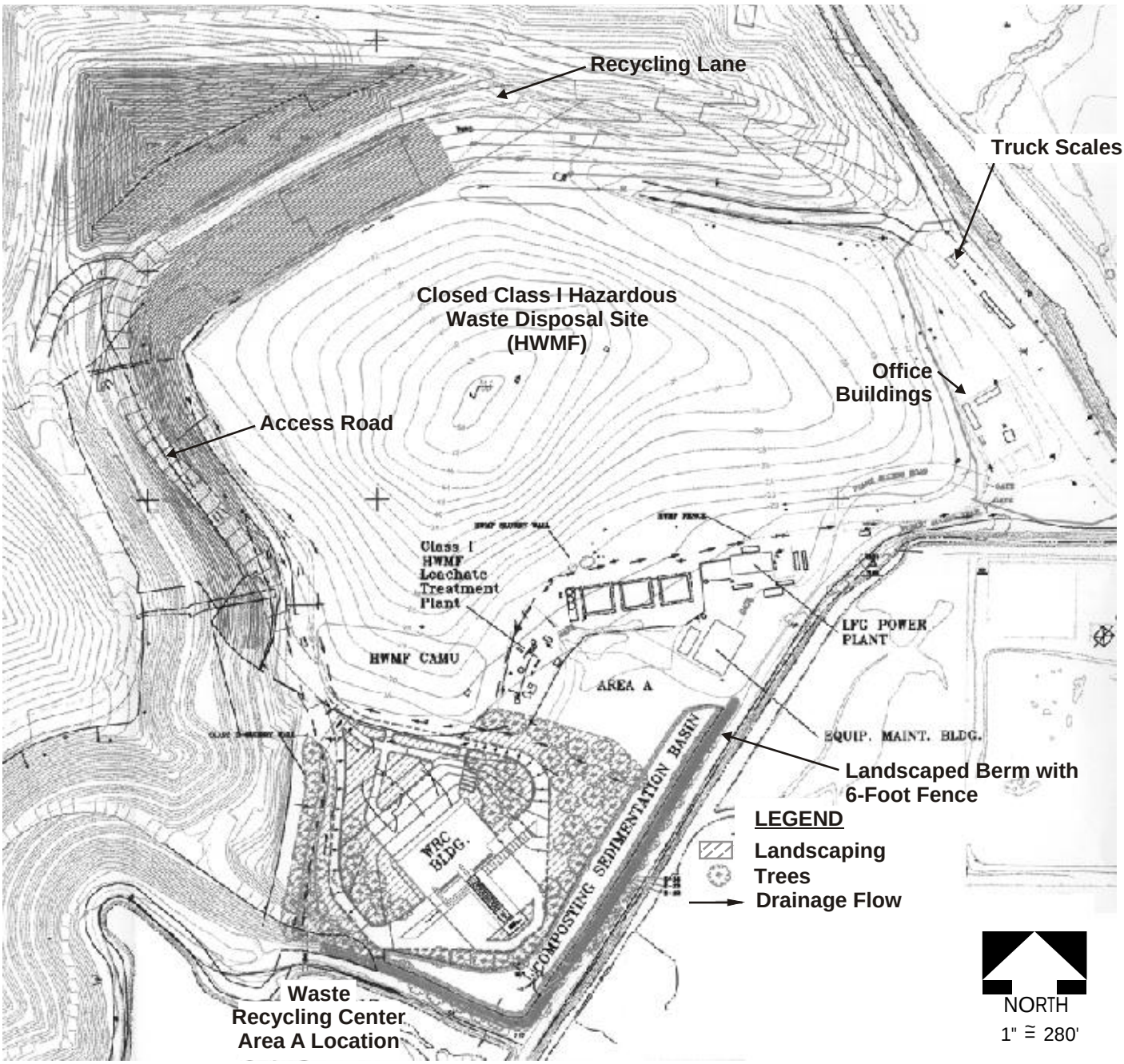
b. Aesthetics. Photomontages were prepared and presented in Chapter 7 for the proposed Project from two viewpoints. Viewpoint 1 is located on the levee that forms the southern boundary of WCCSL Area B which is part of the proposed realignment of Phase I of the Trail, and Viewpoint 2 is at the Wildcat Creek viewing platform about 3,000 feet south of the WCCSL site (Figure 7-3).

Before and after views from these viewpoints are shown on Figures 13-4 through 13-7, assuming the WRC is located in Area A. The reader should compare Figures 13-4/13-5 and 13-6/13-7 to distinguish the existing conditions from the proposed features of the WRC.

Viewpoint 1 was selected to compare and contrast relocated composting and concrete/asphalt recycling operations and the WRC at the proposed and alternative Area A location. Although quite visible to users of the Trail, the Area A location is in a depressed area of the WCCSL and not readily seen from other vantage points. An elevated berm with 6-foot fencing would be constructed along the southern and western borders of Area A to provide site security, to soften the appearance of the WRC, and buffer operations from users of the Trail (Figure 13-8). Although not shown on the photomontages, the berm would be planted with groundcover, shrubs, and compact trees to provide vegetative cover.

c. Traffic. The WRC at the Area A location would have the same 1,000 TPD7 design capacity as the WRC at the proposed location (i.e., former Soil Remediation Building). Thus, the traffic and circulation analysis included Chapter 8 for the proposed Project would also be applicable for the WRC at the Area A location. No significant on-site or off-site traffic impacts would occur.

d. Noise. The Mixed Waste Processing Area would be enclosed in the proposed WRC building and many of the same activities now occurring in an exposed area (e.g., the Waste Shuttle Facility) would cease when the WRC opens. The noise assessment for the proposed Project in Chapter 12 indicated that the vast majority of the Trail would be exposed to less than 70 decibels (dBA) as recommended in both the County and City General Plans. The WRC at the Area A location would expose Trail users to slightly higher noise levels than the background level of about 72 dBA for a few minutes as they walk past; however, the noise environment in this area is predominantly influenced by the LFG power plant, also located in Area A. The Applicant's proposed elevated landscaped berm in this location would help attenuate or reduce noise levels generated at the WRC.



Source: WCL, Inc., January 2003

Figure 13-3 Surface Drainage Plan for WRC at Area A Location

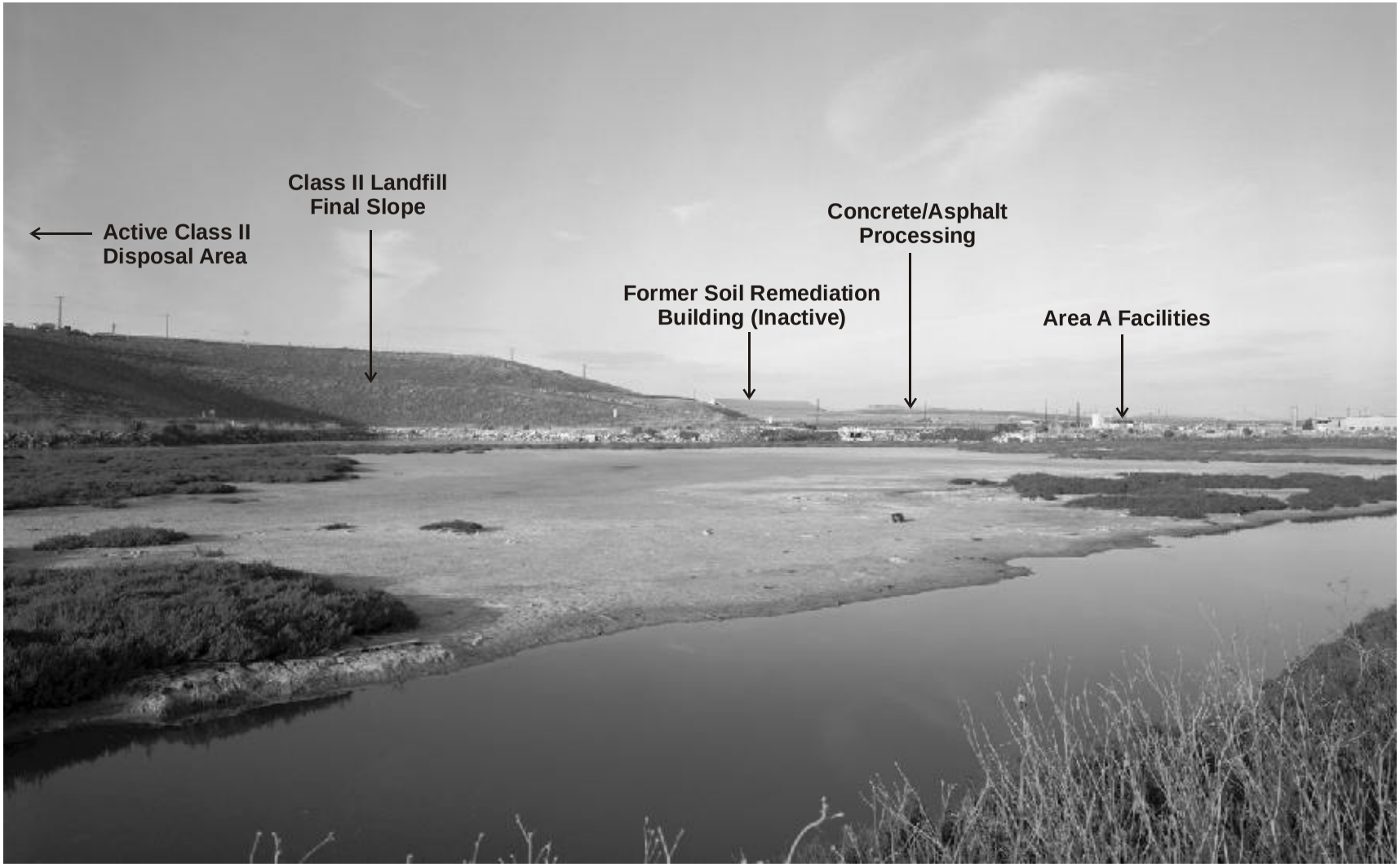


Figure 13-4 Existing Conditions from Viewpoint 1, Levee, Looking Northwest

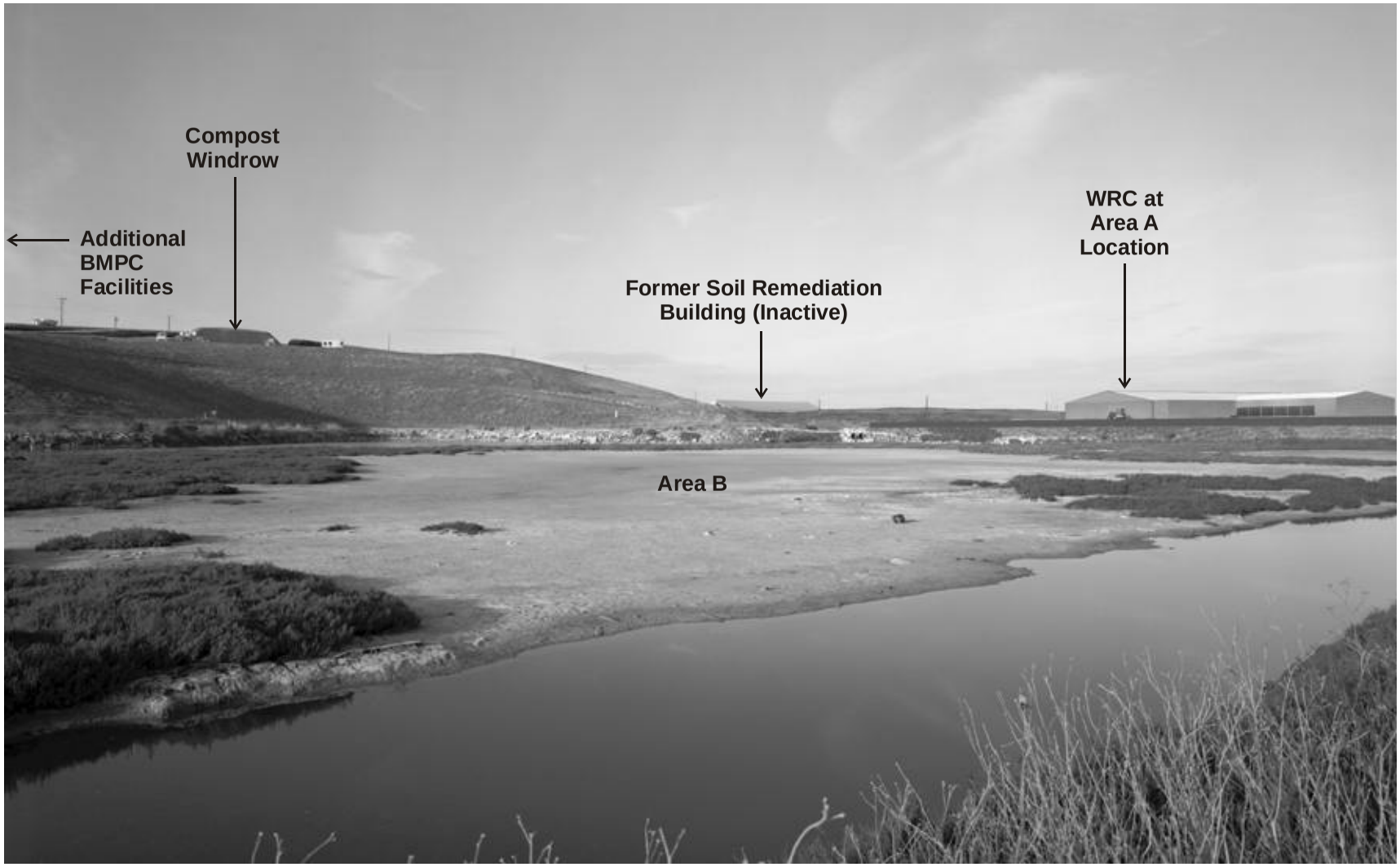


Figure 13-5 Proposed Conditions with the WRC at the Area A Location from Viewpoint 1, Levee, Looking Northwest

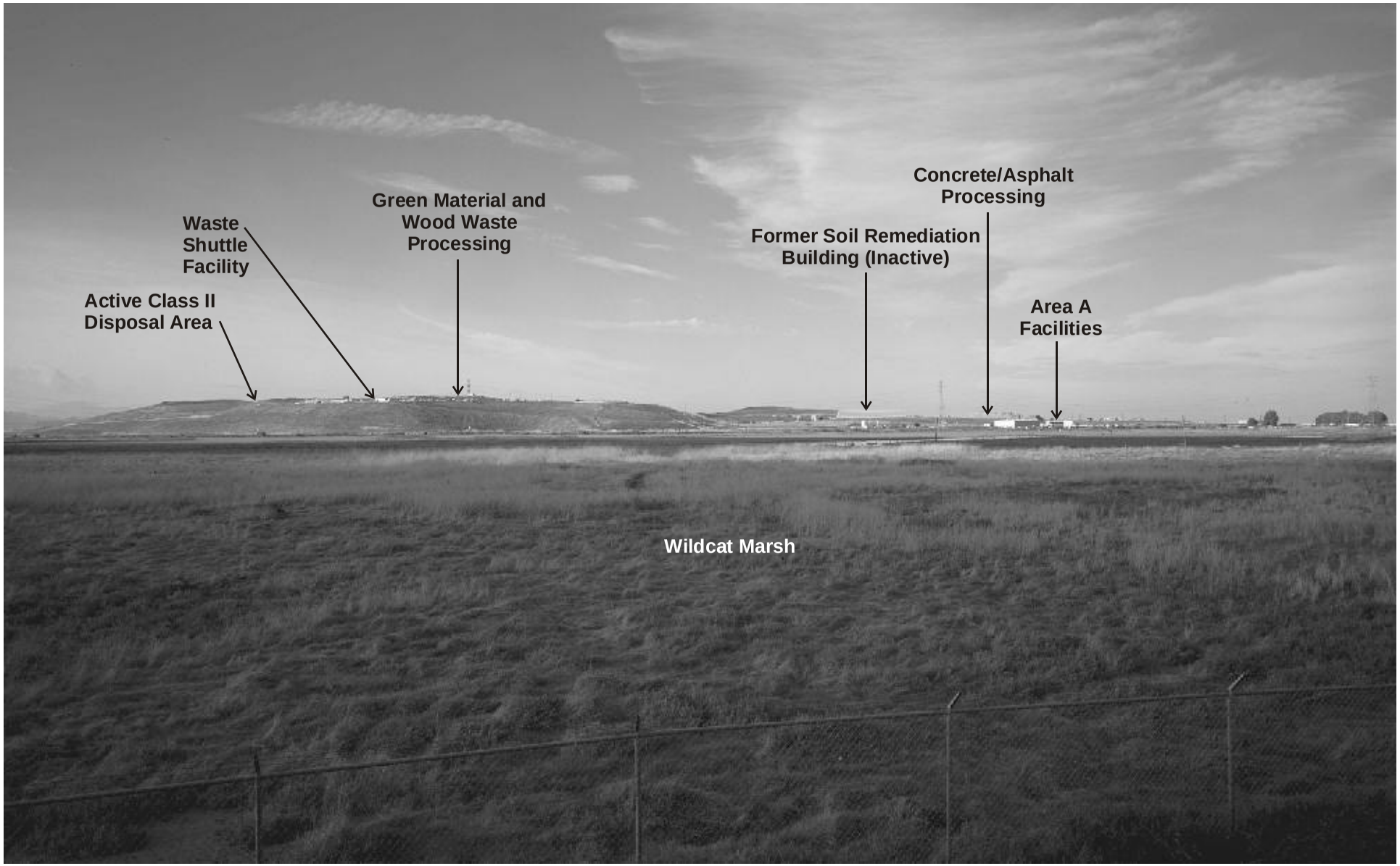


Figure 13-6 Existing Conditions from Viewpoint 2, Wildcat Creek, Looking Northwest

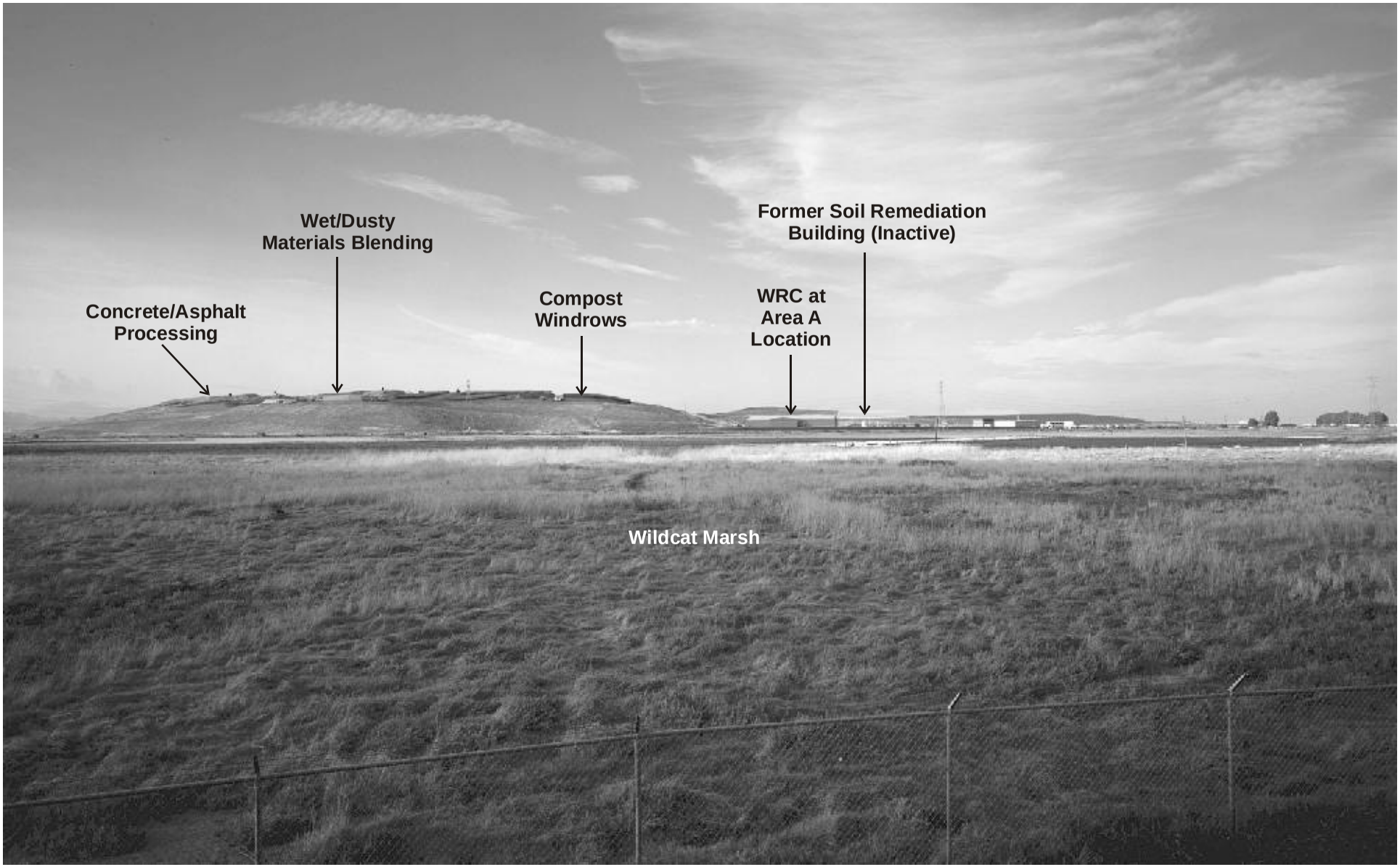


Figure 13-7 Proposed Conditions with the WRC at the Area A Location from Viewpoint 2, Wildcat Creek, Looking Northwest

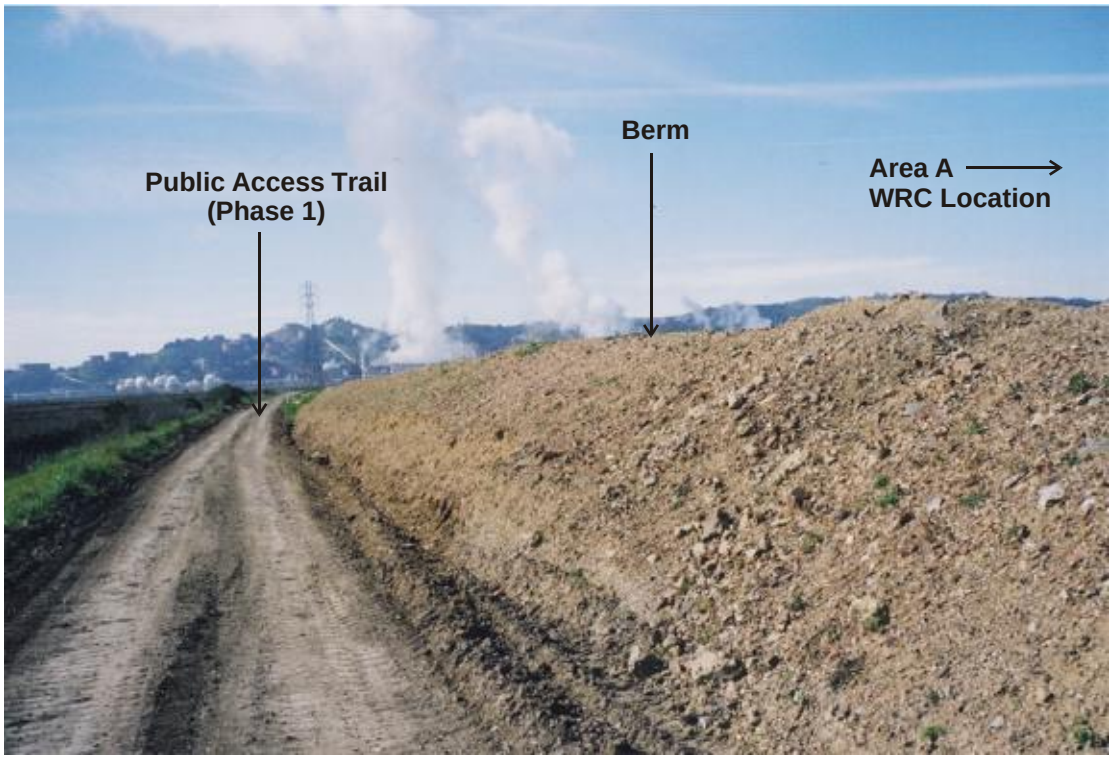


Figure 13-8 Berm Along Public Access Trail Looking Southwest. An elevated landscaped berm with 6-foot fencing would buffer Trail users and adjacent wetlands from WRC operations at the Area A Location.

e. Health and Safety. The new access road to the Area A location from Recycling Lane would conflict with and essentially preclude the use of about a 2.5-acre portion of the 22.5-acre area on the eastern landfill sideslope proposed for liquid biosolids and dredged materials application. While dried biosolids could be incorporated into the soils, liquid biosolids would produce aerosols that could impact users and workers of the nearby Area A WRC. Accordingly, if the Area A location is selected for the WRC, the Applicant would not use affected sideslope areas for liquid biosolids application; thereby potentially reducing the amount of these materials that can be processed by about 10 percent or 2.4 MG.

LFG should not be a significant issue at the Area A location. The Area A location is bounded by a slurry wall on the west that controls the Class II landfill. Because the Area A location is within 1,000 feet of the Class II landfill, LFG monitoring at the structure would be required (27 CCR §20923). The HWMF slurry wall is aligned along the south side of the HWMF, thus the Area A location would be protected along that edge. The slurry walls are from 20 to 35 feet deep and contain high moisture soil material that would serve as a barrier for LFG migration. Additionally, the HWMF is capped with a geomembrane that is gas tight. Therefore, with the limited LFG production in the HWMF, the cap, and the slurry wall, LFG migration should be prevented.

3. Comparison to Proposed Project

The alternative location at Area A has some practical advantages. Although the cost for the WRC would be greater at this location compared to adaptive reuse of the former Soil Remediation Building, there is ample space that would allow the Applicant to design a new facility unencumbered by settlement issues associated with the proposed WRC location. Use of the Area A location would also allow for removal of the former Soil Remediation Building, thus allowing that area of the WCCSL to be used for additional disposal activities. As indicated in Table 3-5 in Chapter 3, building removal would provide approximately 17 months of additional disposal capacity. If pursued, filling of this area has been evaluated in the EIR on the WCCSL Hazardous Waste Management Facility Closure and Postclosure Plans.[33] In lieu of filling this area, if the Applicant elects to do so, the former Soil Remediation Building could also be used to house the proposed wet/dusty material blending operation. Added revenues may partially offset the increased costs of removing the Soil Remediation Building, relocating the existing composting sedimentation basin, and designing and constructing a new WRC building and access road for the Area A location.

The proposed Project includes a WRC in the former Soil Remediation Building within the unincorporated County area which would be rehabilitated and expanded. The Area A location is within the City and would require access improvements. The building envelope would be different (44,400 sq. ft. for the proposed WRC and 37,500 sq. ft. for the alternative WRC at the Area A location), but the design capacities would be identical (1,000 TPD7) and operations would be the same. The environmental analysis of the proposed WRC did not reveal any significant unavoidable impacts aside from its contribution to the PM_{10} impact

(Impact 10-2), but a number of potentially significant environmental impacts were identified requiring mitigation.

Table 13-2 summarizes the potentially significant impacts associated with the proposed WRC at the former Soil Remediation Building location, and the Applicant's control measures and EIR mitigation measures. The table also compares the environmental effects of the WRC at the Area A location. Upon review of the table, it can be seen that many of the impacts associated with the WRC at the proposed location would also be associated with the WRC at the Area A location. From an environmental standpoint, the WRC could be constructed at either site without significant unavoidable impact. The one exception is increased PM_{10} emissions and exceedence of Bay Area Air Quality Management District (BAAQMD) threshold values. Use of the Area A location would have no measurable effect on this impact.

There are important differences between the two sites. The main difference is that the proposed site is located on the Class II landfill and is underlain by 15 to 20 feet of municipal solid waste. Because of the previous placement of waste, substantial differential settlement has occurred resulting in damage to the building and foundation. As discussed in Chapter 5, about 95 percent of decomposition of the refuse has occurred, but additional settlement would be expected requiring incorporation of geotechnical safeguards into WRC design and construction of building expansion. Because the WRC at this location would be on waste fill, precautions to prevent LFG migration into the facility, as well as ongoing monitoring, would be necessary. In addition, the proposed site is adjacent to the soil-attapulgite slurry wall separating the Class II landfill and the closed Class I HWMF. This requires additional studies to be completed and possible incorporation of additional control measures if new fill is placed to ensure the integrity of the wall is not compromised.

By comparison, the Area A location is not on the Class II landfill but rather on natural soil. In addition, over the years the Applicant has stockpiled large quantities of soil in this area for later use in WCCSL operations. These soils have since been removed, but their storage at the Area A location has "pre-loaded" site soils resulting in consolidation of underlying sediments and improvement of the value of the site as a buildable location. The Area A location is also not affected by issues associated with LFG migration and close proximity to the soil-attapulgite slurry wall. The WRC building is sufficiently far from the slurry wall and the additional grading for site development in minor. The Area A location also provides a location for building where site planning and design are not constrained by an existing building or other physical site constraints.

Table 13-2. Comparison of Environmental Effects of Alternative Waste Recycling Center Sites and Layouts

Proposed WRC location		Environmental effects of Area A location
Applicable EIR significant impact	Applicable mitigation (EIR) or control measure (Applicant)	
Chapter 4. Land Use, Plans, and Policies 4-4. Proposed Project components are not consistent with the County or Regional NDFE.	<u>Mitigation Measure</u> a. The County and Authority would revise their NDFEs to include the WRC at the BMPC as a transfer station (non-disposal facility) pursuant to Article 7, Chapter 9, Division 7 of Title 14 of the California Code of Regulations (EIR).	Same impact and mitigation measure.
Chapter 5. Geology Soils, and Seismicity 5-9. Slope deformation or slope failure at the proposed WRC site could impact the soil-attapulgite slurry wall.	<u>Control Measures</u> a. The inspection, monitoring, and repair plans outlined in the maintenance plan would be followed (Applicant). b. Following a significant earthquake (magnitude 6.5 or greater), the site would be inspected to evaluate the performance of the environmental control systems related to the Class I landfill. Slurry wall deformations in excess of 1 foot would require notification to the State Department of Toxic Substances Control (DTSC) and RWQCB within 14 days and repairs made pursuant to their recommendations (Applicant).	Site not located on the Class II landfill. No impact to the slope or slurry wall expected from the Area A location.

Table 13-2. Comparison of Environmental Effects of Alternative Waste Recycling Center Sites and Layouts (continued)

Proposed WRC location		Environmental effects of Area A location
Applicable EIR significant impact	Applicable mitigation (EIR) or control measure (Applicant)	
Chapter 5 (continued)	Mitigation Measure a. If new fill will be placed for renovation of the proposed WRC site, additional studies would be performed to evaluate potential settlement, slope stability, and movement of the soil-attapulgite slurry wall and recommendations would be incorporated into construction plans and specifications (EIR).	
5-10. Ground shaking during an earthquake would affect building structures and associated improvements.	Control Measure a. New buildings would be designed to meet the 1997 Uniform Building Code (UBC) Seismic Zone Factor 4 standards, and constructed in accordance with applicable building codes and regulations (Applicant). Mitigation Measure a. To ensure proper structural design, a geotechnical report would be prepared for all new buildings to be located on waste fill with recommendations included in construction plans and specifications. The geotechnical report would discuss the potential for differential ground surface settlement and the need for flexible utility connections (EIR).	Same impact and mitigation measures. A benefit of the Area A location is that it does not overlie the Class II landfill.

Table 13-2. Comparison of Environmental Effects of Alternative Waste Recycling Center Sites and Layouts (continued)

Proposed WRC location		Environmental effects of Area A location
Applicable EIR significant impact	Applicable mitigation (EIR) or control measure (Applicant)	
Chapter 5 (continued) 5-11. The construction and operation of new buildings and facilities, as well as construction of the cap itself, could cause damage to the landfill cover (cap).	Control Measures a. During construction, the subgrade would be prepared properly to create a smooth surface and proper construction and quality assurance monitoring would be conducted consistent with the requirements of the Postclosure Plan (Applicant). b. If the cover (including the GCL) is damaged during construction or post-closure activities, it would be repaired or replaced (Applicant).	Site is not located on the Class II landfill. No impact to the cover system from the WRC at the Area A location.
Chapter 6. Water Resources 6-4. The proposed Project could produce increased runoff or new sources of polluted runoff that could result in substantial erosion or siltation on or off site, or otherwise degrade surface water quality.	Control Measures a. A Notice of Intent and revised SWPPP related to proposed operations would be submitted for approval by the Executive Officer of the RWQCB; Best Management Practices (BMPs) would be implemented for control of storm water (Applicant). b. The existing Drainage, Erosion, and Sediment Control Plan would be modified pursuant to County Land Use Permit (LUP) No. 2054-92, as amended by LUP No. 2043-94, and City CUP No. 92-53. The FDIP revisions would be finalized, if amended use permits are obtained, and the Applicant would comply with permit conditions (Applicant).	Same impact and mitigation measures.

Table 13-2. Comparison of Environmental Effects of Alternative Waste Recycling Center Sites and Layouts (continued)

Proposed WRC location		Environmental effects of Area A location
Applicable EIR significant impact	Applicable mitigation (EIR) or control measure (Applicant)	
Chapter 6 (continued)	c. Modified or new SWFPs would be obtained from the LEA and CIWMB for the landfill, Composting Facility, and WRC and permit conditions would be followed (Applicant).	
Chapter 7. Aesthetics and Visual Quality 7-3. The proposed WRC/transfer station and expanded BMPC operations could introduce new sources of litter that could degrade the visual quality of the area.	<u>Control Measures</u> a. The existing Litter Control Program would be modified pursuant to County LUP No. 2054-92, as amended by LUP No. 2043-94, and City CUP No. 92-53, the FDIP revised, and if amended use permits obtained, adhered to permit conditions (Applicant). b. Revised and new SWFPs would be obtained and litter abatement requirements would be implemented (Applicant).	Same impact and mitigation measures.
Chapter 10. Air Quality and Odor 10-1. Construction of the WRC could result in dust nuisance.	<u>Mitigation Measures</u> a. All active construction areas would be watered at least twice daily and more often during windy periods (EIR). b. All trucks hauling soil, sand, and other loose materials would be covered or required to maintain 2 feet of freeboard (EIR).	Same impact and mitigation measures.

Table 13-2. Comparison of Environmental Effects of Alternative Waste Recycling Center Sites and Layouts (continued)

Proposed WRC location		Environmental effects of Area A location
Applicable EIR significant impact	Applicable mitigation (EIR) or control measure (Applicant)	
Chapter 10 (continued)	c. All unpaved access roads, parking areas and staging areas at the construction site would be paved, watered three times daily, or receive applications of non-toxic soil stabilizers (EIR). d. All paved access roads, parking areas, and staging areas at the construction site would be swept daily with water sweepers (EIR). e. Inactive constructions areas would be hydroseeded or non-toxic soil stabilizers would be applied (EIR). f. Exposed stockpiles would either be enclosed, covered, watered twice daily, or receive application of non-toxic soil stabilizers (EIR). g. Traffic speeds on unpaved roads would be limited to 15 mph (EIR).	
10-2. Increased emissions, which, with other Project sources, exceed BAAQMD PM_{10} thresholds.	<u>Control Measures</u> a. The main access road would initially be graveled, treated with chemical dust suppressants and regularly watered. After land settlement, the main access road would be paved (Applicant). b. Handling and sorting would occur within an enclosed or partially enclosed WRC structure (Applicant).	Same impact and mitigation measures.

Table 13-2. Comparison of Environmental Effects of Alternative Waste Recycling Center Sites and Layouts (continued)

Proposed WRC location		Environmental effects of Area A location
Applicable EIR significant impact	Applicable mitigation (EIR) or control measure (Applicant)	
Chapter 10 (continued)	c. Roads, unloading areas and the processing area would be paved, and sweepers or vacuums would be used to keep these surfaces clean (Applicant). d. Periodic watering would be used on internal roads as needed, and wind fences would be strategically located to control wind erosion (Applicant). e. Wastes would be pre-screened to avoid dusty materials (Applicant).	
10-6. Operation of the WRC could create objectionable odors.	<u>Control Measures</u> a. Only wastes that are consistent with 14 CCR §17863.4 and the OIMP would be accepted (Applicant). b. Loaded transfer vehicles would be covered and properly maintained to minimize odors (Applicant). c. Wastes would be processed within 48 hours of receipt to prevent significant odor buildup from waste decomposition (Applicant). d. Routine cleaning of floors, walls and equipment would be conducted (Applicant).	Same impact and mitigation measures.

Table 13-2. Comparison of Environmental Effects of Alternative Waste Recycling Center Sites and Layouts (continued)

Proposed WRC location		Environmental effects of Area A location
Applicable EIR significant impact	Applicable mitigation (EIR) or control measure (Applicant)	
Chapter 10 (continued)	e. Wastes in processing areas would be treated with odor suppressants as deemed necessary or required by the LEA or BAAQMD (Applicant). f. Odor complaints documented by the LEA or BAAQMD would be responded to within 2 working days detailing the problem and remedial action to be taken. Additional physical improvements or management practices would be implemented as necessary under the review and oversight of the LEA and BAAQMD (Applicant).	
Chapter 11. Health and Safety 11-1. Increased hazards associated with exposure to new materials and increased material processing.	<u>Control Measures</u> a. The existing WCCSL Public Health and Safety Plan required pursuant to County and City use permits, would be modified, amended permits sought, and permit conditions followed (Applicant). b. The requirements of the Richmond Fire Department, building codes, and CAL/OSHA would be incorporated into the design, construction, and operation of new facilities (Applicant).	Same impact and mitigation measures.

Table 13-2. Comparison of Environmental Effects of Alternative Waste Recycling Center Sites and Layouts (continued)

Proposed WRC location		Environmental effects of Area A location
Applicable EIR significant impact	Applicable mitigation (EIR) or control measure (Applicant)	
Chapter 11 (continued)	c. Formal training of personnel would continue to be conducted that includes the proper use of facility equipment; identification, avoidance, and reporting of conditions that could potentially compromise safety; identification and management of HHW; regular safety meetings; and annual review and refresher training to ensure continued safe operation and compliance with regulations (Applicant). d. Users of the facility would be restricted to designated areas for unloading and loading of materials through the use of temporary barriers, signage, and staff. Restricted areas or areas of potential risk would be off limits to the general public (Applicant). e. Workers would be equipped with the appropriate safety clothing. Safety equipment would be readily available for all site personnel (Applicant). f. The hazardous waste screening program in place at the WCCSL and BMPC facilities would be continued (Applicant).	

Table 13-2. Comparison of Environmental Effects of Alternative Waste Recycling Center Sites and Layouts (continued)

Proposed WRC location		Environmental effects of Area A location
Applicable EIR significant impact	Applicable mitigation (EIR) or control measure (Applicant)	
Chapter 11 (continued) 11-4. LFG contains methane, which is explosive in the 5 to 15 percent range under conditions of confined space with sufficient oxygen for combustion.	Control Measure a. The WRC building expansion would be constructed with the necessary LFG controls consistent with the requirements of the LEA and the Richmond Fire Department, and the facility would continue to be included in the LFG monitoring program (Applicant).	Site not located on the Class II landfill. The Area A location is bounded on the west by the Class II landfill slurry wall and protected from the Class I landfill by its slurry wall which serve as barriers to LFG migration. Additionally, the HWMF is capped with a geomembrane that is gas tight. Because the Area A location is within 1,000 feet of the Class II landfill, LFG monitoring at the structure would be required (27 CFR §20923).
11-5. The receipt, processing and disposal of solid waste materials has the potential to create a fire hazard with associated health and safety impacts.	Control Measures a. A Fire Protection Component for the WRC meeting requirements of the Richmond Fire District and the LEA to contain and extinguish fires originating at the facility would be developed and implemented (Applicant). b. All required permits from the Richmond Fire Department would be obtained and the Applicant would comply with permit conditions (Applicant). c. Any incoming burning wastes would be deposited in a safe area and extinguished pursuant to 27 CCR §20780 (Applicant). d. The WCCSL Emergency Response and Evacuation Plan would be implemented as necessary (Applicant).	Same impact and mitigation measures.

D. ALTERNATIVE COMPOSTING PROCESS

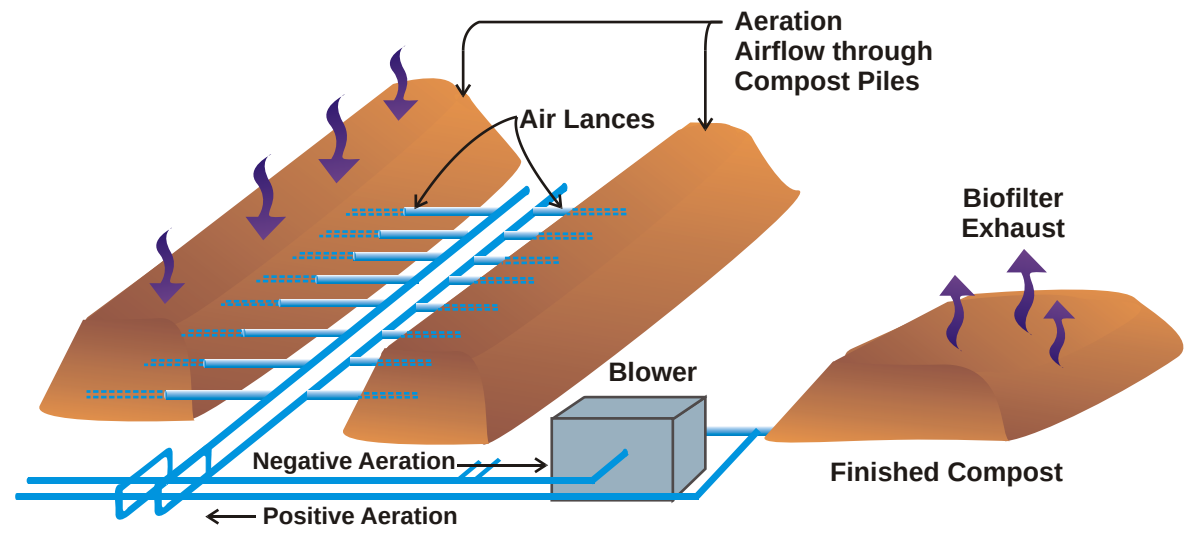
The proposed Project involves the continued use of windrow composting process for the expanded Composting Facility. Discussion in Chapter 10, Air Quality and Odor, indicates this composting process has potential for creating significant odor impacts because of the use of additional feedstock materials with a high odor potential under varied climatic conditions. EIR recommended Mitigation Measure 10-5(b) requires the Applicant to conduct a 1-year demonstration project, under the review and oversight of the Local Enforcement Agency (LEA), to ensure composting operations and controls maintain an efficient operation under various climatic conditions that controls odors, as well as nuisance pests.

The Applicant has identified aerated static pile as an alternative composting process, which is discussed and analyzed in this section. The aerated static pile composting process was developed by the composting industry to reduce land area requirements and other problems that can develop with the windrow composting process. At large scale, the Applicant believes the aerated static pile process may be more economical at the WCCSL than windrow composting. The aerated static pile process is described below, along with environmental considerations and comparison to windrow composting.

1. Description

The Composting Operations Plan Summary in Appendix 3B addresses windrow and aerated static pile composting processes. Figure 13-9 is a schematic diagram showing the layout of the aerated static pile process that may be used by the Applicant. The system is sold by Rexius Forest By-Products and is called Express Composting Systems.

a. Process. After the compost feedstock is prepared (e.g., shredded) and mixed, the materials are placed into static piles. Underlying the piles is a network of “air lances” that are connected to a plastic piping network. The piping system is connected to the suction side of a blower. Atmospheric air is drawn through the compost piles by the negative pressure and discharged from the blower to a piping system that exhausts the air through a biofilter comprised of finished compost. Pulling the air through the compost piles maintains aeration and minimizes or eliminates the need for turning. Turning is not required for aerated static pile as it is for the windrow composting process. According to 14 CCR §17867.3, for the aerated static pile process all active compost shall be covered with 6 to 12 inches of insulating material and the active compost shall be maintained at a temperature of 131 degrees Fahrenheit or higher for a pathogen reduction period of 3 days. The piping for the aerated static pile process is portable and reusable for subsequent batches of compost. When composting facility biofilters are properly designed and operated, they remove more than 90 percent of the odor compounds that pass through the system.[67]



Source: Rexius Express Composting Systems 2003

Figure 13-9 Layout of the Aerated Static Pile Composting Process

To deter vectors and nuisance pests, a blanket of up to 1 foot of finished compost is placed over the aerated static piles as they are formed. This is done on a daily basis as the piles are formed or extended. The system is designed for a minimum of 21 days of active composting, during which time the process will be continuously monitored for key process parameters, most notably temperature and moisture. The Applicant would follow 40 Code of Federal Regulations, Part 503 (40 CFR Part 503) when composting biosolids so that the end product would be designated as a Class A, Exceptional Quality product.

The aerated static pile process proposed by the Applicant is designed to make composting as quick and odor-free as possible, and to do it in a way that competes economically with mechanically-turned windrow systems. Condensate would be produced during the cooler weather when the aeration piping would be cold enough (probably January through March) to condense the moist air being drawn through the piles. The aeration piping would be sloped to drain to low points where the condensed moisture would accumulate. This condensate can be pumped and blended into the feedstock or pumped into a treatment system depending upon the needs of the operators. At the WCCSL, if necessary, it would be possible to discharge the condensate to the landfill leachate pumping system.

To handle the incoming 450 TPD (630 TPD peak) of all materials to be composted (e.g., green waste, wood waste, food waste), up to six 50-horsepower systems would be employed providing up to 21 days of active composting. These units would be run on electricity generated through combustion of LFG at the landfill power plant. Each individual system is a stand-alone unit. The system is designed for aboveground installation on an improved surface. Each 50-horsepower unit would consist of four aerated piles of approximately 725 cubic yards (270 tons) each.

After the 21-day composting process is complete, the aerated static piles would be broken down and piled into static pile windrows for up to 6 months to allow for final product stabilization and maturation. These static piles would be located adjacent to the aerated static piles. After the compost has been cured for the designated period, the compost will be screened to develop products that meet specifications for both on-site and off-site uses.

b. Development and Phasing. The Applicant does not propose to implement the aerated static pile composting process on a full-scale basis initially. The Applicant anticipates that the initial process development would begin in 2004 after required permits are obtained. During this initial development phase, the Applicant anticipates one or two piles would be used, each about 200 feet long. Experience would be gained on processing the various feedstocks under varied climatic conditions. During the spring of 2004, the aerated static pile process would run in parallel with windrow composting. By the fall of 2004, it is the Applicant's intent that the aerated static pile process would be used primarily for the wet weather season of 2004/2005. By that time, the Applicant expects the business program to have been developed for the processed materials and the tipping fee economics for the regional feedstock clients.[68]

Within several years, the Applicant anticipates the aerated static pile to be almost a complete replacement process. The windrows may continue to be used during the dry season to take advantage of additional amounts of green materials produced during the growing season. Thus, the windrows could serve to provide extra seasonal processing capacity.

The Applicant believes there to be sufficient area available for the aerated static piles to process the entire quantity proposed (see Table 3-1 in Chapter 3). The raw material or finished product stockpile amounts generally would be similar between the aerated static pile and the windrow process.

2. Environmental Considerations

Use of aerated static pile process would meet the Applicant's Project objectives. The aerated static pile composting process is a relatively high technology approach for composting the various feedstock materials proposed for the BMPC. The process was originally developed by the composting industry to reduce the land area requirements and other constraints common to the windrow process. The aerated static pile process provides for more flexible operation and more precise control of oxygen and temperature conditions in the piles than would be achieved in a windrow system. Since the time required for aerated static pile composting tends to be slightly shorter and anaerobic conditions can be more readily prevented, the potential for odor generation is reduced. Use of a layer of finished compost over the piles has many benefits, including abatement of odors that can be emitted as well as reducing the attraction to flies. The biofilter is an effective measure to remove odorous compounds that pass through the system. In addition, the aerated static pile process is less affected by weather than the windrow system, and because frequent turning of the piles is not required (possibly once every 14 to 21 days), an additional source of odors and particulate emissions is reduced. Other benefits related to the aerated static pile process are summarized in Section C3 below.

In addition to the higher initial capital cost, there can be several disadvantages of the aerated static pile process. To ensure that decomposition proceeds at high rates, temperature and oxygen levels must be closely monitored and maintained. Although better suited for relatively dry feedstock materials that have a relatively uniform particle size of less than 1.5 to 2 inches in diameter, wet materials can be used but clumping must be controlled by proper mixing of bulky materials that adjust porosity and moisture. Another disadvantage includes decreased ability to adjust moisture in the composting mass after the initial mix.[69,124]

3. Comparison to Proposed Project

The proposed Project includes use of the windrow composting process to compost a variety of feedstock materials on a year-round basis. Operations would be substantially expanded from the existing 27 TPD7 to 450 TPD7. The environmental analyses of the proposed Composting Facility expansion in this EIR did not reveal any significant unavoidable impacts

aside from its contribution to PM_{10} impact (Impact 10-2), but a number of potentially significant environmental impacts were identified related to expanded composting requiring mitigation.

Table 13-3 summarizes the potentially significant impacts associated with windrow composting and the Applicant's control measures and EIR recommended mitigation measures. The table also compares the environmental effects of the alternative aerated static pile composting process. Upon review of the table, it can be seen that many of the impacts associated with the windrow composting would also be associated with aerated static pile composting, requiring the same mitigation measures. However, there are important differences, identified in Table 13-3.

The aerated static pile process provides for more efficient operation compared to windrows and is less affected by weather. As discussed above, it provides for more precise control of oxygen and temperature conditions in the pile than would be obtained in a windrow system. Since the time required for composting is shorter with aerated static pile and anaerobic conditions can be more readily prevented, the risk of nuisance odor generation can be reduced. The use of an insulating cover layer of finished compost over the piles and use of a biofilter, as proposed, would provide for effective odor control. The insulating layer of finished compost also serves to discourage flies and other nuisance pests and, because frequent turning of the piles is not necessary, odors and particulate emissions would be reduced.

For windrow composting, a 1-year demonstration project was recommended in Mitigation Measure 10-5(b) to assess the performance of that process with proposed feedstock materials under varied climatic conditions. For aerated static pile, such a demonstration project is not considered necessary. The Applicant has, in fact, proposed to transition this process into BMPC operations by beginning with a limited operation during the winter of 2003 and gradually expanded to a point where it would be the primary composting process. During this initial development phase, experience would be gained on processing the various feedstocks and the effects of differing weather conditions. Within several years, aerated static pile would be almost a complete replacement process with windrows used during the dry season to provide seasonal processing capacity.

E. PREFERRED ENVIRONMENTAL ALTERNATIVE

The Preferred Environmental Alternative (PEA) results from environmental analysis of the proposed Project included in Chapters 4 through 12 and the evaluation of alternatives in this chapter. With the exception of PM_{10} emissions, the proposed Project and this alternative mitigates the significant adverse impacts associated with the proposed Project; however, this alternative mitigates certain impacts to a greater degree. The main components of the PEA are summarized in Table 13-4.

Table 13-3. Comparison of Environmental Effects of Windrow and Aerated Static Pile

Windrow composting		Environmental effects of aerated static pile composting
Applicable EIR significant impact	Applicable mitigation (EIR) or control measure (Applicant)	
Chapter 6. Water Resources		
6-4. Increased runoff or new sources of polluted runoff and degradation of surface water quality.	Control Measures a. A Notice of Intent and revised SWPPP related to proposed operations would be submitted for approval by the Executive Officer of the RWQCB; Best Management Practices (BMPs) would be implemented for control of storm water (Applicant). b. The existing Drainage, Erosion, and Sediment Control Plan would be modified pursuant to County Land Use Permit (LUP) No. 2054-92, as amended by LUP No. 2043-94, and City CUP No. 92-53. The FDIP revisions would be finalized, if amended use permits are obtained, and the Applicant would comply with permit conditions (Applicant). c. Modified or new SWFPs would be obtained from the LEA and CIWMB for the landfill, Composting Facility, and WRC and permit conditions would be followed (Applicant). d. BMPs at the Composting Facility would be employed that would optimize applied water to the windrows while minimizing the generation of leachate (Applicant).	Same impact and mitigation measures. A benefit of aerated static pile is that less water is required for maintenance of the piles resulting in a lower potential for surface runoff.

Table 13-3. Comparison of Environmental Effects of Windrow and Aerated Static Pile (continued)

Windrow composting		Environmental effects of aerated static pile composting
Applicable EIR significant impact	Applicable mitigation (EIR) or control measure (Applicant)	
Chapter 10. Air Quality and Odor		
10-2. Increased emissions, which, with other Project sources, exceed BAAQMD PM_{10} thresholds.	Control Measures a. Green material and wood shredding/screening equipment would be equipped with water sprays (Applicant). b. Green waste, wood waste, and composting materials would be watered as unloaded (Applicant). c. Green waste, wood waste, and composting materials would be pre-screened to avoid dusty materials (Applicant). d. Windrows and intervening pathways would be watered prior to turning of windrow (Applicant). e. Internal roads in the Organic Materials Processing Area would be watered at least twice daily, more often when windy (Applicant). f. Finished stabilized compost would be screened and loaded during low wind speed conditions (less than 20 mph); handling of compost would be suspended if the wind speed increases (above 20 mph) (Applicant). g. Berms would be used in the Organic Materials Processing Area to provide an upwind barrier to reduce wind effects (Applicant).	Same impact and mitigation measures. A benefit of aerated static pile is that PM_{10} emissions associated with the windrows would be reduced because little, if any, turning of the piles is required. However, the significant unavoidable PM_{10} impact would remain. Diesel exhaust emission would be reduced slightly as regular turning of the windrows by diesel equipment would not be necessary

Table 13-3. Comparison of Environmental Effects of Windrow and Aerated Static Pile (continued)

Windrow composting		Environmental effects of aerated static pile composting
Applicable EIR significant impact	Applicable mitigation (EIR) or control measure (Applicant)	
Chapter 10 (continued)	h. Wind fences would be strategically located in the Organic Materials Processing Area to control wind erosion (Applicant). <u>Mitigation Measure</u> a. The Applicant would, at the earliest practical date, prepare applications to the BAAQMD for new sources proposed to be located at the site, obtain required BAAQMD permits, and comply with all permit conditions (EIR).	
10-5. The Organic Materials Processing Area and expansion of the Composting Facility could create objectionable odors.	<u>Control Measures</u> a. The Applicant would work with the LEA to assure facility compliance with the Odor Impact Minimization Plan (Applicant). b. Food processing materials would be rapidly incorporated (within hours) with other compostible materials, shredded materials, or compost (Applicant). c. The windrows would be turned an average of twice per week to maintain aerobic conditions (Applicant). d. A monitoring program would be implemented to track the composting process and implement operational adjustments as necessary (Applicant). e. The operations area would be regarded as needed to ensure drainage and prevent ponding of compost leachate (Applicant).	Aerated static pile would substantially reduce the nuisance odor potential compared to windrow composting. Issues associated with receipt and initial processing of feedstocks remain. For aerated static pile, frequent pile turning is not required and conduct of a 1-year demonstration project is not considered necessary.

Table 13-3. Comparison of Environmental Effects of Windrow and Aerated Static Pile (continued)

Windrow composting		Environmental effects of aerated static pile composting
Applicable EIR significant impact	Applicable mitigation (EIR) or control measure (Applicant)	
Chapter 10 (continued)	<u>Mitigation Measures</u> a. The turning of the windrows would be limited when the wind is blowing inland toward potential receptors. Turning and screening operations would be curtailed when wind speeds exceed 20 miles per hour (mph) toward developed areas (EIR). b. A 1-year composting demonstration project would be conducted under the review and oversight of the LEA and BAAQMD. The demonstration project would focus on all feedstock materials with a high nuisance odor potential and would identify composting operations and controls necessary to ensure an efficient operation that would control odors under various climatic conditions. Based on the results of the demonstration project, the LEA and BAAQMD would specify the conditions these feedstock materials could be used at the Composting Facility as part of the Composting Facility permitting process. The demonstration project shall include, but not be limited to, the following items: ▪ The scale of the demonstration project needs to duplicate the pile size and operational factors of the planned facility, so that valid data are collected at full-size operation. ▪ The span of feedstock combinations needs to encompass the range of expected future options, concentrating on worst-case combinations from processing, operations, and odor standpoints.	

Table 13-3. Comparison of Environmental Effects of Windrow and Aerated Static Pile (continued)

Windrow composting		Environmental effects of aerated static pile composting
Applicable EIR significant impact	Applicable mitigation (EIR) or control measure (Applicant)	
Chapter 10 (continued)	▪ Monitoring during the demonstration period needs to include standard compost processing monitoring parameters as well as odor emission data during different operating and climate/wind conditions. Odor data should include emissions of critical constituents such as reduced sulfur compounds and reduced nitrogen compounds, as well as total odor emission data collected via odor panel and with flux chamber protocols. Downwind odor data should be collected concurrent with pile or source emission data to correlate the impacts. ▪ Odor impacts from demonstration scale will need to be extrapolated for the full-scale system through odor modeling or similar approach that achieves valid predictions of odor from the large proposed system. ▪ Odor data should be identified for any compost leachate liquid or storm water runoff liquid coming from the demonstration piles/area (EIR).	

Table 13-3. Comparison of Environmental Effects of Windrow and Aerated Static Pile (continued)

Windrow composting		Environmental effects of aerated static pile composting
Applicable EIR significant impact	Applicable mitigation (EIR) or control measure (Applicant)	
Chapter 11. Health and Safety		
11-1. Increased hazards associated with exposure to new materials and increased material processing.	Control Measures a. The existing WCCSL Public Health and Safety Plan required pursuant to County and City use permits would be modified, amended permits sought, and permit conditions followed (Applicant). b. The requirements of the RFD, building codes, and CAL/OSHA would be incorporated into the design, construction and operation of new facilities (Applicant). c. Formal training of personnel would continue to be conducted that includes the proper use of facility equipment; identification, avoidance and reporting of conditions that could potentially compromise safety; identification and management of HHW; regular safety meetings; and annual review and refresher training to ensure continued safe operation and compliance with regulations (Applicant). d. Users of the facility would be restricted to designated areas for unloading and loading of materials through the use of temporary barriers, signage, and staff. Restricted areas or areas of potential risk would be off limits to the general public (Applicant). e. Workers would be equipped with the appropriate safety clothing. Safety equipment would be readily available for all site personnel (Applicant).	Same impact and mitigation measures.

Table 13-3. Comparison of Environmental Effects of Windrow and Aerated Static Pile (continued)

Windrow composting		Environmental effects of aerated static pile composting
Applicable EIR significant impact	Applicable mitigation (EIR) or control measure (Applicant)	
Chapter 11 (continued)	f. The hazardous waste screening program in place at the WCCSL and BMPC facilities would be continued (Applicant).	
11-5. The receipt, processing and disposal of solid waste materials has the potential to create a fire hazard with associated health and safety impacts.	Control Measures a. The existing Fire Protection Component for the Composting Facility would be revised as necessary under the review and oversight of the local fire districts and the LEA (Applicant). b. All required permits from the Richmond Fire Department would be obtained and the Applicant would comply with permit conditions (Applicant). c. Necessary measures at the landfill would be taken for prompt fire control at the landfill, including use of heavy equipment, stockpiled soil, and water suppression (Applicant). d. Any incoming burning wastes would be deposited in a safe area and extinguished pursuant to 27 CCR §20780 (Applicant). e. The WCCSL Emergency Response and Evacuation Plan would be implemented as necessary (Applicant).	Same impact and mitigation measures. A benefit of aerated static pile is that more precise control of oxygen, moisture and temperature conditions can be achieved, thus reducing the fire risk associated with windrow composting.
11-6. The generation of bioaerosols and endotoxins during the composting process can create health and safety issues for employees and users of the facility.	Control Measures a. Water would be applied at least twice daily, more often when windy, on internal roads for dust control purposes (Applicant).	Same impact and mitigation measures. Because aerated static pile requires little, if any, turning and the piles would be covered with a layer of finished compost, the piles would be a reduced source of bioaerosols and endotoxins compared to windrows.

Table 13-3. Comparison of Environmental Effects of Windrow and Aerated Static Pile (continued)

Windrow composting		Environmental effects of aerated static pile composting
Applicable EIR significant impact	Applicable mitigation (EIR) or control measure (Applicant)	
Chapter 11 (continued	b. Green waste, wood waste, and composting materials would be watered as unloaded (Applicant). c. Green waste, wood waste, and composting materials would be pre-screened to avoid dusty materials (Applicant). d. Water spray would be applied during the shredding process to wet the material being shredded (Applicant). e. Water would be applied on the compost windrows and pathways prior to aeration (turning) (Applicant). f. Finished stabilized compost would be screened and loaded during low wind speed conditions (less than 20 mph); handling of compost would be suspended if wind speed increases above 20 mph (Applicant). g. Heavy equipment would have enclosed cabs for operators and other employees would be required to use dust masks (Applicant). h. Wind fences and berms would be strategically located in the Organics Materials Processing Area to reduce wind effects and control wind erosion (Applicant).	

Table 13-3. Comparison of Environmental Effects of Windrow and Aerated Static Pile (continued)

Windrow composting		Environmental effects of aerated static pile composting
Applicable EIR significant impact	Applicable mitigation (EIR) or control measure (Applicant)	
Chapter 11 (continued) 11-8. Elevated levels of organic chemicals in biosolids which can make compost harmful.	Control Measure a. Prior to accepting biosolids from WCWD or other sources, or dredged materials, the Applicant would enforce WCCSL's Waste Acceptance Guidelines and require the project sponsor to provide sufficient chemical characterization data that would enable the Applicant to demonstrate to the RWQCB that the material is non-hazardous pursuant to 40 CFR Part 261 and 22 CCR, Division 4.5, Chapter 11, Article 3 (Applicant)..	Same impact and mitigation measure.
11-10. Elevated pathogen and pollutant levels in finished compost.	Control Measure a. The Applicant would comply with Federal and State regulatory standards for compost operation, pollutant concentrations, pathogen reduction, monitoring, record keeping, and reporting (Applicant).	Same impact and mitigation measures. A benefit of aerated static pile is that a more uniform temperature can be achieved in the piles, resulting in increased efficiency and shorter composting period.
11-11. Facilitate spread of the plant pathogen, *Phytophthora ramorom*, the causative agent of Sudden Oak Death.	Control Measure a. The Applicant would comply with new revised Federal rule and revised California rule regarding composting and control of *Phytophthora ramorum*, expected some time in 2003. If finished compost or mulch are transported out of the quarantined area, a compliance agreement would be executed with the County Agricultural Commissioner at the required time and specified conditions therein would be followed (Applicant).	Same impact and mitigation measure.

Table 13-4. Summary of the PEA

PEA component	Main characteristics
Use permit change	
Expanded Facility Operating Hours	• Extend equipment maintenance hours from 7:00 a.m. to 6:00 p.m. Monday through Saturday to 5:00 a.m. and 10:00 p.m.
	• Extend hours for transporting of BMPC materials from 7:00 a.m. to 5:00 p.m., 7 days per week to 24 hours per day.
	• Extend hours for operation of concrete/asphalt processing equipment from 7:00 a.m. to 5:00 p.m. Monday through Saturday to 5:00 a.m. to midnight.
	• Extend hours for chipping and grinding of wood from 7:00 a.m. to 5:00 p.m., 7 days per week to 5:00 a.m. to midnight.
	• Allow WRC operation to be 24 hours per day, 7 days per week.
Expanded Composting	• Aerated static pile as primary composting process within several years with windrows providing seasonal processing capacity.
	• Expand the types and volume of materials composted.
	• 164,300 tons of compostables processed annually.
Expanded Concrete/Asphalt Processing	• Relocate to landfill central plateau.
	• 528,000 tons of concrete and asphalt processed annually.
New WRC	• Area A location and layout.
	• 365,000 tons of mixed waste processed annually.
New Wet/Dusty Material Blending	• 51,100 tons of dry waste processed annually.
Expanded Wood Recovery	• 131,400 tons of wood waste processed annually.
New Soil Reclamation and Biosolids/ Dredged Materials Spreading	• 195,000 tons of soil, dredged materials, and biosolids processed annually.
Related Actions	
Class II landfill height increase	• Increase landfill height to 160 feet msl (top of waste) with improved drainage management.
Pubic Access Trail Alignment	• Phase 1, 2, and 3 alignments only. Eliminate Phase 4.
Mitigation Measures	• See Table 2-1 in Chapter 2.

1. Proposed Project

The proposed Project as modified by alternatives described below in Sections E2, E3, and E4 comprises the PEA. The primary sources of information for the Project include the Applicant's Report of Disposal Site Information,[1] the BMPC Final Development and Improvements Plan,[3] the Transfer/Processing Station Report,[43] the Report of Composting Site Information,[4] and the BMPC Land Use Permit Application.[28] Chapter 3 provides a description of the Project based on these information sources.

2. Aerated Static Pile

The proposed Project includes use of windrow composting for the expanded Composting Facility. Aerated static pile has been identified as an alternative composting process that is discussed in detail in Section C. The aerated static pile process would be a more suitable process for the types of feedstock materials proposed by the Applicant to be composted at the WCCSL. It is a composting process that provides for more efficient operation, is less affected by weather, and it provides for more precise control of oxygen, moisture and temperature in a pile than would be obtained in a windrow system. The risk of nuisance odor generation would be reduced because anaerobic conditions can be more readily prevented, an insulating cover layer of finished compost would be placed over the piles, and the use of a biofilter for treatment of exhaust drawn through the piles.

For windrow composting, this EIR recommended Mitigation Measure 10-5(b) requiring a 1-year demonstration project to assess the performance of that process with proposed feedstock materials under varied climatic conditions. Such a demonstration project is not considered necessary for the aerated static pile process. The Applicant proposes to transition this process into BMPC operations, beginning during the winter of 2003/2004 and gradually increasing to a point where it would be the primary composting process. Experience would be gained on processing the various feedstocks and the effects of differing weather conditions. Ultimately, aerated static pile composting would almost completely replace the windrow composting process. Windrows would then be used during the dry season to provide extra seasonal processing capacity when green material production is greatest. Thus, the PEA includes the use of the aerated static pile process as the primary composting process. Windrow composting would be limited to providing additional seasonal processing capacity for green materials. Use of feedstock materials other than currently permitted green materials would be subject to the approval of a revised Composting Facility Permit from the LEA and the California Integrated Waste Management Board.

3. Alternative WRC Site

Based on the analysis in this EIR, the proposed WRC could be constructed at either the proposed site at the former Soil Remediation Building, or at the Area A location (this alternative

is discussed in Section B). At either site, Applicant's control measures included in the Project and mitigation measures recommended by this EIR together reduce impacts to less-than-significant levels. The decision on which site to be used for the WRC can also be based in part, on non-environmental criteria such as cost.

For purposes of this EIR, the Area A location, with associated WRC development plan, is included in the PEA. The Area A location is not located on the Class II landfill and is not, therefore, subject to the same constraints associated with rehabilitation of an existing building, differential settlement, possible LFG migration, and proximity to the soil-attapulgite slurry wall that separates the Class II landfill and the closed Class I HWMF. Use of the Area A location permits the design of a new building where operational efficiency can be maximized without the presence of physical or site constraints. Soils at the Area A location have been "pre-loaded" from past soil stockpiling activities, thus further improving the engineering properties of the site. Finally, use of the Area A location allows the former Soil Remediation Building to be removed and the resulting area used for additional disposal. Building removal would allow for approximately 17 months of additional disposal capacity for the Class II landfill if the Applicant elects to do so (Applicant also proposes to use this building for wet/dusty material blending prior to converting into the WRC). Added revenues may partially offset the increased costs of removing the Soil Remediation Building, relocating the Composting Sedimentation Basin, designing and constructing a new WRC building, and constructing the WRC at the Area A location.

4. Public Access Trail

A key recommended mitigation measure in Chapter 9, Biological Resources, is the elimination of the Phase 4 alignment of the Trail. The Phase 4 alignment would loop around WCCSL Area C. Because the levee around Area C has been breached to allow for tidal action, two pedestrian bridges would need to be constructed. Chapter 9 recommended Mitigation Measure 9-4(a) to eliminate Phase 4 because the levee provides important resting, roosting, and nesting habitat for birds. Human access associated with the Phase 4 alignment would greatly diminish and possibly eliminate the use of this area by many species. Thus, the PEA includes Phases 1, 2, and 3 of the Trail as described in Chapter 3.

5. Mitigation Measures

Recommended mitigation measures are discussed in Chapters 4 through 12 of this EIR and summarized in Chapter 2, Table 2-1. The measures are an important feature of the PEA because they mitigate with one exception, the significant adverse environmental impacts associated with the proposed Project. The PEA would have lower PM_{10} emissions than the proposed Project because of the reliance on the aerated static pile composting process in lieu of windrow composting. A significant unavoidable PM_{10} impact (Impact 10-2), however, would remain. The PEA would also be subject to the BAAQMD's New Source Review process

discussed in Mitigation Measure 10-2(a). During the BAAQMD permitting process, the PEA would be evaluated for application of Best Available Control Technology and emission offsets for reducing PM_{10} emissions to acceptable levels. In summary, the mitigation measures recommended in this EIR can be broadly categorized as new or supplementary additions in the following areas:

- Improvements in design, construction, and operation.
- Improvements in environmental control and monitoring systems.
- Refinement of design, operation, and environmental criteria based on demonstration activities or projects under regulatory agency overview.
- Further technical analysis under regulatory agency overview with incorporation of results into construction plans and specifications and into post-closure monitoring, maintenance and repair plans.

These mitigation measures should be made conditions of approval in the County and City use permits as applicable.

CHAPTER 14

OTHER STATUTORY SECTIONS

The California Environmental Quality Act (CEQA) requires an Environmental Impact Report (EIR) to include discussions of specific impact categories. These include cumulative impacts (§15130), unavoidable impacts (§15126.2 [b]), and growth-inducing impacts (§15126.2 [d]. A discussion of irreversible environmental changes is not required for this EIR (§15127). This discussion is based on the analysis of the proposed Bulk Materials Processing Center (BMPC) use permit amendment changes and related actions (Project) in the previous chapters of this EIR.

A. SUMMARY OF CUMULATIVE IMPACTS

Individual chapters of this EIR have included discussions of cumulative impacts. Many impact areas were addressed and most do not have the potential for cumulative impacts. For purposes of this section, the following cumulative impact areas are summarized:

- **Traffic**. Traffic forecasts for the Richmond Parkway by Contra Costa County (County) and the Contra Costs Transportation Authority (CCTA) predict about a 40 percent increase in the through-traffic volumes (an average daily trips [ADT] of 28,000 vehicles per day increasing to an ADT of 39,000 vehicles per day) on the Richmond Parkway between I-80 and I-580 by 2015, without the Project. At the Richmond Parkway/Parr Boulevard intersection; the Level of Service (LOS) will decrease from "A" currently to "C" in 2015, but the overall roadway capacity conditions will be well within CCTA standards. The proposed Project would not cause cumulative traffic conditions to degrade to unacceptable levels. Cumulative impacts would not be significant.

  For purposes of the cumulative analysis in this EIR, a scenario is analyzed in which the Central Integrated Resource Recovery Facility (Central IRRF) and proposed Waste Recycling Center (WRC) would operate jointly at their full design capacities. Operation of the Central IRRF at full capacity could result in changes or increases in the number of turning movements on the Richmond Parkway at Parr Boulevard and at Pittsburg Avenue, but these impacts would not be significant. The Central IRRF and proposed Project would amount to about 3.8 percent of the total daily traffic in 2015 at the Richmond Parkway near I-80. Such an increase would most likely not affect the overall operation of the Richmond Parkway, but further congestion of the ramps at I-80 would be expected during the commuter peak hours. Managing the Central IRRF and

proposed Project-related traffic to avoid the commuter peak hours would mitigate this impact.

- **Biological Resources**. The Public Access Trail (Trail) would increase human activity along the shoreline of San Pablo Bay and, potentially, could contribute to increased disruption to wildlife in the area. However, research conducted on the effects of public access on wildlife use along segments of the San Francisco Bay Trail Project suggests no correlation between trail use and bird abundance or changes in species diversity.[98] With Applicant-proposed control measures and recommended mitigation measures, the proposed Project would not contribute to any significant adverse cumulative impacts on sensitive biological and wetland resources.

- **Air Quality.** Combined on-site and off-site emissions of particulates (PM_{10}) would exceed the Bay Area Air Quality Management District (BAAQMD) significance threshold of 80 pounds per day (with controls). Thus, for purposes of this EIR, the proposed Project would have a significant and unavoidable cumulative impact for PM_{10}. The Project, however, is subject to BAAQMD's New Source Review process. During this permitting process, the Project would be evaluated for application of Best Available Control Technology (BACT) and emission offsets for reducing PM_{10} emissions to acceptable levels.

  A health risk assessment was prepared to estimate diesel exhaust risk at two residential areas adjacent to Richmond Parkway where additional diesel truck traffic from the Project and cumulative traffic increases in 2015 would pass near existing homes. These locations represent the worst-case exposure to new diesel particulates from Project and cumulative traffic increases. The maximum calculated cancer risks are well below the BAAQMD significance threshold. The maximum calculated cancer risks from the proposed Project and the Central IRRF operating at full design capacity are also below the BAAQMD significance threshold.

- **Odor.** Areas of particular concern associated with the proposed Project and nuisance odor generation include an expanded Composting Facility using open windows, additional and new feedstock materials, and the application of liquid anaerobically digested wastewater sludge (biosolids) to the closed southern and eastern sideslopes of the Class II landfill. Individually, and particularly on a cumulative basis, significant odor nuisance impacts could occur. The Preferred Environmental Alternative includes use of aerated static pile as the primary composting process which should substantially lessen the nuisance odor potential associated with composting. The Applicant would also need to demonstrate to the Local Enforcement Agency (LEA) and the BAAQMD that biosolids application can occur without creating nuisance odor conditions. As a result, cumulative odor impacts would be reduced to less-than-significant levels.

B. UNAVOIDABLE IMPACTS

Based on the analysis in Chapter 10, Air Quality and Odor, exceedances of the BAAQMD threshold of 80 pounds per day PM_{10} represents a significant unavoidable adverse impact. Evaluation of BACT and emission offsets for the proposed Project will occur during the BAAQMD New Source Review process.

C. GROWTH INDUCEMENT

CEQA requires that an EIR discuss the ways in which a project could foster either economic or population growth or the construction of additional housing, either directly or indirectly, in the surrounding environment. Included in this definition are public works projects which would remove obstacles to population growth.

The proposed Project is mostly activity related and does not involve construction of major new facilities that would stimulate the Bay Area's economy. The proposed Waste Recycling Center (WRC) and relocated equipment maintenance building would be the main new facilities. Construction of these facilities would occur over a relatively short period. The number of new construction jobs would be negligible compared to the County's total employment. The demand for skilled labor would likely be met from the existing labor pool. Expanded resource recovery and recycling operations would be expected to create new jobs. In addition, adding recyclables to various markets (instead of disposal in landfills) would have a positive, but unquantifiable economic impact.

The proposed Project consists of BMPC use permit amendment changes and related actions. The BMPC changes provide for substantially increased resource recovery operations at the West Contra Costa Sanitary Landfill. The related actions include a vertical height increase at the Class II landfill for improved drainage management, and the Trail. The landfill height increase from 130 feet above mean sea level (msl) to 160 feet msl, assuming the WRC is constructed at the former Soil Remediation Building location, would also provide approximately 17 months of additional disposal capacity with landfill closure in about April 2005.

Provisions of additional resource recovery and disposal capacity could be viewed as growth inducing, since a possible constraint for future growth would be removed to some degree. However, such activities are not now a constraint to growth, nor are they expected to become so in the future. In their General Plan Growth Management Elements, both the County and City of Richmond identified the following public services as controlling factors for growth for which performance standards have been established: traffic circulation, water, sanitary sewer, fire protection, public protection, parks and recreation, and flood control and drainage. Other public services, such as related to solid waste, are addressed by General Plan policies rather than performance standards. The proposed Project, as detailed in this EIR, is consistent with both the

County and City General Plans. Increased resource recovery, recycling, and provision of a local facility for the public to drop off waste is encouraged in the General Plans and required by the California Integrated Waste Management Act (also known as AB 939).

APPENDIX 1A

REFERENCES

REFERENCE LIST

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APPENDIX 1B

TERMS AND DEFINITIONS

TERMS AND DEFINITIONS

The WCCSL Bulk Materials Processing Center project changes involve revisions to the existing City and County use permits. The current state/LEA issued Composting Permit needs to be replaced with a more full-materials composting permit. The Waste Recycling Center will require a new Solid Waste Facilities Permit from the LEA and California Integrated Waste Management Board.

During the permit update process it will be useful to center on certain definitions of the various activities or process products since the existing permits use terms that need better description. Terms and definitions for each Bulk Materials Processing Center are listed below. Following those listings is a general category of other terms and definitions.

Composting Facility

This expanded facility is proposed to handle a series of different waste feedstock types. The following are definitions and descriptions for this facility.

- Compostibles or Compost Feedstock: means any decomposable organic material used in the production of compost or chipped and ground material including, but not limited to, clean green material, green material, animal material, sewage sludge, and mixed solid waste. Feedstocks shall not be considered as either additives or amendments.

- Green Material: means any plant material that is either separated at the point of generation, or separated at a centralized facility than employs methods to minimize contamination. Green material includes, but is not limited to, yard trimmings, plant wastes from the food processing industry, manure, untreated wood wastes, paper products, and natural fiber products. Green material does not include treated wood waste, mixed demolition or mixed construction debris.

- Food Wastes or Plant Wastes: from the food processing industry including the vegetative and food materials from the fresh food packing and marketing industry, food canning and freezing industry, food marketing industry (wholesale warehouses, produce markets), and residential food wastes.

- Mixed Wastes: paper, cardboard, wood, excluding wood products that may contain pentachlorophenol, arsenical, or creosote type preservatives and wood painted with lead based paint, (no unsorted garbage and trash will be processed).

- Composting Facility Area or Operations Area: The total area encompassed in the facility boundary used for compostibles receiving, processing and finished product storage; also includes the ancillary areas including the equipment storage activities for the facility and the runoff channels and runoff ponding area.

- Receiving/Unloading Area: The area used to park vehicles while receiving/unloading compostible materials.

- Raw Material Stockpile: The area used to temporarily store the compostible materials prior to shredding or placement in windrows.

- Shredding/Grinding Area: The area used for shredding/grinding the compostible materials. Screening may also occur here.

- Shredded Material Stockpile: The area used for temporary storage of the shredded materials prior to placement of them in windrows for composting.

- Pre-Composting Area: The area(s) that may be used seasonally for the initial composting of the shredded material in larger piles or windrows prior to placement of the shredded material in the compost windrows.

- Compost Windrows Area: The area where the series of windrows are laid out for the major composting activity.

- Compost Maturing/Storage Area: The area used to store the compost removed from windrows during the last period of composting when the maturing cycle is completed.

- Compost Screening Area: An area where the mechanical screening activity occurs to separate the finished compost product; several sizes of materials may be created involving several storage piles adjacent to the screening machine.

- Overs Storage Area: The area used to store the large-sized materials removed from the finished compost product during the mechanical screening process.

- Finished Compost Product Storage Area: The area used to store the compost product while awaiting loadout for ultimate use.

- Composting Facility Other Area: The ancillary portions of the composting facility that includes the administration activities for the facility and the runoff channels and runoff ponding area.

Wood Materials Recovery Facility

Also operated in conjunction within the Compost Facility boundary is a wood materials recovery facility. The expanded facility is proposed to be operated under the mulching facilities tiered registration process established by the CIWMB. The following are definitions and descriptions for this facility.

- Wood Materials: Wood materials such as dimensional lumber, pallets, branches and stumps are ground into chips for either a biofuel market or for landscaping mulch. Certain materials received in a shredded state may need only to be screened. Some larger sized tree limbs and trunks are separated for firewood. Some of the oversized materials screened out at the composting facility will be further processed here. Large sized items such as tree trunks and stumps are now being added to the processing program since a larger wood waste shredder is now available.

- Wood Materials Recovery Area: The total area encompassed in the facility boundary used for wood materials receiving, processing and finished product storage; also includes the ancillary areas. This actually will be co-located with the Compost Facility since the shredder processes both compostible materials and wood wastes.

- Receiving/Unloading Area: The area used to park vehicles while receiving/unloading wood materials.

- Wood Materials Storage Area: The area used to temporarily store the wood materials prior to shredding or other handling of the materials.

- Wood Materials Processing Area: The area where the wood materials are processed such as by shredding or sorting or screening.

- Wood Products Storage Area: The area(s) used to store the recovered wood products while awaiting loadout for ultimate use.

- Wood Materials Recovery Facility Other Area: The ancillary portions of the wood materials recovery facility that includes the equipment storage activities for the facility and other ancillary features.

Concrete and Asphalt Processing Facility

The following are definitions and descriptions for this facility.

- Concrete/Asphalt Materials: This facility handles concrete and asphalt debris materials delivered to the WCCSL by self-haul deliveries, primarily from general construction contractors. The materials are crushed into the various sizes of gravel and rock products needed for the construction market.

- Processing Center Area: The total area encompassed in the facility boundary used for concrete and asphalt materials receiving, processing and finished product storage. This area will be located adjacent to the Compost Facility and we wish to develop a flexible boundary between the two areas to allow for seasonal production changes of both compost and rock products.

- Receiving/Unloading Area: The area used to park vehicles while receiving/unloading concrete rubble and asphalt debris materials.

- Asphalt Materials Storage Area: The area used to temporarily store the asphalt debris materials prior to crushing, screening or other handling of the materials.

- Concrete Materials Storage Area: The area used to temporarily store the concrete rubble materials prior to crushing, screening or other handling of the materials.

- Materials Processing Area: The area where the asphalt and concrete materials are processed such as by crushing, sorting or screening.

- Asphalt Products Storage Area: The area(s) used to store the recovered asphalt products while awaiting loadout for ultimate use.

- Concrete Products Storage Area: The area(s) used to store the recovered concrete products while awaiting loadout for ultimate use.

- Concrete & Asphalt Materials Recovery Facility Other Area: The ancillary portions of the materials recovery facility that includes the administration activities for the facility and other ancillary features.

Waste Recycling Center

The following are definitions and descriptions for this facility.

- Waste Recycling Center Feedstock Wastes: The WRC will receive and handle the trash and rubbish delivered by the self-haul customers and non-franchised commercial haulers after the landfill is filled to capacity. The mixed wastes would be unloaded, recyclables would be salvaged, and the residue would be placed in transfer trucks for transport to the Potrero Hills Landfill in Solano County. This facility also would receive green materials and wood wastes delivered to the WCCSL by deliveries from citizens, yard cleanup firms, and contractors.

- Waste Recycling Center Area: The total area encompassed in the facility boundary used for trash and rubbish receiving, compostibles and wood materials receiving, processing operations, loadout of residue, and finished product storage; also includes the ancillary areas. This site also would include the location of the receiving and shredding operation for green materials and wood wastes delivered to the WCCSL by deliveries from citizens, yard cleanup firms, and contractors.

- Receiving/Unloading Area: The area used to park vehicles while receiving/unloading rubbish and trash and other materials; this area is also used to temporarily store the rubbish and trash prior to examining the materials for salvageable content.

- Green Materials and Wood Materials Storage Area: The area used to temporarily store the green materials and wood materials prior to shredding or other handling of the materials.

- Mixed Waste Processing Area: The area where the mixed wastes are inspected for salvageable content and where the materials are sorted. Some of the processing will be done by hand and some by mechanized equipment.

- Compostibles and Wood Materials Processing Area: The area where the compostibles and wood materials are processed such as by shredding or sorting or screening.

- Mixed Waste Storage Area: The area where the residues are stored prior to loadout and also including the transfer trailer loading area.

- Household Hazardous Waste Storage Unit: This storage unit will be used to handle and temporarily store motor oil, vehicle batteries, antifreeze, paint, and other household chemicals collected during load checks.

- Equipment Maintenance Center: This facility will be the relocated maintenance facility for the tractors, trucks and other equipment used at the WRC, Wood Waste Recovery Facility and Composting Facility. This installation will replace the existing maintenance facility located at the extreme northeast corner of the WCCSL.

- Waste Recycling Center Other Area: The ancillary portions of the Waste Recycling Center that includes the administration activities for the facility and other ancillary features.

Soil Remediation Facility

The following are definitions and descriptions for this facility.

- Feedstock Wastes: This facility processes liquids and soil that contains residues of gasoline, diesel and other hydrocarbon fuels, and other liquids. Wastes such as biosolids may also be processed.

- Soil Remediation Facility Area: The total area encompassed in the facility boundary used for contaminated soil or other material receiving, processing operations, loadout of residue, and finished product storage; also includes the ancillary areas.

- Receiving/Unloading Area: The area used to park vehicles while receiving/unloading waste materials;

- Materials Storage Area: The area used to temporarily store the waste liquids and soil materials prior to processing the materials.

- Processing Area: The area where the liquids and soils and are processed.

- Residues Storage Area: The area where the rocks and rubble residues are stored prior to loadout.

- Finished Product Storage Area: The area where the processed soil is stored prior to loadout.

Soil Reclamation Facility

The following are definitions and descriptions for this facility.

- Soils Receiving/Unloading Area: The area used to park vehicles while receiving/unloading soil materials; the soil reclamation would be conducted on the unused portions of the composting and wood waste recovery areas.

- Soils Storage Area: The area used to temporarily store the soil materials prior to processing or other handling of the materials.

- Soil Processing Area: The area where the soils are processed. The primary soil reclamation operations would entail mechanical screening of soil to remove rock and debris. The screened soil would be separated into material suitable for trench backfill or building pad engineered fill, and also soil to be blended with sand and/or compost to produce topsoil.

- Residues Storage Area: The area where the rocks and rubble residues are stored prior to loadout.

- Finished Product Storage Area: The area where the processed soil is stored prior to loadout.

Other Terms and Definitions

- AB939: State adopted regulation to foster statewide increases in waste reduction, reuse and recycling
- ADC: Alternative daily cover which are substitute materials used to cover the wastes placed in the landfill instead of using soil
- ADT: Average Daily Traffic counting inbound and outbound trips
- BAAQMD: Bay Area Air Quality Management District
- BCDC: Bay Conservation and Development Commission
- CAMU Corrective Action Management Unit
- CC/WCFPD: Contra Costa/West County Fire Protection District
- CCDD: Contra Costa County Community Development Department
- CEQA: California Environmental Quality Act
- CFC: Chloroflurocarbons contained in refrigeration systems
- CIWMB: California Integrated Waste Management Board
- Class II Landfill: The WCCSL general municipal solid waste landfill
- CPCF: WCCSL Closure/Postclosure Plans
- DRO: City of Richmond Development Review Organization
- DTSC: State Department of Toxic Substance Control
- EBMUD: East Bay Municipal Utilities District which provides potable water in the area
- EIR: Environmental Impact Report prepared as a CEQA compliance activity
- EPCRA: Federal Emergency Planning and Community Right-to-know Act
- FDIP: Final Development and Improvements Plan
- HWMF: Hazardous Waste Management Facility, also referred to as the Class I site
- IRRF: West County Integrated Resource Recovery Facility, located at Central and Pittsburg Avenues
- Landfill Gas: Gases produced from the decomposition of organic solid wastes in the landfill
- LEA: Local Enforcement Agency (Contra Costa County Health Services Department)
- Leachate: Liquid that is derived from water contacting the solid wastes
- MSL: Mean Sea Level

- MSW: Municipal Solid Waste
- NPDES: National Pollutant Discharge Elimination System
- OCC: Cardboard and linerboard
- OES: California Office of Emergency Services
- PDRB: City of Richmond Public Development Review Board
- POTW: Publicly Operated Treatment Works referred to also as sewage or wastewater treatment plant
- RCSI: Report of Composting Site Information for the WCCSL composting program
- RDSI: Report of Disposal Site Information for the WCCSL landfill operation
- RSS, Inc.: Richmond Sanitary Service Inc.
- TPD7: Daily Tons Per Day, averaged over a 7-day week; same as dividing the annual tonnage by 365 days
- SWPPP: Storm Water Pollution Prevention Plan
- WCCSL: West Contra Costa Sanitary Landfill, the property
- WCCSL, Inc.: West Contra Costa Sanitary Landfill, Inc., site operator
- WCL, Inc.: West County Landfill, Inc., site owner
- WRC: Waste Recycling Center at the WCCSL where solid waste will be recycled and transferred

APPENDIX 1C

INITIAL STUDY

2. EVALUATION OF POTENTIAL ENVIRONMENTAL IMPACTS

This section presents initial analyses and evaluations of potential environmental impacts of the proposed project. The checklist from the CEQA *Guidelines* is used to evaluate potential impacts by environmental subject area.

The proposed land use permit amendment and related actions (also referred to as "the Project") at the Bulk Materials Processing Center (BMPC) operated by the West Contra Costa Sanitary Landfill. The project's location, design, and operation (internal operating practices and control measures) would eliminate the potential for some environmental impacts including:

- Agricultural resources
- Mineral resources
- Population and housing
- Public services
- Recreation, and
- Utilities and Service Systems.

In the checklist that follows, the rationale is presented if these potential impacts are less-than-significant or would not occur. During review of the proposed project design, location, and operation, the following potential impacts were identified for further analysis and evaluation in an environmental impact report (EIR):

- Aesthetics
- Air Quality
- Biological Resources
- Geology and Soils
- Hazards and hazardous materials
- Hydrology and Water Quality
- Land Use and Planning
- Noise, and
- Transportation

SOURCES

This environmental evaluation draws upon multiple data sources including those generated by the the Community Development Department, the Applicant - West Contra Costa Sanitary Landfill (WCCSL), and Contra Costa Environmental Health as the Local Enforcement Agency (LEA). In the process of preparing this Checklist and conducting the evaluation, the following sources (which are available for review by appointment at the Contra Costa County Community Development Department – Solid Waste Division, 651 Pine Street, County Administration Building, 4th Floor, North Wing, Martinez, CA) were consulted:

1. Determined based on location of project.

2. Determined based on CDD staff office review.

3. Determined based on CDD staff field review, February 14, 2002

4. Determined based on Project Overview and Description submitted by Applicant - (Part 1 Executive Summary, and Part 2 Summary Document).

5. Determined based on County General Plan and Zoning Maps.

6. Bulk Materials Processing Center, West Contra Costa Sanitary Landfill, Land Use Permit No. 2054-92 1993, and No. 2043-94 1995.

7. City of Richmond Conditional Use Permit No. 92-53, 1993.

8. Solid Waste Facility Permit, West Contra Costa Sanitary Landfill, #07-AA-0001, 1998.

9. Final Development and Improvements Plan, Bulk Materials Processing Center, West Contra Costa Sanitary Landfill, March 2002.

10. Composting Facility Permit, West Contra Costa Sanitary Landfill, #07-AA-0044, 1996.

11. Authority to Construct/Operate, West Contra Costa Sanitary Landfill, Plant No. 1840.

12. Approved Hazardous Waste Management Facility Closure Plan, 2000.

13. Approved Class II Site Closure Plan, 1994.

14. West Contra Costa Sanitary Landfill Hazardous Waste Management Facility Closure and Post Closure Plans, Draft Environmental Impact Report, September 1998.

15. Draft Environmental Impact Report, North Richmond Shoreline Specific, May 1992

16. Final Environmental Impact Report, Responses to Comments, North Richmond Shoreline Specific Plan, November 1992.

17. Order No. R2-2002-0066, SFRWQCB, Updated Waste Discharge Requirements and Recission of Order No. 96-079, June 2002.

18. Public Access Shoreline Trail Draft Development Plan, January 2002.

19. National Pollution Discharge Elimination System (NPDES) Permit No, CAS000002.

ENVIRONMENTAL IMPACTS

U.S. Geological Survey (USGS) Quad Sheet	?
Assessor Parcel #	408-140-008; 408-140-009; 408-140-010; 408-140-013
Date of Site Visit	February 14, 2002

Note: Indicated panel numbers refer to U.S. Geological Survey (USGS) 7.5 minute quadrangle map sheets located in the Contra Costa County Community Development Department offices at 651 Pine Street 2nd floor, North Wing, Martinez, California 94553.

I. AESTHETICS

Significance Criteria

The proposed project would have a significant environmental impact if it blocked or had an adverse effect on scenic vistas or scenic resources, or if it introduced a new source of substantial light or glare.

CHECKLIST

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
Would the project:				
a) Have a substantial adverse effect on a scenic vista? (Source 1,2,3,4,18)	*X*			

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway? (Source 2,3,5)				*X*
c) Substantially degrade the existing visual character or quality of the site and its surroundings? (Source 2,3,5)			*X*	
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area? (Source 1,2,3,4)			*X*	

Discussion

The proposed project involves a major expansion of existing composting, concrete crushing uses/operations areas at the top of the landfill plateau, in addition to either a new or modified building for waste recycling, sorting, and transfer. The potential exists for view obstruction from specific vantage points along the Richmond Parkway. The proposed height increase of the landfill cap, could increase the potential for visual impacts. Nighttime conditions related to lights and glare could also be affected by proposed expansion of facility operating hours.

Mitigation Measures

To be evaluated in EIR.

II. AGRICULTURAL RESOURCES

Significance Criteria

The proposed project would have a significant environmental impact if it would directly or indirectly convert farmland that is classified as Prime, Unique, or of Statewide Importance to non-agricultural uses, or if it would conflict with existing zoning for agricultural use or with a Williamson Act contract.

CHECKLIST

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
Would the project:				

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use? (Source 1,2,3,4,6)				*X*
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract? (Source 1,2,3,4,6)				*X*
c) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use? (Source 1,2,3,4,6)				*X*

Discussion

No farmland or agricultural land would be converted. No conflict would exist with existing zoning on other portions of the WCCSL property. No impact to agricultural resources would occur.

Mitigation Measures

None required.

III. AIR QUALITY

Significance Criteria

The Bay Area Air Quality Management District (BAAQMD) has established thresholds of significance for construction impacts, project operations and cumulative impacts. The project would be considered to have a significant effect on the environment if its operation would generate emissions in excess of thresholds established by the *BAAQMD CEQA Guidelines* (BAAQMD, 1999). Significant air quality impacts would occur if the proposed actions individually or cumulatively cause a net increase in pollutant emissions of reactive organic gases (ROG), nitrogen oxides (NO_X), or respirable particulate matter (PM-10) exceeding 80 pounds per day or 15 tons per year, or if expanded or new stationary sources would cause a net increase in carbon monoxide (CO) emissions exceeding 550 pounds per day.

With respect to odors, the BAAQMD's significance criteria are more subjective and are based on the number of odor complaints generated by a project. The BAAQMD considers odor impacts for projects locating near an existing source of odors to be significant if there has been either: (1) more than one confirmed complaint per year averaged over a three year period; or (2) three unconfirmed complaints per year averaged over a three-year period.

For construction impacts, the pollutant of greatest concern to the BAAQMD is PM-10. The BAAQMD recommends that significance be based on a consideration of the control measures to be implemented during project construction. The *BAAQMD CEQA Guidelines* contains a list of feasible control measures for construction-related PM-10 emissions.

Any proposed project that would individually have a significant air quality impact would also be considered to have a significant cumulative air quality impact.

CHECKLIST

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
Would the project:				
a) Conflict with or obstruct implementation of the applicable air quality plan? (Source #2,8,10,11)				*X*
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation? (Source #2,8,10,11)	*X*			
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)? (Source #2,6,11)			*X*	
d) Expose sensitive receptors to substantial pollutant concentrations? (Source #1,2,3,4)				*X*
e) Create objectionable odors affecting a substantial number of people? (Source #1,3,4)	*X*			

Discussion

Local and regional impacts on air quality could occur from vehicles, trucks, equipment handling of waste materials, and dust generated during operations. There will be an incremental increase of

emissions resulting from proposed expansion of bulk materials processing. Truck and auto traffic is projected to increase with expanded operations, resulting in potential increases in vehicle emissions. Drying and handling of sludge materials may result in particulate emissions and nuisance odors. There may be sensitive receptors in nearby residential and/or commercial uses in proximity of the WCCSL.

Mitigation Measures

To be evaluated in EIR.

IV. BIOLOGICAL RESOURCES

Significance Criteria

The project would have a significant impact on the environment if it would directly or indirectly have a substantial, adverse effect on a special status species; if it would have a substantial adverse effect on a riparian area or wetland; if it would adversely modify a wildlife migration corridor; or if it would be in conflict with a local, State, or federal plan to protect biological resources.

CHECKLIST

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
Would the project:				
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service? (Source 1,2,3,4)	*X*			
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or US Fish and Wildlife Service? (Source 1,2,3,4,5)				*X*

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means? (Source #1,2,3,4,5,15)				*X*
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites? (Source #1,2,3,15)				*X*
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance? (Source #1,2,5)				*X*
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan? (Source #1,2,5,15)				*X*

Discussion

Existing and proposed landfill facilities and/or operations are not located in any animal habitat and do not produce any animal food resource. Project activities would not directly occur in any sensitive habitats, and would not affect animal species populations or diversity. No new animal species would be introduced. The project site is not located in, or adjacent to, any animal migration routes; however, implementation of Phase 1 of the public access trail could indirectly impact biological resources, particularly nesting or brooding migratory water fowl. An evaluation of habitat and species adjacent to the trail should be conducted.

Mitigation Measures

To be evaluated in EIR.

V. CULTURAL RESOURCES

Significance Criteria

The proposed project would have a significant environmental impact if it disturbed, destroyed, or caused a substantial adverse change in a unique archaeological, historical, or paleontological resource, or if it disturbed any human remains.

CHECKLIST

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
Would the project:				
a) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5? (Source #1,3,5,6,15)				*X*
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5? (Source #1,2,15)				*X*
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature? (Source #1,2,15)				*X*
d) Disturb any human remains, including those interred outside of formal cemeteries? (Source #1,2,15)				*X*

Discussion

The Northwest Information Center at Sonoma State University was contacted to assess potential impacts to cultural or historic resources. Their review of the California Historical Resources Information System identified no historical resources based on a study covering 98 percent of the project area. The unsurveyed portion of the project area is considered to have a low possibility of historical resources. Further study for historical resources was not recommended. The landfill and surrounding areas are not the subject of any ethnic cultural use, identity, or values; and are not used for any existing religious or sacred purposes. No impact to cultural resources would likely occur.

Mitigation Measures

None required.

VI. GEOLOGY AND SOILS

Significance Criteria

The proposed project would have a significant effect on the environment if it were to expose people or structures to risk of loss, injury, or death from seismic events, landslides, or other geologic hazards; or if it would cause substantial erosion and loss of topsoil.

CHECKLIST

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
Would the project:				
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:	*X*			
• Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? (Source #1, 2,4,5) Refer to Division of Mines and Geology Special Publication 42.	*X*			
• Strong seismic ground shaking? (Source #1,2,5,6,15)	*X*			
• Seismic-related ground failure, including liquefaction? (Source #1,2,5,15)	*X*			
• Landslides? (Source #1,2,3,5)				*X*
b) Result in substantial soil erosion or the loss of topsoil? (Source #1,2,3,6)				*X*
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse? (Source #1,2,6,18)	*X*			

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property? (Source #1,2,6,18)	*X*			
e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater? (Source #1,2,6)				*X*

Discussion

The San Francisco Bay region is an area of high seismicity and has a documented history of strong earthquakes. Active and potentially active earthquake faults are located in the region. The WCCSL site overlies San Francisco Bay Mud and thus is subject to settlement and or liquefaction during a seismic event. Major excavation of soils, changes in geologic substructures, surface grading, and/or alteration of ground surface relief features may occur. People or property may be exposed to new, or increased geologic hazards during, or after, completion of the proposed project. Earthquake faults in the immediate vicinity of WCCSL area, or faults of potential local significance within about 12 miles of the WCCSL site, should be identified and evaluated. All WCCSL facilities shall be designed to meet Federal Subtitle D regulations for seismic design of solid waste facilities. Design and construction of all structures shall be required to meet the requirements of the County Building Inspection Department and Uniform Building Code.

Mitigation Measures

To be evaluated in EIR.

VII. HAZARDS AND HAZARDOUS MATERIALS

Significance Criteria

The proposed project would have a significant effect on public health or the environment if it would result in the release of hazardous materials, or the exposure of workers or the public to hazardous materials; interfere with aviation or subject workers or the general public to aviation hazards; interfere with an adopted emergency response plan or emergency evacuation plan; or if it would present an unacceptable risk of fire.

CHECKLIST

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
Would the project:				
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials? (Source #1,6,8,10,11,12)				*X*
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment? (Source #1,6,8,10,11,12)				*X*
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school? (Source #1,6,8,10,11,12)				*X*
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment? (Source #1,6,8,10,11,12)	*X*			
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area? (Source #1,3)				*X*
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area? (Source #1,3)				*X*
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan? (Source #2,4,9)				*X*

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands? (Source #1,4,6,9)				*X*

Discussion

No hazardous waste or materials shall be allowed in compliance with State regulations for a Class II landfill and under land use permits issued by the County and City of Richmond. The types of operations occurring at the BMPC have an inherent risk of accident, explosion, fire, or the release of potentially hazardous substances due to upset conditions or mechanical malfunctions. An Emergency Response Preparedness Plan and Worker Injury Prevention Plan shall be prepared in compliance with State law. The handling and drying of sludge materials may pose a health risk to workers and the public.

Mitigation Measures

To be evaluated in EIR.

VIII. HYDROLOGY AND WATER QUALITY

Significance Criteria

The proposed project would result in a significant impact on hydrology and water quality if it were to result in violation of water quality standards or waste discharge requirements; deplete groundwater; alter drainage patterns and increase the potential for erosion, siltation, or flooding; create substantial sources of polluted runoff or exceed the capacity of storm drainage systems; or expose structures and people to floods or inundation.

CHECKLIST

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
Would the project:				

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Violate any water quality standards or waste discharge requirements? (Source #4,6,20,21)	*X*			
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)? (Source #1,4,6,20,21)				*X*
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site? (Source #1,8,18)	*X*			
d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site? (Source #1,8,18)		*X*		
e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff? (Source #1,2,18,20,21)			*X*	
f) Otherwise substantially degrade water quality? (Source #1,2,18,20,21)				*X*
g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map? (Source #1,4,5,9)				*X*
h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows? (Source #1,4,5,9)				*X*

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam? (Source #1,4,5,9)				*X*
j) Inundation by seiche, tsunami, or mudflow? (Source #1,4,5,9)				*X*

Discussion

The WCCSL BMPC site and operations are subject to Order No. R2-2002-0066, Updated Waste Discharge Requirements adopted by the Regional Water Quality Control Board, San Francisco region (RWQCB) in June 2002. Compliance with Order No. R2-2002-0066 is required to minimize potential water quality impacts. As proposed by the applicant, all runoff from the WCCSL site, including disturbed areas and undisturbed slopes, is routed through surface water drainage facilities into the Runoff Control Pond (in Area B), via drainage channels and concrete drainage ditches. The following systems, control measures, or project features also are in effect at the WCCSL:

- Storm drainage facilities have been designed to meet the requirements of the 1,000-year, 24-hour storm event.
- The landfill is located outside of the 100-year flood plain.
- The landfill's sewer system also eliminates a number of potential water quality impacts.
- No project solid waste activity would occur within any watercourse or water body. Provision of kayak facilities does not involve solid waste but is part of the project.
- No new indirect or direct discharges of untreated water or wastewater would occur. Landfill gas condensate will continue to be managed as is currently implemented.
- The proposed height increase and grading of the landfill plateau areas will convey surface runoff to existing drainage and stormwater management facilities.
- No new construction or any other project solid waste activities would occur in the flood plain.
- Project solid waste activities would not affect the amount of surface water in any water body.

- Surface runoff would not increase; nor would any water be diverted or pumped from any waterbody.
- Groundwater pumping and/or recharge would not occur as a part of this project.
- No groundwater additions or withdrawals would occur.
- No increase in exposure of people or property to water-related hazards would occur.
- Stormwater would be conveyed to existing drainage facilities per the WCCSL SWPPP.
- All surface water would be treated and managed by the existing wastewater and stormwater management system. These procedures would prevent any discharges that could affect fisheries, endangered species, or habitat due to chemical discharges.
- The landfill discharges meet all NPDES discharge limits.

Since project activity may occur adjacent to seasonal wetlands, a potential exists for water quality impacts. This potential should be evaluated in greater detail in a project EIR.

Mitigation Measures

To be evaluated in EIR.

IX. LAND USE AND PLANNING

Significance Criteria

The proposed project would result in a significant impact on land use and planning if it were to physically divide an established community, conflict with local or regional land use plans, policies, or regulations adopted for the purpose of avoiding or mitigating an environmental effect, or if it were to conflict with any applicable habitat conservation plan or natural community conservation plan.

CHECKLIST

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
Would the project:				

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Physically divide an established community? (Source #'s 1,3,5)				*X*
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect? (Source #1,2,17)	*X*			
c) Conflict with any applicable habitat conservation plan or natural community conservation plan? (Source #1,5,19)				*X*

Discussion

The General Plan Land Use Designation is OS open space and Class I Waste Disposal; zoning is P-1 Planned Unit Development/North Richmond P-1. The County Board of Supervisors adopted the "North Richmond P-1" zoning in December 1994. This zoning pulls together all of the known development criteria that would be required to review a variety of applications related to planning ordinances and other regulations. The North Richmond P-1 provides that the Integrated Resource Recovery Facility BMPC Land Use Permits 2054-92 and 2053-92 and amendments shall govern uses permitted for the BMPC project sites rather than this ordinance (Source 14). The County General Plan and the North Richmond Planned District provide for the continuation of waste disposal and recyclables processing at the WCCSL Class II landfill site for an undetermined interim period. The WCCSL is located outside the Urban Limit Line (ULL) as designated in the County General Plan.

The proposed project includes a new waste recycling center that would function as a transfer station. A transfer station currently operated by the West County Resource Recovery Corporation is located approximately one mile southeast of the WCCSL site. Development of a second transfer station in West County may conflict with adopted plans, policies, and objectives for solid waste management.

Mitigation Measures

To be evaluated in EIR.

X. MINERAL RESOURCES

Significance Criteria

The proposed project would result in a significant impact on mineral resources if it were to result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state, or if it were to result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan.

CHECKLIST

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
MINERAL RESOURCES:				
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state? (Source #1,5)				*X*
b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan? (Source #1,5)				*X*

Discussion:

The proposed project would not require the use of vast amounts of natural resources or minerals for construction or operation. Minor quantities of concrete and asphalt would be used for construction of the Waste Recycling Center. Small quantities of oils will be used in the operation of the IC engines. The project would recycle concrete, greenwaste, and metals and make available finished products such as gravel, asphalt, recyclable metal, and compost. These impacts would be beneficial.

Mitigation Measures

None required.

XI. NOISE

Significance Criteria

Generally, a three-dBA[1] increase in ambient noise levels represents the threshold at which most people can detect a change in the noise environment; an increase of 10 dBA is perceived as a doubling of loudness. A change of 5 dBA is required before any noticeable change in community response would be expected (Contra Costa County, 1996). For the purposes of this analysis, a net change in noise level greater than 5-DNL would constitute a significant noise impact. In addition, current land use permits 2054-92 and 2043-94 require the monitoring of noise levels at the landfill boundary or other monitored location as directed by the Community Development Department. If monitored levels exceed 60 dBA during daylight hours, or 50 dBA during the evening or night, the County would require the operator to institute additional noise reduction measures to bring noise levels to the aforementioned levels or less.

CHECKLIST

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
Would the project:				
a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies? (Source #1,4,6)	*X*			
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels? (Source #1,2,4,6)				*X*
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project? (Source #1,2,4)			*X*	
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project? (Source #1,2,3,7,8)			*X*	
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels? (Source #1,2)				*X*

[1] A decibel (dB) is a unit of sound energy intensity. Sound waves, traveling outward from a source, exert a sound pressure level (commonly called "sound level") measured in dB. An A-weighted decibel (dBA) is a decibel corrected for the variation in frequency response of the typical human ear at commonly encountered noise levels. All noise levels reported herein reflect A-weighted decibels unless otherwise stated.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels? (Source #1,2)				*X*

Discussion

- WCCSL site is located approximately ¾ mile distance from residential areas, public areas, schools and other possible sensitive receptors. On-site and off-site noise levels could increase from vehicles transporting solid waste and operation of heavy equipment. Facility workers may also be exposed to elevated noise levels.

Mitigation Measures

To be evaluated in EIR.

XII. POPULATION AND HOUSING

Significance Criteria

The proposed project would have a significant impact on the environment if it directly or indirectly induces substantial population growth, or if it displaces substantial numbers of people or existing housing.

CHECKLIST

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
Would the project:				
a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)? (Source #1,2,3,4,5)				*X*

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere? (Source #1,2,3,4,5)				*X*
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere? (Source #1,2,3,4,5)				*X*

Discussion

The proposed project would be located on an existing sanitary landfill. No housing would be displaced. There is no potential for altering the location, distribution, density, or growth rate of the adjacent, off-site human population.

Mitigation Measures

None required.

XIII. PUBLIC SERVICES

Significance Criteria

The proposed project would have a significant environmental impact if it would require provision of new governmental facilities for police, fire, parks, schools, or recreation.

CHECKLIST

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
Would the project:				

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:				
• Fire protection? (Source #1,2,3,4,6,8,9)				*X*
• Police protection? (Source #1,2,3,4,6,8,9)				*X*
• Schools? (Source #1,2,3,4,6,8,9)				*X*
• Parks? (Source #1,2,3,4,6,8,9)				*X*
• Other public facilities? (Source #1,2,3,4,6,8,9)				*X*

Discussion

The proposed project would not result in the need for additional police services, schools, parks, or other public facilities. Once constructed, facility personnel will monitor operation. The WCCSL BMPC lies within both the City of Richmond and the unincorporated area of Contra Costa County, and in the jurisdiction of the Richmond Fire Department.

Mitigation Measures

None required.

XIV. RECREATION

Significance Criteria

The proposed project would have a significant environmental impact if it would cause or accelerate physical deterioration of existing parks or recreation facilities, or if it would include or require new recreational facilities that would have an adverse environmental impact.

CHECKLIST

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
Would the project:				
a) Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated? (Source #1,2,3,4,15,19)			*X*	
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment? (Source #1,2,3,4,15,19)				*X*

Discussion:

The proposed project would create expanded recreational opportunities with implementation of the public access trail around the perimeter of the WCCSL site and along the Bay shoreline. This potential impact is considered beneficial.

Mitigation Measures

None required.

XV. TRANSPORTATION

Significance Criteria

The proposed project would have a significant impact on the environment if it were to cause a substantial increase in traffic; if it were to exceed an established roadway level of service, result in a change in air traffic patterns, cause a substantial road safety hazard, result in inadequate emergency access or inadequate parking capacity, or conflict with adopted policies, plans, or programs supporting alternative transportation.

CHECKLIST

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
Would the project:				

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Cause an increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections)? (Source #1,2,3,4,19)	*X*			
b) Exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways? (Source #2,3,4,)	*X*			
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks? (Source #1,2)				*X*
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)? (Source #1,2,3)				*X*
e) Result in inadequate emergency access? (Source #1,2,3,4)				*X*
f) Result in inadequate parking capacity? (Source #1,2,3,4,19)				*X*
g) Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)? (Source #1,2,5)				*X*

Discussion

The volumes of traffic that would be generated by construction of new facilities and expanded BMPC operations and operating hours have not been quantified although the Applicant has provided general estimates to the County. Additional truck traffic and auto traffic is projected to increase over existing levels. A traffic study may be necessary to evaluate whether the existing traffic network (on-site and off-site) can accommodate projected traffic levels. Richmond Parkway is a heavily used truck route. Traffic conditions during peak periods and weekends require additional analysis.

Mitigation Measures

To be evaluated in EIR.

XVI. UTILITIES AND SERVICE SYSTEMS

Significance Criteria

The proposed project would have a significant environmental impact if it exceeds the capacity of existing, or requires the construction of new or expanded wastewater treatment facilities, storm drain systems, water supply, or solid waste landfills; or if it fails to comply with federal, state, and local statutes and regulations related to solid waste.

CHECKLIST

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
Would the project:				
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board? (Source #2,4,20,21)				*X*
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects? (Source #2,3,4,20)				*X*
c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects? (Source #1,2,3,4)		*X*		
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed? (Source #1,2,3,4,)				*X*

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
e) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments? (Source #2,3,4)				*X*
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs? (Source #1,6,8)				*X*
g) Comply with federal, state, and local statutes and regulations related to solid waste? (Source #2,3,4,8,9,12,13)				*X*

Discussion

No impacts to utilities are expected to occur as a result of the expansion of existing facilities or construction of new facilities such as the waste recycling center. Existing landfill electrical, gas, lighting, water, wastewater, and telecommunications systems are adequate to supply proposed operations. With one exception, no modification, upgrade, or expansion of utilities outside the WCCSL site has been proposed. The exception is the proposed pipeline to convey biosolids from the adjacent West County Wastewater District plant to the proposed sludge drying area on the south slope. Depending on the final alignment of this pipeline, potential impacts could occur to resources traversed by the pipeline.

Mitigation Measures

To be evaluated in EIR.

XVII. MANDATORY FINDINGS OF SIGNIFICANCE

CHECKLIST

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory? (Source #1,2,3,4,5,6,8,9,15)			*X*	
b) Does the project have impacts that are individually limited, but cumulatively considerable? (Source #2,4,6,8) ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.)				*X*
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly? (Source #1,2,3,7,8,9,14)	*X*			

Discussion:

The proposed project may have environmental effects that would cause substantial adverse effects on human beings, such as excessive noise, emission of criteria air pollutants and toxic air contaminants (diesel emissions), and odors. In the long term, the project would have no adverse effect on landfill closure or post closure plans. The BMPC and waste recycling center would operate only as long as market conditions are conducive. In the mid and short terms, operation of an expanded BMPC atop the plateau area would preclude alternative uses such as recreation or other commercial uses identified in the past.

APPENDIX 1D

LETTERS FROM THE NOTICE OF PREPARATION PROCESS

CONTRA COSTA

02 NOV 14 PM 2:28

November 13, 2002

73 Belvedere Ave.
Richmond, CA 94801
Phone/Fax: 510-235-2835
Email:beyaert@earthlink.net

Ms. Deidra Dingman
Solid Waste Program Manager
Community Development Dept.
Contra Costa County Administration Building
651 Pine St., 4th Floor, North Wing
Martinez, CA 94553-0095

Dear Deidra,

TRAC, the Trails for Richmond Action Committee, has reviewed Contra Costa County's October 10 Notice of Preparation on the proposed amendment of the Land Use Permit for the Bulk Materials Processing Center at the West Contra Costa Sanitary Landfill. TRAC is very concerned that the County proposes to include the entire public access shoreline trail in the DEIR for the Bulk Material Processing project. This will unnecessarily delay completion of this important new Bay Trail segment, especially the planned opening this year of the Phase I trail located entirely within the City of Richmond.

A public access trail around the landfill has been required since 1992-1993 under terms of City and County permits **issued previously** to West Contra Costa Sanitary Landfill. Condition 21.5 of the current Landfill permit issued by Contra Costa County states "... **the City of Richmond will be lead agency and have specific approval over that portion of the public access within their jurisdiction". A defined trail route around the landfill was adopted by the City of Richmond in Figure 7 of its 1993 North Richmond Shoreline Specific Plan after full compliance with CEQA, including certification of a final EIR.**

A broad, diverse working group comprised of County and City representatives, ABAG, BCDC, Neighborhood House of North Richmond, Save The Bay, Sierra Club, TRAC, and others worked during 2000-2002 to develop the public access plan which Republic Services now desires to implement in good faith. This public access plan prohibits dogs on the public access trail -- thus exceeding the BIO-6 mitigation measure of the Specific Plan FEIR, which recommends only leashing of

dogs to minimize potential impacts on wildlife. The County should not unnecessarily delay implementation of this public access trail plan.

The community has been promised a shoreline public access trail around this landfill for ten years. Republic Services is prepared to start delivering on their commitments by opening the 1.8-mile Phase 1 trail on existing dike roads by the end of this year. It would be most unfortunate if Contra Costa County were to impede this long-awaited shoreline public access project when the private sector and public interest groups have worked so long and constructively to develop and implement a plan which has broad support.

TRAC recognizes that a portion (2/3 mile) of the 1.8-mile Phase 1 route recommended by the above working group runs on the outboard side of the runoff control pond, rather than the landfill side as shown in Figure 7 of the North Richmond Shoreline Specific Plan. However, the remainder of the four-mile trail follows the same alignment as in the Specific Plan. **CEQA Section 21166 states "When an environmental impact report has been prepared for a project ....., no subsequent or supplemental environmental impact report shall be required by the lead agency or any responsible agency, unless one or more of the following events occurs:**

a. Substantial changes are proposed in the project, which will require major revisions of the environmental impact report.
b. Substantial changes occur with respect to the circumstances under which the project is being undertaken which will require major revisions in the environmental impact report.
c. New information, which was not known and could not have been known at the time the environmental impact report was certified as complete, becomes available."

There is no "substantial evidence" (CEQA Guidelines Sections 15063 and 15384) that the 2/3-mile change in the four-mile trail route constitutes a "substantial change" "which will require major revisions of the environmental impact report" or that there is "new information, which was not known and could not have been known at the time the environmental impact report was certified as complete". Hence, a new DEIR may not be required for the public access trail, with the possible exception of Phase 4. TRAC recognizes that the Phase 4 trail may be included in the DEIR since there currently is no access to part of this outer dike, and new bridges would be required to provide access to a portion of the Phase 4 trail.

TRAC also would like to point out that CEQA does not apply to Ministerial projects (CEQA Section 21080 (b)(1) and Guidelines Section 15268). It appears that no discretionary government approvals may be required for Republic Services to proceed with the public access trail with the possible exception of Phase 4. If so, the trail project is exempt from CEQA and should not be included in the DEIR.

TRAC recommends adherence to the following principles if Phase 4 or any portion of the trail is included within the scope of the DEIR:

1. The DEIR should use objective, scientific data in its analysis of the potential effects of trail use on sensitive species, e.g.:

a. It should use only objective, validated observations demonstrating the current presence of sensitive species in the vicinity of the planned trail alignments

b. It should recognize that well-designed trails in the Bay Area operate in harmony with wildlife, e.g.

- preliminary results of the two-year Wildlife and Public Access Study by Trulio and Sokale conducted for ABAG found no general relationship between human use of trails and bird abundance or diversity in foraging habitats at three locations in the Bay Area;
- clapper rails are commonly observed within 50 to 80 feet of the Bay Trail between Marina Bay and Point Isabel in Richmond (I saw one Monday and have seen two together in the past.)
- avocets nest and raise fledglings near the Bay Trail between Marina Bay and the Albany mudflats in Richmond;
- oystercatchers raise fledglings within 30 feet of the Bay Trail in Marina Bay;
- clapper and black rails flourish in proximity to boardwalk trails in the Palo Alto Baylands as described in the October - December, 2002 issue of *Bay Nature*;
- clapper rail populations are increasing in EBRPD's Martin Luther King, Jr. Regional Shoreline in Oakland which has Bay Trail access for observation; and
- clapper rails nest within five feet of a trail in EBRPD's Elsie Roemer Marsh in Alameda.

2. Allegations of potential conflicts between trail users and wildlife must be supported by scientific evidence relevant to the species now present at the landfill and the type of trail use planned.

3. Where there is a potential adverse effect of trail use on sensitive wildlife, the DEIR should recommend trail design and management practices which have the potential to eliminate or minimize the potential adverse effect. The DEIR should not simply recommend elimination of the planned trail route.

Please let me know if you would like clarification of TRAC's comments. Thank you very much.

Sincerely,

Bruce Beyaert

Bruce Beyaert, TRAC Chair

cc: Supervisor John Gioia
Mr. Larry Burch
Mr. Barry Cromartie
Mr. David Lewis
Mr. Steve McAdam
Mr. Morty Prisament
Ms. Laura Thompson

PUBLIC WORKS DEPARTMENT
CONTRA COSTA COUNTY

DATE: November 18, 2002

TO: Deidra Dingman, Solid Waste Program Manager,

FROM: Al Schaal, Civil Engineer, Transportation Engineering

SUBJECT: Comments on the Notice of Preparation for the Proposed Amendment of Land Use Permit (LP# 022-26) for the Bulk Materials Processing Center at the West Contra Costa Sanitary Landfill.

We have reviewed the Notice of Preparation for the West Contra Costa Sanitary Landfill, and have the following comments:

- ✓ The proposed permit change will create a significant increase in the truck traffic volume. The environmental document should clearly address what routes the trucks will be using, and evaluate the level of service for intersections along the routes, for both existing and future conditions.

- ✓ The environmental document should address the impact the proposed land use permit will have on the North Richmond community and identify a system/process to keep the Landfill traffic from using residential streets.

- ✓ The Notice of Preparation indicates that a Barge Mooring Site is located on the property. The environmental document should indicate the level of the existing business done by barge, how much of the future waste will be barged in, and how much of the future product be barged out?

- ✓ The environmental document should address the impact the future truck traffic volume will have on the structural section of roads used as access to the landfill. The document should indicate whether the existing structural section is adequate to handle future truck traffic loads and possible mitigation measures if the loading exceeds the capacity of the current structural section.

AS:je
G:\GrpData\TransEng\EIR\West CC Landfill NOP Comments.doc

c: S Kowalewski, TE

STATE OF CALIFORNIA - THE RESOURCES AGENCY

GRAY DAVIS, *Governor*

DEPARTMENT OF FISH AND GAME
POST OFFICE BOX 47
YOUNTVILLE, CALIFORNIA 94599
(707) 944-5500

CONTRA COSTA

02 NOV 18 PM 12:50

COMMUNITY DEVELOPMENT

November 14, 2002

Ms. Deidra Dingman
Contra Costa County
Community Development Department
651 Pine Street, 4th Floor, North Wing
Martinez, CA 94553-1210
Fax (925) 335-1299

Dear Ms. Dingman:

Notice of Preparation (NOP)
Proposed Amendment of Land Use Permit (LP # 022026)
for the Bulk Materials Processing Center
West Contra Costa Sanitary Landfill, Contra Costa County

Department of Fish and Game (DFG) personnel have reviewed the subject NOP for the proposed amendment of the Sanitary Landfill Land Use Permit. The project area is adjacent to portions of San Pablo Creek and San Pablo Bay, which are known to, or may, provide important wildlife and wetland habitat areas for sensitive wildlife species, such as the salt marsh harvest mouse, salt marsh wandering shrew, California clapper rail, California black rail, San Pablo vole and other species vulnerable to disturbance, including migratory waterfowl and shorebirds. The project proposes changes to facilities and operations at the Sanitary Landfill in the Richmond area of Contra Costa County.

The document should describe all habitats in the project area potentially affected by the proposed project. An analysis of potential effects, including indirect impacts associated with public access trails, should be described in the document. DFG recommends that an analysis of habitat quality be performed, and surveys for sensitive species should be performed where the species may be affected by public access trails. Surveys should be conducted at the appropriate time of year. The DEIR should discuss the need for the proposed trail alignments and provide an analysis of the potential adverse impacts to sensitive species and habitats due to the construction of the segments of the community and Bay Trail systems.

Alternative trail alignments should also be considered as noted below. DFG recommends any permitted use avoid or minimize impacts to sensitive wildlife and maintain the quality of wildlife habitat in areas such as tidelands, wetlands, riparian corridors and adjacent upland areas.

For wetland areas and for streams, DFG recommends that a minimum 100-foot setback buffer be established measuring from the top of the stream bank or from the edge of the wetland vegetation or riparian canopy. Any construction activities should not be allowed within the buffer area to provide adequate protection of the resources and to minimize the need for future maintenance. We discourage the use of structures and rip-rap for erosion protection, and recommend that bioengineering approaches be used where structural modifications are needed. Any proposed landscaping should consist of native species. Trails should also be located outside of the edge of the riparian canopy or wetlands.

While DFG recognizes the need for trails to accommodate visitor access and to help promote the understanding and appreciation of natural resources, we have concerns about the locations of the proposed alignments adjacent to sensitive habitats. Recreational activities associated with trails in the project area, such as hiking, biking and wildlife viewing, can have significant impacts on the habitat quality and on species susceptible to disturbance. Trails may also facilitate unrestricted pedestrian access to habitats which may affect sensitive species, as well as species susceptible to human disturbance such as migratory waterfowl and shorebirds. Disturbances associated with trails may otherwise prevent such species from accessing refugia, and may increase vulnerability of some species to avian or terrestrial predation. It is important to maintain the quality of the tideland, wetland, riparian, and adjacent upland habitats for sensitive species near the site. The proximal effects of the presence of people and the associated potential effects on sensitive species are generally known to impact foraging behavior, and ultimately the reproductive success and overall health of the various species.

The document should sufficiently describe the cumulative impacts of a high level of public use that is expected with the proposed trails. Additionally, the document should address that fencing and other structural modifications and/or seasonal restrictions may not adequately minimize disturbance or other adverse effects on sensitive species. Poor or non-compliance with posted regulations intended to prevent or minimize disturbances to wildlife and common violations with respect to pet and leash laws, as well as trail users entering restricted areas, are an unfortunate reality that also needs to be considered in the document. Measures or restrictions to mitigate these effects should be included. We recommend impacts be avoided and minimized, as unavoidable impacts require added mitigation.

The document should include an alternative alignment for the segment of the Bay Trail on the existing road along the upland side of the hill, north of the runoff control ponds. DFG understands that the ponds are likely to be restored to marsh after the closure of the landfill, anticipated to reach capacity between October 2004 and May 2005. The trail alignment proposed in the NOP would bisect the existing marsh and the marsh likely restored in the future. Additionally, there are two trails proposed in close proximity on the northern portion of the site. The two proposed trails on the northern portion of the site are largely along a parallel alignment, approximately 200 feet apart. The northern-most trail is therefore redundant in providing access on this portion of the site. The more inland trail alignments would provide trail corridors with good bay vistas, located near the tidelands and wetlands, while conserving the values of the greater habitat area and would sustain habitat quality and integrity.

In summary, trails should only be located in less sensitive areas, with greater consideration for impacts associated with the proposed alignments immediately adjacent to disturbance-sensitive habitats. DFG recommends that an alternative southern trail alignment be located on the existing service road to the north of the runoff control ponds. Additionally, since the two trails proposed

on the northern portion of the site are largely along a parallel alignment, DFG recommends that the northern trail be limited to the more upland alignment only, and that the trail proposed along San Pablo Bay be eliminated. The more inland alignments are preferred by DFG because they would avoid or greatly reduce potential impacts and would have less cumulative impacts on sensitive species.

We appreciate your consideration of our comments. Our personnel are available to address these concerns in greater detail. Please contact Mr. John Krause, Associate Wildlife Biologist, at (415) 454-8050; or Mr. Scott Wilson, Habitat Conservation Supervisor, at (707) 944-5584.

Sincerely,

Robert W. Floerke
Regional Manager
Central Coast Region

EAST BAY
MUNICIPAL UTILITY DISTRICT

CONTRA COSTA

02 NOV 20 PM 5:13

November 22, 2002

Ms. Deidra Dingman, Solid Waste Program Manager
Contra Costa County
Community Development Department
651 Pine Street
4th Floor, North Wing
Martinez, CA 94553-0095

Dear Ms. Dingman:

Re: Notice of Preparation of a Draft Environmental Impact Report – Bulk Materials Processing Center - West Contra Costa Sanitary Landfill LP# 022026

East Bay Municipal Utility District (District) appreciates this opportunity to respond to the Notice of Preparation (NOP) of a Draft Environmental Impact Report (EIR) for the Proposed Amendment of Land Use Permit for the Bulk Materials Processing Center at the West Contra Costa Sanitary Landfill (WCCSL). The District has the following comments regarding water service and water recycling.

WATER SERVICE

The proposed project is located within the District's Central Pressure Zone, which serves elevations from 0-100 feet. The WCCSL currently has water service and the Initial Study states that the existing water system is adequate to supply proposed operations. Should additional water service be required for the subject project, the project sponsor should contact the District's New Business Office for questions regarding the cost and conditions for providing additional water service. Due to the District's limited water supply, all customers should plan for shortages in time of drought.

The District will not install pipelines or services in contaminated soil that must be handled as a hazardous waste or that may be hazardous to the health and safety of construction or maintenance personnel wearing Level D personal protective equipment. The District will require a legally sufficient, complete and specific written remedial plan establishing the methodology, planning and design of all necessary system for the removal, treatment, and disposal of all identified soil and/or water contaminants. The District will not install pipelines or services until remediation has been carried out.

375 ELEVENTH STREET . OAKLAND . CA 94607-4240 . (510) 835-3000

WATER RECYCLING

In the spring of 2001, the District entered into an Agreement with the City of Richmond and West County Wastewater District (WCWD) to divert Class II leachate to the City of Richmond's wastewater treatment plant, thereby bypassing the WCWD wastewater treatment plant. This diversion is necessary to prevent excess chlorides from the Class II leachate from entering the WCWD wastewater treatment Plant, which is the source of recycled water for the District's North Richmond Water Recycling Plant (NRWRP). The concentration of chlorides in the WCWD wastewater treatment plant effluent is of particular concern to the District because elevated chloride levels can cause the shutdown of the NRWRP, which provides recycled water to the Chevron Refinery for use in their cooling towers. The District is currently designing the diversion pipeline to divert Class II leachate to the City of Richmond's wastewater treatment plant, and the projected in-service date of the diversion pipeline is October 2003.

The proposed increase in height to the landfill may impact the volume and concentration of the leachate sent offsite. In preparation of the Draft EIR, the impacts of the proposed project to the quantities of leachate discharged from the site should be analyzed. Provisions should be included in the final project to ensure that the volume and concentration of the leachate that had previously been anticipated are not exceeded, and that the quantity of leachate discharged from the project does not exceed what the WCWD's wastewater treatment plant and the City of Richmond's wastewater treatment plant can handle to ensure their compliance with the terms and conditions of the aforementioned Agreement among the District, the WCWD, and the City of Richmond.

If you have any questions or comments concerning this response, please contact Marie A. Valmores at (510) 287-1084.

Sincerely,

WILLIAM R. KIRKPATRICK
Manager of Water Distribution Planning Division

WRK:OAH:sb
sb02_385.doc

1600 Broadway, Suite 300
Oakland, CA 94612-2100

t. 510.452.9261
f. 510.452.9266

www.savesfbay.org

CONTRA COSTA

02 NOV 14 PM 2:28

November 14, 2002

Ms. Deidra Dingman
Solid Waste Program Manager
Community Development Dept.
651 Pine Street, 4th Floor, North Wing
Martinez, CA 94553-0095

Dear Ms. Dingman,

It has recently been brought to our attention that the County's proposed amendment of the land use permit to West Contra Costa Sanitary Landfill has the potential to delay construction of a segment of the Bay Trail around the landfill. Construction of the trail segment would be delayed if the entire public access shoreline trail is included in the upcoming DEIR for the Bulk Material Processing project at the landfill.

The public access trail around the landfill has been required since 1992-93 under previously issued City and County permits. Condition 21.5 of the current permit issued by the County cites the City of Richmond as the lead agency having specific approval over the portion of the public access within their jurisdiction; the City of Richmond incorporated the defined trail route around the landfill in its 1993 North Richmond Shoreline Specific Plan.

According to CEQA Guidelines (Sect. 21166) only a "substantial change" in the trail alignment "which would require major revisions of the environmental impact report" or "new information, which was not known…" at the time the EIR was certified as complete. We are not aware of any such change or new information that would apply to the Phase I segment of the public access trail around the landfill.

Private and public groups have worked for a decade to secure a public access trail around this landfill. Plans to open a 1.8-mile section of the trial on existing roads are to be completed by the end of this year. Save The Bay urges you to exclude Phases 1, 2, and 3 of the four-mile trail route from the DEIR and thus allow the scheduled completion of this Bay Trail segment.

Sincerely,

David Lewis

David Lewis
Executive Director

Cc: Supervisor John Gioia
Mr. Bruce Beyaert
Mr. Morty Prisament
Mr. Barry Cromartie
Mr. Steve McAdam
Ms. Laura Thompson

SAN FRANCISCO BAY TRAIL

CONTRA COSTA

02 NOV 25 PM 3:53

November 21, 2002

Ms. Deidra Dingman
Solid Waste Program Manager
Community Development Department
Contra Costa County
651 Pine Street, 4th Floor, North Wing
Martinez, CA 94553-0095

Subject: Notice of Preparation (NOP) for the West Contra Costa Sanitary Landfill Environmental Impact Report (EIR)

Dear Deidra:

Thank you for the opportunity to submit comments on behalf of the San Francisco Bay Trail Project on the Notice of Preparation for the West Contra Costa Sanitary Landfill's Bulk Materials Processing Center land use permit amendment. The NOP was received in our office on October 21, 2002 and we provided verbal comments at the November 1, 2002 EIR scoping meeting.

The Bay Trail Project is a nonprofit organization administered by the Association of Bay Area Governments (ABAG) that coordinates implementation of the Bay Trail. When complete, the Bay Trail will be a continuous 400-mile network of bicycling and hiking paths that will encircle San Francisco and San Pablo bays in their entirety. It will link the shoreline of all nine Bay Area counties, passing through 47 cities, and will cross seven of the eight toll bridges in the region. To date, 230 miles of the proposed system have been developed.

A Bay Trail spur is planned to extend around the perimeter of the West County Sanitary Landfill in Richmond. The Bay Trail Project has participated in a multi-year effort to develop a public access plan for the trail alignment. The plan separates the trail into four phases, based on timing for closure of sections of the landfill.

We enthusiastically support efforts by the City, County and Republic Services to provide public access around the landfill. A perimeter trail alignment was analyzed in the North Richmond Shoreline Specific Plan EIR, but the Bay Trail Project recognizes that the Phase I segment was not reviewed in that document.

Administered by the Association of Bay Area Governments
P.O. Box 2050 • Oakland California 94604-2050
Joseph P. Bort MetroCenter • 101 Eighth Street • Oakland California 94607-4756
Phone: 510-464-7935
Fax: 510-464-7970

When developing the EIR and the potential impacts of a perimeter trail, we encourage analysis that includes the following issues:

- consideration of both the Phase I trail alignment along the outer edge of the runoff control pond and the trail alignment along the inner edge of the pond;
- evaluation of potential impacts based on biological observations and assessments conducted in the vicinity of the planned trail alignments;
- recognition that the public access plan for the landfill recommends no dogs;
- acknowledgment that numerous well-designed segments of the Bay Trail exist adjacent to marshlands that flourish with wildlife;
- consideration that the levees are part of a working waterfront with heavy machinery and truck operations within close proximity to marshlands;
- if a potential adverse impact on sensitive species is identified, consideration of design and management practices that will minimize the potential adverse effect rather than elimination of the planned trail route.

In closing, I offer you our support and assistance in implementing this Bay Trail alignment in North Richmond. The Bay Trail is a unique regional resource that will provide residents of Richmond and the entire Bay Area with increased access to the outdoors and the shoreline, inexpensive recreation, exercise and sightseeing opportunities. Please call me at (510) 464-7909 if you would like to discuss further the comments in this letter.

Sincerely,

Laura Thompson

Laura Thompson
Bay Trail Planner

cc: Bruce Beyaert, TRAC
Morty Prisament, City of Richmond

recyclemore
WEST CONTRA COSTA INTEGRATED
WASTE MANAGEMENT AUTHORITY

CONTRA COSTA
02 NOV -4 PM 12:03
COMMUNITY
DEVELOPMENT DEPT

October 29, 2002

Deidra Dingman
Solid Waste Program Manager
Contra Costa County Community Development Department
651 Pine Street 4th Floor, North Wing
Martinez, CA 94553-0095

SUBJECT: Response to E.I.R. Notice of Preparation

Dear Ms. Dingman:

This letter responds to the Notice of Preparation, dated October 10, 2002 issued by the Contra Costa County Community Development Department regarding the Draft E.I.R. to be prepared for W.C.C.S.L. Inc's proposed amendment of Land Use Permit #022026.

As you know, Contra Costa County and the Authority have worked closely for many years addressing solid waste issues in West County. However to formally respond to the N.O.P. the Authority would like to be put on record as being an interested party in the development of the subject E.I.R. We have been notified of the County's initial "scoping meeting" for this project to be held on November 1 and plan on attending.

The scope and content of environmental information germane to the Authority which we would like to see addressed in the E.I.R. includes:

1. The need to divert materials delivered to the proposed facilities that originate from the Authority's service area. The Authority and its Member Cities are responsible for meeting the State of California's "AB 939" waste diversion goals, and it is necessary that aggressive waste reduction measures be implemented on self-haul delivered wastes.

2. Consideration of how the proposed project will mesh with the existing Integrated Resource Recovery Facility. These concerns are largely outlined in the Authority's April 11, 2002 letter (copy attached) to your office.

We expect that these issues will be explored in the EIR and welcome the opportunity to work with the County and its consultants on this project. As always, if you have questions regarding this or any other matter please contact me at (510) 215-3127.

Sincerely,

Steve Devine
Executive Director

Attachment: 1. April 11, 2002 letter from Joseph Gomes.

One Alvarado Square ■ t 510.215.3125 ■ info@recyclemore.com
San Pablo, CA 94806 f 510.236.1636 www.recyclemore.com

STATE OF CALIFORNIA—BUSINESS, TRANSPORTATION AND HOUSING AGENCY GRAY DAVIS, Governor

DEPARTMENT OF TRANSPORTATION
P. O. BOX 23660
OAKLAND, CA 94623-0660
(510) 286-4444
(510) 286-4454 TDD

02 NOV 12 PM 9:12

Flex your power!
Be energy efficient!

November 6, 2002

CC-580-4.64
CC580137
SCH 200202057

Ms. Diedra Dingman
Contra Costa County
651 Pine Street, North Wing
Martinez, CA 94553-0095

Dear Ms. Dingman:

Proposed Amendment of Land Use Permit (LP# 022026) for the Bulk Materials Processing Center, West Contra Costa Sanitary Landfill – Notice of Preparation (NOP)

Thank you for including the California Department of Transportation in the environmental review process for the proposed project. We have examined the Notice of Preparation and have the following comments to offer:

Our primary concern with the project is the potentially significant impact it may have to traffic volumes and congestion. In order to adequately address our concerns regarding the operation of Interstates 80 and 580 we recommend a traffic impact analysis be prepared. In addition we would request that the study include the following interchanges and ramps. This being a project that produces a high percentage of truck trips we request that the study include truck percentages and assignments.

- Interstate 80 / Richmond Parkway (post mile 6.60)
- Interstate 580 / Canal Boulevard (post mile 4.64)

The traffic impact analysis should include, but not be limited to the following:

1. Information on the project's traffic impacts in terms of trip generation, distribution, and assignment. The assumptions and methodologies used in compiling this information should be addressed.

2. Average Daily Traffic (ADT) and AM and PM peak hour volumes on all significantly affected streets and highways, including crossroads and controlling intersections.

3. Schematic illustration of the traffic conditions for: 1) existing, 2) existing plus project, and 3) cumulative for the intersections in the project area.

4. Calculation of cumulative traffic volumes should consider all traffic-generating developments, both existing and future, that would affect the State Highway facilities being evaluated.

5. Mitigation measures should consider highway and non-highway improvements and services. Special attention should be given to the development of alternate solutions to circulation problems that do not rely on increased highway construction.

6. All mitigation measures proposed should be fully discussed, including financing, scheduling, implementation responsibilities, and lead agency monitoring.

We recommend you utilize Caltrans' *"Guide for the Preparation of Traffic Impact Studies"* which can be accessed from the following webpage: http://www.dot.ca.gov/hq/traffops/developserv/operationalsystems/reports/tisguide.pdf

We look forward to reviewing the DEIR for this project. We do expect to receive a copy from the State Clearinghouse, but in order to expedite our review; you may send four (hard or digital) copies in advance to:

Tom Holley
Office of Transportation Planning B
Department of Transportation, District 4
P.O. Box 23660
Oakland, CA 94623-0660

Should you require further information or have any questions regarding this letter, please call Tom Holley, of my staff at (510) 622-8706.

Sincerely,

Timothy C Sable

TIMOTHY C. SABLE
District Branch Chief
IGR/CEQA

c: Gregoria Garcia (State Clearinghouse)

California Integrated Waste Management Board

Linda Moulton-Patterson, Chair
1001 I Street • Sacramento, California 95814 • (916) 341-6000
Mailing Address: P. O. Box 4025, Sacramento, CA 95812-4025
www.ciwmb.ca.gov

Winston H. Hickox
Secretary for Environmental Protection

Gray Davis
Governor

CONTRA COSTA
02 NOV 18 PM 12:50
COUNTY
DEVELOPMENT DEPT

RECEIVED
NOV 13 2002
STATE CLEARING HOUSE

November 12, 2002

Ms. Deidra Dingman
Contra Costa County
651 Pine Street, 4th Floor, North Wing
Martinez, California 94553-0095

Subject: Notice of Preparation (NOP) of a Draft Environmental Impact Report (DEIR) for the Bulk Materials Processing Center (BMPC) located at the West Contra Costa Sanitary Landfill (WCCSLF)(SWIS No. 07-AA-0001), Contra Costa County

Dear Ms. Dingman:

The California Integrated Waste Management Board (CIWMB) Environmental Review (ER) staff has reviewed the environmental document cited above. The following is a overview of the CIWMB role in the California Environmental Quality Act (CEQA) process, the project description for the proposed project, and the ER staff analysis and recommendations for the proposed project based on ER staff's understanding of the project, as described in the above document(s).

CIWMB Environmental Review Staff CEQA Review

The CIWMB is a responsible agency for the environmental review of this proposed project, and for concurrence in a Solid Waste Facility Permit (SWFP). The CIWMB operates in cooperation with local government to assure protection of public health, safety, and the environment from the potentially detrimental effects of improper solid waste management. The CIWMB concurs in the issuance, or revision, of SWFPs issued by local enforcement agencies (LEAs) to assure that a solid waste facility operates in a manner consistent with all applicable laws and regulations.

ER staff reviews, and comments on environmental documents, to assist lead agencies in developing environmental documents that will be complete for use in the CEQA process by the lead agency, and all responsible agencies. ER staff comments are to assist decision-makers in

identifying potential impacts from proposed projects; determine whether any such impacts are significant; and ascertain whether significant impacts can be mitigated to a level of insignificance in compliance with the CEQA statutes and regulations.

When performing the initial review of an environmental document during the circulation process, ER staff must analyze and evaluate whether the proposed environmental document clearly describes all phases of the project, and assess all potential primary and secondary impacts to public health, safety, and the environment that could occur by the implementation of the project. In order for ER staff to properly evaluate, and recommend, whether an environmental document is adequate for use in the permitting process, the proposed project must be described in sufficient detail for the ER staff to understand and evaluate the proposed project, the potential environmental impacts, proposed mitigation measures, and findings as presented by the lead agency.

When the proposed SWFP, along with the citation of evidence of CEQA compliance by the LEA, is received by the CIWMB, a second analysis performed by ER staff is done to evaluate whether the CEQA evaluation in the cited environmental document, supports the requested specifications and conditions of the SWFP. The environmental document must clearly describe and assess all potential impacts that can be associated with the proposed project. The SWFP concurrence process is greatly facilitated when this type of information is included, and thoroughly addressed in the environmental document.

After comparison and analysis of the cited CEQA document, with the proposed SWFP, ER staff makes a recommendation to the CIWMB regarding the adequacy of the CEQA document for SWFP concurrence purposes. The Board members make the final determination of the adequacy of the CEQA document for SWFP concurrence, as well as whether or not to concur in issuance of the SWFP.

NOP Project Description

CIWMB ER staff has reviewed the NOP, which consists of an Initial Study (IS) and a Land Use Permit Application Executive Summary (LUPA), and submits the following project description for the proposed project based on these documents. If this project description varies substantially from the project as understood by the lead agency, ER staff request that the lead agency notify ER staff of any significant differences prior to preparation of the DEIR.

The Contra Costa County Community Development Department, acting as lead agency, has prepared and circulated a NOP in order to comply with CEQA, and to provide information to, and solicit consultation with responsible agencies in the approval of the proposed project.

WCCSLF, Inc., operates a Class II sanitary landfill located at the foot of Parr Boulevard, City of Richmond. The site encompasses land in both the City of Richmond and Contra Costa County. The City/County boundaries pass west to east through the WCCSLF site. The WCCSLF site has been in operation since 1953.

Currently the site consists of several distinct operations that function as a cohesive whole. These operations include:

- Solid Waste Disposal in a Class II Sanitary Landfill
- Waste Shuttle Facility
- Bulk Materials Processing Center (BMPC) comprised of:
  - Wood Recycling Facility
  - Composting Facility
  - Asphalt/Concrete Crushing Facility
- Hazardous Waste Management Facility (Closure Plan in progress)
- Hazardous Waste Management Facility Leachate Treatment Plant
- Barge Mooring Area (not in operation at this time)

WCCSLF is currently permitted to receive up to a maximum of 2,500 tons per day of municipal solid wastes (MSW) from various jurisdictions in the San Francisco Bay Area. Wastes are delivered in large transfer trucks, garbage trucks, pickups, and passenger cars.

Proposed project design and operational changes as defined in the NOP are as follows:

Bulk Materials Processing Center (BMPC)

Changes to the existing BMPC include an increase in the hours of operations for the transporting of materials from 7:00 am – 5:00 pm seven days a week, to 24 hours per day, seven days a week. Additional changes are proposed at the following BMPC operations/facilities:

- Compost Facility Operations

  Expand the volume of compostable materials and mulch to be processed, change composting permit to allow mixed wastes, bio-solids, and agricultural wastes. Proposed permitted quantities would increase from 11,600 cubic yards (cy) of materials undergoing composting onsite at one time to: 150,000 cy or 56,000 tons of materials undergoing composting; 32,000 cy or 12,800 tons of unscreened compost in storage; 64,000 cy or 25,600 tons of finished screened compost product in storage; 164,000 tons of compostable materials processed per year.

- Concrete Processing and Asphalt Crushing Facilities

  Relocate both facilities to the west end of the central plateau of the WCCSLF site. Increase in the maximum amount of concrete and asphalt rubble materials: 110,000 cy or 175,000 tons of unprocessed broken concrete or asphalt rubble in storage; 60,000 cy or 95,000 tons of crushed concrete and asphalt products in storage; 525,000 tons of concrete and asphalt processed per year. Change in hours-of-operation for concrete processing equipment from 7:00 am to 5:00 pm, Monday through Saturday, to 5:00 am to Midnight (proposed days of operation are not specified).

- Wood Recovery Facility

  Increase in volume of wood wastes to be processed to 10,000 cy or 25,000 tons of unprocessed wood waste in storage; 55,000 cy or 22,000 tons of shredded wood and mulch products in storage; 13,000 tons or 330,000 cy of wood wastes processed per year. Change in hours of operation for chipping and grinding of wood from 7:00 am to 5:00 pm, seven days a week, to 5:00 am to midnight (proposed days of operation are not specified).

Waste Recycling Center (WRC)

Construct and operate a WRC. The proposed location of the facility is in the current Soil Remediation building, or one of two "alternative" sites. The WRC will recycle, sort, and transfer for disposal, waste material from: self-haulers, industrial debris boxes, and other commercial customers that are not processed at the existing West County Resource Recovery, Inc., Richmond. Proposed hours/days of operation are 24 hours a day, seven days a week. Proposed permitted quantities are: 1,000 tons of mixed wastes temporarily stored on site; 1,600 cy of recycled materials in storage (cardboard, wood, metals, glass, plastic); 360,000 tons of mixed wastes handled per year.

Soil Remediation Facility

Discontinue operation of the Soil Remediation Facility.

Wet Waste/Dusty Material Processing Facility

Establish a wet waste/dusty material processing operation. Proposed permitted quantities: 5000 tons and 10,000 gallons of unprocessed materials in storage, 20,000 tons and 1.5 million gallons of materials processed per year, 25,000 tons of dry wastes processed annually.

Soil Reclamation Facility

Establishment of a soil reclamation/processing operation involving the drying of high moisture content dredged materials and biosolids; screening of waste soils; and mixing of wet-wastes and dusty materials with soil to create products that are suitable for alternative daily cover (ADC), final cover, final cap or off-site use. Proposed permitted quantities: 20,000 tons of material waiting for processing in storage; 6,500 tons of processed material in storage; processing of up to 195,000 tons of material annually.

Equipment Maintenance Operating Hours

Increase in hours for equipment maintenance from 7:00 am to 6:00 pm, Monday through Saturday, to 5:00 am to 10:00 pm (proposed days of operation are not specified).

WCCSLF (Landfill) Operations

Increase in the permitted height of the landfill from 120 feet above mean-sea-level (MSL) to 167 feet above MSL. The 37-foot increase in the height of the landfill will include 30 feet of waste, and 7 feet of cap material. Increase the site-life of the landfill by approximately six months, due to the vertical expansion.

Public Access Trail

Development of a Public Access Trail around the perimeter of the landfill property that will include upgrading and protecting the landfill's environmental control system (pumps and wells – NOP does not specify type/use), and building fences to restrict unauthorized access to off-limit areas of the property.

CIWMB ER Staff Comments

As a responsible agency for SWFP concurrence, CIWMB staff will conduct an environmental analysis for this project, using the DEIR developed by the lead agency, in accordance with CEQA Guidelines Title 14 CCR, §15096. The DEIR should address all the requirements for the contents of Environmental Impact Reports listed in Title 14 CCR, §§15120 – 15132. Required for the proposed project will be new SWFPs for the BMPC and the WRC, and a revised SWFP for the WCCSLF expansion.

CIWMB ER staff requests that the lead agency consider and address the following comments in the DEIR for ER staff review of the DEIR for SWFP concurrence purposes. If any of these questions have been addressed in an existing document (e.g. Report of Facility Information, Closure Plans, or previous Environmental documents), please indicate by reference the document, page number(s) and section(s), and provide copies to the State Clearinghouse and the CIWMB along with the prepared DEIR. The lead agency should consider and describe in the DEIR, the design and operational features and/or proposed changes that are germane to information required for SWFPs.

Facility Checklists

The following outlines were developed by CIWMB staff as guides to lead agencies in the preparation of CEQA documentation, and to responsible agencies for their review of documentation for the construction and/or operation of a solid waste facility requiring a full solid waste facility permit (SWFP). These checklists and other information helpful in determination of requirements for a SWFP, and information required for any environmental documents prepared for this proposed project, are also available on our website
http://www.ciwmb.ca.gov/PermitToolbox/CheckItems/CEQA/Default.htm#Guidelines

Potentially Significant Environmental Impacts

The NOP has identified potentially significant project related impacts in the areas of Ground Water Quality; regional and localized Air Quality; regional and localized Traffic; Biological Resources; Geology and Soils; Transportation; Utility and Service Systems; localized Noise; Hazardous Materials, and Health and Safety. The DEIR should describe what provisions in the design or operations of the facility will be in place to prevent project related impacts such as, but not limited to, litter, odor, dust, noise, glare, vectors, vehicle queuing on and off site, drainage, and health and safety.

Most potentially significant project related impacts might be reduced to less than significant levels by project features and designs and/or mitigation measures. It may be that one or more potentially significant environmental impacts cannot be avoided if the project, as proposed in this NOP is implemented.

Traffic and Related Transportation System Impacts

Traffic volumes (the proposed projects separate and total daily vehicle counts) should be projected over a minimum of five years for the project at peak tonnages considering both short haul, and possible long haul aspects of the project proposals. Discuss the cumulative effect of traffic for all of the projects proposed for analysis in the DEIR including the addition of public vehicles to and from the proposed public access trail area. For consideration in the issuance of a SWFP, peak daily tonnages, and vehicle-counts for all proposed projects must be analyzed *separately* for each facility. The DEIR must also discuss and address in detail all on-site traffic circulation for all proposed facilities.

A traffic study will be necessary to determine whether the existing infrastructure is sufficient to handle the projected vehicular movement for all proposed activities/projects, as well as whether improvements may be necessary to accommodate increased traffic. This may include the installation and/or repair of, and maintenance of, existing roads, additional lighting and traffic signals, turn lanes, and pedestrian walkways; as well as cumulative impacts on the circulation within the landfill vicinity (i.e. ingress and egress). The regional district of California Department of Transportation (Cal Trans) should be contacted regarding potential issues related to an increase in traffic volumes around the WCCSLF

Noise

Activities associated with vehicular transport of waste materials and the use of heavy equipment (e.g. large vehicles, rock crusher, tub grinder, trommel screen, etc.) to process materials may result in significant on-site and off-site noise levels. A noise study should be performed if local receptors are impacted, and should be included in the DEIR along with the distance to all nearby sensitive receptors. Appropriate noise-attenuating mitigation measures, which can be implemented to reduce noise levels, should be incorporated into the DEIR. Short term and cumulative impacts should be assessed as well as operations related noise.

Air Quality

Local and regional impacts on air quality from vehicles, trucks, and equipment emission sources accessing the facility should be analyzed in detail, including emissions from equipment handling waste materials and potential dust generation during operations at the WCCSLF. Dust particulates (PM_{10}) and ozone precursors may be of particular concern if the regional air basin is 'non-attainment' for PM_{10} and ozone precursors. If the proposed projects are located within a 'non-attainment' air basin, cumulative impacts affecting the projected federal 'attainment' dates may be significant and unavoidable.

The distance to the nearest residential and/or commercial receptors should be identified in the DEIR. Mitigation measures, which will be employed to address impacts for the proposed facility, should be incorporated into the DEIR with a description of an attainment plan for the air basin(s) air quality. The local Air Pollution Control District should be contacted regarding air pollution discharge permits, which may be required to ensure compliance with ambient air quality standards.

Odors from composting, and from the processing of bio-solids at the Soil Reclamation Facility, may create potentially significant odor problems. If the proposal for the composting facility is for open aerated static pile, or windrow composting methods, there could substantial odor problems from putrescible wastes. The DEIR should describe in detail measures that will be taken to mitigate the potential for odor generation at all proposed facilities.

Surface Drainage

The DEIR should include a drainage plan, which identifies the paved and exposed surfaces where the projects' proposed operations may take place. The plan should identify surface water runoff, including, but not limited to the bay, creeks, rivers, and/or diversion channels in areas adjacent to the project area. The DEIR should include maps drawn to scale showing in detail the location of all diversion berm(s) that will redirect flow away from/around the proposed facilities, and any drainage basins to keep drainage on-site. Will the proposed facilities be able to handle a 100-year, 24-hour storm event? Which materials being processed and/or stored may possibly be exposed to storm water? ER staff recommends that the Regional Water Quality Control Board (RWQCB) be contacted to determine if a Report of Waste Discharge (ROWD) or a National Pollution Discharge Elimination System (NPDES) permit is required for the proposed facility.

Days and Hours of Operation

Please discuss in the DEIR how the facility proposes to handle the increase in days and hours of operation for the proposed project. This includes how the facility will manage the proposed increase of traffic into and out of the facility from self-haul vehicles, and commercial waste vehicles on-site for all proposed operations. The DEIR should include how the self-haul vehicles will be kept separate from commercial vehicles and how the

increase of the on-site volume of traffic be controlled. If increases in days and hours of operation are proposed, then the DEIR should discuss the related environmental impacts such as noise, dust odor, and glare (night lighting), etc.

Locations of Proposed Facilities and Structures

The DEIR should describe in detail where the exact location for each proposed facility will be, and which proposed facilities and/or structures would be located on, or immediately adjacent to the fill areas of the landfill. If a facility and/or structure will be located on or near buried landfill refuse, the DEIR must describe what provisions will be required to assure that there will be no impacts associated with the migration of landfill gas (LFG). This should include what provisions will be required in the design and operation of the proposed project's to prevent LFG from accumulating within the facility's structure(s). Please refer to Title 27, CCR, §21190, "Post-closure Land Use", and Title 14, CCR §17406.1, "Siting and Design" that may apply to the proposed project.

For technical assistance, you may contact Michael Wochnick of the Remediation, Closure, and Technical Services Branch via telephone: (916) 341-6319, or e-mail: mwochnic@ciwmb.ca.gov

Material Storage

The DEIR should include detailed descriptions of exactly how much of each type of material is proposed for storage at the facility for each of the proposed operations, as well as maps to scale showing exactly where these materials will be located on site. The DEIR should also include descriptions of the exact size of each proposed storage area, the exact location of each proposed storage area, and which proposed operations and storage areas are to be covered.

Acreage and Design Capacity

The DEIR should describe in detail:

- The acreage for each of the proposed projects,
- The total area (e.g. size of the tipping areas) and location for each of the proposed facilities,
- Total acreage and location for any stored materials and/or equipment,
- Maximum design capacity (in tons) for the proposed hours of operation for each facility,
- The number and size of each of the proposed buildings and,
- How much operational area will be covered or not covered, and paved or not paved.
- The location of each project, in relationship to each other.

Vertical Expansion of the Landfill

The DEIR should describe in detail the plan for the proposed vertical expansion of the existing landfill. The DEIR should address issues such as, but not inclusive to, which

areas of the vertical expansion will be located directly over buried refuse that does not have the benefit of a composite liner system and/or a leachate collection and removal system (LCRS), and, how the additional overburden of waste materials will affect the LCRS's ability to manage leachate.

The DEIR should provide information that reflects the current and planned contours for the proposed vertical expansion. ER staff must have current information prior to being able to determine slope stability and the potential for slope failure.

The DEIR should also include analysis and consideration of overburden pressures if the increase in landfill elevation will be over in-place waste/fill areas. This should include whether the field capacity of the existing waste will be decreased to the point where leachate generation is affected (especially in unlined portions of the landfill), and if in-place structures such as gas collection and monitoring systems, are designed to withstand the extra weight on the vertical expansion.

Maps

The NOP for the DEIR contained photocopies of unfolded maps that ER staff could not view during their review of the proposed project. Please ensure that the DEIR contains maps that reflect the requirements of Title 14 CCR §15124(a) that states, "The precise location and boundaries of the proposed project shall be shown on a detailed map, preferably topographic. The location of the project shall also appear on a regional map."

Land Use Compatibility

The DEIR should identify the surrounding land use of the proposed BMPC, with a description of the density of the occupancy for commercial and residential areas. The DEIR should be specific regarding the distance to the nearest sensitive receptor(s).

The project's surrounding land use must be designated as compatible with the proposed and current land uses at the project sites. The local government(s), in whose jurisdiction the facilities will be located, must make a finding that the facility is consistent with the General Plan, Public Resources Code (PRC) §50000, and is identified in the most recent County Integrated/Solid Waste Management Plan, PRC §50001.

Landfill and Alternate Daily Cover (ADC)

Please refer to Title 27 CCR §§20670 through 20705. Daily and Intermediate Cover which states in part that the DEIR should indicate the amount, type, source, and proposed use of landfill cover (daily, intermediate, and final) used and stockpiled on site. The DEIR should indicate the source, location, and size of cover stockpiles that will be stored on the landfill site. The DEIR should also discuss the potential effects to landfill operations that the cover stockpile may have on landfill commercial and self-haul traffic, as well as landfill phasing and grading operations. Potential impacts (aesthetics, dust, erosion, traffic, etc.) that might result from the excavation, transportation, handling, and storage of this material should also be included in the DEIR. Please discuss in particular

detail the anticipated transportation impacts related to the cover material importation to the site.

Please note that any materials used at a landfill for ADC must first be approved by the enforcement agency (EA) and may require concurrence by the CIWMB.

Title 27 CCR §20690 (a)(1)– Alternative Daily Cover states:

> "Alternative materials of alternative thickness for daily cover (other than at least six inches of earthen material) for municipal solid waste landfill units, may be approved by the EA with concurrence by the CIWMB if the owner or operator demonstrates that the alternative material and thickness controls vectors, fires, odors, blowing litter, and scavenging without presenting a threat to human health and the environment."

The DEIR should include detailed descriptions of exactly how much of each type of ADC material will be stockpiled and stored at the facility, as well as maps to scale showing exactly where the ADC material will be located on site.

Please refer to Title 27 CCR §20690(b)(4), which states:

> (A) Public contact with sludge or sludge-derived materials, either alone or blended with soil, ash, processed green material, or stabilization agents such as lime, lime kiln dust, or cement kiln dust, shall be prohibited. This prohibition shall apply to staging, processing, tipping, and cover placement areas.
>
> (B) Sludge or sludge-derived materials, either alone or blended with soil, processed green material, ash, or stabilization agents such as lime, lime kiln dust, or cement kiln dust, shall form a compacted material which can be placed without forming open voids or causing material to be tracked off the working face area.

If sludge will be used on slopes near the proposed Public Access Trail, the DEIR should describe what measure will be implemented in order to protect the public from wind borne particulate and possible pathogen levels from the sludge if used in this area. In addition, the DEIR must describe what measures will be implemented to reduce odors from the use of sludge near the Public Access Trail to a less than significant level.

<u>Proposed ADC Regulations</u>

The project applicant and the lead agency should be aware that the CIWMB is in the process of revising the regulations that control the use of alternative daily cover (ADC) materials at solid waste landfills and the reporting of that use. Affected Code Sections will be Title 27, CCR, §§20680 through 27000; and Title 14, CCR §§Sections 18808-18810, 18812, and 18813.

At its October 7, 2002 meeting, the Permitting and Enforcement Committee directed staff to begin a 45-day public comment period. Staff is currently preparing the regulation package for noticing. The revised regulations should become effective within the next year. ERS staff recommends that the lead agency review the draft proposed regulations, and track their progress as this project is developed. The proposed regulations are located on our website at: http://www.ciwmb.ca.gov/Rulemaking/ADC/

Site Capacity and Site Life Estimates

The DEIR should include complete descriptions of the revised site capacity, and site life estimates, due to the proposed increase height of the landfill along with increases in daily disposal tonnages, and compare them with the site capacity and site life estimates anticipated under current permit conditions. The DEIR should also include what the existing and proposed maximum elevations, final slopes, and cross-sectional differences will be, what conversion factor is in converting cubic yards to tons, and what is the proposed cover to waste ratio. The existing permit also lists the estimated closure date of the facility as 1998. This will need to be updated/revised to reflect the proposed changes.

Please note that ER staff will be routing a copy of the DEIR to the CIWMB Closure and Remediation Branch for their review and comment relative to the site's closure plan.

Hazardous Materials

Hazardous materials can be inadvertently placed in the non-hazardous waste stream. Items such as batteries, electronics, pesticides, and oil containers are commonly placed in the waste stream. Please describe what provisions will be implemented, such as load checking and storage areas, as well as emergency plans to address hazardous waste found in the waste-stream at the proposed facilities.

Earthquake Faulting and Seismic Stress

Identify in the DEIR any known earthquake faults in the vicinity of the proposed facility and the frequency of seismic activity as well as a range of most probable earthquake (MPE) magnitudes and maximum ground acceleration (MGA). Please include a map of historic epicenters within a radius of ten miles of the facility. Describe how the structures for the proposed project will stand up to the MPE and MGA considering that the facility may be located over buried landfill refuse. The DEIR should also include configurations that may incorporate the greatest structural landfill integrity (i.e. side slope stability) at the facility. Please include a discussion of the structural integrity, under seismic duress, of possible design/development scenarios,

Solid Waste Quantities

The NOP contains conflicting and confusing waste quantity measurement units (cubic yards and tons). The DEIR (and any permits) for the proposed projects should use consistent units (either volume, or weight) for waste quantity calculations. The DEIR

could also contain the conversion factors used to convert volume to weight, or weight to volume, and should be provided in the solid waste generation study.

Cumulative Impacts

It is important that the DEIR address the cumulative impacts resulting from the individual/proposed project(s) and the combined projects as well as those incremental impacts resulting from the proposed projects' implementation.

Sudden Oak Death

Please be aware that many counties in California, including Contra Costa, are currently undergoing an epidemic of a plant pathogen that is highly destructive to native oaks and many other hardwoods (Phytophthara ramorum). Composting facilities can act as dispersal centers for diseases such as this one if appropriate measures are not instituted. If material from an infected county is brought to a composting facility, it may then be transferred to uninfected areas through local sales of compost products. Federal and State regulations restrict the movement of plant materials in infected areas, and recent changes to Title 7 Code of Federal Regulations part 301 (Sections 301-92 through 92-10) specifically address Phytophthara ramorum. For further information on this, please see The California Oak Mortality Task Force's website: http://www.suddenoakdeath.org/

Emergency Response Preparedness Plan

In the event of an accident, explosion, fire, or the release of hazardous substances due to upset conditions or mechanical malfunctions, an Emergency Response Preparedness Plan should be prepared and available for the facility. Personnel should be properly trained to handle emergencies, including identification, location and use of fire suppression equipment, procedures for evacuation of the premises, and noticing for contacting the appropriate authorities in the event of such an occurrence. ER staff requests that such a plan be briefly described or referenced in the DEIR including the location and response times of the nearest City/County Fire Departments and hospitals. This information can be referenced in supporting documentation. In addition, please describe in the DEIR the security on and around the facility, including fencing, lighting, gates, and access roads.

Proposed Regulations for Compostable Materials

The project applicant and the lead agency should be aware that the CIWMB is in the process of revising the regulations pertaining to composting facilities and the permitting process. The revised regulations are expected to become effective within the next year, and may include changes designed under the CIWMB Tiered Permit Program. ER staff recommends that the lead agency review the draft proposed regulations, and track their progress as this project is developed. The proposed regulations are located on our website at: http://www.ciwmb.ca.gov/Rulemaking/Organics/

Please note that the proposed Compost Regulations, Title 114, CCR §17863.4(a) Odor Impact Minimization Plan (OIMP) will require all compostable material handling

operations and facilities to prepare, implement, and maintain a site-specific OIMP. A complete plan will be a required submittal to the enforcement agency along with the Enforcement Agency Notification or permit application. The entire text for the proposed regulations can be viewed at: http://www.ciwmb.ca.gov/Rulemaking/Organics/

Please see complete text of all proposed and current regulations on our website: http://www.ciwmb.ca.gov/Law.htm

Mitigation Reporting or Monitoring Program (MRMP)

California PRC §21081.6, states that the lead agency "shall adopt a reporting or monitoring program for the changes made to the project or conditions of project approval, adopted in order to mitigate or avoid significant effects on the environment. The reporting or monitoring program shall be designed to ensure compliance during project implementation", and, that the lead agency "shall provide that measures to mitigate or avoid significant effects on the environment are fully enforceable through permit conditions, agreements, or other measures.

Conditions of project approval may be set forth in referenced documents which address required mitigation measures or, in the case of the adoption of a plan, policy, regulation, or other public project, by incorporating the mitigation measures into the plan, policy, regulation, or project design."

The MRMP should identify the environmental impacts associated with the proposed project, identify mitigation measures to reduce impacts to a less than significant level, identify agencies responsible for ensuring the implementation of the proposed mitigations, and specify a monitoring/tracking mechanism. The MRMP should also indicate that agencies designated to enforce mitigation measures in the DEIR have reviewed the MRMP and agreed that they have the authority, and means, to accomplish the designated enforcement responsibilities.

The MRMP is required to be made a condition of project approval. ER staff suggests that the final EIR establish enforcement procedures and penalties, as well as develop conflict resolution provisions.

Conclusion

CIWMB ERS staff would like to thank the lead agency for the opportunity to review the proposed project. ERS staff hopes that this comment letter will be useful to the lead agency in carrying out their responsibilities in the CEQA process. Please note that ERS staff may be available to attend consultation meetings and/or workshops planned for the preparation of any Environmental documents.

CIWMB ER staff request copies of any subsequent Environmental documents including, the Draft Environmental Impact Report, the Final Environmental Impact Report, the RFI, any Statements of Overriding Considerations, copies of public notices, and any Notices of

Determination for this project. As required in Title 14 CCR, §15205(a) of the CEQA Guidelines, a DEIR for review by state agencies shall be submitted to the State Clearinghouse. If the environmental document for this proposed project is certified during a public hearing, ER staff request notice and location of this meeting two weeks in advance. If the document is certified without a public hearing, ER staff request notification two weeks in advance of the date of the certification, and project approval by the decision-making body.

If you have any questions regarding these comments, please contact me by telephone: (916) 341-6727, or e-mail: dpost@ciwmb.ca.gov

Sincerely,

Diana Post
Environmental Review Staff
Permitting and Inspection Branch
Permitting and Enforcement Division
California Integrated Waste Management Board

Copy: Ken Stuart, Director
County of Contra Costa Health Services Dept
Environmental Health Division
2120 Diamond Blvd Ste 200
Concord, CA 94520

Beatrice Poroli, Integrated Waste Management Specialist
Permitting and Inspection Branch
Permitting and Enforcement Division
California Integrated Waste Management Board

Mary Madison-Johnson, Supervisor,
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Permitting and Enforcement Division
California Integrated Waste Management Board

Christopher Fong, Waste Management Engineer
Permitting and Enforcement Division
Remediation, Closure and Technical Services Branch
Closure and Technical Services Section
California Integrated Waste Management Board

APPENDIX 1E

REPORT PREPARATION

REPORT PREPARATION

A. LEAD AGENCY

Contra Costa County Community Development Department
651 Pine Street
4th Floor – North Wing
Martinez, CA 94553
(925) 335-1224

Community Development Director:	Dennis M. Barry, AICP
Solid Waste Programs Manager:	Deidra Dingman
EIR Coordinator:	Joel Sabenorio

B. LIST OF CONSULTANTS

Prime EIR Contractor

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P.O. Box 331
Danville, CA 94526
(925) 820-9757

Project Manager: Paul Scheidegger

Engineering/Groundwater

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201 N. Civic Drive
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Al Shen
Erv Nesheim
Linda Roe
Perry Schafer

Air Quality

Don Ballanti
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El Cerrito, CA 94530

Don Ballanti

Traffic

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Charlie Abrams
Steven Abrams

Photomontages

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Chuck Henderson

Noise

Illingworth & Rodkin
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Rich Illingworth

Biology

Environmental Collaborative
1268 64th Street
Emeryville, CA 94608

Jim Martin

Geotechnical

Treadwell & Rollo
55 Montgomery Street, Suite 1300
San Francisco, CA 94111

Ramin Golesorkhi
Kelly Candra

C. ORGANIZATIONS AND PERSONS CONSULTED

1. State

State Department of Toxic Substances Control, John Papathakis
California Integrated Waste Management Board, Mary Madison, Diana Post
Regional Water Quality Control Board, Cecil Felix
Department of Fish and Game, John Krause

2. County/Regional

Contra Costa County Community Development Department, Steve Goetz, Roberta Goulart
Contra Costa County Public Works Department, Heather Ballinger
Contra Costa County Environmental Health Department, Lori Braunesreitter, Agnes Vinluam
Solano County Department of Environmental Health, James Campi
East Bay Regional Park District, Terry Noonan
West Contra Costa Integrated Waste Management Authority, Steve Davine
Association of Bay Area Governments, David Lipsetz, Laura Thompson
Bay Area Air Quality Management District, Carol Allen, Rochelle Walker
Contra Costa Transportation Authority, Martin Engelman
West County Wastewater District, Paul Winnicki, Paul Stovall

3. Cities

City of Richmond Planning Department, Judy Battle, Morty Prisament

4. Others

West County Landfill, Inc., Larry Burch, Jeff Martin
West County Toxics Coalition, Dr. Henry Clark
Port of Oakland, Lynn Cardoza
Questa Engineering Group, Jeff Peters
EMCON/OWT, Inc., Denis Buranek, Nagesh Koragappa
Environmental Stewardship and Planning, Steve Patterson
Trails for Richmond Action Committee, Bruce Beygart, Nancy Stravich, Whitney Dotson
Moffet/Nichols, Rich Roades
Edgar & Associates, Shawn Edgar
University of California at Berkeley, Professor Jon Bray
Monk Associates, Geoff Monk

APPENDIX 3A

POSTCLOSURE DEVELOPMENT PERFORMANCE STANDARDS

EXCERPTS FROM WCCSL CLOSURE & POSTCLOSURE PLAN

(From pending 2002 revisions to WCCSL PCP pages 170-171)

It is acknowledged by West Contra Costa Sanitary Landfill, Inc. (site Operator) and West County Landfill, Inc. (WCL, Inc.) the site owner that the Class II site use during the postclosure maintenance period will be in accordance with the requirements of Title 27 Section 21190. Sections 21190(a) through (f) are reprinted below:

21190 CIWMB – Postclosure Land Use. (T14:§17796)

(a) Proposed postclosure land uses shall be designed and maintained to:

(1) protect public health and safety and prevent damage to structures, roads, utilities and gas monitoring and control systems;

(2) prevent public contact with waste, landfill gas and leachate; and

(3) prevent landfill gas explosions

(b) The site design shall consider one or more proposed uses of the site toward which the operator will direct its efforts, or shall show development as open space, graded to harmonize with the setting and landscaped with native shrubbery or low maintenance ground cover.

(c) All proposed postclosure land uses, other than non-irrigated open space, on sites implementing closure or on closed sites shall be submitted to the EA, RWQCB, local air district and local land use agency. The EA shall review and approve proposed postclosure land uses if the project involves structures within 1,000 feet of the disposal area, structures on top of waste, modification of the low permeability layer, or irrigation over waste.

(d) Construction on the site shall maintain the integrity of the final cover, drainage and erosion control systems, and gas monitoring and control systems. The owner or operator shall demonstrate to the satisfaction of the EA that the activities will not pose a threat to public health and safety and the environment. Any proposed modification or replacement of the low permeability layer of the final cover shall begin upon approval by the EA, and the RWQCB.

(e) Construction of structural improvements on top of landfilled areas during the postclosure period shall meet the following conditions:

(1) automatic methane gas sensors, designed to trigger an audible alarm when methane concentrations are detected, shall be installed in all buildings;

(2) enclosed basement construction is prohibited;

(3) buildings shall be constructed to mitigate the effects of gas accumulation, which may include an active gas collection or passive vent systems;

(4) buildings and utilities shall be constructed to mitigate the effects of differential settlement. All utility connections shall be designed with flexible connections and utility collars;

(5) utilities shall not be installed in or below any low permeability layer of final cover;

(6) pilings shall not be installed in or through any bottom liner unless approved by the RWQCB;

(7) if pilings are installed in or through the low permeability layer of final cover, then the low permeability layer must be replaced or repaired; and

(8) periodic methane gas monitoring shall be conducted inside all buildings and underground utilities in accordance with §20933 of Article 6, of Subchapter 4 of this Chapter.

(f) The EA may require that an additional soil layer or building pad be placed on the final cover prior to construction to protect the integrity and function of the various layers of final cover.

(From pending 2002 revisions to WCCSL PCP pages 182-188)

Postclosure Development Performance Standards

To guide the planning of future site uses, performance standards have been developed for the WCCSL that embrace the intent of Title 27 Sections 21190 (a) through (f). The following performance standards shall be considered for each prospective use:

- Final Cover inspection and maintenance – The final cover underlying the zone to be occupied by the subject land use will be inspected annually under the landfill postclosure

monitoring. At the time the land use is proposed and approved, specific potential impacts to the landfill cap will be listed and specific monitoring activities or land use development construction inspection and observations protocols will be developed. After construction is completed, as-built drawings will be prepared and filed as part of the postclosure plan background details. No subsequent construction or grading that will penetrate the cap will be allowed without prior approval. Annual inspections shall include observations to detect any non-approved site modifications.

- Landfill Grading and Drainage System inspection and maintenance – Within the zone to be occupied by the land use, the annual landfill monitoring program will include observation of the final grading and drainage pattern within the zone. The development plans will be required to evaluate the potential for occurrence of settlement of the landfill surface. The development plans must accommodate the anticipated settlement. Any regrading shall be approved by the WCCSL Site Engineer. Areas of differential settlement that interfere with the planned drainage concept will be identified and scheduled for regrading.

- Slope Protection and Vegetation inspection and maintenance – The land use development will be evaluated to determine if special slope protection is required. The annual landfill monitoring program will observe the condition of the slope protection devices and installations and the status of planted erosion control vegetation. The activities associated with the land use will be reviewed to determine if such activities are interfering with the slope protection or if the vegetation growth is being impaired. Any areas requiring erosion correction or replanting will be identified and scheduled.

- Leachate Control and Treatment System operation, inspection and maintenance – At the time the land use is proposed the potential use of water will be estimated by the developer. The control of the water will be evaluated prior to approval of the development. The land use operator annually shall report the amount of water utilized to the WCCSL Site Engineer. Annually the postclosure land use will be evaluated to assure that water usage, drainage or disposal is not penetrating the landfill cap or is causing leachate generation.

- Gas Control System inspection and maintenance – Within the zone occupied by the land use, landfill gas monitoring will be established consistent with the development. At the time the land use is proposed and approved, the landfill gas monitoring details will be ascertained and implemented during construction of the development. Landfill gas migration controls also will be planned and built into the development as deemed necessary. The monitoring will be included in the standard WCCSL landfill gas monitoring program for on-site structures.

- Ground Water Monitoring Network inspection and maintenance – Prior to approval, all proposed land use developments will be reviewed to determine none of the ground water monitoring wells will be damaged by the development construction or operation activities.

At the time any new prospective use is proposed more details must be provided as part of processing the City and County road grading permits, park development plans, and building permits. Such details cannot be provided now due to the preliminary nature of the possible uses. At this stage of the final landfill development process, performance standards and project controls such as listed above are reasonable representative project development control measures to be applied. These center on minimizing water infiltration, maintaining the drainage patterns and preserving the cap integrity.

Note that all finally selected uses for the closed landfill shall be approved by all applicable agencies, most probably involving the City of Richmond or Contra Costa County land use control agencies, the Local Enforcement Agency, California Integrated Waste Management Board, and Regional Water Quality Control Board. Possibly the Bay Conservation and Development Commission and the Bay Area Air Quality Management District also may have jurisdiction over the developments.

The costs of special development details will be borne by the site users. This would apply to the IRRF operator and the greenhouse/nursery industry.

The CIWMB has indicated concern regarding certain financial responsibilities that might be complicated by the postclosure resource recovery operations. Upon further review it appears the attention centers upon reestablishment of approved postclosure control and monitoring measures if a postclosure land use was to be terminated. For example, if the West County composting program was later shifted to another location away from the WCCSL property, what conditions would remain after the composting program stops at the WCCSL? It is WCCSL's intent that the program operator will be required through conditions of the site lease to return the property to meet the required closure conditions. The enhanced depth soil buffer layer could be left in place if the operator provided correct drainage grading. Also, the operator would be required to revegetate the regraded surface. The lease agreement would stipulate that a portion of the lease payment would be placed in a reserve account to be used to pay for the costs of grading and reseeding.

Water Related to Postclosure Land Use

The RWQCB staff members have asked for a description and quantification of water entering, leaving and remaining on-site related to postclosure land use.

The following are applicable to the water on the landfill:

- Water applied to compost for the composting process
- Water applied for dust control
- Water applied in nursery growing areas (net of plant evapotranspiration)
- Precipitation
- Drainage runoff
- Evaporative losses from non-vegetated areas
- Vegetative plants evapotranspiration

The important factor common to the above water occurrences is the net loss of water due to the Northern California climatic conditions.

The nursery growing areas may have the highest amount of applied water. Until the operations are more specifically planned, it is not possible to quantify the amount of water involved. Prior to the permitting of such a land use, specific water usage information and penetration prevention measures will be defined. The development permits and the lease restrictions will enact such controls.

The compost area would have the next highest amount of applied water. Water is added to compostable materials during the dry weather months to maintain the composting process. Water would also be used for dust control within the area. The compost area water would be applied stringently to allow vehicles and tractors to maneuver across the site. The site is sloped for proper drainage and excessive wet conditions would hinder vehicle movement. The compost windrows are to be shifted side to side during the composting operation on a weekly or more frequent basis. Hence, areas under the piles would be exposed and subjected to sun and wind drying weekly resulting in control over deep moisture penetration.

As described in Subsection 3.1.2, past shallow excavations into the vegetative layer portion of the landfill cap have shown water penetration of only 3 or 4 inches after the wet weather season. The surface soil profile completely dries out due to evaporation during the following dry season. The extra protective cap of 3 feet depth that will underlie the composting area provides 3 times the normal vegetative cap thickness and it is underlain by the standard 4-foot thick final cover landfill cap. Deep infiltration of applied water is not anticipated.

In addition the planned moisture penetration evaluations described in Plan Subsection 3.1.2 will provide more extensive information. One additional leachate prevention measure is the moisture extraction that occurs as the landfill gas is collected from the landfill.

Postclosure Use and Landfill Cap Competence

The staff of the CIWMB in reviewing the postclosure uses of the landfill commented on the need to assure that long-term competence and durability of the landfill cap not be compromised. Questions were raised about the potential of differential settlement occurring along the boundaries of the waste processing areas and the adjacent open space areas.

The differential loading of the various areas was reviewed. The areas of greatest differential loading potential that were studied by WCCSL, Inc. in response to this request are the concrete rubble and finished rock products storage pile areas, the wood waste storage area, the compost maturing piles, the soil reclamation area and the baling area. The table following presents representative comparative loadings for these areas.

As indicated in the cap design in the closure plan for all waste processing areas, additional depth of the uppermost "vegetation" zone layer will be provided that will reduce the effective pressures on the critical cap element—the low permeability clay barrier layer. The areas of greatest potential differential settlement will most likely be the storage locations of the heaviest materials, namely the concrete rubble, finished rock products and the soils. These materials have a bulk density of about 3,000 lbs per CY whereas the piles of raw MSW, wood waste and compost are about 20 percent of those densities. The storage pile of solid waste bales created during the evening shift would exert ground pressures of about 100 psf if the bales are stacked 4 bales high. This is to be compared with the stockpile depth of concrete rubble or finished rock products of 15 feet high which would exert a ground bearing pressure of about 1700 psf. The compacted soil cover is anticipated to have a bearing capacity of 8000 to 10000 psf. Applying a safety factor of 3 gives an allowable range of 2700 to 3000 psf for the landfill surface.

Consideration must be given to the impact on the impermeable clay layer located 4 feet below the top of the thickened landfill cap used in the resource recovery processing areas. Evaluating the possible unit soil pressures within the clay layer, assuming a stockpile of concrete rubble 20 feet deep, the effective loading of the clay layer on a unit basis is approximately 50 psf, substantially less than the 6000 to 8000 psf maximum bearing capacity and the shearing stress is less than the shearing strength of this clay soil layer.

EVALUATION OF MATERIAL STOCKPILE AREAS					
Material	Compost	Wood	Soil	Concrete	Asphalt
Density (lb/CY) (pcf)	500 18.5	400 14.8	2500 92.6	3000 111.1	3000 111.2
Proposed Pile Height (ft)	25	25	20	30	20
Ground Pressure (psf)	463	370	1852	3333	2222
Allowable Ground Pressure (psf)	2700 to 3300				2700 to 3300
Comments	Height is governed by other than soil strength	Height is governed by other than soil strength	Maximum height is approx. 35 feet	Maximum height is approx. 30 feet	Maximum height is approx. 30 feet

From the studies made it is apparent that the only specific stockpile height limits set on the resource recovery operations should be on the concrete rubble and soil processing operations. The above table includes the proposed maximum heights of the stockpiles. If a greater depth of the upper landfill cap layer is provided, piles of additional height could be used as approved by the landfill engineer. The other processing operations are not expected to create spot loading conditions sufficient to create undue differential stresses in the landfill cover. In the case of the wood wastes and composting areas, the loadings will be shifted from place to place over time as the piles are formed and subsequently moved. The weight of equipment such as the rock crusher and wood grinder/shredder do not create any more loading than a D-8 dozer.

APPENDIX 3B

COMPOSTING OPERATIONS PLAN SUMMARY

APPENDIX 3B

COMPOSTING OPERATIONS PLAN SUMMARY FOR THE WEST CONTRA COSTA BULK MATERIALS PROCESSING CENTER

April 2003

PREFACE

It is the goal of integrated resource recovery programs to minimize the amount of compostible materials that are buried in landfills. The specific recycling goal of the West County Landfill Composting Program is to process compostible materials into various grades of compost and also recover other organic materials such as mulch materials or wood chip biofuels.

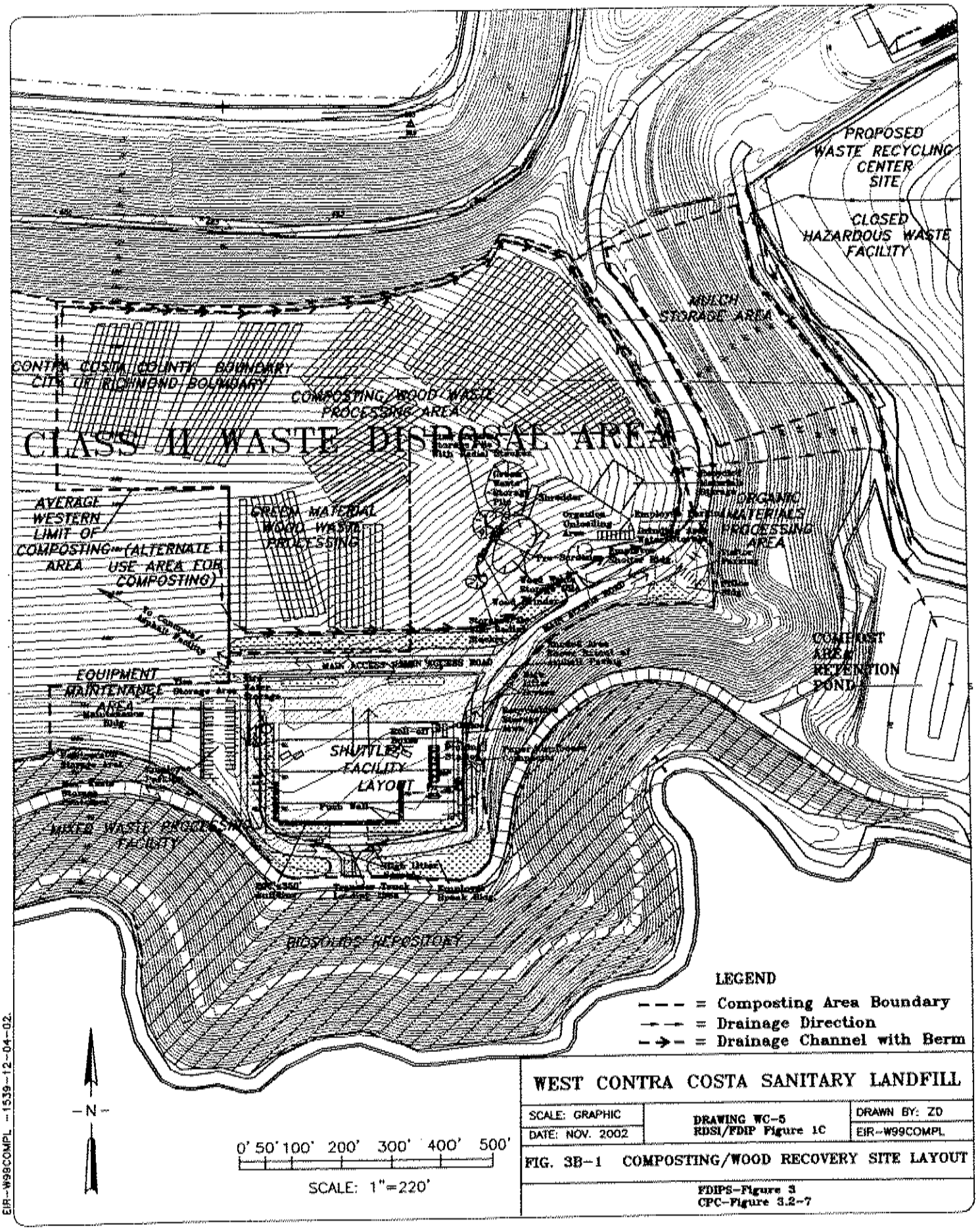
This summary of the compostible material processing program has been developed to document the responsibilities and procedures for segregation, storage and processing of compostible materials at the West Contra Costa Sanitary Landfill (WCCSL) site. This plan covers the aspects of:

1. Acceptance of Compostible Materials
2. Compostible Materials Unloading, Storage and Processing Site
3. Compostible Materials Processing Operations
4. Responsibilities for the Processing Operations
5. Residuals Management
6. Contingencies

1. ACCEPTANCE OF COMPOSTIBLE MATERIALS

The location of the Composting Facility on the West County Landfill is shown on Figure 3B-1.

The Bulk Materials Processing Center (BMPC) will accept compostible materials and have them placed in the organic materials processing area. Customers may deliver compostible materials only during the published hours of public access to the WCCSL site unless special arrangements are made to correlate with the specific schedule of a construction project (e.g. night delivery of finished compost or mulch to avoid freeway congestion).



WEST CONTRA COSTA SANITARY LANDFILL

SCALE: GRAPHIC	DRAWING WC-5 RDSI/FDIP Figure 1C	DRAWN BY: ZD
DATE: NOV. 2002		EIR-W99COMPL

FIG. 3B-1 COMPOSTING/WOOD RECOVERY SITE LAYOUT

FDIPS-Figure 3
CPC-Figure 3.2-7

EIR-W99COMPL -1539-12-04-02.

No unloading at the WCCSL will be authorized until payment of the appropriate fees.

The vehicles delivering the compostible materials will be checked in and out of the BMPC site to insure that proper unloading directions are given and to allow the site personnel to know when the vehicle has departed the site. Persons delivering the compostible materials must adhere to the general rules of the WCCSL facility.

Feedstock Material Types

The following are the feedstock materials that will be received:

(a) green and vegetal material - trunks, branches, brush, leaves, grass clippings, weeds, tree trimmings, untreated wood waste or shrubbery cuttings from residential, commercial and public landscape sites, and agricultural operations.

(b) wood wastes - excluding wood products that may contain pentachlorophenol, arsenical, or creosote type preservatives and wood painted with lead based paint.

(c) manures and stable waste - organic stable bedding, straw and manure, none for the purpose of providing "Additives."

(d) plant wastes from the food processing industry including the vegetative and food materials from the fresh food packing and marketing industry, food canning and freezing industry, food marketing industry (wholesale warehouses, produce markets), and residential food wastes.

(e) sewage sludge (biosolids) – digested POTW sludge biosolids or other treatment residues that have been shown by analysis not to contain any constituents at levels which would cause the waste to be a hazardous or designated waste. At a future time a dilute digested wastewater treatment sludge may be used in the composting process. This sludge, if pumped to the composting site from the West County Wastewater District, will be 95% (by weight) moisture. If the sludge is taken by truck directly from the sludge drying ponds, then the moisture content will be lower (approximately 50 to 85 percent moisture).

(f) animal material – material derived from animal products that are for consumption by humans or animals. The source of these products include, but are not limited to, agriculture, food manufacturing and processing industries, restaurants, hospitals, and food distributors. The material is either separated at the point of generation, or separated at a centralized facility that employs methods to minimize contamination. The composting of mammalian flesh, organs, unprocessed hide, blood, bone and marrow is prohibited, except when from the food service industry. Animal material does not include manure.

(g) agricultural material – the products of farms and ranches and items processed from these products, as defined in Division 21, Part 2, Chapter 1, Section 58619 of the Food and Agricultural Code, including any agricultural, horticultural, aquacultural, silvicultural, floricultural, vermicultural, or viticultural product.

(h) mixed solid wastes – paper, cardboard, and wood (excluding wood products that may contain pentachlorophenol, arsenical, or creosote type preservatives and wood painted with lead based paint). No unsorted garbage and trash will be processed.

The following is the definition of "Green Waste" as defined by the CIWMB in Title 14 Section 17852:

> "Green Material" means any plant material that is either separated at the point of generation, or separated at a centralized facility that employs methods to minimize contamination. Green material includes, but is not limited to, yard trimmings, plant wastes from the food processing industry, manure, untreated wood wastes, paper products, and natural fiber products. Green material does not include treated wood waste, mixed demolition or mixed construction debris.
>
> The phrase "plant wastes from the food processing industry" is included in the CIWMB Green Waste definition. WCCSL, Inc. understands that "plant wastes" are another term for "vegetative wastes" or "food wastes" and that the food processing industry includes the fresh food packing and marketing industry, food canning and freezing industry, food marketing industry (wholesale warehouses, produce markets and stands, other wholesale food markets, and retail markets and stores) where the material is source separated, and the food preparation industry (cafeterias, cafes, bakeries and restaurants) where the material is source separated.

As the State regulations are modified in the future and develop specific definitions of the compostibles feedstock, those revisions will modify the listing above.

The record keeping maintained by the BMPC shall include the amount of compostible materials delivered to the processing area, including the source jurisdiction. An approximate record of the amount of compostible materials processed will also be maintained by the BMPC management.

Notice will be given to the construction and demolition contractors working in the service area of the BMPC regarding the benefits of segregating the compostible materials from other debris at their construction job sites. A reduced tipping fee is planned for materials that are free of metal, rubbish, concrete, asphalt pieces, and dirt.

No wood which has been treated with chemicals such as creosote or pentachlorophenol will be accepted.

Compostible materials containing too much concrete, metal, rubbish and dirt will be refused entry to the composting facility.

Specifications for Biosolids to be Composted

The amount of moisture in the processed biosolids will be related to the method of composting. One method of composting the biosolids is to directly apply the wet biosolids from a tank truck to the windrows. This would add both nutrients and moisture to the materials being composted. In the mechanically aerated windrows, liquid compost (2 to 8 percent solids) may be sprayed on the windrows, or injected into the windrows by jetting them from the tank truck. Then the windrow machine would mix the windows.

Dewatered biosolids will usually contain about 20 percent solids. These will be mixed into the shredded materials and then the windrows will be formed, or the biosolids may be added to the stationary batch mixers used for the aerated static pile composting system.

2. COMPOSTIBLE MATERIALS UNLOADING, STORAGE/ AND PROCESSING SITE

The BMPC reserves the right to designate the location of the compostible materials processing site within the WCCSL property in conformance with applicable regulations. The compostible materials storage and processing operation is sited on the central plateau zone of the WCCSL adjacent to the organic materials and concrete/asphalt processing areas. This location is reached from the central access road. Figure 3B-1 shows the location of the Composting Facility on the central plateau of the landfill.

The area required for the composting operation is approximately 10 to 30 acres. This assumes that the shredded materials can be processed via mechanically aerated windrows into useable compost and mulch within 4 months.

The compostible materials processing area is on the closed landfill. To protect the landfill cap from disturbance, an extra depth of soil has been placed over the final cap. A minimum thickness of 3 feet of compacted soil is placed under the unloading area, stockpile areas, the shredding area and the windrow area. Benchmarks have been established to assure that the 3-foot buffer zone is not removed over time as the compostible materials processing continues. Periodically, additional compacted soil will be placed to augment the thickness of the final cap.

The site chosen for the unloading, storage and processing of the compostible materials is conducive to the needs of the operation. The BMPC WCCSL personnel will continually supervise access to the compostible materials area.

The compostible materials storage and processing area will be restricted to persons delivering compostible materials, BMPC operations personnel and compostible materials processing personnel only. It is off-limits to the general public except those delivering loads of compostible materials, or loading finished products.

During each week, the BMPC WCCSL personnel will periodically push the compostible materials in the unloading area using a rubber tired loader to place them into the raw materials stockpiles. The stockpiles generally will be 10 to 20 feet deep.

The site will be periodically regraded by BMPC WCCSL personnel for effective drainage. Drainage grading and evaporation of rainwater from the site is adequate to prevent the accumulation of standing water. Runoff from the compostible materials storage site will be directed to the WCCSL Area A and Area B ponds.

The composting facility may manage a variety of different composting feedstock, including green materials, biosolids, food waste, and waste paper materials. A possible design feature instituted if necessary is a covered receiving structure (or building) intended to manage litter, and also bird and vector attraction. This structure would receive the food waste and paper products, which would be placed into independent bays. The bays would be designed so that incoming trucks can dump directly into them. The biosolids would be received in an adjacent area that may be covered if necessary. The unground green materials would be received in the nearby area where they will be ground following the current site operations.

Several alternative pre-processing methods may be utilized for handling the mixed materials. Inside the structure, the food waste and waste paper may be placed in adjacent stationary batch mixers. The biosolids and shredded green materials will also be added to the mixers to form a blend that meets the feedstock specifications for the compost windrow or aerated static pile systems. An alternative method is to grind the paper materials and food wastes with the green materials. The biosolids may be added to the grinding step too, if the grinder can handle such a mixture without reducing the efficiency of the shredding process. Depending upon the amount and type of food materials received, it may be possible to add them directly to the windrow, and the mechanical aeration process (e.g. the Scarab tractor) may result in adequate grinding of the food materials. This has been a successful practice in the existing composting process due to the small volume of food wastes processed.

Policing of the compostible materials storage and processing site and the regular processing of the accumulated material will prevent environmental problems.

The environmental controls necessary for the compostible materials processing operation include:

- Odor Control
- Drainage Control
- Fire Control
- Dust Control
- Residuals Management
- Operator Noise Protection
- Safety Protection

An Odor Impact Minimization Plan (OIMP) has been prepared for the WCCSL Composting Facility. The OIMP has been developed to provide guidance to on-site personnel in the handling, storage, and removal of compostible materials, in accordance with 14CCR 17863.4. This OIMP will be revised as necessary to reflect any changes in the design or operation. A copy of the revisions will be provided to the enforcement agency within 30 days of the changes. In addition, this OIMP will be reviewed annually to determine if any revisions are necessary.

The main components of the OIMP are as follows:

1. Odor Monitoring Protocol
2. Meteorological Conditions
3. Complaint Response Protocol
4. Design Considerations for Minimizing Odors
5. Operating Procedures for Minimizing Odors

The BMPC is responsible for the drainage and fire control at the compostible materials storage and processing site. The shredding and composting operator is responsible for odor control, dust control and operator noise and safety protection from the equipment utilized.

The water supply for the dust and fire control operations will be furnished by the BMPC WCCSL tank truck used in the composting operation or the shredding contractor if they are a different entity.

3. COMPOSTIBLE MATERIALS PROCESSING OPERATIONS

The composting operations at the WCCSL site are conducted year-round.

The facility operations concept is based upon processing approved separated compostible materials such as green materials (tree prunings, grass clippings, leaves and other plant and vegetative wastes), commercial and industrial wood debris, agricultural wastes, manures and sewage sludge (biosolids). As loads of the organic materials arrive at the WCCSL, the scale attendant will direct the vehicles to be unloaded at the appropriate area. The materials will be temporarily stored in low piles on the unloading area, or covered storage if necessary.

Prior to stockpiling, unwanted materials such as plastic bags or pieces of metal or concrete will be removed. The stockpiled materials will be fed to the shredder to prepare the wastes. The grinding operation will be performed at a rate that will prevent over-accumulation of the raw materials stockpile. Overtime assignments will be made to site personnel as necessary to handle peak loads. A second shredder will be brought to the site to process stumps and/or supplement the WCCSL equipment processing capacity.

After the wastes are shredded, they may be screened to remove wood chips. The fine-sized materials will be placed in the composting windrows. Each windrow will be approximately 7 feet high by 14 feet wide. The length of the piles will depend upon the amount of compostible materials received and the dimensions of the available processing area.

In the full-scale operation, the throughput of compostible and mulch materials is anticipated to be approximately 450 tons per day (TPD7). A Green Waste Composting Facility Permit has been obtained and it is proposed that the upsized composting operation will function under a full composting permit. A Report of Composting Site Information has been prepared in 2002 providing full details of the operation.

The frequency of compostible materials processing generally will be determined by the amount of compostible materials reaching a sufficient quantity to justify the shredding operation. At this time it is anticipated that compostible materials processing operations will occur at near daily frequencies.

The management of the compostible materials processing operation must control environmental problems. These include prevention of odors, fires and dust, and provision of proper drainage.

The BMPC WCCSL personnel will maintain the plowed or graded firebreaks and the drainage facilities surrounding the compostible materials storage pile, the shredded materials storage pile and the processing site (windrow area).

The BMPC WCCSL site Supervisor will be the contact person. The supervision of the processing operations and equipment is also the responsibility of the Site Supervisor and also the Processing Contractors foreman when an outside processing service is used. The operators are to be trained to work safely. Emergency arrangements (e.g., in the case of operator injury) have been established with BMPC Management.

The initial compostible materials processing operations include shredding, conveyors and screening equipment. The equipment to be used will be suitable for the compostible materials processing operation. The equipment includes a loader to move the compost and load the processed materials into transport trailers. The shredding equipment processes about 70 tons per hour. The hours of processing operation currently are between 7:00 a.m. and 5:00 p.m. seven days a week, or as allowed by the site permits.

The processing operation involves the following steps:

- After removal of unwanted items, the compostible materials will be pushed into the stockpile immediately adjacent to the area where the shredder is positioned.
- The materials will be reduced in size by shredding
- The shredded material will be placed into an adjacent stockpile.
- The shredded material will be placed in windrows and turned at the appropriate intervals to produce compost.
- The composted materials will be removed from the windrows and placed in a stockpile.
- Screening equipment will be used to produce the desired size of composted material.
- The screened material will be placed in designated stockpiles.
- The BMPC Supervisor or the designated contractor will arrange for transportation of the processed compostible materials.
- The BMPC personnel or designated contractor will load the material into transport vehicles.

The shredded wastes are removed from the raw materials stockpile and placed into the compost windrows using the loader. A special windrow mixing or turning machine has been purchased to mechanically aerate the windrows. The aeration initially will occur at least weekly.

Water will be added as necessary to the compost windrows using a water truck. It will spray the windrows while driving down the aisles between the windrows.

After many weeks in the windrows (usually 4 to 8 weeks), the composted materials will be placed in a compost maturing stockpile. Trucks and the loader will be used.

Aerated Static Pile Composting

As an alternative process, the compost feedstock received from the mixing operation would be placed daily into aerated static piles for composting. The system is designed for a minimum of 21 days of active composting during which the process will be continually monitored for key process parameters, most notably temperature and moisture. Because biosolids will be part of the composting mixture, all time/temperature requirements as outlined in the EPA 503 regulations will be followed so that the end product will be designated as a Class A, Exceptional Quality product.

To avoid vector attraction, a blanket of up to one foot of finished compost will be placed over the aerated static piles as they are formed. This will be done on a daily basis as the piles are extended or formed. This will have the added benefit of ensuring all individual particles within the aerated static piles meet the time/temperature requirements.

The type of aerated static pile system that may be used is sold by Rexius Forest By-Products, Inc. and is called Express Composting Systems. It is engineered and designed by CH2M-Hill and is based on proven concepts of aerated static pile composting.

Express Composting System Description

This system simply involves drawing air down through the surface of the static piles by withdrawing air from the base of the piles using “air lances” that are connected to a plastic piping network. The piping system is connected to the suction side of a blower. The air from the compost piles is discharged from the blower to a piping system that exhausts the air through a biofilter comprised of finished compost. The piping is portable and reusable for subsequent batches of compost.

The system is designed to make composting as quick and odor-free as possible, and to do it in a way that competes economically with mechanically turned windrow and other static pile systems. The advantages are more production per acre, less material handling (compared to mechanically aerated windrows), more odor control, more moisture control, and more screening productivity. The system is also a more-routine process that improves operating cost-efficiency compared to operations that are continually adjusting their routine in response to odor

production, moisture swings, wet conditions of the composting pad, or seasonal shortages of product.

A sketch of the Express Composting System process layout and a photograph showing the piping system are contained on the next page. The layout shows the arrangement of the piles, mechanical equipment, piping network, and the biofilter. The picture shows two piles and the negative pressure plastic piping leading from the air lances. The air lances are out of view under the base of the piles. The positive aeration pipeline is in place if the operation is to function by aerating the piles from the base.

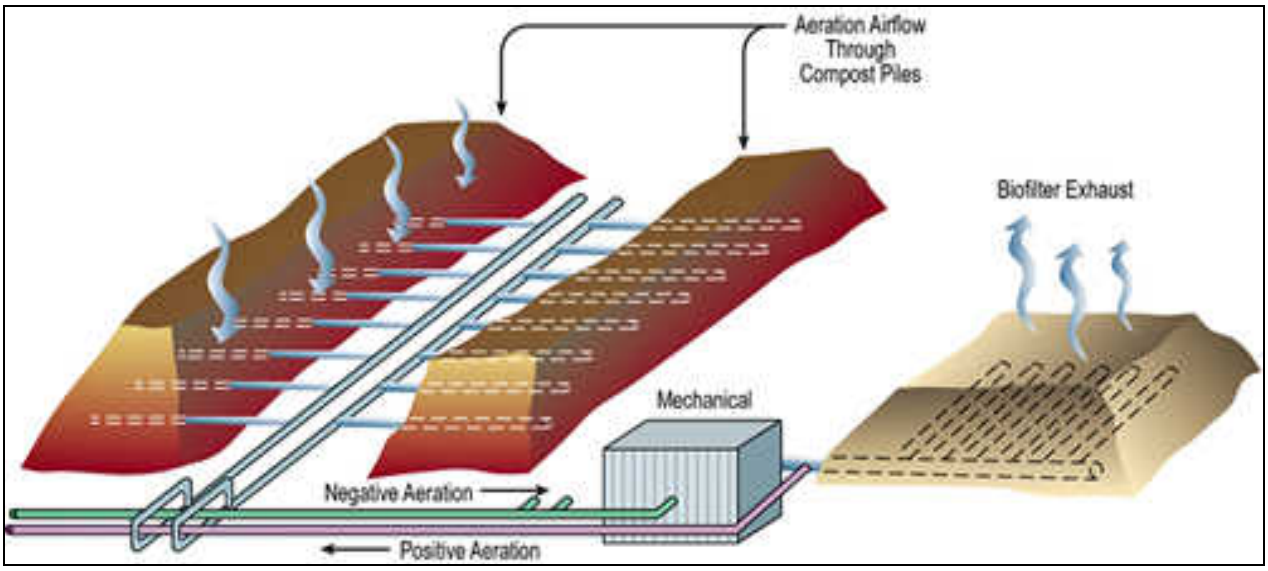
The page following the photographs contains a listing of the design features of the Rexius Express Composting System.

Some labor is required to handle the air lances during pile change-out, and in manually controlling airflow to each pile and the biofilter. However, this type of system has the same operating principles as any negative aeration system with a biofilter. So, once the facility operator is familiar with the system operation, and determines the optimum feedstock, airflows, and residence time for its operation, the initial system can allow transition into a larger system.

No nuisance odors are expected since the aeration air will be sucked down through the surface of the static pile. The layer of compost will also mask the pile odors. The aeration process can be controlled such that sufficient air entry can occur so that the pile sections will be maintained so anaerobic conditions do not occur. The air pulled through the piles will be processed through a biofilter, which is a controlled pile of layered compost positioned over the perforated pipe air discharge zone. A musty odor may be present at times similar to that which occurs in damp forested areas.

Condensate is collected with the negative aeration piping and dropped out in a condensate sump near the blower. This condensate can be pumped and blended into the feedstock or pumped into a treatment system depending upon the needs of the operators. At the WCCSL, if necessary it will be possible to discharge the condensate to the landfill leachate pumping system.

To handle the incoming 450 tons per day of all materials, up to six, 50 horsepower systems would be employed providing up to 21 days of active composting. Each individual system is a stand-alone unit. The system is designed for above ground installation on an improved surface. Each 50 horsepower unit would consist of four aerated piles of approximately 725 cubic yards each.



EXPRESS COMPOSTING SYSTEM AERATED STATIC PROCESS LAYOUT

EXPRESS COMPOSTING SYSTEM AERATED STATIC PILES WITH PIPING NETWORK

Information from Rexius Express Composting Systems

Features and Benefits of the Express Composting Systems ™

- The typical compost process requires frequent turning. This new technique reduces the turning time to once every 14-21 days and requires as little as ½ the total time for completion.
- The odor associated with the composting process is greatly reduced due to greater control of oxygen through the pile.
- The system produces a more complete and homogenous compost.
- The system is easily installed in as little as one day with very low setup costs.
- The unit is very compact and has much smaller space requirements than conventional windrow systems. The system is easily expandable to accommodate future growth.
- It's portable, and the pipes are durable and reusable.
- The system features valve controlled air flow.
- The basic system costs less than the average price of paving an acre of land and handles approximately 3000 cubic yards of material at one time.
- The system is biofilter-capable to control odors of problematic feedstocks.
- Purchase package includes custom engineering to the specific site and operations consultation.

Information from Rexius Express Composting Systems

After the 21-day composting process is complete the aerated static piles will be broken down and piled into static pile windrows for up to six months. These static piles may be located adjacent to the aerated static piles and allow for final product stabilization and maturation. Six months gives adequate time for the final stabilization of the compost to occur resulting in a consistent, high quality compost product being produced.

Post Composting Processing

After the compost has been cured for the designated period the compost will be screened to develop products that meet specifications established by off-site uses. The screening equipment is similar to that used at other composting facilities and in the forest products industry. Equipment may be attached to the screener to remove plastic pieces from the compost. This step improves the overall product quality. Once screened the finished compost may be piled via a radial stacking conveyor where it will remain until shipped to market.

After the compostible materials have been sufficiently composted, the finished materials will be available for use off-site, or for use at the WCCSL to enhance the grass growing ability of the landfill cover soil or to provide erosion control protection on the landfill slopes. The majority of the compost will be used off-site.

Maintenance will be conducted on the equipment generally during daytime operations. Some maintenance may be necessary during nighttime and weekend periods.

More information on the composting facility operations is contained in the WCCSL Report of Composting Site Information (RCSI).

4. RESPONSIBILITIES FOR THE PROCESSING OPERATIONS

The BMPC personnel's prime responsibility shall be to restrict the compostible materials to those materials which are of acceptable type, to provide general supervision of the compostible materials unloading site, and manage the composting operation.

The operations personnel are accountable to the BMPC management and are responsible for the supervision of the operation including organizing, policing, and supervising the compostible materials processing area. This includes control of dust, the collection and disposal of loose rubbish that may accumulate at the processing site, and the immediate supervision of all personnel processing compostible materials at the site.

Firebreaks will be maintained around the composting area and the adjacent wood waste recycling area. If a fire occurs, BMPC personnel will alert the fire control officials and undertake fire control measures identified in the site Fire Control Plan. The occurrence of a fire will be recorded in the site operations daily log and the LEA will be notified within 24 hours.

Fires will be prevented in the composting piles by limiting the depths of the raw material storage pile and the windrows. If a spontaneous combustion fire does occur, the pile will be spread out by tractors after first moving the adjacent windrows. The burning material then will be doused with water.

To utilize a shredder on site, a permit has been obtained from BAAQMD that establishes conditions for the shredder operations. The shredder equipment and operation procedures have been equipped to meet the applicable environmental standards.

The BMPC will designate a representative that is knowledgeable of the compostible materials shredding and screening operations. The BMPC representative is the WCCSL Supervisor.

Any contractor assisting in the program is required to provide proof of general liability and workers compensation insurance coverage.

Dusty conditions would occur if the windrows were too dry. Also, dust could occur from the aisles between the windrows where the tractors operate. Prior to turning the windrows water will be sprayed on the piles and the aisles if rainfall or previous moisture application has evaporated.

The runoff water that has contacted the composting area will be directed to the Area A pond for settling and storage. Excess water will flow to the Area B pond stormwater control pond.

The runoff water may be used in the composting process. Other sources of water are treated effluent from the adjacent West County Wastewater District waste water treatment plant or Area A pond water.

Odors will be controlled through frequent shredding of the incoming materials and aeration of the windrow compost piles. Odors can occur if the piles reach anaerobic conditions.

Annually, the depth of the buffer layer in the composting processing areas will be determined to guard against removal of the cap soil as the compost equipment is operated on the area.

No specific litter control measures would be needed. The primary litter source would be from food materials and waste paper. These materials will be processed in a manner that any blowing paper and plastic items are contained in the operating area.

More information on the process controls and responsibilities is included in the WCCSL RCSI.

5. RESIDUALS MANAGEMENT

The BMPC personnel are responsible for control of drainage water. They also must control dust from the shredding operations, and equipment maintenance materials.

The shredded wood materials of chip size removed during the screening of the compost will be taken off-site for use as mulch or biomass fuel as markets exist. On-site uses might include use of fine size materials as mulch for erosion control or further processing by composting.

Certain non-wood debris may be generated during the processing operations (metals, dirt, litter). As feasible, the non-dirt materials will be salvaged and recycled by delivering them to the appropriate processing facility. The dirt material, if clean, may be processed in the soil reclamation program or used as cover on the landfill are following the postclosure plan.

6. CONTINGENCIES

The BMPC has established response programs for the cases of accidents, fires, and equipment malfunction. The BMPC WCCSL personnel are equipped with a radio to maintain contact with the WCCSL office. The BMPC Management maintain a list of emergency contact numbers and have a Fire Control Plan and a Hazardous Materials Management Plan.

APPENDIX 3C

CONCRETE AND ASPHALT DEBRIS OPERATIONS PLAN SUMMARY

APPENDIX 3C

CONCRETE AND ASPHALT DEBRIS OPERATIONS PLAN SUMMARY FOR THE WEST CONTRA COSTA BULK MATERIALS PROCESSING CENTER

April 2003

Preface

It is the goal of WCCSL, Inc. to minimize the amount of concrete and asphalt debris that is buried in the landfill. The specific recycling goal of this operations plan is to process the concrete and asphalt debris into gravel-like materials useful for on-site roads and also for gas control systems.

This concrete and asphalt processing and recycling program have been developed to document the responsibilities and procedures for segregation, storage and processing of the debris at the West Contra Costa Landfill. This plan covers the aspects of:

1. Acceptance of Concrete Debris
2. Concrete Debris Unloading and Storage Site
3. Concrete Processing Operations
4. Responsibilities of the Processing Contractor
5. Residuals Management
6. Contingencies

The use of the term "concrete debris" in this document is meant to apply to both concrete and asphalt rubble.

1. Acceptance of Concrete Debris

WCCSL will accept concrete debris and place it either in the main landfill or in the concrete recycling area. The landfill supervisor, the scale attendants or the engineering personnel will make the distinction regarding directing the concrete debris to be placed in the concrete recycling area. The materials will also be checked by the Processing Contractor.

Customers may deliver concrete debris only during the published hours of public access to the landfill unless special arrangements are made to correlate with the specific schedule of a construction project (e.g. such as a night-construction project by CalTrans).

No unloading will be authorized until payment of the appropriate fees.

The vehicles delivering the concrete debris will be checked in and out of the landfill to insure that proper unloading directions are given and to allow the WCCSL personnel to know when the vehicle has departed the site. The persons delivering the concrete must adhere to the general rules of the WCCSL facility.

The record keeping maintained by WCCSL shall include the amount of concrete debris and asphalt rubble delivered to the concrete recycling and processing area. An approximate record of the amount of concrete and asphalt processed will also be maintained by WCCSL. The Processing Contractor will participate in this activity.

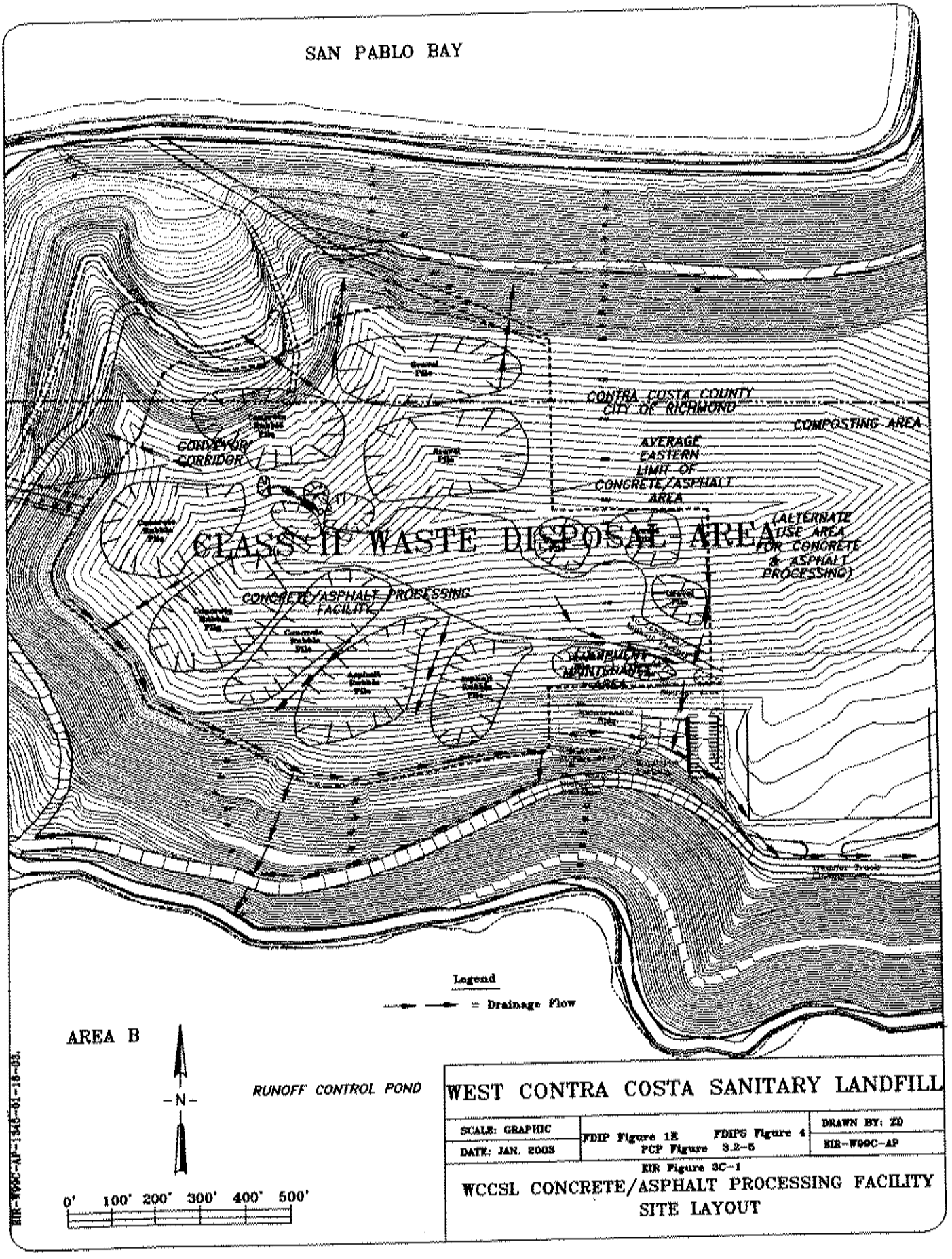
Notice is routinely given to the construction and demolition contractors working in the service area of the landfill regarding the benefits of segregating the concrete from other debris at the construction job sites. A reduced disposal rate is given to materials that are free of wood, rubbish, asphalt pieces, dirt and protruding concrete rebar. The concrete recycling area is also more convenient for unloading large trailer vehicles.

Concrete debris and rubble containing rebar is acceptable if the rebar is not protruding extensively out of the concrete pieces. Extensive amounts of rebar can damage the crushing equipment conveyor belt system. WCCSL, Inc. and its Processing Contractor reserve the right to make the subjective determination regarding "extensive amounts" of steel rebar. Concrete with too extensive an amount of projecting rebar will be rejected from acceptance.

2. Concrete Debris Unloading and Storage Site

WCCSL reserves the right to designate the location of the concrete recycling and processing site within the landfill property in conformance with applicable regulations. The concrete storage and processing operation is anticipated to be moved to the central plateau location as the landfill closure construction sequence proceeds (Figure 3C-1). The initial location is at to the northeastern corner of the WCCSL.

At certain times, the concrete debris may be placed in the winter pad area of the active landfill to build the unloading area so it will sustain traffic during the wet weather period. The site engineering personnel and the landfill supervisor shall designate the winter pad area and determine the amount of concrete to be used for this purpose.



WEST CONTRA COSTA SANITARY LANDFILL

SCALE: GRAPHIC	FDIP Figure 1E FDIPS Figure 4	DRAWN BY: ZD
DATE: JAN. 2003	PCP Figure 3.2-5	EIR-W99C-AP

EIR Figure 3C-1

WCCSL CONCRETE/ASPHALT PROCESSING FACILITY SITE LAYOUT

EIR-W99C-AP-1343-01-18-03

The site chosen for the unloading, storage and processing of the concrete debris and rubble is to be conducive to the needs of the operation. Access to the concrete area is continually supervised by landfill personnel and the Processing Contractor. The concrete storage and processing area is restricted to persons delivering concrete debris, WCCSL operations personnel and professional concrete processing personnel only. It is off-limits to the general public.

During each week, the Processing Contractor's personnel will periodically clear off the unloading area by dozing the concrete debris out into the stockpile. The stockpile of rubble will be 20 to 40 feet deep, thus conveniently positioning the rubble to be reclaimed and processed through the portable crusher unit.

The site is periodically regraded by the Processing Contractor and WCCSL for effective drainage. Drainage and evaporation of rainwater from the site is adequate to prevent the accumulation of standing water. Runoff containment berms and channels are provided down slope from the concrete debris storage site. These facilities are intended to work in concert with the other drainage control facilities installed for the landfill.

Policing of the concrete storage and processing site and the regular processing of the accumulated material are intended to prevent environmental problems.

The environmental controls necessary for the concrete debris recycling and processing operation include:

- Drainage Control
- Fire Control
- Dust Control
- Operator Noise Protection
- Operator Safety Protection

WCCSL is responsible for the drainage and fire control at the concrete storage and processing site. The concrete Processing Contractor and WCCSL are responsible for dust control, operator noise protection, and operator safety protection for their respective operations.

The water supply for the processing operations will be furnished by the Processing Contractor.

WCCSL will maintain the access road. The road has been graveled for all-weather access. Dust control is maintained using water sprayed from a tank truck.

3. Concrete Processing Operations

The frequency of concrete debris processing generally is each weekday throughout the year. A Processing Contractor will be used to process the concrete debris using appropriate crushing and screening equipment.

The management of the concrete debris processing operation must control environmental problems. These include prevention of fires and dust, and control of equipment safety hazards.

WCCSL will maintain firebreaks surrounding the concrete storage pile, the processing equipment site, and the crushed materials storage pile.

The supervision of the processing operations and equipment is the responsibility of the Processing Contractor. Emergency arrangements (e.g., in the case of operator injury) have been established with WCCSL.

The equipment to be used must be suitable for the concrete processing operation. The operators must be trained to work safely. The hours of processing operation will be established for each event and generally will be between 7:00 a.m. and 7:00 p.m. weekdays and Saturday.

The processing steps involve a loader carrying the material from the stockpile and placing it into the crusher feed hopper. The crushed material is either stockpiled if it will be used without screening, or conveying equipment will deliver the crushed material from the crusher directly to a series of screens selected to separate the desired sizes of materials.

4. Responsibilities of the Processing Contractor

The Processing Contractor is accountable to the landfill management and is responsible for the immediate supervision of its operation, and for the obeyance of general landfill rules.

Within the supervising role of the Contractor, the Contractor must organize, police and supervise the area on which it operates. This includes control of dust; the collection and disposal of loose rubbish that may accumulate at the processing site; the prevention of discharge of mechanical or flammable fluids; and the immediate supervision of all personnel processing concrete debris at the site.

The equipment and operation procedures must meet the BAAQMD requirements and applicable environmental standards.

The Processing Contractor has the responsibility to restrict the concrete to that which is of acceptable type, and to provide general supervision of the concrete unloading site. Periodically, WCCSL may furnish equipment to assist the concrete Processing Contractor. If a fire occurs, WCCSL personnel will alert the fire control officials and undertake fire-fighting measures identified in the site Fire Control Plan. The occurrence of a fire will be recorded in the site operations daily log and the LEA will be notified within 24 hours.

The Processing Contractor is also required to provide proof of general liability and workers compensation insurance coverage.

The Processing Contractor must designate a representative that is knowledgeable of the concrete processing operations. No change in the representative can be made without notifying WCCSL, Inc. in writing. The WCCSL representative is the Landfill Manager.

5. Residuals Management

The Processing Contractor is responsible for control of wastewater, dust from the crushing operations, and equipment maintenance materials.

The wastewater generated in the crushing operation (from dust control measure) is to be kept to a minimum, and not be allowed to pond at the site, unless in a controlled manner.

The crushed materials may be used on-site or taken off-site. On-site use includes road construction, and landfill gas control system and leachate control system drain rock. Certain non-rock debris will be generated during the processing operations (metals, dirt, wood, litter).
These materials will generally be placed in the main landfill unless they can be salvaged and recycled. The dirt material, if clean, may be used as daily cover for the landfill.

6 Contingencies

Arrangements have been established for the cases of accidents, fires, and equipment malfunction. The Processing Contractor's equipment operators will notify the WCCSL landfill office personnel. The Contractor will have at least two persons on site during periods when the equipment is being operated. The second person will go to the landfill office in the case of an emergency, if a radio is not available. The landfill office is equipped with a telephone and has radio contact with key landfill personnel. WCCSL maintains a list

of emergency contact numbers and has a Fire Control Plan and a Hazardous Materials Management Plan.

APPENDIX 3D

WASTE RECYCLING CENTER OPERATIONS SUMMARY
SOIL STORAGE BUILDING SITE

APPENDIX 3D

WASTE RECYCLING CENTER OPERATIONS SUMMARY
SOIL STORAGE BUILDING SITE
FOR THE
WEST CONTRA COSTA
BULK MATERIALS PROCESSING CENTER

April 2003

INTRODUCTION

This document was prepared to provide a summary of the current planning efforts for implementation of the Waste Recycling Center (WRC). This was written using the proposed facility location at the existing Soil Remediation Facility at the WCCSL.

Following this Introduction, this summary describes the facility with respect to customers using the Waste Recycling Center and the load-out/haul-out methodology of the recyclables and residual materials. Next, the planned relationships of the Waste Recycling Center to the other Bulk Materials Processing Center operations are described. This is followed by a description of the infrastructure involving access roads and the apron surrounding the building, landfill gas control, drainage control, electricity supply, water supply, telephone, fire control, facility office, employee break room, equipment servicing area, and site security. A residuals management plan is also included.

Waste Recycling Center Concept

WCCSL, Inc. proposes to open the new Waste Recycling Center (WRC) to replace the existing landfill Waste Shuttle Facility. In addition to relocation of this operation, the main changes between the WRC and the Shuttle Facility are the volume of materials handled, the addition of an improved system to load non-recovered wastes into transfer vehicles, and conducting the operations within a large building.

The WRC must begin operation prior to the time the WCCSL is filled to capacity. The primary purpose of the WRC is to construct a permanent facility where WCCSL, Inc. can achieve greater recycling diversion and transfer of the self-haul mixed wastes, wastes from garbage trucks, and the commercial and industrial roll-off boxes that are not processed at the existing Integrated Resource Recovery Facility (IRRF) Central Processing Facility.

Any waste residues remaining after processing for recyclables will be disposed at the landfill working face, or hauled to Potrero Hills Landfill once the WCCSL has reached capacity and is no longer burying wastes for disposal.

The WRC has two parts in separate locations on the landfill: the Mixed Waste Processing Area and the Organic Materials Processing Area.

The BMPC WRC Mixed Waste Processing Area will consist of several main components – a) a receiving area, b) a sorting floor where wastes will be sorted into trash and recyclables, c) an elevated picking line where the recyclables will be sorted, and d) a transfer vehicle loadout area.

The WRC will also include the Organic Materials Processing Area. That area will consist of separate sub-areas for receipt of green waste, wood waste, food waste, agriculture wastes, biosolids, mixed waste paper, and soil.

Current Permit Capacity

This is the use of an existing facility (the landfill and the closed soil remediation facility). WCCSL, Inc. has existing permits for many of the components of the WRC, including recovering recyclables from incoming waste, using mechanized processing equipment, and permits to move waste and processing residues from the processing area to the working face. Most of the mixed waste operations envisioned for the WRC are currently taking place at the landfill Waste Shuttle Facility. WCCSL, Inc. proposes that the existing land use permit for the Soil Remediation Facility be revised from a contaminated soil processing operation to a waste recycling and transfer facility.

The organics processing operation (receiving and grinding green material and wood wastes) now occurs at the existing Composting Facility and mulch/bio-fuel production area.

Proposed Permit Capacity

The contaminated soil processing facility was approved to process up to 1200 tons per day of hydrocarbon-contaminated soil. The WRC is being designed to process an average of 1,000 tons per day of incoming solid wastes and recyclable materials delivered in a combination of private passenger vehicles, pickup trucks, garbage trucks and roll-off box trucks.

Proposed Facility Description Abstract

The WRC will have two waste receiving and handling areas: the Mixed Waste Processing Area and the Organic Materials Processing Area. Figure 3D-1 is the estimated material flow diagram.

The Mixed Waste Processing Area will consist of separate sub-areas for receipt of recyclables, trash, and mixed loads of recyclables and trash. There will be several areas for the processing and removal of recyclables. WCCSL personnel will direct traffic to the proper unloading spot, inspect the incoming materials, and remove obvious ineligible materials. Loads containing all trash and any trash residue remaining after processing will be loaded into transfer trailers to be hauled to the disposal site (either the working face at the WCCSL or Potrero Hills Landfill). Recyclables or recovered materials will be sorted and stored until shipped to markets or end users.

During the 2002-2003 permitting process, selecting the location of the Waste Recycling Center Mixed Waste Processing Area involved two candidate sites at the WCCSL. This description is based on the prime requested location at the existing Soil Remediation Facility, which will be possible since the operation of that facility was terminated during 2001. The second prospective location is in Area A previously used to stockpile landfill cover soil.

The existing building at the old soil remediation facility would need to be expanded to serve as the Mixed Waste Processing Area (Figure 3D-2). This expansion could occur by extending the ends of this narrow building. The building would be more functional if access could be gained through the north and south sides. However, approval would be required from the State Department of Toxic Substances Control (DTSC) to include the vehicle access on the adjacent Hazardous Waste Management Facility (HWMF). Developing such access would need to await the start of the HWMF postclosure period scheduled to occur in 2003 or 2004.

WCCSL, Inc. proposes to obtain all land use approvals for the WRC Mixed Waste Processing Area temporarily operating on the asphalt Waste Shuttle Facility pad, and later within a permanent building at the Soil Facility or in Area A.

The Organic Materials Processing Area is the location where these materials are received, unloaded and initially processed to prepare them for subsequent recovery operations such as composting or biofuel and mulch screening.

The location of the Organic Materials Processing Area is on top of the landfill central plateau adjacent to the composting facility and soil reclamation operation.

The materials would be inspected to remove unwanted items such as plastic bags, metal pieces and concrete chunks. The removed materials would be placed in metal storage bins or placed in designated piles for periodic removal. The processing operations would include grinding and

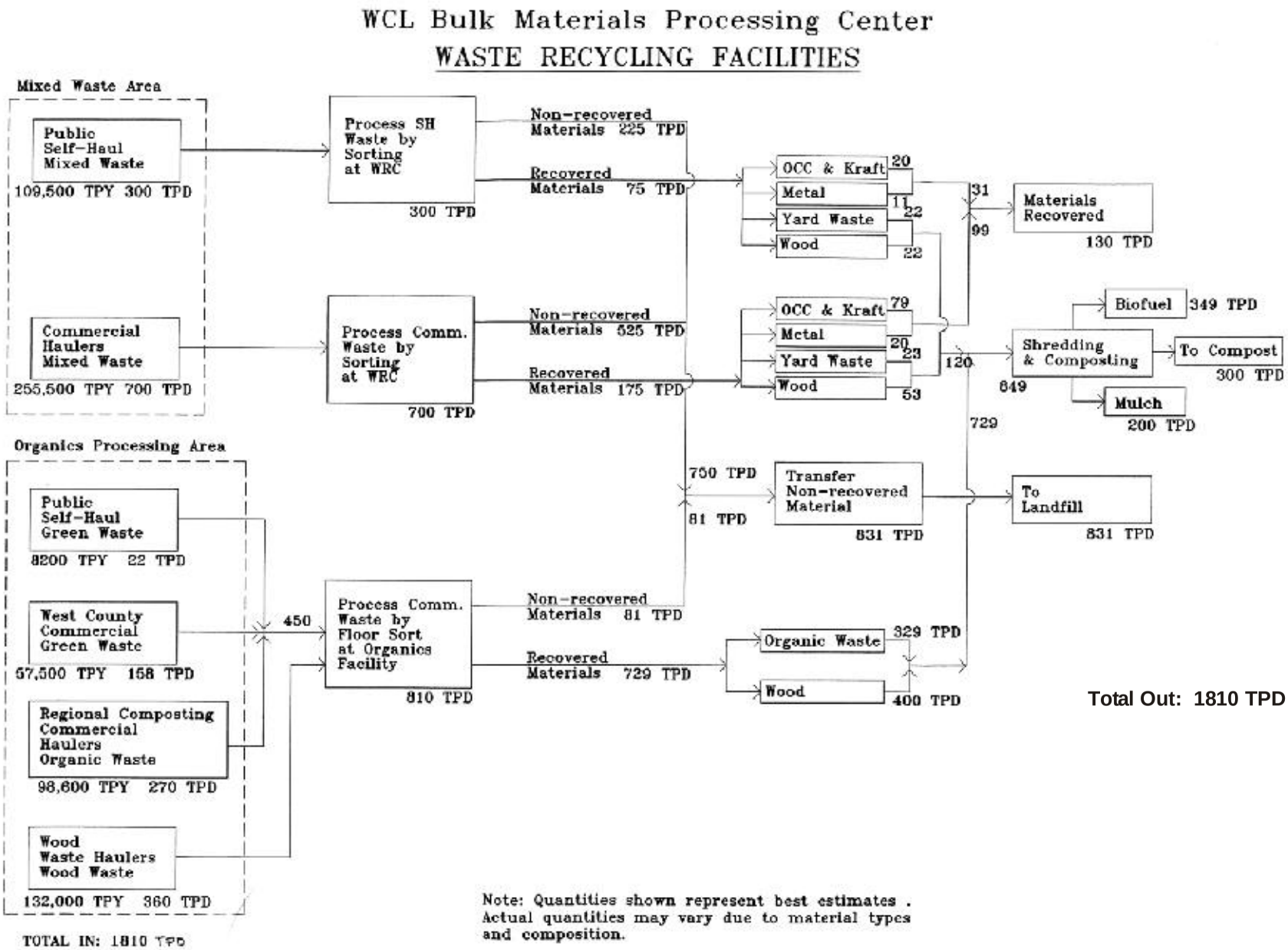


Figure 3D-1 Estimated Material Flow Diagram

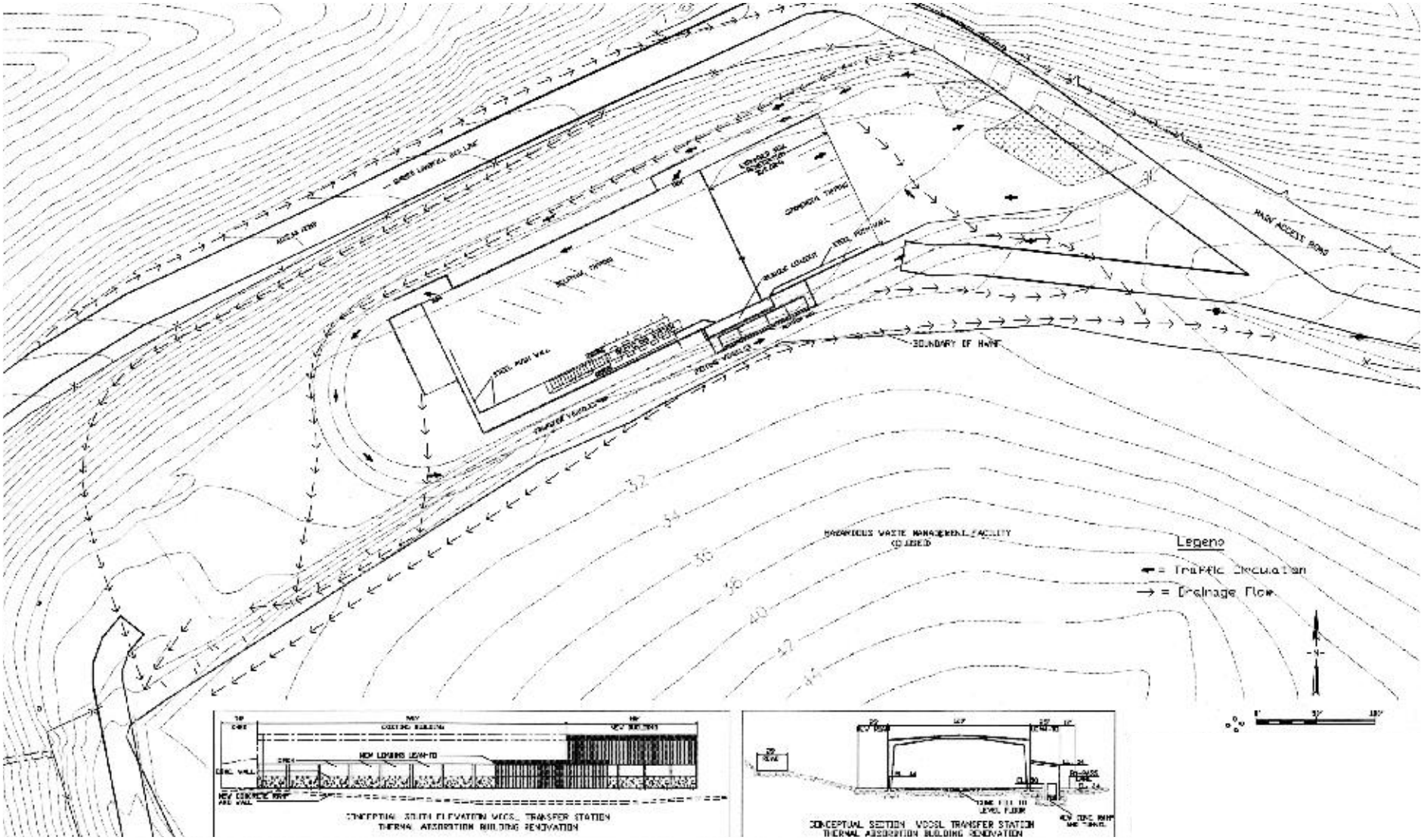


Figure 3D-2 Waste Recycling Facility Site Layout

shredding, and mixing of materials such as shredded green materials and biosolids. The prepared materials would be moved by tractor or truck to the recovery operation such as the adjacent composting facility.

1. DESCRIPTION OF FACILITY OPERATIONS

The waste delivery vehicles will proceed to the scale attendant's building for collection of the fees and initial screening of the waste loads. Initially the existing scalehouse and scales will be used. In the future, it may be desirable to have the scale facility closer to the Waste Recycling Center and Composting facility.

After payment of the fee and/or weigh in, the vehicles with mixed wastes will proceed to the front of the Waste Recycling Center Mixed Waste Processing Area. A building will house the waste processing operation. The initial facility operation may be conducted on a paved area of the Waste Shuttle Facility, enclosed with litter control fencing. This area will be large enough to handle all traffic, including busy weekend use, but involving some customer wait time during peak periods. After the building is constructed and is in use, during weekdays the volume of traffic will be low enough that all wastes can be unloaded inside.

Soil Remediation Facility Location

For the Mixed Waste Processing Area located at the refurbished and expanded soil storage building, as the traffic arrives at the intersection where the Composting and Concrete Processing Facility road continues westward, the Waste Recycling Center traffic would turn to the left. The commercial vehicles would back into the eastern end of the building. Upon leaving they would return to the access road. The self-haul traffic would circle around the Soil Building location and pass eastward along the north edge of the HWMF. This traffic flow pattern would also allow those loads discovered to primarily have green materials to be directed to the Organics Materials Processing Area.

The transfer trucks will pass along the north side of the building, pass around the west end and enter the loading stall in the eastern direction. Removal of the recyclable materials will follow the same path as the transfer trucks. A lane is planned on the south side of the transfer trailer loadout area to allow outbound traffic to circle the building in a counterclockwise direction. The residential and commercial waste collection trucks would be given preferred entrance and use the eastern portion of the building. Self-haul vehicles would enter at the northeast corner and use the

interior portion. As the self-haul site use continued during the day it may be necessary to unload wastes outside the building. This especially will be the case on nice weekends when everyone wants to come out and unload their discarded goods. During weekday overflow times, preference will still be given to the commercial trucks to unload inside the building, due to the larger volume carried by these trucks. These vehicles may also be delivering materials of higher potential salvage value.

The traffic flow pattern into and out of the facility will be designed for safe operations. It is usually preferable for the self-haul drivers to back up looking over their left shoulder for best visibility. This will involve a clockwise flow into and out of the unloading area. The commercial trucks will follow the same route.

Mixed Waste Processing Area Facility Operations Concept

As the wastes are unloaded, the skip loader operator will make the decision whether to push the individual piles to the sorting area or to the transfer loadout area.

Recyclables will be removed as now practiced at the Waste Shuttle Facility through "floor sorting" (picking through the materials while they temporarily lie on the unloading area). Selected materials will be processed by sorting the materials passing down a conveyor belt picking line or sorting station. The picking line to be operated in the Waste Recycling Center will be a unit approximately 10 feet wide and 60 feet long. The rubber-tired bucket loader tractor operator will place those wastes containing salvageable materials into the hopper leading to the conveyor. The salvaging crew will be stationed along the belt with each person picking a designated material (e.g. wood or cardboard) from the conveyor and placing the salvaged item into a metal storage bin parked under the conveyor. All recyclable materials are to be placed in roll-off boxes or designated areas.

The tractor maintaining the facility floor area will push the remaining non-recovered materials to an accumulation area and place them into a temporary pile, or they will be loaded directly into the top of the transfer trailer. While doing this, bulky materials may be crushed by running over them or by using the tractor bucket. A bucket loader tractor will be used to load the materials into the trailer. Several push walls will be installed to make it easier for wastes and recyclables to be moved by the bucket loaders. These walls will be constructed of sturdy steel plates and beams.

A roll-off truck will deliver the boxes of salvaged materials to the appropriate on-site or off-site facilities. For example, boxes that contain green waste, concrete, or ADC will be moved to the appropriate processing area on the WCCSL whenever the boxes are full. Cardboard, metals and other recyclables will be moved off site as needed. The boxes will be allowed to remain at the shuttle area within the building for overnight storage. No wastes are to be left lying on the floor

area after the end of the operating day, with the exception of inert materials (e.g. concrete, asphalt, soil, metals). Periodically the floor will be swept or cleaned with a motorized vacuum sweeper.

Dust control will be provided by spraying the area with a water truck and use of hoses. Litter control will be provided by a mobile sweeper, and regular removal of materials accumulated against the litter fences. Collected materials may be suitable for delivery to the West County IRRF for sorting and recycling.

Rainfall drainage water from the front apron will be considered to potentially be contaminated from oil dripping off vehicles and when waste unloading overflows out onto the front apron area. Hence, the drainage will be specifically directed to the oil/water separators similar to those at the soil remediation facility area. The collected water may require subsequent treatment prior to either being handled as landfill leachate, or being directed to the Area A runoff pond.

2. RELATIONSHIP OF THE WASTE RECYCLING CENTER TO THE OTHER BULK MATERIALS PROCESSING CENTER OPERATIONS

The Waste Recycling Center is part of the Bulk Materials Processing Center operations to be included within the County and City of Richmond Use Permits.

The Waste Recycling Center Organic Materials Processing Area location on the central mound of the closed landfill would be adjacent to the Concrete Processing and the Composting and Wood Processing Facilities. The concrete processing is envisioned to be operated by other parties as tenants on the West County Landfill property.

The Composting Facility and the Waste Recycling Center will be operated by WCCSL, Inc. as joint operations with shared management, personnel and equipment.

The waste screening, weighing, and disposal fee collection will be conducted by WCCSL, Inc. at a central scale facility either located at the current location or in the Waste Recycling Center area.

3. SITE INFRASTRUCTURE

This section describes the Waste Recycling Center site infrastructure.

Access Roads

The Waste Recycling Center is reached via the WCCSL main access road across the San Pablo Creek Bridge (Recycling Lane). This road passes through the entrance area, swings west and crosses the south flank of the Class II landfill (eastern leg), and enters on the east side of the Mixed Waste Processing facility. The main access road continues westward onto the central plateau area. On top of the mound plateau the road turns west and enters the intersection with the Organic Materials Processing Area entrance road. The road then continues west to the Concrete Processing Facility.

The main access road (Recycling Lane) ultimately may be paved and substantially meet the specification for a commercial/industrial development road. Initially, to allow await more settlement of the road, and defer site development costs, the roadway surface will be graveled. Operation of the site with the graveled road will entail maintenance grading to assure that the appropriate surface drainage is maintained.

The roadway used by the transfer vehicles will pass along the north side of the building and circle counter-clockwise around the building. Vehicles entering the building at the northeast corner will exit at the northwest corner. They will then travel around the building to the south and then east paralleling the route of the transfer vehicles.

Apron Surrounding the Building

The aprons surrounding the building will be paved with asphalt. This area will be subject to some differential settlement due to the differing ages of the underlying fill materials. Thus some maintenance repaving will be necessary in future years. The eastern area will be graded to direct the drainage to oil/water separators.

Processing Building

The existing soil remediation storage building is to be remodeled and refurbished to serve the Waste Recycling Center waste processing operation. This is a metal clad steel structure building on a spread footing foundation. The floor of the building has been warped and it will be overlaid with another layer of asphalt or concrete to re-level it. The building site is anticipated to continue to settle over the next 10 years. The major amount of settlement occurred in the 1995-2002 time period of use as a soil storage structure. Periodically the columns may need to be adjusted vertically to account for differential settlement from column to column, and the floor may need patching.

The size of the building currently is 260-feet long and 125-feet wide. The building would be extended about 20-feet on the north side and 100-feet on the eastern end. The transfer vehicle loadout would be constructed on the south side.

The entrance doors will be protected by bollards. The doorways for the commercial truck unloading will be high enough to allow a truck to move forward with the dump body elevated without striking the top of the doorframe.

Initially, the building is being conceived as walled on 3 sides with the eastern doorways left open. Ultimately, roll-up doors could be added to the building.

The loadout area will also be housed inside an extension attached to the south side of the processing building. The transfer trailer would be positioned inside of this side structure which would be high enough to allow a tamping crane to reposition wastes inside the trailer if necessary. The manner of loading the trailer is by a skip loader lifting the materials to the top of the trailer.

Transfer Trailer Weighing Equipment

The concept of weighing the load in the transfer trailer as the wastes are being added remains to be confirmed. The trailer could have an on-board scale system or it could sit on load cells under each axle, or a 70-foot platform scale could be positioned under the truck/trailer.

Landfill Gas Control

Landfill gas control at the old soil remediation site is now provided by the HDPE liner and horizontal piping system placed under the building, on top of the final landfill cap. A similar design will be used in the building additions. The horizontal pipes will be connected into the landfill gas extraction system network. The landfill gas will be processed at the WCL power station.

At critical locations in the Waste Recycling Center processing building, landfill gas monitoring stations will be established similar to that now installed for the soil remediation building. The monitoring will be conducted quarterly as part of the normal postclosure monitoring program.

Landfill gas control at the Organic Materials Processing Facility will be provided by the landfill final cap and the gas recovery system.

Drainage Control

The apron drainage will be sloped away from the Mixed Waste Processing Center building as contained in the WCCSL Closure Plan master grading planning. The eastern area drainage will be directed to the oil-water separator. Since the building will settle more than the apron, the drainage diversion provisions will need adjustment during the Waste Recycling Center operational history. This may be in the form of repaving in front of the door entrances with a slight mounding effect to shunt the drainage away from the building.

The roof drainage of the building will be directed to downspouts. Due to the length of the building, the eave drain will require realignment periodically as the building settles.

At the Organic Materials Processing Facility the area drainage will be maintained by WCCSL, Inc. to conform with the landfill closure and postclosure plans. Ponded water will be avoided due to the slope of the finished landfill surface and periodic regrading. Some of the reclaimed soil and concrete rubble may be used for the grading adjustment.

Litter Control Facilities

The Waste Recycling Center location at the old soil remediation site is provided some shielding from the west winds by the adjacent landfill mound. The building layout with the open doorways on the north and east should provide wind shielding all year.

Litter fences will need to be constructed as wings along the ends of the building. The accumulated litter can be vacuumed up using a portable unit. Since during heaviest site use times when wastes may be unloaded on the eastern apron, it may be necessary to string horizontal netting along the tops of the side fences to prevent airborne plastics from escaping from the site and to provide bird control.

Electricity Supply

The Waste Recycling Center location is now served with electricity by the power line from the WCL Power Plant.

The electrical supply will be from the on-site electrical network which delivers power from the WCCSL landfill gas-fired generating station located in Area A. The electricity powerline from the Leachate Treatment Plant was constructed through the WCL entrance area in 1996 to originally serve the Soil Remediation Facility. Another powerline serves power to the Organic

Materials Processing Area, the Composting Facility and future Concrete Processing Facility locations.

The future power demands of the Waste Recycling Center are being determined by use such as in the processing facility, office, equipment service area, breakroom, and ancillary equipment (e.g. surface drainage pumps).

Water Supply

Water will be necessary for Waste Recycling Center fire control, dust control and processing area washdown. Drinking water will be supplied via bottled water, although EBMUD water service exists at the WCL. Toilet flushing water supply will be from a fresh water supply.

It is envisioned that the Concrete Processing and Composting Facilities will be served reclaimed water from the adjacent West County Wastewater District treatment plant. This will be via a pipeline that extends westward from the HWMF leachate treatment plant location and climbs up the east side of the landfill central mound.

The water used in the Mixed Waste Processing Center will not be reclaimed water. The fire sprinkler water system is planned to be supplied from a firewater service pipeline that will be re-established after being removed for the HWMF final capping project.

Note that all water lines, if buried underground, must be on top of the clay barrier layer component of the landfill cap. Settlement of the buried lines must be anticipated. The lines may be contained in a utility corridor chase, the top of which can be removed for inspection of the lines. Pressure checks of the line will be required as part of the approved WCCSL Postclosure Maintenance Plan.

Telephone

A telephone cable will be laid adjacent to the water pipelines.

A pay telephone will be available in a central area near the processing building. A second payphone will be available outside the employee break room

Fire Control

It is anticipated that the processing building and the trailer loadout areas will be equipped with a fire sprinkler system. The fire water system is envisioned to include both ceiling sprinklers and hose and nozzles stationed at key locations in the building. As many as 6 stations will be needed.

A dedicated 10-inch water line connected to the EBMUD system will supply the sprinkler and fire hose bib system.

Office

The current WCCSL office is located in the entrance area.

For the Waste Recycling Center management personnel, it is envisioned that a separate office complex will be provided within the Waste Recycling Center building. The office will house the facility manager, bookkeeper, load check personnel, and an office for the site environmental & engineering inspection personnel. The office will also serve the Composting Facility. A conference room would be included. The minimum area size presumed in this description is 12 feet x 60 feet.

Employee Break Room

The employee locker area and break room will a portable office building (double-wide) type trailer.

The building size presumed in this description is 12 feet x 60 feet.

The breakroom will serve the Waste Recycling Center and the Composting Facility. The Concrete Processing and Soil Remediation Facilities will have their own employee facilities.

Equipment Servicing Area

Currently, the landfill equipment is maintained at the equipment service center located at the extreme northeast corner of the Class II landfill site. That facility will be moved to the Area A portion of the WCL in 2004.

The equipment used in the Waste Recycling Center (except perhaps the transfer trucks and trailers) and in the Composting Facility will be maintained at the relocated equipment service center. This is a pre-engineered metal building about 60 feet x 60 feet with two cargo containers placed along the sides for a equipment service person's office and supplies storage.

The fueling of the equipment will be via a service truck, which will be filled at the RSS Corporation Yard. Later, an above ground diesel fuel storage tank may be installed. However, the service truck will be necessary to fuel and service the Composting equipment such as the screens and Scarab windrow-turning tractor.

The transfer trucks and trailers may be serviced and maintained off site, or they may be serviced at the Area A maintenance facility.

Dust Control

The graveled access road will be the major dust control maintenance activity. This will be a shared responsibility between the Waste Recycling Center, composting, and concrete processing operations. Two or three water trucks will be available from the adjacent composting and concrete processing operations.

The Waste Recycling Center Mixed Waste Processing Area will be paved and incoming loads will be prescreened to avoid dusty materials. However, dust will occur from the trash materials. Periodic wash down of the apron and processing area will be needed. The water truck from the composting operation can provide that dust control. It will be necessary to sweep (vacuum) the litter on the unloading apron.

At the Organic Materials Processing Area the water trucks will periodically spray the receiving and unloading area for dust control. Water sprays will be used on the grinding/shredding equipment as necessary. The raw materials feedstock will be sprayed with water prior to grinding to also control fugitine dust.

Site Security

The primary security will be the fences and gates located at the end of Parr Blvd. As the landfill is closed, it may be desirable to have more full-time access to the BMPC facilities. Then gates would be installed on the main access road.

The fencing needed for security at the Waste Recycling Center will be a function of access to the WCCSL. For example, for the Public Access Trail, fencing will be needed on the north side of the Compost Processing Facility and Acme Hill, and on the western end of the Concrete Processing Facility.

4. RESIDUALS MANAGEMENT

The Bulk Material Processing Center personnel are responsible for control of drainage water. They also must control dust from the shredding operations, and equipment maintenance materials.

The residuals from the shredded wood materials and compost processing are described in the information provided elsewhere.

Certain dirt and rock debris may be generated during the processing operations (dirt, litter). The non-dirt materials will be salvaged and recycled by delivering them to the appropriate processing facility. The dirt material, if clean, may be processed in the soil reclamation program or used as cover on the landfill area.

5. CONTINGENCIES

The Bulk Material Processing Center operator will have established response programs for the cases of accidents, fires, and equipment malfunction. The Bulk Material Processing Center WCCSL personnel will be equipped with a radio to maintain contact with the WCCSL office. The Bulk Material Processing Center Management will maintain a list of emergency contact numbers and have a Fire Control Plan and a Hazardous Materials Management Plan.

APPENDIX 3E

WET/DUSTY MATERIAL BLENDING PROCESSING OPERATIONS SUMMARY

APPENDIX 3E

WET/DUSTY MATERIAL BLENDING OPERATIONS SUMMARY FOR THE WEST CONTRA COSTA BULK MATERIALS PROCESSING CENTER

December 2002

INTRODUCTION

This document was prepared to provide a summary of the operations plan for the Wet/Dusty Material Blending Operation.

This description first summarizes the operation with respect to how customers access the facility, and the load-out/haul-out of the processed materials/soil mixture. Next, the planned relationships of the Wet/Dusty Material Blending Operation to the other Bulk Materials Processing Center operations are described. This is followed by a description of the infrastructure involving access roads and the apron surrounding the processing area, landfill gas control, drainage control, electricity supply, water supply, telephone, fire control, office, equipment servicing area, and site security. A residuals management plan is also included.

1. DESCRIPTION OF FACILITY OPERATIONS

WCCSL, Inc. affiliate, Bay Soil Remediation, completed the last hydrocarbon-contaminated soil treatment in December 2001. This process involved the thermal treatment of the soil to destroy the hydrocarbons present in the soil. The processing equipment has been sold for removal from the site. The proposed new soil treatment venture involves receiving high moisture content muds and sludges and blending them with waste soil to result in a mixture containing less than 50% moisture. In addition, powdery wastes would be mixed with the high-moisture content materials, thus binding the dust sized particles into the mixture. Most of the mixed material can be used for Alternative Daily Cover (ADC) or for final cover. The volume of material handled in the existing Soil Processing Building or on the final capped landfill if the building is used for the Waste Recycling Center will be the same or less than currently authorized amount of hydrocarbon contaminated soil in the County Land Use permit.

The wastes processed and the resulting moisture content of the waste/soil mix would be those that would make the materials eligible as (1) ADC materials for the active landfill, (2) foundation material for the MSW landfill final cap, (3) acceptable for landfill disposal, or (4) acceptable for off

site use. The following are examples of the types of high-moisture content materials to be processed:

1. Tank bottoms
2. Petroleum containing liquids
3. Car wash sludge
4. Storm drain cleanout silt and sludge
5. Ink sump cleanout sludge
6. Bags with paint dye dust
7. Waste perlite and vermiculite
8. Vegetable oil sludge
9. Oily cullet sludge

Items 6 – 9 may not be suitable for landfill ADC materials.

Two modes of operation are proposed depending upon the availability of the soil processing building. If the building were available prior to its use as the Waste Recycling Center, the high moisture content wastes would be spread over a layer of dry soil placed previously on the asphalt floor of the building. Then a rubber tired loader or grader would mix the wet materials with dry soil until the proper moisture consistency is reached. The loader would be used to load the transport trucks. If the mixing takes place on top of the landfill, it may occur inside a structure erected for that purpose. If the building is not available, then the wet materials would be mixed with the dry soil in batches inside a large metal bin. The bin would be located on top of the landfill plateau near the existing Waste Shuttle Facility (Figure 3-3). The mixing would be accomplished using an excavator equipped with a toothless bucket. After the mixing, the excavator would be used to load the transport trucks.

The vehicles delivering the wastes and the blending soils would proceed to the WCCSL entrance area to the scale facility for check-in and initial screening of the soil loads

After weighing in on the scale, the vehicles delivering the waste materials would proceed to the front of the processing area. The trucks will be checked before they are unloaded to assure they contain the pre-approved wastes. The high moisture content wastes will be discharged by the delivery vehicle directly into the processing area, or if applicable, they will be unloaded into a holding tank.

Later, the tank contents will be delivered by pipe or hose to the processing area. Dusty materials will be delivered directly to the processing area.

Trucks containing the soil to be used in the blending process would proceed to the side of the processing area. After being cleared for unloading, they will be directed to the designated soil storage location. As the incoming blending soils are unloaded, the skip loader operator would push the soil into a storage pile adjacent to the processing area.

The processed wastes/soil mixture would be removed from the processing area by the skip loader and placed into the hauling vehicles. The processed wastes/soil mixture would be removed by trucks using the roads leading up to the landfill Central Plateau. Removal of the residual materials will follow the same path as the processed waste/soil mixture trucks. For the case of use of the material off-site, the loaded trucks would exit the site on the main access road.

Dust control during waste processing and soil blending would be provided by carefully incorporating the dusty wastes with high moisture content wastes in the mixing area. Litter control should not be necessary due to the low volume of trash included in the incoming waste materials.

2. RELATIONSHIP OF THE WET WASTES/DUSTY MATERIALS PROCESSING OPERATION TO THE OTHER BULK MATERIALS PROCESSING CENTER OPERATIONS

The Wet/Dusty Material Blending Operation will become part of the Bulk Materials Processing Center operations when included within the County and City Use Permits.

The Wet/Dusty Material Blending Operation location at the facility previously used for treatment of hydrocarbon containing soils (site #1) would be located in the County area. The location near the existing Waste Shuttle facility (site #2) would be in the City area of the WCCSL. The Wet/Dusty Material Blending Operation is a companion to the Composting and Wood Processing Facilities, and the planned Waste Recycling Center. These facilities are to be operated by WCCSL, Inc. as joint operations with shared management, personnel and equipment.

The Wet/Dusty Material Blending Operation initial load checking, weighing, and processing fee collection will be conducted by WCCSL, Inc. personnel at the scale facility located in the entrance area.

3. SITE INFRASTRUCTURE

This section describes the Wet/Dusty Material Blending Operation site infrastructure. Two possible siting areas are included since the operations may initially occur at the existing facility

previously used for the hydrocarbon contaminated soil remediation operation, and later may occur on the landfill central plateau area.

Access Roads

The main access road (Recycling Lane) ultimately will be paved and substantially meet the specifications for a commercial/industrial subdivision road. Initially, to allow more settlement of the road to occur, and defer site development costs, the roadway surface will be graveled. Operation of the site with the graveled road will entail maintenance grading to assure that the appropriate surface drainage and dust control is maintained. This road is also used for access to the concrete processing, composting, Waste Recycling Center, and the landfill central plateau area.

The first site is reached via the WCCSL main access road across the San Pablo Creek Bridge. This road passes through the entrance area, turns west past the WCCSL scalehouse onto the eastern leg of the MSW landfill and passes along the north side of Site #1 for the Wet/Dusty Material Blending Operation. The road branches into the Site #1 facility entrance. At the west end (rear end) of the Processing Operation a road leads south and then west up the south slope road to the landfill central plateau.

The second Processing Operation site is adjacent to the paved Waste Shuttle Facility. The main access road on the central plateau serves this area.

Apron Surrounding the Processing Area

At the first site the apron on all sides of the storage building is paved with asphalt. This area has been subject to some differential settlement due to the underlying fill materials. Maintenance repaving periodically is necessary. The area grade will be maintained to direct the drainage to the site drainage channels.

The second site is located on the final capped landfill. The apron around the processing area will be gravelled. The area grade will be maintained to provide the proper drainage conditions.

Processing Facility

A storage building was erected at the first site to enclose the contaminated soil. It is a metal clad steel structure building on a spread footing foundation.

High concrete walls provide push walls to encircle the storage area. The floor of the building is asphalt paving. Much of the building site initial settlement of about 2 to 4 feet has occurred over the first 5 years of building use. Thus the major amount of settlement has now occurred. The

building columns will need to be adjusted vertically to account for differential settlement from column to column. The floor will be overlaid with another layer of asphalt as necessary.

The size of the building is 260 feet long and 125 feet wide. The entrance doorways are protected by bollards since site users may back into the building doorway. The doorway for the truck unloading is high enough to allow a dump truck to pass with the dump body elevated without striking the top of the doorframe.

At the second site the processing area would be located on the final capped central plateau area near the Waste Shuttle Facility. This operation in dry weather can occur via placing a pad of soil approximately 2 feet thick. The mixing would occur on top of this pad by adding another layer of soil that would be blended with the waste materials. During inclement weather, the wet materials would be mixed with the dusty materials and dry soil in batches inside large metal bins. The mixing would be accomplished using an excavator. During rainfall, the mixing operations would be halted and the bins would be tarped.

Landfill Gas Control

Landfill gas control is provided at both prospective sites by the horizontal piping system that was placed under the areas beneath the final landfill cap. This is a standard feature of the WCCSL final capping projects. These horizontal pipes are connected into the landfill gas extraction system network. The landfill gas is processed at the on-site power plant.

At the first site a second piping system is placed within the gravel layer of the leachate control system under the building floor. This system is a drainage blanket installed under the building floor on top of a 60 mil HDPE liner. This serves as a gas barrier under the asphalt pavement floor. Landfill gas monitoring stations have been established. The monitoring is conducted quarterly as part of the normal WCCSL monitoring program.

Drainage Control

At the first site the apron drainage is sloped away from the building to prevent it from entering the soil storage building. Since the building may ultimately settle more than the apron, the drainage diversion provisions will need adjustment during the Facility operational history.

This may be in the form of repaving the area in front of the door entrances with a slight mounding effect to shunt the drainage away from the east and west ends of the building. The roof drainage of the building is directed to downspouts. Due to the length of the building and landfill settlement caused by the concentrated soil storage loading, the eave drains have required realignment as the building has settled.

At the second site the grade of the processing area would be maintained such that drainage will flow around and away from the area. During wet weather, the wet materials would be mixed with the dusty materials and soil in batches inside a large metal bin using an excavator.

Litter Control Measures

No specific litter control measures would be needed.

Electricity Supply

Both of the prospective Wet/Dusty Material Blending Operation locations are served with electricity from the on-site electrical network power line. The power source is the WCCSL landfill gas-fired generating plant located in Area A. Backup electricity supply is provided through the intertie with the PG&E grid.

Water Supply

Water would be required for Processing Operation dust control and processing area washdown. Drinking water is supplied via bottled water. At the first site the toilet facility water supply is from a fresh water supply. A portable toilet would be used at the second site.

At the first site the water used in the Processing Operation for the dust control is city water. The main water system is supplied by a 10-inch pipeline that parallels the WCCSL entrance area road. The pipeline is connected to the EBMUD water main near the Parr Blvd./Garden Tract Road intersection. The dust control and washdown water is supplied via a parallel 4" line.

The second site will be supplied with water via water trucks or from the reclaimed water line that will serve the composting operation and the concrete recycling facility.

Ultimately, these water lines will be buried underground on top of the clay barrier layer component of the landfill cap. Reclaimed water may be used for dust control and washdown. Pressure checks of the lines are required as part of the approved WCCSL Postclosure Maintenance Plan.

Telephone

A telephone line extending from the WCCSL Scale House area currently serves the Soil Remediation Facility. At the time of closure cap construction a telephone cable will be laid adjacent to the reclaimed water pipeline.

Fire Control

Due to the inert and non-combustible wastes to be processed, no special fire control measures are necessary.

Office

The landfill office will serve the Wet Waste/Powdery Material Processing Operation. This office is located in the WCCSL entrance area.

Equipment Servicing Area

At the first site the facility equipment will be maintained at the western end of the soil storage building where equipment service supplies are located. This is within an extension of the engineered metal storage building. The fueling of the equipment would be from the WCCSL landfill equipment service truck.

At the second site the equipment also would be serviced by the WCCSL equipment service truck.

Dust Control

At the first site the facility access road and aprons are paved. Soil that is tracked out of the building can be a source of dust. Periodically the paved areas would be swept or hosed off as a dust control maintenance activity.

At the second site a water truck would periodically spray the apron area for dust control.

In the operations, a potential source of dust would be the dusty wastes that would be processed. Examples of these are the foundry sand and baghouse fines, and paint pigments. These dust sources would be controlled by mixing these materials with the wet wastes to form a paste-like consistency. Then this mixture would be blended with soil to reach the desired product characteristics.

Site Security

The primary security is the WCCSL exterior fences and gates located at the end of Parr Blvd. As the landfill is closed, it may be desirable to have more full-time access to the Bulk Materials Processing Center facilities. Then gates would be installed on the main access road near the position of the current WCCSL scale house.

4. RESIDUALS MANAGEMENT

The Wet/Dusty Material Blending Operation personnel are responsible for control of drainage water and equipment maintenance materials. They also must control dust from the unloading and processing operations.

Certain concrete, asphalt and rock debris may be generated during the processing operations. The materials may be salvaged and recycled by delivering them to the appropriate processing facility, or transferred to the landfill. Other trash materials that are received as incidental materials in the waste loads will be appropriately stored in containers and periodically removed from the facility.

5. CONTINGENCIES

The Bulk Material Processing Center operator has established response programs for the cases of accidents, fires, and equipment malfunction. The Bulk Material Processing Center WCCSL personnel are equipped with radios to maintain contact with the WCCSL office. The Bulk Material Processing Center Management maintains a list of emergency contact numbers and has a Fire Control Plan and a Hazardous Materials Management Plan.

APPENDIX 3F

WOOD WASTE RECOVERY OPERATIONS PLAN SUMMARY

APPENDIX 3F

WOOD WASTE RECYCLING OPERATIONS PLAN SUMMARY FOR THE WEST CONTRA COSTA BULK MATERIALS PROCESSING CENTER

April 2003

PREFACE

It is the goal of Integrated Resource Recovery Facility (IRRF) program to minimize the amount of wood waste that is buried in landfills through implementation of this Wood Waste Recycling Operations Plan. The specific recycling goal of this Plan is to process the wood waste into crushed wood material that is suitable for mulch materials, wood chip recovery or composting.

This wood waste processing and recycling program has been developed to document the responsibilities and procedures for segregation, storage and processing of wood waste at the West Contra Costa Sanitary Landfill (WCCSL) site. This plan covers the aspects of:

1. Acceptance of Wood Waste
2. Wood Waste Unloading and Storage Site
3. Wood Waste Processing Operations
4. Responsibilities for the Processing Operations
5. Residuals Management
6. Contingencies

1. ACCEPTANCE OF WOOD WASTE

The Bulk Materials Processing Center (BMPC) will accept wood waste materials and have it placed in the wood waste recovery area. Customers may deliver wood waste only during the published hours of public access to the WCCSL site unless special arrangements are made to correlate with the specific schedule of a construction project (e.g. a night delivery to avoid freeway congestion).

No unloading will be authorized until payment of the appropriate fees.

The vehicles delivering the wood waste will be checked in and out of the BMPC site to insure that proper unloading directions are given and to allow the site personnel to know when the vehicle has departed the site. The persons delivering the wood waste must adhere to the general rules of the WCCSL facility.

The record keeping maintained by the BMPC shall include the amount of wood waste delivered to the wood waste recycling and processing area. An approximate record of the amount of wood waste processed will also be maintained by the BMPC management.

Notice will be given to the construction and demolition contractors working in the service area of the BMPC regarding the benefits of segregating the wood waste from other debris at their construction job sites. A reduced disposal fee is planned for wood materials that are free of metal, rubbish, concrete, asphalt pieces, and dirt.

No wood which has been treated with chemicals such as creosote or pentachlorophenol will be accepted.

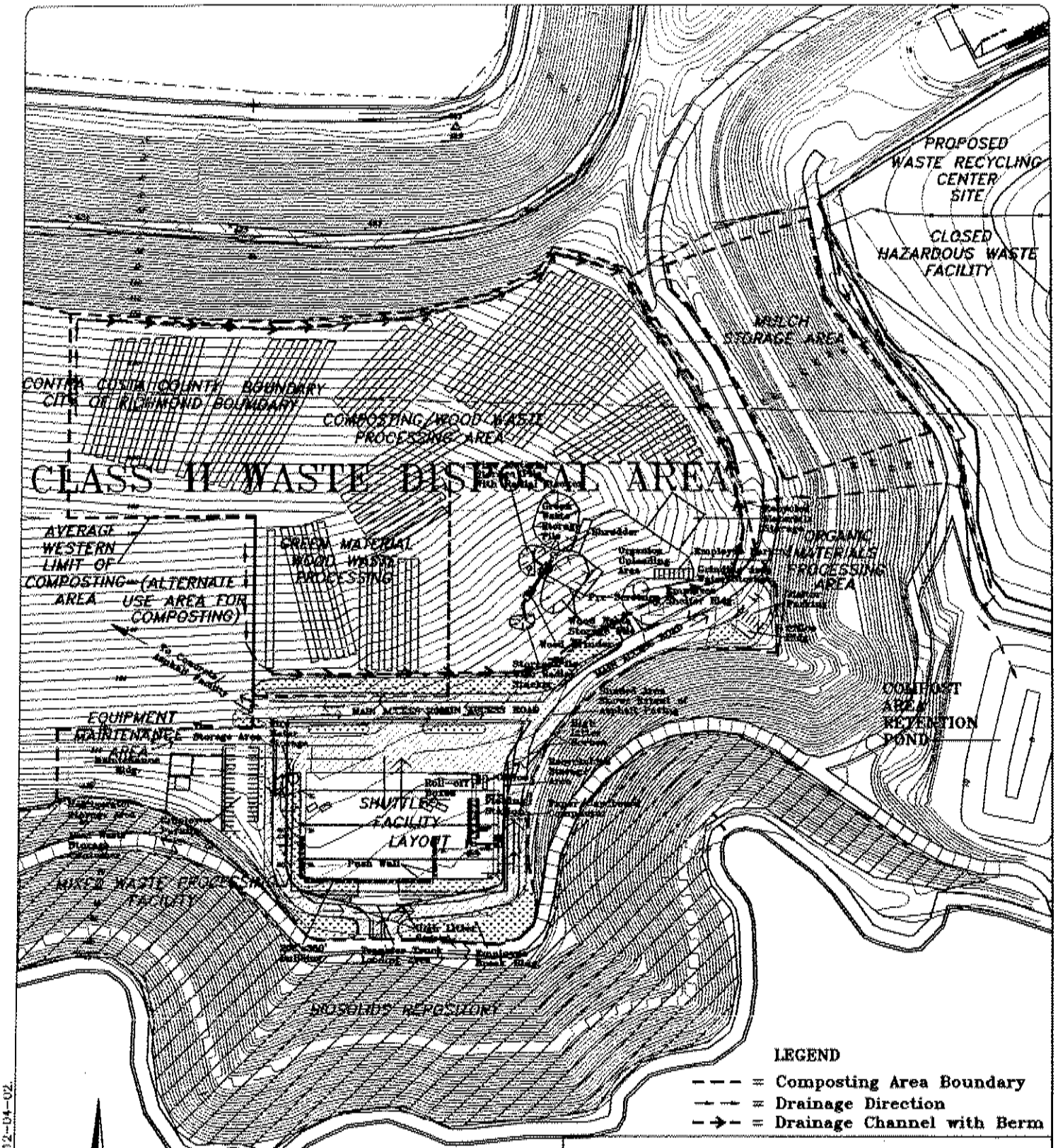
Wood waste containing too much concrete, metal, rubbish and dirt will be refused entry to the wood waste processing facility.

2. WOOD WASTE DEBRIS UNLOADING, STORAGE AND PROCESSING SITE

The wood waste unloading and processing site is shown on the West County Landfill in Figure 3F-1.

The BMPC reserves the right to designate the location of the wood waste recycling and processing site within the WCCSL property in conformance with applicable regulations. The wood waste storage and processing operation initially is planned to be sited on the central mound zone of the WCCSL adjacent to the composting area.

The wood waste processing area is on the closed landfill. To protect the landfill cap from disturbance, an extra depth of soil has been placed over the final cap. A minimum thickness of 3 feet of compacted soil is placed under the unloading area, stockpile areas and the shredding area. Benchmarks have been established to assure that the 3-foot buffer zone is not removed over time as the wood waste processing continues.



WEST CONTRA COSTA SANITARY LANDFILL

SCALE: GRAPHIC	DRAWING WC-5 RDSI/FDIP Figure 1C	DRAWN BY: ZD
DATE: NOV. 2002		EIR-W99WOODL

FIG. 3F-1 COMPOSTING/WOOD RECOVERY SITE LAYOUT

FDIPS-Figure 3
CPC-Figure 3.2-7

EIR-W99WOODL -1604-12-04-02

The site chosen for the unloading, storage and processing of the wood waste is conducive to the needs of the operation. Access to the wood waste area will be continually supervised by the BMPC WCCSL personnel. The wood waste storage and processing area will be restricted to persons delivering wood waste, BMPC operations personnel and wood waste processing personnel only. It is off-limits to the general public except those delivering loads of wood waste.

During each week, the BMPC WCCSL personnel will periodically push the wood waste in the unloading area using a rubber tired loader to place it into the stockpile. The stockpile generally will be 10 to 20 feet deep.

The site will be periodically regraded by BMPC WCCSL personnel for effective drainage. Drainage grading and evaporation of rain water from the site is adequate to prevent the accumulation of standing water. Runoff from the wood waste storage site will be directed to the Area A and B ponds.

Policing of the wood waste storage and processing site and the regular processing of the accumulated material prevent environmental problems.

The environmental controls necessary for the wood waste recycling and processing operation include:

- Drainage Control
- Fire Control
- Dust Control
- Residuals Management
- Operator Noise Protection
- Operator Safety Protection

The BMPC is responsible for the drainage and fire control at the wood waste storage and processing site. The shredding operator is responsible for dust control and operator noise and safety protection.

The water supply for the dust and fire control operations will be furnished by the BMPC WCCSL tank truck used in the composting operation or the wood shredding contractor if they are a different entity.

3. WOOD WASTE PROCESSING OPERATIONS

The frequency of wood waste processing generally will be determined by the amount of wood waste reaching a sufficient quantity to justify the shredding operation. At this time it is anticipated that wood waste processing operations will occur at weekly frequencies.

The management of the wood waste processing operation must control environmental problems. These include prevention of fires and dust, and provision of proper drainage.

The BMPC WCCSL personnel will maintain the plowed or graded firebreaks and the drainage facilities surrounding the wood waste storage pile, the processing site, and the shredded materials storage pile.

The initial wood waste processing operations include shredding, conveyors and screening equipment.

The BMPC WCCSL site Supervisor will be the contact person. The supervision of the processing operations and equipment is the responsibility of the Processing Contractor. The operators are to be trained to work safely. Emergency arrangements (e.g., in the case of operator injury) have been established with BMPC Management.

The equipment to be used will be suitable for the wood waste processing operation. The equipment includes a loader to move the wood and load the processed materials into transport trailers. The shredding equipment is anticipated to process about 70 tons per hour. The hours of processing operation currently are between 7:00 a.m. and 5:00 p.m. seven days a week. Revisions to the schedule may be approved by the City and County

The processing operation involves the following steps:

- The wood waste will be pushed into the stockpile immediately adjacent to the area where the shredder is positioned.
- The shredded material will be placed into an adjacent stockpile.
- Screening equipment will be used to produce the desired size of shredded material.
- The screened material will be placed in designated stockpiles.

- The BMPC Supervisor or the designated contractor will arrange for transportation of the processed wood wastes.

- The BMPC personnel or designated contractor will load the material into transport vehicles.

Maintenance will be conducted on the equipment during times when the facility is not operating. This may include nighttime or weekend periods.

4. RESPONSIBILITIES FOR THE PROCESSING OPERATIONS

The BMPC personnel's prime responsibility shall be to restrict the wood waste to those materials which are of acceptable type, and to provide general supervision of the wood waste unloading site.

The operations personnel are accountable to the BMPC management and are responsible for the supervision of the operation including organizing, policing, and supervising the wood waste recycling area. This includes control of dust, the collection and disposal of loose rubbish that may accumulate at the processing site, and the immediate supervision of all personnel processing wood waste at the site.

If a fire occurs, BMPC personnel will alert the fire control officials and undertake fire control measures identified in the site Fire Control Plan. The occurrence of a fire will be recorded in the site operations daily log and the LEA will be notified within 24 hours.

To utilize a shredder on site, a permit has been obtained from BAAQMD that establishes conditions for the wood shredder operations. The shredder equipment and operation procedures have been equipped to meet the applicable environmental standards.

The BMPC will designate a representative that is knowledgeable of the wood waste shredding and screening operations. The BMPC representative is the WCCSL Supervisor.

Any contractor assisting in the program is required to provide proof of general liability and workers compensation insurance coverage.

5. RESIDUALS MANAGEMENT

The BMPC personnel are responsible for control of drainage water. They also must control dust from the shredding operations, and equipment maintenance materials.

The shredded wood materials of chip size will be taken off-site for use as mulch or biomass fuel as markets exist. On-site uses might include use of fine size materials as mulch for erosion control or further processing by composting. Certain non-wood debris may be generated during the processing operations (metals, dirt, litter). The non-dirt materials will be salvaged and recycled by delivering them to the appropriate processing facility. The dirt material, if clean, may be processed in the soil reclamation program or used as cover on the landfill area.

6. CONTINGENCIES

The BMPC operator will have established response programs for the cases of accidents, fires, and equipment malfunction. The BMPC WCCSL personnel will be equipped with a radio to maintain contact with the WCCSL office. The BMPC Management will maintain a list of emergency contact numbers and have a Fire Control Plan and a Hazardous Materials Management Plan.

APPENDIX 3G

SOIL RECLAMATION FACILITY OPERATIONS SUMMARY

APPENDIX 3G

SOIL RECLAMATION FACILITY OPERATIONS SUMMARY FOR THE WEST CONTRA COSTA BULK MATERIALS PROCESSING CENTER

April 2003

INTRODUCTION

This plan was prepared to provide a summary of the operations plan for the Soil Reclamation Facility.

This description first describes the facility with respect to how customers access the Facility, and the load-out/haul-out of the processed soil materials. Next, the planned relationships of the Soil Reclamation Facility to the other Bulk Materials Processing Center operations are described. This is followed by a description of the infrastructure involving access roads and the apron surrounding the facility, landfill gas control, drainage control, electric supply, water supply, telephone, fire control, office, equipment servicing area, and site security. A residuals management plan is also included.

1. DESCRIPTION OF FACILITY OPERATIONS

The soil delivery vehicles proceed through the WCCSL entrance area to the scalehouse building for check-in and initial screening of the soil loads.

After weighing on the Facility scale, checking in, and paying fees, the truck will proceed to the designated Soil Reclamation area. The trucks are unloaded on the area established for storing the soil while awaiting processing. As the incoming soils are unloaded, the skip loader or dozer operator will push the soil into a stockpile.

Figure 3F-1 shows the location of the Soil Reclamation Facility at the West County Landfill.

The soils will be removed from storage by the skip loader and placed onto the conveyor leading to the soil processing unit (rotary and vibratory screens). The fine sized soil passes through the screens and the screened materials (chunks of concrete, asphalt and rocks) are discharged of the

end or sides of the units. The screened residual material will be further processed to enable it to be recovered by the WCCSL concrete/asphalt processing facility.

Dust control at the discharge of the soil processing unit is provided if necessary by spraying the soil as it passes on the conveyor. Litter control should not been necessary due to the low volume of trash included in the incoming soil.

The processed soil will be removed by trucks using the roads leading up to the landfill Central Plateau. Removal of the residual materials will follow the same path as the processed soil trucks.

2. RELATIONSHIP OF THE SOIL RECLAMATION FACILITY TO THE OTHER BULK MATERIALS PROCESSING CENTER OPERATIONS

The Soil Reclamation Facility will become part of the Bulk Materials Processing Center operations after it is included within the County and City Use Permits.

The Soil Reclamation Facility location on the central mound of the closed landfill is a companion facility to the Concrete Processing and the Composting and Wood Processing Facilities.

The Composting Facility, the Waste Recycling Center and the Soil Reclamation Facility will be operated by WCCSL, Inc. as joint operations with shared management, personnel and equipment.

The Soil Reclamation Facility soil screening, weighing, and processing fee collection will be conducted by WCCSL, Inc. at the main scale facility located in the entrance area.

3. SITE INFRASTRUCTURE

This section describes the Soil Reclamation Facility site infrastructure.

Access Roads

The site is reached via the WCCSL main access road across the San Pablo Creek Bridge (Recycling Lane). This road passes through the entrance area, turns west past the WCCSL scalehouse. The Soil Reclamation Facility is at top of the main road to the landfill Central Plateau.

The main access road (Recycling Lane) ultimately will be paved and substantially meet the specifications for a commercial/industrial subdivision road. Initially, to allow more settlement of the road to occur, and defer site development costs, the roadway surface will be graveled. Operation of the site with the graveled road will entail maintenance grading to assure that the appropriate surface drainage is maintained and dust control.

Apron Surrounding the Facility

The apron on two sides of the storage area will be graveled to provide all-weather access. Maintenance regrading will be conducted periodically as necessary. The area grade will be maintained to direct the drainage to the intended location.

Landfill Gas Control

Landfill gas control is provided by the horizontal piping system that was placed under the final landfill cap. This is a standard feature of the WCCSL final capping projects. These horizontal pipes are connected into the landfill gas extraction system network. The landfill gas is processed at the power station.

Drainage Control

The apron drainage is sloped away from the processing facility to prevent it from entering the facility. The maintenance regrading will assure the drainage flows away from the facility.

Litter Control Measures

No specific litter control measures should be needed.

Electricity Supply

The Soil Reclamation Facility does not need electrical service. In the future lights may be installed on poles to provide better visibility. The lights will be directed toward the work area, and will be shrouded to avoid light glare to off-site areas.

Water Supply

Water is required for Soil Reclamation Facility, dust control and processing area washdown. Drinking water is supplied via bottled water.

The water used in the Soil Reclamation Facility for the fire water system and the dust control is supplied by the WCL water trucks.

Telephone

Telephone service is not needed at the Soil Reclamation Facility.

Fire Control

Fire control is not necessary for the Soil Reclamation Facility.

Office

The WCCSL office serves the Facility.

Equipment Servicing Area

The Facility equipment is maintained with the other WCL equipment.

Dust Control

The Facility access road and apron is graveled. Soil that is tracked out of the building can be a source of dust. Periodically the area is watered with the WCL water truck.

Site Security

The primary security is the WCCSL exterior fences and gates located at the end of Parr Blvd. As the landfill is closed, it may be desirable to have more full-time access to the Soil Reclamation Facility. Then gates would be installed on the main access road near the position of the current WCCSL scale house.

4. RESIDUALS MANAGEMENT

The Soil Reclamation Facility personnel are responsible for control of drainage water and equipment maintenance materials. They also must control dust from the unloading and processing operations.

Certain concrete, asphalt and rock debris may be generated during the processing operations. As feasible, the materials may be salvaged and recycled by delivering them to the appropriate processing facility, or transferred to the landfill.

5. CONTINGENCIES

The Bulk Material Processing Center operator has established response programs for the cases of accidents, fires, and equipment malfunction. The Bulk Material Processing Center WCCSL personnel are equipped with a radio to maintain contact with the WCCSL office. The Bulk Material Processing Center Management maintains a list of emergency contact numbers and have a Fire Control Plan and a Hazardous Materials Management Plan.

APPENDIX 3H

BIOSOLIDS MANAGEMENT PLAN SUMMARY

APPENDIX 3H

BIOSOLIDS MANAGEMENT PLAN SUMMARY FOR THE WEST CONTRA COSTA BULK MATERIALS PROCESSING CENTER

April 2003

PREFACE

The West County Landfill (WCL) is continuing its program of working with the adjacent West County Wastewater District (WCWD) in management of the biosolids generated from the District's Public Operated Treatment Works (POTW). This document summarizes the activities planned at the Landfill to receive, process and recover the biosolids. Materials from other POTWs may be received if within the ability of the WCL to handle the materials. This program is part of the WCL Bulk Materials Processing Center (BMPC).

The biosolids management program also is proposed to include processing a portion of the biosolids materials in the WCL Composting Program. A full composting permit is being requested for the upsized composting operation to expand the scope from the existing Green Material Composting Permit held by the WCL.

This summary includes the following aspects of the biosolids management program:

1. Background Information
2. Biosolids Handling Concepts
3. Biosolids Description
4. Possible Co-processing With Other Materials
5. Location of Handling Facilities
6. Specifications for Biosolids Spreading and Drying
7. Runoff Control
8. Processed Biosolids Removal
9. Protection of Landfill Cap and Annual Maintenance Activities
10. Other Environmental and Operational Factors
11. Monitoring and Reporting
12. Facility Cleanup and Closure Activities

1. BACKGROUND INFORMATION

Contractual arrangements have been made between the WCL and the WCWD for the landfill company to provide for annual cleanout and disposal of the POTW biosolids. The long-term permit agreement was established in 1999. The two entities have been cooperatively investigating the possible ways that areas of the WCCSL could be used for biosolids drying and the manner of using the processed materials.

The goal of these studies is determining how an alternative manner of biosolids handling can be conceived and permitted, thus allowing for replacement or reduction of use of the existing WCWD biosolids lagoons. During 2000 and 2001 the lagoon-dried biosolids were successfully used as soil amendment materials on the final caps constructed on the MSW landfill.

This summary primarily covers the proposed spreading of the biosolids on specific site areas as soil conditioner and the processing and recovery of the materials. One program involves the annual spreading of biosolids on final capped areas of the landfill as an annual activity to improve the erosion control vegetation growing conditions. This may include both the MSW landfill and the closed Hazardous Waste Management Facility. The second program envisions use of the southern and eastern MSW landfill slopes as locations for annual repetitive spreading and drying of high moisture content biosolids.

As mentioned in the Preface, the biosolids management program also is proposed to be affiliated with biosolids composting at the WCL.

2. BIOSOLIDS HANDLING CONCEPTS

The following information is directed to spreading and drying the biosolids on the MSW landfill slopes. This presents the outline of the concepts for segregation, storage, spreading and processing of the materials. This operation may also be applicable to using portions of the Hazardous Waste Management Facility if allowed by the approved Postclosure Plan and the Permit.

Delivery of Biosolids

Delivery by truck – The moisture content of the biosolids that can be trucked to the WCL can cover an extensive range. Biosolids of high moisture content (e.g. 5 to 10% solids) can be hauled in a tank truck. Lower moisture content materials (20% solids or greater) can be hauled by a dump truck.

Spreading of the biosolids carried by truck to the WCL involves unloading the materials at both the top of slope and at the base.

This requires the trucks to have unencumbered access to these spreading areas. The access roads available to be used by the trucks and the biosolids application areas are shown on Figure 3H-1.

Only the lower moisture content materials area are applicable to unloading the biosolids at the bottom of the slope to be spread up the slopes with a dozer.

Delivery by pipeline – The transportation of biosolids through the pipeline for the 4000 foot distance between the POTW and the WCL spreading area requires the material to be less than of about 6% solids.

WCL envisions the transport pipeline to be buried in an alignment that extends from the northwest gate of the POTW and runs parallel to the leachate pipelines passing by the power plant and the HWMF leachate treatment facility. Aboveground pipes would run along the top of the east and south landfill slopes.

Storage

At the WCCSL large volume storage of the high moisture content biosolids pumped from the POTW probably is limited to ponds that would be created in Area A. This option would allow less lagoon area to be needed at the POTW. However, Area A may be used as the location of the Waste Recycling Center, and hence may not be available. Wastes underlie all other areas at the WCCSL, and thus ponds cannot be used there. A 20,000-gallon tank may be established on the landfill central plateau to serve as a filling station for the spray truck.

Storage of lower moisture content materials trucked to the WCCSL would be in the form of unloading the biosolids in piles and rows at the top or base of the slope where they are to be spread. These truckload piles may sit in these locations for up to one week while awaiting the scheduled spreading of the material on the slope. Monitoring of the piles will be done by observing the pile area to detect any nuisance odors. Through experience in handling the stored biosolids, a management schedule will be created to avoid odors, yet allow some moisture to be removed during

the storage time, while sequencing the spreading operation to result in site equipment usage to be optimized.

Spreading

Spreading of the lower moisture content biosolids carried by truck to the top of slope and at the base would be conducted using a dozer tractor. The tractor would move the materials from the storage piles and push them downhill or uphill.

The intent is to spread the materials in the area designated for that amount of biosolids to a depth of about 3 to 4 inches. After that layer has dried, in one or two weeks an additional layer can be applied.

Spreading of the pipeline-discharged high moisture biosolids may occur by gravity flow for the 100 to 200 foot distance down the slope. Further spreading of the accumulated application to achieve a uniform thickness layer would be accomplished using the dozer. Alternately, the liquid biosolids may be sprayed from a tank truck or through large diameter nozzle sprinklers. The truck would be driven above the bench roads and the biosolids would be sprayed downwind.

Drying

Solar drying will be the major mechanism to reduce the moisture contained in the biosolids lying on the slopes. Moisture removal also will be accomplished from wind blowing across the slopes. The drying will occur over a week or two during the sunny days of late spring, summer and fall. During lower temperature periods, the biosolids may skin over, trapping the moisture in the bottom of the layer. At those times, the dozer may be used to track through the materials and break the skin crust.

Another potential drying method is growing plants such as rye grass or wheat to consume the moisture of the biosolids spread during the wet weather season. This may be very applicable to the pipeline or truck spraying options since the spreading of the biosolids flowing down the slopes would resemble flood-type irrigation of crops and the spraying would sprinkle the liquid biosolids over the plants. At the appropriate time, the plant materials may be harvested from the slopes and processed in the composting facility, or be cut and baled for erosion control on construction areas.

Removal or Incorporation into Landfill Cap

If the dewatered biosolids materials are not to remain in place they will be removed by a dozer tractor, pushing the dried material to the base of the slope to the loadout areas.

Incorporation of dried biosolids in the final landfill cap involves determining that the new depth of biosolids is desirable. This may be through co-spreading of the biosolids with solidified wastes and soils. This mixture will add to the thickness of the final cap, providing additional protection of the landfill.

3. BIOSOLIDS DESCRIPTION

Sources

The adjacent West County Wastewater District would be the major source of biosolids processed at the WCL. Other possible sources are the other POTWs in the West County area in Hercules and Pinole. Additional POTWs may be served if sufficient biosolids handling capacity exists at the WCL.

Characteristics

The candidate biosolids are restricted to adequately digested biosolids that represent no health risks. The moisture content range will range from about 2 percent to 75 percent solids. In this discussion "high moisture content biosolids" are defined as having a moisture content of between 2 to 6 percent by weight.

Quantity

The quantity of biosolids generated per month at the WCWD averages about 2 million gallons at 2 to 5 % moisture. This is equivalent to 10,000 cubic yards per month at 5% solids or 8,500 tons per month.

The biosolid quantities available from other sources are yet to be determined, but are expected to be only about 50% of the biosolid amounts generated by the WCWD.

Chemical Character

The biosolids are analyzed annually to provide a listing of the inorganic and organic chemical substances contained in the materials. No constituents of concern are anticipated from the expected POTW sources of the biosolids. A listing of the results of laboratory analysis of the WCWD biosolids is included at the end of this Appendix.

4. POSSIBLE CO-PROCESSING WITH OTHER MATERIALS

A parallel program to the biosolids processing is the spreading of dredged materials generated by local bay and harbor dredging operations. Another group of materials that may be spread on the slopes is the solidified materials developed from the processing of the wet wastes/powdery materials. Prior to the acceptance of any material, the generator's technical representatives must supply data to WCL, Inc. that shows the material meets the WCCSL acceptance criteria.

Dredged Materials

The dredged materials are the silty and sandy deposits removed from bay channels and harbors during dredging projects. These types and sources of materials have been identified in the BCDC dredged materials management alternatives evaluation. These are wet materials that require substantial drying and should only be spread to a depth of about one foot until dry.

Solidification Materials

WCL, Inc. proposes to operate a solidification program. Typical candidate materials are wet wastes and powdery materials that include silt biosolids from sumps and baghouse fines. The solidification is achieved by blending wet and dry materials or adding wet or dry soil to result in the desired moisture content and material plasticity.

Soil

Excess soils may be spread on the slopes to allow combining with biosolids or solidification materials, or to thicken the final cap. These soils would be those free of tree branches, rocks, concrete and rubbish.

Miscellaneous

Foundry Sand – The WCCSL receives foundry sand from the companies operating in Berkeley. After closure of the active landfill, an alternative handling method must be found. These dust prone materials can not be handled through a transfer station.

Sand Blast – Spent sand blast requires disposal and would make a good addition to the biosolids cake if the metals content is acceptable.

5. LOCATION OF HANDLING FACILITIES

Management Areas

The prime locations for the repetitive biosolids spreading areas are the south and east slopes of the MSW landfill. These locations are shown on Figure 3H-1.

The access routes to the east and south slopes are shown on Figures 3H-1. These include the main haul road climbing up to the top of the central plateau of the MSW landfill, and the south slope roads. The main access roads to the siting area are graveled and provide all-weather access. Maintenance grading is provided to assure that the appropriate road smoothness, surface drainage and dust control is maintained. These roads are also used for access to the other site areas. Site maintenance inspection and roads spur off of these roads allowing equipment to reach all parts of the slopes.

The area available on the south slope is 14 acres. The eastern slope area is about 5 acres.

The liquid biosolids could be sprayed on other slope areas. Subsequently, these areas would be disked to incorporate the biosolids into the cover soil, or left as a thin layer on the vegetation.

Description of Side Slope Areas

The upper and lower south and east slope areas average a 3:1 horizontal to vertical slope angle. The length of the slopes range from 50 to 400 feet.

The slopes are covered with low vegetation in the form of weedy plants and grasses. Prior to application of the biosolids, the vegetation would be mowed or trampled with a dozer tractor to reduce the height of the vegetation to a few inches, if necessary.

Adjacent Uses At Landfill

Existing uses are the organics receiving and grinding area and the waste shuttle area. When the landfill closes, one of the alternative areas for locating the Waste Recycling Center is on top of the landfill central plateau, immediately above the south landfill slope.

Another potential siting area of the Waste Recycling Center is Area A, which is at the base of the eastern slope.

The joint operation of the biosolids spreading area and the Waste Recycling Center at either of these areas should occur without any problems.

6. SPECIFICATIONS FOR BIOSOLIDS SPREADING & DRYING

The objective of the biosolids spreading is to apply the materials in a uniform manner over the area. The thickness of the new layer is selected to allow the biosolids to quickly dry in the sunlight and from the wind so that another layer can be spread on the biosolids processing slopes or to allow tilling or blending of the dried materials into the landfill final cap. If they are sprayed on the cover plants prior to the day-weather season, the plants would in essence be irrigated with the liquid. Thus, the plants may stay green all summer, resulting in more moisture removal through evapotranspiration.

The moisture content of the biosolids governs the spreading method. Biosolids with high water content will flow down the slope. Those of lower moisture content will need to be spread down or up the slope with a low-ground pressure dozer tractor.

Spreading by Truckload

The concept is to deliver the low moisture content biosolids to the slopes adjacent to the access roads. Usually the intent is to spread the materials down the slope. Very high moisture content biosolids (2 to 6% solids) would be hauled by a tank truck and the materials would be sprayed through a nozzle directly onto the slopes. Also they could be spread from a hose and allowed to flow down the slope. Possibly they could be discharged directly from the truck and be allowed to flow down the slope. Biosolids with lower moisture content would be carried to the spreading area in a dump truck. The truck would dump the load at the top of the slope, and sometimes at the base of the slope. The dozer tractor would uniformly spread the biosolids down or up the slope.

Spreading via a Piping System

Due to the large number of tank truck loads that would be required to handling the annual generation of the POTW biosolids, it may be desirable to pump the high moisture content biosolids directly from the POTW through a buried pipeline that links the treatment plant with the top of the landfill. Pipelines are being constructed during 2002-2003 for leachate handling

and non-potable water delivery to the landfill. A pipeline and the pumping system with lateral pipelines running along the top of the south and east slopes could be included in the project.

The manner of discharging the biosolids may be via a hose to spray the materials onto the slope. An alternative manner of biosolids discharge may be through a piping system which large-sized holes drilled every foot or so that will allow the sludge to be discharged along the slope top.

The pipeline could also be connected to the storage tank located on top at the central plateau.

Specifications for Reuse as Dried Biosolids

The amount of moisture in the processed biosolids will be related to the intended use of the biosolids.

Dried biosolids to be used for soil conditioner usually will contain from 20 to 40 percent moisture. The higher the moisture content, the heavier the load which affects the transportation of the product.

No chemical constituents are anticipated to be present in the dried biosolids that would restrict the use of the materials as soil conditioners.

Specifications for Reuse of Biosolids Mixed with Soil

The finished dried biosolids mixed with soil will contain from 20 to 40 percent moisture.

The chemical nature of the biosolids/soil mix is expected to be neutral. Both the biosolids and the soils placed on the processing area will be checked to assure that no excessive contaminant levels will occur.

To prepare the biosolids and soil for mixing, the soil and biosolids will be spread in layers. This will involve several alternating layers of biosolids and soil. When the layers are excavated during the removal of the materials from the slopes, mixing will occur. As the hauling trucks are loaded, additional mixing will occur.

Specifications for Incorporating into Side Slope Final Cover

The dried biosolids to be incorporated into the slope final cover will contain from 20 to 60 percent moisture. The mixing method will determine the amount of acceptable moisture content. If the materials are to be plowed into the upper layer of the landfill cap, the moisture content

could extend across the entire range. To mix the materials by track-walking the slope with a dozer requires the materials to be drier, probably less than 40 percent moisture.

The anticipated areas where the dried biosolids would be incorporated into the final cover include the western end of the landfill, the northern side, and the southern side facing the HWMF.

To create better vegetation growing conditions, dried biosolids may also be mixed into the HWMF final cap vegetative soil layer. After spreading, the materials may be left in place of several weeks to achieve further drying before incorporating them into the vegetative soil layer.

If the drying lagoons are no longer used at the POTW, then the dried materials to be spread on the final cap areas will be obtained from the east or south slope biosolids processing areas.

Specifications for Composting the Biosolids

One method of composting the biosolids is to directly apply the wet biosolids from a tank truck to the windrows. This would add both nutrients and moisture to the green materials being composted.

It may be desirable to first process the biosolids by storing them on the slope spreading areas. For example, the compost operation cannot receive much high moisture content biosolids during the wet weather season. Some biosolids may be spread down the south slopes during the dry weeks that periodically occur during the rainy season. Then in April-May these semi-dried biosolids could be removed and be placed in the compost windrows for processing into compost. If the biosolids have been dried on the slopes to remove sufficient moisture for composting, the moisture content may range from 30 to 60 percent.

Rates of Repetitive Spreading on the Processing Areas:

Table 1 presents an initial estimate of the amounts of biosolids that can be placed on the available WCL slopes. The assumptions and general calculations are shown, giving the range of materials that can be accommodated on the slopes. Approximately 22 acres appear to be available.

The rate of spreading is dependent upon the time required to dry the biosolids to the desired moisture content. A 3-inch thick layer of biosolids may dry within one week if the daily maximum temperature exceeds 70 degrees and some wind is present. Cooler temperature will require greater times. Spraying the biosolids from a tank truck will be limited by the tendency of

Table 1

APPLICATION OF BIOSOLIDS TO SPREADING AREAS
VOLUME OF LIQUIDS APPLIED

Example 1
SPREADING RATE = 1 GALLON/5 SQ FT

Zone	Area Acres	Area Sq Ft	Rate 1/5 gal/sf	Quantity Gallons
1	3.2	140000	5	28000
2	9.9	430000	5	86000
3	5.1	220000	5	44000
4	4.4	190000	5	38000
Total	22.5	980000		196000

Example 2
SPREADING RATE = 1 GALLON/15 SQ FT

Zone	Area Acres	Area Sq Ft	Rate 1/15 gal/sf	Quantity Gallons
1	3.2	140000	15	9333
2	9.9	430000	15	28667
3	5.1	220000	15	14667
4	4.4	190000	15	12667
Total	22.5	980000		65333

Notes:

Assumes uniform spreading of the biosolids over available area

Berm at base of each slope intercepts and routes runoff water

the liquids to run down the slope. A vegetated surface will hold more liquids then a bare soil slope.

The estimated application amounts range from about 2,900 gallons per acre to 8,700 gallons per acre. Assuming that applications can be made four times per month, then from 260,000 gallons to 770,000 gallons can be applied per month.

Truckloads – The above monthly ranges equate to 4 to 12 truckloads per day.

Pipeline or tank truck discharge – The above monthly ranges equate to 8,700 to 26,000 gallons per day.

The above estimated rates will be re-evaluated after the test-spreading program. WCL, Inc. has conducted a limited test spreading of the biosolids to gather additional information that can be applied to the design of the pipeline spreading and truck spraying option. The tests conducted in 2002 confirmed the feasibility of applying the 2% to 6% solids content biosolids on the landfill slopes.

In the test applications conducted in 2002 the following were noted. Two test procedures were conducted during summer 2002. The first was the direct bulk placement of the liquid biosolids on the vegetated final capped landfill slope from the back gate of the tank truck. The second involved spraying the biosolids through a hose, pump and nozzle connected to the tank truck.

In the first test, approximately 2000 gallons were unloaded in about 5 minutes from the tank truck when parked at the top of the 3:1 H:V slope. The biosolids quickly fanned out downslope in approximately a 20-foot wide swath. But, much of the liquid ran in concentrated flow approximately 6 inches to 1-foot wide downslope through the 6 to 12 inch high dried browned-off vegetation. The liquid evaporated within several days and no penetration into the soil cover occurred. It was apparent that to obtain a more consistent application, the biosolids would need to be discharged through a diffuser pipe laid at the top of the slope, or they should be sprayed on the hillside.

The second test involved spraying two 4000-gallon tank truckloads on the slope. Due to the equipment used and the approximately 15 mph wind conditions, the liquid biosolids were sprayed up the final capped slope. This allowed effective observation of the runoff pattern and the biosolids spraying could be applied to different portions of the area (bare soil versus 12 inch deep dried vegetation) in durations that were varied to avoid runoff. Approximately 4 times more liquid could be applied to the vegetated area compared to the bare soil. The vegetation absorbed or restricted the water from flowing downslope. The spray application, using a monitor nozzle with a 1-inch opening, resembled a hydroseeding application that uses a low mulch content mix. With the equipment used and the wind conditions, the biosolids spray range

extended up slope about 80 to 100 feet. The final result was a covering over the soil and vegetation less than 1/16th inch thick. The application rates achieved in the test appear to have averaged about 0.5 gallons per sq ft on the bare soil, and 3 to 4 gallons per sq ft on the vegetated slope. The 4000-gallon load was sprayed over the hillside in about 10 minutes. The soil cover surface dried within several hours, with no penetration. It would appear that on a sunny, windy day that several spray applications could be made on the same day over an area.

Prior to full-scale implementation of the biosolids spreading, further testing will be conducted to refine the rates and methods of application.

7. RUNOFF CONTROL

This discussion primarily applies to the biosolids processing areas located on the south and east final capped slopes of the landfill.

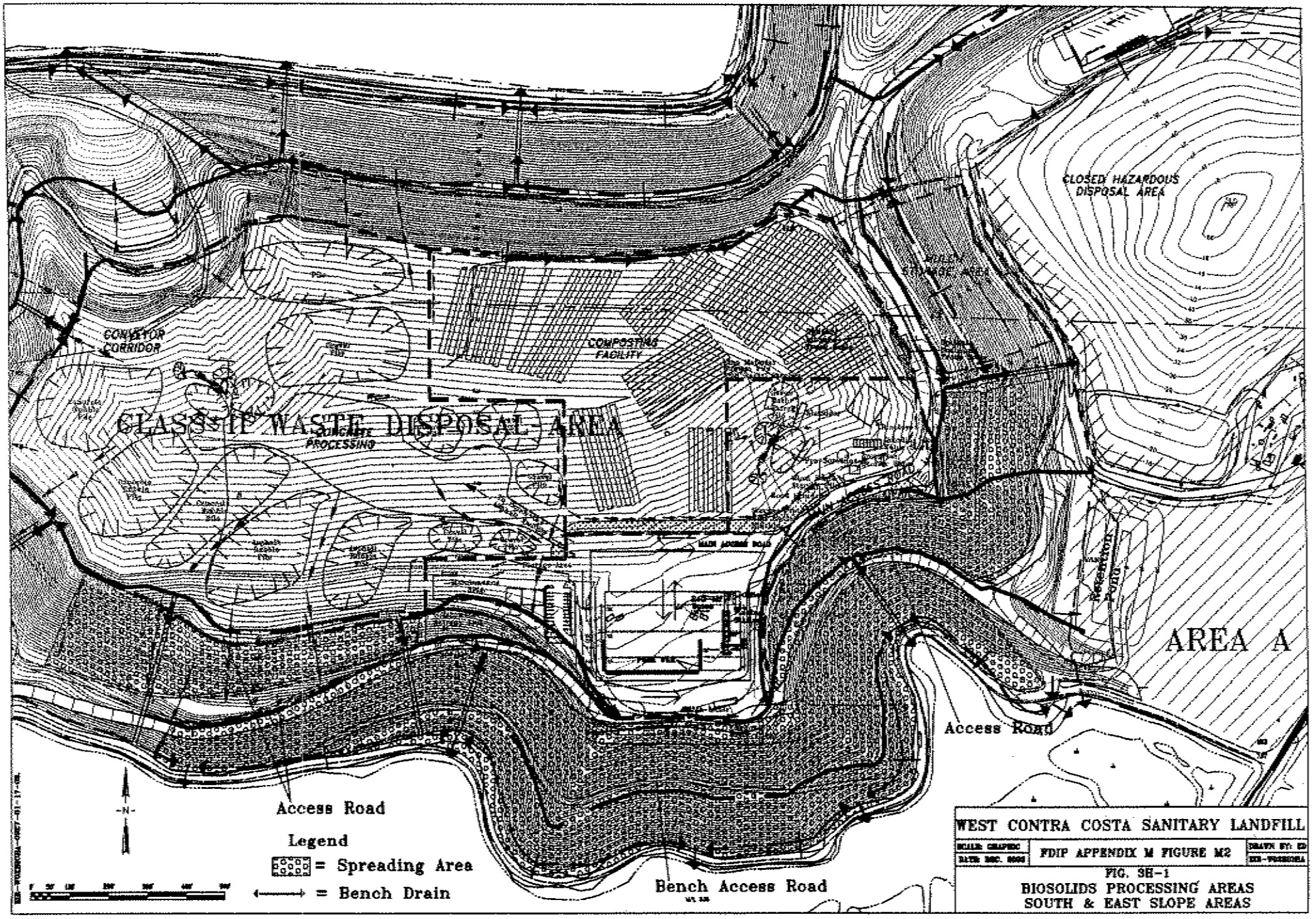
After the biosolids spreading has been approved by all agencies, the biosolids spreading area will be named in the WCCSL Stormwater Control Program filed with the State. Sampling points will be established as described below.

Drainage Control

The drainage grading for the area above the processing area slopes will prevent the water from these upper areas from entering the slope area. The grades surrounding the processing area would be maintained such that drainage will flow around and away from the area.

Controls At Base Of Slope

The control concept is to place a berm at the base of the slope where the runoff water would be collected in a series of low points where pumps would be located in sumps. At the base of the slopes the landfill leachate pipeline is buried within a berm that overlies the final cap. That berm would be raised in height to contain the runoff and direct the water to the pump sumps. Grasses would be planted to transpire water and uptake nutrients in the ditches behind the berm. The locations of the runoff control berms and channels are shown on Figure 3H-1.


CLOSED HAZARDOUS DISPOSAL AREA
CONVEYOR CORRIDOR
COMPOSTING FACILITY
CLASS II WASTE DISPOSAL AREA
PROCESSING
MAIN ACCESS ROAD
Reservoir Pond
AREA A
Access Road
Access Road
Bench Access Road
-N-
Legend
= Spreading Area
= Bench Drain
WEST CONTRA COSTA SANITARY LANDFILL
FDIP APPENDIX M FIGURE M2
FIG. 3H-1
BIOSOLIDS PROCESSING AREAS
SOUTH & EAST SLOPE AREAS

Runoff Handling – Pump to POTW

The water may be pumped into the leachate piping system used for the HWMF treated leachate discharge to the WCWD sewer. The amount of water would be similar to the water now pumped off of the existing biosolids drying lagoons at the WCWD POTW. That rainwater now is decanted off of the ponds and pumped back to the POTW headworks.

Pump To Top Of Slope For Evaporation

An alternative manner of handling and disposing the rainwater is to evaporate it on the slope. This option is only available during the last portion of the wet weather season. However, during the wet season usually during December or January, several weeks of dry weather occur each year. The runoff can be pumped to the top of the slope where it will evaporate after it wets the slope.

Stormwater Monitoring Sampling Points

Drainage from Areas Where Biosolids are Spread as Soil Amendment on the Final Capped Areas – The erosion control plants growing on the landfill cap uptake nutrients and consume large amounts of moisture. Some of the moisture infiltrates into the root zone during the wet season and is stored. Subsequently the plant transpiration process extracts this moisture until the plant withers during the dry season. The warm weather evaporation removes the remaining moisture.

Stormwater moisture in excess of the soil field capacity will run off. For those areas where the biosolids have been placed in that year as soil amendment, WCL will maintain an unscreened compost windrow or shredded green material (approximately 8 feet wide and 2 feet deep) at base of the spreading area for first season. At the WCL this method has been shown to retain a significant amount of runoff from the periodic rainstorms, and the nutrients are absorbed in the windrow. In the second season the base of slope windrowed materials will be spread on the slope as a thin mulch layer. Observations will be made for rainfall runoff from these areas and to check that the runoff handling system is functioning as anticipated.

The application of biosolids on the final capped slope areas will follow a rotational pattern. A specific annual area will be designated and used that year, and that area probably will not receive the next application for 5 to 10 years.

Drainage from Processing Areas – The processing areas will essentially be in a disturbed condition during the entire year as the repetitive spreading and drying cycles occur. No plants will be present on the slopes initially in the wet weather season. Thus, the rainfall runoff could

contain suspended and settleable solids, and dissolved nutrients. These rainfall runoff flows will require containment. At the processing areas, runoff drainage will be diverted at the base of slope. This design feature is described earlier in this section. The water will flow to pumps that will pump the runoff back to the top of the slope during times of no rainfall, or discharge the water into the leachate discharge line. No landfill leachate will be pumped during the periods when the stormwater is being transported to the POTW. The runoff volume should be less that the amount of rainfall that would have been collected in the existing drying lagoons, in as some water will be evaporated and shallow infiltration and temporary storage of the rainfall would occur on the slope.

8. PROCESSED BIOSOLIDS REMOVAL

This discussion applies to the biosolids processing areas located on the south and east final capped slopes of the landfill.

Method

A dozer tractor will push the biosolids to the base of the slope for loadout. The tractor operator will carefully skim off the layer of material leaving a thin residue to avoid removal of the final cap vegetative soil layer. The dried materials will be accumulated at the base of the slope and temporarily stockpiled. These storage zones are adjacent to the access roads.

A rubber tired loader will load out the stored materials into dump trucks for transport to the market location, to the composting facility, or to another slope area on the landfill for final spreading as soil conditioner. After removal of the dried biosolids, the tractor will backblade the slope to smooth it for the next application of biosolids.

The removal activities will be practically restricted to the dry seasons of the year when truck access is available to the loading area.

Equipment

The following equipment would be used:

- Tank truck to transport high moisture content biosolids to the composting facility or to the spreading slopes.

- Dozer tractor that would be used to spread the materials evenly on the slopes, and push the dried materials to the loadout area.
- Rubber tired loader used to load out the dried biosolids.
- Hauling trucks to transport the biosolids to the composting area or site slope areas, or to off-site use points.
- Water trucks for access road dust control.
- Pumps to handle slope stormwater runoff.

Schedule

The schedule will be set by the rate of drying that occurs on the slopes. It is preferable to spread multiple layers of materials on the slopes. The addition of soils and other solidified wastes will depend on the availability of those materials. The removal schedule will be determined when the biosolids moisture content has reached the desired levels for subsequent marketing of the material or for composting. Also, the scheduling of the dried biosolids removal may be related to preparing the slope for the upcoming wet weather season.

9. PROTECTION OF LANDFILL CAP &ANNUAL MAINTENANCE ACTIVITIES

Description of Caps

The Class II site final cap is composed of compacted soil. The soil profile is composed of 2 feet of foundation soil, 1 foot of compacted clay and 1 foot of vegetative soil. The clay soil forms the moisture barrier layer that prevents moisture infiltration into the buried landfilled wastes.

The HWMF final cap is more unique, comprised of a composite soil and geomembrane structure. The vegetative soil layer is 18 inches thick which will permit incorporation of the dried biosolids in the final cap.

Potential Impacts To Be Avoided From Biosolids Handling Procedures

Infiltration of moisture into cap – The biosolids processing areas are on the sloping hillsides of the Class II landfill. The standard landfill final cap on these slopes is a 4-foot thickness of compacted soil. One foot of compacted soil overlies the 1-foot thick clay barrier layer. A 2-foot thick foundation soil layer underlies the clay layer. One of the prime purposes of the final cap is to minimize the infiltration of moisture into the cap.

Deep infiltration through the clay layer should not occur on the slope. The high moisture biosolids would wet the top few inches of the topmost soil layer as the liquid was wicked down from the biosolids materials into the soil. However, as the biosolids dried, the top of the soil layer will also dry.

Since, the repetitive spreading operation is planned to achieve substantial drying of the biosolids before the next application, it will be several weeks before the next application is made. This will allow the soil to partially dry.

Experience has been gained in evaluating the cap moisture control function. In 1999 test holes were made into the Class II Site final cap to determine moisture penetration from the normal rainfall. This was conducted as part of monitoring of the cap to obtain information in HWMF cap design evaluation.

In the October 1998 tests, the in-situ dry vegetative soil was very firm and non-friable. Digging the holes required substantial effort to hand dig down through the 1-foot thickness. The maximum depth where the roots were noted was 9 inches in the 1996 final cap area.

The rooting depth range of the other test holes was 3 to 6 inches. The excavations were made in areas of the slope where the plants were growing as high as 5 or 6 feet. However, in digging the test holes, when these larger height plants were removed such as from the center of the hole, the primary roots generally did not extend below 2 or 3 inches. The vegetative soil was very dry, whereas the top of the clay barrier layer was moist. It was easy to stick a screwdriver several inches into the clay, as compared to it would not penetrate into the overlying vegetative soil. However, no roots were noted on top or in the top few inches of the clay soil layer even though soil moisture was present.

These results show the limited infiltration potential through the clay cap and the effects of the shallow-rooted grasses and weedy plants acting to remove the moisture.

Additional information is available from the ongoing Potrero Hills Landfill Engineered Alternative Final Cap investigation. At that landfill, a test area on the 3:1 final cap slope is instrumented with moisture sensors that track the moisture profile of a 60-inch thickness or depth of the soil cap. Figure 3H-2 portrays data from the Potrero Hills Landfill study and is included here for reference.

The graph shows at the beginning of the wet season that the moisture content of the surface soils immediately increases with the onset of rainfall. Several weeks after more rainfall, the 12” depth soil layer shows a moisture increase. However, even after 5 months of wet weather, the 18” depth soil layer shows no impact of rainfall infiltration. The data collection and observation

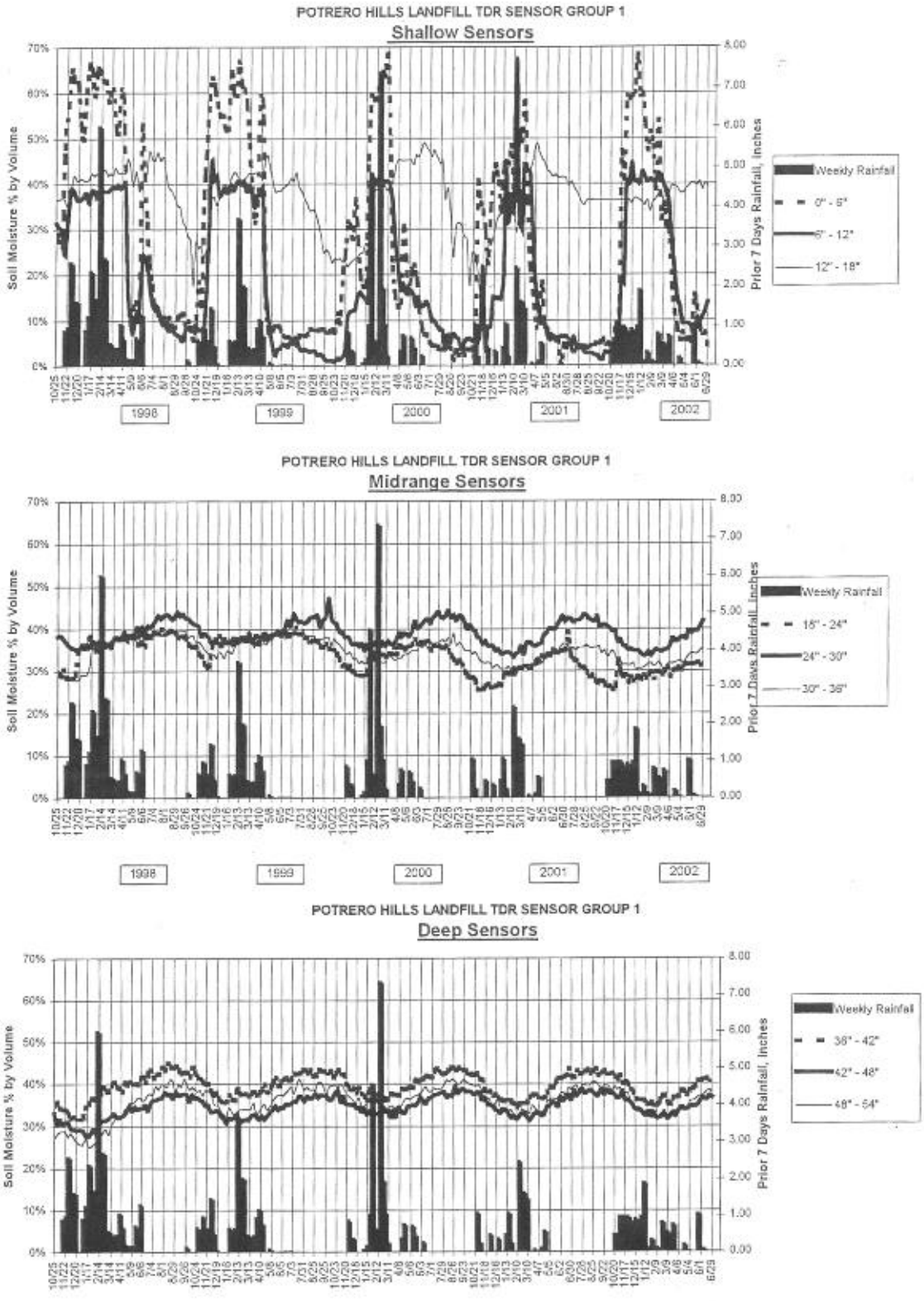


Figure 3H-2 Soil Moisture Trends 1997-2002

shows that the deeper soils (18” to 60” depth) remain with relatively unchanged moisture levels after 5 years of annual rainfall.

At the WCL, even with continuous use of the eastern and southern slopes for biosolids processing, a similar wetting and drying cycle is expected, since the periods between biosolids applications will allow for loss of some of the extra moisture added by the biosolids during the dry weather period.

During the initial years of the biosolids applications at the WCL, soil moisture monitoring is planned to gain knowledge of the annual soil moisture pattern in the cap profile.

Removal of Final Cap Soil – The periodic movement of tractors on the final cap could threaten the cap integrity if proper operation practices are not followed. Prior to use of the eastern and southern slope areas for repetitive placement and removal of the biosolids, additional soil would be placed on the slopes. This will provide a buffer on top of the existing final cap that now has been constructed.

Steps will be taken to include a marker layer similar to those used in the buffer layer underlying the resource recovery operations located on the landfill central plateau.

Creation of nuisances – Proper operational techniques will be developed and followed to avoid creation of nuisance odors and water quality impacts. These measures are described elsewhere in this Appendix in Section 7 (Runoff Control) and Section 10 (Other Environmental and Operational Factors).

Monitoring and Maintenance

Periodically in May-June, moisture content sampling of biosolids layers and the final cap vegetative soil layer will be conducted by driving 1” or 2” diameter soil sampling tubes extending down to the

top of the clay barrier layer. The holes will be immediately backfilled with bentonite chips to reseal the hole. Seed mix will planted at the top of hole if appropriate (if no new biosolids application is anticipated before next season). The moisture content of the soil samples will be determined using proper ASTM methods. The results will be recorded and reported.

Annually, the depth of the buffer layer in the biosolids processing areas will be determined to guard against removal of the cap soil as the biosolids are graded across the hillside or removed from the slope. This involves shallow test holes made to measure the soil thickness existing above the marker layer.

10. OTHER ENVIRONMENTAL AND OPERATIONAL FACTORS

Comparison With Existing Drying Lagoons

The biosolids that would be processed on the WCL slopes primarily would include those that are now lagoon-dried in the WCWD lagoons. A number of these ponds are adjacent to the Richmond Parkway. The existing Bay Trail bike path passes along the east side of these ponds (along the west side of the Parkway). A new trail linking the Wildcat Creek and WCL public access trails may be created along the west side of the POTW, and hence adjacent to the existing western ponds.

The locations of the WCL biosolids spreading slopes are much more remote from public thoroughfares. An exception is the eastern slope area if the Waste Recycling Center is located in Area A. The access roadway to the WRC facility located there would pass along the base of the eastern slope area. Fencing would be in place to restrict public access to the biosolids processing area.

Public Health Aspects

The biosolids to be applied, composted or otherwise utilized at the WCL will be limited those that have been adequately processed through the normal POTW biosolids digestion processes. These have reduced health impact significance as compared to raw biosolids sludge. However, the handling of these materials at the WCL must do with caution and effective notification of possibly affected parties.

Only employees who have been trained in the proper biosolids handling procedures, conditions and operations to be avoided, and good manner of health protection will be allowed to participate in the biosolids-handling program at the WCL. Proper protective equipment (clothing, masks, goggles, etc.) will be provided. Follow-up observation of working practices and re-training will be conducted quarterly to assure continuous respect for the public health aspects of this operation are being routinely followed. These training sessions will also allow feedback from all participants regarding improvements that can be made in the handling process or changes in the manner of monitoring and controlling the operation.

The biosolids will not be placed in any area where the public can have contact with the materials. This includes the public access trail area of the western and northern landfill slopes. Biosolids placed in those areas will be done only when the areas are closed and fenced off to prevent public access, and when the materials will be disked into the shallow soil mantel of the landfill cover. At the edges of the biosolids application area, signs will be posted indicating the boundaries of the area and warning unauthorized persons to not enter the area.

The spraying of the biosolids has the potential to cause wind drift of the biosolids liquid in mist or fine droplets form to adjacent areas. The operators of the spray equipment will be thoroughly trained to watch and assure that the materials are applied to the intended surface. Through experience, limits will be established for various wind speeds that will involve establishing setback distances from adjacent areas or outright halting of spraying. The spraying pattern will be done to avoid the biosolids from being blown back onto the operator or the equipment. The intent is to spray in the downward wind direction.

The annual report will contain a summary of the public health aspects of the preceding year's operation including a review of the health protection procedures that were employed and corrective measures that were or need to be taken.

Aesthetics

Persons traveling down the Richmond Parkway and the Bay Trail located along the Parkway can view the WCL.

More distant views occur from the hillside residential areas to the east and south. When the Public Access Trail is opened around the eastern and southern perimeters of the WCL property, that will create the nearest observation point to the biosolids processing area. The nearest distance ranges from 300 to 900 feet. Figure 3-7 in Chapter 3 shows the trail locations envisioned on the landfill. When dried biosolids are placed on the western and northern final cap slopes, portions of the Trail will need to be taken out of service for the 4 or 6 week period while the temporary fencing is installed and when the materials are being spread on the hillside. The areas nearest the trail will be mulched with straw to return the area to the seasonal brown and tan color of the adjacent hillside vegetation.

The appearance from offsite areas and the Public Access Trail will entail observation of the equipment periodically operating on the slope to spread out the materials. Also, periodically the processed material removal activities will be seen. These areas are sufficiently distant from the trail such that the appearance should not be negative, other than the trail user may have wished to have a recreational hiking or biking scene with no commercial enterprise visible. The noise should not be distinguishable over the ambient noise of the nearby refinery operations.

Use of the eastern slope spreading area, adjacent to the access road leading to the Waste Recycling Center if it is located in Area A, should not be aesthetically displeasing. The operation would resemble constructions projects that have been common at the landfill.

Litter Control Measures

The litter control requirements of LUP Section 24 and CUP Section 22 would apply to this operation. Due to the biosolids and soil materials being handled, little litter should be created. In addition to those methods described in the FDIP report, no specific litter control measures would be needed.

Odors

The odor control requirements of LUP Section 23 and CUP Section 20 would apply to this operation. No nuisance odors are expected since the thickness of the biosolids layers will be maintained such that anaerobic conditions should not occur. The musty odor of the biosolids may be present at times similar to that which occurs when the existing drying lagoons are plowed.

Transportation

Pipeline and Storage Tank – The transport pipeline from the pumping station located at the POTW will be placed underground passing through the POTW, through the WCL front entrance area and through the WCL Area A.

Temporarily the pipeline will be placed on the ground surface where it runs up the grade to the edge of the central plateau. Later this pipeline will be placed underground after the initial major settlement of the landfill has occurred. A 20,000-gallon tank may be placed on the central plateau to serve as a filling station for the tank truck spraying operation.

Inbound Trucks – The number of trucks depends upon the amount of POTW solar drying lagoons continued in service by the WCWD. If the biosolids are pumped to the WCL drying area, or to the storage tank then few numbers of trucks would be used annually. As now occurs, the dried biosolids materials contained in the remaining lagoons in August and September will be hauled out over a several week period and placed on the final capped slopes, or possibly composted. Currently about 800 truckloads are involved annually over about a one month duration.

Outbound Trucks – Periodically trucks will be used to transport the finished dried biosolids or soil/biosolids mix to the point of use off-site.

Water Supply

Water is not required for the biosolids processing operation, except for the haul roads. Dust control in the nearby area and on access roads will be accomplished by spraying water with the site water trucks per existing permit requirements. Drinking water for operations personnel is supplied via bottled water.

Pooling of Biosolids Liquids

Periodic smooth grading of the slopes should prevent pooling of biosolids liquids on the slopes. This would be done by a dozer back-blading the slope area.

Energy Consumption

Comparison with Filter Press and Centrifuge Alternatives – The solar and air drying of the biosolids on the slope is much less energy consumptive compared to the use of a filter press or centrifuge which require significant amount of electricity to operate. Some electrical power would be consumed in pumping the biosolids up to the WCL spreading areas, but it is expected to be only a small percentage of the mechanical dewatering energy needs.

Trucking to WCL areas – If a portion of the existing WCWD biosolids drying lagoons remained in operation, energy would be expended by the tractor plowing and tracking through the lagoons to dry the material, and the loadout and truck transport of the biosolids to the WCL. This removal effort would be less than for hauling the biosolids cake from the Filter Press or Centrifuge.

The lower moisture content lagoon dried materials would constitute less volume to be hauled, thus requiring fewer truck trips.

Handling of biosolids materials on slopes – The current limited information indicates that the amount of energy consumed in placing the materials on the final capped slopes as soil amendment would be approximately equal to the existing WCWD lagoon drying program. Handling the mechanical dewatered biosolids on the slopes to further dry them and combine with soil for recovery might be more energy intensive due to the need to spread them on the slopes with a tractor. However, the liquid biosolids spread at the top of the slopes may require multiple regrading of the layers on the slope to even the thickness of the biosolids. Spraying of the liquid biosolids from a tank truck may require the periodic tracking of the slope vegetation by a bulldozer to create a more uniform biosolids application. Mowing of the green slope vegetation may be necessary.

Fire Control

Due to the thin layer depth and low fire potential of the biosolids, no special measures are anticipated to occur. Compliance will be maintained with the FDIP fire control requirements (e.g. control of wildfires). If lush vegetation growth occurs due to the increased moisture and nutrient availability, at the end of the application season when the foliage dries and browns off, a bulldozer or mower may need to reduce the depth of the vegetation as a fire prevention measure.

Equipment Servicing Area

The equipment would be serviced as part of the BMPC equipment-servicing program. The WCCSL equipment maintenance personnel will accomplish the routine maintenance.

Dust Control

A water truck would be used to periodically spray the site access roads for dust control per existing permits.

Site Security

The primary security is the WCCSL exterior fence and gate located at the end of Parr Blvd. Persons traveling on the access road must pass the WCCSL scale house. The general public using the WCCSL would be excluded from the biosolids processing operation. Fencing would be installed around the spreading areas used annually on the western and northern slopes containing the Public Access Trail. The biosolids storage tank and the tank truck filling area would be fenced and access would be limited to authorized WCL personnel.

Residuals Management (LUP Section 11.4 and CUP Section 9.3)

Certain excess vegetation material may be created seasonally, such as clearing plant growth materials from the slope prior to beginning the spreading operation. These materials can be disked into the slope, left in a crushed condition on the slope, or collected and delivered to the composting facility.

Contingencies

WCCSL, Inc. has established response programs for the cases of accidents, fires, and equipment malfunction. The site personnel are equipped with radios to maintain contact with the WCCSL office. A list of emergency contact numbers is maintained and the site has a Fire Control Plan and a Hazardous Materials Management Plan. No materials are anticipated to be used in the biosolids processing that would require identification in the WCCSL MSDS log and the

Hazardous Materials Management Plan. One contingency plan is to provide pooling areas along the ditches on the south slope roads for the event where the biosolids are channeled down the slope and enter the ditch. Daily observation would be made of each channel. A monitoring log will be maintained to certify that the observations are being accomplished. The plan will anticipate that a tractor may be required on short notice to build a temporary berm to isolate such runoff (such as building up the bottom edge berm). Training of operators will be conducted annually to alert them of this possible scenario and to practice the control measures. Observations will be made of specific locations on the slopes where runoff periodically occurs, and either the biosolids applications will be reduced, or grading will be performed to achieve better areal coverage of the slope.

11. MONITORING & REPORTING

The following is a listing of the content of the monitoring and reporting program envisioned for the biosolids management program. The information will be tabulated monthly and provided to the agencies quarterly or upon request.

Quantities Handled – As applicable, specify the tons or gallons by percent moisture that are applied to the slopes. The composting program will identify the amount of biosolids that are composted.

Location of Processing Area – Indicate the area used per month (location and area size) coupled with the amount of material applied per area.

Schedule of Processing Per Area – Provide a summary of the processing time for the various application areas.

Quantities Removed – Indicate the amount of material removed from the various processing areas.

Runoff Monitoring -- monitor the amount and character of the stormwater runoff from the various processing areas

Soil Moisture Monitoring – Monitor the dept of moisture penetration due to biosolids spreading.

Public Comments – Provide a summary of comments received from the public

Reporting of Critical Events – The following will be reported:

- Odor nuisance complaints
- Lack of containment of biosolids
- Grading corrections

Biosolids Buildup In Vegetative Layer Of Cap – monitor the thickness of biosolids stored on the various processing areas

Thickness of Cap Remaining Underlying Processing Areas - monitor the thickness of the vegetative soil layer above the clay barrier layer.

A report will be prepared and submitted to the appropriate agencies on the schedule that is established in the WCL permitting process. The report will contain descriptions of the above items for the monitoring period. Tables and maps will be included as applicable.

12. FACILITY CLEANUP AND CLOSURE ACTIVITIES

Schedule

There is no current estimate of when the biosolids spreading and application management method would be closed out if this biosolids management technique at the WCL is successful. The POTW will remain at its present location for the foreseeable future. Biosolids generation will continue at the POTW requiring disposal or recovery. This Section is contained in the Appendix to meet information needs and to interface with the WCL Class II Site Postclosure Plan.

Site Cleanup

For site cleanup, that thickness of the final biosolids layer that is not desirable to leave on the slope as soil amendment, will be removed. Also, any pipes that are not needed for other purposes will be removed. The remaining biosolids will be mixed into the underlying materials and the plant seeding will occur in October.

Postclosure Site Monitoring and Maintenance

For the period specified, the normal WCL Postclosure Plan monitoring and maintenance activities will be conducted similar to actions taken for the other final slope areas.

APPENDIX 3I

WCCSL WASTE ACCEPTANCE GUIDELINES

West Contra Costa Landfill

WASTE ACCEPTANCE GUIDELINES
2002

ACCEPTANCE PROCEDURES

The following information summarizes acceptance procedures for the West Contra Costa Landfill (WCCSL):

- Assist in determining WCCSL required laboratory analysis (from this guide or contact WCCSL),
- Complete a "Waste Characterization Data Form" (supplied by WCCSL),
- Submit completed Waste Characterization Data Form, required analyses, Chain of Custody and other required documentation to WCCSL,
- Obtain approval from WCCSL. *Note*: more information may be required upon review of material,
- Set up method of payment prior to transport of material, and
- A Republic manifest will be generated upon approval and sent to transporter, each truck must have a manifest, signed by the Generator prior to arriving at the landfill. These manifests are utilized for tracking purposes when the shipment arrives at the landfill.

ACCEPTANCE CRITERIA

Laboratory Analysis

Petroleum Contaminated Soils

Product specific knowledge can be utilized to determine the appropriate analytical requirements for petroleum contaminated sites. Below is a list of petroleum hydrocarbons that are frequently released, and the analyses that will accurately and completely address the regulated compounds under CCR Title 22 and 40 CFR.

Leaded Gas:	TPH (8015M), BTEX (8020), Lead (TTLC)
Unleaded Gas:	TPH, BTEX, with documentation of unleaded gas only on site
Kerosene:	TPH (8015M), BTEX
Jet Fuel:	TPH (8015M), BTEX, Lead (if leaded product)
Diesel:	TPH (*), BTEX
Used Hydraulic Oil:	TPH (*), BTEX, CAM 17
Bunker Oil:	TPH (*), BTEX, LUFT 5 Metals (or MSDS)
Virgin Motor Oil:	TPH (*), BTEX, Semivolatiles (EPA 8270)
Used Motor Oil:	TPH (*), BTEX, 8260, 8270, CAM 17

* Methods 8015 Modified, 1664, or 5520 are acceptable for TPH results

Petroleum Contaminated Soils, Cont'd.

Constituent	
Total Petroleum Hydrocarbons (gasoline):	50 mg/kg
Total Petroleum Hydrocarbons (gasoline and diesel):	100 mg/kg

The following requirements also apply to managing TPH impacted soils:

Constituent	**TCLP (mg/L)**	**Total (mg/Kg)**
Benzene	0.02	0.7
Toluene	0.8	1
Ethylbenzene	0.60	1
Xylenes	0.40	1
Lead	0.75	

Solvent Contaminated Waste

- If contaminant is known, run the method which targets that contaminant
- If specific contaminant is unknown, run 8260
- Must address any RCRA listings, in writing
- Metals analyses and/or RCI may be requested depending on the source of the contaminant

WWTP Sludges / Biosolids

- TTLC and STLC (Cam 17 metals and organics), TCLP as necessary,
- Volatile Organics (8260),
- Semivolatile Ogranics (8270),
- Pesticides / herbicides (8081),
- PCB's (8082),
- Percent moisture, and
- Cyanide (9010) and sulfide (376.1) (15% - Primary/Secondary Treatment,)

Industrial Waste Streams

Utilizing the generator's description and knowledge of the waste stream, as well as accompanying analyses, the WCCSL will determine the required testing and frequency of sampling. In addition, the waste stream must not exhibit any of the characteristics of reactivity, corrosivity, ignitability, or toxicity.

Treated Wood

A separate form for treated wood must be completed to determine acceptability. Under certain circumstances, creosote treated woods **may not** need analytical characterization. Please contact our office for details.

Creosote or Pentachlorophenol:	8270, Benzene, RCI
CCA/CCZA (Chromium, Copper,	8270, Zinc, Arsenic, Benzene, TTLC CAM 17 & RCI

Frequency

Representative samples are typically required for all incoming waste streams. In general, a four point composite (four individual grab samples composited at a laboratory into one equally represented sample) is required to satisfy the requirements for a "representative" sample.

CONTAMINANTS	PROTOCOL	
	Volume	Frequency
BTEX Lead	0-25 cu. yd. 25-150 cu. yd. 150-300 cu. yd. 300-750 cu. yd. 750-1500 cu. yd. 1500 + cu. yd.	One Grab Sample 4 Point Composite 4 Point Composite per 150 cu. yd. 4 Point Composite pers 250 cu. yd. 4 Point Composite pers 500 cu. yd. 4 Point Composite pers 750 cu. yd.
Petroleum Hydrocarbons (8015M, 418.1, 5520)	0-500 cu. yd. 500-1000 cu. yd. 1000 + cu. yd.	4 Point Composite Two 4 Point Composites 4 Point Composite per 1000 cu. yd.
VOC's (8260) SVOC's (8270) Pesticides (8080) Herbicides (8150) Metals (CAM 17) PCB's (8080)	0-1000 cu. yd. . 1000 + cu. yd.	4 Point Composite per 500 cu. yd. 4 Point Composite per 2000 cu. yd.
Treated Wood analysis: 8270, Benzene, TTLC CAM 17 metals	any volume	4 Point Composite per 500 cu. yd.

Analytical Review

The following should be considered when submitting data from a California accredited independent laboratory to the WCCSL for review:

- The analytical data must be less than 18 months old when received by the WCCSL.
- The analytical report must be legible, typed on the laboratory letterhead, and include the address and phone number of the laboratory. No draft or preliminary reports will be acceptable.
- The results must have units of measure identified.
- For results reported as "non detect," a detection or reporting level must be indicated. Laboratory detection limits must be less than regulatory thresholds.
- Incomplete or inconsistent data may result in a request for new, or additional,
    - analytical information. Examples of inconsistencies are:
        - Required holding times not met,
        - Required spike recoveries not reported (QA/QC reports), and
        - Chain of custody documentation unavailable.

Constituent Limits:

The WCCSL will only accept material that is represented by analytical results indicating concentrations below the listed values. The WCCSL will base approvals on total results where the total threshold limit concentration of a particular constituent does not equal or exceed 10 (STLC dilution factor) times the listed soluble threshold for organic and inorganic compounds.

Metals Contaminated Wastes

Acceptance Limits:

Metal	TTLC (mg/Kg)	STLC (mg/L)
Antimony	500	1.4
Arsenic	500	0.25
Barium	10000	10
Beryllium	75	0.05
Cadmium	100	0.1
Chromium	2500	5
Cobalt	8000	2.5
Copper	2500	10
Fluoride	-	-
Lead	350	0.75
Mercury	20	0.02
Molybdenum	3500	0.5
Nickel	2000	0.134
Selenium	100	0.1
Silver	134	0.5
Thallium	130	0.1
Vanadium	2400	1
Zinc	5000	100

Hazardous Organic Constituent Limits :

	Concentration		
Constituent	**TTLC (mg/kg)**	**STLC (mg/L)**	**TCLP (mg/L)**
Aldrin	1.4	0.14	n/a
Benzene			0.5
Carbon Tetrachloride			0.5
Chlordane	2.5	0.25	0.03
Chlorobenzene			100.0
Chloroform			6.0
Cresols			200.0
2,4 D	100.0	10.0	10.0
DDT, DDE, DDD	1.0	0.10	n/a
1,4 Dichlorobenzene			7.5
1,2 Dichloroethane			0.5
1,1 Dichloroethylene			0.7
2,4 Dinitrotoluene			0.13
Dieldrin	8.0	0.8	n/a
Dioxin	0.01	0.001	n/a
Endrin	0.2	0.02	0.02
Heptachlor	4.7	0.47	0.008
Hexachlorobenzene			0.13
Hexachlorobutadiene			0.5
Hexachloroethane			3.0
Kepone	21.0	2.1	n/a
Lindane	4.0	0.4	0.4
Methoxychlor	100.0	10.0	10.0
Methyl Ethyl Ketone			200.0
Mirex	21.0	2.1	n/a
Nitrobenzene			2.0
Pentachlorophenol	17.0	1.7	100.0
Polychlorinated Biphenyls	50.0	5.0	n/a
Pyridine			5.0
Tetrachloroethylene			0.7
Toxaphene	5.0	0.5	0.5
Trichloroethylene	2040	204.0	0.5
2,4,5 TP (Silvex)	10.0	1.0	1.0
2,4,5 Trichlorophenol			400.0
2,4,6 Trichlorophenol			2.0
Vinyl Chloride			0.2

Other Limits:

Moisture:

> 15% from Primary Treatment Facilities,
> 20% from Secondary Treatment Facilities, or
> 50% all other sources.

Toxicity:

Oral LD50 > 5,000 mg/kg,
Acute Dermal LD50 > 4,300 mg/kg,
Acute Inhalation LC50 > 10,000 ppm, or
Acute Aquatic Toxicity > 500 ppm.

Ignitability:

Flash point > 60° C, or 140° F.

Corrosivity:

pH between 2.0 and 12.5.

Asbestos:

< 1.0 percent friable asbestos.

Must Contains less than 0.001 percent by weight of any of the following substances:

2- Acetylaminofluorine;
Acrylonitrile;
4-Aminodiphenyl;
Benzidine and its salts;
bis (chloromethyl) ether (BCME);
Methyl chloromethyl Ether;
1,2-Dibromo-3-chloropronae (DBCP);
3,3'-Dichlorobenzidene and its salts (DCB);
4-Dimethylaminoazobenzene (DAB);
Ethyleneimine (EL);
alpha-Napthylamine (1-NA);
beta-Napthylamine (2-NA);
4-Nitrobiphenyl (4-NBP);
N-Nitrosodimethylamine (DMN);
beta-propiolactone (BPL); or
Vinyl Chloride.

PROFILE NO. _____

WEST CONTRA COSTA SANITARY LANDFILL

SPECIAL WASTE DISPOSAL REQUEST/INFORMATION FORM

1. GENERATING FACILITY NAME/ADDRESS: _____

_____

2. CONTACT PERSON OR CONSULTANT (if any) _____

Name: _____ Telephone: _____

3. WASTE NAME: _____

4. ANTICIPATED VOLUME: _____ DELIVERY PERIOD: _____
(Per day, week, one-time only)

5. TRANSPORTATION FIRM: _____

6. TYPE OF TRANSPORT TRUCK: 10 CY ☐ Semi-end ☐ Double bottoms ☐

Single bottom ☐ Drop box ☐ Individual Containers ☐

7. METHOD OF PAYMENT: Check ☐ Cash ☐ Charge ☐ Purchase Order ☐
(Charge & PO must have prior WCCSL Accounting Department approval)

Charge Account Name: _____ Purchase Order No. _____

8. Description of Process and Circumstances Producing Waste:

_____

For WCCSL Use Only

FORM:

Partial ☐ Complete ☐

Compatibility:

Compatible ☐
Incompatible ☐
Potentially Incompatible ☐

NO: Yes ☐ No ☐

Reviewed by:
Date:

ACCEPT ☐ REJECT ☐

Authorized By:

Date:

ACCEPT ☐

Site Manager:
Authorized By:

Date:

Notification:

Expiration:

Appointment:

RATES AND FEES:

CODE:
Disposal Rate:

County/State Fees:

Other Rates/Fees:

9. List all materials and chemicals used in the production process:

_____

10. Describe the process by which the waste is collected:

_____

11. Waste Characteristics:

A. Physical Description: Solid ☐ Sludge ☐ Powder ☐ Describe Color: _____

B. Free Liquids: Yes ☐ No ☐

C. Percent: _____Solids _____Water _____Oil

D. pH: _____ How Measured:_____

E. Flash Point _____ °F (Closed Cup Test)

12. Waste Composition:

A. Is this waste produced in the manufacture of pesticide or herbicide products, or does it contain pesticide or herbicide compounds? Yes ☐ No ☐ IF YES, ATTACH CERTIFIED ANALYTICAL RESULTS.

B. Does this waste contain Toxic Metals? Yes ☐ No ☐ IF YES, ATTACH CERTIFIED ANALYTICAL RESULTS.

C. Reactive Constituents: Does this waste contain Cyanide, Sulfide? Yes ☐ No ☐ IF YES, ATTACH CERTIFIED ANALYTICAL RESULTS.

D. Does this waste contain halogenated organic compounds (such as PCB's, Trichloroethylene, Chlorobenzene, etc.)? Yes ☐ No ☐ IF YES, ATTACH CERTIFIED ANALYTICAL RESULTS.

E. Does the process generating this waste use halogenated organic compounds in any part of the process? Yes ☐ No ☐ IF YES, ATTACH CERTIFIED ANALYTICAL RESULTS.

F. Does this waste contain non-halogenated organic solvents (such as toluene. hexane, acetone) or similar such compounds (such as petroleum naphtha, gasoline)? Yes ☐ No ☐ IF YES, ATTACH CERTIFIED ANALYTICAL RESULTS.

G. Does the process generating this waste use non-halogenated organic solvents or similar compounds in any part of the process? Yes ☐ No ☐ IF YES, ATTACH CERTIFIED ANALYTICAL RESULTS.

13. Hazardous Characteristics:

Reactive	Yes_____	No_____
Ignitable	Yes_____	No_____
Corrosive	Yes_____	No_____
Radioactive	Yes_____	No_____
Etiological	Yes_____	No_____

14. List all known or suspected hazards not otherwise disclosed in this document:

_____

15. EPA Hazardous Waste? Yes ☐ No ☐ EPA Codes: _____

CA Hazardous Waste? Yes ☐ No ☐ CA Codes: _____

16. Is the information provided based upon laboratory analysis of the waste? Yes ☐ No ☐
IF YES, ATTACH CERTIFIED ANALYTICAL RESULTS. IF NO, SPECIFY SOURCE _____

_____

17. Is the waste stream homogeneous? Yes ☐ No ☐

Explain basis of answer: _____

18. To generators having submitted a fully completed Waste Information Form on this waste <u>within the last year:</u>

Have any significant changes occurred in this waste material or the process producing this waste since the most recent Waste Information Form was prepared? Yes ☐ No ☐ If YES, fully describe: Changes would also include contamination of the waste by materials not normally present in the waste.

_____

GENERATOR'S CERTIFICATION: I hereby declare that all information submitted in this and all attached documents is true, complete and accurate, and that the contents of this consignment are fully and accurately described above, and the contents of the consignment meet neither the U.S. Environmental Protection Agency Resource Conservation and Recovery Act (RCRA) criteria for a hazardous waste as specified in 40 CFR, Part 261, nor the California Environmental Protection Agency, Department of Toxic Substance criteria for a hazardous waste or extremely hazardous waste as specified in California Code of Regulations, Title 22, Chapter 11, Article 3.

Print Name & Title: _____

Signature: _____ Date: _____

ONE COPY OF THIS FORM, ADDITIONAL SHEETS CONTAINING SUPPLEMENTAL INFORMATION AND $200.00 WASTE REVIEW FEE SHOULD BE RETURNED TO:

West Contra Costa Sanitary Landfill
P. O. Box 4100
Richmond, CA 94804-0100

CONDITIONS FOR ACCEPTANCE

1. Completed and approved Waste Disposal Request Form.
2. Approved waste is accepted Monday through Friday between the hours of 8:00 AM and 2:00 PM ONLY.
3. An appointment for disposal must be made at least 24 hours in advance. Loads arriving without prior approval or appointment will be rejected.
4. Approval for disposal is valid for a period of 120 days. After that time it will be necessary to reapply for acceptance.
5. These conditions are subject to change without notice.

APPENDIX 3J

EQUIPMENT USAGE AT THE WCCSL

EXISTING EQUIPMENT USED AT LANDFILL

Equipment Type	Equipment Item	Schedule of Usage
Solid Waste Compactors	Al Jon 91K	8 hours per day, 7 days per week
	Caterpillar 826G	8 hours per day, 7 days per week
Crawler Tractors	Caterpillar D8 Dozer	8 hours per day, 5 days per week
	Komatsu D65 P "Mudcat"	8 hours per day, 6 days per week
	Komatsu D65 P "Mudcat"	6 hours per day, 5 days per week
Rubber Tire Loaders		
Waste Shuttle Facility	Caterpillar 966	8 hours per day, 6 days per week
	Komatsu Z65	6 hours per day, 5 days per week
Composting	Komatsu Z85	8 hours per day, 6 days per week
	Caterpillar 966	6 hours per day, 5 days per week
	Komatsu Z65	6 hours per day, 5 days per week
Concrete Processing	Caterpillar 966	8 hours per day, 6 days per week
	Caterpillar 966	4 hours per day, 5 days per week
Motor Grader	Caterpillar Model 140G	4 hours per day, 5 days per week
Backhoes	Komatsu PC220 Excavator	Used for limited special projects
	JCB Sitemaster	Used for limited special projects
Utility Tractor	Ford 55SC	6 hours per day, 5 days per week
Miscellaneous Trucks	10 CY Dump Truck	2 hours per day, 5 days per week
Composting, Soil	30 CY Articulating Off-Road Truck	6 hours per day, 5 days per week
Reclamation & Waste	25 CY Articulating Off-Road Truck	6 hours per day, 5 days per week
Solidification	25 CY Articulating Off-Road Truck	Used for limited special projects
	3,800 Gallon Leachate Tank Truck	Used for limited special projects
Composting	4,000 Gallon Water Truck	6 hours per day, 5 days per week
Concrete Processing	4,000 Gallon Water Truck	4 hours per day, 5 days per week
	2,000 Gallon Water Truck	6 hours per day, 5 days per week
	4,000 Gallon Water Truck	Used for fire fighting only
	Service Truck	4 hours per day, 5 days per week
	Fuel/Oil Truck	8 hours per day, 5 days per week
Process Equipment		
Waste Shuttle Facility	Sorting Belt (Elect.)	6 hours per day, 5 days per week
Composting & Wood Waste Recycling	Compost & Wood	6 hours per day, 5 days per week
	Compost & Wood Screen (Diesel)	8 hours per day, 5 days per week
	Compost & Wood Grinder (Elect.)	8 hours per day, 6 days per week
	Compost & Wood Grinder (Diesel)	8 hours per day, 2 days per week
	Compost Scarab (Diesel)	5 hours per day, 3 days per week
Concrete Processing	Concrete Crusher	8 hours per day, 6 days per week
	Conveyors	8 hours per day, 6 days per week
	Material Screens	8 hours per day, 6 days per week

EQUIPMENT TO BE USED AT WCL

Equipment Type	Equipment Item	Schedule of Usage
Rubber Tire Loaders		
Waste Recycling Center	Caterpillar 966	8 hours per day, 7 days per week
	Komatsu Z65	6 hours per day, 5 days per week
Composting	Caterpillar 966	8 hours per day, 6 days per week
	Komatsu Z85	8 hours per day, 5 days per week
	Komatsu Z65	8 hours per day, 5 days per week
Soil Reclamation & Waste Solidification	Komatsu Z65	8 hours per day, 5 days per week
Concrete Processing	Caterpillar 966	8 hours per day, 6 days per week
	Caterpillar 966	6 hours per day, 5 days per week
Motor Grader	Caterpillar Model 140G	2 hours per day, 5 days per week
Backhoes	JCB Sitemaster	Used for limited special projects
Utility Tractor	Ford 55SC	6 hours per day, 5 days per week
Miscellaneous Trucks		
Composting, Soil Reclamation & Waste Solidification	10 CY Dump Truck	2 hours per day, 5 days per week
	30 CY Articulating Off-Road Truck	6 hours per day, 5 days per week
	25 CY Articulating Off-Road Truck	6 hours per day, 5 days per week
Miscellaneous	25 CY Articulating Off-Road Truck	Used for limited special projects
	3,800 Gallon Leachate Tank Truck	Used for limited special projects
Composting	4,000 Gallon Water Truck	8 hours per day, 5 days per week
Concrete Processing	4,000 Gallon Water Truck	6 hours per day, 5 days per week
Miscellaneous	2,000 Gallon Water Truck	6 hours per day, 5 days per week
	4,000 Gallon Water Truck	Used for fire fighting only
	Service Truck	3 hours per day, 5 days per week
	Fuel/Oil Truck	5 hours per day, 5 days per week
Process Equipment		
Waste Recycling Center	Sorting Belt (Elect.)	6 hours per day, 5 days per week
Composting & Wood Waste Recycling	Compost & Wood Grinder (Elect.)	8 hours per day, 6 days per week
	Compost & Wood Grinder (Diesel)	8 hours per day, 5 days per week
	Compost Scarab (Diesel)	8 hours per day, 6 days per week
	Compost Scarab (Diesel)	5 hours per day, 3 days per week
	Compost & Wood Screen (Diesel)	8 hours per day, 5 days per week
	Compost & Wood Screen (Diesel)	6 hours per day, 5 days per week
Concrete Processing	Concrete Crusher	8 hours per day, 6 days per week
	Conveyors	8 hours per day, 6 days per week
	Material Screens	8 hours per day, 6 days per week

APPENDIX 3K

SHORELINE PUBLIC ACCESS TRAIL DEVELOPMENT PLAN

APPENDIX 3K

WEST CONTRA COSTA SANITARY LANDFILL, INC.
SHORELINE PUBLIC ACCESS TRAIL
DEVELOPMENT PLAN

April 2003

Organization of Plan

1.0 Purpose of Document
2.0 Overview of WCCSL Site
3.0 Previous Trail Planning and Development Activities
4.0 Phased Development of Trail
5.0 Trail Alignment
6.0 Trail Improvements
7.0 Trail Development Schedule
8.0 Trail Easements and Deeds
9.0 Health & Safety
10.0 Trail Maintenance
11.0 Fiscal Aspects
12.0 Hours of Trail Availability

1.0 Purpose of Document:

The goal of this Development Plan is to set forth a concise plan for the development of a Public Shoreline Access Trail at West Contra Costa Sanitary Landfill (WCCSL) in Richmond, California. This Development Plan will be used as part of the project description for land use permitting purposes. The concept of creating a Shoreline Public Access Trail has been envisioned for many years, and has been referenced in several regional and site-specific planning documents. These include the WCCSL Land Use Permit 2054-92 issued by Contra Costa County, City of Richmond Use Permit CU 92-53 and the North Richmond Shoreline Specific Plan. The proposed Shoreline Public Access Trail at the West Contra Costa Sanitary Landfill is a segment of the San Francisco Bay Trail. The Bay Trail system is a planned 400-mile recreation and transportation corridor that will encircle the entire Bay linking the shorelines of nine counties and forty-seven cities. Consistent with Bay Trail goals, the proposed trail around the landfill facility will provide recreational and increased access to the Bay, and will offer a setting for a wildlife viewing and environmental education.

This Development Plan is the result of a series of meetings between West Contra Costa Sanitary Landfill, Inc. (WCCSL, Inc.), public agencies, non-profit environmental organizations, and

individual citizens. A complete list of all participants and the minutes of planning meetings that lead to the development of this document are available upon request.

This document sets forth the general consensus of the group on issues related to the development of the Trail, Trail improvements, the timing of the Trail segments being developed, and various operations issues.

WCCSL, Inc. believes that upon implementation, the Shoreline Public Access Trail will be a much better project as a result of the numerous hours of effort that were donated to make this project feasible. Credit and thanks are due to all of those who have been involved with bringing this idea into reality.

In May 2001, Republic Services, Inc. acquired the West County Landfill along with the local affiliate companies (e.g., Richmond Sanitary Service and West Contra Costa Sanitary Landfill, Inc.). Republic Services is a publicly held corporation (NYSE:RSG) and is the third largest waste services company in the U.S. The new owners intend to continue the operation of the landfill under its original name and maintain the primary resource recovery facilities at the WCCSL. The preparation of the Trail Development Plan and its subsequent implementation also will continue.

2.0 Overview of WCCSL Site

The location and setting of the West Contra Costa Sanitary Landfill (the "Landfill") is shown on the figures included at the end of this Plan. The Landfill has been in operation since 1954, and the Landfill construction has created a landmass next to San Pablo Bay. The Landfill property encompasses a total of 350 acres. The Class I and II landfills cover 188 acres. The Area A soil stockpile, the Area B runoff control pond, and the Area C outer tidal pond area occupy the remaining acreage.

The Landfill consists of both an open Class II landfill, which accepts traditional municipal waste and a closed Class I Hazardous Waste Management Facility (HWMF), which, in the past, accepted hazardous materials. The landfill construction has resulted in the construction of a long mounded shape extending out from the San Pablo Creek Marshland almost 3,500 feet (0.6 mile) into the Bay. Around the periphery of the landfill, access roads run along the top edge of the rip-rapped shoreline. Horizontal drainage benches and access roads have been situated mid-way up the landfill slopes. In addition, two levees containing maintenance access roads have been constructed that enclose water and wetland areas on the southern and western sides of the WCCSL property. The unique Landfill location and the access ways that will exist after the landfill closes offer new opportunities for public access to the shoreline.

Each major commercial operations area of the site is discussed in more detail below. With the exception of the municipal solid waste landfill and HWMF site, all of the operations are expected to continue into the future. The locations of those operations areas are shown on Figure 3-3 in Chapter 3.

WCCSL, Inc. is in the final stages of closing the HWMF, which involves building a secure cap of plastic geomembrane and soil to assure that buried materials remain within the confines of the HWMF. Additionally, WCCSL, Inc. is building a cap over its Class II landfill as each area of the Class II facility is filled to capacity. The Class II site cap consists of an engineered soil cover compacted over the buried wastes. The closure of the two facilities at the Landfill is regulated by the California Department of Toxic Substance Control (DTSC) in the case of the HWMF, and the California Integrated Waste Management Board (CIWMB) for the Class II landfill. In both instances, WCCSL, Inc. believes the Landfill is in compliance with the state of the art regulatory requirements for closure and has reserved funds to complete the closure of the two facilities in compliance with all regulations. WCCSL, Inc. has also reserved funds to maintain the closed facilities into the future, as required by state laws.

2.1 Municipal Solid Waste Landfill

As the municipal solid waste landfill continues in its limited term operation, the waste placement will build out the final site topography. Between 1996 and 2001, the maximum landfill elevation had been reached in on most of the central portion of the site, and the final closure cap was installed. In mid-2001, WCCSL engineers noted that the rate of settlement of the surface of the final capped central plateau of the landfill was in excess of that which was anticipated. Left unchanged over time, the landfill top will flatten out and may even form a cupped surface that will not drain. Notification was made to the County and State officials that the final cap would need to be removed in approximately 5 to 10 acre plots, and additional wastes placed to mound up the top surface. This is now being done, involving changes to the site permits with respect to the appropriate maximum elevation and top contours that will counter the future settlement.

The exact date when the disposal site will reach capacity is uncertain due to the degree of consolidation of the underlying wastes that occurs as new wastes are placed in the site and the yet to be determined maximum top elevation. At this time, it is estimated that the site will be full in 2005. Thus, the last portions of final capping would occur in the summer of 2006 and 2007.

2.2 Soil Remediation Facility

This facility was constructed on a portion of the final capped Class II landfill and is now closed. It treated non-hazardous hydrocarbon-contaminated soils from fuel tank leaks and accidental spills. The facility temporarily stored the contaminated soil in a covered building and then thermally treated (oxidized) the soils to remove the hydrocarbon contaminants. The finished soil was then used in landfill operation as cover material over the wastes. Republic Services, Inc. determined the waste remediation business did not fit within its business plan and the operation was shut down in late 2001. The equipment has been sold and the large soil storage building is being cleaned for reuse.

2.3 Composting Facility

The composting facility includes a central green material stockpile and grinding area, and a series of long piles (windrows) of compost. The facility is sited on 18 acres of the final capped portion of the Landfill.

Batches of compost are being produced in approximately monthly intervals. Due to its good quality, the compost is sold for landscaping uses in the region as soon as it is available. The facility also produces mulch products for use as ground cover, and wood chips for use as biofuel.

When proposed in 1990, WCCSL, Inc. expressed the desire to develop the composting project into a regional facility. Good progress continues in achieving that goal. WCCSL, Inc. now serves the composting needs of West Contra Costa County (including the yard waste pickup programs in Richmond, San Pablo, Pinole, Hercules and the local unincorporated area), Mill Valley and Tamalpais areas in Marin County, and processes a portion of the green material from central and eastern Contra Costa County and Alameda County.

WCCSL, Inc. is currently proposing to the City of Richmond and the County to expand the amount of materials that can be composted under the existing conditional use permits to allow the site to operate more economically and make additional compost. This facility is proposed as a major component in the regional area's program for achieving the State AB939 landfill diversion and recycling goals. Annually the WCCSL composting and organic materials recovery program has diverted 30,000 tons of green material from landfills and has provided high quality compost and mulch for the region.

2.4 Proposed Waste Recycling Center

Once wastes are no longer landfilled at the WCCSL site a waste handling and recycling operation will be needed to provide continuing disposal service for the general public and businesses that haul their own trash. In order to meet the need of the community for a conveniently located self-haul disposal and recycling facility, a portion of the Landfill property is being proposed as a self-haul waste handling location, where contingent upon the permitting/CEQA process, wastes will be unloaded, separated for recycling, and the residue will be loaded into trucks for transfer to the sister Republic Services' Potrero Hills Landfill in Solano County.

Two locations of this Waste Recycling Center facility are being considered. WCCSL, Inc. proposes the Center to be located at the refurbished and enlarged soil storage building located within the unincorporated County area. The alternate location is south of the HWMF (in Area A) as a contingency in case the old soil building is not a suitable location. Both of the alternate sites are located within the Richmond city limit. The permits are being sought for the new facility to be placed at one of these locations. Initially, while the processing building is being readied, this facility may consist of an open-air engineered paved asphalt pad located on the landfill control plateau, complete with a landfill gas control system, storm water runoff control system, litter control system, recyclables processing equipment, and a bird control system.

2.5 Concrete/Asphalt Recycling

This existing facility is operated by the Syar Company. Concrete rubble and asphalt paving fragments are crushed and then screened to different sizes of gravel products. The materials are diverted from the Landfill consistent with AB939 goals and used for construction projects.

The materials produced by Syar at the Landfill meet CalTrans specifications for use in road construction.

WCCSL, Inc. is currently proposing to the City and County to increase the operations capacity by moving the location of the existing operation westward up onto the finished Landfill. It would be sited on the west end of the Landfill central plateau mound adjacent to the composting facility and the self-haul recycling and disposal facility. An expanded concrete and asphalt crushing facility as proposed would divert greater quantities of materials from the Landfill and would increase the percentage of reused materials in our region's roads and construction projects.

2.6 Hazardous Waste Management Facility

The Hazardous Waste Management Facility (also referred to as a Class I site) has not received wastes since November 1985. Over the last 16 years, WCCSL, Inc. has been working with various state agencies to develop the final closure plan and obtain the approval to place the final cap on the site. The State Department of Toxic Substances Control (DTSC) completed the CEQA review and approved the Closure Plan for this site in 2000.

The industrial liquid waste evaporation pond was dewatered and solidified for permanent closure. The Class I site Closure Plan prohibits disturbance of already placed hazardous materials, requires placement of a soil and plastic geomembrane cap over the entire site, placement of MSW as subgrade fill material, and processing of the leachate and landfill gas. The final cap construction began in 2000 and is anticipated to be completed in 2002.

The site is proposed to be open space. An alternate possible use would be a commercial nursery/greenhouse area. Portions of the site perimeter may be used for roadways serving adjacent facilities at the WCCSL.

2.7 Proposed Dredged Materials/Biosolids Spreading Area

High moisture content dredged materials may be processed at the WCCSL to provide an upland area to receive these materials versus disposal to water. These wet materials would be spread down the southern or eastern slopes below the landfill central plateau area as shown in Figure 3. Biosolids may also be spread in this area. The materials may be left in place to result in a deepened-thickness final cap or they may be removed for off-site use.

2.8 Proposed Wet Wastes/Powdery Materials Processing Operation

The wet wastes/powdery materials processing location initially may be conducted in the existing soil remediation facility. Later it would be moved to the central plateau area.

The two types of materials would be mixed with soil to result in absorbing the moisture and incorporating the powdery material in the wetted mixture to allow reuse of the finished product.

2.9 Power Plant

An affiliate of WCCSL, Inc. operates the landfill gas power plant. This plant generates about 3 megawatts of electricity, which is enough to power nearly 3,000 homes from landfill gas.

The electricity is used on-site, some may be used to power the adjacent waste water treatment plant, with the excess electricity marketed to the PG&E power grid. In future years, as the amount of landfill gas that is produced increases, additional power generation capacity may be added to this plant. In addition to the building that houses the power generation engines, this area also includes a maintenance building.

2.10 HWMF Leachate Treatment Plant

Adjacent to the Class I Hazardous Waste Management Facility (HWMF) and the power plant is a facility that treats the leachate from the site (the water pumped from the closed landfill). This facility treats approximately 20 gallons per minute. The treated leachate is stored and tested to ensure that it meets all discharge standards. After being tested, the treated leachate is piped to the West County Wastewater District, which is adjacent to the WCCSL property. An area in the southwest corner of the HWMF site is used to dispose of the solids removed from the leachate.

2.11 Landfill Infrastructure Maintenance

Business operations at the WCCSL will continue to remain in operation for many years after the Shoreline Public Access Trail has been opened. The various WCCSL recycling operations require significant maintenance activities to protect public safety and preserve the Landfill infrastructure. These maintenance activities include maintaining the levees and riprap that protect the Landfill from erosion. Periodically, sections of the Trail will be closed for maintenance activities, and Trail users may note heavy equipment working near the Trail. Prior to closing any section of the Trail, signage will be posted in the parking area. WCCSL, Inc. will schedule the maintenance operations to avoid periods of high trail use whenever feasible and will endeavor to complete the maintenance as quickly as possible.

3.0 Previous Trail Planning and Development Activities

The EIR documents for the Integrated Resource Recovery Facility and the Landfill recycling projects were published in May 1991 and December 1991. The public access trail was discussed in conceptual form, including references to the BCDC Bay Plan public access goals. In July 1993 the County filed the CEQA Notice of Determination for the EIR prepared for the landfill recycling projects at the time of approving the Land Use Permit.

During the 1993 granting of permits by Contra Costa County and the City of Richmond for recycling projects at the Landfill, requirements were included for conducting a feasibility analysis and preliminary planning for public access along the site perimeter to allow access to the bay shoreline, and for implementing the access as it was determined to be feasible.

Between 1993 and 1994, WCCSL, Inc. met with interested individuals and agencies during the development of the initial planning document. In February 1994, a preliminary plan was submitted to the County for the north edge of the Landfill property located in the unincorporated area. A similar document was submitted to the City in June 1995 for the western and southern portions of the property located in the incorporated area. This document acknowledged the possibility of access for the public at a future date and contained further information to be furnished to the City and County. Further Trail implementation action was delayed as the Landfill continued in operation longer than anticipated.

In mid-2000, WCCSL, Inc. had completed enough of the final cap of the Landfill to enable additional recycling activities to take place on the closed portions of the Landfill site, and the Company accelerated the process of land use planning and permitting to realize the many changes that must occur at the Landfill as landfilling draws to a close and recycling activities and public access are implemented. This process has included activities related to the development of the Trail.

The remainder of this document describes the WCCSL Shoreline Public Access Trail Development Plan.

4.0 Phased Development of Trail

The Shoreline Public Access Trail would be developed in three to four phases. The purpose of phasing the development of the Trail is to:

1) Allow access to portions of the Trail while the Landfill is still accepting wastes for disposal.
2) Enable access to portions of the Trail while funds are located and permits are secured that will allow for Trail extension in the future.
3) Gain operations experience on a smaller portion of the Trail at the outset, so that the later phases of the Trail can be optimally designed and managed.

WCCSL, Inc. reserves the opportunity to modify specifics of this development plan in order to comply with permit limitations or operations issues as they are encountered.

5.0 Trail Alignment

The alignment of the Trail will be along the existing levee roads that form the outer edge of the Landfill and delineate the WCCSL property. The alignment of each phase is discussed in greater detail below, and the trail segments are shown on Figure 3-7 in Chapter 3.

5.1 Phase 1

The Phase 1 portion of the Trail will begin at a graveled parking area on the southeast corner of the Landfill property. Visitors will park within the designated parking area. The Trail would extend to the west and pass beside some of the operations areas at the Landfill, including portions of the Class I Hazardous Waste Management Facility, the Landfill gas power generation plant, a maintenance building, and the Area A portion of the WCCSL property. Along this section of the Trail, the northern edge of the Trail would be bounded by a HWMF permit-required security fence (chain link fence that is topped with barbwire), to keep Trail users out of these Landfill areas, and to provide a physical barrier between the Trail users and any heavy construction equipment, trucks, or Landfill equipment working within the areas.

The Trail would continue along the existing outer southern levee roadway between the marshlands and the West County Wastewater District emergency outflow channel to the south and the brackish undeveloped area to the north (WCCSL Area B). Area B is used as a runoff control pond for storm water runoff, and as a result, the amount of water fluctuates with the seasons -- higher in the winter and spring from rainfall, and lower in the summer and fall due to evaporation. Area B has not been developed as part of the landfill operations, and there are no plans to develop this area in the future.

The Trail would have a side spur trail at the southwest corner of the WCCSL property. This spur trail would continue in a westerly direction to the southwestern corner of the tidal pond area (Landfill Area C) and terminate. This spur trail is approximately 0.5 mile long. A canoe and kayak launching area would be created at the end of the spur.

To the north, a breach or gap in the levee was made in 1980 in order to allow tidal action in the area enclosed by these levees. During Phase 1, 2 and 3, the zone between the trail end and the gap will remain off-limits to public access to avoid interference with wildlife in the zone. Extending the spur trail beyond the gap is part of a possible Phase 4.

From the intersection of the spur trail, the main segment of the Phase 1 Trail would continue in a northerly direction on the levee road separating Area B and Area C towards the southwest corner of the municipal solid waste landfill. At this corner, the Phase 1 Trail will stop, and Trail users will double-back to the parking area. This portion of the Phase 1 Trail is approximately 1.3 one-way miles. Extending the Trail beyond the corner of this landfill is part of Phase 2.

5.2 Phase 2

The Phase 2 Trail segment has two main components: a lower Phase 2 segment, and an upper Phase 2 segment.

The lower Phase 2 segment will continue the Phase 1 Trail from the landfill southwest corner along the western perimeter of the landfill. This Trail segment would be along the shoreline at about the 15-foot elevation. During Phase 2, this segment of the Trail would end at a fence adjacent to areas where WCCSL will continue to landfill solid waste and place the final cap during 2003 and 2004. Trail users would double-back at this point and return to the parking

area. The total length of the Phase 2 Trail combined with Phase 1 from the parking area is approximately 1.6 miles.

The lower Trail segment will consist of a shoreline point for a potential kayak landing near a second gap in the existing levee. Extending the spur trail from the point area westward beyond the gap would be part of Phase 4. WCCSL will endeavor to open the lower Phase 2 Trail at the same time as the Phase 1 Trail, if feasible from a technical and public safety perspective.

The upper Phase 2 Trail segment would parallel the lower Phase 2 Trail at an elevation of roughly 50-to-60-feet above the bay level. This spur would begin near the southwestern corner of the Landfill and would climb in elevation to reach a ridgeline where it would temporarily terminate. The length of this spur would be about 0.2 mile. There will be a short connector trail (200 feet +/-) constructed to link the lower and upper Phase 2 Trails, to enable Trail users to loop rather than double back.

5.3 Phase 3

The Phase 3 Trail segment would complete the Trail loop around the WCCSL property. This segment would begin at the northern end of the Phase 2 Trail, and continue around the northern boundary of the Landfill. The upper level trail would also be continued and contain a contoured wind-protected "meadow" area suitable for use as a picnic area, scenic overlook and resting point for Trail users. This location is shown on Figure 3-7. This upper level Trail would continue along at approximately the 60-foot MSL elevation for 0.5 mile, and would rejoin the Phase 3 Shoreline Trail. At the northeast corner of the property, the Trail would turn in a southeasterly direction and proceed along San Pablo Creek. This portion of the Trail would pass by the WCCSL scale house, and terminate at the Trail parking area. A designated crossing (with signage and pavement striping) would be provided for users of the Trail to safely cross the traffic on the main roadway leading to the WCCSL scalehouse. The length of the Phase 3 shoreline level Trail segment would be about 0.8 mile.

5.4 Phase 4

Phase 4 of the WCCSL Shoreline Public Access Trail would consist of linking the Phase 1 spur that ends at the western-most levee with the Phase 2 shoreline point area. In order to link these two portions of the Trail, two pedestrian bridges would be required (See Figure 3-7). The construction of this trail segment and these bridges will entail conducting wildlife studies and obtaining additional permits from regulatory agencies.

While it may be possible to reuse structural components from demolition projects to construct portions of these bridges and any ancillary improvements to the levees, the construction of these bridges is liable to be very expensive, and funding sources (other than WCCSL, Inc.) will need to be obtained. WCCSL, Inc. does not have the staff or the expertise to pursue external funding sources. WCCSL, Inc. is willing to provide portions of the construction activities needed for the Phase 4 Trail segment through use of on-site employees and equipment. Since WCCSL, Inc. cannot assume the financial responsibility for constructing this portion of the Trail, WCCSL, Inc. is willing to participate in helping others to locate external funding sources.

The construction of the pedestrian bridges will not commence until the necessary permits and funding have been procured. The length of the Phase 4 segment is approximately 0.4 mile.

6.0 Trail Improvements

The Trail would consist of a pathway on the existing system of levees that ring the Landfill. These levees were constructed 40 years ago, and have been maintained on an annual basis. The levees include a roadway with a surface of compacted gravel materials and a riprap rock slope along the edge of the water. There is a variety of forbs and grasses growing between the roadway surface and the water's edge.

6.1 Trail Surface Improvements

The surface of the Trail will be compacted gravel. No significant improvements other than routine maintenance are proposed to the existing levee roadway surface. The Trail surface will not be paved or smooth, but rather will have small ruts, loose stones and pebbles, and a "graveled-road" type appearance. The Trail surface will be maintained in a condition suitable for mountain bikes and sturdy shoes. Vehicle use would be for monitoring and maintenance purposes only.

6.2 Trail Landscaping

There is a variety of forbs and grasses that have been growing along the levees between the gravel roadways and the riprap. These plants have grown naturally, and have not been sown, maintained, irrigated, or pruned by WCCSL, Inc. WCCSL, Inc. will continue the practice of allowing plants to grow at the edge of the Trail without any maintenance by WCCSL personnel. Periodically some of these plants may be removed due to Landfill or levee maintenance construction projects. Upon completion of such maintenance projects, WCCSL, Inc. will not take any action to replace, but will rather allow plants and grasses to naturally re-vegetate in those areas. However, WCCSL, Inc. will comply fully with Richmond City Ordinances regarding control of invasive and noxious weeds.

The Phase 3 Trail will contain an area suitable for picnicking or resting near the northwest corner of the landfill. This area will be at approximately the 50-foot elevation and will contain a grassy area of approximately 1-acre.

WCCSL, Inc. will investigate the potential of planting shallow-rooted bushes and shrubs to enhance this area. State regulations prohibit planting of plants with roots that can penetrate the Landfill cap.

As the capping and closure of the Landfill is completed, WCCSL, Inc. will seed the capped areas with a mix including native grasses in accordance with the City of Richmond ordinances. Revegetation plans will require the use of native plant species for landscaping purposes wherever possible.

6.3 Parking Area Improvements

A graveled parking lot that would meet code requirements for handicapped parking would be constructed adjacent to the entrance of the Landfill, just west of the existing bridge across San Pablo Creek. (See Figure 4) This parking lot would have improvements consisting mainly of traffic control barriers (either concrete "k-rails", large concrete blocks, or old telephone poles) that will designate the limits of the parking area and its entrance roadway. There will not be designated parking spaces, nor wheelstops, nor striping. The parking area would provide room for up to 15 vehicles. A bike rack would be provided. Restroom facilities also may be located in this area.

6.4 Fencing and Access Control

Fencing and access control features will be installed to ensure Trail users do not wander off the Trail and into areas of commercial site operations. Daily operations at the Landfill result in significant amounts of heavy truck traffic and operation of numerous backhoes, bulldozers, compactors, and other heavy construction equipment. Additionally, there are extensive environmental control and monitoring instruments and equipment located throughout the Landfill, including over 50 monitoring wells, 30 leachate extraction wells and pumps, and 60 landfill gas wells. These wells are carefully calibrated by certified technicians and are very expensive to replace. There is also the former Class I Hazardous Waste Management Facility within the borders of the Landfill property to which public access must be restricted. Even after the Landfill stops burying wastes for disposal, the composting facility, concrete crushing operation, proposed waste recycling and disposal facility, soils processing facility, landfill gas power plant, and leachate treatment facility will continue in operation.

Prior to opening the Phase 1 Trail for public access, a security fence will be installed adjacent to the Hazardous Waste Management Facility, the landfill gas power plant and maintenance area, and "Area A". An entry gate will be installed to prevent access to the Trail by horses and motorized vehicles. A security fence will also be installed at the north end of the Phase 1 Trail to prevent access onto other portions of the Landfill site. Along Area A, a soil berm will be placed parallel to the trail to visually screen commercial activities occurring within that area.

Prior to the Phase 2 Trail opening, which would allow the public onto the actual Landfill, all landfill wells and pipelines will be protected or be placed underground to protect them from unauthorized access. In addition to the fences mentioned above, a fence will be installed along the top of the slope near the Landfill operations and recycling operations areas.

This fence will be designed to prevent Trail users from having access to the commercial operations areas. Additionally, a fence will be installed at the intersection of the Trail and the Landfill south slope road, and at the end of the Phase 2 Trail.

Prior to Phase 3, the security fence at the top of the Landfill slope will be extended eastward around the commercial operations areas. A barrier (i.e. "k-rails", concrete blocks, telephone poles or soil berms) will be placed along the Trail near the scale house to physically separate Trail users from vehicular traffic using the WCCSL operations areas.

WCCSL expects to install temporary fences and limit access to the Trail (or sections of the Trail) for maintenance, emergency operations, or any other reasonable purpose as needed and consistent with public safety concerns and expedient landfill management. Temporary fences will be installed around certain landfill equipment, and other facilities.

In order to minimize the visual impact of any fences that are permanently installed directly adjacent to the Trail, vines or shrubs will be planted to the extent feasible while protecting the integrity of the cap. Fences will be coated with a colored plastic or be of other aesthetically satisfactory material to reduce their visual impact.

6.5 Signage

There will be two principal types of signs installed prior to each phase of the Trail opening. The first would be typical instructional signs (where to park, hours of operation, rules of conduct, Bay Trail signs, limits of accessible areas, tidal conditions, HWMF site advisements and NO TRESPASSING, NO SMOKING signs, etc.). These signs would be installed in the parking area, at the trailheads, and at other locations along the Trail as needed.

The second type of sign would be interpretive signs (site Map and Trail locations, descriptions of vegetation, wildlife habitats and Landfill history and recycling descriptions). These signs would be installed along the Trail at good viewing locations, trailheads, and in the parking area. It is estimated five to ten interpretive signs would be installed along the entire length of the Trail.

6.6 Benches and Rest Areas

Several benches and rest areas would be created along the Trail. There will be a trash and recycling can placed at each bench location. Picnic tables may be placed in some areas, such as the meadow area on the Phase 3 Trail (and possibly at a kayak launch point).

Restroom facilities may be placed at the parking area and the Phase 2 Trail point area.

6.7 Kayak and Canoe Access

WCCSL is aware of a community desire to have kayak access as part of the Trail. Although this may require additional permitting efforts and creates some operations issues, WCCSL will work with the community individuals and regulatory authorities to provide this access as feasible.

The Save the Bay Association has contacted WCCSL, Inc. regarding their “Kids in Canoes” program. This program provides local school children with the opportunity to canoe along protected shoreline areas to experience a valuable link between being on the water in a small craft, up close to a shoreline nature area. The Association is evaluating using the bayside point at the end of the Phase 1 spur as a canoe launching and return site. WCCSL, Inc. is reviewing this potential with the Association and will coordinate with responsible agencies.

7.0 Trail Development Schedule

The WCCSL Shoreline Public Access Trail is proposed to be developed in phases to open portions of the Trail prior to the landfilling operations ceasing. WCCSL intends to open the Trail Phases according to the schedule listed below and will employ its best efforts to avoid delays.

Trail Segment	Projected Opening Date
Phase 1	December 1, 2003
Phase 2	December 1, 2004
Phase 3	December 1, 2007
Phase 4	9 months after securing funding

It may be possible to accelerate the opening dates for Phases 2 and 3, depending on the amount of wastes landfilled and the construction schedule of the final cap.

8.0 Trail Easements and Deeds

The WCCSL property ownership must continue in its present form (private ownership) because the Company will have long-term legal responsibilities for monitoring and maintaining the closed disposal sites.

WCCSL, Inc. will execute and record such legal instruments as may be required to assure public access to the Trail. If a public agency makes the suitable arrangements, a public access easement could be established if responsibilities for trail maintenance are assumed by a public entity. This may provide a means to avoid termination of the public access trail usage if landfill business operations are no longer feasible.

9.0 Health & Safety

Public Law serves to protect WCCSL, Inc. from liabilities arising from the public use of the Shoreline Public Access Trail. WCCSL, Inc. shall not be responsible the health or safety of any person using the WCCSL Shoreline Access Trail. WCCSL, Inc. does not provide emergency services of any kind. Persons using the Trail will do so at their own risk.

10.0 Trail Maintenance

The Trail would be maintained on a weekly basis. The maintenance of the Trail will include emptying of trash and recycling cans, collection of litter, and repair of any Trail structure or appurtenance. All maintenance activities shall be performed in accordance with Section 11.2 below.

11.0 Fiscal Aspects

11.1 Financing Construction of Trail Improvements and Appurtenances

WCCSL, Inc. will provide all funds necessary to construct Phases 1, 2, and 3 of the Shoreline Public Access Trail as proposed and described in this Development Plan. WCCSL, Inc. is not assuming any additional costs of construction that are incurred (beyond the scope of this document) due to changes or limitations that are placed on the project as a result of any permitting or public agency action.

Funds required for construction of the Phase 4 Trail segment must be provided by sources other than WCCSL, Inc. Construction of the Phase 4 Trail shall not begin until all necessary funds for construction and maintenance have been obtained. WCCSL, Inc. will cooperate with and support those seeking funds for Phase 4 as described in this development plan.

11.2 Funding of Maintenance of Trail Improvements and Appurtenances

WCCSL, Inc. would provide funds necessary to provide maintenance activities for the Trail, on an "as needed basis" including, but not limited to: emptying of trash and recycling cans, maintenance of levee riprap and roads, maintenance of Trail surfaces, maintenance of fences, benches, picnic facilities, signs, and other Trail appurtenances. For the purposes of this Development Plan, "maintenance activities" are defined as work required to repair or maintain items that have degraded due to normal wear and tear. Repairs of damage from vandalism are not included (See section 11.3).

WCCSL, Inc's, responsibility under this section will remain in full force so long as there are business ventures operating on the WCCSL property whether these business ventures are operated by WCCSL, Inc. or its successor. In the event that WCCSL, Inc. or its successor is no longer operating any businesses on the property, then all private fiscal responsibility for the Trail will cease.

In the event that WCCSL, Inc. or its successor is no longer fiscally responsible for the maintenance of the Trail, and no other funding source has been located, WCCSL or its successor will have the sole right to permanently close the Trail.

11.3 Paying for Damage Due to Vandalism

WCCSL, Inc. would fund up to $5,000 per year for the repair or replacement of items damaged by vandalism. If during the course of any calendar year the estimated cost of repairing or replacing damage caused by vandalism exceeds $5,000, WCCSL will convene a meeting of the City of Richmond, Contra Costa County, AGAG Bay Trail staff, and Trails for Richmond Action Committee. If adequate sources of funding are not located, WCCSL, Inc. has the right to close the Trail.

12.0 Hours of Trail Availability

The Trail would be open to the public from dawn until dusk during those days business operations (e.g. the Landfill, compost facility, proposed Waste Recycling Center) are open. WCCSL, Inc. reserves the right to limit access to the Trail or to close the Trail at any time as may be required for public safety, Trail maintenance, and for Landfill management. The Landfill currently closes on New Years Day, 4th of July, Thanksgiving, and Christmas; the Trail would also be closed during these holidays.

APPENDIX 8A

TECHNICAL SUPPORT TRAFFIC INFORMATION

APPENDIX

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CAPACITY CALCULATIONS

```
CCTALOS Software ver. 2.35 by TJKM Transportation Consultants
==================================================================
Condition: Existing AM Peak Hour Traffic Volumes              03/25/03
==================================================================
INTERSECTION      2 Richmond Parkway/Parr Boulevard
Count Date                    Time                 Peak Hour
------------------------------------------------------------------
CCTA METHOD          RIGHT THRU LEFT                        4-PHASE SIGNAL
-----------             34 2048   18
                         |    |    |
             ^           |    |    |          ^
             |         <---   v   --->        | Split? N
LEFT    18 ---  1.0   1.1  3.1  1.0   1.1 ---   13  RIGHT
                                                          STREET NAME:
THRU    12 ---> 1.1  (NO. OF LANES)   1.1<---   24  THRU  Parr Boulevard

RIGHT   28 ---  1.1   1.0  3.1  1.1   1.0 ---   90  LEFT
             |       <---   ^   --->       |
             v         |    |    |         v
  N                    |    |    |                        SIG WARRANTS:
W + E                 42  850   71                          Urb=N, Rur=Y
  S                 LEFT THRU RIGHT Split? N

              STREET NAME: Richmond Parkway
==================================================================
                ORIGINAL   ADJUSTED                V/C     CRITICAL
   MOVEMENT      VOLUME    VOLUME*   CAPACITY     RATIO       V/C
------------------------------------------------------------------
NB  RIGHT (R)      71         71       1650       0.0430
    THRU (T)      850        850       4950       0.1717
    LEFT (L)       42         42       1650       0.0255     0.0255
    T + R                    921       4950       0.1861
------------------------------------------------------------------
SB  RIGHT (R)      34         34       1650       0.0206
    THRU (T)     2048       2048       4950       0.4137
    LEFT (L)       18         18       1650       0.0109
    T + R                   2082       4950       0.4206     0.4206
------------------------------------------------------------------
EB  RIGHT (R)      28         28       1650       0.0170
    THRU (T)       12         12       1650       0.0073
    LEFT (L)       18         18       1650       0.0109
    T + R                     40       1650       0.0242     0.0242
------------------------------------------------------------------
WB  RIGHT (R)      13         13       1650       0.0079
    THRU (T)       24         24       1650       0.0145
    LEFT (L)       90         90       1650       0.0545     0.0545
    T + R                     37       1650       0.0224
==================================================================
     TOTAL VOLUME-TO-CAPACITY RATIO:                            0.52
     INTERSECTION LEVEL OF SERVICE:                              A
==================================================================
* ADJUSTED FOR RIGHT TURN ON RED
INT=WCCSL.INT,VOL=WCCSLEX.AMV,CAP=
```

```
CCTALOS Software ver. 2.35 by TJKM Transportation Consultants
==================================================================
Condition: Existing PM Peak Hour Traffic Volumes              03/25/03
==================================================================
INTERSECTION      2 Richmond Parkway/Parr Boulevard
Count Date                    Time                 Peak Hour
------------------------------------------------------------------
CCTA METHOD          RIGHT THRU LEFT                        4-PHASE SIGNAL
-----------             18  970   15
                         |    |    |
             ^           |    |    |          ^
             |         <---   v   --->        | Split? N
LEFT    37 ---  1.0   1.1  3.1  1.0   1.1 ---   10  RIGHT
                                                          STREET NAME:
THRU    24 ---> 1.1  (NO. OF LANES)   1.1<---   28  THRU  Parr Boulevard

RIGHT   51 ---  1.1   1.0  3.1  1.1   1.0 ---   67  LEFT
             |       <---   ^   --->       |
             v         |    |    |         v
  N                    |    |    |                        SIG WARRANTS:
W + E                 45 1890   82                          Urb=N, Rur=Y
  S                 LEFT THRU RIGHT Split? N

              STREET NAME: Richmond Parkway
==================================================================
                ORIGINAL   ADJUSTED                V/C     CRITICAL
   MOVEMENT      VOLUME    VOLUME*   CAPACITY     RATIO       V/C
------------------------------------------------------------------
NB  RIGHT (R)      82         82       1650       0.0497
    THRU (T)     1890       1890       4950       0.3818
    LEFT (L)       45         45       1650       0.0273
    T + R                   1972       4950       0.3984     0.3984
------------------------------------------------------------------
SB  RIGHT (R)      18         18       1650       0.0109
    THRU (T)      970        970       4950       0.1960
    LEFT (L)       15         15       1650       0.0091     0.0091
    T + R                    988       4950       0.1996
------------------------------------------------------------------
EB  RIGHT (R)      51         51       1650       0.0309
    THRU (T)       24         24       1650       0.0145
    LEFT (L)       37         37       1650       0.0224
    T + R                     75       1650       0.0455     0.0455
------------------------------------------------------------------
WB  RIGHT (R)      10         10       1650       0.0061
    THRU (T)       28         28       1650       0.0170
    LEFT (L)       67         67       1650       0.0406     0.0406
    T + R                     38       1650       0.0230
==================================================================
     TOTAL VOLUME-TO-CAPACITY RATIO:                            0.49
     INTERSECTION LEVEL OF SERVICE:                              A
==================================================================
```

UNSIGNALIZED GARDEN TRACT RD. AM

1: Parr Boulevard & Garden Tract Rd. — Existing AM Peak Hour Volumes

HCM Unsignalized Intersection Capacity Analysis

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	6	48	64	14	21	6
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (veh/h)	7	53	71	16	23	7
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	87				146	79
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	87				146	79
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				97	99
cM capacity (veh/h)	1509				843	982

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	60	87	30
Volume Left	7	0	23
Volume Right	0	16	7
cSH	1509	1700	870
Volume to Capacity	0.00	0.05	0.03
Queue Length (ft)	0	0	3
Control Delay (s)	0.9	0.0	9.3
Lane LOS	A		A
Approach Delay (s)	0.9	0.0	9.3
Approach LOS			A

Intersection Summary			
Average Delay	1.9		
Intersection Capacity Utilization	14.7%	ICU Level of Service	A

UNSIGNALIZED GARDEN TRACT RD. PM

1: Parr Boulevard & Garden Tract Rd. — Existing PM Peak Hour Volumes

HCM Unsignalized Intersection Capacity Analysis

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	24	4	21	7	16	4
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (veh/h)	27	4	23	8	18	4
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	31				85	27
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	31				85	27
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	98				98	100
cM capacity (veh/h)	1581				901	1048

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	31	31	22
Volume Left	27	0	18
Volume Right	0	8	4
cSH	1581	1700	927
Volume to Capacity	0.02	0.02	0.02
Queue Length (ft)	1	0	2
Control Delay (s)	6.3	0.0	9.0
Lane LOS	A		A
Approach Delay (s)	6.3	0.0	9.0
Approach LOS			A

Intersection Summary			
Average Delay	4.7		
Intersection Capacity Utilization	13.3%	ICU Level of Service	A

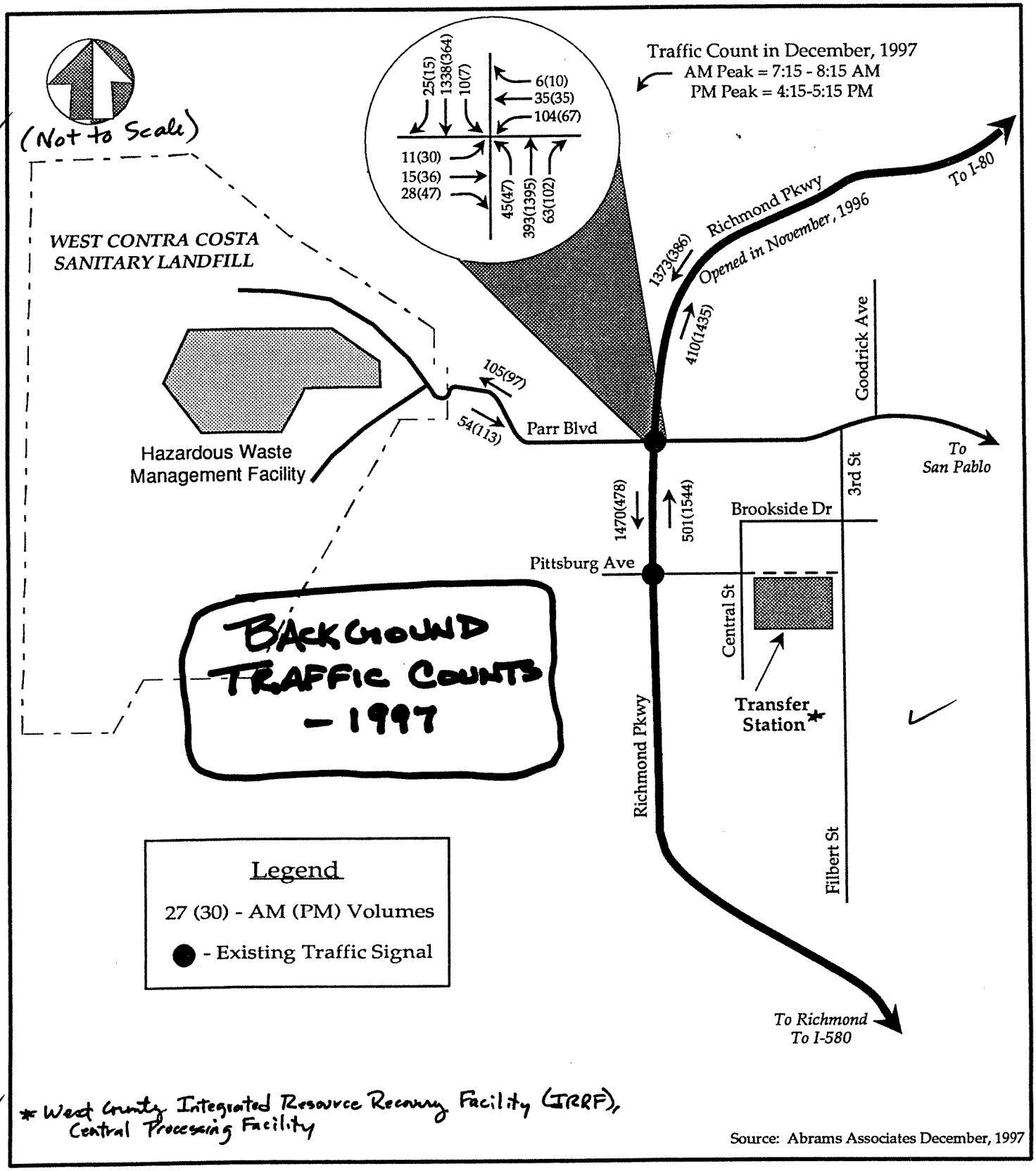
INBOUND/OUTBOUND HOURLY TRAFFIC

WEST COUNTY LANDFILL INBOUND HOURLY TRAFFIC*					
Hour Starting at	Self Haulers	Packer Trucks	Other Trucks	Other Vehicles	Total
12:00 AM	0	0	0	0	0
1:00 AM	0	0	0	1	1
2:00 AM	0	0	0	2	2
3:00 AM	0	0	1	0	1
4:00 AM	0	0	2	6	8
5:00 AM	0	1	6	19	26
6:00 AM	0	0	8	21	29
7:00 AM	0	5	11	41	57
8:00 AM	6	11	15	49	81
9:00 AM	10	20	23	75	128
10:00 AM	39	52	19	66	176
11:00 AM	31	13	17	44	105
12:00 PM	22	5	12	77	116
1:00 PM	30	15	11	56	112
2:00 PM	41	10	14	55	120
3:00 PM	21	8	12	35	76
4:00 PM	4	5	6	31	46
5:00 PM	0	3	6	18	27
6:00 PM	0	0	3	7	10
7:00 PM	0	0	0	5	5
8:00 PM	0	0	0	3	3
9:00 PM	0	0	0	1	1
10:00 PM	0	0	0	2	2
11:00 PM	0	0	0	1	1
12:00 AM	0	0	0	3	3
Totals	204	148	166	618	1136

*Based on an average of counts taken between November, 2002 and January, 2003

WEST COUNTY LANDFILL OUTBOUND HOURLY TRAFFIC*					
Hour Starting at	Self Haulers	Packer Trucks	Other Trucks	Other Vehicles	Total
12:00 AM	0	0	0	1	1
1:00 AM	0	0	0	2	2
2:00 AM	0	0	1	1	2
3:00 AM	0	0	0	3	3
4:00 AM	0	3	1	4	8
5:00 AM	0	7	2	9	18
6:00 AM	0	8	4	14	26
7:00 AM	0	12	6	20	38
8:00 AM	2	16	12	38	68
9:00 AM	5	28	16	64	113
10:00 AM	33	39	25	60	157
11:00 AM	26	10	28	34	98
12:00 PM	22	3	27	54	106
1:00 PM	25	6	14	64	109
2:00 PM	44	11	9	60	124
3:00 PM	31	5	8	58	102
4:00 PM	19	3	7	39	68
5:00 PM	3	2	5	24	34
6:00 PM	0	0	2	15	17
7:00 PM	0	0	1	8	9
8:00 PM	0	0	0	6	6
9:00 PM	0	0	0	4	4
10:00 PM	0	0	0	3	3
11:00 PM	0	0	0	2	2
12:00 AM	0	0	0	1	1
Totals	210	153	168	588	1119

*Based on an average of counts taken between November, 2002 and January, 2003



WCCSL Closure EIR	Figure 9-3
Contra Costa County	**Existing Peak Hour Traffic Volumes - 1997**
	Abrams Associates

ROAD TUBE 24 HRS COUNT ON PARR BLVD. AT WCCSL ENTRANCE

August 15, 2002

	IN	OUT	TOTAL
12:00 AM	9	6	15
1:00 AM	27	18	45
2:00 AM	12	23	35
3:00 AM	7	6	13
4:00 AM	46	21	67
5:00 AM	69	54	123
6:00 AM	48	34	82
7:00 AM	81	36	117
8:00 AM	143	102	245
9:00 AM	68	101	169
10:00 AM	100	70	170
11:00 AM	127	131	258
12:00 PM	85	72	157
1:00 PM	107	91	198
2:00 PM	52	88	140
3:00 PM	47	63	110
4:00 PM	28	48	76
5:00 PM	17	33	50
6:00 PM	11	22	33
7:00 PM	22	24	46
8:00 PM	22	18	40
9:00 PM	4	7	11
10:00 PM	26	20	46
11:00 PM	18	20	38
TOTAL	1176	1108	2284

ROAD TUBE 24 HRS COUNT ON PARR BLVD. AT WCCSL ENTRANCE

AUGUST 16, 2002

	IN	OUT	TOTAL
12:00 AM	13	6	19
1:00 AM	22	17	39
2:00 AM	12	22	34
3:00 AM	7	6	13
4:00 AM	56	20	76
5:00 AM	51	63	114
6:00 AM	38	22	60
7:00 AM	93	40	133
8:00 AM	128	110	238
9:00 AM	67	67	134
10:00 AM	102	50	152
11:00 AM	139	101	240
12:00 PM	68	131	199
1:00 PM	109	94	203
2:00 PM	66	102	168
3:00 PM	48	64	112
4:00 PM	23	45	68
5:00 PM	11	21	32
6:00 PM	8	21	29
7:00 PM	20	11	31
8:00 PM	4	16	20
9:00 PM	0	2	2
10:00 PM	17	12	29
11:00 PM	10	10	20
TOTAL	1112	1053	2165

	WEST COUNTY LANDFILL INBOUND TRAFFIC (WED, JANUARY 8, 2003)				
	Self Haulers	Packer Trucks	Landfill Trucks	Other Vehicles	Total
6:00 AM					0
6:15 AM					0
6:30 AM					0
6:45 AM					0
7:00 AM					0
7:15 AM					0
7:30 AM					0
7:45 AM					0
8:00 AM					0
8:15 AM					0
8:30 AM					0
8:45 AM					0
9:00 AM	0	3	4	17	24
9:15 AM	0	3	4	18	25
9:30 AM	3	5	5	18	31
9:45 AM	7	6	10	22	45
10:00 AM	12	6	4	11	33
10:15 AM	6	4	6	17	33
10:30 AM	14	16	4	20	54
10:45 AM	7	19	5	18	49
11:00 AM	6	2	4	12	24
11:15 AM	11	4	6	5	26
11:30 AM	8	2	3	12	25
11:45 AM	6	3	4	15	28
12:00 PM	4	0	4	24	32
12:15 PM	5	1	3	17	26
12:30 PM	6	0	2	21	29
12:45 PM	7	3	3	15	28
1:00 PM	8	4	2	16	30
1:15 PM	7	3	4	15	29
1:30 PM	6	3	2	12	23
1:45 PM	9	3	3	13	28
2:00 PM	19	2	6	10	37
2:15 PM	10	3	3	15	31
2:30 PM	8	2	3	13	26
2:45 PM	4	2	2	17	25
3:00 PM					0
3:15 PM					0
3:30 PM					0
3:45 PM					0
4:00 PM					0
4:15 PM					0
4:30 PM					0
4:45 PM					0
5:00 PM					0
5:15 PM					0
5:30 PM					0
5:45 PM					0
6:00 PM					0

	WEST COUNTY LANDFILL OUTBOUND TRAFFIC (WED, JANUARY 8, 2003)				
	Self Haulers	Packer Trucks	Landfill Trucks	Other Vehicles	Total
6:00 AM					0
6:15 AM					0
6:30 AM					0
6:45 AM					0
7:00 AM					0
7:15 AM					0
7:30 AM					0
7:45 AM					0
8:00 AM					0
8:15 AM					0
8:30 AM					0
8:45 AM					0
9:00 AM	0	2	4	12	18
9:15 AM	0	3	3	16	22
9:30 AM	2	6	5	19	32
9:45 AM	3	21	2	4	30
10:00 AM	2	2	6	9	19
10:15 AM	6	5	5	12	28
10:30 AM	13	21	4	6	44
10:45 AM	12	16	6	21	55
11:00 AM	3	2	4	4	13
11:15 AM	5	4	5	8	22
11:30 AM	10	3	6	4	23
11:45 AM	8	2	9	11	30
12:00 PM	4	2	4	6	16
12:15 PM	5	1	5	8	19
12:30 PM	6	0	10	12	28
12:45 PM	7	0	4	17	28
1:00 PM	6	2	4	17	29
1:15 PM	8	2	3	10	23
1:30 PM	4	0	2	11	17
1:45 PM	7	3	3	13	26
2:00 PM	14	3	2	15	34
2:15 PM	9	4	2	12	27
2:30 PM	9	3	3	15	30
2:45 PM	12	2	1	6	21
3:00 PM					0
3:15 PM					0
3:30 PM					0
3:45 PM					0
4:00 PM					0
4:15 PM					0
4:30 PM					0
4:45 PM					0
5:00 PM					0
5:15 PM					0
5:30 PM					0
5:45 PM					0
6:00 PM					0

FAX (925) 445-7766

22066

Abrams Associates
Intersection Turning Movement Count

Show North Arrow

GENE POERTNER
(Name)

(Name)

JAN 8, 2002
(Date)

RICHMOND

PARR BLVD.
Street Name

GARDEN TRACT RD.
Street Name

TRAFFIC DATA SHEETS @ Garden Tract Rd. #1

SELF HAUL	PACKER
OTHER BIG (INCL TRANSFER)	MIN SIZE & MISC (INCL CARS & PUs)

Movement Number

15 Minute Period Starting At:	1	~~2~~	3	4	5	~~6~~	~~7~~	~~8~~	~~9~~	~~10~~	11	12	
9:00	0 0 1 2	3	0 0 0 0	0 0 0 0	0 2 4 2						0 3 4 17	0 0 1 2	3
9:15	0 0 3 1	4	0 0 0 0	0 0 0 0	0 3 3 16						0 3 5 18	0 0 2 2	4
9:30	0 0 4 2	6	0 0 0 0	0 0 0 0	2 6 5 19						3 5 5 18	0 0 1 2	4
9:45	0 2 1 8	19	0 0 0 0	0 0 0 0	3 21 2 4						7 6 10 22	0 0 4 4	8
10:00	0 0 6 4	10	0 0 0 0	0 1 0 0	2 2 6 9						12 6 4 11	0 0 2 6	8
10:15	0 0 3 2	5	0 0 0 0	0 0 0 1	6 5 5 12						6 4 6 17	0 0 2 3	5
10:30	0 0 2 2	4	0 0 0 1	0 0 0 0	13 21 4 6						14 16 4 19	0 0 6 0	6
10:45	0 0 4 2	6	0 0 0 0	0 0 0 0	12 16 6 21						9 19 5 18	0 0 1 3	4
11:00	0 0 4 4	8	0 1 0 0	0 1 0 1	3 2 4 4						6 2 4 12	0 1 0 0	0

65 42

10

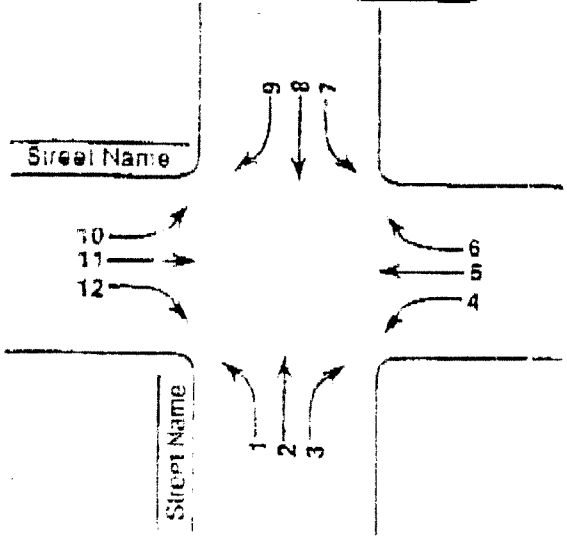
Abrams Associates
Intersection Turning Movement Count

(Name)

(Name)

(Date)

Show North Arrow



Gaydn Trail Rd #2

Movement Number

15 Minute Period Starting At:	1	~~2~~	3	4	5	~~6~~	~~7~~	~~8~~	~~9~~	~~10~~	11	12	
11:15	0 0 2 4	6	0 0 0 1	0 1 0 1	5 4 5 7						11 4 6 4	0 0 4 6	10
11:30	0 0 1 2	3	0 0 0 0	0 0 0 0	10 3 6 4						8 2 3 12	0 0 3 1	4
11:45	0 0 2 2	4	0 0 0 0	0 0 0 1	8 2 7 11						6 3 4 15	0 0 3 1	4
12:00	0 0 2 6	8	0 0 0 1	0 0 0 0	4 2 4 16						4 0 4 23	0 0 6 2	8
12:15 BREAK													
12:30	0 0 4 2	6	0 0 0 1	0 0 0 0	5 0 10 12						6 0 2 20	0 0 2 2	4
12:45	0 0 1 2	3	0 0 0 1	0 0 0 1	7 0 4 17						7 3 3 14	0 0 3 2	5
1:00	0 0 4 10	14	0 0 0 0	0 0 0 0	6 2 4 17						8 4 2 16	0 0 3 2	5
1:15	0 0 2 3	5	0 0 0 1	0 0 0 0	8 2 3 10						7 3 4 14	0 0 2 1	3
	49												43

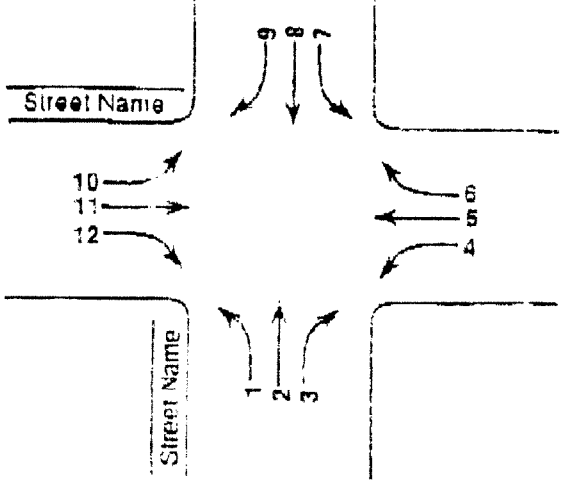
Abrams Associates
Intersection Turning Movement Count

(Name)

(Name)

(Date)

Show North Arrow



Golden Trout Road #3

Movement Number

15 Minute Period Starting At:	1	~~2~~	3	4	5	~~6~~	~~7~~	~~8~~	~~9~~	~~10~~	11	12	
1:30	0 0 6 10	16	0 0 0 0	0 0 0 1	4 0 2 11						6 3 2 12	0 0 1 4	5
1:45	0 0 1 6	7	0 0 0 0	0 0 0 0	7 3 3 13						9 3 3 13	0 0 2 3	5
2:00	0 0 2 12	14	0 0 0 0	0 1 0 1	14 3 2 15						19 2 6 10	0 0 2 4	6
2:15	0 0 2 5	7	0 0 0 1	0 0 0 0	9 4 2 12						10 3 3 14	0 0 2 2	4
2:30	0 0 2 5	7	0 0 0 0	0 0 0 0	9 3 3 15						8 2 3 13	0 0 2 3	5
2:45	0 0 2 10	12	0 0 0 0	0 0 1 0	12 2 1 6						4 2 2 17	0 0 4 2	6
		63											31

WCCSL Monthly Distribution & Tonnage

WCCSL DAILY LANDFILLED TONNAGE - 2001

	Jan Tons	Wkly Avg	Feb Tons	Wkly Avg	Mar Tons	Wkly Avg	Apr Tons	Wkly Avg	May Tons	Wkly Avg	Jun Tons	Wkly Avg	Jul Tons	Wkly Avg	Aug Tons	Wkly Avg	Sep Tons	Wkly Avg	Oct Tons	Wkly Avg	Nov Tons	Wkly Avg	Dec Tons	Wkly Avg
1	0		1085		1143		136	952	948		375													
2	1228		1201		1191		1358		747		242													
3	1040		290		401		1203		1063		132	441												
4	964		99	903	59	983	1163		867		613													
5	1070		1062		1087		1063		310		514													
6	526		1137		1242		1044		138	802	591													
7	150	711	1243		1146		290		854		501													
8	1074		1170		1192		95	888	903		524													
9	995		948		1113		1192		843		163													
10	905		126		296		1318		923		135	435												
11	797		89	825	117	885	1118		763		563													
12	984		1018		1195		1161		323		724													
13	210		1103		1252		1250		80	670	671													
14	80	721	1119		1185		269		674		515													
15	1106		1155		1050		0	901	814		557													
16	1050		1225		1199		1222		557		195													
17	1244		231		354		1187		500		104	476												
18	1177		60	844	145	911	1192		590		599													
19	1239		887		1215		1086		315		518													
20	294		966		1226		1026		147	514	626													
21	154	895	908		1212		207		727		542													
22	1035		1152		1087		79	857	669		608													
23	987		1128		1188		910		622		277													
24	930		166		348		977		634		124	471												
25	987		63	753	50	904	924		807		650													
26	1082		1410		1209		764		482		455													
27	312		1242		1262		857		301	606	426													
28	140	782	1435		1257		280		0		443													
29	1209				1122		153	695	877		460													
30	1157				1370		763		636		254													
31	1277				304				823															
	25404		23717		28217		24289		18938		13103		12677		24565		20603		0		0		0	

WCL says missing 5/01 – 9/01 vehicle count report.

22066

West Contra Costa Sanitary Landfill
1st Quarter 2002 Disposal Daily Vehicle Count
Excluding Greenwaste/Compost

January	Commercial	Self Haul	Total	February	Commercial	Self Haul	Total	March	Commercial	Self Haul	Total
1/1/2002	0	0	0	2/1/2002	249	303	552	3/1/2002	237	241	478
1/2/2002	183	173	356	2/2/2002	46	354	400	3/2/2002	43	469	512
1/3/2002	210	297	507	2/3/2002	16	311	327	3/3/2002	20	408	428
1/4/2002	217	361	578	2/4/2002	241	253	494	3/4/2002	272	258	530
1/5/2002	83	388	471	2/5/2002	284	242	526	3/5/2002	249	290	539
1/6/2002	10	288	298	2/6/2002	265	258	523	3/6/2002	221	130	351
1/7/2002	228	249	477	2/7/2002	223	181	404	3/7/2002	182	128	310
1/8/2002	191	238	429	2/8/2002	212	192	404	3/8/2002	227	203	430
1/9/2002	237	284	521	2/9/2002	36	385	421	3/9/2002	40	417	457
1/10/2002	286	306	592	2/10/2002	11	324	335	3/10/2002	11	277	288
1/11/2002	309	270	579	2/11/2002	257	238	495	3/11/2002	214	205	419
1/12/2002	38	496	534	2/12/2002	278	244	522	3/12/2002	259	238	497
1/13/2002	17	417	434	2/13/2002	236	190	426	3/13/2002	217	213	430
1/14/2002	346	328	674	2/14/2002	241	170	411	3/14/2002	235	237	472
1/15/2002	319	320	639	2/15/2002	237	234	471	3/15/2002	218	256	474
1/16/2002	277	265	542	2/16/2002	32	407	439	3/16/2002	25	473	498
1/17/2002	280	278	558	2/17/2002	8	202	210	3/17/2002	14	150	164
1/18/2002	247	325	572	2/18/2002	163	218	381	3/18/2002	260	206	466
1/19/2002	17	429	446	2/19/2002	191	112	303	3/19/2002	233	287	520
1/20/2002	8	373	381	2/20/2002	208	136	344	3/20/2002	226	266	492
1/21/2002	247	232	479	2/21/2002	216	227	443	3/21/2002	206	289	495
1/22/2002	236	241	477	2/22/2002	226	280	506	3/22/2002	197	208	405
1/23/2002	300	287	587	2/23/2002	32	428	460	3/23/2002	32	280	312
1/24/2002	309	294	603	2/24/2002	8	364	372	3/24/2002	9	292	301
1/25/2002	291	292	583	2/25/2002	232	267	499	3/25/2002	253	277	530
1/26/2002	15	158	173	2/26/2002	234	282	516	3/26/2002	226	251	477
1/27/2002	10	268	278	2/27/2002	245	270	515	3/27/2002	226	280	506
1/28/2002	206	193	399	2/28/2002	243	259	502	3/28/2002	213	257	470
1/29/2002	212	203	415					3/29/2002	217	288	505
1/30/2002	208	215	423					3/30/2002	48	512	560
1/31/2002	218	200	418					3/31/2002			0
Grand Total			**14423**				**12201**				**13316**

West Contra Costa Sanitary Landfill
2nd Quarter 2002 Disposal Daily Vehicle Count
Excluding Greenwaste/Compost

April	Commercial	Self Haul	Total	May	Commercial	Self Haul	Total	June	Commercial	Self Haul	Total
4/1/2002	246	346	592	5/1/2002	220	228	448	6/1/2002	41	492	533
4/2/2002	229	314	543	5/2/2002	219	288	507	6/2/2002	12	430	442
4/3/2002	239	287	526	5/3/2002	258	336	594	6/3/2002	319	261	580
4/4/2002	201	282	483	5/4/2002	38	461	499	6/4/2002	284	270	554
4/5/2002	209	294	503	5/5/2002	9	371	380	6/5/2002	252	289	541
4/6/2002	30	530	560	5/6/2002	286	258	544	6/6/2002	221	271	492
4/7/2002	13	379	392	5/7/2002	205	281	486	6/7/2002	230	284	514
4/8/2002	295	242	537	5/8/2002	232	323	555	6/8/2002	33	458	491
4/9/2002	214	251	465	5/9/2002	257	284	541	6/9/2002	28	364	392
4/10/2002	202	234	436	5/10/2002	234	323	557	6/10/2002	293	279	572
4/11/2002	212	270	482	5/11/2002	39	457	496	6/11/2002	249	280	529
4/12/2002	224	266	490	5/12/2002	14	306	320	6/12/2002	240	291	531
4/13/2002	57	455	512	5/13/2002	250	265	515	6/13/2002	235	268	503
4/14/2002	12	410	422	5/14/2002	239	294	533	6/14/2002	236	340	576
4/15/2002	256	268	524	5/15/2002	224	278	502	6/15/2002	42	423	465
4/16/2002	246	242	488	5/16/2002	244	289	533	6/16/2002	12	301	313
4/17/2002	251	229	480	5/17/2002	206	339	545	6/17/2002	260	254	514
4/18/2002	222	255	477	5/18/2002	22	461	483	6/18/2002	238	307	545
4/19/2002	231	283	514	5/19/2002	3	205	208	6/19/2002	207	314	521
4/20/2002	44	451	495	5/20/2002	213	188	401	6/20/2002	235	329	564
4/21/2002	9	372	381	5/21/2002	205	205	410	6/21/2002	240	307	547
4/22/2002	269	287	556	5/22/2002	203	282	485	6/22/2002	31	435	466
4/23/2002	216	250	466	5/23/2002	256	276	532	6/23/2002	20	394	414
4/24/2002	246	270	516	5/24/2002	281	310	591	6/24/2002	270	253	523
4/25/2002	219	305	524	5/25/2002	32	456	488	6/25/2002	243	278	521
4/26/2002	221	323	544	5/26/2002	16	364	380	6/26/2002	244	308	552
4/27/2002	28	450	478	5/27/2002	65	0	65	6/27/2002	215	265	480
4/28/2002	13	347	360	5/28/2002	322	333	655	6/28/2002	224	259	483
4/29/2002	240	237	477	5/29/2002	323	304	627	6/29/2002	49	461	510
4/30/2002	230	269	499	5/30/2002	390	306	696	6/30/2002	32	363	395
				5/31/2002	341	323	664				
Grand Total			**14722**				**15240**				**15063**

wcsl\CityDailyVehCount2002

West Contra Costa Sanitary Landfill
3rd Quarter 2002 Disposal Daily Vehicle Count
Excluding Greenwaste/Compost

July	Commercial	Self Haul	Total	August	Commercial	Self Haul	Total	September	Commercial	Self Haul	Total
7/1/2002	241	273	514	8/1/2002	286	332	618	9/1/2002	30	361	391
7/2/2002	214	279	493	8/2/2002	257	284	541	9/2/2002	0	0	0
7/3/2002	213	292	505	8/3/2002	35	430	465	9/3/2002	300	326	626
7/4/2002	0	0	0	8/4/2002	23	372	395	9/4/2002	310	269	579
7/5/2002	204	409	613	8/5/2002	265	300	565	9/5/2002	340	323	663
7/6/2002	72	469	541	8/6/2002	241	264	505	9/6/2002	230	318	548
7/7/2002	12	376	388	8/7/2002	263	273	536	9/7/2002	92	464	556
7/8/2002	279	309	588	8/8/2002	228	251	479	9/8/2002	24	349	373
7/9/2002	290	284	574	8/9/2002	255	308	563	9/9/2002	228	278	506
7/10/2002	246	262	508	8/10/2002	42	408	450	9/10/2002	276	301	577
7/11/2002	228	282	510	8/11/2002	20	350	370	9/11/2002	258	299	557
7/12/2002	219	319	538	8/12/2002	416	335	751	9/12/2002	247	240	487
7/13/2002	22	493	515	8/13/2002	446	314	760	9/13/2002	333	252	585
7/14/2002	7	343	350	8/14/2002	443	333	776	9/14/2002	164	439	603
7/15/2002	252	278	530	8/15/2002	516	315	831	9/15/2002	16	304	320
7/16/2002	245	266	511	8/16/2002	282	319	601	9/16/2002	313	233	546
7/17/2002	238	302	540	8/17/2002	58	487	545	9/17/2002	223	254	477
7/18/2002	282	261	543	8/18/2002	11	370	381	9/18/2002	201	267	468
7/19/2002	284	283	567	8/19/2002	302	275	577	9/19/2002	285	254	539
7/20/2002	57	421	478	8/20/2002	264	301	565	9/20/2002	259	275	534
7/21/2002	22	349	371	8/21/2002	258	282	540	9/21/2002	52	400	452
7/22/2002	280	257	537	8/22/2002	261	297	558	9/22/2002	24	302	326
7/23/2002	261	261	522	8/23/2002	253	314	567	9/23/2002	241	244	485
7/24/2002	262	257	519	8/24/2002	60	423	483	9/24/2002	233	241	474
7/25/2002	260	271	531	8/25/2002	14	379	393	9/25/2002	235	274	509
7/26/2002	266	300	566	8/26/2002	297	281	578	9/26/2002	303	227	530
7/27/2002	64	454	518	8/27/2002	281	265	546	9/27/2002	247	240	487
7/28/2002	22	362	384	8/28/2002	257	311	568	9/28/2002	66	410	476
7/29/2002	306	267	573	8/29/2002	235	282	517	9/29/2002	27	336	363
7/30/2002	263	288	551	8/30/2002	233	307	540	9/30/2002	317	260	577
7/31/2002	238	281	519	8/31/2002	52	463	515				
Grand Total			**15397**				**17079**				**14614**

wccsl\QtlyDailyVehCount2002

APPENDIX 9A

BAYSIDE TRAIL PLANTING RECOMMENDATIONS

West Contra Costa Sanitary Landfill

Bayside Trail (Barrier) Planting Recommendations

August 2003

INTRODUCTION

This summary describes the proposed weed eradication and native barrier planting for a creek side trail along the southern access road at the West Contra Costa Sanitary Landfill (WCCSL) in Richmond, California. This program would be implemented in the area between the existing roadway/proposed pedestrian trail located along the southern boundary of the WCCSL and the tidal creek that separates this area from the Wildcat Creek Marsh. The length of this area extends from the landfill entrance area westward for approximately 1 mile to the southwestern corner of the property. The proposed program involves soil preparation, minor efforts to eradicate invasive exotic plant species (adjacent to planting areas) and re-establishment of native vegetation to create a protective buffer between the proposed trail and adjacent mudflat/marsh/aquatic habitats.

The intent of this program is to create a vegetative buffer between sensitive creek and marsh habitats adjacent to the landfill and the future bayside trail (for pedestrians and cyclists) and a potential staging area for canoes and kayaks and other recreational users. The WCCSL will develop specific planting plans and landscape site designs upon the approval of the trail alignment by the County and the City of Richmond.

VEGETATION BUFFER RECOMMENDATIONS

The planting concept presented below is based upon plant species composition and distribution observed on local coastal hillsides and upland areas directly adjacent to marshlands. The plant species and placements have also been selected for their utility as 'barrier plantings', with low, dense and in some cases thorny growth habits; the planting concept is intended to preserve views and discourage trail users from going off the trail in order to access the marsh.

Exotic weed species present on the project site include sea fig (*Carpobrotus edulis*), wild radish (*Raphanus sativus*), sweet fennel (*Foeniculum vulgare*), French broom (*Genista monspessulana* aka *Cytisus monspessulana)* dock (*Rumex* spp.) and non-native grasses These weedy exotics, radish, fennel and broom in particular, can quickly out compete the desired native species. Given the disturbed setting and constant exposure to exotic seed sources, complete eradication of exotic species is not realistic. For this reasons in order to establish a native plant buffer on the project site, exotics should be completely removed in areas adjacent to plant installation sites prior to the planting phase of construction. Exotic weeds may then be kept in check with periodic maintenance. Native plants within the revegetation area should be protected during weed eradication efforts.

The revegetation area will be planted in native coastal scrub and riparian species, as listed in Table 1, in accordance with their physical requirements.

TABLE 1. Revegetation Planting Palette		
SPECIES	SIZE	DENSITY/ PATTERN
Salix spp. Willow species	local cuttings/ wattles	8 ft on center/ on contour
Sambucus mexicana Blue elderberry	container	scattered
Heteromeles arbutifolia Toyon	container	scattered
Rhamnus californica California coffeeberry	container	scattered
Symphorocarpus mollis Snowberry	container	in thickets 2-3 ft on center
Baccharis pilularis var. consanguinea Coyote brush	container	scattered
Rubus ursinus California blackberry	cuttings/ container	in thickets 2-4 ft on center
Rosa californica California wild rose	container	in thickets 2-4 ft on center
Ceanothus sp. California lilac	1-gal	grouped 5 ft on center
Rhus diversiloba Poison Oak	container	lower slopes
Artemisia californica California sagebrush	container	scattered

Elymus glaucus Blue wildrye	seed	scattered upper banks
Eschscholzia californica California poppy	seed	scattered upper banks
Lupinus spp. Lupine species	seed	scattered upper banks
Sisyrinchium bellum Blue- Eyed grass	seed	scattered upper banks
Nassella pulchra Purple needlegrass	seed	scattered upper banks

Willow plantings will be limited to the bank along the eastern end of the trail area (adjacent to the vehicle parking area), where screening of the wastewater treatment plant is desired. Willow cuttings will be taken from locally growing specimens, and will be planted on the lower banks and areas between the proposed trail and marsh/mudflat habitats. While willows are generally not considered a species tolerant of saline conditions, willow thickets have become established along drainage courses in the immediate vicinity of the proposed project and along San Pablo Creek. Individuals adapted to these site conditions are more likely to produce propagules that will succeed. Willow species are proposed as a component of the planting palette due to their dense growth habit and high habitat values, particularly for local avifauna. Willows that become established will provide canopy cover over marsh and bank areas, and will serve to shade out weedy species. Canopy trees may also serve as roosting, nesting, and forage sites for a variety of avian species, as well as cover for other wildlife.

Species adapted to drier conditions, such as coyote brush, sagebrush, ceanothus, toyon, snowberry, coffeeberry and blue elderberry will be planted on the higher areas of the bayside banks, directly adjacent to the trail. Thorny species (wild rose and blackberry) will be planted slightly lower on the banks. Poison oak will be planted well off the proposed trail, so that it does not pose a hazard to trail users. It will be planted on lower bank areas and adjacent to marshlands, but within the vision of trial users. This native species has a vigorous growth habit, and should establish relatively quickly. The visible presence of poison oak will serve as an excellent deterrent to potential 'bush whackers'. The banks will be seeded with native grasses and wildflower species to provide herbaceous cover and erosion control.

The revegetated trail corridor will be more densely vegetated than that of the existing bayside bank. The revegetated bank will provide a tough, prickly barrier/buffer between the proposed trail and sensitive habitat areas, and enhanced cover and forage areas for wildlife. Plantings that have forage value for birds and other wildlife include California blackberry, blue elderberry, red-flowering currant, snowberry and coffeeberry. See Table 1 for a complete list of recommended plant species.

APPENDIX 10A

SPREADHSEETS FOR CALCULATION OF PROCESS EMISSIONS

Spreadsheet to Calculate Process Emissions

	Existing				2008				2015			
Sources	ORG	NOx	CO	PM	ORG	NOx	CO	PM	ORG	NOx	CO	PM
Landfill Operation:												
Landfill/Gas Collection	0.2	0.0	0.0	144.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Landfill Gas Combustion	9.0	57.1	326.0	9.0	8.2	52.0	297.0	8.2	5.3	34.0	194.1	5.4
Concrete/Asphalt Recycling:												
Concrete Crusher	0.0	0.0	0.0	5.0	0.0	0.0	0.0	62.3	0.0	0.0	0.0	83.0
Asphalt Crusher	0.0	0.0	0.0	5.0	0.0	0.0	0.0	62.3	0.0	0.0	0.0	83.0
Concrete Screen	0.0	0.0	0.0	13.0	0.0	0.0	0.0	162.0	0.0	0.0	0.0	215.8
Concrete/Asphalt Storage	0.0	0.0	0.0	61.0	0.0	0.0	0.0	760.1	0.0	0.0	0.0	1012.6
Composting Operation:												
Wood Shredder	0.0	0.0	0.0	52.0	0.0	0.0	0.0	218.4	0.0	0.0	0.0	291.2
Wood Waste Screener	0.0	0.0	0.0	20.0	0.0	0.0	0.0	84.0	0.0	0.0	0.0	352.8
Soil Reclamation Operation:												
Soil Handling	0	0	0	0	0	0	0	4.2	0	0	0	6
Wet Waste/Dusty Material:												
Material Handling	0	0	0	0	0	0	0	17	0	0	0	22.6
	9.1	57.1	326.0	309.0	8.2	52.0	297.0	1378.4	5.3	34.0	194.1	2072.4

Spreadsheet to Calculate Emissions from Equipment/Vehicles

Scenario: Existing 2003

Equipment/Vehicle	Emission Factors (Pounds/day)				Daily Hours	Ann. Hours	Daily Emission (Pounds/Day)			
	ROG	NOx	CO	PM10			ROG	NOx	CO	PM10
Campactor	1.84	16.4	11.6	0.74	16	5824	3.7	32.8	23.2	1.5
Crawler Tractor	1.45	12.93	9.14	0.59	22	6136	4.0	35.6	25.1	1.6
Rubber-Tired Loader	1.35	8.23	11.52	0.3	46	13208	7.8	47.3	66.2	1.7
Motor Grader	1.76	16.4	11.6	0.74	4	1040	0.9	8.2	5.8	0.4
Utility Tractor	0.65	5.8	4.1	0.26	6	1560	0.5	4.4	3.1	0.2
Off Road Trucks	3.6	25.96	27.44	1.06	42	10920	18.9	136.3	144.1	5.6
							35.7	264.5	267.5	11.0

Annual Emissions (Tons)

ROG	NOx	CO	PM10
5.4	47.8	33.8	2.2
4.4	39.7	28.0	1.8
8.9	54.4	76.1	2.0
0.9	8.5	6.0	0.4
0.5	4.5	3.2	0.2
19.7	141.7	149.8	5.8
39.8	296.6	297.0	12.3

Spreadsheet to Calculate Emissions from Equipment/Vehicles

Scenario: Project 2008

Equipment/Vehicle	Emission Factors (Pounds/day)				Daily Hours	Ann. Hours	Daily Emission (Pounds/Day)			
	ROG	NOx	CO	PM10			ROG	NOx	CO	PM10
Campactor	1.84	12.74	14.14	0.44	0	0	0.0	0.0	0.0	0.0
Crawler Tractor	1.45	10.04	11.15	0.51	0	0	0.0	0.0	0.0	0.0
Rubber-Tired Loader	1.35	7.86	11.52	0.22	46.4	13707.2	7.8	45.6	66.8	1.3
Motor Grader	1.76	10.22	14.98	0.28	1.7	442	0.4	2.2	3.2	0.1
Utility Tractor	0.65	4.5	5	0.16	5.1	1326	0.4	2.9	3.2	0.1
Off Road Trucks	3.6	20.89	30.62	0.58	35.7	9282	16.1	93.2	136.6	2.6
							24.7	143.9	209.8	4.0

Annual Emissions (Tons)

ROG	NOx	CO	PM10
0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0
9.3	53.9	79.0	1.5
0.4	2.3	3.3	0.1
0.4	3.0	3.3	0.1
16.7	97.0	142.1	2.7
26.8	156.1	227.7	4.4

Spreadsheet to Calculate Emissions from Equipment/Vehicles

Scenario: Project 2015

Equipment/Vehicle	Emission Factors (Pounds/day)				Daily Hours	Ann. Hours	Daily Emission (Pounds/Day)			
	ROG	NOx	CO	PM10			ROG	NOx	CO	PM10
Campactor	1.84	11.37	15.16	0.34	0	0	0.0	0.0	0.0	0.0
Crawler Tractor	1.45	8.96	11.95	0.27	0	0	0.0	0.0	0.0	0.0
Rubber-Tired Loader	1.35	7.86	11.52	0.22	46.4	17680	7.8	45.6	66.8	1.3
Motor Grader	1.76	10.22	14.98	0.28	1.7	520	0.4	2.2	3.2	0.1
Utility Tractor	0.65	4.02	5.36	0.12	5.1	1560	0.4	2.6	3.4	0.1
Off Road Trucks	3.6	20.89	30.62	0.58	35.7	10920	16.1	93.2	136.6	2.6
							24.7	143.5	210.1	4.0

Annual Emissions (Tons)

ROG	NOx	CO	PM10
0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0
11.9	69.5	101.8	1.9
0.5	2.7	3.9	0.1
0.5	3.1	4.2	0.1
19.7	114.1	167.2	3.2
32.6	189.3	277.1	5.3

Spreadsheet to Calculate Vehicular Emissions

Project: West Contra Costa
YEAR: 2003

Diesel Truck

		Emissions Factors (grams/mile)			DAILY EMISSIONS (LBS/DAY)		
	VMT:	11000	ROG	NOX	PM10	ROG	NOX	PM10
			0.517	13.75	0.321	12.5	333.1	7.8

LDT

		Emissions Factors (grams/mile)			DAILY EMISSIONS (LBS/DAY)		
	VMT:	8500	ROG	NOX	PM10	ROG	NOX	PM10
			0.867	1.051	0.039	16.2	19.7	0.7

LDA

		Emissions Factors (grams/mile)			DAILY EMISSIONS (LBS/DAY)		
	VMT:	9300	ROG	NOX	PM10	ROG	NOX	PM10
			0.766	0.674	0.032	15.7	13.8	0.7
					Total	44.5	366.6	9.2

Spreadsheet to Calculate Vehicular Emissions

Project: West Contra Costa
YEAR: 2008

Diesel Truck

VMT:	14900	Emissions Factors (grams/mile) ROG	NOX	PM10	DAILY EMISSIONS (LBS/DAY) ROG	NOX	PM10
		0.496	12.25	0.293	16.3	402.0	9.6

LDT

VMT:	12400	Emissions Factors (grams/mile) ROG	NOX	PM10	DAILY EMISSIONS (LBS/DAY) ROG	NOX	PM10
		0.617	0.658	0.041	16.9	18.0	1.1

LDA

VMT:	6900	Emissions Factors (grams/mile) ROG	NOX	PM10	DAILY EMISSIONS (LBS/DAY) ROG	NOX	PM10
		0.443	0.382	0.033	6.7	5.8	0.5
				Total	39.9	425.8	11.2

Spreadsheet to Calculate Vehicular Emissions

Project: West Contra Costa
YEAR: 2015

Diesel Truck

VMT:	19800	Emissions Factors (grams/mile) ROG	NOX	PM10	DAILY EMISSIONS (LBS/DAY) ROG	NOX	PM10
		0.309	5.79	0.187	13.5	252.5	8.2

LDT

VMT:	14800	Emissions Factors (grams/mile) ROG	NOX	PM10	DAILY EMISSIONS (LBS/DAY) ROG	NOX	PM10
		0.375	0.345	0.0424	12.2	11.2	1.4

LDA

VMT:	8700	Emissions Factors (grams/mile) ROG	NOX	PM10	DAILY EMISSIONS (LBS/DAY) ROG	NOX	PM10
		0.217	0.178	0.033	4.2	3.4	0.6
				Total	29.9	267.2	10.2

APPENDIX 10B

HEALTH RISK ASSESSMENT METHODOLOGY

APPENDIX 10B

Health Risk Assessment Methodology

A health-risk assessment was prepared to estimate diesel exhaust risk at two residential areas adjacent to Richmond Parkway where additional diesel truck traffic from the project and cumulative traffic increases would pass near existing homes. These locations were the northeast corner of the intersection of Richmond Parkway and Gertrude Avenue and along the west side of Richmond Parkway both south and north of its intersection with Hilltop Drive. These locations represent the worst-case exposure to new diesel particulate from project and cumulative traffic increases.

The health risk assessment utilized estimated new daily heavy-duty diesel truck trip volumes in 2015. The EMFAC-2002 emissions model was used to predict emission rates from traveling heavy-duty diesel trucks in the year 20015. Two separate models were constructed.

The model used in this assessment was the U.S. EPA-approved guideline model, Industrial Source Complex for Short-Term Impacts (ISCST-3).[1] At the Richmond Parkway/Gertrude Avenue intersection a single receptor was utilized, located at the closest corner of what is the closest residential building. Near Hilltop Drive a series of eight receptors were located along the western edge of the Richmond Parkway right-of-way. The location of receptors is shown in Figures 1 and 2. The ISCST-3 model was run using a meteorological file from a monitoring site at the Chevron refinery that was provided by the Bay Area Air Quality Management District. Model output is attached.

The maximum annual concentration obtained from each model was used in the calculation of cancer risk. The methodology for the analysis followed the guidelines developed for the preparation of health risk assessments required under the Air Toxics "Hot Spots" Information and Assessment Act of 1987 (Health and Safety Code Section 44360 et seq.) and guidance provided by the Bay Area Air Quality Management District.

The Unit Risk Value for diesel exhaust particulate recommended by the California Office of Environmental Health Hazard Assessment (OEHHA) is 3.0×10^{-04} per microgram per cubic meter (ug/m^3). This means that for receptors with an annual average concentration of 1 ug/m^3 in the ambient air, the probability of contracting cancer over a 70-year life span is 300 in one million (300×10^{-06}). The Unit Risk Value assumes that a person is exposed continuously for 70 years. Tables 1 and 2 below show the results of the risk screening calculation.

Calculated risk is below the BAAQMD significance threshold of 10 in one million. The Annual Average Concentration is also well below the chronic inhalation Reference

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[1]U. S. Environmental Protection Agency, User's Guide for the Industrial Source Complex (ISC3) Dispersion Models, Report EPA-454/b-95-003a, September 1995.

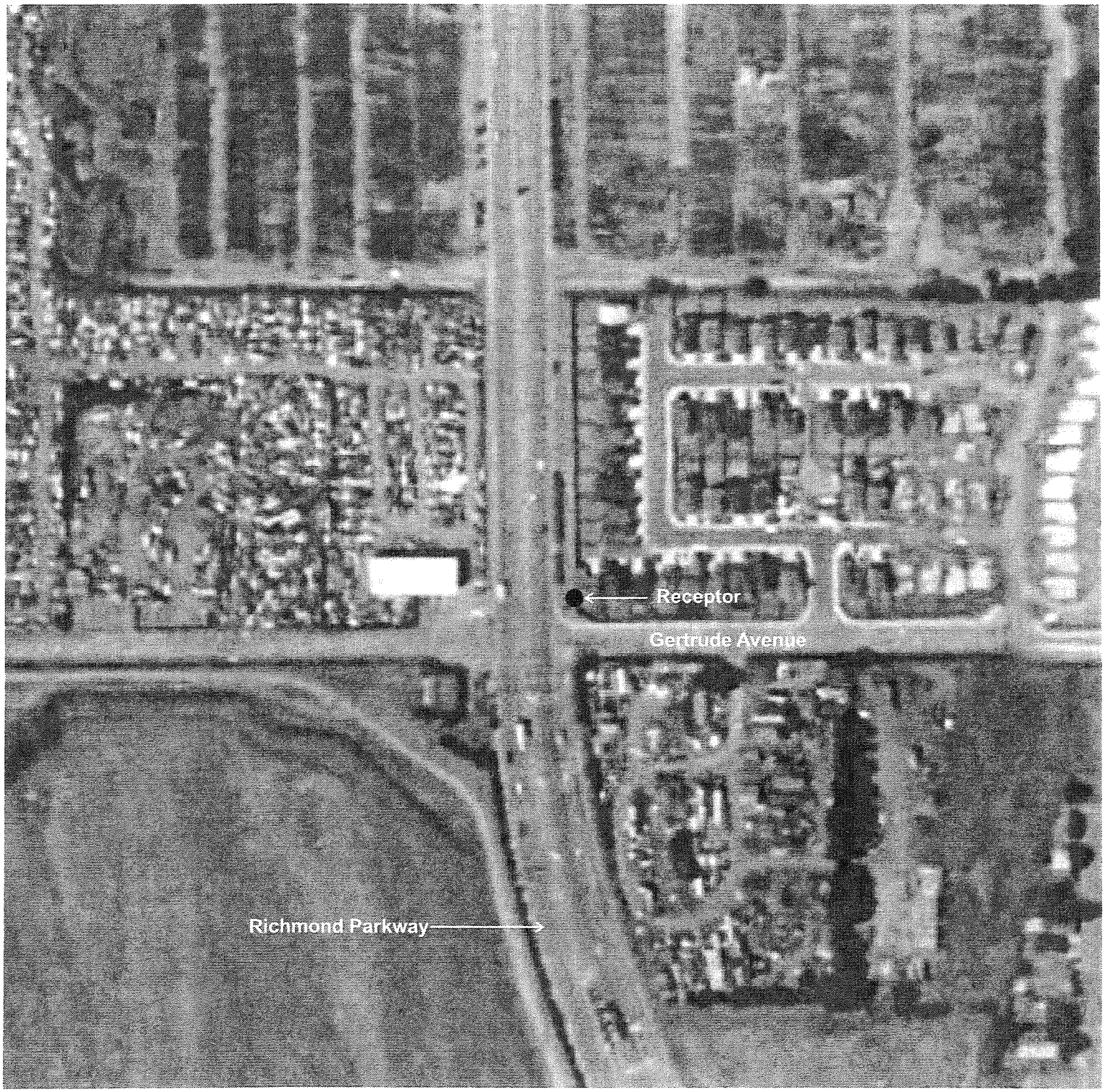

Figure 1 Receptor Location, Richmond Parkway at Gertrude Avenue

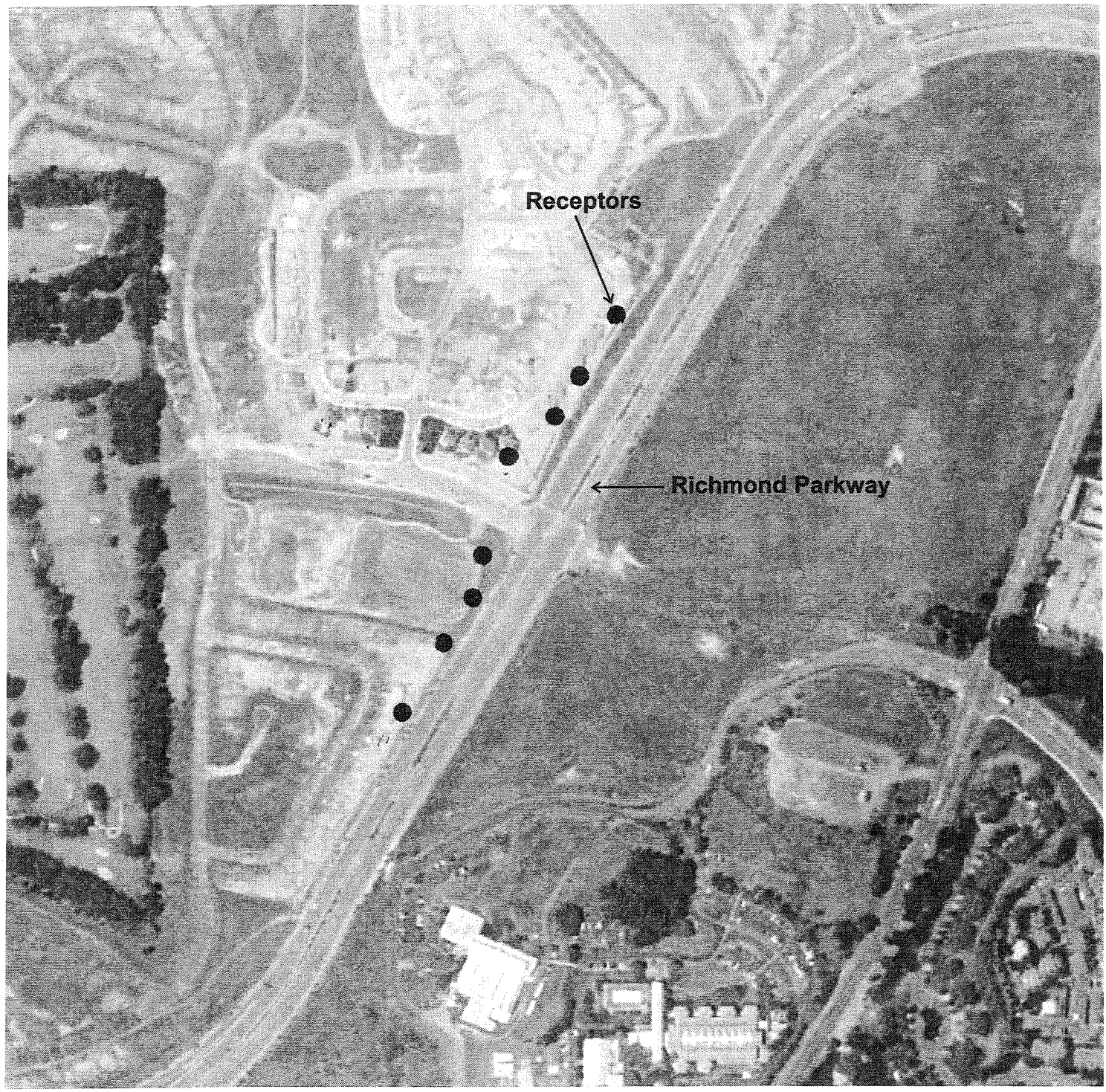

Figure 2 Receptor Locations, Richmond Parkway at Hilltop Drive

Exposure Level (REL) for diesel exhaust particulate of 5 ug/m^3. The REL is the concentration at or below which no adverse non-cancer health effects are anticipated. These results support a conclusion that impacts related to diesel exhausts would be less than significant.

Table 1: Calculated Excess Carcinogenic Risk from Proposed Project Truck Traffic

Location	**Annual Average Concentration (ug/m^3)**	**Unit Risk Factor**	**Calculated Risk**
Richmond Parkway/ Gertrude Avenue	0.00418	$3.0x10^{-4}$	$1.25x10^{-6}$
Richmond Parkway/ Hilltop Drive	0.00541	$3.0x10^{-4}$	$1.62x10^{-6}$

Table 2: Calculated Excess Carcinogenic Risk from Cumulative Truck Traffic

Location	**Annual Average Concentration (ug/m^3)**	**Unit Risk Factor**	**Calculated Risk**
Richmond Parkway/ Gertrude Avenue	0.0141	$3.0x10^{-4}$	$4.23x10^{-6}$
Richmond Parkway/ Hilltop Drive	0.0167	$3.0x10^{-4}$	$5.02x10^{-6}$

```
CO STARTING
CO TITLEONE WCCSL/CUMULATIVE DIESEL PARTICULATE- RICHMOND PARKWAY/GERTRUDE

CO MODELOPT CONC URBAN DFAULT


CO AVERTIME  PERIOD


CO POLLUTID OTHER
CO FLAGPOLE 1.5
CO RUNORNOT RUN
CO FINISHED

SO STARTING
SO LOCATION NB1  AREA   65.2   -228.9
SO LOCATION NB2  AREA   33.9   -155.3
SO LOCATION NB3  AREA   13.9    -78.4
SO LOCATION NB4  AREA      2        0
SO LOCATION NB5  AREA      2     80.0
SO LOCATION NB6  AREA      2    160.0
SO LOCATION SB1  AREA    -10    160.0
SO LOCATION SB2  AREA    -10     80.0
SO LOCATION SB3  AREA    -10        0
SO LOCATION SB4  AREA    3.9    -78.4
SO LOCATION SB5  AREA   23.9   -155.5
SO LOCATION SB6  AREA   55.2   -228.9


SO SRCPARAM NB1  0.00000000947 4.15 8.0 80.0 -23  1.39
SO SRCPARAM NB2  0.00000000947 4.15 8.0 80.0 -16  1.39
SO SRCPARAM NB3  0.00000000947 4.15 8.0 80.0 -10  1.39
SO SRCPARAM NB4  0.00000000947 4.15 8.0 80.0  0   1.39
SO SRCPARAM NB5  0.00000000947 4.15 8.0 80.0  0   1.39
SO SRCPARAM NB6  0.00000000947 4.15 8.0 80.0  0   1.39
SO SRCPARAM SB1  0.00000000947 4.15 8.0 80.0  0   1.39
SO SRCPARAM SB2  0.00000000947 4.15 8.0 80.0  0   1.39
SO SRCPARAM SB3  0.00000000947 4.15 8.0 80.0  0   1.39
SO SRCPARAM SB4  0.00000000947 4.15 8.0 80.0 -10  1.39
SO SRCPARAM SB5  0.00000000947 4.15 8.0 80.0 -16  1.39
SO SRCPARAM SB6  0.00000000947 4.15 8.0 80.0 -23  1.39

SO SRCGROUP ALL
SO FINISHED
RE STARTING


RE DISCCART  20 12  0



RE FINISHED

ME STARTING
ME INPUTFIL CHV02600.asc
ME ANEMHGHT 10 METERS

ME SURFDATA 2703  2002
ME UAIRDATA 2703  2002

ME FINISHED
OU STARTING
```

OU RECTABLE ALLAVE FIRST

OU FINISHED

```
***********************************
*** SETUP Finishes Successfully ***
***********************************
```

```
 *** ISCST3 - VERSION 00101 ***    *** WCCSL/CUMULATIVE DIESEL PARTICULATE- RICHMOND
PARKWAY/GERTRUDE       ***        09/17/03
                                   ***
***        11:22:52
**MODELOPTs:
PAGE   1
CONC                        URBAN  FLAT   FLGPOL DFAULT

                                          ***     MODEL SETUP OPTIONS SUMMARY       ***
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - -

**Intermediate Terrain Processing is Selected

**Model Is Setup For Calculation of Average CONCentration Values.

  --  SCAVENGING/DEPOSITION LOGIC --
**Model Uses NO DRY DEPLETION.  DDPLETE =  F
**Model Uses NO WET DEPLETION.  WDPLETE =  F
**NO WET SCAVENGING Data Provided.
**NO GAS DRY DEPOSITION Data Provided.
**Model Does NOT Use GRIDDED TERRAIN Data for Depletion Calculations

**Model Uses URBAN Dispersion.

**Model Uses Regulatory DEFAULT Options:
           1. Final Plume Rise.
           2. Stack-tip Downwash.
           3. Buoyancy-induced Dispersion.
           4. Use Calms Processing Routine.
           5. Not Use Missing Data Processing Routine.
           6. Default Wind Profile Exponents.
           7. Default Vertical Potential Temperature Gradients.
           8. "Upper Bound" Values for Supersquat Buildings.
           9. No Exponential Decay for URBAN/Non-SO2

**Model Assumes Receptors on FLAT Terrain.

**Model Accepts FLAGPOLE Receptor Heights.

**Model Calculates PERIOD Averages Only

**This Run Includes:    12 Source(s);      1 Source Group(s); and       1 Receptor(s)

**The Model Assumes A Pollutant Type of:  OTHER

**Model Set To Continue RUNning After the Setup Testing.

**Output Options Selected:
         Model Outputs Tables of PERIOD Averages by Receptor
         Model Outputs Tables of Highest Short Term Values by Receptor (RECTABLE Keyword)

**NOTE:  The Following Flags May Appear Following CONC Values:  c for Calm Hours
                                                                m for Missing Hours
                                                                b for Both Calm and
Missing Hours

**Misc. Inputs:  Anem. Hgt. (m) =    10.00 ;    Decay Coef. =    0.000     ;    Rot. Angle
=     0.0
                 Emission Units = GRAMS/SEC                                  ;  Emission
Rate Unit Factor =   0.10000E+07
                 Output Units   = MICROGRAMS/M**3

**Approximate Storage Requirements of Model =     1.2 MB of RAM.

**Input Runstream File:          richmnd1.txt
**Output Print File:             richmnd1.out
```

*** ISCST3 - VERSION 00101 *** *** WCCSL/CUMULATIVE DIESEL PARTICULATE- RICHMOND PARKWAY/GERTRUDE *** 09/17/03
***
*** 11:22:52
**MODELOPTs:
PAGE 2
CONC URBAN FLAT FLGPOL DFAULT

*** AREA SOURCE DATA ***

ORIENT. SOURCE OF AREA ID (DEG.)	NUMBER PART. CATS.	EMISSION RATE (GRAMS/SEC /METER**2)	INIT. SZ (METERS)	SCALAR VARY BY	COORD (SW CORNER) X (METERS)	Y (METERS)	BASE ELEV. (METERS)	RELEASE HEIGHT (METERS)	X-DIM OF AREA (METERS)	Y-DIM OF AREA (METERS)
NB1	0	0.94700E-08	-23.00	1.39	65.2	-228.9	0.0	4.15	8.00	80.00
NB2	0	0.94700E-08	-16.00	1.39	33.9	-155.3	0.0	4.15	8.00	80.00
NB3	0	0.94700E-08	-10.00	1.39	13.9	-78.4	0.0	4.15	8.00	80.00
NB4	0	0.94700E-08	0.00	1.39	2.0	0.0	0.0	4.15	8.00	80.00
NB5	0	0.94700E-08	0.00	1.39	2.0	80.0	0.0	4.15	8.00	80.00
NB6	0	0.94700E-08	0.00	1.39	2.0	160.0	0.0	4.15	8.00	80.00
SB1	0	0.94700E-08	0.00	1.39	-10.0	160.0	0.0	4.15	8.00	80.00
SB2	0	0.94700E-08	0.00	1.39	-10.0	80.0	0.0	4.15	8.00	80.00
SB3	0	0.94700E-08	0.00	1.39	-10.0	0.0	0.0	4.15	8.00	80.00
SB4	0	0.94700E-08	-10.00	1.39	3.9	-78.4	0.0	4.15	8.00	80.00
SB5	0	0.94700E-08	-16.00	1.39	23.9	-155.5	0.0	4.15	8.00	80.00
SB6	0	0.94700E-08	-23.00	1.39	55.2	-228.9	0.0	4.15	8.00	80.00

CONC URBAN FLAT FLGPOL DFAULT

*** SOURCE IDs DEFINING SOURCE GROUPS ***

GROUP ID	SOURCE IDs
ALL	NB1 , NB2 , NB3 , NB4 , NB5 , NB6 , SB1 , SB2 , SB3 , SB4 , SB5 , SB6 ,

CONC URBAN FLAT FLGPOL DFAULT

*** DISCRETE CARTESIAN RECEPTORS ***
(X-COORD, Y-COORD, ZELEV, ZFLAG)
(METERS)

(20.0, 12.0, 0.0, 0.0);

CONC URBAN FLAT FLGPOL DFAULT

*** METEOROLOGICAL DAYS SELECTED FOR PROCESSING ***

(1=YES; 0=NO)

```
          1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1
1 1 1   1 1 1 1 1 1 1 1 1 1 1
          1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1
1 1 1   1 1 1 1 1 1 1 1 1 1 1
          1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1
1 1 1   1 1 1 1 1 1 1 1 1 1 1
          1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1
1 1 1   1 1 1 1 1 1 1 1 1 1 1
          1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1
1 1 1   1 1 1 1 1 1 1 1 1 1 1
          1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1
1 1 1   1 1 1 1 1 1 1 1 1 1 1
          1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1
1 1 1   1 1 1 1 1 1 1 1 1 1 1
          1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1
1 1 1   1 1 1 1 1 1 1 1 1 1 1
          1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1
```

NOTE: METEOROLOGICAL DATA ACTUALLY PROCESSED WILL ALSO DEPEND ON WHAT IS INCLUDED IN THE DATA FILE.

*** UPPER BOUND OF FIRST THROUGH FIFTH WIND SPEED CATEGORIES ***

(METERS/SEC)

1.54, 3.09, 5.14, 8.23, 10.80,

*** WIND PROFILE EXPONENTS ***

STABILITY CATEGORY	WIND SPEED CATEGORY 1	2	3	4	5	6
A	.15000E+00	.15000E+00	.15000E+00	.15000E+00	.15000E+00	.15000E+00
B	.15000E+00	.15000E+00	.15000E+00	.15000E+00	.15000E+00	.15000E+00
C	.20000E+00	.20000E+00	.20000E+00	.20000E+00	.20000E+00	.20000E+00
D	.25000E+00	.25000E+00	.25000E+00	.25000E+00	.25000E+00	.25000E+00
E	.30000E+00	.30000E+00	.30000E+00	.30000E+00	.30000E+00	.30000E+00
F	.30000E+00	.30000E+00	.30000E+00	.30000E+00	.30000E+00	.30000E+00

*** VERTICAL POTENTIAL TEMPERATURE GRADIENTS ***
(DEGREES KELVIN PER METER)

STABILITY CATEGORY	WIND SPEED CATEGORY 1	2	3	4	5	6

A	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00
B	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00
C	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00
D	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00
E	.20000E-01	.20000E-01	.20000E-01	.20000E-01	.20000E-01
F	.35000E-01	.35000E-01	.35000E-01	.35000E-01	.35000E-01

*** ISCST3 - VERSION 00101 *** *** WCCSL/CUMULATIVE DIESEL PARTICULATE- RICHMOND PARKWAY/GERTRUDE *** 09/17/03
***
*** 11:22:52
**MODELOPTs:
PAGE 6
CONC URBAN FLAT FLGPOL DFAULT

*** THE FIRST 24 HOURS OF METEOROLOGICAL DATA ***

FILE: CHV02600.asc
FORMAT: (4I2,2F9.4,F6.1,I2,2F7.1,f9.4,f10.1,f8.4,i4,f7.2)
SURFACE STATION NO.: 2703 UPPER AIR STATION NO.: 2703
NAME: UNKNOWN NAME: UNKNOWN
YEAR: 2002 YEAR: 2002

YR	MN	DY	HR	FLOW VECTOR	SPEED (M/S)	TEMP (K)	STAB CLASS	MIXING HEIGHT (M) RURAL	MIXING HEIGHT (M) URBAN	USTAR (M/S)	M-O LENGTH (M)	Z-0 (M)	IPCODE	PRATE (mm/HR)
10	01	01	01	262.6	2.77	285.8	4	600.0	600.0	0.0000	0.0	0.0000	0	0.00
10	01	01	02	246.9	1.97	285.9	4	600.0	600.0	0.0000	0.0	0.0000	0	0.00
10	01	01	03	246.5	3.40	285.9	4	600.0	600.0	0.0000	0.0	0.0000	0	0.00
10	01	01	04	242.7	2.91	285.9	5	600.0	600.0	0.0000	0.0	0.0000	0	0.00
10	01	01	05	246.5	3.22	285.8	5	600.0	600.0	0.0000	0.0	0.0000	0	0.00
10	01	01	06	249.4	2.68	285.5	4	600.0	600.0	0.0000	0.0	0.0000	0	0.00
10	01	01	07	212.4	1.21	285.3	5	600.0	600.0	0.0000	0.0	0.0000	0	0.00
10	01	01	08	241.0	1.39	285.1	4	600.0	600.0	0.0000	0.0	0.0000	0	0.00
10	01	01	09	239.7	1.52	285.3	4	600.0	600.0	0.0000	0.0	0.0000	0	0.00
10	01	01	10	277.0	1.03	285.8	3	600.0	600.0	0.0000	0.0	0.0000	0	0.00
10	01	01	11	318.0	2.28	286.3	4	600.0	600.0	0.0000	0.0	0.0000	0	0.00
10	01	01	12	355.7	1.97	286.5	3	600.0	600.0	0.0000	0.0	0.0000	0	0.00
10	01	01	13	8.2	1.74	286.5	3	600.0	600.0	0.0000	0.0	0.0000	0	0.00
10	01	01	14	339.6	2.46	286.1	4	600.0	600.0	0.0000	0.0	0.0000	0	0.00
10	01	01	15	323.7	2.15	286.5	4	600.0	600.0	0.0000	0.0	0.0000	0	0.00
10	01	01	16	331.5	3.17	287.5	4	600.0	600.0	0.0000	0.0	0.0000	0	0.00
10	01	01	17	331.4	4.29	288.0	4	600.0	600.0	0.0000	0.0	0.0000	0	0.00
10	01	01	18	333.7	5.77	288.3	4	600.0	600.0	0.0000	0.0	0.0000	0	0.00
10	01	01	19	335.9	5.10	288.0	4	600.0	600.0	0.0000	0.0	0.0000	0	0.00
10	01	01	20	339.7	4.69	288.1	4	600.0	600.0	0.0000	0.0	0.0000	0	0.00
10	01	01	21	347.3	4.07	287.8	4	600.0	600.0	0.0000	0.0	0.0000	0	0.00
10	01	01	22	344.4	5.41	288.1	4	600.0	600.0	0.0000	0.0	0.0000	0	0.00

Exposure Level (REL) for diesel exhaust particulate of 5 ug/m^3. The REL is the concentration at or below which no adverse non-cancer health effects are anticipated. These results support a conclusion that impacts related to diesel exhausts would be less than significant.

Table 1: Calculated Excess Carcinogenic Risk from Proposed Project Truck Traffic

Location	**Annual Average Concentration (ug/m^3)**	**Unit Risk Factor**	**Calculated Risk**
Richmond Parkway/ Gertrude Avenue	0.00418	$3.0x10^{-4}$	$1.25x10^{-6}$
Richmond Parkway/ Hilltop Drive	0.00541	$3.0x10^{-4}$	$1.62x10^{-6}$

Table 2: Calculated Excess Carcinogenic Risk from Cumulative Truck Traffic

Location	**Annual Average Concentration (ug/m^3)**	**Unit Risk Factor**	**Calculated Risk**
Richmond Parkway/ Gertrude Avenue	0.0141	$3.0x10^{-4}$	$4.23x10^{-6}$
Richmond Parkway/ Hilltop Drive	0.0167	$3.0x10^{-4}$	$5.02x10^{-6}$

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CO STARTING
CO TITLEONE WCCSL/CUMULATIVE DIESEL PARTICULATE- RICHMOND PARKWAY/GERTRUDE

CO MODELOPT CONC URBAN DFAULT


CO AVERTIME  PERIOD


CO POLLUTID OTHER
CO FLAGPOLE 1.5
CO RUNORNOT RUN
CO FINISHED

SO STARTING
SO LOCATION NB1  AREA   65.2   -228.9
SO LOCATION NB2  AREA   33.9   -155.3
SO LOCATION NB3  AREA   13.9    -78.4
SO LOCATION NB4  AREA      2        0
SO LOCATION NB5  AREA      2     80.0
SO LOCATION NB6  AREA      2    160.0
SO LOCATION SB1  AREA    -10    160.0
SO LOCATION SB2  AREA    -10     80.0
SO LOCATION SB3  AREA    -10        0
SO LOCATION SB4  AREA    3.9    -78.4
SO LOCATION SB5  AREA   23.9   -155.5
SO LOCATION SB6  AREA   55.2   -228.9


SO SRCPARAM NB1  0.00000000947 4.15 8.0 80.0 -23  1.39
SO SRCPARAM NB2  0.00000000947 4.15 8.0 80.0 -16  1.39
SO SRCPARAM NB3  0.00000000947 4.15 8.0 80.0 -10  1.39
SO SRCPARAM NB4  0.00000000947 4.15 8.0 80.0  0   1.39
SO SRCPARAM NB5  0.00000000947 4.15 8.0 80.0  0   1.39
SO SRCPARAM NB6  0.00000000947 4.15 8.0 80.0  0   1.39
SO SRCPARAM SB1  0.00000000947 4.15 8.0 80.0  0   1.39
SO SRCPARAM SB2  0.00000000947 4.15 8.0 80.0  0   1.39
SO SRCPARAM SB3  0.00000000947 4.15 8.0 80.0  0   1.39
SO SRCPARAM SB4  0.00000000947 4.15 8.0 80.0 -10  1.39
SO SRCPARAM SB5  0.00000000947 4.15 8.0 80.0 -16  1.39
SO SRCPARAM SB6  0.00000000947 4.15 8.0 80.0 -23  1.39

SO SRCGROUP ALL
SO FINISHED
RE STARTING


RE DISCCART  20 12  0



RE FINISHED

ME STARTING
ME INPUTFIL CHV02600.asc
ME ANEMHGHT 10 METERS

ME SURFDATA 2703  2002
ME UAIRDATA 2703  2002

ME FINISHED
OU STARTING
```

OU RECTABLE ALLAVE FIRST

OU FINISHED

```
**********************************
*** SETUP Finishes Successfully ***
**********************************
```

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 *** ISCST3 - VERSION 00101 ***    *** WCCSL/CUMULATIVE DIESEL PARTICULATE- RICHMOND
PARKWAY/GERTRUDE       ***        09/17/03
                                   ***
***        11:22:52
**MODELOPTs:
PAGE   1
CONC                        URBAN  FLAT   FLGPOL DFAULT

                                          ***     MODEL SETUP OPTIONS SUMMARY       ***
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - -

**Intermediate Terrain Processing is Selected

**Model Is Setup For Calculation of Average CONCentration Values.

  --  SCAVENGING/DEPOSITION LOGIC --
**Model Uses NO DRY DEPLETION.  DDPLETE =  F
**Model Uses NO WET DEPLETION.  WDPLETE =  F
**NO WET SCAVENGING Data Provided.
**NO GAS DRY DEPOSITION Data Provided.
**Model Does NOT Use GRIDDED TERRAIN Data for Depletion Calculations

**Model Uses URBAN Dispersion.

**Model Uses Regulatory DEFAULT Options:
           1. Final Plume Rise.
           2. Stack-tip Downwash.
           3. Buoyancy-induced Dispersion.
           4. Use Calms Processing Routine.
           5. Not Use Missing Data Processing Routine.
           6. Default Wind Profile Exponents.
           7. Default Vertical Potential Temperature Gradients.
           8. "Upper Bound" Values for Supersquat Buildings.
           9. No Exponential Decay for URBAN/Non-SO2

**Model Assumes Receptors on FLAT Terrain.

**Model Accepts FLAGPOLE Receptor Heights.

**Model Calculates PERIOD Averages Only

**This Run Includes:    12 Source(s);      1 Source Group(s); and       1 Receptor(s)

**The Model Assumes A Pollutant Type of:  OTHER

**Model Set To Continue RUNning After the Setup Testing.

**Output Options Selected:
         Model Outputs Tables of PERIOD Averages by Receptor
         Model Outputs Tables of Highest Short Term Values by Receptor (RECTABLE Keyword)

**NOTE:  The Following Flags May Appear Following CONC Values:  c for Calm Hours
                                                                m for Missing Hours
                                                                b for Both Calm and
Missing Hours

**Misc. Inputs:  Anem. Hgt. (m) =    10.00 ;    Decay Coef. =    0.000     ;    Rot. Angle
=     0.0
                 Emission Units = GRAMS/SEC                                   ;  Emission
Rate Unit Factor =   0.10000E+07
                 Output Units   = MICROGRAMS/M**3

**Approximate Storage Requirements of Model =     1.2 MB of RAM.

**Input Runstream File:          richmnd1.txt
**Output Print File:             richmnd1.out
```

CONC URBAN FLAT FLGPOL DFAULT

*** AREA SOURCE DATA ***

SOURCE ID	NUMBER PART. CATS.	EMISSION RATE (GRAMS/SEC /METER**2)	COORD (SW CORNER) X (METERS)	Y (METERS)	BASE ELEV. (METERS)	RELEASE HEIGHT (METERS)	X-DIM OF AREA (METERS)	Y-DIM OF AREA (METERS)	ORIENT. (DEG.)	INIT. SZ (METERS)
NB1	0	0.94700E-08	65.2	-228.9	0.0	4.15	8.00	80.00	-23.00	1.39
NB2	0	0.94700E-08	33.9	-155.3	0.0	4.15	8.00	80.00	-16.00	1.39
NB3	0	0.94700E-08	13.9	-78.4	0.0	4.15	8.00	80.00	-10.00	1.39
NB4	0	0.94700E-08	2.0	0.0	0.0	4.15	8.00	80.00	0.00	1.39
NB5	0	0.94700E-08	2.0	80.0	0.0	4.15	8.00	80.00	0.00	1.39
NB6	0	0.94700E-08	2.0	160.0	0.0	4.15	8.00	80.00	0.00	1.39
SB1	0	0.94700E-08	-10.0	160.0	0.0	4.15	8.00	80.00	0.00	1.39
SB2	0	0.94700E-08	-10.0	80.0	0.0	4.15	8.00	80.00	0.00	1.39
SB3	0	0.94700E-08	-10.0	0.0	0.0	4.15	8.00	80.00	0.00	1.39
SB4	0	0.94700E-08	3.9	-78.4	0.0	4.15	8.00	80.00	-10.00	1.39
SB5	0	0.94700E-08	23.9	-155.5	0.0	4.15	8.00	80.00	-16.00	1.39
SB6	0	0.94700E-08	55.2	-228.9	0.0	4.15	8.00	80.00	-23.00	1.39

CONC URBAN FLAT FLGPOL DFAULT

*** SOURCE IDs DEFINING SOURCE GROUPS ***

GROUP ID	SOURCE IDs
ALL	NB1 , NB2 , NB3 , NB4 , NB5 , NB6 , SB1 , SB2 , SB3 , SB4 , SB5 , SB6 ,

CONC URBAN FLAT FLGPOL DFAULT

*** DISCRETE CARTESIAN RECEPTORS ***
(X-COORD, Y-COORD, ZELEV, ZFLAG)
(METERS)

(20.0, 12.0, 0.0, 0.0);

*** ISCST3 - VERSION 00101 ***   *** WCCSL/CUMULATIVE DIESEL PARTICULATE- RICHMOND PARKWAY/GERTRUDE   ***   09/17/03 ***

*** 11:22:52
**MODELOPTs:
PAGE 5
CONC   URBAN FLAT FLGPOL DFAULT

*** METEOROLOGICAL DAYS SELECTED FOR PROCESSING ***

(1=YES; 0=NO)

1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
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1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1

NOTE: METEOROLOGICAL DATA ACTUALLY PROCESSED WILL ALSO DEPEND ON WHAT IS INCLUDED IN THE DATA FILE.

*** UPPER BOUND OF FIRST THROUGH FIFTH WIND SPEED CATEGORIES ***

(METERS/SEC)

1.54, 3.09, 5.14, 8.23, 10.80,

*** WIND PROFILE EXPONENTS ***

STABILITY CATEGORY	WIND SPEED CATEGORY 1	2	3	4	5	6
A	.15000E+00	.15000E+00	.15000E+00	.15000E+00	.15000E+00	.15000E+00
B	.15000E+00	.15000E+00	.15000E+00	.15000E+00	.15000E+00	.15000E+00
C	.20000E+00	.20000E+00	.20000E+00	.20000E+00	.20000E+00	.20000E+00
D	.25000E+00	.25000E+00	.25000E+00	.25000E+00	.25000E+00	.25000E+00
E	.30000E+00	.30000E+00	.30000E+00	.30000E+00	.30000E+00	.30000E+00
F	.30000E+00	.30000E+00	.30000E+00	.30000E+00	.30000E+00	.30000E+00

*** VERTICAL POTENTIAL TEMPERATURE GRADIENTS ***
(DEGREES KELVIN PER METER)

STABILITY CATEGORY	WIND SPEED CATEGORY 1	2	3	4	5	6

	A	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00
	B	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00
	C	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00
	D	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00
	E	.20000E-01	.20000E-01	.20000E-01	.20000E-01	.20000E-01
	F	.35000E-01	.35000E-01	.35000E-01	.35000E-01	.35000E-01

CONC URBAN FLAT FLGPOL DFAULT

*** THE FIRST 24 HOURS OF METEOROLOGICAL DATA ***

FILE: CHV02600.asc
FORMAT: (4I2,2F9.4,F6.1,I2,2F7.1,f9.4,f10.1,f8.4,i4,f7.2)
SURFACE STATION NO.: 2703 UPPER AIR STATION NO.: 2703
NAME: UNKNOWN NAME: UNKNOWN
YEAR: 2002 YEAR: 2002

YR	MN	DY	HR	FLOW VECTOR	SPEED (M/S)	TEMP (K)	STAB CLASS	MIXING HEIGHT (M) RURAL	MIXING HEIGHT (M) URBAN	USTAR (M/S)	M-O LENGTH (M)	Z-0 (M)	IPCODE	PRATE (mm/HR)
10	01	01	01	262.6	2.77	285.8	4	600.0	600.0	0.0000	0.0	0.0000	0	0.00
10	01	01	02	246.9	1.97	285.9	4	600.0	600.0	0.0000	0.0	0.0000	0	0.00
10	01	01	03	246.5	3.40	285.9	4	600.0	600.0	0.0000	0.0	0.0000	0	0.00
10	01	01	04	242.7	2.91	285.9	5	600.0	600.0	0.0000	0.0	0.0000	0	0.00
10	01	01	05	246.5	3.22	285.8	5	600.0	600.0	0.0000	0.0	0.0000	0	0.00
10	01	01	06	249.4	2.68	285.5	4	600.0	600.0	0.0000	0.0	0.0000	0	0.00
10	01	01	07	212.4	1.21	285.3	5	600.0	600.0	0.0000	0.0	0.0000	0	0.00
10	01	01	08	241.0	1.39	285.1	4	600.0	600.0	0.0000	0.0	0.0000	0	0.00
10	01	01	09	239.7	1.52	285.3	4	600.0	600.0	0.0000	0.0	0.0000	0	0.00
10	01	01	10	277.0	1.03	285.8	3	600.0	600.0	0.0000	0.0	0.0000	0	0.00
10	01	01	11	318.0	2.28	286.3	4	600.0	600.0	0.0000	0.0	0.0000	0	0.00
10	01	01	12	355.7	1.97	286.5	3	600.0	600.0	0.0000	0.0	0.0000	0	0.00
10	01	01	13	8.2	1.74	286.5	3	600.0	600.0	0.0000	0.0	0.0000	0	0.00
10	01	01	14	339.6	2.46	286.1	4	600.0	600.0	0.0000	0.0	0.0000	0	0.00
10	01	01	15	323.7	2.15	286.5	4	600.0	600.0	0.0000	0.0	0.0000	0	0.00
10	01	01	16	331.5	3.17	287.5	4	600.0	600.0	0.0000	0.0	0.0000	0	0.00
10	01	01	17	331.4	4.29	288.0	4	600.0	600.0	0.0000	0.0	0.0000	0	0.00
10	01	01	18	333.7	5.77	288.3	4	600.0	600.0	0.0000	0.0	0.0000	0	0.00
10	01	01	19	335.9	5.10	288.0	4	600.0	600.0	0.0000	0.0	0.0000	0	0.00
10	01	01	20	339.7	4.69	288.1	4	600.0	600.0	0.0000	0.0	0.0000	0	0.00
10	01	01	21	347.3	4.07	287.8	4	600.0	600.0	0.0000	0.0	0.0000	0	0.00
10	01	01	22	344.4	5.41	288.1	4	600.0	600.0	0.0000	0.0	0.0000	0	0.00

10 01 01 23	358.2	5.28	287.3	4	600.0	600.0	0.0000	0.0	0.0000	0	0.00
10 01 01 24	3.3	4.92	286.8	4	600.0	600.0	0.0000	0.0	0.0000	0	0.00

*** NOTES: STABILITY CLASS 1=A, 2=B, 3=C, 4=D, 5=E AND 6=F.
FLOW VECTOR IS DIRECTION TOWARD WHICH WIND IS BLOWING.

*** ISCST3 - VERSION 00101 *** *** WCCSL/CUMULATIVE DIESEL PARTICULATE- RICHMOND PARKWAY/GERTRUDE *** 09/17/03 ***

*** 11:22:52
**MODELOPTs:
PAGE 7
CONC URBAN FLAT FLGPOL DFAULT

*** THE PERIOD (8760 HRS) AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): NB1 , NB2 , NB3 , NB4 , NB5 , NB6 , SB1 , SB2 , SB3 , SB4 , SB5 , SB6 ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF OTHER IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC
20.00	12.00	0.00418			

```
 *** ISCST3 - VERSION 00101 ***    *** WCCSL/CUMULATIVE DIESEL PARTICULATE- RICHMOND
PARKWAY/GERTRUDE        ***        09/17/03
                                    ***
***        11:22:52
**MODELOPTs:
PAGE   8
CONC                        URBAN  FLAT   FLGPOL DFAULT

                                          *** THE SUMMARY OF MAXIMUM PERIOD (  8760 HRS)
RESULTS ***


                                       ** CONC OF OTHER    IN MICROGRAMS/M**3
**


NETWORK
GROUP ID                      AVERAGE CONC                 RECEPTOR  (XR, YR, ZELEV, ZFLAG)
OF TYPE  GRID-ID
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - -

ALL      1ST HIGHEST VALUE IS       0.00418 AT (      20.00,       12.00,      0.00,
0.00)  DC      NA
         2ND HIGHEST VALUE IS       0.00000 AT (       0.00,        0.00,      0.00,
0.00)
         3RD HIGHEST VALUE IS       0.00000 AT (       0.00,        0.00,      0.00,
0.00)
         4TH HIGHEST VALUE IS       0.00000 AT (       0.00,        0.00,      0.00,
0.00)
         5TH HIGHEST VALUE IS       0.00000 AT (       0.00,        0.00,      0.00,
0.00)
         6TH HIGHEST VALUE IS       0.00000 AT (       0.00,        0.00,      0.00,
0.00)
         7TH HIGHEST VALUE IS       0.00000 AT (       0.00,        0.00,      0.00,
0.00)
         8TH HIGHEST VALUE IS       0.00000 AT (       0.00,        0.00,      0.00,
0.00)
         9TH HIGHEST VALUE IS       0.00000 AT (       0.00,        0.00,      0.00,
0.00)
        10TH HIGHEST VALUE IS       0.00000 AT (       0.00,        0.00,      0.00,
0.00)


 *** RECEPTOR TYPES:  GC = GRIDCART
                      GP = GRIDPOLR
                      DC = DISCCART
                      DP = DISCPOLR
                      BD = BOUNDARY
```

```
 *** ISCST3 - VERSION 00101 ***    *** WCCSL/CUMULATIVE DIESEL PARTICULATE- RICHMOND
PARKWAY/GERTRUDE       ***        09/17/03
                                   ***
***        11:22:52
**MODELOPTs:
PAGE   9
CONC                        URBAN  FLAT   FLGPOL DFAULT


*** Message Summary : ISCST3 Model Execution ***

 --------- Summary of Total Messages --------

A Total of            0 Fatal Error Message(s)
A Total of            0 Warning Message(s)
A Total of            9 Informational Message(s)

A Total of            9 Calm Hours Identified


   ******** FATAL ERROR MESSAGES ********
              ***  NONE  ***


   ********   WARNING MESSAGES   ********
              ***  NONE  ***


   ************************************
   *** ISCST3 Finishes Successfully ***
   ************************************
```

```
CO STARTING
CO TITLEONE WCCSL/CUMULATIVE DIESEL PARTICULATE- RICHMOND PARKWAY/HILLTOP

CO MODELOPT CONC URBAN DFAULT


CO AVERTIME PERIOD


CO POLLUTID OTHER
CO FLAGPOLE 1.5
CO RUNORNOT RUN
CO FINISHED

SO STARTING
SO LOCATION NB1  AREA   -97.3  -386.5
SO LOCATION NB2  AREA   -76.6  -309.2
SO LOCATION NB3  AREA   -55.9  -231.9
SO LOCATION NB4  AREA   -35.2  -154.6
SO LOCATION NB5  AREA   -14.5   -77.3
SO LOCATION NB6  AREA     6.2       0
SO LOCATION NB7  AREA    26.9    77.3
SO LOCATION NB8  AREA    47.6    154.6
SO LOCATION NB9  AREA    68.3    231.9
SO LOCATION NB10 AREA    89.0    309.2
SO LOCATION SB1  AREA    67.9    309.2
SO LOCATION SB2  AREA    47.2    231.9
SO LOCATION SB3  AREA    26.5    154.6
SO LOCATION SB4  AREA     5.8     77.3
SO LOCATION SB5  AREA   -14.9       0
SO LOCATION SB6  AREA   -35.6    -77.3
SO LOCATION SB7  AREA   -56.3    -154.6
SO LOCATION SB8  AREA   -77.0    -231.0
SO LOCATION SB9  AREA   -99.7    -309.2
SO LOCATION SB10  AREA  -120.4   -386.5

SO SRCPARAM NB1  0.00000000917 4.15 8.0 80.0 15  1.39
SO SRCPARAM NB2  0.00000000917 4.15 8.0 80.0 15  1.39
SO SRCPARAM NB3  0.00000000917 4.15 8.0 80.0 15  1.39
SO SRCPARAM NB4  0.00000000917 4.15 8.0 80.0 15  1.39
SO SRCPARAM NB5  0.00000000917 4.15 8.0 80.0 15  1.39
SO SRCPARAM NB6  0.00000000917 4.15 8.0 80.0 15  1.39
SO SRCPARAM NB7  0.00000000917 4.15 8.0 80.0 15  1.39
SO SRCPARAM NB8  0.00000000917 4.15 8.0 80.0 15  1.39
SO SRCPARAM NB9  0.00000000917 4.15 8.0 80.0 15  1.39
SO SRCPARAM NB10  0.00000000917 4.15 8.0 80.0 15  1.39
SO SRCPARAM SB1  0.00000000917 4.15 8.0 80.0 15  1.39
SO SRCPARAM SB2  0.00000000917 4.15 8.0 80.0 15  1.39
SO SRCPARAM SB3  0.00000000917 4.15 8.0 80.0 15  1.39
SO SRCPARAM SB4  0.00000000917 4.15 8.0 80.0 15  1.39
SO SRCPARAM SB5  0.00000000917 4.15 8.0 80.0 15  1.39
SO SRCPARAM SB6  0.00000000917 4.15 8.0 80.0 15  1.39
SO SRCPARAM SB7  0.00000000917 4.15 8.0 80.0 15  1.39
SO SRCPARAM SB8  0.00000000917 4.15 8.0 80.0 15  1.39
SO SRCPARAM SB9  0.00000000917 4.15 8.0 80.0 15  1.39
SO SRCPARAM SB10  0.00000000917 4.15 8.0 80.0 15  1.39

SO SRCGROUP ALL
SO FINISHED
RE STARTING


RE DISCCART  -129.5 -152.4  0
```

```
RE DISCCART   -94.5  -94.5  0
RE DISCCART   -68.6  -48.8  0
RE DISCCART   -61.0  -15.2  0
RE DISCCART   -35.0   68.6  0
RE DISCCART       0  109.8  0
RE DISCCART    25.9  149.4  0
RE DISCCART    48.8  192.0  0

RE FINISHED

ME STARTING
ME INPUTFIL CHV02600.asc
ME ANEMHGHT 10 METERS

ME SURFDATA 2703  2002
ME UAIRDATA 2703  2002

ME FINISHED
OU STARTING
OU RECTABLE ALLAVE FIRST



OU FINISHED

***********************************
*** SETUP Finishes Successfully ***
***********************************
```

```
 *** ISCST3 - VERSION 00101 ***    *** WCCSL/CUMULATIVE DIESEL PARTICULATE- RICHMOND
PARKWAY/HILLTOP        ***        09/17/03
                                   ***
***        11:15:24
**MODELOPTs:
PAGE   1
CONC                        URBAN  FLAT   FLGPOL DFAULT

                                          ***     MODEL SETUP OPTIONS SUMMARY       ***
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - -

**Intermediate Terrain Processing is Selected

**Model Is Setup For Calculation of Average CONCentration Values.

  --  SCAVENGING/DEPOSITION LOGIC --
**Model Uses NO DRY DEPLETION.  DDPLETE =  F
**Model Uses NO WET DEPLETION.  WDPLETE =  F
**NO WET SCAVENGING Data Provided.
**NO GAS DRY DEPOSITION Data Provided.
**Model Does NOT Use GRIDDED TERRAIN Data for Depletion Calculations

**Model Uses URBAN Dispersion.

**Model Uses Regulatory DEFAULT Options:
           1. Final Plume Rise.
           2. Stack-tip Downwash.
           3. Buoyancy-induced Dispersion.
           4. Use Calms Processing Routine.
           5. Not Use Missing Data Processing Routine.
           6. Default Wind Profile Exponents.
           7. Default Vertical Potential Temperature Gradients.
           8. "Upper Bound" Values for Supersquat Buildings.
           9. No Exponential Decay for URBAN/Non-SO2

**Model Assumes Receptors on FLAT Terrain.

**Model Accepts FLAGPOLE Receptor Heights.

**Model Calculates PERIOD Averages Only

**This Run Includes:    20 Source(s);      1 Source Group(s); and       8 Receptor(s)

**The Model Assumes A Pollutant Type of:  OTHER

**Model Set To Continue RUNning After the Setup Testing.

**Output Options Selected:
         Model Outputs Tables of PERIOD Averages by Receptor
         Model Outputs Tables of Highest Short Term Values by Receptor (RECTABLE Keyword)

**NOTE:  The Following Flags May Appear Following CONC Values:  c for Calm Hours
                                                                m for Missing Hours
                                                                b for Both Calm and
Missing Hours

**Misc. Inputs:  Anem. Hgt. (m) =    10.00 ;    Decay Coef. =    0.000     ;    Rot. Angle
=     0.0
                 Emission Units = GRAMS/SEC                                  ;  Emission
Rate Unit Factor =   0.10000E+07
                 Output Units   = MICROGRAMS/M**3

**Approximate Storage Requirements of Model =     1.2 MB of RAM.

**Input Runstream File:          richmnd2.txt
**Output Print File:             richmnd2.out
```

*** ISCST3 - VERSION 00101 *** *** WCCSL/CUMULATIVE DIESEL PARTICULATE- RICHMOND PARKWAY/HILLTOP *** 09/17/03
***
*** 11:15:24
**MODELOPTs:
PAGE 2
CONC URBAN FLAT FLGPOL DFAULT

*** AREA SOURCE DATA ***

ORIENT. SOURCE OF AREA ID (DEG.)	INIT. PART. SZ CATS. (METERS)	NUMBER EMISSION RATE (GRAMS/SEC /METER**2) SCALAR VARY BY	COORD (SW CORNER) X (METERS)	Y (METERS)	BASE ELEV. (METERS)	RELEASE HEIGHT (METERS)	X-DIM OF AREA (METERS)	Y-DIM OF AREA (METERS)
NB1	0	0.91700E-08	-97.3	-386.5	0.0	4.15	8.00	80.00
15.00	1.39							
NB2	0	0.91700E-08	-76.6	-309.2	0.0	4.15	8.00	80.00
15.00	1.39							
NB3	0	0.91700E-08	-55.9	-231.9	0.0	4.15	8.00	80.00
15.00	1.39							
NB4	0	0.91700E-08	-35.2	-154.6	0.0	4.15	8.00	80.00
15.00	1.39							
NB5	0	0.91700E-08	-14.5	-77.3	0.0	4.15	8.00	80.00
15.00	1.39							
NB6	0	0.91700E-08	6.2	0.0	0.0	4.15	8.00	80.00
15.00	1.39							
NB7	0	0.91700E-08	26.9	77.3	0.0	4.15	8.00	80.00
15.00	1.39							
NB8	0	0.91700E-08	47.6	154.6	0.0	4.15	8.00	80.00
15.00	1.39							
NB9	0	0.91700E-08	68.3	231.9	0.0	4.15	8.00	80.00
15.00	1.39							
NB10	0	0.91700E-08	89.0	309.2	0.0	4.15	8.00	80.00
15.00	1.39							
SB1	0	0.91700E-08	67.9	309.2	0.0	4.15	8.00	80.00
15.00	1.39							
SB2	0	0.91700E-08	47.2	231.9	0.0	4.15	8.00	80.00
15.00	1.39							
SB3	0	0.91700E-08	26.5	154.6	0.0	4.15	8.00	80.00
15.00	1.39							
SB4	0	0.91700E-08	5.8	77.3	0.0	4.15	8.00	80.00
15.00	1.39							
SB5	0	0.91700E-08	-14.9	0.0	0.0	4.15	8.00	80.00
15.00	1.39							
SB6	0	0.91700E-08	-35.6	-77.3	0.0	4.15	8.00	80.00
15.00	1.39							
SB7	0	0.91700E-08	-56.3	-154.6	0.0	4.15	8.00	80.00
15.00	1.39							
SB8	0	0.91700E-08	-77.0	-231.0	0.0	4.15	8.00	80.00
15.00	1.39							
SB9	0	0.91700E-08	-99.7	-309.2	0.0	4.15	8.00	80.00
15.00	1.39							
SB10	0	0.91700E-08	-120.4	-386.5	0.0	4.15	8.00	80.00
15.00	1.39							

CONC URBAN FLAT FLGPOL DFAULT

*** SOURCE IDs DEFINING SOURCE GROUPS ***

GROUP ID	SOURCE IDs
ALL	NB1 , NB2 , NB3 , NB4 , NB5 , NB6 , NB7 , NB8 , NB9 , NB10 , SB1 , SB2 , SB3 , SB4 , SB5 , SB6 , SB7 , SB8 , SB9 , SB10 ,

CONC URBAN FLAT FLGPOL DFAULT

*** DISCRETE CARTESIAN RECEPTORS ***
(X-COORD, Y-COORD, ZELEV, ZFLAG)
(METERS)

(-129.5, -152.4, 0.0, 0.0); (-94.5, -94.5, 0.0, 0.0); □□□□□□□□□□□□□□□□□□□□□□□□
(-68.6, -48.8, 0.0, 0.0); (-61.0, -15.2, 0.0, 0.0);
(-35.0, 68.6, 0.0, 0.0); (0.0, 109.8, 0.0, 0.0);
(25.9, 149.4, 0.0, 0.0); (48.8, 192.0, 0.0, 0.0);

CONC URBAN FLAT FLGPOL DFAULT

*** METEOROLOGICAL DAYS SELECTED FOR PROCESSING ***

(1=YES; 0=NO)

```
   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1
1 1 1   1 1 1 1 1 1 1 1 1 1
   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1
1 1 1   1 1 1 1 1 1 1 1 1 1
   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1
1 1 1   1 1 1 1 1 1 1 1 1 1
   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1
1 1 1   1 1 1 1 1 1 1 1 1 1
   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1
1 1 1   1 1 1 1 1 1 1 1 1 1
   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1
1 1 1   1 1 1 1 1 1 1 1 1 1
   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1
1 1 1   1 1 1 1 1 1 1 1 1 1
   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1
1 1 1   1 1 1 1 1 1 1 1 1 1
   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1
```

NOTE: METEOROLOGICAL DATA ACTUALLY PROCESSED WILL ALSO DEPEND ON WHAT IS INCLUDED IN THE DATA FILE.

*** UPPER BOUND OF FIRST THROUGH FIFTH WIND SPEED CATEGORIES ***

(METERS/SEC)

1.54, 3.09, 5.14, 8.23, 10.80,

*** WIND PROFILE EXPONENTS ***

STABILITY CATEGORY	WIND SPEED CATEGORY 1	2	3	4	5	6
A	.15000E+00	.15000E+00	.15000E+00	.15000E+00	.15000E+00	.15000E+00
B	.15000E+00	.15000E+00	.15000E+00	.15000E+00	.15000E+00	.15000E+00
C	.20000E+00	.20000E+00	.20000E+00	.20000E+00	.20000E+00	.20000E+00
D	.25000E+00	.25000E+00	.25000E+00	.25000E+00	.25000E+00	.25000E+00
E	.30000E+00	.30000E+00	.30000E+00	.30000E+00	.30000E+00	.30000E+00
F	.30000E+00	.30000E+00	.30000E+00	.30000E+00	.30000E+00	.30000E+00

*** VERTICAL POTENTIAL TEMPERATURE GRADIENTS ***
(DEGREES KELVIN PER METER)

STABILITY CATEGORY	WIND SPEED CATEGORY 1	2	3	4	5	6

	A	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00
	B	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00
	C	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00
	D	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00
	E	.20000E-01	.20000E-01	.20000E-01	.20000E-01	.20000E-01
	F	.35000E-01	.35000E-01	.35000E-01	.35000E-01	.35000E-01

*** ISCST3 - VERSION 00101 *** *** WCCSL/CUMULATIVE DIESEL PARTICULATE- RICHMOND PARKWAY/HILLTOP *** 09/17/03
***
*** 11:15:24
**MODELOPTs:
PAGE 6
CONC URBAN FLAT FLGPOL DFAULT

*** THE FIRST 24 HOURS OF METEOROLOGICAL DATA ***

FILE: CHV02600.asc
FORMAT: (4I2,2F9.4,F6.1,I2,2F7.1,f9.4,f10.1,f8.4,i4,f7.2)
SURFACE STATION NO.: 2703 UPPER AIR STATION NO.: 2703
NAME: UNKNOWN NAME: UNKNOWN
YEAR: 2002 YEAR: 2002

YR	MN	DY	HR	FLOW VECTOR	SPEED (M/S)	TEMP (K)	STAB CLASS	MIXING HEIGHT (M) RURAL	MIXING HEIGHT (M) URBAN	USTAR (M/S)	M-O LENGTH (M)	Z-0 (M)	IPCODE	PRATE (mm/HR)
10	01	01	01	262.6	2.77	285.8	4	600.0	600.0	0.0000	0.0	0.0000	0	0.00
10	01	01	02	246.9	1.97	285.9	4	600.0	600.0	0.0000	0.0	0.0000	0	0.00
10	01	01	03	246.5	3.40	285.9	4	600.0	600.0	0.0000	0.0	0.0000	0	0.00
10	01	01	04	242.7	2.91	285.9	5	600.0	600.0	0.0000	0.0	0.0000	0	0.00
10	01	01	05	246.5	3.22	285.8	5	600.0	600.0	0.0000	0.0	0.0000	0	0.00
10	01	01	06	249.4	2.68	285.5	4	600.0	600.0	0.0000	0.0	0.0000	0	0.00
10	01	01	07	212.4	1.21	285.3	5	600.0	600.0	0.0000	0.0	0.0000	0	0.00
10	01	01	08	241.0	1.39	285.1	4	600.0	600.0	0.0000	0.0	0.0000	0	0.00
10	01	01	09	239.7	1.52	285.3	4	600.0	600.0	0.0000	0.0	0.0000	0	0.00
10	01	01	10	277.0	1.03	285.8	3	600.0	600.0	0.0000	0.0	0.0000	0	0.00
10	01	01	11	318.0	2.28	286.3	4	600.0	600.0	0.0000	0.0	0.0000	0	0.00
10	01	01	12	355.7	1.97	286.5	3	600.0	600.0	0.0000	0.0	0.0000	0	0.00
10	01	01	13	8.2	1.74	286.5	3	600.0	600.0	0.0000	0.0	0.0000	0	0.00
10	01	01	14	339.6	2.46	286.1	4	600.0	600.0	0.0000	0.0	0.0000	0	0.00
10	01	01	15	323.7	2.15	286.5	4	600.0	600.0	0.0000	0.0	0.0000	0	0.00
10	01	01	16	331.5	3.17	287.5	4	600.0	600.0	0.0000	0.0	0.0000	0	0.00
10	01	01	17	331.4	4.29	288.0	4	600.0	600.0	0.0000	0.0	0.0000	0	0.00
10	01	01	18	333.7	5.77	288.3	4	600.0	600.0	0.0000	0.0	0.0000	0	0.00
10	01	01	19	335.9	5.10	288.0	4	600.0	600.0	0.0000	0.0	0.0000	0	0.00
10	01	01	20	339.7	4.69	288.1	4	600.0	600.0	0.0000	0.0	0.0000	0	0.00
10	01	01	21	347.3	4.07	287.8	4	600.0	600.0	0.0000	0.0	0.0000	0	0.00
10	01	01	22	344.4	5.41	288.1	4	600.0	600.0	0.0000	0.0	0.0000	0	0.00

10 01 01 23	358.2	5.28	287.3	4	600.0	600.0	0.0000	0.0	0.0000	0	0.00
10 01 01 24	3.3	4.92	286.8	4	600.0	600.0	0.0000	0.0	0.0000	0	0.00

*** NOTES: STABILITY CLASS 1=A, 2=B, 3=C, 4=D, 5=E AND 6=F.
FLOW VECTOR IS DIRECTION TOWARD WHICH WIND IS BLOWING.

*** ISCST3 - VERSION 00101 *** *** WCCSL/CUMULATIVE DIESEL PARTICULATE- RICHMOND PARKWAY/HILLTOP *** 09/17/03
***
*** 11:15:24
**MODELOPTs:
PAGE 7
CONC URBAN FLAT FLGPOL DFAULT

*** THE PERIOD (8760 HRS) AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): NB1 , NB2 , NB3 , NB4 , NB5 , NB6 , NB7 , NB8 , NB9 , NB10 , SB1 , SB2 , SB3 , SB4 , SB5 , SB6 , SB7 , SB8 , SB9 , SB10 ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF OTHER IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC
-129.50	-152.40	0.00192	-94.50	-94.50	0.00255
-68.60	-48.80	0.00311	-61.00	-15.20	0.00306
-35.00	68.60	0.00323	0.00	109.80	0.00461
25.90	149.40	0.00541	48.80	192.00	0.00517

```
 *** ISCST3 - VERSION 00101 ***    *** WCCSL/CUMULATIVE DIESEL PARTICULATE- RICHMOND
PARKWAY/HILLTOP        ***        09/17/03
                                   ***
***        11:15:24
**MODELOPTs:
PAGE   8
CONC                        URBAN  FLAT   FLGPOL DFAULT

                                         *** THE SUMMARY OF MAXIMUM PERIOD (  8760 HRS)
RESULTS ***


                                      ** CONC OF OTHER    IN MICROGRAMS/M**3
**


NETWORK
GROUP ID                      AVERAGE CONC                RECEPTOR  (XR, YR, ZELEV, ZFLAG)
OF TYPE  GRID-ID
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - -

ALL      1ST HIGHEST VALUE IS       0.00541 AT (      25.90,      149.40,      0.00,
0.00)  DC      NA
         2ND HIGHEST VALUE IS       0.00517 AT (      48.80,      192.00,      0.00,
0.00)  DC      NA
         3RD HIGHEST VALUE IS       0.00461 AT (       0.00,      109.80,      0.00,
0.00)  DC      NA
         4TH HIGHEST VALUE IS       0.00323 AT (     -35.00,       68.60,      0.00,
0.00)  DC      NA
         5TH HIGHEST VALUE IS       0.00311 AT (     -68.60,      -48.80,      0.00,
0.00)  DC      NA
         6TH HIGHEST VALUE IS       0.00306 AT (     -61.00,      -15.20,      0.00,
0.00)  DC      NA
         7TH HIGHEST VALUE IS       0.00255 AT (     -94.50,      -94.50,      0.00,
0.00)  DC      NA
         8TH HIGHEST VALUE IS       0.00192 AT (    -129.50,     -152.40,      0.00,
0.00)  DC      NA
         9TH HIGHEST VALUE IS       0.00000 AT (       0.00,        0.00,      0.00,
0.00)
        10TH HIGHEST VALUE IS       0.00000 AT (       0.00,        0.00,      0.00,
0.00)


*** RECEPTOR TYPES:  GC = GRIDCART
                     GP = GRIDPOLR
                     DC = DISCCART
                     DP = DISCPOLR
                     BD = BOUNDARY
```

```
 *** ISCST3 - VERSION 00101 ***    *** WCCSL/CUMULATIVE DIESEL PARTICULATE- RICHMOND
PARKWAY/HILLTOP        ***        09/17/03
                                   ***
***        11:15:24
**MODELOPTs:
PAGE   9
CONC                        URBAN  FLAT   FLGPOL DFAULT


*** Message Summary : ISCST3 Model Execution ***

 --------- Summary of Total Messages --------

A Total of            0 Fatal Error Message(s)
A Total of            0 Warning Message(s)
A Total of            9 Informational Message(s)

A Total of            9 Calm Hours Identified


   ******** FATAL ERROR MESSAGES ********
              ***  NONE  ***


   ********   WARNING MESSAGES   ********
              ***  NONE  ***


   ************************************
   *** ISCST3 Finishes Successfully ***
   ************************************
```

APPENDIX 10C

ODOR IMPACT MINIMIZATION PLAN

West Contra Costa Sanitary Landfill

WCCSL COMPOST FACILITY

ODOR IMPACT MINIMIZATION PLAN

Prepared by West Contra Costa Sanitary Landfill

Environmental Management and Engineering Division

April 2003

West Contra Costa Sanitary Landfill

WCCSL COMPOST FACILITY

ODOR IMPACT MINIMIZATION PLAN

April 2003

Introduction

This West Contra Costa Sanitary Landfill (WCCSL) Odor Impact Minimization Plan (OIMP) has been developed to provide guidance to on-site personnel in the handling, storage, and removal of compostable materials, in accordance with 14 CCR 17863.4. This OIMP will be revised as necessary to reflect enforcement agency notifications of needed revisions. The revisions will be made within 30 days of the LEA notice. In addition, this OIMP will be reviewed annually to determine if any revisions are necessary.

The chipping and grinding of source separated green materials is conducted as part of the diversion efforts at the WCCSL Compost Facility. In short, green materials are received from the public and commercial sectors and stored in designated areas until processed (i.e., chipped and ground) by WCCSL personnel or a contractor. The feedstock is processed within 14 days of receipt and the finished products removed from the site within 7 days of processing (if they do not go to the compost process). Since the chipped and ground material is stored on-site longer than 7 days (as regulated in 14 CCR 17852(k)(1)(B)), this activity is not regulated as a green material composting operation.

Chipped and ground material is marketed as biomass fuel, compost feedstock, and mulch as well as for use as a soil amendment and erosion control. An average of 90% is used on-site as ADC and/or for erosion control per (up to 40,000 cy/year).

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1. Odor Monitoring Protocol

1.A. *Proximity of Odor Receptors*

The closest receptors will be personnel who will be on-site daily monitoring the status of the

operation/facility.

The closest off-site residential units are approximately one mile from the site. An adjacent wetland/wildlife viewing public access trail is currently being installed. The surrounding land uses may also be other odor sources, because the compost facility is adjacent to West Contra Costa Waste Water Treatment Facility, a refinery and exposed sulfur-containing bay mud in the adjacent tidelands and low tide-impacted wetlands.

1.B. *Method for Assessing Odor Impacts*

Each day the operator will evaluate on-site odors and evaluate operations for potential release of objectionable odors. Best Management Practices and good housekeeping measures will be implemented to minimize the release of objectionable odors (e.g., clearing spilled materials between piles, eliminating areas where water could pond and design drainage as prescribed in the annual winterization plan, load checking, and maintaining reasonably sized stockpiles of feedstock of chipped and ground material).

If objectionable on-site odors are detected, the operator will implement the following protocol:

1. Investigate and determine the likely source of the odor.

2. Determine if on-site management practice could remedy the problem and immediately take steps to remedy the situation. Possible sources and likely management actions are shown in Table 1.

3. Determine whether or not the odor is traveling beyond the site by patrolling the site perimeter and noting existing wind patterns by viewing the wind direction ribbons stationed around the site.

4. Determine whether or not the odor is significant enough to warrant contacting the adjacent neighbors an/or the LEA.

2. Meteorological Conditions (Including Seasonal Variations)

2.A. *Wind Velocity*

Historical wind data indicates prevailing wind direction to be from the west averaging about 10 mph. The most common seasonal variation is the winter rains and hot dry summers with cool morning fog. During January and February the wind direction switches to blowing from the north.

3. Complaint Response Protocol

In the event that a complaint is received, an operator's representative will:

1. Go to the location of the complaint to verify that the site is indeed responsible for the odor.
2. Investigate the nature of the source of the odor complaint and implement operational changes to minimize odors.
3. If warranted, meet with the LEA and complainant (if known and choosing to participate) within a reasonable time frame to discuss the nature of the source of the odor and operational changes proposed and/or implemented.
4. Document the complaint(s) in the Operations/Special Occurrence Log, including the nature of the complaint and actions taken to minimize odors in the future.

4. Design Considerations for Minimizing Odors

In odor to minimize the development of conditions that could lead to odor problems, the compostable material handling areas of the site were designed based on the nature and quantity of materials to be received and stored, climatologic factors, adjacent land use, grading, and drainage controls.

4.A. *Method and Degree of Aeration*

Windrow Management is implemented with at least 5 turnings during, which the temperature is maintained greater than 132 degrees F. If the temperature of the ground green waste pile reaches 170 degrees F, then the pile is cut down and spread out at shallower depths, is transported to the landfill working face to be buried or used as ADC. (See Attachment)

4.B. *Moisture Content of Materials*

Most of the material received consists of woody materials with a small percentage of materials that have high moisture content, such as grass clippings.

4.C. *Feedstock Characteristics*

The feedstock consists of green material, yard trimmings, and wood waste, as they are defined in 14 CCR 17852, in addition to certain segregated food wastes.

4.D. *Airborne Emission Production*

In order to reduce airborne emissions, water is used during the chipping and grinding and screening processes. The chipping and grinding equipment can be fitted with misters to reduce airborne emissions if odor or dust is problematic. If airborne emissions become an issue during the loading process, water can be applied with portable water trucks.

4.E. *Process Water Distribution*

Other than rainfall, no water is currently added to the feedstock or chipped and ground material. Misters on the chipping and grinding equipment, with most of it being absorbed during the chipping, grinding and screening processes, can apply water.

4.F. *Pad and Site Drainage and Permeability*

Since the compostible material handling, storage and processing is completed on the closed landfill, a three foot thick working pad was constructed which has been graded to minimize ponding and convey runoff to the designed drainage structures. Stormwater sampling is conducted in accordance with the landfill's waste discharge requirements/monitoring and reporting program.

4.G. *Equipment Reliability*

All equipment is maintained per the manufacturers recommendations. Adequate equipment is available on site.

4.H. *Personnel Training*

Personnel in this area have been trained in subjects pertinent to the site operation and maintenance, such as this OIMP, load checking procedures and heavy equipment operations (front loader/excavator and grinder). The contractor maintains their personnel's training records.

4.I. *Weather Event Impacts*

The only weather event impact is heavy rainfall which could impede processing activities. However, there is ample storage space available in the event operations have to temporarily cease due to adverse weather conditions.

4.J. *Utility Service Interruptions*

The equipment (e.g. tub grinder and screener) is powered by diesel engines and supplied from a 500-gallon fuel storage tank on the equipment service truck that is stationed on-site. An electric grinder is also utilized for compost material.

The electricity is produced on-site by the MSW landfill-gas-fired power plant. In case of plant upset or outage, PG&E will provide backup power service.

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5. Operating Procedures for Minimizing Odor

The primary sources of odors from this activity may occur during the grinding, windrow formation, screening process and when loading product that is being shipped to market. If stockpiled for an extended period of time, the ground green material may result in an anaerobic condition and create objectionable odors. As a result, the staff or contractor works diligently to remove the mulch products from the site within 7 days of processing and other chipped and ground material within 30 days of processing. The operator plans to manage all compostable material handling areas on the site in a manner that minimizes the development of conditions that could lead to objectionable odors. All materials that are causing odors will be moved to the landfill working face to be buried or used for alternative daily cover depending on the severity of the odor.

5.A. *Aeration*

See 4.A. above.

5.B. *Moisture Management*

Other than rainfall, no moisture is added to the feedstock or chipped and ground material. Compost windrows are watered daily during the summer months by a water truck to maintain proper decomposition rates and temperature conditions.

5.C. *Feedstock Quality*

The feedstock consists of green material, yard trimmings, and wood waste, as they are defined in 14 CCR 17852 and some segregated food waste material. All incoming feedstock is checked for physical contaminants. A spotter is on-site during operating hours 8:00-3:30 M-F, 9:00-4:00 Sat.-Sun.

5.D. *Drainage Controls*

Material storage and processing is completed on a three-foot thick pad that has been graded to minimize ponding and convey runoff to the designed drainage structures (Area B). Storm water sampling is conducted in accordance with the landfill's waste discharge requirements/monitoring and reporting program. The receiving water storage lagoon in the Area B portion of the WCCSL is sampled twice a year.

5.E. *Pad Maintenance*

Site personnel routinely inspect the pad for any evidence of ponding or drainage problems. Any standing water that is discovered will be absorbed with chipped material and the depression will be filled with soil.

5.F. *Wastewater Pond Controls*

All storm water/waste water is conveyed to the designated drainage channel and sampled in accordance with the landfill's waste discharge requirements/monitoring and reporting program. The receiving water storage lagoon in the Area B has a storage capacity of 111 million gallons. It can hold the equivalent of five 100-year return frequency storms.

5.G. *Storage Practices*

1. Storage Time

a. Feedstock

Feedstock will be processed within 7 days of receipt (indicate the average storage time/frequency of contractor to process material). Since most of the feedstock received is a woody material, longer storage times have not posed any odor problems.

b. Processed Material

Material that is not planned to be used on-site is removed from the site within 30 days of processing. Material planned to be used on-site as ADC or erosion control will be used with 60 days of processing.

2. Pile Geometry

a. Feedstock

Feedstock material does not provide a source of odors due to the porous nature of mainly bulky landscaping material. The pile depth is limited to less than 20 feet.

b. The ground green material would be a concern if the height of the pile were to be more than 20 feet for extended periods of time. When the dimensions of the pile reach this height, it is managed by conducting daily temperature readings and the pile is immediately cut down to shallower depths when the temperature reaches 170 degrees F.

c. The compost windrows are constructed to be approximately 9 feet by 9 feet by approximately 300 feet long. During the composting process the pile height decreases.

5.H. *Contingency Plans*

1. Equipment

In the event of equipment breakdown, back up equipment will be obtained from the contractor's equipment fleet or rented from a local company. In addition,

landfill equipment and operators are available in the event of an emergency.

2. **Water**

   The WCCSL personnel maintain a 2,000-gallon water truck mainly for composting and the landfill has an additional 4,000-gallon water truck for use. Reclaimed water is obtained from the adjacent West County Wastewater District treatment plant.

3. **Power**

   Equipment is diesel powered, with one of the grinders being electrically operated.

4. **Personnel**

   Additional personnel are available from a contractor as warranted. In addition, landfill personnel can provide assistance in the event of an emergency.

5.I. *Biofiltration*

Biofiltration equipment is not utilized at this site.

5.J. *Tarping*

Tarping of the feedstock or chipped and ground material is not warranted.

Table 1

Sources of Odor and Possible Management Techniques

Source of Odor	Possible Cause	Management Approach
Feedstock Receiving	Material sitting too long prior to processing	Expedite material processing
Aisles	Storm water allowed to pond	Absorb ponded water with wood chips/other absorbent, fill pothole, improve grading and/or drainage control
	Uncomposted Material in aisles	Clean aisles of spilled material
Stockpiles/Windrows	Ammonia odor (high nitrogen level)	Add additional wood chips (or other carbon source), recombine pile
	Sulfur Odor (anaerobic conditions	Increase turning frequency, check temperatures, add bulking agent
	Varying odors in pile	Turn windrows to achieve even mixing
	Odors generated after turning	Increase turning frequency, increase pile porosity, add odor-absorbing amendment (like sawdust); emergency action: cover windrow with a layer of compost
	Long retention time	Remove chipped and ground material more frequently
Curing Piles	High temperatures in windrow	Decrease pile size, increase windrow time prior to moving to curing
Retention Basin	Standing water overloaded with nutrients or sediment	Install filter berm before pond, clean out sediment in pond, enlarge pond size

APPENDIX 13A

WASTE RECYCLING CENTER OPERATIONS SUMMARY
AREA A SITE

APPENDIX 13A

WASTE RECYCLING CENTER OPERATIONS SUMMARY

AREA A SITE

FOR THE

WEST CONTRA COSTA

BULK MATERIALS PROCESSING CENTER

April 2003

INTRODUCTION

This document was prepared to provide a summary of the current planning efforts for implementation of the Waste Recycling Center (WRC). This was written using the proposed facility location at the alternate site in the Area A portion of the WCCSL.

Following this Introduction, this summary describes the facility with respect to customers using the Waste Recycling Center and the load-out/haul-out methodology of the recyclables and residual materials. Next, the planned relationships of the Waste Recycling Center to the other Bulk Materials Processing Center operations are described. This is followed by a description of the infrastructure involving access roads and the apron surrounding the building, landfill gas control, drainage control, electricity supply, water supply, telephone, fire control, facility office, employee break room, equipment servicing area, and site security. A residuals management plan is also included.

Waste Recycling Center Concept

WCCSL, Inc. proposes to open the new Waste Recycling Center (WRC) to replace the existing landfill Waste Shuttle Facility. In addition to relocation of this operation, the main changes between the WRC and the Shuttle Facility are the volume of materials handled, the addition of an improved system to load non-recovered wastes into transfer vehicles, and conducting the operations within a large building.

The WRC must begin operation prior to the time the WCCSL is filled to capacity. The primary purpose of the WRC is to construct a permanent facility where WCCSL, Inc. can achieve greater recycling diversion and transfer of the self-haul mixed wastes, wastes from garbage trucks, and the commercial and industrial roll-off boxes that are not processed at the existing Integrated Resource Recovery Facility (IRRF) Central Processing Facility.

Any waste residues remaining after processing for recyclables will be disposed at the landfill working face, or hauled to Potrero Hills Landfill once the WCCSL has reached capacity and is no longer burying wastes for disposal.

The WRC has two parts in separate locations on the landfill: the Mixed Waste Processing Area and the Organic Materials Processing Area.

The BMPC WRC Mixed Waste Processing Area will consist of several main components – a) a receiving area, b) a sorting floor where wastes will be sorted into trash and recyclables, c) an elevated picking line where the recyclables will be sorted, and d) a transfer vehicle loadout area.

The WRC will also include the Organic Materials Processing Area. That area will consist of separate sub-areas for receipt of green waste, wood waste, food waste, agriculture wastes, biosolids, mixed waste paper, and soil.

Current Permit Capacity

This is the use of an existing facility (the landfill and the closed soil remediation facility). WCCSL, Inc. has existing permits for many of the components of the WRC, including recovering recyclables from incoming waste, using mechanized processing equipment, and permits to move waste and processing residues from the processing area to the working face. Most of the mixed waste operations envisioned for the WRC are currently taking place at the landfill Waste Shuttle Facility. WCCSL, Inc. proposes that the existing land use permit for the Soil Remediation Facility be revised from a contaminated soil processing operation to a waste recycling and transfer facility.

The organics processing operation (receiving and grinding green material and wood wastes) now occurs at the existing Composting Facility and mulch/bio-fuel production area.

Proposed Permit Capacity

The contaminated soil processing facility was approved to process up to 1200 tons per day of hydrocarbon-contaminated soil. The WRC is being designed to process an average of 1,000 tons per day of incoming solid wastes and recyclable materials delivered in a combination of private passenger vehicles, pickup trucks, garbage trucks and roll-off box trucks.

Proposed Facility Description Abstract

The WRC will have two waste receiving and handling areas: the Mixed Waste Processing Area and the Organic Materials Processing Area.

The Mixed Waste Processing Area will consist of separate sub-areas for receipt of recyclables, trash, and mixed loads of recyclables and trash. There will be several areas for the processing and removal of recyclables. WCCSL personnel will direct traffic to the proper unloading spot, inspect the incoming materials, and remove obvious ineligible materials. Loads containing all trash and any trash residue remaining after processing will be loaded into transfer trailers to be hauled to the disposal site (either the working face at the WCCSL or Potrero Hills Landfill). Recyclables or recovered materials will be sorted and stored until shipped to markets or end users.

During the 2002-2003 permitting process selecting the location of the Waste Recycling Center Mixed Waste Processing Area involved two candidate sites at the WCCSL. This description is based upon the alternate location in Area A previously used to stockpile landfill cover soil. The proposed location is at the closed Soil Remediation Facility.

If the Mixed Waste Processing Area is located at the Area A site a new building would be constructed (Figure 13A-1). The building would contain about 30,000 to 60,000 square feet of processing space. The design of the building would include all the necessary components of a waste recycling facility and transfer station.

WCCSL, Inc. proposes to obtain all land use approvals for the WRC Mixed Waste Processing Area temporarily operating on the asphalt Waste Shuttle Facility pad, and later within a permanent building at the Soil Facility or in Area A.

The Organic Materials Processing Area is the location where these materials are received, unloaded and initially processed to prepare them for subsequent recovery operations such as composting or biofuel and mulch screening.

The location of the Organic Materials Processing Area is on top of the landfill central plateau adjacent to the composting facility and soil reclamation operation.

The materials would be inspected to remove unwanted items such as plastic bags, metal pieces and concrete chunks. The removed materials would be placed in metal storage bins or placed in designated piles for periodic removal. The processing operations would include grinding and shredding, and mixing of materials such as shredded green materials and biosolids. The prepared materials would be moved by tractor or truck to the recovery operation such as the adjacent composting facility.

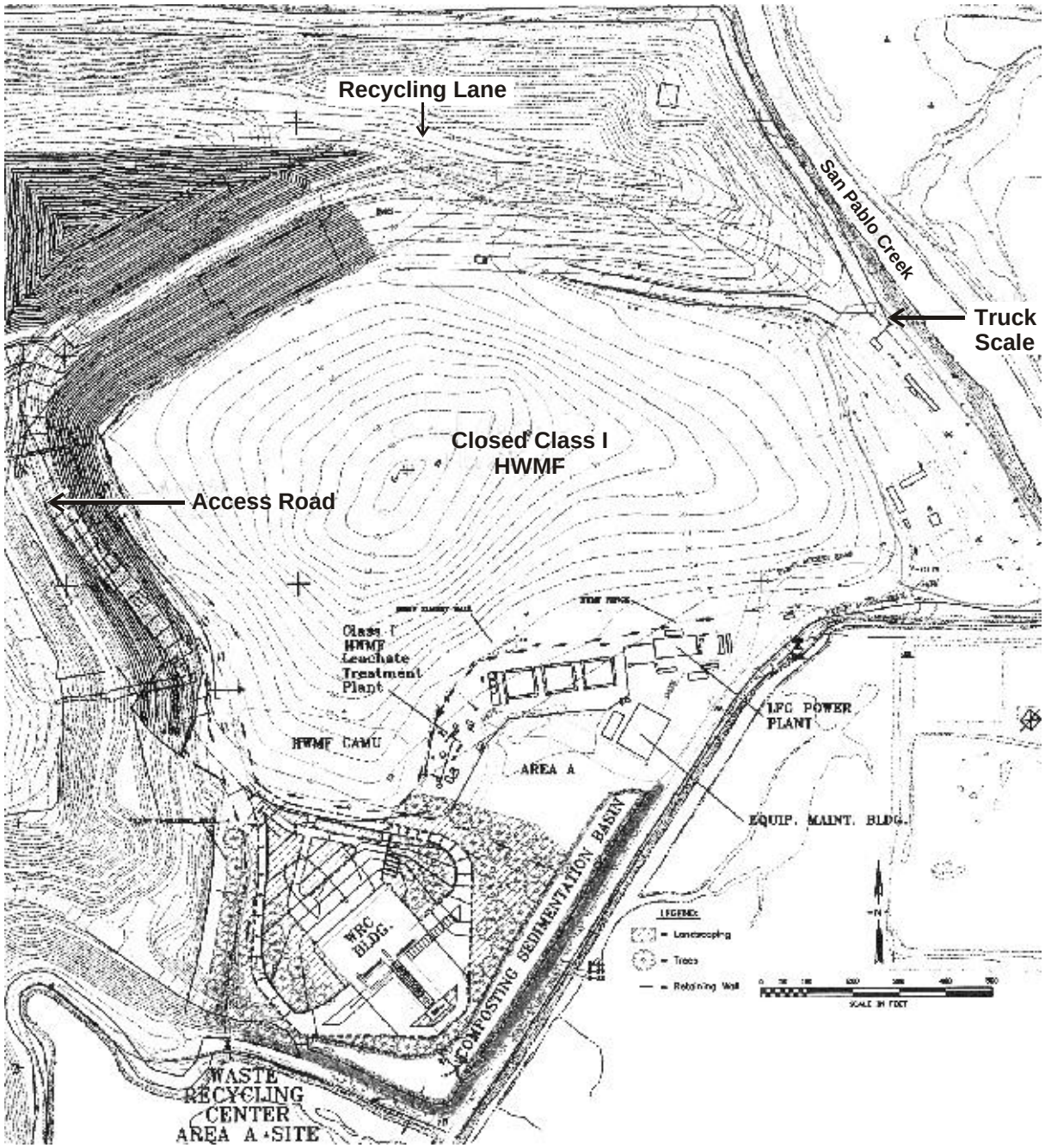

Figure 13A-1 Grading Plan and Surface Drainage Plan Area A Site

1. DESCRIPTION OF FACILITY OPERATIONS

The waste delivery vehicles will proceed to the scale attendant's building for collection of the fees and initial screening of the waste loads. Initially the existing scalehouse and scales will be used. In the future, it may be desirable to have the scale facility closer to the Waste Recycling Center and Composting facility.

After payment of the fee and/or weigh in, the vehicles with mixed wastes will proceed to the front of the Waste Recycling Center Mixed Waste Processing Area. A building will house the waste processing operation. The initial facility operation may be conducted on a paved area of the Waste Shuttle Facility, enclosed with litter control fencing. This area will be large enough to handle all traffic, including busy weekend use, but involving some customer wait time during peak periods. After the building is constructed and is in use, during weekdays the volume of traffic will be low enough that all wastes can be unloaded inside.

Location

For the Mixed Waste Processing Area located at the Area A portion of the WCCSL, as the traffic arrives at the intersection where the Organic Materials Processing Area, Composting and Concrete Processing Facility road continues westward, the Waste Recycling Center Mixed Waste Processing Area traffic would proceed to the left and travel southward. At the building the residential and commercial waste collection vehicles would back into the western end. Upon leaving they would return to the main access road. The self-haul traffic would follow the same route as the collection vehicles but enter the building at the east edge. This traffic flow pattern would also allow those loads discovered to primarily have green materials to be directed to the Organics Materials Processing Area.

The transfer trucks will pass southward along the west side of the building, turn at the southwest corner end and enter the loading stall in the eastern direction. Removal of the recyclable materials will follow the same path as the transfer trucks. A lane is planned on the south side of the transfer trailer loadout area to allow employee traffic to circle the building in a counterclockwise direction.

The residential and commercial waste collection trucks would be given preferred entrance and use the west portion of the building. Self-haul vehicles would enter at the northeast corner and use the eastern portion. As the self-haul site use continued during the day it may be necessary to unload wastes outside the building. This especially will be the case on nice weekends when everyone wants to come out and unload their discarded goods. During weekday overflow times, preference will still be given to the commercial trucks to unload inside the building, due to the larger volume carried by these trucks. These vehicles may also be delivering materials of higher potential salvage value.

The traffic flow pattern into and out of the facility will be designed for safe operations. It is usually preferable for the self-haul drivers to back up looking over their left shoulder for best visibility. This will involve a clockwise flow into and out of the unloading area. The commercial trucks will follow the same route.

Mixed Waste Processing Area Facility Operations Concept

As the wastes are unloaded, the skip loader operator will make the decision whether to push the individual piles to the sorting area or to the transfer loadout area.

Recyclables will be removed as now practiced at the Waste Shuttle Facility through "floor sorting" (picking through the materials while they temporarily lie on the unloading area). Selected materials will be processed by sorting the materials passing down a conveyor belt picking line or sorting station. The picking line to be operated in the Waste Recycling Center will be a unit approximately 10 feet wide and 60 feet long. The rubber-tired bucket loader tractor operator will place those wastes containing salvageable materials into the hopper leading to the conveyor. The salvaging crew will be stationed along the belt with each person picking a designated material (e.g. wood or cardboard) from the conveyor and placing the salvaged item into a metal storage bin parked under the conveyor. All recyclable materials are to be placed in roll-off boxes or designated areas.

The tractor maintaining the facility floor area will push the remaining non-recovered materials to an accumulation area and place them into a temporary pile, or they will be loaded directly into the top of the transfer trailer. While doing this, bulky materials may be crushed by running over them or by using the tractor bucket. A bucket loader tractor will be used to load the materials into the trailer. Several push walls will be installed to make it easier for wastes and recyclables to be moved by the bucket loaders. These walls will be constructed of sturdy steel plates and beams.

A roll-off truck will deliver the boxes of salvaged materials to the appropriate on-site or off-site facilities. For example, boxes that contain green waste, concrete, or ADC will be moved to the appropriate processing area on the WCCSL whenever the boxes are full. Cardboard, metals and other recyclables will be moved off site as needed. The boxes will be allowed to remain at the shuttle area within the building for overnight storage. No wastes are to be left lying on the floor area after the end of the operating day, with the exception of inert materials (e.g. concrete, asphalt, soil, metals). Periodically the floor will be swept or cleaned with a motorized vacuum sweeper.

In the future the volume of materials salvaged such as cardboard may justify the installation of a baler. This unit would be placed in an enclosure located on the south side of the main processing building where sufficient area will exist.

Dust control will be provided by spraying the area with a water truck and use of hoses. Litter control will be provided by a mobile sweeper, and regular removal of materials accumulated against the litter fences. Collected materials may be suitable for delivery to the West County IRRF for sorting and recycling.

Rainfall drainage water from the front apron will be considered to potentially be contaminated from oil dripping off vehicles and when waste unloading overflows out onto the front apron area. Hence, the drainage will be specifically directed to the oil/water separators similar to those at the soil remediation facility area. The collected water may require subsequent treatment prior to either being handled as landfill leachate, or being directed to the Area A runoff pond.

2. RELATIONSHIP OF THE WASTE RECYCLING CENTER TO THE OTHER BULK MATERIALS PROCESSING CENTER OPERATIONS

The Waste Recycling Center is part of the Bulk Materials Processing Center operations to be included within the County and City of Richmond Use Permits.

The Waste Recycling Center Organic Materials Processing Area location on the central mound of the closed landfill would be adjacent to the Concrete Processing and the Composting and Wood Processing Facilities. The concrete processing is envisioned to be operated by other parties as tenants on the West County Landfill property.

The Composting Facility, Wood Processing Facility and the Waste Recycling Center will be operated by WCCSL, Inc. as joint operations with shared management, personnel and equipment.

The waste screening, weighing, and disposal fee collection will be conducted by WCCSL, Inc. at a central scale facility either located at the current location or nearer to the Waste Recycling Center area.

3. SITE INFRASTRUCTURE

This section describes the Waste Recycling Center site infrastructure.

Access Roads

The Waste Recycling Center is reached via the WCCSL main access road across the San Pablo Creek Bridge (Recycling Lane). This road passes through the entrance area, swings west and crosses the south flank of the Class II landfill (eastern leg), and passes along the north side of the location of the old soil remediation facility. An intersection is planned where the road swings to the south as it climbs up onto the central plateau area. The south leg of this intersection is the access road for the vehicles using the Mixed Waste Processing Facility.

On top of the plateau the road turns west and enters the intersection with the Organic Materials Processing Area and the Composting/Wood Waste Processing Facility entrance road. The west end of the road leads to the Concrete Processing Facility.

The main access road (Recycling Lane) ultimately will be paved and substantially meet the specification for a commercial/industrial development road. Initially, to allow more settlement of the road to occur, and defer site development costs, the roadway surface will be graveled. Operation of the site with the graveled road will entail maintenance grading to assure that the appropriate surface drainage is maintained.

The roadway used by the mixed waste hauling vehicles and the transfer vehicles will enter and exit on the main access road.

Apron Surrounding the Building

The aprons surrounding the building will be paved with asphalt. No wastes underlie the Area A site. The engineered fill to be placed for the facility should not experience differential settlement and future maintenance repaving should be minimal. The areas where wastes or recycled materials will be stored will be graded to direct the drainage to oil/water separators.

Processing Building

A processing building will enclose the Mixed Waste Processing Facility operation. The design review is focusing on a metal clad steel frame structure on a spread footing foundation. The floor of the building will be concrete.

The size of the building is yet to be finalized. The current sizing is 250 feet long and 150 feet deep. In this description, the building is presumed to be sited in the center of the Area A portion of the WCCSL.

Bollards will protect the entrance doors since site users must back into the building doorways. The doorways for the commercial truck unloading must be high enough to allow a truck to move forward with the dump body elevated without striking the top of the doorframe.

Initially, the building is being conceived as walled on 3 sides with the doorways left open. Ultimately, roll-up doors could be added to the building.

The loadout area will also be housed inside a building which is attached to the south side of the processing building. The transfer trailer would be positioned inside of this side structure which would be high enough to allow a tamping crane to reposition wastes inside the trailer if necessary.

The trailers will be top loaded by pushing the wastes horizontally to pass them through the openings in the floor, into the top of the trailers. Two loading stalls will be provided.

Transfer Trailer Weighing Equipment

The concept of weighing the load in the transfer trailer as the wastes are being added remains to be confirmed. The trailer could have an on-board scale system or it could sit on load cells under each axle, or a 70-foot platform scale could be positioned under each truck/trailer.

Landfill Gas Control

Landfill gas control at the Mixed Waste Processing Center will not be necessary due to the facility being a sufficient distance from the landfill edge.

Landfill gas control at the Organic Materials Processing Facility will be provided by the landfill final cap and the landfill gas recovery system.

Drainage Control

The apron drainage will be sloped away from the Mixed Waste Processing Center building. That portion of the drainage that may contact wastes or the recycled material storage areas will need to be intercepted to route it to the oil/water separators.

The roof drainage of the building will be directed to downspouts with the discharges directed to the storm drainage system.

At the Organic Materials Processing Facility the area drainage will be maintained by WCCSL, Inc. to conform with the landfill closure and postclosure plans. Ponded water will be avoided due to the slope of the finished landfill surface and periodic regrading. Some of the reclaimed soil and concrete rubble may be used for the grading adjustment.

Litter Control Facilities

The Waste Recycling Center location in Area A places it somewhat out of the wind due to the wind shadow of the landfill central mound. The building layout with the open doorways on the north should provide wind shielding during almost 90 percent of the year. The north winds of January/February will blow directly into the building causing

some swirling of the wastes. It may be necessary to wet down the lighter wastes with a fire hose to prevent blowing paper and plastic during the windiest days.

Litter fences will need to be constructed as wings along the ends of the building. The accumulated litter can be vacuumed up using a portable unit. Since during heaviest site use times when wastes may be unloaded on the front apron, it may be necessary to string horizontal netting along the tops of the side fences to prevent airborne plastics from escaping from the site and to provide bird control. Loads of residential and commercial garbage will be unloaded only inside the building.

Electricity Supply

The Waste Recycling Center location will be served with electricity by extending the power line from the Leachate Treatment Plant located about 400-feet to the north.

The electrical supply will be from the on-site electrical network which delivers power from the WCCSL landfill gas-fired generating station located in Area A. The electricity powerline from the Leachate Treatment Plant will be constructed southward across Area A to reach the Mixed Waste Processing Center. An existing powerline continues westward up the slope of the central mound and serves power to the Organic Materials Processing Area, and the Composting Facility and the future Concrete Processing Facility locations.

The future power demands of the Waste Recycling Center are being determined by use such as in the processing facility, office, equipment service area, breakroom, and ancillary equipment (e.g. surface drainage pumps).

Water Supply

Water will be necessary for Waste Recycling Center fire control, dust control and processing area washdown. Drinking water will be supplied via bottled water, although EBMUD water service will be available. Toilet flushing water supply will be from a fresh water supply.

It is envisioned that the Concrete Processing and Composting Facilities will be served reclaimed water from the adjacent West County Wastewater District treatment plant. This will be via a pipeline that extends westward from the HWMF leachate treatment plant location and climbs up the east side of the landfill central mound.

The water used in the Mixed Waste Processing Center will not be reclaimed water. The fire sprinkler water system is planned to be supplied from an extension of the fine water service pipeline installed to the power plant area in 2003.

Telephone

A telephone cable will be laid adjacent to the water pipelines.

A pay telephone will be available in a central area near the processing building. A second payphone will be available outside the employee break room.

Fire Control

It is anticipated that the processing building and the trailer loadout areas will be equipped with a fire sprinkler system. The fire water system is envisioned to include both ceiling sprinklers and hose and nozzles stationed at key locations in the building. As many as 6 stations will be needed.

A dedicated 10-inch water line connected to the EBMUD system will supply the sprinkler and fire hose bib system.

Office

The current WCCSL office is located in the entrance area.

For the Waste Recycling Center management personnel, it is envisioned that a separate office building will be provided within the Waste Recycling Center Mixed Waste Processing Facility. The office will house the facility manager, bookkeeper, load check personnel, and an office for the site environmental & engineering inspection personnel. The office will also serve the Composting Facility. A conference room would be included. The minimum area required is presumed in this description as 20 feet x 50 feet, with the office located on the second floor.

Employee Break Room

The employee locker area and break room is planned as a portion of the office building, located on the first floor.

The breakroom will serve the Waste Recycling Center and the Composting Facility. The Concrete Processing and Soil Remediation Facilities will have their own employee facilities.

Equipment Servicing Area

Currently, the landfill equipment is maintained at the equipment service center located at the extreme northeast corner of the Class II landfill site. That facility will be moved to the Area A portion of the WCL in 2004.

The equipment used in the Waste Recycling Center (except perhaps the transfer trucks and trailers) and in the Composting Facility will be maintained at the relocated equipment service center. This is a pre-engineered metal building about 60 feet x 60 feet with two cargo containers placed along the sides for a equipment service person's office and supplies storage.

The fueling of the equipment will be via a service truck, which will be filled at the RSS Corporation Yard. Later, an above ground diesel fuel storage tank may be installed. However, the service truck will be necessary to fuel and service the Composting equipment such as the screens and Scarab windrow-turning tractor.

The transfer trucks and trailers may be serviced and maintained off site, or they may be serviced at the Area A maintenance facility.

Dust Control

The graveled access road will be the major dust control maintenance activity. This will be a shared responsibility between Waste Recycling Center, the composting, and concrete processing operations. Two or three water trucks will be available from the adjacent composting and concrete processing operations.

The Waste Recycling Center Mixed Waste Processing Area will be paved and incoming loads will be prescreened to avoid dusty materials. However, dust will occur from the trash materials. Periodic washdown of the apron and processing area will be needed. The water truck from the composting operation can provide that dust control. It will be necessary to sweep (vacuum) the litter on the unloading apron.

At the Organic Materials Processing Area the water trucks will periodically spray the receiving and unloading area for dust control. Water sprays will be used on the grinding/shredding equipment as necessary. The raw materials feedstock will be sprayed with water prior to grinding to also control fugitine dust.

Site Security

The primary security will be the fences and gates located at the end of Parr Blvd. As the landfill is closed, it may be desirable to have more full-time access to the BMPC facilities. Then gates would be installed on the main access road.

The fencing needed for security at the Waste Recycling Center will be a function of access to the WCCSL. For example, for the Public Access Trail, fencing will be needed along the eastern side of Area A on the north side of the Compost Processing Facility and Acme Hill, and on the western end of the Concrete Processing Facility.

4. RESIDUALS MANAGEMENT

The Bulk Material Processing Center personnel are responsible for control of drainage water. They also must control dust from the shredding operations, and equipment maintenance materials.

The residuals from the shredded wood materials and compost processing are described in the information provided elsewhere.

Certain dirt and rock debris may be generated during the processing operations (dirt, litter). The non-dirt materials will be salvaged and recycled by delivering them to the appropriate processing facility. The dirt material, if clean, may be processed in the soil reclamation program or used as cover on the landfill area.

5. CONTINGENCIES

The Bulk Material Processing Center operator will have established response programs for the cases of accidents, fires, and equipment malfunction. The Bulk Material Processing Center WCCSL personnel will be equipped with a radio to maintain contact with the WCCSL office. The Bulk Material Processing Center Management will maintain a list of emergency contact numbers and have a Fire Control Plan and a Hazardous Materials Management Plan.