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STREETSCAPE DESIGN PROJECT SUMMARY

This memorandum summarizes the key elements of the design concept for the Bailey Road Pedestrian and Bicycle Improvement Plan in Bay Point, California. The plan covers an area along Bailey Road between the Pittsburg-Bay Point BART Access Road in the south and Willow Pass Road in the north. The overall project area is divided into two different segments: the Interchange Zone and Bailey North.

PURPOSE OF THE PROJECT

The primary goal of the Bailey Road Pedestrian and Bicycle Improvement Plan is to improve the pedestrian and bicycle environment along Bailey Road. This plan considers effects to vehicular traffic in the corridor but automobile circulation is not the focus of this project. The plan provides design concepts that fulfill the community’s desire for Bailey Road to be more safe, walkable, bikeable, transit-oriented, and visually attractive.

PLANNING PROCESS

The Bailey Road Pedestrian and Bicycle Improvement Plan is the result of numerous meetings and discussions with the community, the Municipal Advisory Council (MAC), and a Technical Advisory Committee (TAC) comprised of technical staff from Contra Costa County, the City of Pittsburg, Caltrans, East Bay Regional Park District, Tri Delta Transit, BART, and other concerned individuals. It is also the result of recommendations based on the experience of the consultant team. The consultant team included BMS Design Group, an urban design and landscape architecture firm, Kimley-Horn and Associates, Inc., a transportation and traffic engineering firm and BKF Engineers, a civil engineering firm.

The consultant team reviewed existing plans and policies, conducted numerous site visits, and analyzed existing conditions based on land use, urban form, transportation, circulation, and utilities. An Existing Conditions Memorandum, dated May 15, 2009 documents the physical conditions of the street corridor, summarizes key policies and plans that affect the corridor, and analyzes issues and opportunities to improve the pedestrian and bicycle environment.

Over the period from May 2009 through August 2009, three scenarios for pedestrian and bicycle improvement for the Bailey Road corridor were prepared by the consultant team.
These scenarios outlined alternative methods of improving pedestrian and bicycle safety and access along Bailey Road through a variety of measures including:

- Modifications to the State Route 4 (SR4) interchange
- Removal or reconfiguration of Bailey Road travel lanes to allow wider sidewalks
- Added or modified signal operations
- Detailed improvements to pedestrian crosswalks, transit waiting areas, and other important pedestrian nodes.

All of the scenarios removed the existing pedestrian tunnel at the SR4 interchange on the west side of Bailey Road. See Appendix B for a brief description of each scenario.

Primarily as a result of meetings with Caltrans District 4 staff, it was concluded that one of the scenarios, (known as “Scenario 1”) would result in a sub-standard interchange design and therefore, it was eliminated. The Alternative Scenario Feasibility Analysis Summary Memorandum, dated October 9, 2009 summarizes the feasibility of the remaining two alternative scenarios for the improvement of pedestrian and bicycle facilities on the Bailey Road corridor. For each scenario it includes summary descriptions, traffic analysis, and cost analysis.

After review with the community, the MAC, and the TAC, a preferred scenario was selected. It includes elements from each of the two scenarios. The following document describes the concepts of the preferred combined scenario and comprises the Bailey Road Pedestrian and Bicycle Improvement Plan.

**Project Area**

The Bailey Road Pedestrian and Bicycle Improvement Plan is located in the Bay Point Area, an unincorporated community in Contra Costa County. The study area extends from Bailey Road’s northern terminus at Willow Pass Road to the Pittsburg-Bay Point BART Station Access Road, which is just south of the State Route 4 freeway interchange. The study area corridor is approximately 3,000 feet long.

Bailey Road is designated as a major arterial in the County Roadway Network Plan and serves a variety of functions. It acts as a “main street,” providing pedestrian and bicycle access to neighborhoods, retail locations, BART, Bel Air Elementary School, churches, parks, and other community activity centers. It is also part of a larger regional road network, functioning as a feeder road to the freeway and BART station. The corridor is also an important part of the transit network for East Contra Costa County, providing access to several important transit destinations including the Pittsburg Bay Point BART station and regional bus stops served by Tri Delta Transit. Finally, a portion of Bailey Road acts as a segment of the Delta De Anza Regional Trail, a major east-west trail that extends from Concord to Oakley. See Figure 1, Regional Area Map.
Figure 1: Regional Area Map

- Study Area Boundary
- Pittsburg City Boundary
- Southern Pacific Railroad
- BART - Pittsburg / Bay Point Station
- State Route 4
- Arterial Road
- Local Road

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Overview of Existing Conditions

For a full analysis of existing conditions, see the Bailey Road Pedestrian and Bicycle Improvement Plan-Existing Conditions Memorandum, dated May 15, 2009. The following section includes excerpts from that document.

Subdistricts and Gateways

For purposes of analysis and design, the study area can be broken down into three general zones and specific gateway points and destinations. Different design responses will occur in each of these zones and gateways along the corridor. See Figure 2, Subdistricts Map.

Bailey South

The Bailey South Zone encompasses the Bailey Road corridor from West Leland Road to the BART Station Access road. It is within the City of Pittsburg and is therefore outside the focus of this project. However, since it is part of the overall corridor, it has an influence on the design principles utilized in the Bailey Road Pedestrian and Bicycle Improvements Plan. Land uses in this area are planned for commercial/residential mixed-use, including a major transit-oriented development adjacent to the BART station that is currently in the planning stages. Bailey South is therefore an important destination for residents all along the corridor.
The Bailey Road corridor in this zone will also be improved as part of a separate project, the Bailey Road Widening Improvements Project, a joint effort of the City of Pittsburg and Contra Costa County. At the south end of this zone, a gateway to the Bailey Road corridor from West Leland Road has been illustrated. At the north end is a pedestrian gateway to the eastern leg of the Delta / De Anza Trail.

Interchange Zone

The Interchange Zone extends from the BART Station Access Road to the Canal Road / State Route 4 on-ramp intersection. It is dominated by the State Route 4 highway overpass, on-ramps, and off-ramps which are in Caltrans jurisdiction. The type of on and off ramps used at Bailey Road are no longer built by Caltrans in urban areas because they create too many conflicts for pedestrians and bicyclists. Therefore, in meetings with Caltrans District 4 staff during the process; it was agreed that interchange modifications and upgrades would be possible.

The location of this auto-oriented segment between the BART station with its adjacent planned mixed-use development to the south and the residential neighborhoods and Bel Air elementary school to the north, creates a challenge for pedestrians and bicyclists seeking to access these important destinations. Large numbers of pedestrians and bicyclists need to pass through the underpass. However, due to its design and the large volume and speed of vehicles, the pedestrian experience is uncomfortable and feels unsafe.

Additionally, the pedestrian tunnel beneath the westbound loop off-ramp, which was intended to provide a safe connection for pedestrians traversing the area, is unattractive, feels unsafe and requires indirect circulation movement for pedestrians. As a result, it goes unused, further contributing to the problems of pedestrian safety and conflicts with fast-moving vehicles.

The entire Interchange Zone segment is the most dangerous and difficult area in the corridor for pedestrians and bicyclists and therefore merits the most significant re-evaluation and redesign in order to meet the goals of the Bailey Road Pedestrian and Bicycle Improvement Plan.

Bailey North

Bailey North extends from the Canal Road / State Route 4 on-ramp intersection to Willow Pass Road. It is fronted by a variety of commercial uses, a small mixed-use area, and single and multi-family residential uses.

Gateways

Pedestrian Gateways

Pedestrian gateways occur at the two locations where the Delta / De Anza Trail intersects with Bailey Road. These gateways mark the transitions to and from the trail’s urban segment through Bay Point.

Corridor Gateways

Corridor gateways have been defined at three locations, including the following:

- Bailey Road at Leland Road (This gateway is outside the limits of this study)
- Bailey Road, where it passes under State Route 4 (both directions)
- Bailey Road at Willow Pass Road.

The Leland Road and Willow Pass Road intersections are the locations where many motorists enter the Bailey Road corridor. The SR4 overpass marks the transition between Pittsburg and Bay Point.
Relevant Plans and Policies

The Bailey Road Pedestrian and Bicycle Improvement Plan will implement numerous policies from previous plans and studies. The plan builds on policy decisions and infrastructure plans already adopted by the Board of Supervisors, including the following:

- Pittsburg / Bay Point BART Station Area Specific Plan, November 1997 (BSASP)
- Bay Point Redevelopment Area Design Guidelines, September 2002 (RADG)
- Bay Point Community Based Transportation Plan, January 2007 (CBTP)
- Contra Cost County General Plan, January 2005 (CCCGP)

The following section summarizes key relevant portions of these plans and policies. The summary has been organized by policies that are general to the entire corridor (General Improvements) and policies that relate to a specific design element (Specific Improvements).

Since this plan is more recent and further detailed than prior plans and policy documents, in a few cases the recommendations found here vary from those of prior plans. In such cases, minor updates to prior plans may be required.

General Improvements

The following text is a quote from the Pittsburg/Bay Point BART Station Area Specific Plan document, referring to Bailey Road:

The intent of this improvement is to link the two sides of State Highway 4 together visually and to enhance the overall image and character of the Bailey Road corridor which serves as the primary entryway from the freeway and Willow Pass Road to the BART Station Area. Although the sidewalks under the freeway cannot be widened, additional lighting is planned to improve the pedestrian character of that linkage. Anticipated improvements are outlined below:

- Bailey Road Improvements
  - Replace median trees
  - Widen sidewalks
  - Add street trees at edges
  - Provide Bailey/Willow Pass Road intersection treatment
  - Provide Freeway off-ramp crosswalk
  - Provide Freeway underpass improvements.
  (BSASP Public Sector Improvements, Bailey Road)

In addition, the plan states:

- Create a strong visual linkage between the area north and south of State Highway 4.
  (BSASP Urban Design Goal 2, Objective 2.1)
SPECIFIC IMPROVEMENTS
The following excerpts from existing plans and policies refer to design elements specifically relevant to the Bailey Road Pedestrian and Bicycle Improvements Plan.

Street Cross-Section
Various existing policy documents contain recommendations related to specific facilities that should be provided in the overall cross-section of Bailey Road including the following:

Future street improvements in the Specific Plan Area should emphasize the provision of adequate pedestrian, bicycle and transit facilities and strive to correct existing deficiencies in these facilities.

(BSASP Policy C-7)

Make major streets easier and more conducive to walking, bicycling, street greenery, and traffic calming.

(CBTP)

Provide sidewalks with a clear path wide enough to accommodate anticipated pedestrian use and wheelchairs, baby strollers or similar devices. This area clear zone must be free of street furniture, signposts, utility poles or any other obstruction.

(CCCGP 5-at)

Pedestrian Sidewalks and Paving
The following policies relate to pedestrian paving:

Crosswalk improvements will encourage pedestrian movement along Bailey Road to and from the BART Station Area. Pedestrians now share the existing tunnel under the State Route 4 west-bound intersection off-ramp at Bailey Road for security reasons and cross the ramp at grade in conditions which offer motorists little warning of pedestrian presence. Decorative paving and pedestrian-activated walk lights will improve grade-level crossing safety at this intersection. Implementation of these improvements is contingent upon a feasibility study as outlined in the Circulation Section of this document.

(BSASP, Urban Design Concept 7)

Emphasize pedestrian crosswalks with textured paving materials.

(RADG Guidelines for Arterial Streets)

Special Pedestrian Improvement Locations
Specific existing policies related to special improvement locations state the following:

Major Gateway at State Route 4 Overpass
The area under the freeway should also be studied to determine if there is any way to widen existing sidewalks. Also a railing or other barrier (e.g., bollards) along the outer edge of the sidewalks would help to separate pedestrians from the vehicles. Lighting condition, the general appearance of these sidewalk areas, and the potential for improving the appearance of the undercrossing with mural or other art works should also be examined.

(BSASP Pedestrian / Bicycle)
Delta / De Anza Trail

The utility of the Delta / De Anza Trail along Bailey Road should be enhanced. The Delta / De Anza Trail must use Bailey Road to transition from the north to the south side of Highway 4. Efforts should be made to enhance this important linkage as well as to improve access to the trail throughout the study area. The Delta / De Anza Trail should maintain its separated Class I status wherever possible.

(BSASP Policy C-10)

Trails along the East Bay Municipal Utility District (EBMUD) easement will be improved to encourage their usage for pedestrian and bicycle access to the BART Station Area. Landscaping with shallow-rooted landscaping to improve the appearance of the pathways and the installation of pedestrian lighting to improve early evening security will assist in encouraging non-automobile travel to the area.

(BSASP, Urban Design Concept 6)

Major Gateway at Willow Pass Road

Transit centers or nodes should be developed in both the north and south portions of the Specific Plan Area. In addition to the southern transit node at the BART Station, a northern node should be established near the intersection of Bailey Road and Willow Pass Road.

(BSASP Policy C-8)

Treat Willow Pass Road as a neighborhood shopping street.

(RADG Basic Design Principle 7)

Planting

Several existing policies relate to general planting and tree planting. Some of the most relevant include:

All projects shall be expected to provide substantial, high quality landscaping. The use of flowering plants and trees shall be encouraged to reinforce the strongly residential character of the area.

(BSASP Policy UD-5)

Minimize the visual impacts of parking. Wherever possible parking areas should be set back from street frontages and screened with structures and/or landscaping.

(RADG Basic Design Principle 3)

Install landscaped medians wherever possible.

(RADG Guidelines for Arterial Streets)

Landscaping and trees should be used to enhance pedestrian facilities and should be selected to minimize future maintenance and safety issues.

(CCCGP 5-ar)

Street median trees will be replaced and new street trees added at the street edges along Bailey Road. Stronger identity trees extended from Willow Pass Road to West Leland Road will visually tie the Specific Plan Area together and assist in mitigating the substantial barrier created by State Highway 4. In addition, new street trees along the curb line will provide some better sense of separation between vehicular and pedestrian movement.

(BSASP, Urban Design Concept 5)

Install street trees with a size and shape that will minimize street widths.

(RADG Guidelines for Arterial Streets)
Lighting, Street Furniture and Signage

The following existing policies relate to lighting, street furniture, and signage:

- Install or retrofit street lights to accommodate decorative and informational banners.
  (RADG Guidelines for Arterial Streets)

- Lighting shall be provided where needed for visibility and safety.
  (CCCPG)

- Install comfortable wood or metal benches at bus stops and areas of substantial public pedestrian traffic.
  (RADG Guidelines for Arterial Streets)

- Provide more bicycle racks in Bay Point and bicycle lockers at the BART station.
  (CBTP)

- Streetscape improvements should be included in the design of high usage pedestrian facilities to encourage pedestrian activity. This would include improvements such as benches, public art, drinking fountains and pedestrian-scale lighting fixtures.
  (CCCPG 5-as)

- Install a way-finding system for pedestrians to reach area destinations.
  (BSASP)

- Remove extraneous signage.
  (RADG Guidelines for Arterial Streets)

- Develop new street and directional signage using a common family of sign types, styles and mounting techniques.
  (RADG Guidelines for Arterial Streets)
2 | Summary of General Design Principles

Based on evaluation of existing conditions, prior adopted policies, and input from the community, eight overall design principles for improvements to Bailey Road have been identified:

1. **Enhance Image of the Corridor:**
   Enhance the image and character of Bailey Road in keeping with its role as a center of the community.

2. **A Great Street:**
   Design Bailey Road to be a great and memorable street when considered in the context of the entire County.

3. **Neighborhood Scale:**
   Maintain a neighborhood feel through residential-compatible scale of furnishings, lighting and landscaping.

4. **Unify North and South Bailey Road:**
   Create a strong visual linkage between the area north and south of State Highway 4 while maintaining a distinctive identity for each.

5. **Two Subdistricts:**
   Within this overall expression, establish two distinct sub-districts that respond to their differing functional requirements and character. Provide each of these two sub-districts with a unique yet unified design character. These sub-districts include:
   - **Interchange Zone:** Establish a gateway that provides a source of community pride and acts as a transition between Pittsburg and Bay Point. Also provide visual and physical elements to calm traffic and improve pedestrian connections both along and across Bailey Road.
   - **Bailey North:** Establish a pedestrian-oriented “main street” zone with improvements to enhance pedestrian and bicycle safety and comfort. Unify the corridor through the use of common planting, lighting and other streetscape elements.

6. **Create Focal Points:**
   Enhance specific locations for pedestrian safety and to increase their importance as visual focal points, gateways, and gathering places along the street. These locations include:
   - Major gateway improvements at SR4 overpass
   - Bus transit stops and intersection of Canal Road and Bailey Road
   - Intersection of the Delta /De Anza Trail, Bel Air Trail and Bailey Road
   - Bus transit stops and intersection at Mary Ann Lane, Placer Drive and Bailey Road
   - Major gateway and intersection at Willow Pass Road and Bailey Road

7. **Community Involvement in Future Enhancements:**
   Provide locations for future enhancements that can be sponsored by artist groups, business and community groups, schools and other children's groups and individuals.

8. **Cost Effective:**
   Provide attractive and functional improvements that are cost-effective and meet the ongoing maintenance requirements of the County.
This section summarizes the overall design features that apply to the entire Bailey Road corridor. Following this section (in sections 4 and 5) is a more detailed discussion of design features that apply specifically to the two primary segments of the corridor, the interchange Zone and Bailey North.

The Bailey Road Design Concept Diagram, Figure 3, illustrates the conceptual framework for design improvements to the corridor. It should be noted that while the corridor has been defined for study purposes as containing three segments or “zones,” the character of design improvements in Figure 3 is based on two segments: north of the SR4 overpass and south of the SR4 overpass. The overpass acts as a gateway between Pittsburgh and Bay Point.

As the plan illustrates, the vocabulary of design improvements is intended to vary somewhat on the south side and north side of the SR4 overpass. However, it is also intended that the basic structure of the design be similar in both segments in order to convey the image of Bailey Road as a unified corridor.

South of the overpass, Bailey Road improvements under this project will relate directly to the streetscape project to the south, the joint City / County Bailey Road Widening Improvements Project, which is currently in the final stages of construction design. The character and design vocabulary of Bailey Road will thus have a uniform expression from Leland Road to the SR4 overpass.
Overall Design Concepts

North of the overpass, the general character of Bailey Road will be similar to the southern segment (large shade trees on the sidewalks, for example), but the specific details will be unique in some instances in order to provide the Bay Point neighborhood with a unique identity.

Following is a description of the key design elements of the overall corridor, including:

• Street Cross-Section
• Pedestrian Tunnel at the Westbound SR4 Loop Off Ramp
• Pedestrian Sidewalks and Paving
• Bicycle Lanes
• Median and Buffer Zone Paving
• Planting
• Lighting
• Street Furnishings
• Utilities
• Special Pedestrian Improvement Locations

See Figure 4: Bailey Road Proposed Improvement Plan on pages 36 through 41 for detailed illustrative plans of the entire corridor.
**STREET CROSS-SECTION**

With a few localized exceptions, the general characteristics of the Bailey Road street cross-section will be four uniform travel lanes (two in each direction) with a central planted median (or left turn lane at intersections where needed) through the entire corridor, from Leland Road on the south to Willow Pass Road on the north. This is similar to the existing condition, except in a few areas, such as at the SR4 interchange, where the roadway currently contains six lanes plus a median. In this area, the roadway will be narrowed. For a more complete discussion of roadway modifications in the Interchange area, see Section 4.

Currently, the width of the existing travel lanes and bicycle lanes also varies, in some cases exceeding appropriate standards. As part of the Bailey Road Pedestrian and Bicycle Improvement Plan, all vehicular lanes will be re-designed to a uniform 12-foot width, bicycle lanes will be a uniform 5-foot width and the central median / turn lane will be 10-feet wide (except in the SR4 Interchange Zone).

**PEDESTRIAN TUNNEL AT THE WESTBOUND SR4 LOOP OFF RAMP**

Although not a corridor-wide improvement, this tunnel and the overhead loop ramp is stated most often by the community as the single greatest pedestrian problem-point in the corridor. The loop ramp and pedestrian tunnel will be completely eliminated. This will allow the 6-lane street cross-section in the Interchange Zone to be reduced to 4 lanes as described above. See Section 4 for additional discussion.

**PEDESTRIAN SIDEWALKS AND PAVING**

New pedestrian sidewalks will be installed on both sides of Bailey Road throughout the corridor. Modifications to the street cross-section described above, and uniform standards for lane widths, will allow additional space to be gained for a wider pedestrian zone, which in most places will include sidewalks and a 4-foot-wide planted buffer zone separating pedestrians from moving traffic. Sidewalk width will vary, depending upon location, but in all instances, a minimum width of 6 feet will be achieved, in order to assure facilities are comfortable for pedestrians and compliant with Americans with Disabilities Act (ADA) standards. Sidewalk material will be natural grey concrete, per Contra Costa County standards.

There will be special paving in some of the special pedestrian improvement locations. See Section 6: Special Pedestrian Improvement Locations, of this document for special paving at those locations.
**BICYCLE LANES**

Bicycle lanes of varying width currently exist along the entire corridor. The modified street cross-section will provide a continuous 5-foot-wide Class II bicycle lane on both sides of the street from Willow Pass Road to the BART Access Road where it will link with the 5-foot-wide Class II lane that is being provided by the City / County Bailey Road Widening Improvements Project. Proposed changes to the SR4 off-ramps will improve bicycle safety on Bailey Road. See Section 4 for additional discussion.

**MEDIAN AND BUFFER ZONE PAVING**

Special textural paving materials will be used in two median and buffer zone circumstances:

- Where the center median and pedestrian buffer zones are beneath the SR4 overpass and inadequate sunlight does not allow planting.
- Where the center median is less that 7-feet wide and therefore too narrow for planting.

In these two situations the paving will be heavily textured to discourage jaywalking and pedestrian use and to add visual interest. Possible materials include granite or concrete cobblestones, river rock, or heavily textured concrete unit pavers.

The planted portion of all medians incorporate 18-inch wide maintenance safety zones at the outside of the medians which provide space for maintenance workers (12-inch maintenance band plus 6-inch curb). The maintenance bands will be paved with concrete unit pavers in a color close to that of the special textural paving material. This will provide a continuous field of color where the planted medians narrow to paving only. The unit pavers should be relatively smooth to create a stable surface for use by maintenance workers.
PLANTING

Wherever possible, street trees and ground plane planting will be added to the sidewalk buffer and the median. Under the SR4 overpass, planting will not be possible due to poor light conditions.

OVERALL STREET TREE PLANTING

There are currently no street trees along the sidewalks in the corridor, resulting in an environment that is visually harsh, lacking in pedestrian scale and hot in summer.

Street trees will be planted in the sidewalk buffer zones and in the center median throughout the corridor with the exception of the SR4 underpass. The street tree planting design assumes the existing overhead utilities will be removed and placed underground prior to or during construction of the Pedestrian and Bicycle Improvement Project. Therefore, the overhead utilities are not considered a design constraint in the selection of street trees.

The design intent is to establish a street tree vocabulary that accomplishes the following:

- Create a more comfortable environment for pedestrians and bicyclists by incorporating trees near the sidewalk where possible.
- Reinforce the goal of calming traffic by using street trees at the sidewalks and medians to create a perceived narrowing of the roadway.
- Create a strong visual linkage between the stretches of Bailey Road north and south of the SR4 interchange while maintaining a distinctive identity for each.
- Improve the aesthetic quality of Bailey Road suitable to its role as a center of the community.
General technical design criteria for all street trees to be used throughout the project include:
- Do not heave pavement
- Allow ease of maintenance
- Have low water requirements
- Capable of withstanding regular high winds.

OVERALL GROUND PLANE PLANTING
General technical criteria for all ground plane planting in the median and sidewalk zones will meet the following design criteria:
- Low maintenance
- Interest throughout the seasons
- Drought tolerant
- Low in height to allow drivers and pedestrians to see one another, particularly at intersections.

FOUR PLANTING DESIGN TYPES
The concept for planting along Bailey Road will reinforce the unique image of the segments north and south of the SR4 interchange while helping to provide a unified image for the corridor. This will be accomplished by using similar types of planting in the north and the south, but different species with different character (form, color, seasonal expression) along the two segments.

The design includes four general types of planting:
- Sidewalk Planting
- Median Planting
- SR4 Interchange Planting
- Accent Planting

Existing Streetscape Condition, Interchange Zone: Without street trees, the environment of the interchange zone lacks pedestrian scale, is uncomfortable for pedestrians and bicyclists and is unsightly.

Existing Streetscape Condition, Interchange Zone: No planting
SIDEWALK PLANTING

The sidewalk planting includes the trees and ground plane planting that will be used along the side of the street in the buffer zone between the sidewalk and the on-street bicycle lane.

Key Design Criteria for Sidewalk Trees

Design criteria for the selection of the sidewalk tree species are the same throughout the project. They include the general technical criteria for all street trees described above as well as these criteria specific to the sidewalk trees:

- High branching to provide clearance for trucks and buses in travel lanes.
- Large, spreading canopy to provide shade and visually limit the width of Bailey Road.
- Deciduous, to provide summer shade and allow winter sun.
- Fall color for seasonal interest and to visually link with the trees used in the Bailey Road South zone, a part of the Bailey Road Widening Improvements Project.

The sidewalk planting strategy will be divided in two sections, south and north of the overpass of State Highway 4.

Sidewalk Planting South of the Overpass

Sidewalk Trees

Freeman Maple 'Autumn Fantasy' trees will be planted in the buffer zone next to the sidewalks from the BART Access Road to the overpass of SR4 at a uniform spacing of approximately 30 feet. This is the same tree being used at the sides of Bailey Road in the Bailey Road Widening Improvements Project. Using the same tree as the widening project will create a strong visual link between the two projects and meets the design criteria for tree species to be used at the sidewalks. The exception to the regular use of the sidewalk tree, south of the overpass is the use of accent trees at special pedestrian improvement locations.
Sidewalk Ground Plane Planting

South of the overpass, the buffer zones on each side of Bailey Road will be planted with ornamental groundcovers to beautify this segment and link visually with the Bailey Road Widening Improvements Project.

The sidewalk ground plane planting will be a single species south of the overpass. The planting will draw from the list of species used in the Bailey Road Widening Improvements Project.

Species to be considered south of the overpass include:
- *Escallonia ‘Newport Dwarf’*
  Dwarf Escallonia
- *Pittosporum tobira ‘Wheelers Dwarf’*
  Dwarf Mock Orange
- *Rosa ‘Meidiland Sevillana’*
  Sevillana Meidiland Rose

Sidewalk Planting North of the Overpass

Sidewalk Trees

North of the SR4 overpass, a single species of sidewalk tree will be used for the full length of Bailey Road to Willow Pass Road. However, the species will be different from, but compatible with, the Freeman Maple Trees being used south of the overpass. This will help to create a strong visual linkage between the areas north and south of SR4 while maintaining a distinctive identity for each.

The trees will be planted in the buffer zone next to the sidewalks at a uniform spacing of approximately 30 feet. They will unify the street and provide shade for pedestrians and bicyclists. The exception to the regular use of the sidewalk tree north of the overpass is the use of accent trees at special pedestrian improvement locations.
Many tree species would be appropriate for the sidewalk trees north of the overpass. In particular, tree species that should be considered in the future detailed design and construction phase of the project include:

- *Fraxinus americana 'Autumn Purple'*
  Autumn Purple American Ash
- *Ginkgo biloba 'Autumn Gold'*
  Autumn Gold Maidenhair Tree
- *Pistacia chinensis*
  Chinese Pistache
- *Quercus shumardii*
  Schumard Oak

**Sidewalk Ground Plane Planting**

North of the overpass, the buffer zones on each side of Bailey Road will be planted with ornamental groundcovers. The species will be different from, but compatible with, the ground plane planting being used south of the overpass. This will help to create a strong visual linkage between the areas north and south of SR4 while maintaining a distinctive identity for each.

The sidewalk ground plane planting will be a single species north of the overpass. Species to be considered in the detail design/construction phase of the project include:

- *Agapanthus africanus*
  Lily of the Nile
- *Ceanothus griseus horizontalis*
  Carmel Mountain Lilac
- *Cistus hybridus*
  White Rockrose
- *Nepeta species*
  Catmint
- *Rhaphiolepis species*
  Hawthorne
- *Rosmarinus officinalis*
  Rosemary
MEDIAN PLANTING

The existing olive trees in the median north of the SR4 overpass will be replaced as recommended in the Pittsburg/Bay Point BART Station Area Specific Plan. The existing olive trees have a low profile and muted color that do little to distinguish Bailey Road as a memorable place. The trees are widely spaced with large expanses of paving that create a barren character that detracts from the aesthetic image of the street. The olive trees also drop messy fruit producing a maintenance problem on Bailey Road.

Most of the median in the Interchange Zone will not be planted because the median is beneath the overpass and lacks sunlight or is too narrow for planting (see Median Paving). This includes both trees and groundcovers.

Median Trees

Design criteria for the selection and planting of median trees are the same throughout the project. They include the general technical criteria for all street trees described above as well as these criteria specific to the median trees:

- Narrow, small or high branching to provide clearance for trucks and buses in travel lanes.
- Interesting form and/or color to draw attention and make Bailey Road memorable, preferably in multiple seasons.
- Median trees will be planted where the total width (from curb to curb) is 7-feet or greater.

The median planting strategy will be divided into two sections, south and north of the SR4 overpass.
Median Planting South of the Overpass

Median Trees
South of the overpass, Chanticleer Pear is the preferred median tree because it is one of the trees being used in the median of Bailey Road in the Bailey Road Widening Improvements Project further south. It will be planted at a uniform spacing of approximately 20 feet. The tree is tall and quite narrow and is attractive in multiple seasons with white spring bloom, bright green foliage, and autumn color. The tree fulfills the design criteria for tree species to be used in the median.

The exception to the regular use of Chanticleer Pear in the median south of the overpass is the use of accent trees at special pedestrian improvement locations.

Median Ground Plane Planting
South of the overpass, the Bailey Road median will be planted with ornamental groundcovers to beautify this segment and link visually with Bailey Road Widening Improvements Project. The planting will draw from the list of species used in that project.

Species to be considered south of the overpass in the median include:
- Arctostaphylos, 'Emerald Carpet'
  Dwarf Manzanita
- Helictotrichon sempervirens
  Blue Oatgrass
- Nandina domestica 'Harbor Dwarf'
  Dwarf Heavenly Bamboo
Median Planting North of the Overpass

Median Trees
North of the overpass, several ornamental tree species should be considered for use in the median, including:

- *Gingko biloba ‘Princeton Sentry’*
  Princeton Sentry Maidenhair Tree
  (only if *Gingko* is not used as the sidewalk tree)

- *Chionanthus retusus*
  Chinese Fringe Tree

- *Lagerstroemia x fauriei ‘Natchez’*
  White Crape Myrtle

- *Prunus serrulata ‘Snow Goose’*
  Snow Goose Flowering Cherry

- *Prunus serrulata ‘Mount Fuji’*
  Mount Fuji Flowering Cherry

- *Pyrus kaempferi*
  Evergreen Pear.

In addition, serious consideration should be given to the use of palm trees in the Bailey North median. These trees are easily maintained, allow sunlight and views, and will give Bailey Road a distinctive image unlike most other major roadways in the County. Palms to consider include:

- *Phoenix canariensis*
  Canary Island Date Palm

- *Phoenix dactylifera ‘Medjool’*
  Medjool Date Palm (male)

- *Syagrus romanzoffiana*
  Queen Palm

- *Washingtonia robusta*
  Mexican Fan Palm.

Like other areas along the corridor, the exception to the regular use of the median tree north of the overpass is the use of accent trees at special pedestrian improvement locations.
Median Ground Plane Planting

North of the overpass, the median will be planted with ornamental groundcovers. The species will be different from but compatible with the ground plane planting being used south of the overpass. This will help to create a strong visual linkage between the areas north and south of SR4 while maintaining a distinctive identity for each.

Species to be considered in the detail design/construction phase of the project include:

- *Dietes iridioides*
  - Fortnight Lily
- *Gazania species*
  - Gazania
- *Hemerocallis species*
  - Daylilies
- *Lantana species*
  - Ground cover Lantana
- *Phormium hybrids*
  - New Zealand Flax
- *Sedum ‘Autumn Joy’*
  - Stonecrop
Accent Trees

Ornamental accent trees will be used to draw attention to special pedestrian improvement areas throughout the corridor.

Design criteria for the selection of the accent tree species are the same throughout the project. They include the general technical criteria for all street trees described above as well as these criteria specific to accent trees:

- Narrow, small or high branching to provide clearance for trucks and buses in travel lanes.
- Color and form that contrasts with the median tree and the sidewalk trees in order to accent and draw attention to these special locations.

A single species of tree will be used in the tree groups in each location in order to create a strong accent, but grouped species may vary from location to location. Tree species to consider in the detailed design and construction phase of the project include:

- Crabagus phaenopyrum
  Washington Thom
- Lagerstroemia x fauriei hybrids
  Crape Myrtle
- Malus species
  Flowering Crabapple
- Cercis canadensis ‘Forest Pansy’
  Eastern Redbud
- Cercis occidentalis
  Western Redbud
- Prunus serrulata
  Flowering Cherry.
Overall Design Concepts

Lighting

Just as the major street tree planting is intended to provide a more comfortable pedestrian and bicycle environment in the daytime, lighting will play an important role in enhancing the environment at night, while also addressing functional needs for vehicular and pedestrian safety and security. Lighting design for the entire corridor from the BART Access Road to Willow Pass Road includes two important considerations:

1. Nighttime functional and aesthetic requirements:
   - For the vehicular portion of the street, illumination levels must be provided that are suitable for safe operation of vehicles at the design speed of the street.
   - It is preferable that all light sources (luminaires) for street lighting and pedestrian lighting provide a “white” light such as that provided by metal halide, induction or LED sources. White light sources render color of people and objects at night in a much more attractive manner, which is important on a pedestrian-oriented street.

2. Appearance of light standards and luminaires as objects in the streetscape in the daytime. Poles and street light elements must be:
   - Attractive and contribute to the community image.
   - Designed to accommodate decorative or informational banners (at least one type of pole).
   - Contemporary in design to fit with the contemporary character of the neighborhood and the modern design of the BART station.

Three types of lighting will be provided:
   - Overhead vehicular street lighting located in the median where possible.
   - Pedestrian sidewalk lighting located in the sidewalk buffer zone.
   - Special feature lighting.
OVERHEAD VEHICULAR STREET LIGHTING

Overhead vehicular street lighting will be provided by a “cut-off” type fixture on a tall pole approximately 30 feet in height, installed approximately 120-150 feet apart. Cut-off fixtures provide light to the surface of the street, but the source of the light is “cut-off” and not visible from the side. Standard “Cobra heads” are not preferred, as they will not serve to distinguish Bailey Road from other roads in the County. See examples on the previous page.

PEDESTRIAN SIDEWALK LIGHTING

Pedestrian-level lights are intended to provide illumination at the sidewalk level in scale with the pedestrian. They are also intended to provide a visible white light source that will unify the corridor at night with a strong rhythm of illumination when viewed down the street. They will be installed approximately 60 feet apart.

The pedestrian lights will be a post-top fixture with top shields to eliminate upward light spillage and conform with “dark sky” policies. They will be mounted on poles approximately 14-18 feet high and thus will be the most visible streetscape design element at night extending the entire 3,000 foot length of Bailey Road from the BART Access Road to Willow Pass Road. It is recommended that the same pedestrian lighting be extended south to Leland Road along the sidewalk. See examples on this page.

SPECIAL FEATURE LIGHTING

See Section 4: Interchange Zone Design Concepts and Section 5: Bailey North Design Concepts for specific information about special feature lighting in each subdistrict.
STREET FURNISHINGS

Street furniture includes all of the various elements that are typically placed along the sidewalks to enhance the use and comfort of the street by pedestrians and bicyclists. Street furnishings will include the following:

- Seating
- Trash and Recycling receptacles
- Bicycle racks
- Newspaper racks
- Tree grates, if needed
- Tree guards, if needed
- Signage and Wayfinding Elements
- Bus Transit Facilities.

STREET FURNITURE DESIGN CRITERIA

There are several specific criteria related to the design and placement of street furniture elements. Key considerations include:

- A design expression that is simple and contemporary without being trendy in order to relate to the contemporary character of the neighborhood and modern design of the BART station.
- To the extent possible, a collection of elements that generally relate to one another in design expression (and to other streetscape elements such as pedestrian lighting).
- Readily available from manufacturers of solid reputation and longevity to avoid expensive custom fabrications and assure ease of replacement.
- Durable and easily maintained.
- Constructed of sustainable recycled materials, where available and appropriate.

It should be noted that the street furniture examples shown are not intended to be the final selected products. They are illustrated here to convey design intent. Final selection will occur in the detail design and engineering stages of the project.
STREET FURNITURE LOCATION CRITERIA

In addition to the design criteria related to major streetscape elements, the placement of streetscape elements is based on the following criteria:

- Installed in the buffer zone where possible. An exception to this criterion is benches outside of bus transit facilities. These will be located away from and facing the street.
- Located according to the following minimums:
  - Minimum of eighteen inches (18”) from the outside edge of the curb.
  - Four feet (4’) from any driveway, wheelchair ramp, blue zone parking space, or curb cut.
  - Five feet (5’) from any fire hydrant.
  - Three feet (3’) from other structures such as street light poles, trees, etc. (unless specifically designed otherwise).
  - Not located below a fire escape or blocking access to a standpipe, utility valve, or utility box.
  - Contrasting in color to the sidewalk so as to be visible to visually impaired pedestrians.
  - Located in accordance with ADA guidelines, California Title 24, and County accessibility requirements.

SEATING

Seating will be primarily located at bus stops, the Contra Costa Canal crossing, and the Delta / De Anza Trail crossing plazas. See the “Transit Shelter” section for bench requirements in transit shelters. The seating outside of transit shelters will consist of individual seats or benches with backs and closely spaced armrests. This type of design is comfortable, while also discouraging sleeping and reclining.

Example: Contemporary Seating, “Trio” by Forms + Surfaces

Example: Contemporary Seating, “Steelites RB-28” by Victor Stanley
TRASH AND RECYCLING RECEPTACLES
Two sets of trash and recycling receptacles will be provided in the buffer zone, adjacent to the pedestrian path of travel at each intersection of Bailey North. There will be one set on each side of Bailey Road. A set consists of one trash receptacle and one recycling receptacle.

At intersections with transit stops, the receptacles will be located near the shelter. In addition, one set of trash and recycling receptacles will be provided near the seating at the Delta / De Anza Trail crossing. The trash and recycling receptacle models will be compatible with the bench design options and provide a side door for easy maintenance access. Each receptacle will have a decal or other method to indicate whether it is intended for trash or recycling.

BICYCLE RACKS
Bicycle Racks are needed at specific destinations accessible from Bailey Road more than they are needed along the corridor itself. There is an existing bicycle rack on the west side of Bailey Road at Willow Pass Road, near the “Taco Bell” restaurant. This may be a location where more bike racks are warranted. The new Walgreens plan includes two bike racks near Willow Pass Road as part of the planned site improvements for that project.

Where used, bicycle racks will be placed parallel to the curb and will allow a minimum of 6 feet of clear pedestrian circulation along the sidewalk (including when bicycles are parked at the rack). They will also be placed to allow at least 36 inches of clearance between the bicycles parked at racks and any other street furniture. The selected model will allow the locking of two bicycles and will be simple in design to avoid adding excessive clutter to the street.
NEWSPAPER RACKS
Newspaper racks will be fixed, pedestal-mounted gang-type racks in order to avoid clutter and assure accessibility and safety. They will be located near the bus stops.

TREE GRATES
In locations where a 4-foot wide planted buffer zone will result in a sidewalk path of travel that is too narrow (less than 6-feet), sidewalk street trees will be planted with tree grates and tree guards in order to increase the usable sidewalk path of travel width. Square grates of a minimum 48” size are preferred. Actual size will be determined based upon final sidewalk design, underground utilities, and other constraints. The tree grates will meet all relevant ADA/Title 24 disability standards. Notably, no opening will exceed 1/2” in the surface of the grate.

TREE GUARDS
Tree guards will be provided on all new trees that are installed with tree grates. The trees in these locations are especially close to the sidewalk and the bike lane; consequently tree guards will be provided to protect the trees. The tree guards will be simple in design and compatible with the tree grates and, to the extent possible, the design of other street furniture elements such as seating. The tree guard will be strong and durable against vandalism with a top steel ring to protect against bending of top pickets.

WAYFINDING AND INFORMATIONAL SIGNAGE
In addition to required traffic regulatory signage, two types of signage will occur along Bailey Road to direct and inform pedestrians and bicyclists.

Wayfinding Signage
Wayfinding signs will be located in the Pittsburg/Bay Point BART station and at the Delta De Anza and Bel Air Trail crossings. These signs will display regional and local transit maps with key Bay Point destinations. The signs at the trail crossings will be provided by BART and will include bicycle route maps and information about connecting transportation services. Additional signs will be provided along the corridor to guide pedestrians and bicyclists to the Delta / De Anza Trail.
BUS TRANSIT FACILITIES

Bus transit facilities will be important elements of the streetscape design for Bailey Road. Well designed transit facilities enhance the experience of transit riders, add attractive features to the streetscape, and provide useful information and wayfinding. In addition to the street furniture and lighting mentioned previously, transit shelters will be located at all of the bus transit stops along the corridor. The shelters will meet the requirements of Tri Delta Transit, including the following:

- Compliant with all relevant Americans with Disabilities Act (ADA) standards
- Provide sufficient lighting levels to read a newspaper
- Designed with perforated metal on backs and half sides with a solid roof
- Durable and easily maintained.
- Include a bench under a shelter canopy allowing at least four feet of space between the end of the bench and the end far wall of the shelter for wheelchair accommodation. Benches will be backless. Each bench will include two mid-bench armrests that preclude individuals from laying down along the length of the bench.
- 12-feet minimum and 14-feet maximum length
- 2-feet minimum and 4-feet maximum width
- 7.5-feet minimum and 13-feet maximum height with a minimum 7-foot clearance on the inside of the shelter as installed.

The existing transit shelters near Mary Ann Lane and Placer Drive are good examples of suitable facilities.
Utilities

Contra Costa County is in the early planning stages of undergrounding overhead utilities along Bailey Road. With this improvement, utility poles will be eliminated. This will open the sidewalks for use by pedestrians and eliminate the visual blight of utility poles, wires, transformers and associated hardware.

The widening of the sidewalks, reconfiguration of SR4 on-ramps and off-ramps and the introduction of buffer areas between the pedestrian zones and the travel lanes will dictate that the facilities that convey the storm drainage run-off from these areas, including the curbs, gutters, catch basins and underground storm drainage lines must be relocated and reconstructed.

This work provides the opportunity for the storm drainage system in the area to be upgraded to meet new standards for stormwater treatment. In this case, the new storm drainage facilities will include vegetation and specially designed filtration systems that help to remove bacteria, metals, nutrients and other suspended solids prior to them being discharged to the Suisun Bay. Additionally, the final street surface may need to be lowered to accommodate the new curbs so some existing utility pipes may need to be lowered so that adequate cover is maintained.

The City of Pittsburg has existing sanitary sewer facilities south of the project area that will likely need to be upsized to accommodate new development immediately west of the BART station. There are no plans at this time to install a sanitary sewer line in the Bailey Road corridor, but it has not been ruled out as a possibility. The development of final engineering plans for Bailey Road corridor improvements should be coordinated with the City of Pittsburg so that a sanitary sewer line, if needed, could be installed either before or concurrent with surface improvements. Care will be taken to ensure that new street trees are not installed directly above existing or new sewer and utility lines.
Overall Design Concepts

Figure 4: Bailey Road Proposed Improvement Plan, Continued
Sheet 3 of 6

18' Maintenance Safety Zone at Median, Both Sides
Median Narrowed to 10'
New Median Trees
New Ground Plane Planting
Existing Pedestrian Crossing and Signal to be Retained with Improvements
Sidewalk Width Varies 11' - 13'
Pedestrian Scale Light

SEE FIGURE 15: DETAIL PLAN - BUS TRANSIT STOPS AND INTERSECTION AT CANAL ROAD AND BAILEY ROAD ON PAGE 71
SEE FIGURE 16: DETAIL PLAN - INTERSECTION OF THE DELTA / DC ANZA TRAIL, BEL AIR TRAIL AND BAILEY ROAD ON PAGE 73
4 | Interchange Zone Design Concept

This section describes design concepts specific to the Interchange Zone segment of the corridor, particularly modifications to the SR4 interchange.

**On-Ramp and Off-Ramp Modifications**

The most significant safety and aesthetic improvements to the pedestrian and bicycle environment along the entire Bailey Road corridor will occur within the Interchange Zone and involve important changes to the on-ramps and off-ramps between State Route 4 and Bailey Road. These major modifications include:

- **Removal of the north-side loop off-ramp entirely in order to provide an uninterrupted west side surface sidewalk and southbound bicycle lane.** Pedestrians currently do not feel safe using the existing tunnel, so they have been crossing the off-ramp despite the serious conflict with automobiles. It also causes southbound bicyclists on Bailey Road to be trapped when the free-flow ramp creates an additional lane between the bicyclist and the curb. The need for the loop off-ramp will be alleviated by improvements to the westbound directional ramp described below.

- **Removal of the loop off-ramp will allow the pedestrian tunnel on the northwest side of the interchange to be removed.** This tunnel was built to prevent pedestrians and bicyclists from crossing the north-side loop off-ramp. Pedestrians and bicyclists seldom use the tunnel because of security concerns. With the removal of the loop ramp, the tunnel will no longer be needed.

*Existing Streetscape Condition, Interchange Zone (View West): Vehicular movements on and off the freeway, narrow sidewalks, and little protection from vehicles detracts from the pedestrian environment in this section. The loop ramp will be removed.*

*Existing Streetscape Condition, Interchange Zone, northwest side: Pedestrian tunnel is intended to divert foot traffic under north-side loop off-ramp. The tunnel will be removed.*
Interchange Zone

Figure 5: Existing and Proposed Cross-sections at Interchange Zone

Existing Condition
Bailey Road at State Route 4 Overpass
(View North)

Proposed Condition
Bailey Road at State Route 4 Overpass
(View North)
• Improve the westbound (directional) off-ramp at the east side of Bailey Road to accommodate both northbound and southbound traffic turning onto Bailey Road. This will be accomplished by widening the off-ramp and adding a traffic signal to allow both left and right turns onto Bailey Road.

• Change the south-side loop off-ramp to a fully signal-controlled T-intersection at Bailey Road. The signal will allow through traffic to the BART Access Road and right turns onto Bailey Road northbound. Left turns southbound onto Bailey Road will not be allowed, similar to the condition as it exists today.

• Changing the intersection to a “T” will eliminate the separated right turn merge lane from the eastbound SR 4 to northbound Bailey Road loop ramp. This lane has encouraged fast-moving vehicular right-turns and discouraged pedestrian and bicycle movement. The loop ramp will be widened if needed to accommodate traffic that may otherwise have backed up onto State Route 4 because of the signalized intersection. This off-ramp will continue to allow no left turns.

**Interchange Zone Street Cross-Section**

With the above modifications to the interchange loop ramps, the two outside lanes on Bailey Road can be removed and the street cross-section in the Interchange Zone will be revised in the following ways. See Figure 5, Existing and Proposed Cross-Sections at Interchange Zone.

• On the east side, a pedestrian zone of variable width up to 18 feet can be provided. This allows sidewalks up to 14 feet wide and a buffer area to separate pedestrians from traffic of 4 feet or more. Actual width of the sidewalk will vary through this area due to travel lane requirements but will not be less than 6 feet.

• On the west side of Bailey Road, the removal of the loop ramp will also allow removal of the dedicated right turn lane into the BART station. Removal of this lane will create additional space for pedestrians on the west side of Bailey Road through the underpass. The right turns into BART will be incorporated and

*Existing Streetscape Condition, Interchange Zone: The south-side loop off-ramp (eastbound State Route 4 to northbound Bailey Road) includes a crossing signal that is largely ignored by motorists and presents a hazard to pedestrians and bicyclists. This area will be reconfigured to a T-intersection.*

*Existing Streetscape Condition, Interchange Zone (View South): The underpass sidewalk on the east side of Bailey Road is narrow with no buffer between pedestrians and vehicular traffic. (See Figure 2. Existing Conditions Cross-Sections). The outside merge lane will be removed and the sidewalk widened.*
controlled by the existing traffic signal at the intersection. As much as 12 feet can be gained, resulting in a potential sidewalk and buffer zone of up to 29 feet in width.

- It is generally envisioned that the sidewalk on the west side of Bailey Road beneath the overpass will be limited to a width of 12-feet unless a specific buffer-zone design warrants exception to this guideline. The balance of the pedestrian space under the highway will be within the buffer zone which can be devoted to a variety of streetscape improvements. This configuration will discourage use of the underpass space for activities other than pedestrian movement. The paving within the buffer zone will be designed to discourage jaywalking and pedestrian use and to add visual interest. See Section 3, Overall Design Concepts for examples of possible paving materials. See Section 5, Special Pedestrian Improvement Locations for potential uses in the buffer zone through the underpass.

- On-street bicycle lanes on both sides of Bailey Road through this area will be 5 feet wide.

**Interchange Zone Pedestrian Crossings**

All intersections in the Interchange Zone will meet current Public Rights-of-Way Accessibility Guidelines (PROWAG) requirements for accessibility developed by the United States Access Board.

A key issue is the location of the Bel Air Elementary School and the children it serves. The existing pedestrian facilities indicate that pedestrians are intended to use the west side of Bailey Road as the preferred route, presumably because the pedestrian tunnel is provided to protect them from crossing the north-side loop off-ramp at the street level. The school, however, is on the east side of Bailey Road. Therefore, the school crosswalks were designed such that school children who live on the east side of Bailey Road are directed to cross the arterial twice in order to take advantage of the pedestrian tunnel on the west side. Improved sidewalks on both sides of Bailey Road as well as intersection improvements will alleviate this hazard for children.
Further discussion of the intersection of Bailey Road, the BART Access Road, and SR4 On and Off-Ramps is addressed in the Special Pedestrian Improvement Locations section of this document. The other intersections in the Interchange Zone will feature the following pedestrian crossing improvements:

INTERSECTION OF THE BART ACCESS ROAD AND BAILEY ROAD
The Bailey Road Widening Improvements Project will include a crosswalk across Bailey Road on the south side of the BART Access Road intersection. Therefore this crossing will not be addressed in this Pedestrian and Bicycle Improvement Plan. The access across the BART Access Road and the SR4 On and Off-ramps will both have special treatments to call attention to pedestrians and bicyclists crossing at these locations. Special features include:

- Provide enhanced crosswalks across the BART Access Road with vehicular stop bars set back four feet from the crosswalk. The crosswalk paving should be either natural scored concrete or unit pavers to facilitate future street maintenance. This applies to all enhanced crosswalks.
- Provide an enhanced school crosswalk across the SR4 Eastbound On-Ramp with a vehicular stop bar set back four feet from the crosswalk.
- Restrict pedestrians from crossing Bailey Road on the north side of the intersection.
- Re-time the traffic signal with timing adequate to assure pedestrians have ample time to cross in all directions.
- Install countdown pedestrian signals with properly placed pedestrian actuation buttons and audible locator tones.
- Install ADA ramps with truncated domes.

See Figure 6, Detail Plan - Intersection of the BART Access Road and Bailey Road.

Existing Streetscape Condition: Intersection of the BART Access Road and Bailey Road. (view west). This pedestrian crosswalk is not in the scope of this plan but will be improved as part of the Bailey Road Widening Improvements Project.

Existing Streetscape Condition, SR4 Westbound Off-Ramp (east side of Bailey Road): This intersection does not include a crossing signal or standard school crosswalk despite the fact that it is used by schoolchildren south of SR4 to access Bel Air Elementary School.
STATE ROUTE 4 WESTBOUND DIRECTIONAL OFF-RAMP

This existing single lane off-ramp is located on the east side of Bailey Road and currently allows only right turns northbound onto Bailey Road. In addition to widening the off-ramp to two lanes and allowing left turns onto Bailey Road, the following pedestrian improvements will be made:

- Provide a standard school crosswalk across the SR4 Westbound Off-Ramp with a vehicular stop bar set back four feet from the crosswalk.
- Restrict pedestrians from crossing Bailey Road at this location.
- Add a new traffic signal allowing both left and right turns onto Bailey Road. Time the traffic signal with adequate timing to allow pedestrians to cross the ramp parallel to Bailey Road.
- Install a countdown pedestrian signal with properly placed pedestrian actuation buttons and audible locator tones.
- Install ADA ramps with truncated domes.
- Install properly placed pedestrian actuation buttons, with audible locator tones.

CANAL ROAD / STATE ROUTE 4 WESTBOUND ON-RAMP

This intersection includes Canal Road on the east side and the westbound SR4 on-ramp on the west side of Bailey Road. Standard school crosswalks are provided across the on-ramp and Bailey Road but no school crossing is provided across Canal Road despite the fact that Canal Road is the street on which the school is located. The following pedestrian improvements will be made at this intersection:

- A pedestrian refuge will be provided in the median at the Bailey Road crossing.
- Provide vehicular stop bars set back four feet from the standard school crosswalk across Bailey Road.
- Upgrade the crosswalk across Canal Road to a standard school crosswalk with a vehicular stop bar set back four feet from the crosswalk.
restrict pedestrians from crossing Bailey Road on the south side of the intersection.

- Re-time the traffic signal with adequate timing to allow pedestrian crossing.
- Install countdown pedestrian signals with properly placed pedestrian actuation buttons and audible locator tones.
- Install ADA ramps with truncated domes.

Interchange Zone Planting

Loop Ramp Planting

Where the off-ramps are being removed and/or reconfigured in the Interchange Zone, new planting will be added to areas disturbed by construction. The south-side loop ramp area is on the east side of Bailey Road between the SR4 eastbound off-ramp and the overpass. The north-side loop ramp area is on the west side of Bailey Road between the SR4 westbound on-ramp and the overpass. See Figures 7 and 8, Detail Plans - South and North Loop Ramp Planting.

Tree and ground plane planting will conform to Caltrans standards and link visually to the existing planting in these areas. The design is conceptual and is intended to create a design that is compatible with the Bailey Road Pedestrian and Bicycle Improvement Project. As the interchange area is Caltrans property, the final design will be subject to Caltrans final design requirements.

In the loop ramp zones, a double row of street trees will be planted, one row in the buffer zone as described in Section 3: Overall Design Concept of this document and one row within the loop ramp side of the sidewalk. These will be the same species as the sidewalk trees. The second row is provided to better shade pedestrians in these wide sidewalk zones.

The tree species that currently exists in the loop ramp areas is attractive and appropriate to its location. Therefore, it is recommended that these trees remain to the extent possible and supplemented with additional similar plantings throughout the
loop ramp planting areas, (with the exception of the double row of street trees). See “Major Gateway at SR4 Overpass” in the Special Pedestrian Improvement Locations section of this document for more information regarding accent tree planting at the loop ramps.

Additional ground plane planting will also be required. It too, will relate to the remaining existing plantings. Criteria for these plantings include the following:

- Low maintenance
- Drought tolerant
- Preferably native to California
- Maintain sight distance standards along the highway and loop ramps.
- Maintain setbacks for errant vehicles to regain control along the highway and loop ramps
- Discourage camping or other undesirable activities through the use of barrier plantings and design layout that allows visibility into and through the sites.

There will be three categories of ground plane plants used at the ramp areas: grasses, shrubs, and ground cover. Listed below are species to be considered in the detailed design and construction phase of the project:

**Grasses**

Native grasses are recommended to be the most prevalent of the ground plane plants in the ramp areas, covering the ground around and between other types of plants. Examples include:

- *Carex tenuicola*
  Berkeley Sedge
- *Helictotrichon sempervirens*
  Blue Oat Grass
- *juncus patens*
  Gray Rush

- *Leymus condensatus*
  Lyme grass
- *Muhlenbergia rigens*
  Deer Grass.

**Barrier shrubs**

The barrier shrubs are intended to reach a mature height between 36 and 60 inches, preferably with stiff, woody branches, thorns, or spiny leaves in order to discourage human activity. Examples include:

- *Arctostaphylos*, species
  Manzanita
- *Rosa californica*
  Wild Rose
- *Ceanothus*, species
  Wild Lilac
- *Rhamnus californica*
  Coffee Berry.

**Ornamental ground cover**

The ornamental ground cover is intended to reach a mature height no greater than 24 inches. It will act as the foreground planting when viewed from Bailey Road, creating a green transition between the conventional planting in the pedestrian environment and the more natural planting in the ramp areas. Examples include:

- *Arctostaphylos uva-ursi*
  Bearberry
- *Arctostaphylos ‘Emerald Carpet’*
  Manzanita
- *Arctostaphylos ‘Pacific Mist’*
  Manzanita
- *Baccharis pilularis ‘Pigeon Point’*
  Dwarf Coyote Brush
- *Ceanothus*, species
  Dwarf Wild Lilac.
Interchange Zone Lighting

The general street lighting plan is described in the Overall Design Concept (Section 3). Lighting unique to the Interchange Zone will help illuminate the SR4 underpass at night and reinforce its character as a gateway. A variety of treatments should be considered including down-lights to wash the side walls of the underpass with light, accenting potential artwork and marking this as a significant gateway between Pittsburg and Bay Point. Another option is to incorporate special lighting as part of a public art project under the highway. See Section 6, Special Pedestrian Improvement Locations for more information about potential artwork through the underpass.

If such special lighting is included in a future project, the pedestrian-scale post-top lighting may not be needed. However, if special lighting is not provided, the post-top pedestrian lights should continue through the underpass.
INTERCHANGE ZONE WAYFINDING AND INFORMATIONAL SIGNAGE

WAYFINDING SIGNAGE
Wayfinding signage will be provided at three locations in the Interchange Zone to guide pedestrians and bicyclists to and along the Delta / De Anza Trail. These signs will be two-sided in order to inform pedestrians and bicyclists traveling in either direction.

One sign will be located at the south-east corner of the intersection at the BART Access Road and Bailey Road and another will be located at the south-west corner of the same intersection. Although these two locations are not within the area of this plan, adding the signs will benefit pedestrians and bicyclists on the trail as they pass through the Bailey Road corridor.

A third sign will be located near the north-west corner of the intersection at the BART Access Road and Bailey Road. It will communicate to pedestrians and bicyclists traveling south that they are to cross Bailey Road on the south side of the BART Access Road to continue on the Delta / De Anza Trail.

INTERPRETIVE SIGNAGE
An interpretive exhibit will be located at the Contra Costa Canal crossing on the west side of Bailey Road, north of the overpass. It will provide appropriate historical and/or other information about the canal and its relationship to the watershed, the bay, and the Contra Costa Water District.
This section describes design concepts specific to the Bailey North segment of the corridor. The Bailey North Zone provides the opportunity for Bailey Road to be a memorable street and source of pride for the Bay Point community.

The existing conditions through the Bailey North Zone detract from the pedestrian and bicycle environment and from the neighborhood’s identity:

- Sidewalks are too narrow for pedestrian comfort.
- Sidewalks do not meet ADA requirements.
- Sidewalks are not separated from vehicular traffic by a buffer zone.
- There are no street trees at the sidewalk.
- Bicycle lanes are inconsistent.
- The median is stark and unattractive because of its large paved areas and sparsely-planted olive trees. The fruit from the trees is messy and stains the pavement.
- Utility poles obstruct the sidewalk and detract from the visual quality of the street.
- The lack of street trees, prevalence of overhead utilities, and the wide roadway combine to make the Bailey Road corridor visually barren and unattractive.

Existing Streetscape Condition, Bailey North: Existing sidewalks suffer from non-standardized treatment and design features that are not consistent with American with Disabilities Act (ADA) standards. Utility pole and other elements restrict pedestrians to a narrow passage that is insufficient for wheelchairs.

Existing Streetscape Condition, Bailey North: Class II Bikeways (Bike Lane) exist in both northbound and southbound directions along Bailey Road. However, they are not of consistent width.
Figure 9: Existing and Proposed Cross-Sections at Bailey North

Existing Condition
Bailey Road at Mary Ann Lane, Placer Drive
(View North)

Proposed Condition
Bailey Road at Mary Ann Lane, Placer Drive
(View North)
**Bailey North Street Cross Section**

To address these issues, the street cross-section in Bailey North will be modified in the following ways. See Figure 9, Existing and Proposed Cross-Sections at Bailey North.

- Narrow the two travel lanes in each direction to 12-feet wide. They currently are of variable width, wider than 12-feet in some cases.
- Modify existing bike lanes to be 5 feet wide consistently. They currently are of variable width, often exceeding 5 feet.
- Narrow the existing 14 foot-wide median to 10 feet. This will allow planting and left turn pockets where needed.
- Provide a 10-12 feet wide pedestrian zone with the space gained from the reconfiguration of the median, travel lanes, and bicycle lane, described above.
- Within the pedestrian zone, create a 6-foot wide minimum pedestrian sidewalk.
- Also within the pedestrian zone, adjacent to the curb, create a 4-foot wide minimum buffer zone with sidewalk street trees and ground plane planting. Where the resulting pedestrian zone may be less than 6 feet wide, buffer zones will be replaced by sidewalk street trees in tree grates.
- Where possible, provide pedestrian refuges in medians at crosswalks.
- New medians will include 18-inch wide safety zones (12-inch paved maintenance band + 6-inch curb) on either side and ground plane planting in the 7-foot wide interior space.

**Bailey North Sidewalk Layout**

For purposes of safety and to encourage an orderly layout of street elements, the sidewalk has been divided into two functional longitudinal zones, where possible:

- A minimum six-foot wide clear pedestrian zone at the outside of the right-of-way. In many places this zone is wider than six feet.
- A buffer zone adjacent to the curb that is usually 4-feet wide but may be wider when space allows. Generally all street tree planting, lighting, signage and other vertical elements are placed in this zone.

An exception to the use of the buffer zone will be seating. Where benches have been incorporated into the streetscape design, they will be located away from and facing the street.

See following Figures 10, 11 and 12, Bailey Road near Mary Ann Lane - Photo of Existing Condition and Photo Simulations of Recommended Improvement Options.
Figure 10: Bailey Road near Mary Ann Lane - Photo of Existing Condition
Figure 11: Bailey Road near Mary Ann Lane - Photo Simulation of Recommended Improvements, Option 1: Flowering Cherry Trees in Median
Bailey North

Figure 12: Bailey Road near Mary Ann Lane - Photo Simulation of Recommended Improvements, Option 2: Palm Trees in Median
BAILEY NORTH LIGHTING

See the Overall Design Concept (Section 3) of this document for a description of the general lighting concept, which applies to the entire corridor.

FEATURE LIGHTING

There are various options for feature lighting in Bailey North. Small white LED lights in the median trees will make nighttime Bailey Road a memorable street in keeping with its role as a center of the community. Another option is to use moonlighting in the median trees.

Lighting can be incorporated into the kiosks at the Delta / De Anza Trail Crossing. Feature lighting may be used as an element of the special entry monuments at the gateway to Bailey Road at Willow Pass Road.

The Bailey Road Widening Project includes pedestrian-scale lights along the eastern segment of the Delta / De Anza Trail. Although it is not within the area of this plan, adding pedestrian-scale lights to the western segment of the trail would encourage more bicycle and pedestrian use of the trail system.

BAILEY NORTH WAYFINDING AND INFORMATIONAL SIGNAGE

Two types of signage will occur in the Bailey North segment of Bailey Road to direct and inform pedestrians and bicyclists. Wayfinding signs will be located in bus shelters and at the Delta De Anza and Bel Air Trail crossings. The trail signage will guide pedestrians and bicyclists to and along the Delta / De Anza Trail. These signs will be two-sided in order to inform pedestrians and bicyclists traveling in either direction.

Interpretive signage will provide information at two Bailey North locations, Delta / De Anza Trail on the west side of Bailey Road and the Bel Air Trail on the east side of Bailey Road. These will provide appropriate information about the trails, their destinations, and their relationship to the East Bay Municipal Utility District.
Due to their special importance as gateways, community gathering spaces (bus stops) and special pedestrian crossings, five special pedestrian improvement locations have been identified:

1. Major gateway improvements at SR4 overpass
2. Bus transit stops and intersection at Canal Road and Bailey Road
3. Intersection of the Delta / De Anza Trail, Bel Air Trail and Bailey Road
4. Bus transit stops and intersection at Mary Ann Lane, Placer Drive
5. Major gateway and intersection at Willow Pass Road and Bailey Road

Two important Bailey Road gateways are outside the scope of this project, and so are not included in this list. They are the intersection of Bailey Road at Leland Road and the southern gateway to the Delta / De Anza Trail at the southeast corner of Bailey Road and the BART Access Road.

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Lighting condition, the general appearance of these sidewalk areas, and the potential for improving the appearance of the undercrossing with mural or other art works should also be examined.

Pittsburg / Bay Point BART Station Area Specific Plan: Pedestrian / Bicycle Circulation, November 1997
MAJOR GATEWAY IMPROVEMENTS AT SR4 OVERPASS

Traveling on Bailey Road north from Leland Road, one leaves the City of Pittsburg and enters the unincorporated community of Bay Point. The overpass at State Route 4, while not exactly at the dividing line, creates the gateway representing the transition from one place to another. It is therefore, an important gateway to both Pittsburg and Bay Point.

In addition, large numbers of pedestrians and bicyclists need to pass through the underpass. However, due to its design and the large volume and speed of vehicles, the pedestrian experience is uncomfortable and unsafe.

The design concept for the State Route 4 overpass gateway will create a visual linkage between Bailey Road north and south of State Highway 4 while maintaining a distinctive identity for each. It also reduces vehicular impacts and improves pedestrian safety and enjoyment. Among the key improvements are the following:

Pedestrian Improvements
- In order to improve pedestrian safety and amenity, the SR4 off-ramps will be reconfigured to require vehicles to stop before turning onto Bailey Road. See Street Cross-Section and On and Off-Ramp Changes sections of the Interchange Zone segment of this document for more detailed information.
- Sidewalks will be widened and buffer zones added through the underpass. See Section 4, Interchange Zone Design Concepts for more specific information.
- Pedestrian sidewalk lighting will be added through the underpass.

Aesthetic Improvements
- The overpass gateway is an opportunity to celebrate community pride. Accent trees will be planted on both sides of Bailey Road at each end of the overpass. The trees will add interest to the concrete side walls of the overpass and call attention to the gateway as a special location.
• A generous buffer zone between 8-15 feet will be provided under the highway on the west side of Bailey Road. As this area is not suitable for planting, there are other ways it can be used. See below for some ideas.

• Murals or other artistic wall treatments with appropriate lighting are recommended on both sides of the underpass to serve as a gateway to Pittsburg and Bay Point.

The two planes, the horizontal surface of the buffer zone paving and the vertical surface of the underpass walls, will be particularly effective if they work together as a whole concept. The underpass area is an ideal location for the participation of an artist and other designers, funded through a public/private partnership. This is also an opportunity for community participation.

Design of the work could consider a variety of themes, including history, geology, culture, flora, or fauna of the Pittsburg and Bay Point area, including the Suisun Bay. Listed here are some ideas for special treatments through the underpass:

• Include a storm water treatment system in the buffer zone that is reflected in the surface treatment with boulders and rocks creating the impression of a dry streambed. The wall treatment could include information about the local watershed.

• The buffer zone could be paved in a pebble mosaic representing the surface of the bay and with vertical sculptures of native wildlife. The walls could include images of some flora and fauna of the shoreline.

• Simple, repetitive vertical sculptures can be created in the buffer zone to represent pilings or reeds with mosaic murals on the walls showing scenes of historic or cultural interest on the bay.

See Figures 13 and 14, Major Gateway at SR4 Overpass, Photo of Existing Condition and Photo Simulation of Recommended Improvements.
**Bus Transit Stops and Intersection at Canal Road and Bailey Road**

The Mims/Canal Intersection will have special treatments to call attention to pedestrians and bicyclists crossing at this location. There are also northbound and southbound bus stops near this intersection. Special features include:

- Enhanced Crosswalks at intersection with stop bar set back four feet from crosswalk. This paving should be either natural scored concrete or concrete unit pavers to facilitate street maintenance.
- Re-time traffic signal with timing appropriate for pedestrian crossing.
- Install countdown pedestrian signals with properly placed pedestrian actuation buttons and audible locator tones.
- Install ADA ramps with truncated domes.
- A pedestrian refuge will be provided at the median at the Canal/Mims Intersection.
- Accent trees will be planted at the corners of the intersection and at the bus stops.
- Special sidewalk paving will be used at the bus stops.
- Enhanced, highly visible bus transit nodes will include shelters, benches, security and accent lighting, trash and recycling receptacles, and newspaper racks.
Figure 15: Detail Plan - Bus Transit Stops and intersection at Canal Road and Bailey Road
Intersection of the Delta / De Anza Trail, Bel Air Trail and Bailey Road

The Delta / De Anza Trail uses the sidewalks along Bailey Road as an urban segment of the trail to pass under State Route 4. The Delta / De Anza Trail crossing will have special treatments to call attention to pedestrians and bicyclists crossing at this location and to help them to find their way between the eastern and western legs of the trail. Countdown pedestrian signals, properly placed pedestrian actuation buttons, ADA ramps, and a pedestrian refuge have been recently constructed as part of the County’s Delta / De Anza Trail Gap Closure / Crossing Signalization project. These improvements will be retained with the Pedestrian and Bicycle Improvement Project. Additional special features include:

- Enhanced Crosswalks at intersection with stop bar set back four feet from crosswalk. This paving should be either natural scored concrete or concrete unit pavers to facilitate future street maintenance.
- Assure the newly-installed traffic signal is timed appropriately for safe pedestrian crossing.
- Install audible locator tones for the visually impaired.
- Accent trees that contrast in color and character from the sidewalk street tree and primary median tree will call attention to this special node. In addition, shade trees will be provided adjacent to the seating areas at this location. Shade tree species to be considered include:
  - **Aesculus californica**
    - California Buckeye
  - **Acer macrophyllum**
    - Big-leaf Maple
  - **Quercus chrysolepis**
    - Canyon Live Oak
  - **Quercus lobata**
    - Valley Oak
- Special way-finding and interpretive signage on both sides of Bailey Road.
- Special seating areas with benches, pet waste stations, trash, and recycling receptacles on both sides of Bailey Road.
- Special sidewalk paving.
Figure 16: Detail Plan - Intersection of the Delta / De Anza Trail, Bel Air Trail and Bailey Road

- Pedestrian Refuge with 6' Wide Median Break to Allow Disabled Access and Bicycle Crossing
- Accent Trees
- New Ground Plane Planting at Trail Entrances
- New Fence at Trail Entrances
- Shade Trees, Typical
- Information or Interpretive Kiosk
- Bench, Typical
- Special Sidewalk Paving
- Pedestrian Scale Lights
- Enhanced Crosswalk
- Trash and Recycling Receptacle, Typical
- EBMUD Underground Lines - NO TIES PLANTED ABOVE THESE LINES
- Bailey Road
- Mims / Canav Road

Bailey Road Pedestrian and Bicycle Improvement Plan | June 2010
**Bus Transit Stops and Intersection at Mary Ann Lane, Placer Drive**

Since this intersection is not signal-controlled, special treatments will be incorporated to call attention to pedestrians and bicyclists crossing at this location. Special features include:

- High visibility marked ladder crosswalks across Bailey Road.
- Stop bar on Bailey Road set back four feet from crosswalk.
- Advanced crossing sign with “Ped Xing” pavement marking.
- High visibility pedestrian crossing sign at crosswalk with arrow pointing to crosswalk.
- Install ADA ramps with truncated domes.
- Accent trees will be planted at the corners of the intersection and at the bus stops.
- Special sidewalk paving will be used at the bus stops.
- Bus Transit facilities with special lighting, benches, trash and recycling receptacles and newspaper racks will be located at the bus stops.

*Public Art can be incorporated in the special improvement locations along Bailey Road.*
Figure 17: Detail Plan - Bus Transit Stops and Intersection at Mary Ann Lane, Placer Drive and Bailey Road

- High visibility crosswalks at unsignalized intersection
- Vehicular lights
- Accent tree planting

- Bailey Road
- Mary Ann Lane
- Placer Drive

- Pedestrian lighting in close proximity to pedestrian node
- Concrete bus pad
- Newspaper rack
- Trash and recycling receptacles
- Bus shelter with bench
- Special sidewalk paving

Scale: 0' - 15' - 30' - 60'
Major Gateway and Intersection at Willow Pass Road and Bailey Road

Willow Pass Road currently serves as an important neighborhood shopping destination for Bay Point. With additional private investment currently planned, the importance of the intersection of Bailey Road and Willow Pass Road as a destination will increase.

It is also the gateway to both corridors representing the image of Bay Point as a community. Furthermore large numbers of pedestrians and bicyclists need to pass through the intersection. However, due to its design and the large volume and speed of vehicles, the pedestrian experience is uncomfortable and unsafe.

Therefore, special treatments will be used to increase safety and to celebrate this important location. The design concept for the Willow Pass Road gateway creates a visual anchor for Bailey Road and helps define it as a primary space within the Community of Bay Point. It also reduces vehicular impacts and improves pedestrian and bicycle safety and enjoyment. Among the key improvements are the following:

Pedestrian Improvements
- Widened Sidewalks at Bailey Road.
- Enhanced Crosswalks at intersection with stop bar set back four feet from crosswalk. This paving should be either natural scored concrete or concrete unit pavers to facilitate future street maintenance.
- Re-timed traffic signal with timing adequate to assure pedestrians have ample time to cross in all directions.
- Install countdown pedestrian signals.
- Install ADA ramps with truncated domes.

Aesthetic Improvements
- Special Entry Monuments with lighting will be located on Bailey Road near Willow Pass Road. The monuments are an ideal opportunity to for the participation of an artist.
- Accent Planting.
Appendix A: Conceptual Cost Analysis

**INTRODUCTION**

Based on the Bailey Road Proposed Improvement Plan, a conceptual Engineers Opinion of Probable Construction Cost was prepared. The table on this page provides a summary of the cost estimate, broken down into the two primary areas of the Bailey Road Corridor, the Interchange Zone and the Bailey North Zone.

Detailed description of cost items, unit cost assumptions and data sources follow.

**KEY ASSUMPTIONS**

- The Interchange Zone includes the corridor from the BART Access Road to the Canal Road (East) / SR-4 On-Ramp (West).
- The Bailey North Zone includes the corridor from the Canal Road (East) / SR-4 On-Ramp (West) to Willow Pass Road.
- Soft costs include design fees, agency permitting fees, construction management fees, construction staking, and inspection.
- A cost contingency of 25% has been added to the direct construction costs (hard costs) to account for future design and construction changes, inflation and extraordinary events.

**COST SUMMARY**

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**TOTAL HARD COSTS INCLUDING CONTINGENCY**

SOFT COSTS (20% of hard costs)

TOTAL

$16,871,000

$3,374,000

$20,250,000
### APPENDIX

#### INTERCHANGE ZONE

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### Notes

1. Costs to relocate utilities may be reimbursable by the various utility providers.
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Notes:
1. Costs to relocate utilities may be reimbursable by the various utility providers.
## Appendix

This section provides data on the sources used to provide unit costs for the Engineers Opinion of Probable Construction Costs. Where possible, comparable bid and construction experience from the consultant team's recent projects has been used.

### Utilities

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<th>ITEM</th>
<th>SOURCES, ASSUMPTIONS, NOTES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Relocate Utility Poles</td>
<td>Hampton Road Blvd., 22 September 09, Average</td>
</tr>
<tr>
<td>Adjut Manholes to Grade</td>
<td>Hampton Road Blvd., 22 September 09, Average</td>
</tr>
<tr>
<td>Relocate Catch Basin Structures</td>
<td>Hampton Road Blvd., 22 September 09, Average or 25% Mark-Up for Demolition or Abandonment of Existing</td>
</tr>
<tr>
<td>Relocate Storm Drainage Main Line</td>
<td>Hampton Road Blvd., 22 September 09, Average for 18-inch RCP Installation or 25% Mark-Up for Demolition or Abandonment of Existing</td>
</tr>
<tr>
<td>Relocate Fire Hydrants</td>
<td>Engineer's best estimation of cost. Assumes existing hydrant to be reused</td>
</tr>
<tr>
<td>Adjut Water Appurtenance Boxes to Grade</td>
<td>Hampton Road Blvd., 22 September 09, Average</td>
</tr>
<tr>
<td>Adjut Survey Monument Boxes to Grade</td>
<td>Hampton Road Blvd., 22 September 09, Average</td>
</tr>
<tr>
<td>Install C3 Measures adjacent to Catch Basins</td>
<td>For discussion with Fittera Sales Representative on 5 October 09</td>
</tr>
<tr>
<td>Relocate Sewer Man</td>
<td>Estimate compilation of RS Means Construction Cost Data. Includes pipe installation at $20/LF, trenching and backfill at $25/CY for 10 deep trench @ 2 yards per LF, boring and sheeting at $20/LF, sewer by-pass pumping at $20/LF, gravel stabilization of existing utilities at $10/LF, manholes at $10/LF, and abandonment of demolition of existing facilities at $20/LF.</td>
</tr>
</tbody>
</table>

### Landscape Improvements

<table>
<thead>
<tr>
<th>ITEM</th>
<th>SOURCES, ASSUMPTIONS, NOTES</th>
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</thead>
<tbody>
<tr>
<td>Existing Tree Protection</td>
<td>Assume 80 LF/tree</td>
</tr>
<tr>
<td>Folsom Bids. 7/5/2009, highest cost of 3 = $56/LF tree protection fencing</td>
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<tr>
<td>Soil Analysis</td>
<td>Folsom Bids. dated 7/5/2009, highest cost of 3 = $33/LF, Project cost = $550/LF</td>
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<tr>
<td>Amended Planting Soil</td>
<td>Folsom Bids. 7/5/2009, highest cost of 3 = $48/LF, Project cost = $50/LF</td>
</tr>
<tr>
<td>Streetscape</td>
<td>Assume 4&quot; x 4&quot; deep per tree, 1&quot; deep for ground plane planting</td>
</tr>
<tr>
<td>Loop Ramp</td>
<td>Assume 4&quot; x 4&quot; deep per tree, 6&quot; deep for ground plane planting</td>
</tr>
<tr>
<td>Trees (35&quot; box)</td>
<td>Street trees planted at about 30&quot; o.c.</td>
</tr>
<tr>
<td>Median Trees planted at about 20&quot; o.c.</td>
<td></td>
</tr>
<tr>
<td>Accent Trees located as shown or plan</td>
<td></td>
</tr>
<tr>
<td>Loop Ramp trees spaced as shown or plan</td>
<td></td>
</tr>
<tr>
<td>Folsom Bids. 7/5/2009, highest cost of 3 = $70/LF, Per tree tree</td>
<td></td>
</tr>
<tr>
<td>Ground Plane Planting (#1 container)</td>
<td>Folsom Bids. 7/5/2009, highest cost of 3 = $31/LF, Gallon shrub</td>
</tr>
<tr>
<td>Streetscape</td>
<td>Assume 2&quot;-inch deep over all planting areas</td>
</tr>
<tr>
<td>Loop Ramp</td>
<td>Assume 42&quot;-inch deep over all planting areas</td>
</tr>
<tr>
<td>Irrigation System (Streetscape)</td>
<td>Ebro Water Irrigation Designers, 9/29/2009, $1/1000 LF for streetscape</td>
</tr>
<tr>
<td>Irrigation System (Loop Ramps)</td>
<td>Ebro Water Irrigation Designers, 9/29/2003, $1/1000 LF for streetscape</td>
</tr>
<tr>
<td>Decorative Street Lights</td>
<td>Folsom Bids. 7/5/2009, highest cost of 3 = $50/4000 EA, Project cost = $9,500/EA</td>
</tr>
<tr>
<td>Does not include electrical service system</td>
<td></td>
</tr>
<tr>
<td>Dual-Arm Vehicular Streetlights</td>
<td>Cost per street light from Kimley-Horn</td>
</tr>
<tr>
<td>Does not include electrical service system</td>
<td></td>
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<tr>
<td>Single-Arm Vehicular Streetlights</td>
<td>Cost per street light from Kimley-Horn</td>
</tr>
<tr>
<td>Feature Lighting</td>
<td>Allow $25,000 per subdistrict (Interchange Zone and Bailey North)</td>
</tr>
<tr>
<td>Benches</td>
<td>Park Ave Emeryville Bids, 5/1/2009, highest cost = $250/EA</td>
</tr>
<tr>
<td>6-foot long bench</td>
<td></td>
</tr>
<tr>
<td>Bolards</td>
<td>Park Ave Emeryville Bids, 5/1/2009, highest cost = $100/EA</td>
</tr>
<tr>
<td>Bike Racks</td>
<td>Folsom Bids, 7/5/2009, highest cost = $100/EA</td>
</tr>
<tr>
<td>Newspaper Racks</td>
<td>Folsom Bids, 7/5/2009, average of 3 bidders' unit cost = $6,495/EA, Project cost = $7,000/EA</td>
</tr>
<tr>
<td>Trash &amp; Recycling Receptacles</td>
<td>Folsom Bid Proposal dated 7/5/2009, highest price = $20,000/EA</td>
</tr>
<tr>
<td>Wayfinding &amp; Information Signage</td>
<td>Fropp + Guerin Graphic Designers, 1/26/2009, cost about $5,000/ea.</td>
</tr>
<tr>
<td>Maintenance Band-Concrete Unit Pavers (median 18&quot;, both sides)</td>
<td>Concrete Cobblestone Pavers per Van Ness ERT Cost Estimate $35/SF</td>
</tr>
<tr>
<td>Cobblestone Paving</td>
<td>Concrete Cobblestone Pavers per Van Ness ERT Cost Estimate $35/SF</td>
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<tr>
<td>Special Sidewalk Paving</td>
<td>This cost is the difference between the special paving cost and the concrete sidewalk cost. (See surface improvements)</td>
</tr>
<tr>
<td>Special Paving Cost=$35/SF from Concrete Cobblestone Paver cost. $35/SF = $200/SF + $15/SF</td>
<td></td>
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<tr>
<td>Public Art</td>
<td>1% of the project total for public art</td>
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<tr>
<td>Transit Shelters</td>
<td>Park Street, Alameda Construction Cost. Estimated date 12/18/2003. $8,000/EA</td>
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<tr>
<td>Gateway Markers</td>
<td>Folsom Streetscape Bld, 12/20/2005 Screen wall = $3,500 @ 50 SF finished finish based on this. Stone Wall = $3,000 @ 400 SF finished finish. Estimate $3,000 @ 50 SF finished finish. $3,700/ea. Gateway feature. Project cost $10,000 each gateway feature</td>
</tr>
<tr>
<td>ITEM</td>
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<tr>
<td><strong>Interchange Improvements</strong></td>
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</tr>
<tr>
<td>Clearing and Grubbing</td>
<td>I-680/Solinger Canyon Road Interchange Preliminary Engineering</td>
</tr>
<tr>
<td>Remove Concrete Culvert and Gutter</td>
<td>I-680/Solinger Canyon Road Interchange Preliminary Engineering</td>
</tr>
<tr>
<td>Concrete Sawcut</td>
<td>I-680/Solinger Canyon Road Interchange Preliminary Engineering</td>
</tr>
<tr>
<td>Asphalt Sawcut</td>
<td>I-680/Solinger Canyon Road Interchange Preliminary Engineering</td>
</tr>
<tr>
<td>Remove Asphalt Pavement</td>
<td>I-680/Solinger Canyon Road Interchange Preliminary Engineering</td>
</tr>
<tr>
<td>Remove Concrete</td>
<td>I-680/Solinger Canyon Road Interchange Preliminary Engineering</td>
</tr>
<tr>
<td>Edge Grind Existing Pavement</td>
<td>I-680/Solinger Canyon Road Interchange Preliminary Engineering</td>
</tr>
<tr>
<td>Remove Off-Ramp</td>
<td>I-680/Solinger Canyon Road Interchange Preliminary Engineering</td>
</tr>
<tr>
<td>Remove Pedestrian Tunnel</td>
<td>I-680/Solinger Canyon Road Interchange Preliminary Engineering</td>
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<tr>
<td>Imported Borrow</td>
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<td>Asphalt Concrete</td>
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</tr>
<tr>
<td>Aggregate Base/Subbase</td>
<td>I-680/Solinger Canyon Road Interchange Preliminary Engineering</td>
</tr>
<tr>
<td>AC Overlay (6&quot;)</td>
<td>I-680/Solinger Canyon Road Interchange Preliminary Engineering</td>
</tr>
<tr>
<td>Concrete Sidewalk</td>
<td>I-680/Solinger Canyon Road Interchange Preliminary Engineering</td>
</tr>
<tr>
<td>Concrete Curb and Gutter</td>
<td>I-680/Solinger Canyon Road Interchange Preliminary Engineering</td>
</tr>
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<td>ADA Curb Ramps</td>
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<td>Storm Drainage</td>
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<tr>
<td>Retaining Walls</td>
<td>I-680/Solinger Canyon Road Interchange Preliminary Engineering</td>
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<td>Pedestrian Barriers</td>
<td>I-680/Solinger Canyon Road Interchange Preliminary Engineering</td>
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<tr>
<td>Concrete Barrier (Type 1/2) on Bridge</td>
<td>I-680/Solinger Canyon Road Interchange Preliminary Engineering</td>
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<tr>
<td>Metal Beam Guardrail</td>
<td>I-680/Solinger Canyon Road Interchange Preliminary Engineering</td>
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<tr>
<td>Transition Railing and Terminal System</td>
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<tr>
<td>AC Driveway</td>
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<tr>
<td>Erosion Control</td>
<td>I-680/Solinger Canyon Road Interchange Preliminary Engineering</td>
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<tr>
<td>Remove Existing Median</td>
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<tr>
<td>E-Concrete Median Curb</td>
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<td>Water Pollution Control</td>
<td>I-680/Solinger Canyon Road Interchange Preliminary Engineering</td>
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<td>Hazardous Waste Mitigation Work</td>
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<td>Environmental Mitigation</td>
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<td>Residential Office Space</td>
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<tr>
<td>Lighting Modifications</td>
<td>I-680/Solinger Canyon Road Interchange Preliminary Engineering</td>
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<tr>
<td>Traffic Signal</td>
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<td>Traffic Signal Modifications</td>
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<td>Pavement Markings</td>
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<td>Roadside Signs</td>
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<td>Transportation Management Plan</td>
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<tr>
<td><strong>Bailey North Surface Improvements</strong></td>
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<tr>
<td>Clearing and Grubbing</td>
<td>City of Tracy Grant Line Road Reconstruction Project</td>
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<td>Remove Concrete Culvert and Gutter</td>
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<td>Remove Concrete Median</td>
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<tr>
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<td>City of Tracy Grant Line Road Reconstruction Project</td>
</tr>
<tr>
<td>Concrete Curb and Gutter</td>
<td>City of Tracy Grant Line Road Reconstruction Project</td>
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<td>Median Curb</td>
<td>City of Tracy Grant Line Road Reconstruction Project</td>
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<td>Roadway Excavation</td>
<td>City of Tracy Grant Line Road Reconstruction Project</td>
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<td>Preparation of Sub-Grade</td>
<td>City of Tracy Grant Line Road Reconstruction Project</td>
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<td>Traffic Control Systems</td>
<td>City of Tracy Grant Line Road Reconstruction Project</td>
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<td>Construction Staking</td>
<td>City of Tracy Grant Line Road Reconstruction Project</td>
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<tr>
<td>Reconstruct Concrete Driveway Aprons</td>
<td>City of Tracy Grant Line Road Reconstruction Project</td>
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<td>Asphalt Concrete</td>
<td>City of Tracy Grant Line Road Reconstruction Project</td>
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<tr>
<td>Aggregate Base/Subbase</td>
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<tr>
<td>Street Overlay</td>
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<td>Erosion Control</td>
<td>City of Tracy Grant Line Road Reconstruction Project</td>
</tr>
</tbody>
</table>
Appendix B: Summary Descriptions of Scenarios

Over the period from May 2009 through August 2009, three scenarios for pedestrian and bicycle improvement to the Bailey Road corridor were prepared by the consultant team. These scenarios outlined alternative methods of improving pedestrian and bicycle safety and access along Bailey Road through a variety of measures including:

- Modifications to the State Route 4 (SR4) interchange
- Removal or reconfiguration of Bailey Road travel lanes to allow wider sidewalks
- Added or modified signal operations
- Detailed improvements to pedestrian crosswalks, transit waiting areas, and other important pedestrian nodes.

All of the scenarios removed the existing pedestrian underpass at the SR4 interchange on the west side of Bailey Road. Primarily as a result of meetings with Caltrans District 4 staff, it was concluded that one of the scenarios (known as “Scenario 1”) would result in a sub-standard interchange design and therefore, it was eliminated.

Following is a description of the two remaining scenarios that were prepared and analyzed in detail. As a result of the analysis of these two scenarios and review with members of the TAC and the MAC, a hybrid scenario was created, which is the Bailey Road Pedestrian and Bicycle Improvement Plan summarized in the body of this report.
Scenario 2

Modest Improvement Scenario
This scenario is referred to as the “modest” improvement scenario because modifications appear modest compared with Scenario 3. Both freeway loop ramps remain, but minor modifications are made to their geometry. The Bailey North segment will remain as a 5-lane cross section (2-lanes in each direction with left turn lanes). However, the median under this scenario is reduced to 10 feet in width. Changes to the northside loop and Bailey North curb realignments suggested under this scenario are costly.

Key Traffic Analysis Findings
- For current traffic levels, this scenario can meet intersection delay standards and accommodate traffic queues with the possible exception of the SR4 eastbound-to-southbound off ramp.
- For projected future traffic levels in 2030, a geometric and signal timing plan can be developed so that all study intersections meet intersection delay standards, with the possible exception of the Bailey Road/Leland Road intersection.
- For projected future traffic levels in 2030, all SR4 ramps are expected to accommodate traffic queues with the possible exception of the eastbound off-ramps. This may be mitigated by further signal timing adjustments and further study of geometric alignment.
- For future traffic conditions along Bailey Road, traffic volumes between Willow Pass Road and Canal Road are below capacity. Therefore, independent of the traffic signals, it is expected that no additional vehicular delay would be experienced along this segment.

Key Cost Analysis Findings
- Although this scenario appears “modest,” costs are higher for this scenario than the more aggressive “maximum” improvement scenario (Scenario 3).
- Narrowing the median in Bailey North, relocating all curbs, and rebuilding the freeway off-ramps are key reasons for the higher costs of this scenario.
- Capital costs for this Scenario are $21.6 million, although the improvements could be phased in gradually over time so the County would not need to obtain $21.6 million all at once.

Amenities, Pedestrian, and Bicycle Findings
- Provides continuous six-foot bike lane along the entire Bailey Road study corridor.
- Provides additional buffer width between pedestrians and vehicular traffic.

Key Conclusions
- Retaining the northside loop ramp would perpetuate the existing difficulty and danger faced by pedestrians and bicyclists. Additionally, traffic studies show the loop ramp is not needed. Therefore, the interchange zone portion of this scenario was not included in the ultimate plan.
- The five lane cross-section in Bailey North retains existing traffic capacities while also gaining space for pedestrian and bicycle facilities and amenities. Therefore the Bailey North portion of this scenario was included in the ultimate plan.
**Scenario 3**

**MAXIMUM IMPROVEMENT SCENARIO**

This scenario is referred to as the “maximum” improvement scenario because significant modifications to the current configuration of freeway ramps and the cross section of Bailey Road North are proposed. Of note are the complete removal of the north side loop ramp at the freeway interchange and elimination of two travel lanes (one in each direction) in the Bailey North segment of the corridor.

**KEY TRAFFIC ANALYSIS FINDINGS**

- For current traffic levels, this scenario can meet intersection delay standards and accommodate traffic queues with the possible exception of the SR4 eastbound-to-southbound off ramp.
- For projected future traffic levels in 2030, a geometric and signal timing plan can be developed so that all study intersections meet intersection delay standards and operate acceptably.
- For projected future traffic levels in 2030, all SR4 ramps are expected to accommodate traffic queues with the possible exception of the eastbound off-ramps. This may be mitigated by further signal timing adjustments and further study of geometric alignment.
- For future traffic conditions along Bailey Road, traffic volumes between Willow Pass Road and Canal Road do not exceed capacity with the reduction of the roadway width to one northbound and one southbound travel lane. Therefore, independent of the traffic signals, it is expected that no additional vehicular delay would be experienced along this segment.

**KEY COST ANALYSIS FINDINGS**

- As noted previously, while the interventions appear significant compared with existing conditions or compared with Scenario 2, estimated costs are lower for this scenario.
- Capital costs for this Scenario are $19 million (not including annual maintenance costs), although improvements would be phased in over time.
- Key cost elements under this scenario are changes to freeway ramps (including closure and demolition of one ramp and the pedestrian tunnel underneath it), and substantial widening of sidewalks.

**AMENITIES, PEDESTRIAN, AND BICYCLE FINDINGS**

- This scenario provides greater opportunity for enhanced pedestrian, bicycle, and transit patron improvements than Scenario 2 at comparable (or lower) cost.
- This scenario provides greater opportunity for enhanced buffer separation between the sidewalk and active travel lanes.
- Like Scenario 2, this scenario provides a continuous 6-foot wide bike lane.

**KEY CONCLUSIONS**

- Removing the northside loop ramp maximizes opportunities for pedestrian and bicycle improvements. Additionally, traffic studies show the loop ramp is not needed. Therefore, the interchange zone portion of this scenario was included in the ultimate plan.
- The three lane cross-section in Bailey North maximizes opportunities for pedestrian and bicycle improvements and retains existing traffic capacities but is unpopular with the community. Therefore the Bailey North portion of this scenario was not included in the ultimate plan.
Appendix C: Acknowledgements

**Contra Costa County Board of Supervisors**
- Supervisor Federal D. Glover, District 5 (Bay Point)
- Supervisor John Gioia, District 1
- Supervisor Gayle B. Uilkema, District 2
- Supervisor Mary N. Piepho, District 3
- Supervisor Susan Bonilla, District 4

**Bailey Road Pedestrian and Bicycle Improvement Plan Technical Advisory Committee**
- Tom Harais, Tri Delta Transit
- Deidre Heiman, BART
- Adelina Huerta, Contra Costa County Public Works
- Joel McDaniel, City of Pittsburg
- Leigha Schmidt, City of Pittsburg
- Craig Standafer, Contra Costa County Public Works
- Maureen Toms, Contra Costa Redevelopment Agency
- Jim Townsend, East Bay Regional Park District
- Keith Wayne, Caltrans District 4, Local Assistance/Community Planning Branch

**Contra Costa County Municipal Advisory Council**
- Vicki Zumwalt, Chair
- Gloria Magleby, Vice-Chair
- Eva Garcia
- Debra Mason
- Sterling Stevenson
- Charles Tremain

**Project Manager**
- John Greitzer, Senior Transportation Planner

**Consultant Team**
- **BMS Design Group**
  - Michael Smiley, Partner
  - Valerie Conant, Senior Landscape Architect
  - Joy Glasier, Landscape Architect
  - Sean King, Landscape Designer
- **Kimley-Horn and Associates, Inc.**
  - Jim Daisa, PE, Principal-in-Charge
  - Peter Reinhofer, Project Manager
- **BKF Engineers**
  - Daniel Schaefer, PE, Vice-President
  - Chris Mills, PE, Project Manager