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.

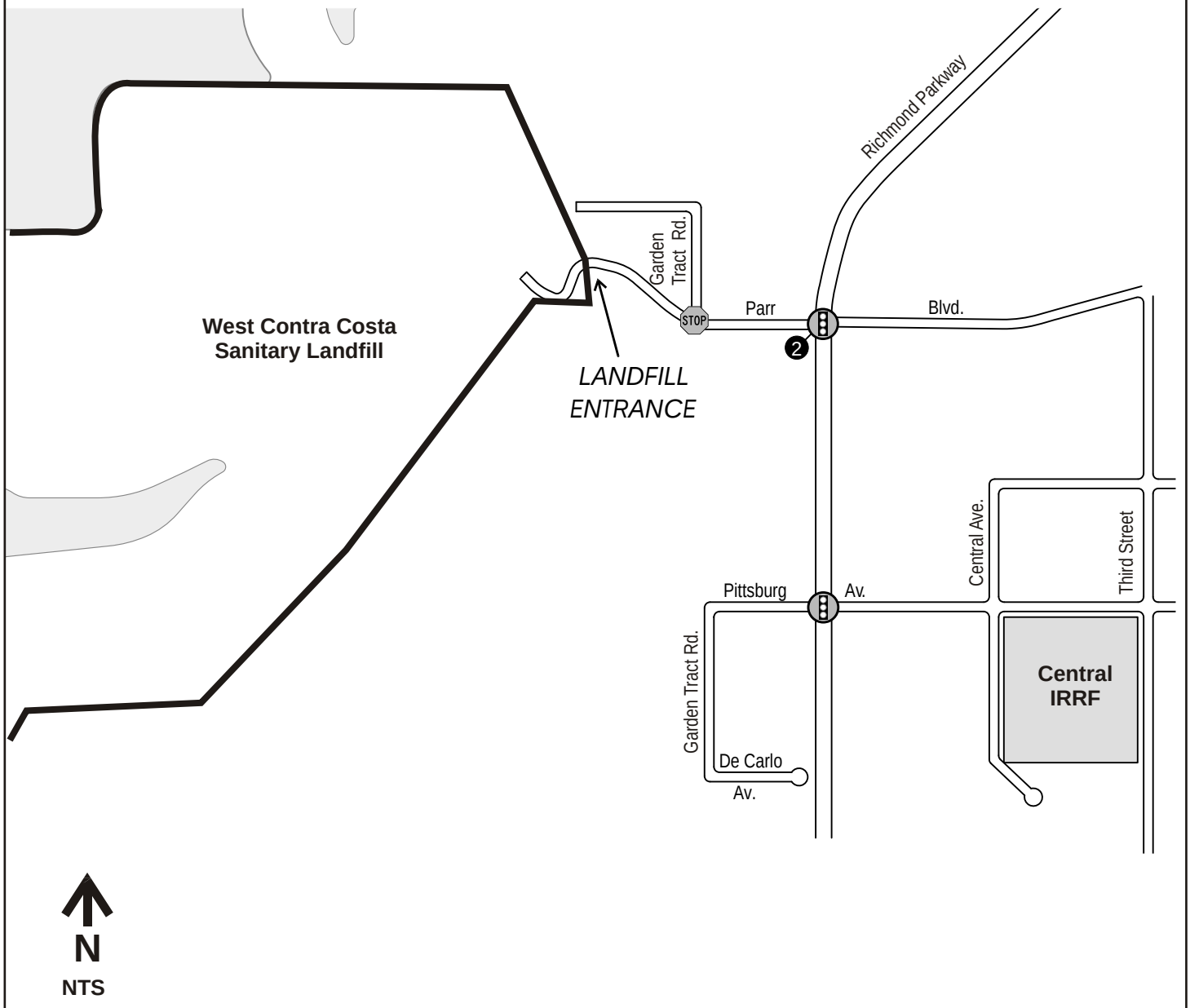


Figure 8-1 Local Roadway Network

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.

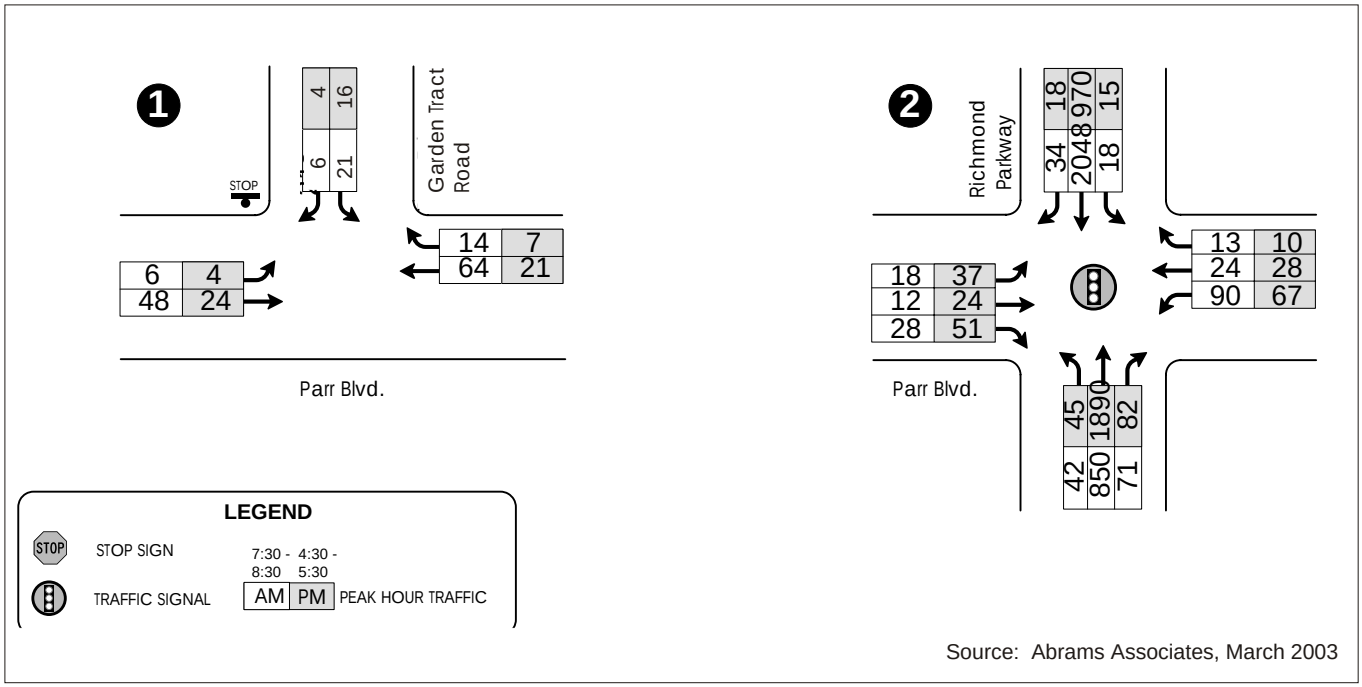


Figure 8-2 Existing Weekday Traffic Conditions for Approach Intersections

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

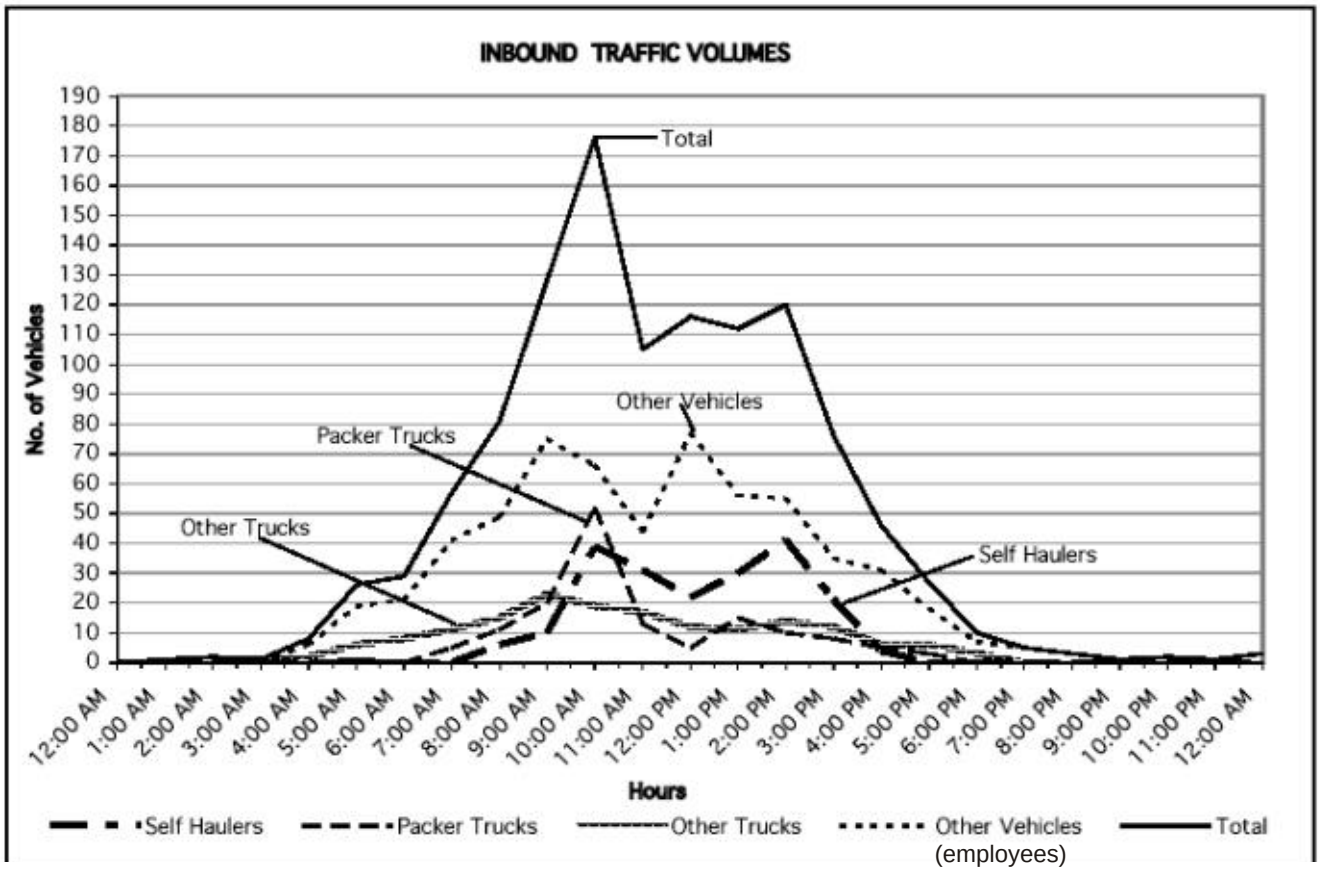
Existing conditions (2003)	Daily traffic by type of activity,[a] (vehicles per day)	Daily traffic by type of vehicle,[a] (vehicles per day)
Activities include the Class II landfill, composting, concrete/asphalt processing, importing landfill cover soil, and various minor activities.	Landfill – 1,200 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

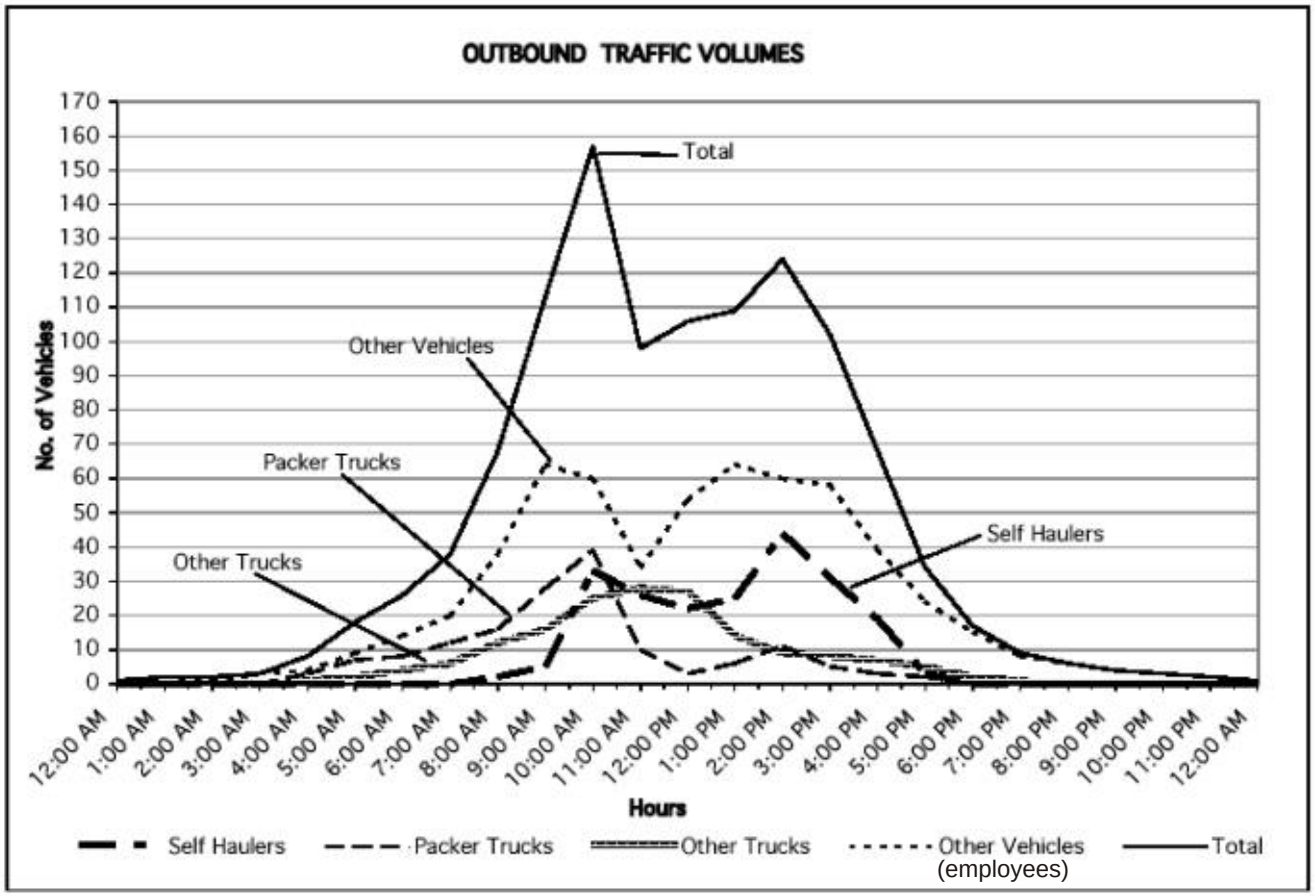
a. Daily traffic count represents the average 24-hour traffic during a peak month of landfill activity. Data derived from a combination of vehicle counts at the WCCSL scales and manual traffic counts taken by Abrams Associates on the WCCSL access road (Parr Boulevard).

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)

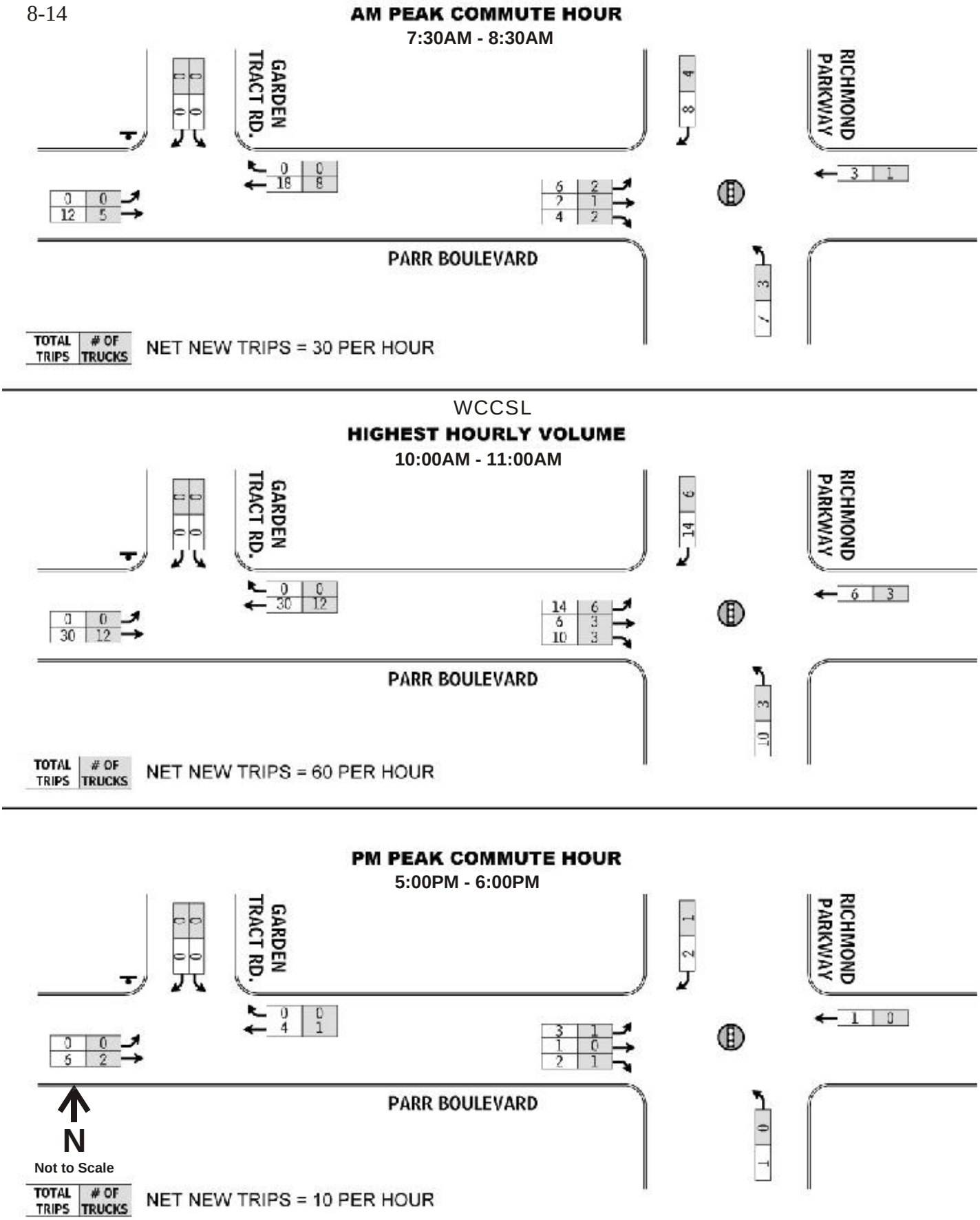
Traffic parameter	Existing traffic	After implementation of the Project (2015)	Net new Project traffic
Average daily traffic	2,250	3,220	970
AM commute peak hour (7:30 – 8:30 AM)	160	210	50
PM commute peak hour (5:00 – 6:00 PM)	50	80	30
WCCSL peak hour (10:00 - 11:00 AM)	280	380	100

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).

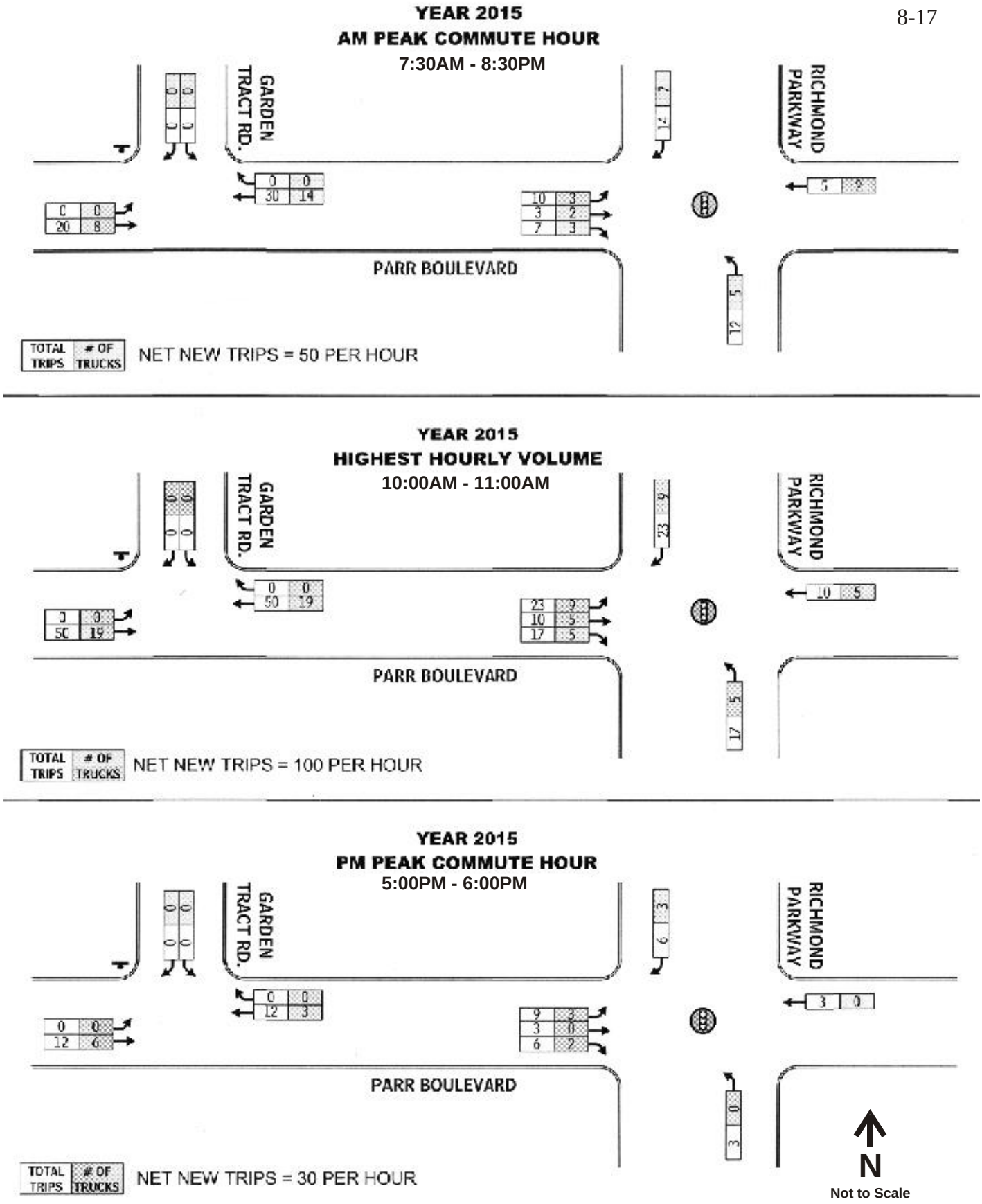
Source: Abrams Associates, March 2003.

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

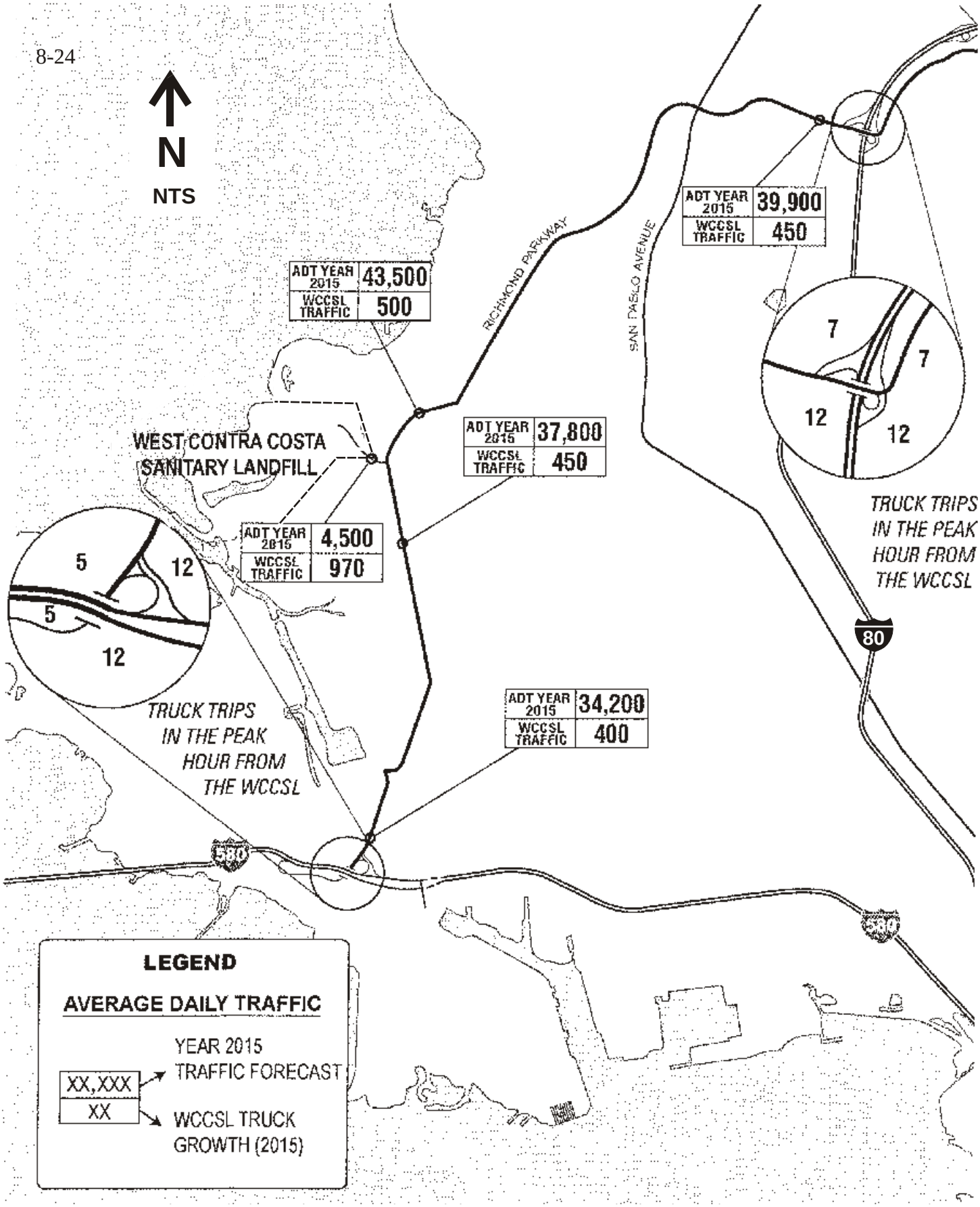
The analysis of cumulative traffic conditions is based on several sources for future traffic projections. Regional traffic forecasts have made by Contra Costa County, in coordination with the CCTA for the West Contra Costa County Travel Demand Forecasting Model (Model) based on 2015 land use assumptions 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.

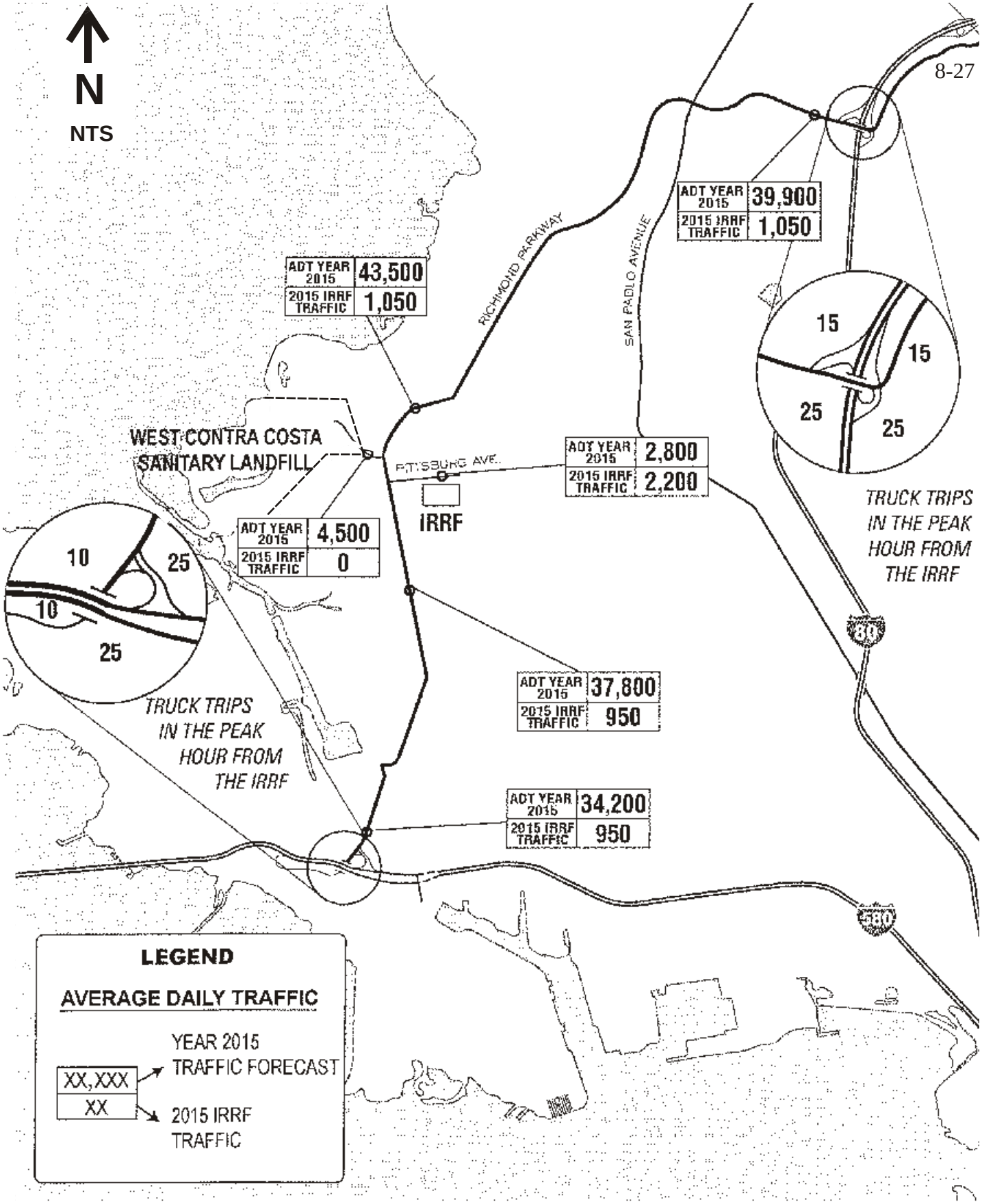
a. Central IRRF Traffic. With the Central IRRF currently operating at about 150 TPD, an additional 1,050 TPD of waste and recyclables would need to be hauled to the facility to attain the permitted tonnage of 1,200 TPD. For purposes of this analysis, it is assumed that the 1,050 TPD would be entirely 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.

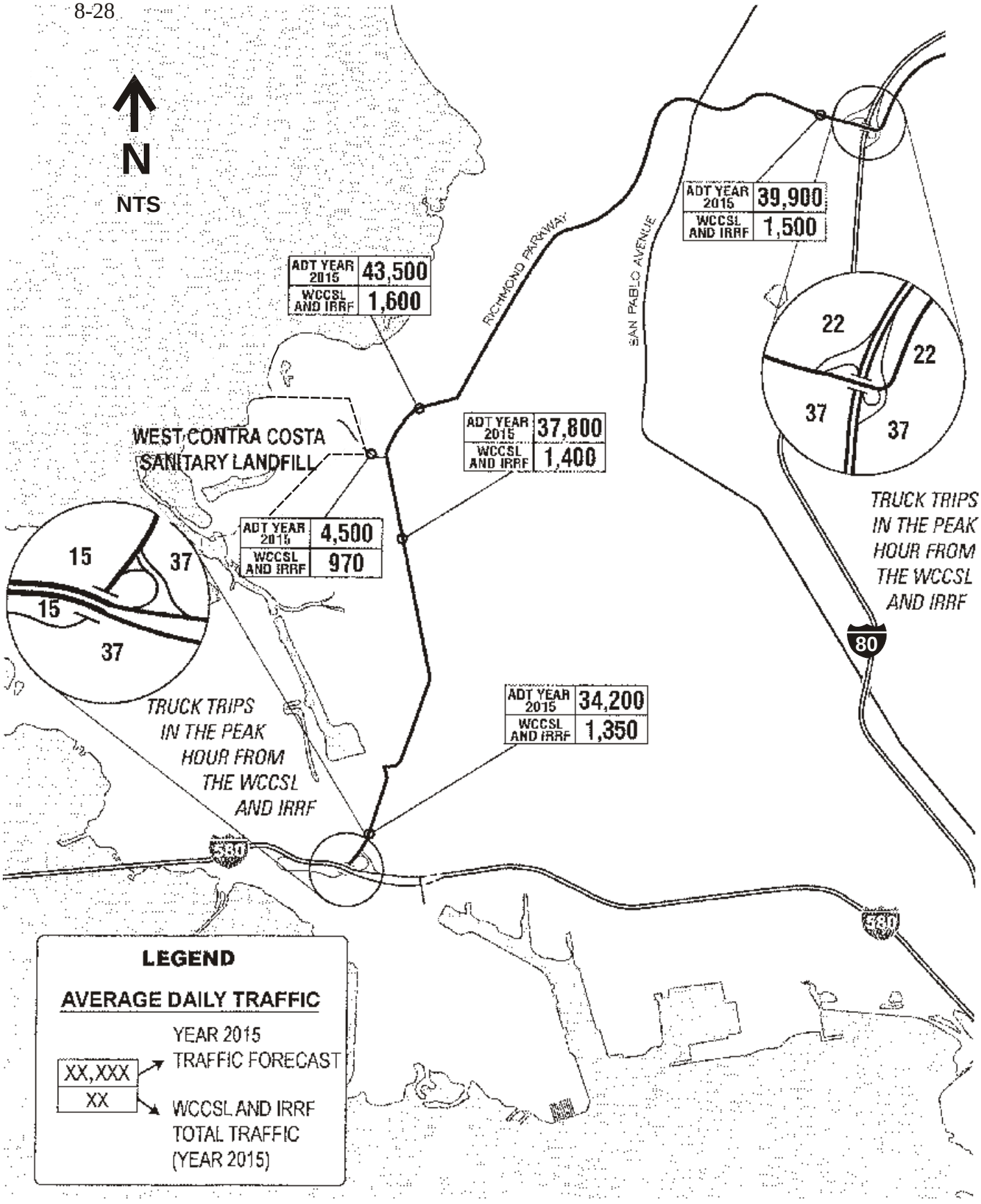
Operation of the Central IRRF at full capacity could also result in changes or increases in the number of turning movements on the Richmond Parkway at Parr Boulevard and at Pittsburg Avenue, but these impacts would not be significant. Both of these signalized intersections have excess capacity that can 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