Section 4
Other CEQA/NEPA Considerations

4.1 Introduction

This section provides a summary of significant impacts resulting from project implementation that cannot be mitigated to a less-than-significant level. This section also identifies irreversible and irretrievable commitment of resources, significant cumulative impacts, growth-inducing impacts, and the designation of the environmentally superior alternative.

4.2 Significant Unavoidable Adverse Impacts

Section 3 of this document identifies impacts considered significant and the mitigation measures required to reduce those impacts to an insignificant level. The significant impacts of the Connector that cannot be mitigated to a less-than-significant level are identified below.

- The AGT would be visually dominant within the Hegenberger Road Corridor and create a sense of visual encroachment for building occupants within 60 feet. The AGT would conflict with proposed landscape and streetscape enhancement features proposed in Oakland's Gateway Study.

- The AGT in combination with other proposed development projects in the project corridor would result in a significant cumulative change in the constructed environment and streetscape, and a loss of views of the Oakland Hills from the street and sidewalk level.

- Future traffic noise increases in the vicinity of the Hegenberger Road hotels would be cumulatively significant.

- There would be cumulative noise impacts at the Lew F. Galbraith Municipal Golf Course due to aircraft noise at OIA.

- Construction noise for the AGT guideway, stations, and ancillary facilities would be expected, at times, to exceed the thresholds of significance for noise impacts and would be considered significant and unavoidable for hotels, outdoor recreation areas, and other commercial uses.

- The cumulative effects on electricity demand from the preferred alternative and all growth in the region could potentially exceed the level of supply and would therefore be considered significant.

- The short-term ground-borne vibration annoyance impacts from pile driving associated with construction of the AGT facilities would disturb occupants of office buildings and hotels, and patrons of restaurants within 400 feet of the activity; and ground-borne vibration from

longer-term construction activities would disturb hotels and other vibration-sensitive uses within 60 feet of the right-of-way. The intensity of impacts would be considered significant for the tenants at 675 Hegenberger, Denny's restaurant, and Sam's Hofbrau west of Hegenberger Road and north of Coliseum Way.

- Any building within 50 feet of pile driving could experience damage from vibration impacts. Properties within this radius of impact include offices (Employment Development Department and United Labor Bank), restaurants (Sam's Hofbrau and Denny's), the Edgewater West hotel, and other infrastructure, including, but not limited to, roadway support structures, utility lines, or the OIA airport instrumentation lighting system. (If the Median Option is substituted for a portion of the preferred alternative alignment, Denny's would not be subject to potential damage from vibration impacts.)

- Construction of the AGT would contribute to cumulative impacts on local traffic circulation, including vehicle movements, emergency response, transit, pedestrian, and bicycle movements, and displacement of on-street parking spaces. While disruption in any one location would be relatively short term and mitigated by construction transportation management plans, the overall congestion and delays along Hegenberger corridor from the cumulative construction activities would remain significant and unavoidable.

4.3 Significant Irreversible Environmental Changes

An EIR/EIS must analyze the extent to which the primary and secondary effects of a proposed project or its alternatives would irretrievably commit nonrenewable resources (CEQA Guidelines, Section 15126.2(c)). Irreversible commitment of resources must be evaluated to assure that current consumption is justified. Actions that may be considered significant and irreversible include:

- Uses of nonrenewable resources (e.g., land, energy, and construction materials) during the construction and operational phases of the project may be irreversible (since a large commitment of such resources makes removal or non-use thereafter unlikely).

- Primary impacts, and particularly, secondary impacts, that will commit future generations to similar use.

- Irreversible damage due to environmental accidents.

Project-Related Impacts

- The AGT would involve the use of hazardous materials normally required for operation and maintenance of transit systems and vehicles. Environmental accidents stemming from the inadvertent release of these materials are not considered to be significant because of the minimal volumes and concentrations used by the proposed Connector. As a result, while environmental accidents may occur, they are not expected to result in irreversible damage to the public or to the environment.

- The AGT would require an irretrievable commitment of construction materials for the stations, guideway, and maintenance facility, such as asphalt, steel, cement, lumber, and fabricated materials.

- Operation of the AGT in 2005 (assuming an electrical-powered system) would require 0.107 billion BTUs of energy per day. Construction of the AGT would consume about approximately 740 billion BTUs.

- The AGT would require an irreversible commitment of land resources for the guideway, stations, maintenance facility, and intermediate stops.

4.4 Significant Cumulative Impacts

Cumulative effects are those resulting from future growth and other foreseeable development projects in the project corridor. Other present and reasonably foreseeable future projects that are included in the cumulative analysis are presented in Table 3.0-2, and include:

- Best Western Hotel at 170 Hegenberger Loop Road;

- Courtyard by Marriott at 350 Hegenberger Road;

- Zhone Technologies at 66th and Oakport Roads;

- Edgewater Distribution Center at 7200 Edgewater Drive;

- Wingate Hotel at Hegenberger and Pardee Road (northwest corner);

- Hegenberger/Pardee Site at Hegenberger and Pardee Roads;

- Metroport Site at Hegenberger Road and I-880; and

- Rail Platform (Capital Corridor) at 73rd Avenue and San Leandro.

The Connector's contribution to cumulative effects would be less than significant for cultural resources, community services, utilities, geology, hydrology, biological resources, hazardous materials, and environmental justice. As a result, there would be no significant cumulative impact in these areas. Cumulative effects with the Connector that are beneficial include those related to transportation, land use/socioeconomics, and air quality:

- **Transportation.** The preferred alternative would result in reductions to traffic volumes in the project corridor and on the regional highways, compared to the No Action Alternative. As such, the preferred alternative would have a cumulatively beneficial impact on future traffic and intersection conditions. The AGT would also result in greater ridership on BART, compared to the No Action Alternative. As such, the AGT has a cumulatively beneficial impact on transit ridership.

- **Land Use/Socioeconomics.** The AGT in conjunction with the Capitol Corridor project (an intercity rail project linking Sacramento and San Jose with a proposed stop at the Coliseum)

would support the socioeconomic changes underway and planned for in the Coliseum BART Station area and along the project corridor. The City's General Plan and Coliseum BART Station Area Plan call for strong transit orientation in the project corridor. The AGT Intermediate Stations support the land use and economic development goals of the City's General Plan and Hegenberger-98th Gateway Development Study. The combined operations of the Capitol Corridor and the Connector would establish an intermodal facility that would complement the public policy, land use, and socioeconomic changes envisioned in the area by strengthening it as a transit-oriented district, increasing transit ridership, and supporting the City's and BART's joint development policies.

- **Air Quality/Energy.** The AGT would have cumulative beneficial effects on air quality and regional energy consumption, since it reduces the number of automobiles on the road, and thus reduces regional vehicles mile traveled, compared to the No Action Alternative.

Cumulative effects that are significant are visual quality, noise, energy, and construction-period effects.

- **Visual Quality.** The preferred alternative, in combination with increased building development, would substantially alter the visual character of the corridor. The AGT would be the largest single contributor to altering visual conditions within the corridor due to its height, dimensions of the guideway and supporting columns, and linear configuration. Although the City of Oakland already applies "S-4 Design Review Combining Zone Regulations" to the Boulevard Service Commercial Zone that applies to much of Hegenberger Road and would conduct a design review process for eight proposed development projects, there would be a significant change in the constructed environment, streetscape, and a loss of view of the Oakland Hills from the street and sidewalk level. No additional mitigation measures would reduce this cumulative effect to less than significant.

- **Noise.** Cumulative growth in motor vehicle traffic noise would cause a significant impact to each of the hotels along the Hegenberger Road portion of the project corridor. The resulting noise levels would be above those considered by the City of Oakland Noise Element as "normally acceptable" for lodging uses. The outdoor recreational uses would not be affected by the increased traffic noise, although in the vicinity of aircraft activity at the OIA North Field, the Lew F. Galbraith Golf Course would experience cumulative impacts due to increased aircraft noise. Anticipated increases in BART system noise combined with noise from the project alternatives would not cause a significant cumulative impact to residences near the Coliseum BART Station.

- **Energy.** The preferred alternative would reduce regional vehicle miles traveled, compared to the No Action Alternative. Therefore, cumulatively there would be energy savings with this alternative. However, the AGT (unless a petroleum-based fuel is used) would consume large amounts of electrical energy. Currently, there are regional and state electricity supply and transmission problems. It is speculative to assume when these current problems might be resolved and in recognition of this uncertainty, the cumulative energy impacts are considered significant.

- **Construction Activities.** The preferred alternative, in combination with other development projects in the project corridor, could result in cumulatively significant effects during the construction period on local traffic circulation, the visual character of the streetscape, erosion and sedimentation, biological resources, noise levels, air emissions, energy consumption, and accidental releases of hazardous materials. Implementation of mitigation measures (including construction management plans and specific contractor practices) identified in Section 3.16 (Construction) would reduce all cumulative construction impacts, except transportation-related and noise impacts, to a less than significant level.

4.5 Growth-Inducing Impacts

As required by Section 15126(g) of the CEQA Guidelines, this section discusses the growth-inducing effects of the Connector. NEPA itself does not require these features, although the NEPA regulations do call for the consideration of secondary and/or indirect effects that may include growth-inducing effects. A project is considered growth inducing if it could directly or indirectly foster economic or population growth or the construction of additional housing. For example, extension of urban services or transportation facilities into previously unserved or underserved areas, or removal of obstacles to growth and development, are considered factors that contribute to growth inducement. Growth could occur in the form of land development or increased numbers and concentrations of housing and jobs.

Transportation projects can have a wide range of growth-inducing effects. A project may hasten growth in certain areas, retard it in others, intensify development in certain locations, or shift growth from one locality to another. Other factors, particularly local planning and community standards or environmental initiatives, may also direct the location and timing of transportation investments.

Generally, transportation improvements support growth, whereas land use development generates new travel demand and the need for new transportation capacity. In other words, projects like the proposed Connector in an already developed corridor tend to respond to and accommodate, rather than induce, new growth. ABAG projects substantial population and employment growth in Alameda County over the next 20 years. These forecasts continue to show that the OIA and the Coliseum Complex are major economic engines in the region. The Connector has been proposed in response to this growth.

As illustrated in Table 3.0-2 in Section 3.0, there are at least seven major development projects that are currently proposed or under construction in the project corridor. This development includes hotels and commercial space that could bring an additional 5,400 employees into the project corridor plus related hotel patrons and travelers. This growth is encouraged by Oakland's general plan and by Oakland's *Hegenberger Road-98th Avenue Gateway Development Study*. As discussed in Section 3.3 (Socioeconomics), the general plan has goals and objectives to retain existing businesses, attract new business, support economic development through public investment, invest in economically distressed areas of the city, improve transportation links, and coordinate city and Port of Oakland economic development plans. The Gateway Development study identifies a number of opportunity sites along Hegenberger Road for the development of new office and hotel projects.

New development in addition to that already planned or proposed could be fostered by improved transit services and accessibility to BART's regional transit system. Proximity to BART offers major access improvements, and thus Connector's presence in the corridor is likely to enhance development. This development may occur regardless of the Connector, but the location and intensity of growth may shift to take advantage of the access afforded by the Connector. Population or employment growth could, in turn, tax existing community services and facilities. Presented below are the growth-inducing impacts of the preferred alternative.

Project-Related Impacts

The construction of the preferred alternative would create an average of 273 construction jobs over the estimated 31-month construction period. Applying the APTA regional multiplier, this project alternative would result in a direct and indirect increase of 689 jobs within the San Francisco Bay Area. The overall magnitude of new regional jobs and capital investment of $229.6 million in the project corridor is substantial and would stimulate the regional economy. In addition, the improved transit connection between BART and OIA afforded by the AGT would support of land use and socioeconomic changes that the City and the Port of Oakland envision for the project corridor. In particular, most growth inducement or land development effects associated with transit improvements occur around station areas where additional foot traffic and capital investment make the areas more attractive for other businesses. In the case of the two stations, one at the Coliseum BART Station and one at OIA, both termini are already proposed for land use changes and revitalization in the BART Station Area Plan, the City's General Plan, the Hegenberger Road-98th Avenue Gateway Study, and the Airport Development Program. Thus, introduction of the AGT service for these two stations would not induce growth that was not already planned or envisioned.

However, the intermediate stops for the AGT would result in additional jobs associated with construction of the two intermediate stops. The increment of direct and indirect jobs for the region during the construction period represents a greater stimulus to the regional economy than the AGT Alternative. The more substantive effect of the two intermediate stops is the opportunity to serve other development sites in the project corridor, providing an efficient connection to BART's regional transit system, as well as an international airport at OIA. The enhanced accessibility would most likely be attractive to prospective businesses, which could relocate to the project corridor. This could result in higher density developments in the vicinity of the intermediate stops. Therefore, development of the intermediate stops could have a growth-inducing impact. Ridership for the two intermediate stations is projected to be approximately 2,413 weekday passengers in 2005 and approximately 4,517 weekday passengers in 2020. This equates to the addition of 880,750 annual passengers in 2005 and 1,648,700 annual passengers in 2020. These riders would be over and above the expected ridership to and from the airport.

Section 5
Section 4(f) Evaluation

Section 5.1
Introduction

Section 4(f) (49 U.S.C. 303, formerly Department of Transportation Act of 1966, §4(f)) created a national policy to preserve the natural beauty of the countryside, public park and recreation lands, wildlife refuges, and historic sites. Section 4(f) permits the Secretary of Transportation to approve a project that requires the use of publicly owned land from a park, recreation area, or wildlife refuge, or any land from a historic site of national, state, or local significance only if the following determinations have been made: there is no feasible and prudent alternative to the use of such land, and all possible planning has been undertaken to minimize harm to the 4(f) lands resulting from such use. Section 4(f) evaluation is required of federal transportation projects; but CEQA does not require it.

As discussed in Section 3.5, Cultural Resources, none of the structures within the delineated Area of Potential Effects is considered to be eligible for the National Register of Historic Places, or otherwise significant under Sections 5024.1 and/or 15064.5 of the California Public Resources Code. Therefore, the preferred alternative would not affect any significant historic resources. BART has already eliminated alignments that would take public parkland and preliminarily consulted with the public agencies that own the parkland resource in preparing this FEIR/FEIS. This evaluation for Section 4(f) conformance thus examines only parklands in relationship to the preferred alternative. As discussed in this section, the preferred alternative has a potential to affect the future extension of the San Leandro Creek Trail.

Section 5.2
Existing Parklands in the Project Corridor

Figure 5.2-1 shows the existing and proposed parklands and trails in the study area. The parklands and trails in the project vicinity that may be affected under Section 4(f) include the Lew F. Galbraith Golf Course, the San Leandro Creek Trail, and the proposed extension of the Bay Trail. There are other parklands and trails in the study area that would not be affected under Section 4(f). The Martin Luther King Jr. Shoreline Park located in the study area has wildlife and waterfowl refuge areas. In addition, Oyster Bay Regional Shoreline Park in San Leandro has a diversity of wildlife and shore birds. However, these areas are not within the project corridor, and they are more than a quarter mile away from the preferred alternative. It is noted, however, that one of the parking facilities that serves the needs of the Martin Luther King Jr. Shoreline Park is located adjacent to Hegenberger Road. This facility also serves the San Leandro Creek Trail and the impacts of the Connector Project on the parking facility is discussed under Impact 4(f) – 2 of this section.

5.2.1 Lew F. Galbraith Municipal Golf Course

Background

The 165-acre Lew F. Galbraith Municipal Golf Course was constructed in 1965 over a landfill (Port of Oakland, 1994). The golf course is located east of Airport Drive and south of Doolittle Drive (see Figure 5.2-1). The golf course site is owned by the Port of Oakland and was leased to the City of Oakland for operation and maintenance of a golf course. The various recreational and commercial uses at the golf course included a clubhouse, driving range, restaurant (at the clubhouse), and soccer field. The Port of Oakland and City of Oakland entered into a Memorandum of Understanding in 1994 allowing the Port of Oakland to use the golf course site as a disposal site for dredged materials from the deepening of Port channels. With the dredge disposal project, the recreational and related commercial uses of the site except the clubhouse, driving range, restaurant were scheduled to be closed for a period of approximately seven years. Placement of dredged materials at the golf course was completed in July 1998. Landfill capping and rough grading was scheduled for completion in October 2001. There are no plans for replacement of the soccer field, since a new soccer field was made available at the Curt Flood Sports Complex in East Oakland during the summer of 1994 (Port of Oakland, 1994). The restaurant operated until 1997, while the clubhouse and driving range were open until August 1999. No public services have been provided at the golf course since August 1999 (Acosta, 2000). The golf course is scheduled to re-open in 2002.

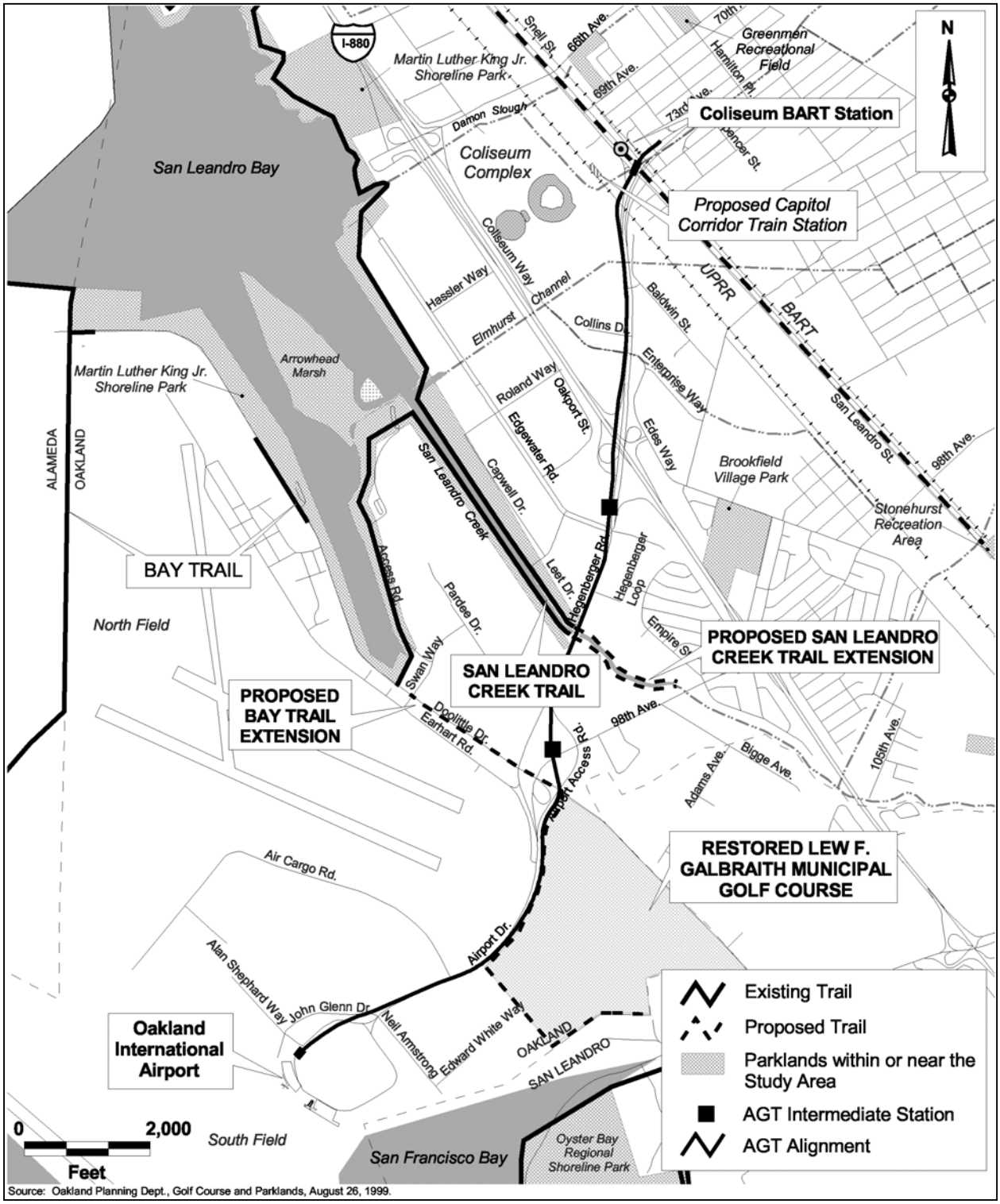

Figure 5.2-1
Parklands in the Study Area

The hydraulic placement of dredged material at the golf course site was completed in June 1998. The dredged materials were being dried, stockpiled, and used in reconstructing the golf course, for rough grading the golf course contours. Capping the landfill and establishing the rough grade for the golf course was completed in January 2001. Golf course construction began in February 2001 and was completed by October 2001. The new 18-hole golf course is projected to open in early 2002 (Acosta, 2000).

Ownership

The site is owned by the Port of Oakland and leased to the City of Oakland. When the golf course was in operation, the City subleased the operation and management of the 18-hole golf course, clubhouse, and driving range to a property management firm, Ransom McKay Golf, Inc. The lease with Ransom McKay Inc. was terminated once the Port of Oakland began the dredging activity (Port of Oakland, 1994).

The development and operation of the new golf course would be subleased to another private firm. Funding for the project is partially in place ($2.5 million from the Port of Oakland) and the development team would have to provide the balance of funding required for the new golf course, which is currently estimated to be between $6-8.5 million, depending on the nature of the clubhouse and other visitor amenities (Acosta, 2000).

Proposed Facilities

The facilities at the new golf course will be similar to the old golf course: an 18-hole golf course with a clubhouse, parking lots, driving range, maintenance facility, and golf practice facilities. The precise nature of these amenities has not yet been finalized and will be significantly influenced by the selected development team. A first tee youth golf program and facility (classroom, practice green, practice holes, and driving range) will be mandatory at the golf course, regardless of the team selected. Clubhouse amenities will include a golf pro shop (merchandise sales), locker rooms, restrooms, and banquet facilities. Depending on the developer, the clubhouse would also have a coffee shop, restaurant, or a lounge (Acosta, 2000).

Access

Access to the site is currently from Doolittle Drive, and this entryway would be retained with the new golf course (Acosta, 2000).

Usage

Statistics in 1994 when the golf course was last operational show that, on a yearly basis, about 65,000 rounds of golf were played, and about 15,000 patrons used the driving range. Total membership in the Junior Golf Program was variously reported as between 9 and 35 participants. Use of the golf course was approximately 80 percent of capacity from Friday to Sunday, and about 50 percent of capacity Monday through Thursday. In 1994, there were over thirty 18-hole public golf courses in the greater Bay Area. However, almost all of these facilities were operating at or near capacity during the weekends (Port of Oakland, 1994). The new golf course is expected to attract 55,000 rounds of golf in its first year of operation, increasing to more than 70,000 rounds by its fourth year of operation (Acosta, 2000).

Surrounding Uses and Relationship To Other Area Parks

Land uses in the vicinity of the Lew Galbraith golf course include OIA and commercial and industrial uses along Doolittle Drive. A water pollution control treatment plant and industrial waste monitoring facility are adjacent to the eastern boundary of the golf course, west of Davis Street in the City of San Leandro. Other uses near the southern terminus of Davis Street include a public rifle and pistol range, the Davis Street Resource Recovery and Transfer Station Complex, a public dump, and the Oyster Bay Regional Shoreline Park.

Martin Luther King Jr. Regional Shoreline Park, Airport Channel, and Arrowhead Marsh are located northwest of Swan Way, about ½ mile west of Hegenberger Road. A portion of the proposed Bay Trail Extension between Oyster Bay Regional Shoreline Park and Martin Luther King Jr. Shoreline Park is along the south and west sides of the golf course.

Unusual Characteristics

The golf course is within the area subject to the Alameda County Airport Land Use Policy Plan. As such, any construction on this site must be consistent with the General Referral Area, Height Referral Area, Noise Zone, and Safety Zone portions of the plan. The golf course site is within the historical margins of marshland of San Francisco Bay. There are also coastal salt marshes and seasonal wetlands within the golf course site. The golf course was originally constructed on a landfill. The southwest portion of the site was filled with municipal waste consisting mainly of construction debris. The remainder of the site received some hydraulic fill, overlain by more municipal waste and demolition debris. Beginning in about 1965, the waste and debris fills were graded to a relatively level configuration and blanketed with a thin layer of clayey soil and a golf course was constructed on top of the fill. Various types of soil and concrete/asphalt and construction debris were used to construct many of the golf course landscape mounds. The site is underlain by Bay Mud ranging in thickness from less than 1 foot at the northern edge (near Doolittle Drive) to more than 10 feet at the southern boundary.

5.2.2 San Leandro Creek Trail

Background

This trail is an east-west facility along both sides of the San Leandro Creek, west of Hegenberger Road.

The San Leandro Creek Trail was established in 1972 as part of the Martin Luther King Jr. Regional Shoreline Park**.** The trail is about 0.87 miles long on each side of San Leandro Creek. The paved path along the creek is about 10 feet wide and the total width of the trail is about 20 feet. The trail is available to pedestrians, equestrians, and cyclists (Suzio, 2000).

The East Bay Regional Park District has plans to extend San Leandro Creek Trail eastwards along the creek to 98th Avenue. A 24-foot-wide graded access road already exists along the creek east of Hegenberger Road, and it is currently being used by the Alameda County Public Works Agency to maintain San Leandro Creek. Ratto Farm currently owns the land. Negotiations are underway between Alameda County Public Works Agency and Ratto Farm to convert the access road along the creek to a public trail (Suzio, 2000). Funding for the proposed

extension of the San Leandro Creek Trail is not yet in place and, hence, a time frame for implementation of the proposed extension has not been established (Weise, 2000a).

Ownership

The Flood Control and Water Conservation District of the Alameda County Public Works Agency operates the San Leandro Creek Flood Control Channel. The East Bay Regional Park District has a license agreement from the Alameda County Public Works Agency to use the access roads along San Leandro Creek as trails (Baker, 2000).

Existing Facilities

The San Leandro Creek Trail has limited parking facilities (four parking spaces) at its Hegenberger Road trailhead. These spaces serve the parking needs of the Martin Luther King Jr. Shoreline Park, which includes the San Leandro Creek Trail (Weise, 2000). The EBRPD currently has plans to expand the parking area to 14 spaces (Weise, 2001). There are no restrooms, drinking water fountains, telephone facilities, picnic tables, or benches along the 1.74-mile-long San Leandro Creek Trail (the total length, counting trail on north and south banks of the creek). These facilities are available along the other trails of the regional trail system at Martin Luther King Jr. Shoreline Park. Arrowhead Marsh at the west end of the San Leandro Creek trails has restrooms, water fountains, parking, visitor and information center. These amenities are the closest available facilities to the San Leandro Creek Trail (Suzio, 2000).

Access

The main access to the trail from the east is from Hegenberger Road. The trail can also be reached from Edgewater Road, Swan Way, and Doolittle Drive. AC Transit (routes 57C and 58) provides bus service from the trail (main entry at Hegenberger Road) to the Coliseum BART Station. AC Transit bus routes 98 and 49 provide service from the Coliseum BART Station to the Edgewater Drive entry of the San Leandro Bay Trail (Suzio, 2000).

Usage

Although usage statistics for the San Leandro Creek Trail are not available, 250,000 people visited Martin Luther King Jr. Shoreline Park and the San Leandro Bay Trail, which includes the San Leandro Creek Trail, in 1999 (Suzio, 2000).

Surrounding Uses and Relationship to Other Area Parks

The major uses on both sides of the San Leandro Creek are airport-related office uses. The back of the United Parcel Service property borders the south side of San Leandro Creek Trail West. The north side of San Leandro Creek Trail East is bordered by offices and businesses of the Edgewater Industrial Park between San Leandro Creek and Capwell Drive. Trees planted along the trail partially screen views of these businesses (Suzio, 2000).

The San Leandro Creek Trail is a part of the regional trail system intended to connect the Oyster Bay Regional Shoreline Park to the Martin Luther King Jr. Shoreline Park at San Leandro Bay. The regional trail system starts at Doolittle Drive, goes along the San Leandro Bay, crosses Arrowhead Marsh, follows San Leandro Creek, and then goes along the northern border of San

Leandro Bay almost parallel to I-880. The trails included in this regional system are the Doolittle Trail, Arrowhead Marsh Trail, San Leandro Creek Trail West and East, Elmhurst Creek Trail, Garretson Point Trail, and Damon Marsh Trail.

Unusual Characteristics

There are no unusual characteristics that define or affect use of the San Leandro Creek Trail.

5.2.3 Proposed Bay Trail Extension

Background

The Port of Oakland is constructing the Airport Roadway Project in partnership with the East Bay Regional Park District, the City of Oakland, the Alameda County Transportation Authority, the City of Alameda, and the City of San Leandro. This roadway project includes construction of a section of the Bay Trail along Doolittle Drive, Airport Drive, and the south side of the restored Lew F. Galbraith Golf Course. The Port of Oakland has an existing commitment to build sidewalks along Doolittle Drive between the Hilton Hotel property and Swan Way. The City of San Leandro proposes to build a bridge to Oyster Bay. The Bay Trail extension project would bring the trail extension/ connection to within several hundred feet of the proposed bridge to Oyster Bay Regional Shoreline Park. As OIA is a major employment center, construction of Class I bike lanes connecting existing Bay Trail segments in the area to 98th Avenue, Doolittle and Airport Drives, and Hegenberger Road would make commuting to work via bicycle or foot a viable option. A majority of the funding for the Bay Trail extension would be from Association of Bay Area Government's Bay Trail funds and from the Port of Oakland (Thompson, 2000a; Gaffney, 2000).

The total length of the proposed Bay Trail extension would be 6,100 feet, with 1,800 feet planned at the southern edge of the restored Lew F. Galbraith Golf Course and the remaining 4,300 feet along Airport Drive and Doolittle Drive. The section of the Bay Trail on Airport Drive between Doolittle Drive and Air Cargo Road is proposed to be ten feet wide. This section of the Bay Trail would be located between the golf course and the 35-foot easement reserved for the Connector. The planned trail width along the southern edge of the Lew F. Galbraith Golf Course is 10 feet. The trail is planned for both pedestrians and bicyclists. The trail along the south side of the golf course is in the design phase at this time (Thompson, 2000a; Engel, 2000a; Gaffney, 2000).

Ownership

The Port of Oakland, with financial help from other agencies (including ABAG and the California Coastal Conservancy), is developing the Bay Trail extension project in this portion of Oakland. Responsibility for operation and maintenance of the trail is being negotiated at this time (Engel, 2000a; Gaffney, 2000).

Proposed Facilities

The Bay Trail extension along Airport Drive has no planned amenities like water fountains, parking, or restrooms. Facilities for the trail segment along the south side of the restored golf course have not yet been planned (Gaffney, 2000).

Access

The proposed trail would bring the trail within several hundred feet of the proposed bridge to the Oyster Bay Regional Shoreline Park. The portion of the Bay Trail extension along Airport Drive and Doolittle Drive could be accessed from Airport Drive, Doolittle Drive, 98th Avenue, Hegenberger Road, Swan Way, and from Martin Luther King Jr. Regional Shoreline Park. Access is not planned between the trail and Lew F. Galbraith Golf Course (Thompson, 2000a; Gaffney, 2000).

Usage

In 1999, the Oyster Bay Regional Shoreline Park had 73,000 visitors and the Martin Luther King Jr. Shoreline Park had 250,000 visitors. The proposed Bay Trail extension would bring the trail within several hundred feet of the proposed bridge that would connect these two parks, but no known projections have been made regarding future use of the trail.

Surrounding Uses and Relationship To Other Area Parks

The uses along the Airport Drive segment of the trail include the Lew F. Galbraith Golf Course to the east and Airport Drive and the OIA North Field runways to the west. On the Doolittle Drive segment of the trail, the surrounding uses include hotels, inns, light industrial businesses, long-term parking lots, and offices. The golf course segment of the Bay Trail (i.e., the section of the trail along the southern boundary of the golf course) has the golf course to the north, and wetlands and a fuel farm to the south. The Bay Trail extension would bring the trail within several hundred feet of the proposed bridge that would connect Martin Luther King Jr. Shoreline Park and Oyster Bay Regional Shoreline Park.

Unusual Characteristics

There are no unusual characteristics that define or affect use of the Bay Trail extension.

Section 5.3
Impact Assessment and Mitigation Measures

5.3.1 Standards of Significance

For the Section 4(f) analysis, there are two types of "use" that trigger potential adverse effects and the need for mitigation measures. The first involves the permanent "taking" or acquisition of land (i.e., acquisition through fee simple or a permanent easement). The second "take" would also occur if project construction required temporary removal of protected Section 4(f) resources, where such removal or occupancy would interfere with regular recreational activities (i.e., acquisition through a temporary easement).

The second type of use is "constructive use." Constructive use occurs when the transportation project does not incorporate land from a Section 4(f) resource, but the project's proximity impacts are so severe that the protected activities, features, or attributes that qualify a resource for protection under Section 4(f) are substantially impaired. Substantial impairment occurs only when the protected activities, features or attributes of the resource are substantially diminished. The following are examples of situations when a constructive use of a Section 4(f) resource occurs:

- The projected noise level increase attributable to the project substantially interferes with the use and enjoyment of a noise-sensitive facility of a resource protected by Section 4(f), such as hearing the performances at an outdoor amphitheater, sleeping in the sleeping area of a campground, or enjoyment of an urban park where serenity and quiet are significant attributes.

- The proximity of the proposed project substantially impairs aesthetic features or attributes of a resource protected by Section 4(f), where such features or attributes are considered important contributing elements to the value of the resource. Examples of substantial impairment to visual or aesthetic qualities would be location of a transportation facility in such proximity that it obstructs or eliminates the primary views of an architecturally significant historical building, or substantially detracts from the setting of a park or historic site which derives its value in substantial part due to its setting.

- The project results in restriction on access, which substantially diminishes the utility of a significantly publicly owned park, recreation area, or a historic site.

Therefore, the proposed project would lead to significant environmental impacts on Section 4(f) resources if it involves the following:

- "take" or acquisition of land; or

- "constructive use."

Section 4(f) does not apply to a temporary occupancy (including those resulting from construction) when the following conditions are satisfied:

a) Duration must be temporary, i.e., less than the time needed for construction of the project, and there should be no change in ownership of the land;

b) Scope of the work must be minor, i.e., both the nature and the magnitude of the changes to the Section 4(f) resource are minimal;

c) There are no anticipated permanent adverse physical impacts, nor will there be interference with the activities or purpose of the resource, on either a temporary or permanent basis;

d) The land being used must be fully restored, i.e., the resource must be returned to a condition which is at least good as that which existed prior to the project; and

e) There must be documented agreement of the appropriate federal, state, or local officials having jurisdiction over the resource regarding the above conditions (FHWA, 1997).

5.3.2 Planning Efforts to Avoid Take of Section 4(f) Lands

As part of this FEIR/FEIS, BART considered several alignment options for the AGT. Option C, described in Section 2.6, Alternatives Considered But Rejected, would have required acquisition of a portion of the Lew F. Galbraith Golf Course. Approaching the golf course from the north along Hegenberger Road, the AGT would be in an aerial configuration. The design under Option C would require the AGT alignment to travel over the 98th Avenue/Doolittle Drive/Airport Drive interchange, currently under construction. The AGT alignment would then descend steeply to achieve a 14-foot clearance between the guideway and the FAA obstacle free zone. To achieve this, the AGT alignment would have had to curve further to the east, thus, interfering with the proposed 15th and 16th holes of the new golf course design. Option C would require use of Section 4(f) parklands. In light of this potential effect, BART directed its general engineering contractor to halt further consideration of the aerial alignment and to consider the currently proposed below-grade alignment.

5.3.3 Preferred Alternative Environmental Analysis

Impact 4(f)-1. Impacts on Lew F. Galbraith Golf Course

The AGT alignment would be at least 14 feet from the boundary of the golf course and, therefore, would not result in permanent take of the golf course. Because Airport Drive is already a heavily trafficked corridor, the approximately 80-foot-long, at-grade, AGT train (2 cars, each 40 feet long) would not cause a long-term significant visual or noise impact that could detract from the recreational use of the golf course. Moreover, the preliminary drawings for the restored golf course show a vegetative barrier along the boundary of the golf course, where it borders the AGT alignment. If implemented, this barrier would further screen views of passing AGT vehicles.

During construction, access to the golf course from Doolittle Drive would not be affected. Construction of the guideway along Airport Drive and west of the golf course would, however, result in visual, noise, and dust impacts. Short-term grading and construction activities would visually contrast with the landscaped, manicured appearance of the golf course, however not with the traffic on Airport Drive. Noise from construction equipment and pile driving for AGT guideway foundations near the golf course would be above comfort levels for golfers. Fugitive dust during grading and construction could be a nuisance and also interfere with use of the golf course. These construction-related impacts would be temporary, would only affect a minor portion of the golf course (three of the 18 holes), and would not substantially impair the features and attributes of the golf course. Given these factors, the visual, noise, and dust effects during construction would not constitute a constructive use of the golf course nor be considered a significant effect. Additionally, the temporary impacts to the golf course would be further minimized by mitigation measures proposed in Section 3.16, Construction Impacts.

The construction right-of-way along the golf course property would encroach into the golf course in some segments. There would be narrow strips of the golf course property, none of which includes any of the proposed holes, within the construction right-of-way. Therefore, there would be a temporary take of a small portion of the golf course property during construction. There would be no change in ownership of the land, no anticipated permanent adverse physical impacts, nor interference with the activities or function of the golf course. Nonetheless, BART would require temporary use of the golf course property. (PS)

Mitigation Measures. The preferred alternative would result in temporary use of the golf course property. The following mitigation measures would mitigate the impact to a less-than-significant level. (LTS)

4(f)-1(i) *Obtain Temporary Easement for Use of Golf Course Property.* BART shall obtain right of entry permission (temporary construction easement) for construction activities within the Lew F. Galbraith Golf Course property from the Port of Oakland, the City of Oakland and the golf course operator. This easement shall contain provisions to minimize impact on the golf course operation and provisions for BART to pay for the cost of clean up, grading, and restoration of the golf course property.

4(f)-1(ii) *Adjust Construction Schedule and Plans to minimize effects on Golf Course.* BART shall consult with the Port of Oakland and the City of Oakland park officials regarding the construction plans and schedule of the project near the golf course. The Traffic Management Plan (proposed as Mitigation Measure C-TR-1(ii)) and other construction plans and schedules that would be prepared for the project shall be submitted to these agencies for review and BART shall adjust its plans to minimize impacts to the proposed restoration of the golf course and other projects proposed by the East Bay Regional Park District and the Port of Oakland in the vicinity of the golf course.

Coordination. BART has consulted with the Port of Oakland and the City of Oakland regarding the impacts of the preferred alternative to the Lew F. Galbraith Golf Course. The Port

of Oakland and the City of Oakland concurred with the identified impacts. However, minor adjustments to the mitigation measures were suggested. Their comments were acknowledged and the revisions were made to the proposed mitigation measures (Engel, 2000b; Ryugo, 2000; Ryugo, 2001).

Impact 4(f)-2. Impacts on San Leandro Creek Trail
The preferred alternative would not lead to a direct take of the existing San Leandro Creek Trail, since the alignment is in the median of Hegenberger Road, east of the trail. The operation of the AGT system would not have a noise impact that would detract from enjoyment of the trail (see Section 3.11, Noise and Vibration).

There are offices and businesses, mostly more than one story buildings, to the north and south of the trail. The AGT guideway would not significantly contrast in scale with these buildings. A hiker/cyclist moving eastward on the trail would have views of the Oakland Hills. The AGT guideway would partially obstruct these views as the hiker/cyclist travels along the trail. Because this impact exists for only a small stretch of the trail, it is considered less than significant and would not preclude use or enjoyment of the trail.

The placement of the columns in the Hegenberger Road median could obstruct the direct extension of the San Leandro Creek Trail across Hegenberger Road. The precise location of columns has not been defined and will not be finalized until the contract to build the AGT system is awarded. Consequently, there is a potential for the guideway support columns to interfere with the planned trail extension and adversely affect enjoyment of the trail. This would be a potentially significant impact.

Construction work for the guideway and columns would result in visual, noise, and dust effects. The noise and dust effects would be a nuisance only near the trail. The length of project corridor crossing the trail is about 300 feet. Installation of foundations, columns, and the aerial guideway for the stretch would take about two to six months. The visual, noise, and dust effects due to construction of the guideway would therefore be temporary, would affect only a small stretch of the trail, and would not substantially impair trail activities to the west. Consequently, these activities would not result in constructive use of the trail.

In summary, the temporary effects to San Leandro Creek Trail during construction of the AGT are not considered to constitute a constructive use and would be a less-than-significant impact. Furthermore, mitigation measures proposed in Section 3.16, Construction Impacts, would further minimize harm to the Section 4(f) resource. Nevertheless, the placement of the AGT columns could obstruct the planned trail extension of San Leandro Creek Trail. This could result in a potential take of the trail. (PS)

Mitigation Measures. The AGT would result in potentially significant impacts. The following mitigation measures in combination with Mitigation Measures SE-1(i) Relocate Displaced Facilities or Compensate and SE-1(ii) Provide Replacement Parking would reduce direct and indirect use of the trail to less than significant. (LTS)

SE-1(i) *Relocate Displaced Facilities or Compensate.* BART shall negotiate with the property owners of all affected parcels to minimize economic loss. For all displacement BART shall comply with the federal Uniform Relocation Act (Public Law 91-646) and the California Relocation Act (Chapter 16, 7260 *et. seq.* of the Government Code) and related laws and regulations. Appropriate mitigation could involve relocating affected uses to another location on the property (several possible options are described below) or compensation for the existing property. Mitigation could also involve compensation for modification of existing property like Sam's Hofbrau, which does not involve relocation. If on-site relocation or modification of the affected uses is not feasible, BART will compensate the property owners in conformance with the state and federal relocation laws.

SE-1(ii) *Provide Replacement Parking*. BART shall provide on-site replacement parking facilities (including fencing, as appropriate) for properties that would have parking spaces permanently removed by the proposed project. If on-site replacement parking facilities cannot be identified, BART shall compensate the property owners for the permanent take of the parking spaces in accordance with state and federal relocation laws.

4(f)-2(i) *Plan Location of Columns for the Guideway.* The distance between the north and south legs of the San Leandro Creek Trail is about 300 feet. Because the maximum allowable span between two columns is 160 feet, the AGT guideway would have at least one column in this 300-foot segment of the alignment. BART shall require the contractor to place the columns so as to avoid precluding the extension of the San Leandro Creek Trail east of Hegenberger Road, shall not block access to the trail from Hegenberger Road, and shall not impede sight lines for vehicles exiting the driveway of the trail parking facility onto Hegenberger Road that could create a safety impact. The column shall also avoid the City of Oakland sewer lift station and cleanout located at the entrance to the trail.

4(f)-2(v)[1] *Adjust Construction Schedule and Plans to minimize effects on San Leandro Creek Trail.* BART shall consult with the East Bay Regional Park District park officials regarding the construction plans and schedule of the project near the San Leandro Creek Trail. The Traffic Management Plan (proposed as Mitigation Measure C-TR-1(ii)) and other construction plans and schedules that would be prepared for the project shall be submitted to these agencies for review and BART shall adjust its plans to minimize project impacts to the East Bay Regional Park District in the vicinity of the San Leandro Creek Trail.

Coordination. BART has consulted with the East Bay Regional Park District regarding the impacts of the preferred alternative to the San Leandro Creek Trail. The East Bay Regional Park District suggested minor adjustments to the identified impacts and mitigation measures. Their

[1] The DEIR/DEIS proposed additional mitigation measures 4(f)-2(ii) through 4(f)-2(iv) for impacts that would be specific to another AGT alignment option (Option B). Since those mitigation measures do not apply to the preferred alternative or the Median Option, they are not presented here.

comments were acknowledged and revisions were made to minimize harm to the San Leandro Creek Trail (Wiese, 2000b; Wiese, 2001).

Impact 4(f)-3. Impacts on proposed Bay Trail extension
As part of the ADP, the Port of Oakland has reserved right-of-way for the Connector and the Bay Trail extension. Consequently, the AGT would not require use of the proposed Bay Trail extension.

Regarding constructive use from indirect effects related to AGT operation, the at-grade guideway segment adjacent to the Lew F. Galbraith Municipal Golf Course would not significantly affect the views of pedestrians and cyclists using the trail. These trail users would see the golf course to the east and transportation uses (both the AGT and Airport Drive) to the west. Primary views to the south would be of Airport Marsh, which would not be affected by the AGT.

The noise analysis (Section 3.11, Noise and Vibration) indicates that the AGT vehicles would generate noise that could diminish enjoyment of the trail immediately adjacent to the AGT guideway. Maximum passby noise from the preferred alternative would exceed the thresholds of significance at the Bay Trail extension.

The construction right-of-way of the AGT guideway would overlap with land reserved for the Bay Trail extension. If the Bay Trail extension is constructed before the AGT, AGT construction would result in a temporary take of the trail. The main function of the Bay Trail extension is that it serves to connect the bay trails at Oyster Bay Regional Shoreline Park and Martin Luther King Jr. Regional Shoreline Park. AGT construction activity could cause the Bay Trail extension to cease to function temporarily as a connector trail or require a temporary rerouting of the trail. Temporary occupancy of the Bay Trail extension by the AGT construction activities is considered a potentially significant impact. (PS)

Mitigation Measures. The preferred alternative could result in permanent constructive use (noise impacts) of the stretch of the Bay Trail extension along Airport Drive. Implementation of Mitigation Measure NV-1(i), Mitigate Passby Noise, would reduce this impact to less-than-significant.

NV-1(i) *Mitigate Passby Noise.* BART shall incorporate into its contract documents a specification that the contractor reduce operational noise to or below the BART design criteria for passby noise. The thresholds can be achieved for diesel-powered equipment by incorporating engine compartment treatments with sound absorbing materials and low-noise engine mufflers, and for rail equipment by incorporating spin-slide wheel traction control, wheel truing, and rail grinding to eliminate wheel flats and rail corrugation.

The AGT could result in temporary take of the stretch of the Bay Trail extension along Airport Drive if this trail is completed prior to the AGT. The following mitigation measures would reduce this temporary impact to less than significant. (LTS)

4(f)-3(i) *Reroute Bay Trail Temporarily.* BART in coordination with the City of Oakland, Port of Oakland, City of San Leandro, and the Bay Trail extension operator shall temporarily reroute the Bay Trail extension from Oyster Bay Regional Shoreline Park to Doolittle Drive. The temporary route shall generally follow Davis Street (heading north) and Doolittle Drive (heading west). These streets are designated as scenic routes in the City of San Leandro General Plan. In addition, the City of San Leandro in its General Plan identifies Doolittle Drive as a bikeway and recommends that as development occurs, roadway improvements including bikeways be constructed along Doolittle Drive (City of San Leandro, 1989).

4(f)-3(ii) *Place Signs Showing Temporary Rerouting of the Bay Trail Extension.* BART shall place appropriate signs at the ends of the trail at Oyster Bay Regional Shoreline Park and Martin Luther King Jr. Regional Shoreline Park indicating temporary rerouting of the Bay Trail Extension.

4(f)-3(iii) *Obtain Temporary Easement for Use of Bay Trail Extension Property.* BART shall obtain a temporary easement for the construction activities within the right-of-way of the Bay Trail extension from the Port of Oakland, the City of Oakland and the Bay Trail extension operator. The easement shall contain provisions for BART to pay for the cost of clean up and reconstruction of the Bay Trail extension after construction of the Connector.

4(f)-3(iv) *Adjust Construction Schedule and Plans to minimize effects on the Bay Trail Extension.* BART shall consult with the Port of Oakland and the East Bay Regional Park District park officials regarding the construction plans and schedule of the project near the proposed Bay Trail Extension. The Traffic Management Plan (proposed as Mitigation Measure C-TR-1(ii)) and other construction plans and schedules that would be prepared for the project shall be submitted to these agencies for review and BART shall adjust its plans to minimize impacts to the proposed Bay Trail Extension and other projects proposed by the East Bay Regional Park District and the Port of Oakland in the vicinity of the Bay Trail Extension.

Coordination. BART has consulted with the Port of Oakland, Association of Bay Area Governments, and the East Bay Regional Park District regarding the impacts of the preferred alternative to the Bay Trail Extension. The Association of Bay Area Governments concurred with the analysis. The Port of Oakland and the East Bay Regional Park District suggested minor adjustments to the analysis. Their comments were acknowledged and revisions were made to the mitigation measures to minimize harm to the proposed Bay Trail Extension (Engel 2000b; Thompson 2000b; Thompson, 2001; Wiese, 2000b; Wiese, 2001). Copies of the agency communications are included at the end of this section.

Partial ADP Scenario

The Partial ADP components that could affect the Connector project would be in the OIA terminal area. The OIA terminal area does not have any Section 4(f) resources. Therefore, the impacts to parklands and trails with the Partial ADP would be the same as under the ADP.

References

Antonio E. Acosta, Director, Office of Parks and Recreation, City of Oakland, facsimile, March 31, 2000.

Rick Baker, Engineer, Alameda County Public Works Agency, personal communication, March 13, 2000.

City of San Leandro, Community Development Department Planning Division, San Leandro General Plan, adopted March 20, 1989.

Louise Engel, Associate Strategic Planner, Environmental Planning Department, Port of Oakland, Bay Trail Extension Project, personal communication, July 2000a.

Louise Engel, Associate Strategic Planner, Environmental Planning Department, Port of Oakland, Bay Trail Extension Project, personal communication, November 27, 2000b.

FHWA, Federal-Aid Policy Guide, Transmittal 18, Subchapter H, Section 771.135, Section 4(f) (http://www.fhwa.dot.gov/ legsregs/directives/fapg/cfr0771.htm) October 14, 1997.

Maureen Gaffney, Planner, Environmental Planning Department, Port of Oakland, personal communication, March 16, 2000.

Port of Oakland, *Oakland Harbor Deep - Draft Navigation Improvements Final Supplemental Environmental Impact Report/Environmental Impact Statement (SCH 91073031)*, June 1994.

Jim Ryugo, Zone Manager, Life Enrichment, Park and Recreations Department, City of Oakland, personal communication, December 5, 2000.

Jim Ryugo, Zone Manager, Life Enrichment, Park and Recreations Department, City of Oakland, personal communication, June 12, 2001.

Joan Suzio, Park Supervisor, Martin Luther King Jr. Shoreline Park and Oyster Bay Shoreline Park, East Bay Regional Park District, personal communication, March 22, 2000.

Laura Thompson, Bay Trail Planner, Association of Bay Area Governments, letter to EIP Associates, March 13, 2000a.

Laura Thompson, Bay Trail Planner, Association of Bay Area Governments, personal communication, December 1, 2000b.

Laura Thompson, Bay Trail Planner, Association of Bay Area Governments, personal communication, June 8, 2001.

Brian Wiese, Planner, Interagency Planning, East Bay Regional Park District, personal communication, April 5, 2000a.

Brian Weise, Planner, Interagency Planning, East Bay Regional Park District, personal communication, November 29, 2000b.

Brian Wiese, Planner, Interagency Planning, East Bay Regional Park District, letter to EIP Associates, June 20, 2001.

EAST BAY REGIONAL PARKS PARK DISTRICT

June 20, 2001

Ms. Binu Chandy
EIP Associates
601 Montgomery Street, Suite 500
San Francisco, CA 94111

RE: BART-Oakland International Airport Connector Project

Dear Ms. Chandy:

Thank you for sharing relevant sections of the revised administrative draft EIR/EIS and 4(f) evaluation for the subject project with the East Bay Regional Park District. In addition to the comments contained in my original letter of November 29, 2000, I would like to make the following comments:

Section 5.2: Existing Parklands in the Project Corridor
The section notes the presence of the Oyster Bay and Martin Luther King, Jr. Regional Shorelines, but states that they are more than a quarter mile away from any of the alternative alignments of the Connector project. This is not correct. The statement should note the existing staging area for the Martin Luther King Shoreline, located on the northwest side of Hegenberger Road, just southwest of San Leandro Creek. The Park District has current plans to improve this staging area and enlarge it to 14 spaces in the near future. This staging area would be adversely impacted by AGT Alignment Option B.

Section 5.2.3 Proposed Bay Trail Extension
Under *Proposed Facilities*, the document states that: "*The plan for the trail segment along the south side of the restored golf course is still conceptual and no facilities have yet been planned.*" The plan appears both in ABAG's Bay Trail Plan and the East Bay Regional Park District's 1997 Master Plan. The Port of Oakland has recently obtained a grant from ABAG and the California Coastal Conservancy to construct this segment of the Bay Trail.

Section 5.3.3: Alternative-Specific Environmental Analysis
Under *AGT Alignment Option B*, this section states: "*This alignment may...result in the permanent take of one of the parking spaces at the entrance of the San Leandro Creek Trail.*" Because the design of the parking spaces will change somewhat, and without a design plan for the BART column alignment, it is impossible to predict the exact impact of this alternative on

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the parking lot. You should note, however, that there is an existing City of Oakland sewer lift station and cleanout located at the property frontage on Hegenberger. The City requires regular access to this facility.

The statement continues: "*In addition, the column placement for the AGT guideway at the entrance to the trail has the potential to block access to the trail from Hegenberger Road...*" More significantly, the column placement could block the driveway entrance to the staging area, or impede sight lines for vehicles exiting the driveway onto Hegenberger, creating a safety problem. Mitigation measures 4(f)-2(i) and 4(f)-2(ii) should recognize and address this impact.

Mitigation Measure 4(f)–2(iv) states: "*BART shall obtain a temporary easement for the construction activities within the right-of-way of the San Leandro Creek Trail property from the East Bay Regional Park District.*" Easements would also need to be obtained from the Port of Oakland and Alameda County Flood Control District, the underlying property owners.

In summary, the Park District believes that AGT alignment option B would involve constructive use and probably take of this park staging area.

Thank you again for sharing the subject administrative draft comments with the Park District. Please feel free to contact me at any time at (510) 544-2623.

Sincerely,

Brian Wiese
Interagency Planning

Binu Chandy

From: Laura Thompson [LauraT@abag.ca.gov]
Sent: Friday, June 08, 2001 5:18 PM
To: Bchandy@elpassociates.com
Subject: BART-OIA Connector Project

Binu,

Thank you for forwarding the revisions to Section 4(f) reflecting suggestions and comments from the Port of Oakland and East Bay Regional Park District.

We support the added mitigation measures addressing increased noise levels and construction schedule adjustments to reduce impacts on Bay Trail users.

Thank you for the opportunity to comment on these revisions and I look forward to reviewing the Draft EIR/EIS.

Laura Thompson
Bay Trail Planner
(510) 464-7909
laurat@abag.ca.gov

Binu Chandy

From: Ryugo, Jim [JRyugo@oaklandnet.com]
Sent: Tuesday, June 12, 2001 2:56 PM
To: 'bchandy@eipassociates.com'
Subject: BART-Oakland International Airport Connector Project Draft EIR/EI S

Dear Binu,

In response to your recent letter, I want to advise you that the Port of Oakland, City of Oakland and Oakland Golf, LLC. have agreement on a plan to re-develop, construct and operate the Galbraith Golf Course. The legislation will be submitted in July 2001 and the golf course is still planned to open in summer 2002.

Please call me if you have any further questions.

Jim Ryugo
510-238-6648

EAST BAY REGIONAL PARKS PARK DISTRICT

November 29, 2000

Ms. Binu Chandy
EIP Associates
601 Montgomery Street, Suite 500
San Francisco, CA 94111

RE: BART Oakland Airport Connector Project EIS/R / 4(f)

Dear Ms. Chandy:

Thank you for forwarding relevant sections of the draft copy of the above document for early review.

With regard to the existing San Leandro Creek trail, the I offer the following new information, which should be incorporated into the document: In connection with the construction of the planned Airport Technology Center to the west of Hegenberger Road, south of San Leandro Creek, the existing 4-space parking lot will be paved and enlarged to 26 spaces with appropriate fencing and landscaping. The construction schedule is not certain at the present time, but may intersect with construction of the BART Airport Connector Project.

Page 5.3-5, paragraph 5 states that: *Option B may result in the take of one of the parking spaces at the entrance to the San Leandro Creek Trail. The column placement for the AGT guideway at the entrance to the trail has the potential to block access to the trail from Hegenberger Road...*Because of this new staging area, the District would urge that another option be selected. If Option B is selected, mitigation measure 4(f)-2(ii), restriping parking spaces, is not appropriate or adequate. If the project will result in a permanent take of land under the Park District's control, appropriate compensation will need to be made. In any case, specific construction plans and time schedules should be forwarded to the District for review and coordination.

Page 5.3-4 of the section 4(f) analysis, 6th paragraph, states that a proposed staging area will be directly south of the trail entrance; however the exact location is unclear. It would be helpful if proposed staging locations for alternatives B and D were shown on a map in order to coordinate construction activities and avoid or reduce construction impacts in the future.

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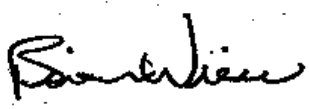
With regard to section 4(f)-3, *Impacts on the proposed Bay Trail extension,* the document states (p. 5-3-6) that *(T)he noise* analysis *...indicates that the AGT vehicles would not generate noise that could diminish enjoyment of the trail immediately adjacent to the AGT guideway;* however, notes in other sections of the draft indicate that noise calculations have not yet been prepared. This conclusion does not, therefore, appear to be justified at this time. Results of the noise analysis should be presented.

Again, with the AGT alignment, option D, where construction activities would overlap with the Bay Trail alignment and result in a temporary take, construction activities should be coordinated with the Port of Oakland.

Mitigation Measure 4(f)-3(i) calls for a temporary re-routing of the trail between the Airport Roadway and Oyster Bay onto Davis Street and Doolittle Drive. It is suggested that BART planners coordinate with the City of San Leandro in this process to sign and stripe this entire route as a Class II bikeway.

Thank you for forwarding an early draft of the document to the Park District. Should you have further questions on these comments, please contact me at (510) 544-2623.

Sincerely,



Brian Wiese
Interagency Planning

Binu Chandy

From: Laura Thompson [LauraT@abag.ca.gov]
Sent: Friday, December 01, 2000 9:47 AM
To: Bchandy@elpassociates.com
Subject: Airport Connector Project

Binu,

Thank you for the opportunity to review the draft Section 4(f) analysis for the proposed Oakland Airport Connector Project. We have reviewed the background material, project descriptions and proposed mitigation measures and feel that the mitigation measures sufficiently address the potential impact on the Bay Trail.

I apologize for the delay in responding to you. It is a busy time for us now! I look forward to reviewing the upcoming environmental documents.

Thanks,
Laura Thompson
(510) 464-7909

CONTACT REPORT FORM

Project: BART-Oakland Airport Connector EIR/EIS **Project #: 10287-00**

Person Contacted: Jim Ryugo **Contacted By: Binu Chandy, EIP Associates**

Title: Zone Manager, Life Enrichment **Date: December 5, 2000**

Agency/Firm: Parks and Rec, Dept., City of Oakland **Forum: Telephone**

Subject: Comments on the Section 4(f) Analysis presented for the project

Items Discussed:

1. Noise Impacts on the Lew F. Galbraith Golf Course:

Jim Ryugo expressed his views that the noise impacts from the AGT Alternative would significantly affect the golfers. Especially at holes 16, 17, 15, 13, and 12. However, the Section 4(f) Analysis concluded that the impact would be less-than-significant.

Answer and action by Consultant: As per the noise analysis performed for the EIR, the operational noise at the golf course would not be significant to disturb the golfers. Compared to the noise from aircrafts and traffic on Hegenberger Road, noise from the Agt system would not be significant. Noise from construction equipment and pile driving for AGTguideway foundations near the golf course would be above comfort levels for golfers. However, according to the noise analyis the construction phase noise impacts would be temporary and would only affect a minor portion of the golf course (3 out of 18 holes). Therefore, this impact would not qualify as a Section 4(f) impact. Mr. Ryugo agreed with this reasoning and requested that text be revised to present this explanation.

2. *Dust Pollution and Mitigation for Dust Pollution:*

Mr. Ryugo had concerns about the dust pollution during construction of the project. He was also concerned that mitigation provided for dust abatement (watering the area to control dust) could be bad for the grass/turf. It could also lead to fungus growth.

Answer and action by Consultant: The dust impact during construction would be significant. But as in the case of noise impact, the dust impact would also be temporary and would only affect a minor portion of the golf course. So it does not qualify as a Section 4(f) impact.

However, the secondary impacts due to implementation of mitigation measure to control the dust was acknowledged. It was agreed to revise the text in the Section 4(f) Analysis to introduce a mitigation measure that would help obtain temporary easement for use of a portion of the golf course property. The easement would include clean up and restoration of the golf course property.

3. *Financial Loss to the City and Port of Oakland*

Jim expressed a concern that golfers may refuse to use the course during the construction phase at the golf course area. This could lead to a financial loss.

Answer and action by Consultant: The financial lois again is temporary. However, a mitigation measure was proposed to be added to schedule construction to minimize disturbance to golfers to help address Mr. Ryugo's concern.

Follow-Up/Action Items:
The Section 4(f) Analysis to be revised based on conversation with Mr. Ryugo.

Route to:

Binu Chandy

From: Louise Engel [lengel@portoakland.com]
Sent: Wednesday, November 29, 2000 4:36 PM
To: BChandy@elpassociates.com
Cc: ddean@bart.gov; David Gittleson; Gail Staba
Subject: Port of Oakland comments on section 4 (f), Admin. Draft 11/ 27/ 2000


Section 4 (f) Sec5.1.doc


Section 4(f) Sec5.2.doc


Section 4(f) Sec5.3.doc

The attached files incorporate revisions and additions to the text. I am sending a fax to you of figure 5.2 -1 that contains revisions to the location of the existing and proposed trail.

The City of Oakland has jurisdiction over any proposed San Leandro Creek Trail segment east of Hegenberger Road.

ONLY COPIES OF PAGES WITH COMMENTS/REVISIONS FROM THE ABOVE THREE FILES HAVE BEEN INCLUDED.

The hydraulic placement of dredged material at the golf course site was completed in June 1998. The dredged materials are currently being dried and stockpiled for use in reconstructing the golf course, for rough grading the golf course contours. Capping the landfill and establishing the rough grade for the golf course will take place concurrently and is projected to be completed by January 2001. Golf course construction is projected to begin in February 2001 and be completed by October 2001. The new 18-hole golf course is projected to open in early 2002 (Acosta, 2000).

Ownership

The site is owned by the Port of Oakland and leased to the City of Oakland. When the golf course was in operation, the City subleased the operation and management of the 18-hole golf course, clubhouse, and driving range to a property management firm, Ransom McKay Golf, Inc. The lease with Ransom McKay Inc. was terminated once the Port of Oakland took up the dredging activity (Port of Oakland, 1994).

The development and operation of the new golf course would be subleased to another private firm. Funding for the project is partially in place ($2.5 million from the Port of Oakland) [Note to Reviewer: Janie Layton is confirming amount] and the development team would have to provide the balance of funding required for the new golf course, which is currently estimated to be between $6-8.5 million, depending on the nature of the clubhouse and other visitor amenities (Acosta, 2000).

Proposed Facilities

The facilities at the new golf course will be similar to the old golf course: an 18-hole golf course with a clubhouse, parking lots, driving range, maintenance facility, and practice golf facilities. The precise nature of these amenities has not yet been finalized and will be significantly influenced by the selected development team. A first tee youth golf program and facility (classroom, practice green, practice holes, and driving range) will be mandatory at the golf course, regardless of the team selected. Clubhouse amenities will include a golf pro shop (merchandise sales), locker rooms, restrooms, and banquet facilities. Depending on the developer, the clubhouse would also have a coffee shop, restaurant, or a lounge (Acosta, 2000).

Access

Access to the site is currently from Doolittle Drive, and this entryway would be retained with the new golf course (Acosta, 2000).

Usage

Statistics in 1994 when the golf course was last operational show that, on a yearly basis, about 65,000 rounds of golf were played, and about 15,000 patrons used the driving range. Total membership in the Junior Golf Program was variously reported as between 9 and 35 participants. Use of the golf course was approximately 80 percent of capacity from Friday to Sunday, and about 50 percent of capacity Monday through Thursday. In 1994, there were over thirty 18-hole public golf courses in the greater Bay Area. However, almost all of these facilities were operating at or near capacity during the weekends (Port of Oakland, 1994). The new golf

The San Leandro Creek Trail is a part of the regional trail system connecting the Oyster Bay Regional Shoreline Park to the Martin Luther King Jr. Shoreline Park at San Leandro Bay. The regional trail system starts at Doolittle Drive, goes along the San Leandro Bay, crosses Arrowhead Marsh, follows San Leandro Creek, and then goes along the northern border of San Leandro Bay almost parallel to I-880 (see Figure 5.2-3). The trails included in this regional system are the Doolittle Trail, Arrowhead Marsh Trail, San Leandro Creek Trail West and East, Elmhurst Creek Trail, Garretson Point Trail, and Damon Marsh Trail.

Unusual Characteristics

There are no unusual characteristics that define or affect use of the San Leandro Creek Trail.

5.2.3 Proposed Bay Trail Extension

Background

The Port of Oakland, is constructing the Airport Roadway Project in partnership with the East Bay Regional Park District, the City of Oakland, the Alameda County Transportation Authority, the City of Alameda, and the City of San Leandro. That roadway project includes ~~has planned for~~ construction of a section of the Bay Trail along Doolittle Drive, Airport Drive, and the south side of the restored Lew F. Galbraith Golf Course (see Figure 5.2-4). ~~When combined with the~~ Port of Oakland has an ~~'s~~ existing commitment to build sidewalks along Doolittle Drive between ~~Hegenberger Road~~ the Hilton Hotel property and Swan Way. ~~and the~~ City of San Leandro's ~~proposal~~ proposes to build a bridge to Oyster Bay. the Bay Trail extension project would ~~join~~ bring the trail extention/ connection to within several hundred feet of ~~at~~ the proposed bridge to Oyster Bay Regional Shoreline Park. As OIA is a major employment center, construction of Class I bike lanes connecting existing Bay Trail segments in the area to 98th Avenue, Doolittle and Airport Drives, and Hegenberger Road would make commuting to work via bicycle or foot a viable option. A majority of the funding for the Bay Trail extension would be from Association of Bay Area Government's Bay Trail funds and from the Port of Oakland (Thompson, 2000; Gaffney, 2000).

The total length of the proposed Bay Trail extension would be 6,100 feet, with 1,800 feet planned at the southern edge of the restored Lew F. Galbraith Golf Course and the remaining 4,300 feet along Airport Drive and Doolittle Drive. The section of the Bay Trail on Airport Drive between Doolittle Drive and Air Cargo Road is proposed to be ten feet wide. This section of the Bay Trail would be located between the golf course and the 35-foot easement reserved for the Connector. The planned trail width along the southern edge of the Lew F. Galbraith Golf Course is 10 feet ~~and may be widened to 12 feet~~. The trail is planned for both pedestrians and bicyclists. The trail along the south side of the golf course is in the design phase at this time (Thompson, 2000; Engel, 2000; Gaffney, 2000).

Ownership

The Port of Oakland ~~and the East Bay Regional Park District, with~~ financial help from ~~the City of Oakland and other~~ agencies, is developing the Bay Trail extension project in this portion of Oakland. Responsibility for operation and maintenance of the trail is being negotiated at this time (Engel, 2000; Gaffney, 2000).

Proposed Facilities

The Bay Trail extension along Airport Drive has no planned amenities like water fountains, parking, or restrooms. The plan for the trail segment along the south side of the restored golf course is still conceptual and no facilities have yet been planned (Gaffney, 2000).

Access

the proposed trail ~~can~~ would bring the trail within several hundred feet of the ~~accessed~~ proposed bridge to ~~from~~ the Oyster Bay Regional Shoreline Park ~~and Martin Luther King Jr. Regional Shoreline Park~~. The portion of the Bay Trail extension along Airport Drive and Doolittle Drive could be accessed from Airport Drive, Doolittle Drive, 98th Avenue, Hegenberger Road, and Swan Way and from Martin Luther King Jr. Regional Shoreline Park. Access is not planned between the trail and ~~from~~ Lew F. Galbraith Golf Course ~~has not yet been planned~~ (Thompson, 2000; Gaffney, 2000).

Usage

In 1999, the Oyster Bay Regional Shoreline Park had 73,000 visitors and the Martin Luther King Jr. Shoreline Park had 250,000 visitors. The proposed Bay Trail extension would bring the trail within several hundred feet of the proposed bridge that would connect these two parks, but no known projections have been made regarding future use of the trail.

Surrounding Uses and Relationship To Other Area Parks

The uses along the Airport Drive segment of the trail include the Lew F. Galbraith Golf Course to the east and the OIA North Field runways to the west. On the Doolittle Drive segment of the trail, the surrounding uses include hotels, inns, light industrial businesses, long-term parking lots, and offices. The golf course segment of the Bay Trail (i.e., the section of the trail along the southern boundary of the golf course) has the golf course to the north, and wetlands and a fuel farm to the south. The Bay Trail extension would bring the trail within several hundred feet of the proposed bridge that would connects Martin Luther King Jr. Shoreline Park and Oyster Bay Regional Shoreline Park.

Unusual Characteristics

There are no unusual characteristics that define or affect use of the Bay Trail extension.

5.3.3 Alternative-Specific Environmental Analysis

4(f)-1. Impacts on Lew F. Galbraith Golf Course

No Action and QB Alternatives. The No Action and QB Alternatives would not involve any construction activity or long-term development near the golf course and, hence, would not involve permanent take or constructive use of the golf course. (NI)

AGT Alternative. The AGT alignment would be at least ~~14~~ 10 feet from the boundary of the golf course and, therefore, would not result in permanent take of the golf course. Because Airport Drive is already a heavily trafficked corridor, the approximately 80-foot-long, at-grade, AGT train (2 cars, each 40 feet long) would not cause a long-term significant visual or noise impact that could detract from the recreational use of the golf course. Moreover, the preliminary drawings for the restored golf course show a vegetative barrier along the boundary of the golf course, where it borders the AGT alignment. If implemented, this barrier would further screen views of passing AGT vehicles.

(Note to review : an earlier draft of this section 4(f) had the following sentence: "during construction, the construction right-of-way would not result in the temporary take of the golf course, because the construction corridor lies west of the golf course property." An earlier draft, section 3.16, construction impacts, refers to a 30 ft. wide construction easement. Such a construction easement would impact the golf course.)

During construction, access to the golf course from Doolittle Drive would not be affected. Construction of the guideway along Airport Drive and west of the golf course would, however, result in visual, noise, and dust impacts. Short-term grading and construction activities would visually contrast with the landscaped, manicured appearance of the golf course, however not with the traffic on Airport Drive. Noise from construction equipment and pile driving for AGT guideway foundations near the golf course would be above comfort levels for golfers. Fugitive dust during grading and construction could be a nuisance and also interfere with use of the golf course. These construction-related impacts would be temporary, would only affect a minor portion of the golf course (three of the 18 holes), and would not substantially impair the features and attributes of the golf course. Given these factors, the visual, noise, and dust effects during construction would not constitute a constructive use of the golf course nor be considered a significant effect. Additionally, the temporary impacts to the golf course would be further minimized by mitigation measures proposed in Section 3.16, Construction Impacts.

The construction right-of-way along the golf course property would encroach into the golf course in some segments. There would be narrow strips of the golf course property, none of which includes any of the proposed holes, within the construction right-of-way. Therefore, there would be a temporary take of a small portion of the golf course property during construction. There would be no change in ownership of the land, no anticipated permanent adverse physical impacts, nor interference with the activities or function of the golf course. Nonetheless, BART would require temporary use of the golf course property. In order for this to occur, BART shall obtain right of entry permission (temporary construction easement) for construction activities within the Lew F. Galbraith Golf Course property from the Port of

The construction right-of-way of the AGT guideway would overlap with land reserved for the Bay Trail extension. If the Bay Trail extension is constructed before the AGT Alternative, AGT construction would result in a temporary take of the trail. The main function of the Bay Trail extension is that it serves to connect the bay trails at Oyster Bay Regional Shoreline Park and Martin Luther King Jr. Regional Shoreline Park. AGT construction activity could cause the Bay Trail extension to temporarily cease to function as a connector trail or require a temporary rerouting of the trail. Temporary occupancy of the Bay Trail extension by the AGT construction activities is considered a potentially significant impact.

AGT Options. The AGT options are not in the vicinity of the proposed Bay Trail extension and, therefore, their implementation would not lead to any potential use of the trail. (NI)

Mitigation Measures. The No Action and QB Alternatives and the various AGT options would not result in take or constructive use impacts. Therefore, these alternatives would not require any mitigation measures.

The AGT Alternative, however, could result in temporary take of the stretch of the Bay Trail extension along Airport Drive if this trail is completed prior to the AGT Alternative. The following mitigation measures would reduce this temporary impact to less than significant. (LTS)

4(f)-3(i) *Reroute Bay Trail Temporarily (AGT).* BART in coordination with the City of Oakland, Port of Oakland, City of San Leandro, and the Bay Trail extension operator shall temporarily reroute the Bay Trail extension from Oyster Bay Regional Shoreline Park to Doolittle Drive. The temporary route shall generally follow Davis Street (heading north) and Doolittle Drive (heading west). (No connection exists between the end of Davis Street and the Bay Trail segment along the southwestern portion of Galbraith golf course. Does this mitigation propose to make that connection?) These streets are designated as scenic routes in the City of San Leandro General Plan. In addition, the City of San Leandro in its General Plan identifies Doolittle Drive as a bikeway and recommends that as development occurs, roadway improvements including bikeways be constructed along Doolittle Drive (City of San Leandro, 1989).

4(f)-3(ii) *Place Signs Showing Temporary Rerouting of the Bay Trail Extension (AGT).* BART shall place appropriate signs at the ends of the trail at Oyster Bay Regional Shoreline Park and Martin Luther King Jr. Regional Shoreline Park indicating temporary rerouting of the Bay Trail Extension.

Note to reviewer: what about mitigation for the 30 foot wide construction easement impacts?

4(f)-3(iii) *Obtain Temporary Easement for Use of Bay Trail Extension Property(AGT).* BART shall obtain a temporary easement for the construction activities within the right-of-way of the Bay Trail extension from the Port of Oakland, the City of Oakland and the Bay Trail extension operator. The easement shall contain provisions for BART to pay for

PORT OF OAKLAND

ENVIRONMENTAL PLANNING DEPARTMENT

FAX COVER SHEET

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FROM	Name:	Louise Engel	Phone:	510–627- 1544
DATE	~~11/29/00~~ 12/1/00		Number of Pages:	2 (Including this one)

Message:

Port of Oakland comments on section 4 (f), Admin. Draft 11/ 27/ 2000.
Attached is figure 5.2 -1 that contains revisions to the location of the existing and proposed trail.

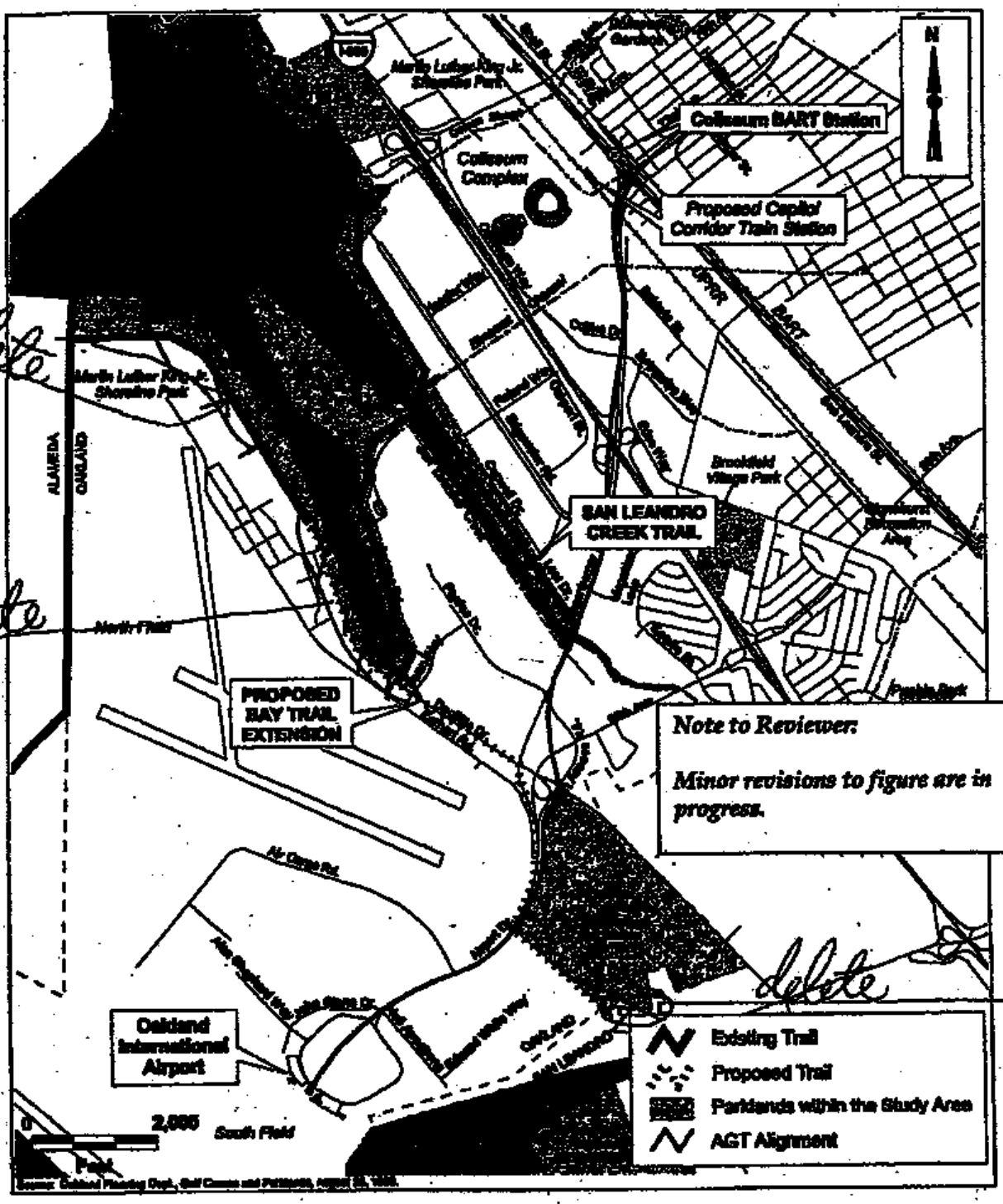

Figure 5.2-1
Parklands in the Study Area

Section 6
Financial Considerations

6.1 Introduction

To facilitate evaluation of the cost-effectiveness of the preferred alternative, this section considers the costs of each alternative and design option considered in the DEIR/DEIS by evaluating capital costs, annual operating and maintenance (O&M) costs, and cost effectiveness. The primary factors considered in this section are derived from the FTA New Starts Criteria. While New Starts funding is not anticipated for this project, FTA's *Technical Guidance on Section 5309 New Starts Criteria* (July 2000) provides useful tools for the general evaluation of a proposal's costs and cost effectiveness.

At the time that the DEIR/DEIS was prepared, the Port of Oakland's ADP provided for the Airport AGT Station to be sited at the center of the new consolidated terminal, located perpendicular to and above the terminal access roads. The Port has subsequently made design refinements to the OIA terminal layout. While subject to further refinement, the Port currently proposes a station integrated into the new multi-story parking garage. Because passenger walk time between airport facilities and the AGT station is an important factor in the model used to estimate Connector ridership, minor adjustments to ridership numbers result from this changed configuration. Accordingly, the financial analysis in this section has been updated to reflect the resulting travel times and ridership, in order to provide the best available financial information for decision-makers. In addition, although this section includes financial analysis for the AGT with Option D alignment, the changes in airport layout would make Option D infeasible.

6.2 Cost Summary

6.2.1 Capital Costs

Capital costs are the expenses associated with design and construction and include acquisition of right-of-way, environmental mitigation, urban design, guideway and station construction, vehicles, system equipment, and maintenance facilities (as applicable). Capital cost estimates for the Connector project were based on historical BART costs, actual costs of other transit projects throughout the country, and the experience of both BART and BART's General Engineering Consultant (GEC) team.

Estimating Methodology

The total cost of each alternative is based on unit costs for individual line items required to build and operate that alternative. Both BART and BART's consultants provided prices for items such as stations, vehicles, systems, urban design, maintenance facilities, and other components of each alternative. Percentage adjustments for "soft costs" (design services, insurance, and contingencies) were applied to the unit costs to develop the total cost for each alternative.

No Action Alternative. The bus unit capital cost for the No Action alternative was based on American Public Transit Association (APTA) data on recent 40-foot low floor bus purchases by public transit agencies (average of year 1999 purchases) and inquiries of specific bus suppliers. This is the only capital expense item for the No Action alternative.

Quality Bus Alternative. The bus unit cost was based on APTA data on recent 60-foot articulated bus purchases by public transit agencies (average of year 1999 purchases) and inquiries of specific bus suppliers. Station facility costs were based on planning level unit price and quantity estimates applied to the conceptual plans prepared by VBN Architects and Lea+Elliott, transportation consultants, who estimated station system equipment costs from their transit cost database.

AGT Alternative. AGT systems involve propriety technology and their designs vary widely in a limited marketplace. Each supplier has developed components, in many cases patented, which are unique to the supplier's technology and thus proprietary from a commercial viewpoint. For business reasons, the cost of proprietary components are considered highly confidential by the suppliers and are, therefore, closely guarded secrets. AGT procurements are always undertaken on a design-build basis using performance specifications. The supplier's responsibilities include final design, manufacturing, installation, and testing to confirm contract compliance. BART's General Engineering Consultant Team (GEC), led by the firm of Lea+Elliott, used computer models to prepare parametric price estimates for the system portions of AGT projects. Bid prices for past AGT projects are used to calibrate the models. These models necessarily predict prices, not costs, for the reasons discussed above. Therefore, some of the input parameters were adjusted accordingly. Estimates for the non-systems portion (guideway, foundations, support columns, etc.) of the Connector used conventional planning cost techniques.

Capital Cost Estimates by Alternative

Table 6-1 summarizes the capital costs for the three principal alternatives and AGT design options discussed in this EIR/EIS. The alternatives and design options are presented in order of increasing cost, illustrating a range of capital costs from $0.4 million to $232.3 million. All costs are expressed in millions of dollars and in 2001 dollars. No right-of-way costs are included for lands owned by the project partners: the City of Oakland, the Port of Oakland, and BART.

As Table 6-1 indicates, the No Action alternative would have a capital cost of $0.4 million and the Quality Bus alternative would be $30.2 million. The AGT estimates show a range of capital costs from $204 million for the 2-station AGT up to $232.2 million for the 4- station AGT with Option D. Construction of both intermediate stops is estimated to add roughly $26 million to the original 2-station proposed project. Construction of the preferred alternative would be $229.6 million.

Table 6-1
Capital Cost Estimates of Alternatives under Consideration-2020
Expressed in millions (2001 dollars)
(Preferred Alternative is highlighted)

Alternative	*Detail*	*Capital Cost (2001 $)*[(1)]
1. No Action	Expand AirBART to maintain current mode share	$0.4
2. Quality Bus	Performance enhancements; modest capital investment	$30.2
3. AGT	2-stations	$204.0
4. AGT	2-stations with Option D	$206.6
5. AGT	4-stations (preferred alternative)	$229.6
6. AGT	4-stations with Option D	$232.2

Source: BART, LEA+Elliott, and WSA

Notes:

(1) Does not include right of way or real estate costs for property owned by the City of Oakland, Port of Oakland, or BART.

Incorporation of the Median Option into the AGT alignment has a potential construction cost savings due to the elimination of aerial guideway crossings into and out of the Hegenberger Road median.

Comparison to Original 1997 Cost Estimate for the Proposed AGT Project

In 1997, the proposed AGT project was estimated to cost $130 million in 1998 dollars. Today, the cost to build the basic 2-station AGT system has escalated to approximately $204 million (in 2001 dollars). There are a number of reasons for this increase in the price, including escalation of construction costs in the San Francisco Bay Area, escalation of real estate costs along Hegenberger Road, and design changes due to environmental constraints.

The single largest reason for the increase in estimated cost has to do with the assumptions made about the AGT guideway. The original estimate of $130 million (1998 dollars) assumed the same AGT configuration as described for the proposed project without intermediate stations, but it assumed a smaller (narrower and lighter) guideway. Since the actual size of the guideway will not be known until a specific technology is chosen, a different assumption was made for purposes of this EIR/EIS. Throughout this document a large guideway, or the "worst-case scenario," has been assumed in order to assess the full extent of possible environmental impacts if such a system were selected. Since the guideway is roughly one-third of the total project cost, assuming a larger guideway has a major impact on the total cost. It should be noted that a smaller, less costly guideway is still a viable solution.

There have also been two design modifications since the project was first described in 1997. Originally, the portion of alignment traversing Doolittle Drive was to be an aerial structure. In order to reduce impacts to Lew F. Galbraith Golf Course and associated wetland areas, the alignment is now proposed to travel under Doolittle Drive via a tunnel. The second modification is the inclusion of two intermediate stations. Although intermediate stations increase initial capital costs, the additional ridership generated creates a more cost-efficient option.

6.2.2 Operating and Maintenance (O&M) Costs

Operating and Maintenance (O&M) costs were provided by Lea+Elliott and the General Engineering Consultant (GEC) team. The Lea+Elliott O&M cost model estimates staffing requirements, labor costs, and non-labor expenses for each alternative. The model is based upon the service and fleet assumptions for 2020 (e.g., peak vehicles, number of stations, passengers) described in Section 2 of this EIR/EIS.

Table 6-2 lists the annual Connector O&M costs in 2020 for each alternative. Annual Connector O&M costs in 2020 range from $2 million for the No Project alternative and $2.4 million for the Quality Bus to $7.3-7.7 million for the 2-station and 4-station AGT scenarios respectively. The AGT design options (including the Median Option) would not have an appreciable effect on annual O&M costs.

Table 6-2
Operating and Maintenance Cost Estimates for Alternatives – Year 2020
(2000 dollars)
(Preferred Alternative is Highlighted)

Alternative	*Detail*	*Annual O&M Cost*[1]
No Action	8 peak operating vehicles; 40' standard buses	$2.0
Quality Bus	9 peak operating vehicles; 60' articulated buses	$2.4
AGT	4, 2-car trains in peak; 2 stations	$7.3
AGT	4, 2-car trains in peak; 4 stations (preferred alternative)	$7.7

Source: BART, LEA+Elliott
Notes:
(1) AGT alignment options would not have an appreciable effect on O&M costs for any of the AGT scenarios.

6.2.3 O&M Costs and Fare Revenues

Based on estimated ridership and O&M costs for each alternative, Table 6-3 indicates the projected BART and Connector O&M fare revenues resulting for each alternative in both 2005 and 2020. As with the current AirBART service today, anticipated fare revenues generated by the Connector in both 2005 and 2020 are projected to cover O&M expenses for all Connector alternatives. Net annual revenue in 2005 would range from a low of $1.7 million with the No Action to an estimated $4.3 million with AGT Option D and 2 stations. The preferred alternative would generate $1.8 million in annual revenue. As a result of design changes at the airport terminal area, Option D is no longer feasible. If the Option D alignment were rerouted to the planned airport garage, rather than going directly to the terminal as described in the DEIR/DEIS, the Option D alignment would attract slightly fewer patrons than the preferred alternative due to a slightly longer alignment and resulting longer trip time. Option D revenues would therefore be less than the preferred alternative. The 2-station AGT would generate slightly higher revenue than the preferred alternative due to lower O&M costs.

Net annual revenue in 2020 would be higher for all alternatives and would range from $3.0 million for the No Action Alternative to $13.1 million for AGT Option D with intermediate stations. As noted above, Option D is no longer feasible. The preferred alternative would generate $9.4 million in annual revenue. Increases in O&M expenses are matched by the

anticipated increase in ridership in 2020 and therefore an increase in fare revenues. Given that the Connector is bridging a relatively small gap to an existing rail system, no increase in the operating cost per passenger mile for the entire BART system is expected from any of the alternatives. According to the FTA's evaluation methodologies, this means that the operating efficiency of the Connector is high.

Table 6-3
Estimated O&M Costs and Fare Revenue in 2005 and 2020
(expressed in millions in 2000 dollars)
(Preferred Alternative is Highlighted)

Alternative	*Annual Ridership*	*Connector Fare Revenue[1]*	*BART Fare Revenue[2]*	*BART Plus Connector Fare Revenue*	*Total O&M Costs[3]*	*Net Annual Revenue[4]*
Year 2005						
No Action	0.7	$1.4	$1.5	$2.9	$1.2	$1.7
QB	1.2	$2.4	$2.6	$5.0	$1.8	$3.2
AGT – 2 stations	1.9	$3.8	$4.0	$7.8	$5.7	$2.1
AGT – 4 stations	2.7	$3.6	$5.7	$9.4	$7.6	$1.8
Option D – 2 stations [3] [5]	2.4	$4.8	$5.2	$10.0	$5.7	$4.3
Option D – 4 stations [5]	3.2	$4.6	$6.8	$11.4	$7.6	$3.8
Year 2020						
No Action	1.2	$2.4	$2.6	$5.0	$2.0	$3.0
QB	2.2	$4.4	$4.7	$9.1	$2.4	$6.7
AGT – 2 stations	3.4	$6.8	$7.3	$14.1	$7.3	$6.8
AGT – 4 stations	4.9	$6.6	$10.5	$17.1	$7.7	$9.4
Option D – 2 stations [3] [5]	4.4	$8.4	$9.5	$17.9	$7.3	$10.6
Option D – 4 stations [5]	5.8	$8.4	$12.4	$20.8	$7.7	$13.1

Source: BART, Lea+Elliott, and WSA

Notes:

[1] For airport passengers and employees traveling between Coliseum Station and OIA. Connector fare is assumed to remain at $2 per trip for each alternative. Does not include intermediate station riders.
[2] BART fare to the Coliseum Stations and (for purposes of this EIR) to either intermediate station is assumed to be $2.13 per trip for each alternative, which is the current average trip fare for the system and represents an average 13 mile trip on BART.
[3] AGT alignment options will not have an appreciable effect on O&M costs for any of the AGT scenarios.
[4] Not all rows total exactly due to rounding.
[5] Option D is no longer feasible due to design changes at OIA.

6.2.4 Cost-Effectiveness

The FTA's cost-effectiveness criterion is measured by the incremental cost per incremental passenger in the forecast year. This measure is based on the annualized total capital investment and annual operating costs, divided by the forecast change in annual transit system ridership, as expressed by the following equation:

$$\text{Cost Effectiveness Index} = \frac{\Delta \text{ Capital Cost} + \Delta \text{ O\&M Cost}}{\Delta \text{ Linked Annual Transit Trips}}$$

Using the FTA's annualization factors, annualized costs for all the alternatives were calculated (FTA, *New Starts Criteria*, 2000). Project costs were annualized according to their assumed useful life and a 7 percent discount rate. The useful life of different project components varies

according to the component. For example, right-of-way is assumed to have a useful life of 100 years, structures have a useful life of 50 years and track work, signals, and electrical systems have a useful life of 30 years.

Incremental Cost per Incremental Passenger

The incremental cost per incremental passenger provides a comparison of the cost per new rider for each alternative. Table 6-4 summarizes the cost effectiveness calculations by combining the annualized capital cost and systemwide O&M costs into a total annualized cost for each alternative. Systemwide O&M costs include BART's systemwide costs and the O&M costs of each alternative.[1] BART's systemwide cost is assumed to be $374 million. This annualized cost is divided by the projected annual ridership for each alternative compared to the No Action alternative. The resulting dollar amount provides a comparison of the relative cost effectiveness of each alternative as defined by FTA New Starts Criteria. The three alternatives compared in Table 6-4 are QB, AGT with two stations, and the preferred alternative (AGT with four stations).

The incremental cost per new rider for the QB alternative compared to the No Action alternative is $2.97. The AGT project without intermediate stations is $9.52 per new rider compared to No Action. The incremental cost per new rider for the preferred alternative decreases to $6.25 compared to No Action. These comparisons indicate that the Quality Bus alternative is the most cost efficient alternative ($2.97 compared to $9.52 for the 2-station AGT and $6.25 for the 4-station AGT). However, due to the increased ridership expected from the preferred alternative, it provides a more cost efficient AGT option ($9.52 for 2-station, $6.25 for 4-station) by garnering a greater overall ridership and lower cost per new rider than the 2-station AGT option. The preferred alternative is also significantly closer to the cost efficiency provided by the Quality Bus alternative.

To put these cost comparisons in a larger context, submissions to FTA for New Starts projects in fiscal year 2000 show cost-effectiveness indices that ranged from $2.54 per new rider to $48.82 per new rider, with a median of $10.39 per new rider reported. All three connector alternatives indicate a lower cost per new rider than the FTA median and better cost efficiency than the FTA median.

[1] These comparisons are based on annual O&M costs and do not take into account revenues that would offset O&M costs. If revenues are included in the calculation, the cost per new rider would be reduced for all alternatives. However, their relative cost-effectiveness would be the same; that is, the Quality Bus would remain the most cost-effective for the three Connector alternatives and the preferred alternative would remain the most cost-effective of the AGT options.

Table 6-4
Cost-Effectiveness Calculation: Incremental Cost per Incremental Passenger-2020

Factor	*Alternative*				*Comparison*			*Source/Calculation*
	No Action	*QB*	*AGT – 2 Stations*	*Preferred Alternative*	*2-Station AGT vs. No Action*	*Preferred Alternative vs. No Action*	*QB vs. No Action*	
1. Annualized Capital Cost (2000$)	$-	$2,513,270	$15,583,494	$17,566,700				Source: Lea+Elliott, June 2000
2. Total Systemwide Annual O&M Cost [(1)] (2000$)	$376,000,000	$376,400,000	$381,300,000	$381,700,000				Source: BART FY01 budget; Lea+Elliott, June 2000
3. Total Systemwide Annualized Cost in 2020 [(1)] (2000$)	$376,000,000	$378,913,270	$396,883,494	$399,266,700				Calculation: Total cost = annualized capital cost + annual O&M cost (Line 1 + Line 2)
4. Total Systemwide Annual Ridership in 2020 [(1)]	132,105,560	133,087,410	134,299,570	135,830,360				Source: BART FY01 budget; CCS Mode Choice Model
5. Incremental Annualized Cost					$20,883,494	$23,266,700	$2,913,270	Calculation: Subtract total annualized costs (Line 3) for: ▪ No Action from 2-station AGT ▪ No Action from Preferred Alternative ▪ No Action from QB
6. Incremental Systemwide Annual Ridership					2,194,010	3,724,800	981,850	Calculation: Subtract total annual ridership (Line 4) for: ▪ No Action from 2-station AGT ▪ No Action from Preferred Alternative ▪ No Action from QB
7. Cost-Effectiveness (Incremental Cost per New Rider)					$9.52	$6.25	$2.97	Calculation: Divide incremental annual cost (Line 5) by incremental annual ridership (Line 6) for: ▪ No Action vs. 2-station AGT ▪ No Action vs. Preferred Alternative ▪ No Action vs. QB

Source: BART

Note: [(1)] Systemwide O&M costs for the BART system include O&M costs for the respective Connector alternative.

6.3 Financial Feasibility And Local Financial Commitment

The Connector project's financial feasibility is based on existing capital revenue sources, potential capital revenue sources and O&M revenue sources. All of the alternatives under consideration will generate new revenue through passenger fares and incidental revenues such as advertising. However, these revenues will only cover a portion of the project's total funding.

No Action. The small amount of capital expenses necessary for the No Action alternative could be funded through fare revenues as has been done in the past.

Quality Bus. While capital costs are relatively modest for the QB alternative, fare revenues would not be enough to cover them. No commitments have been made yet to fund the capital expenses of the QB alternative. Utilization of Alameda County Transportation Sales Tax revenues for the QB alternative is not included in the voter-approved Expenditure Plan and would require a locally approved amendment to the plan. Alternatively, the capital expenses could possibly be met by contributions from state and regional funding sources and airport revenues.

AGT. Capital expenses for the proposed project would be expected to be met by a combination of Alameda County's transportation sales tax revenues (Measure B), airport revenues, and state and regional funds. A total of approximately $143.5 million (in 2001 dollars) has been committed to the project. The Alameda County Transportation Sales Tax commits $65.8 million to an AGT (1998 dollars). (Measure B also provides for a possible additional $7.2 million (1998 dollars) in "Tier 2" funds; these are not considered committed funds and not included in the $143.5 million.) In April 2001, the Alameda County Transportation Improvement Authority (ACTIA) Board (which controls the Measure B funds) approved policies that clarified eligible costs and other issues related to the ACTIA Expenditure Plan, including provisions for escalation of the Measure B revenues. This policy is expected to escalate the committed project funding to $75 million in 2001 dollars. The Port of Oakland has committed $25 million (2001 dollars) in airport revenues. The California Transportation Commission has approved $5.5 million (2001 dollars) in STIP funds, and BART has committed to obtaining $38 million (2001 dollars) in state and regional funds. Potential state and regional funding sources identified include STIP, ITIP and Bridge Tolls. The County Transportation Sales Tax is expected to provide for increased costs due to escalation and approved project scope changes or cost overruns.

As discussed above, the AGT cost estimates have been developed with historical data that is difficult to obtain due to the proprietary nature of the industry. Additionally, if an AGT system is selected, it may have different guideway requirements than were assumed for this report. And finally, the increasing cost of construction and real estate in the Bay Area is difficult to predict. For these and other reasons, the AGT alternative capital cost shortfall needs to be expressed as a range.

The estimated capital cost of the AGT scenarios range from $204 million (2001 dollars) for the 2-station AGT to $232.2 million (2001 dollars) for the Option D with intermediate stations. The preferred alternative is estimated at $229.6 million (2001 dollars). As noted above, the amount of funds currently committed to the project is approximately $143.5 million (2001 dollars). The preferred alternative would therefore require an additional $86.1 million (2001 dollars). In addition, because construction is not expected to be completed until 2005, escalated costs during project construction were estimated. The escalated capital cost of the preferred alternative would be approximately $270 million. Conservatively considering committed funding at $143.5 million in 2001 dollars, the AGT may require an escalated $126.5 million (since future escalation of committed funds is not certain). Potential additional funding sources include, but are not limited to ITIP funds, joint public/private ventures for the intermediate stations, Business Improvement District, Bridge Tolls, and additional STIP funds, federal economic development funds, and FAA demonstration project funds. BART is working with staff from the Alameda

County Congestion Management Agency, ACTIA, and MTC to develop a full funding plan for the Connector project.

6.4 References

Federal Transportation Authority, *Technical Guidance on Section 5309 New Starts Criteria*, July 2000

San Francisco Bay Area Rapid Transit District, *FY01 Short Range Transit Plan, Fiscal Years 2001-2010*, August 24, 2000.

Section 7
Community Participation

This environmental document was prepared on the basis of consultation and coordination with federal, state, and local agencies, and with elected officials, community leaders, organizations and other individuals from the neighborhoods, and communities within the project corridor.

7.1 Summary of Scoping

The process of determining the scope, focus, and content of an EIR/EIS is known as "scoping." Recommended under CEQA and NEPA, a scoping meeting is a useful opportunity to obtain information from the public, interested agencies, and Responsible and Trustee Agencies. In particular, the scoping process asks agencies and interested parties to provide input on what issues to address, alternatives to consider, and criteria to use in evaluating alternatives. Bringing together interested parties at an early stage helps to define the issues based on a broad spectrum of opinions and concerns.

On November 4, 1999, BART held a public scoping meeting and open house at the East Oakland Multipurpose Senior Center located at 9255 Edes Avenue in Oakland California. The public scoping meeting and open house was publicized through an invitation mailer sent to over 400 property owners, residents, business owners, special interest groups, public agencies, and other interested parties. BART notified all property owners within 300 feet of the proposed project.

Letters explaining the project and the public scoping meeting were mailed to elected officials in the project area and along the BART system. A press release was sent to area newspapers. Specific questions were handled through a project information telephone line that was checked regularly. The Notice of Intent (NOI)/Notice of Preparation (NOP) also served as scoping announcements. The NOP was sent to Responsible, Trustee, and involved federal agencies and the NOI was published in the Federal Register by the Federal Transit Administration (FTA).

The scoping meeting program included an open house and a verbal comment forum. The open house had information stations with project team members available to answer questions. The public reviewed area maps and displays that gave information on the preliminary project alternatives and environmental issues. Comments were accepted in writing and/or during the formal verbal comment session. A court reporter was provided to record verbal comments during the comment forum. Approximately 100 people attended the meeting and their comments were documented by BART.

The written and verbal comments received during the scoping process were used to determine the content of the FEIR/FEIS.

7.2 Summary of Ongoing Public Outreach

A variety of public participation activities have been conducted over the course of the environmental studies. Public involvement activities have included meetings with and presentations to organized groups and individuals as requested. Approximately 25 presentations were made to various public groups, agencies, and professional associations.

The BART Station Area Improvement Program Task Force prepared a newsletter for the community surrounding the Coliseum BART Station. The newsletter, distributed in early May 2000, contained an article updating the community on the Connector. Public participation continued during the review of the DEIR/DEIS, selection of the investment strategy, and preparation of the FEIR/FEIS. A project information kit, a Web site, and one-on-one meetings are planned to inform the community about the upcoming stages of the environmental review process and the project. The project information telephone line is still active and continues to be a means for the public to gain information; the number is (510) 464-6300.

A public hearing was held on September 12, 2001, during the 45-day public review of the document following the release of the DEIR/DEIS on August 2, 2001. All comments on the DEIR/DEIS received from individuals and public groups, and the responses thereto, are presented in Volume II of the FEIR/FEIS.

7.3 Summary of Public Agency Coordination

To assist the EIR/EIS scoping process, the lead agency, BART, circulated a Notice of Preparation (NOP) on October 21, 1999, to all Responsible and Trustee Agencies advising of BART's intention to prepare a DEIR/DEIS. The NOP served to familiarize the recipient agencies with the project, and contained a description for the project, its location and the probable environmental effects. The federal lead agency, the Federal Transit Administration (FTA), published a Notice of Intent (NOI) in the Federal Register on October 26, 1999. The NOI included a description of the proposed action including alternatives and BART's proposed scoping process.

Public agencies were contacted and consulted throughout the development of the DEIR/DEIS. BART created a Project Development Team (PDT) that consists of public officials, transit agency representatives, City of Oakland staff, Port of Oakland staff, and other stakeholders representing businesses and business development agencies. The PDT has met regularly during the development of the DEIR/DEIS to discuss the proposed project and to respond to comments provided by the members. Schedule, project alternatives, funding options, and environmental issues have been discussed during these team meetings. The environmental consulting team has conducted individual technical meetings with various agencies. BART has attended city council and planning commission meetings to discuss the proposed project. The PDT has also been an avenue for coordinating information about related improvements such as the Airport Development Program, the restoration of the Lew F. Galbraith Golf Course, and the Hegenberger-98th Avenue Gateway Study. BART has engaged and consulted with state and federal agencies who have particular expertise and/or management responsibilities for resources or hazards in the project vicinity. Specifically BART has coordinated with:

- the Federal Aviation Administration regarding air safety regulations, lighting, the Airport Layout Plan, and funding approvals for the airport terminal station (see Section 3.2, Land Use, and Section 3.4, Visual Quality)
- the U.S. Army Corps of Engineers in compliance with Section 404 of the Clean Water Act (see Section 3.10, Biological Resources)
- the U.S. Fish & Wildlife Service in compliance with the federal Endangered Species Act and particularly in determination of the absence of the endangered salt marsh harvest mouse (see Section 3.10, Biological Resources)
- the State Office of Historic Preservation in compliance with Section 106 of the National Historic Preservation Act (see Section 3.5, Cultural Resources)
- the Metropolitan Transportation Commission in compliance with U.S. Environmental Protection Agency air conformity regulations (see Section 3.12, Air Quality)
- local park owners and managers in compliance with Section 4(f) of the Federal Transportation Act (see Section 5, Section 4(f) Evaluation)
- the Department of the Interior on Section 4(f) issues (see Volume II, Section 2.3, Additional Agency Correspondence)

A partial list of public agencies and city staff formally or informally contacted and consulted during the preparation of this environmental document, or whom provided comments on the DEIR/DEIS, is shown in Table 7.3-1. All comments on the DEIR/DEIS received from public agencies, individuals, and public groups during the comment period following the release of the DEIR/DEIS, and the responses thereto, are presented in Volume II of this FEIR/FEIS.

Table 7.3-1 ***Partial List of Public Agencies Contacted***	
AC Transit	City of San Leandro
Alameda County Congestion Management Agency	East Bay Municipal Utility District
Alameda County Planning Dept.	East Bay Regional Park District
Alameda County Transportation Authority	FAA, San Francisco Airports Dist. Office
Assoc. of Bay Area Governments	Federal Emergency Management Assoc.
Bay Area Air Quality Management District	Metropolitan Oakland International Airport
CA Dept. of Boating and Waterways	Metropolitan Transportation Commission
CA Dept. of Fish and Game	Office of Historic Pres., Dept. of Parks and Rec.
CA Dept. of Parks and Recreation	Port of Oakland
CA Dept. of Toxic Substances Control	S.F. Bay Conservation and Development Comm.
CA Housing and Community Development Dept.	State Clearinghouse Governor's Office of Planning & Research
CA Native Plant Society, East Bay	U.S. Army Corps of Engineers
CA State Water Resources Control Board	U.S. Dept. of Interior
CA Dept. of Transportation	U.S. Dept. of Transportation, Fed. Transit Admin.
CA Energy Commission	U.S. Environmental Protection Agency, Reg. IX
City of Oakland - Community & Economic Devlp. Agency, Fire Department, Police Department, Public Works Agency, Planning Agency	U.S. Fish & Wildlife Service
Governor's Office of Planning and Research, State Clearinghouse	U.S. Department of Commerce
California Transportation Commission	City of Alameda
Sierra Club, San Francisco Bay Chapter	The Airport Area Business Association
Coliseum Neighborhood Council	San Leandro Chamber of Commerce

Section 8 Agencies, Organizations, and Individuals Who Received Copies of the DEIR/DEIS

8.1 Agency

8.1.1 Federal

Advisory Council on Historic Preservation
Ralston Cox, Washington, D.C. Office

Federal Aviation Administration
Joseph Rodriguez, Supervisor, Planning and Programming Section

Federal Emergency Management Agency
Sandro Amaglio

U.S. Army Corps of Engineers
Calvin Fong, San Francisco District

U.S. Department of Commerce, National Ocean Service
Captain Lewis Lapine, Director, National Geodetic Survey,

U.S. Department of Commerce
Donna Wieting, Acting Director Office of Ecology & Conservation

U.S. Department of Energy
Office of Environmental Compliance
Janet Neville

U.S. Department of Housing & Urban Development
Environmental Clearance Officer

U.S. Department of the Interior
Willie Taylor, Director, Office of Environmental Policy & Compliance

U.S. Department of Public Works, Region 9, Federal Highway Administration
Bill Wong, Senior Transportation Engineer

U.S. Department of Transportation, Federal Aviation Administration
John Pfeifer, Manager, Airport District Office

U.S. Environmental Protection Agency, Region 9
Nova Blazej

U.S. Fish & Wildlife Service, Sacramento Field Office
Wayne S. White Field Supervisor, Ecological Services
c/o Mark Littlefield

8.1.2 State

Air Resources Board
James D. Boyd, Executive Director

Attorney General's Office
Bill Lockyer, Attorney General

California Transportation Commission
Robert Remen, Executive Director

Coastal Commission
Peter Douglas, Executive Director

Coastal Conservatory
Bill Ahern, Executive Director

Department of Boating and Waterways
William Ivers

Department of Conservation
Steve Arthur

Department of Fish & Game
Robert W. Floerke, Regional Manager

Department of Housing and Community Development
Judy Nevis, Acting Director

Department of Parks and Recreation
Cherilyn Widell, Historic Preservation Officer

Department of Toxic Substances Control
Edwin Lowry, Director

California Department of Transportation
Richard Dyer, Division of Aeronautics

California Department of Transportation
Harry Yahata, District Director, District 4

California Energy Commission
William J. Keese, Chairman

California Environmental Protection Agency
James M. Strock, Director

California Highway Patrol
D.O. Helmick, Commissioner

Native American Heritage Commission
Debbie Pilas-Treadway, Assoc. Governmental Program Analyst

Native Plant Society, East Bay
Joe Willingham, President

Office of Historic Preservation
Joy Patterson, Department of Parks and Recreation

California Public Utilities Commission
Wesley M. Franklin, Executive Director

Railroad Association
Herb Nobriega

State Clearinghouse
Chris Belsky, Governor's Office of Planning & Research

State Lands Commission
Dave Plummer, Public Land Manager

State Water Resources Control Board
Joseph Chou, San Francisco Bay Region

8.1.3 Regional

AC Transit
Rick Fernandez, General Manager

Association of Bay Area Governments
Laura Thompson, Bay Trail Planner

Bay Area Air Quality Management District
Henry Hilken

East Bay Municipal Utility District
William R. Kirkpatrick, Manager of Water District Planning
c/o Senior Civil Engineer

East Bay Regional Park District
Brad Olson, Environmental Specialist

Metropolitan Transportation Commission
Steve Heminger, Executive Director

San Francisco Regional Water Quality Control Board
Steven Hill

San Francisco Regional Water Quality Control Board
Richard Whitsel

San Francisco Bay Conservation & Development Commission
William Travis, Executive Director

8.1.4 Local

Agencies

Port of Oakland
Charles Foster, Executive Director

Alameda County Congestion Management Agency
Dennis Fay, Executive Director

Alameda County Planning Department
James Walsh

Alameda County Transportation Improvement Authority
Christine Monsen

City of Alameda, Planning Department

City of Oakland, Community and Economic Development Agency
William Claggett, Interim Director
Leslie Gould, Director of City Planning

City of Oakland, Parks and Recreation Department
Jim Ryugo, Zone Manager

City of Oakland, Police Department
Peter Dunbar, Deputy Chief

City of Oakland, Fire Department
William Wittmer, Captain

City of Oakland, Office of Emergency Services
Henry Renteria

Elected Officials

City of Alameda
The Honorable Ralph Appezzato, Mayor

Alameda County Supervisors
Scott Haggerty
Nate Miley

California State Senate
Senator Don Perata

City of Oakland
The Honorable Jerry Brown, Mayor
Council Member Larry Reid

City of San Leandro
The Honorable Sheila Young, Mayor

8.2 Interested Parties

Air Transport Association
Neil Bennett, Regional Director Western Regional Office

Aircraft Owners & Pilots Association
John Rogers, Legislative Coordinator

Airline Passengers Association

Airport Area Business Association
Debbie Hanser, Acting Executive Director

Airports Council Int'l. - North America
Bonnie Wilson, Director Facilities & Services

American Airlines
Jeffrey D. Benvegnu

American Association of Airport Executives
Carter Morris, Director, Environmental Affairs

Bay Area Council
Andrew Michael

California Alliance for Jobs

California Aviation Council

Central East Oakland Community Development
Carolyn Sandridge, Chairperson

Coliseum Area Redevelopment Advisory Committee
Robert Schwartz, Co-Chairperson
Mark Clement, Co-Chairperson

Federal Express
Reuben Maynes, Senior Manager

Metropolitan Oakland Chamber of Commerce
Joseph Haraburda, President

Southwest Airlines
John Causee, Regional Manager

Bay Area Transportation & Land Use Coalition
Stuart Cohen, Coordinator

8.3 Libraries

Alameda Public Library
3221 Macartney Road, Alameda, CA 94502

Oakland Public Library, Brookfield Branch, Edes Avenue

Oakland Public Library, Main Library
125 14th Street, Oakland, CA 94612

Oakland Public Library, Martin Luther King Jr. Branch
6833 International Blvd., Oakland, CA

San Leandro Public Library (Main)
2950 Alvarado Street, San Leandro, CA 94577

MTC/ABAG Library
Joan Friedman

Section 9
List of Preparers

9.1 Lead Agencies

Federal Transit Administration (FTA) - Federal Lead Agency

- Leslie T. Rogers, Regional Administrator
- Ray Sukys, Director, Office of Planning & Program Development
- Donna Turchie, Transportation Representative

San Francisco Bay Area Rapid Transit (BART) - Local Lead Agency

- Michele Jacobson, AICP, Planning Research Development, Project Manager
- Kathy Mayo, Transit System Development, Engineering Project Manager
- Donald Dean, MCP, Environmental Coordinator
- Jerry Goldberg, Station Area Planning, AICP
- Richard Lu, Outreach Coordinator

9.2 Environmental Consultants

Camp Dresser & McKee Inc., Walnut Creek, California

Responsible for overall contract management and administration, document production, and technical analyses of geology, hydrology, air quality, utilities, and hazardous materials.

- Randall T. Smith, P.E., B.S., M.S., Mechanical Engineering - 22 years experience. Contract and Project Manager responsible for overall contract management and administration, document production, and technical analyses of geology, hydrology, air quality, utilities, energy, and hazardous materials.
- Julie Hinchcliff, Heald Business College – 22 years experience. Responsible for Word Processing and Document Production.
- Andria Pomponi, B.S., Economics – 6 years experience. Responsible for technical analyses on Utilities and Hazardous Materials.

- Jason Preece, B.S., Geology – 13 years experience. Responsible for technical analyses on Geology, Soils, and Seismicity; and Hydrology and Water Quality.

- Teresa Raine, B.S., Environmental Science; M.Eng., Environmental Engineering – 3 years experience. Responsible for technical analyses on Air Quality.

- Kassandra H. Tzou, P.E., B.S., Civil Engineering; M.Eng., Environmental Engineering – 8 years experience. Responsible for overseeing Document Production.

EIP Associates, San Francisco, California

Responsible for overall technical coordination, base map production, and technical analyses of land use, visual quality, cultural resources, biological resources, energy, and Section 4(f).

- Rod Jeung, AICP, B.A., Economics; M.R.P., City and Regional Planning – 21 years of experience. Technical Project Manager and Coordinator responsible for overall technical review and coordination.

- Shannon Allen, AICP, B.A., Environmental Studies; M.P., Planning – 6 years of experience. Performed overall technical review of Socio/Economic issues.

- Brewster Birdsall, B.S., Mechanical Engineering; M.S. Civil Engineering – 6 years of experience. Performed Noise and Vibration analyses.

- Neill Brower, B.A., Anthropology – 10 years of experience. Performed Cultural and Historic Resources analyses.

- Binu M. Chandy, B.T., Civil Engineering; M.P., Environmental Planning – 5 years of experience. Performed Land Use, Visual Quality, and Energy analyses; and Section 4(f) Evaluation.

- Vickie Germany, AICP, B.A., Ecology and Systematics; M.A., Resource Management and Environmental Planning – 12 years of experience. Performed overall technical review of Physical Environmental Issues.

- Matthew Huisman, B.A., Earth Sciences – 4 years of experience. Prepared Base map and report graphics.

- Kirsten Lawrence, B.A., Natural Science – 3 years of experience. Prepared Base map and report graphics.

- Mike Laris, B.A., Environmental Studies; M.E.S., Environmental Studies – 1 year of experience. Assisted with other CEQA/NEPA considerations.

- Gina Messa, B.F.A., Historic Preservation – 2 years of experience. Assisted with Cultural and Historic Resources analyses.

- Richard Nichols, B.A., Biological Sciences; M.S., Range Management – 20 years of experience. Performed Biological Resources analyses.
- Randy Zebell, B.S., Biology; M.A., Conservation Biology – 8 years of experience. Performed Biological Resources analyses.
- Ted Adams, B.A., Landscape Architecture – 30 years of experience. Performed Visual Quality analyses.
- Demian Ebert, B.A., Biology – 8 years of experience. Performed Biological Resources analyses.

CCS Planning and Engineering, Oakland, California

Responsible for patronage forecasts.

- Michael Aronson, P.E., B.S., Civil Engineering, M.S., Transportation Engineering – 20 years experience. Developed ridership model and prepared ridership forecasts.
- Peter Eakland, T.E., B.S., Civil Engineering – 21 years experience. Managed surveys and evaluation of AirBART bus service.
- Shusuke Iida, B.S., Civil Engineering – 2 years experience. Performed analysis of regional transit routes, auto travel times and VMT.
- Michael Chong, B.S., Aeronautical Engineering – 16 years experience in computer programming including 4 years in GIS and transportation applications. Evaluated MTC Air Passenger Survey and programmed ridership model.

H.T. Harvey & Associates, San Jose, California

Responsible for field surveys for salt marsh harvest mouse.

- Ronald Duke, B.A., Biological Sciences/Ecology; M.A. Animal Ecology – 20 years of experience. Responsible for field surveys for salt marsh harvest mouse.
- Dr. Howard Shellhammer, B.A., Ph.D., Zoology – 40 years of experience. Responsible for field surveys for salt marsh harvest mouse.

JRP Historical Consulting Services, Davis, California

Responsible for technical analyses of historical resources.

- Christopher McMorris, B.A., History; M.S., Historic Preservation – 3 years of experience. Responsible for technical analyses of historical resources and preparation of the Historic Architectural Survey
- Stephen R. Wee, B.A., Music; M.A., History – 24 years of experience. Responsible for technical analyses of historical resources and preparation of the Historic Architectural Survey

Public Affairs Management, San Francisco, California

Responsible for public participation and technical analyses of socioeconomics, community services, and environmental justice.

- Kay Wilson, B.A., Political Science; MA, Community and Regional Planning – 30 years experience. Directed community outreach program and reviewed Community Participation section.
- Scott Steinwert, B.A., Biological Sciences/Terrestrial Ecology – 12 years experience. Directed and reviewed socioeconomic and community services analysis.
- Kristi Tyndall, B.A., Government; M.P.A., Public Administration – 7 years experience. Coordinated community outreach and prepared Community Participation section.
- Steve Wertheim, B.A., Public Policy and Philosophy – 5 years experience. Conducted socioeconomic and community services analysis.
- Vahram Massehian, B.A., Land Planning/Landscape Architecture – 2 years experience. Assisted with socioeconomic and community services analysis.

Wilbur Smith Associates, San Francisco, California

Responsible for formulation of No Action and Quality Bus Alternatives, and technical analyses of transportation and parking.

- William E. Hurrell, P.E., B.S., Mechanical Engineering; M.S., Institute of Transportation and Traffic Engineering in Civil Engineering Transportation Planning – 27 years experience. Assisted in the development of alternatives, and evaluated transportation impacts associated with each alternative.
- Amy Marshall, B.S., Civil Engineering; M.S., Transportation Engineering – 4 years experience. Evaluated existing transportation conditions, and analyzed transportation impacts for each alternative.
- Kenneth G. Sislak, BA, Economics; MBA, Finance – 28 years experience. Provided technical support related to the transportation analysis and reviewed the analysis of transportation impacts of each alternative.
- Luba C. Wyznyckyj, AICP, B.A., Economics, Urban Design; M.U.P., Urban Planning – 16 years experience. Provided technical support related to the transportation analysis, and analyzed transportation impacts of each alternative.

William Kanemoto Associates, Oakland, California

Responsible for visual simulations.

- William Kanemoto, B.A., Liberal Arts; M.L.A., Landscape Architecture – 15 years of experience. Responsible for preparation of visual simulations.

William Self & Associates, Orinda, California

Responsible for archaeological resources analysis.

- William D. Self, B.A., M.A., Anthropology - Archaeological Survey Report – 28 years of experience. Responsible for archaeological resources analysis and preparation of the Archaeological Survey Report.

9.3 General Engineering Consultants

- William H. Leder, Lea+Elliott, B.S., M.S., Civil Engineering - 30 years experience. Project manager responsible for all aspects of conceptual engineering.
- Harley Moore, Lea+Elliott, B.S. Engineering; M.S and C.E., Transportation Systems - 25 years experience. Responsible for AGT and bus technology, ridership analysis.
- Sebastian Gladney, Lea+Elliott, B.S., Civil Engineering - 2 years experience. Responsible for guideway alignment, cost estimating, facilities conceptual engineering, AGT system performance.
- Matt Hsiao, P.E., MGE Engineering, B.S., M.S., Civil Engineering - 40 years experience. Responsible for guideway and foundation structural engineering and cost estimating.
- Robert McFarland, P.E., Parsons Brinckerhoff, B.S., Civil Engineering – 32 years experience. Responsible for civil engineering.
- Eli Naor, R.A., AIA, VBN Architects, A.B/, Environmental Design; M.A., Architecture - 15 years experience. Responsible for station and maintenance facility architecture.
- Larry Roth, P.E., G.E., B.S., M.S., Environmental Engineering - 30 years experience. Responsible for geotechnical engineering.
- Edwin Woo, P.E., G.E., B.S., M.S., Civil Engineering - 13 years experience. Responsible for geotechnical engineering.

Section 10
Glossary of Terms and Acronyms

Term	Description
Acute	Having a sudden onset.
Air Toxics	Air pollutants (other than criteria pollutants as defined below) which may cause or contribute to an increase in mortality or serious illness, or which may pose a present or potential hazard to human health.
Alluvium	Clay, silt, sand, gravel, or similar material deposited by running water.
Ambient Noise	The background noise present in a given environment, usually a composite of sounds from many sources near and far.
Ancillary Facilities	Structures or equipment that provide supporting services to the project's primary activity (such as a maintenance facility, power substation, or communication system).
Aquifer	A natural underground formation that is saturated with water, and from which water can be withdrawn.
Aquitard	A hydrogeologic unit with low permeability that impedes the vertical flow of groundwater.
Area of Potential Effect (APE)	The geographic area or areas within which a project may cause direct or indirect changes in the character or use of historic properties.
Arterial Road	A roadway whose primary function is to carry through traffic in a continuous route across an urban area while also providing some access to abutting land.
Articulated Bus	Extra-long (54- to 60-foot) bus with the rear body section connected to the main body by a joint mechanism. The joint mechanism allows the vehicle to bend when in operation for sharp turns and curves and yet have a continuous interior.
Artifact	A single, portable human-made or human-altered object.
Attainment Area	Geographic area in which the concentration of an air pollutant does not exceed the applicable National Ambient Air Quality Standard for that pollutant.
Average Daily Passengers	The total annual ridership divided by 365.
Average Passenger Wait Time	The average elapsed time between a passenger's arrival at a transit stop and the vehicle's arrival at the stop.
Average Speed	Average vehicle speed not including dwell time.
Average Wait Time	See Average Passenger Wait Time.
A-Weighted Decibel Sound Level (dBA)	See decibel, A-Weighted
Berm	An embankment, usually extended in a linear alignment. Berms can function as visual screens, noise attenuators, and water diverters.
British Thermal Unit	A common unit for energy consumption, defined as the quantity of heat required to raise the temperature of one pound of water by one degree Fahrenheit.
Carbon Monoxide (CO)	A colorless, odorless gas which is toxic because of its tendency to reduce the oxygen-carrying capacity of the blood.
Chronic	Marked by long duration or frequent recurrence.
Community Noise Equivalent Level (CNEL)	A time-weighted 24-hour average noise level based on the A-weighted decibel. The CNEL scale includes an additional 5 dB penalty to sounds occurring in the evening (7:00 p.m. to 10 p.m.), and a 10 dB penalty to sounds occurring in the late evening and early morning hours (between 10:00 p.m. and 7:00 a.m.).
Contiguous	Lands or legal subdivisions having a common boundary; lands having only a common corner are generally not contiguous.
Criteria Pollutant	An air pollutant for which EPA has established a National Ambient Air Quality Standard.
Day-Night Average Sound Level (LDN)	The A-weighted average sound level in decibels during a 24-hour period with a 10 dB penalty applied to nighttime sound levels (10 p.m. to 7 a.m.). This exposure method is similar to the CNEL, but does not characterize the evening time period (7 p.m. to 10 p.m.) as a separate factor.
Decibel (dB)	A unit expressing the relative intensity (loudness) of sounds. The decibel is the logarithm of the ratio of the intensity of a given sound to the faintest sound discernible by the human ear.
Decibel, A-Weighted (dBA)	A frequency measurement that correlates overall sound pressure levels with the frequency response of the human ear.
Direct Employment	In reference to a particular project, employment of persons engaged in construction and operation of that project.
Dwell Time	Elapsed time between the transit vehicle's arrival at a stop and its departure from the same stop.

Term	Description
Emission Factor	The rate at which pollutants are emitted into the atmosphere by one source or a combination of sources.
Endangered Species	A species or subspecies of plant or animal in danger of extinction throughout all or a significant portion of its range.
Equivalent Noise Level (Lea)	Average sound-energy level over a specified period of time, representing the fluctuating sound level in decibels over that period.
Erosion	The process by which material is removed from the earth's surface (including weathering, dissolution, abrasion, and transportation), most commonly by wind or water.
Fault	A fracture in the earth's crust forming a boundary between rock masses that have shifted. An active fault is a fault that has moved recently and which is likely to move again. An inactive fault is a fault which shows no evidence of movement in recent geologic time and no potential for movement in the relatively near future.
Floodplain	A nearly level area that borders a stream and is subject to flooding unless protected artificially.
Fluvial	Relating to streams (as in fluvial deposition of sediments).
Fuel Farm Marsh	A wetland area located adjacent to and southeast of Airport Drive, between Lew F. Galbraith Golf Course and the airport parking area. The area is referred to as the " fuel farm marsh" due to the presence of the large airport fuel tanks south of Airport Drive.
Gigawatt-Hour	A measure of electrical consumption equal to 1,000,000 kilowatt-hours.
Grading	Alteration of existing slope and shape of the ground surface.
Gravity-Fed	A water distribution or wastewater collection system that relies on gravity to move the fluids through pipelines.
Groundwater	Water under the earth's surface, often confined to aquifers capable of supplying wells and springs.
Groundwater Recharge	The natural process of infiltration and percolation of rainwater from land areas or streams through permeable soils into water-holding geologic formations that provide underground storage (i.e., 'aquifers").
Hazardous Material	A chemical, substance, waste or form of energy that may cause harm to human health or the environment
Headway	Elapsed time between the arrival of a transit vehicle at a stop and the arrival of the next vehicle at the same stop.
Hourly Equivalent Noise Level (Leq(h))	The equivalent noise level of sounds occurring over one hour.
Hydrocarbons	Petroleum products and related compounds consisting of carbon and hydrogen. Reactive Organic Gases (defined below) include hydrocarbons emitted to the air from incomplete combustion of gasoline and from evaporation of petroleum fuel.
Indirect Employment	In reference to a particular project, the employment provided by businesses that sell goods and services to the primary project and businesses serving growth attributable to the project.
Inductive Wire Loop	An electrically charged wire loop installed under roadway pavement used to detect the presence of a passing vehicle and trigger a signal change at a roadway intersection.
Infiltration	The introduction of underground water, such as groundwater, into wastewater collection systems. Infiltration results in increased wastewater flow levels.
Infrastructure	Permanent utility installations, including roads, water supply lines, sewage collection pipes, and power and communications lines.
Interfluvial	The transition area between stream-borne and basin sediment deposits.
In-Vehicle Travel Time	The elapsed time between departure of a vehicle from one station and its arrival at the next station.
Jurisdictional Wetlands	Wetlands that are subject to the jurisdiction of the U.S. Army Corps of Engineers under Section 404 of the federal Clean Water Act.
Kilowatt	A measure of electrical flow equal to one thousand watts.
Kilowatt-Hour	A measure of electrical consumption equal to one kilowatt for a period of one hour.
Lateral Spreading	Deformation of very gently sloping ground (or virtually flat ground adjacent to an open body of water) that occurs when stresses caused by an earthquake induce soil failure and "spreading" of the slope.
Level of Service (LOS)	A quantitative measure of traffic flow, usually described by a letter rating system of A through F, with LOS A indicating stable traffic flow with little or no delays and LOS F indicating excessive delays and jammed traffic conditions.
Liquefaction	A geologic phenomenon in which surface and near-surface materials (soils, alluvium, etc.) behave like a liquid during seismic shaking, often causing failure of soils to support structures.
Lurching	Horizontal movement of soil, sediments, or fill located on relatively steep embankments or scarps as a result of earthquake-induced ground shaking.
Maximum Credible Earthquake	The largest Richter magnitude (M) seismic event that appears to be reasonably capable of occurring under the conditions of the presently known geological framework.
Megawatt	A measure of electrical flow equal to 1,000 kilowatts.
Megawatt-Hour	A measure of electrical consumption equal to 1,000 kilowatts over a period of one hour.

Term	Description
Mode Share	The percentage of potential passengers that choose a particular form or method of travel (bus, private auto, etc).
Nitrogen Oxides (NOx)	Chemical compounds containing nitrogen and oxygen which react with volatile organic compounds, in the presence of heat and sunlight, to form ozone. NOx is also a major precursor of acid rain. Nationwide, approximately 45 percent of NOx emissions come from mobile sources, 35 percent from electric utilities, and 15 percent from industrial fuel combustion.
Nonattainment Area	Geographic area in which the concentration of an air pollutant exceeds the applicable National Ambient Air Quality Standard for that pollutant.
Opportunity Sites	Sites along Hegenberger Road targeted by the City of Oakland for public investment to stimulate the development of substantial new hotel or office projects.
Ozone	A compound consisting of three oxygen atoms that is the primary constituent of smog, formed through chemical reactions in the atmosphere involving volatile organic compounds, nitrogen oxides, and sunlight. Ground-level ozone can initiate damage to the lungs as well as damage to trees, crops, and materials. The harmful effects of ground-level ozone are distinct from the beneficial effect of the natural layer of ozone in the upper atmosphere which shields the earth from harmful ultraviolet radiation.
Patronage	The number of person trips carried by a transit system over a specified time period.
Peak Hours	In reference to transportation systems, the hour or hours during which the greatest traffic flow occurs.
Peak Noise Level (Lmax)	The maximum level of sound occurring during a measurement or given period of time.
Peak Particle Velocity (ppv)	The maximum positive or negative velocity of ground motion (related to seismic action).
Percolation	Downward movement of groundwater through soil and bedrock.
Permeability (Soil)	The ability of the soil to be penetrated by or to transmit water or air.
Petroleum Self-Propelled	Vehicles using gas, diesel, or compressed natural gas as fuel.
Pinched Loop	In a transit guideway system, the configuration of switches so that guideway vehicles can change direction by changing lanes.
PM_{10}	Solid and liquid particles suspended in the atmosphere that are ten or fewer micrometers in diameter. PM-10 is a criteria pollutant for which EPA has established National Ambient Air Quality Standards. The smaller PM-10 particles may penetrate to the deeper portions of the lung, and may affect sensitive population groups such as children and people with respiratory diseases.
Point Source	A discrete source discharging pollutants to a water body, such as a pipe, ditch, channel, conduit or well.
Precursor	A chemical compound that reacts with other compounds to form a pollutant. For example, reactive organic gases and nitrogen oxides are precursors of ozone.
Rare Species	A species or subspecies which, although not currently threatened with extinction, exists in such small numbers throughout its range that it may become endangered if its environment worsens.
Reactive Organic Gases (ROG)	Classes of hydrocarbons (olefins, substituted aromatics, and aldehydes) that are likely to react with nitrogen oxides in the atmosphere to form ozone.
Retained Cut	A below-surface excavation with concrete walls and left open on top, as at each end of the AGT tunnel portion of the corridor.
Ridership	The quantification of actual, estimated, or projected passengers using a particular transit mode and/or a particular segment of a transit system or corridor. Ridership is usually expressed in units of number of passengers per unit time (day, year).
Riprap	Pieces of broken stone used to protect the sides of waterways from erosion.
Root mean square vibration velocity scale (VdB)	A measure of ground-borne vibration used by the FTA. The root mean square amplitude of a vibration velocity level referenced to 10^{-6} inches/second.
Runoff	Rainwater which leaves an area in surface drainage, as opposed to the amount that seeps out as groundwater.
Running time	Elapsed time between the departure of a transit vehicle from one station and its arrival at the next station.
Secondary Containment	A device or system that prevents a release or spill from a tank from reaching the environment. It often takes the form of a berm or dike around an above ground storage tank.
Sedimentation	Process by which material suspended in water is deposited on the bottom of a body of water.
Solid Waste	Any garbage, refuse or other discarded material including solid, liquid, semi-solid or contained gaseous material resulting from industrial, commercial, agricultural, mining operations, residential, and community activities.
Spoils	Rock and soil removed during excavation.
Stratigraphy	The layering of soil and/or rock deposited over time.
Sulfur Dioxide (SO_2)	A heavy, pungent, colorless air pollutant formed primarily by the combustion of fossil fuels. It is a respiratory irritant, especially for asthmatics and is the major precursor to the formation of acid rain.
Surface Water	Water in lakes, streams or rivers, as distinct from subsurface groundwater.

Term	Description
Threatened Species	A species of animal or plant which is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range.
Total Trip Time	Wait/transfer time, in-vehicle travel time, and walk time. In contrast to Transit Travel Time, Total Trip Time does not include walk time from the transit vehicle to the security gate.
Transit Travel Time	Total time composed of walk time to the initial transit station or shop, wait time at fare machines, wait time for the transit vehicle, in-vehicle travel time, transfers, and walk time from transit vehicle to the security gate.
Trip Generation	The number of individual vehicle trips both to and from a development or destination (such as OIA).
Tsunami	A large sea wave produced by any large-scale, short duration disturbance of the ocean floor, principally by a shallow submarine earthquake, but also by submarine earth movement, subsidence, or volcanic eruption.
Urban Land (Geologic)	Heterogeneous fill material that typically exhibits high permeability, slow runoff, low erosion potential, and high wind blowing characteristics.
Vehicle Miles Traveled (VMT)	The total number of vehicle miles traveled within a specified geographical area (whether the entire country or a smaller area) over a given period of time.
View Corridor	Long, visually restricted vistas formed by regularly placed buildings or landscaping.
Viewpoint	A location from which a site is visible.
Viewshed	The geographic area from which a site is visible; a collection of viewpoints.
Volume-To-Capacity Ratio (V/C)	A measurement of vehicle volumes to roadway capacity. The sum of the per-lane vehicle volumes on critical, conflicting intersection movements divided by the design capacity of the intersection. If the sum of conflicting movement volumes is equal to the capacity of the intersection, the V/C ratio is 1.00.
Wait time	Elapsed time between a passenger's arrival at a stop and the transit vehicle's arrival at the stop.
Waters of the United States	Navigable waterways, their tributaries, and jurisdictional wetlands.
Watershed	The area of a landscape from which surface runoff flows to a given point.
Wetlands	An area inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances does support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas.
Xeropsamments	Dredged sand fill.

Abbreviations/Acronyms

This section contains the definition of various abbreviations and acronyms that appear throughout the FEIS/FEIR document.

Convention/Abbreviation	Definition
AADT	average annual daily traffic
AATC	Advanced Automatic Train Control
AB	Assembly Bill
ABAG	Association of Bay Area Governments
AC Transit	Alameda-Contra Costa Transit District
ACFCWCD	Alameda County Flood Control and Water Conservation District
ADP	Airport Development Program
AGT	Automated Guideway Transit Systems
Alameda CMA	Alameda Congestion Management Agency
APE	Area of Potential Effect (cultural resources)
AQ	air quality
B	beneficial effects
BAAQMD	Bay Area Air Quality Management District
BART	San Francisco Bay Area Rapid Transit District
BCDC	San Francisco Bay Conservation and Development Commission
BCF/D	billion cubic feet per day
BEP	Business Emergency Plan
BMPs	Best Management Practices
BR	biological resources
BTUs	British Thermal Units
C	construction impact
CAA	Clean Air Act
CAAQS	California Ambient Air Quality Standard
Cal-ISO	California Independent System Operator
Caltrans	California Department of Transportation
CARB	California Air Resources Board
CASHPO	California State Office of Historic Preservation
CBC	California Building Code
CCR	California Code of Regulations
CCTV	closed-circuit television
CDFG	California Department of Fish and Game
CDMG	California Department of Conservation, Division of Mines and Geology
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
CHMIRS	California Hazardous Material Incident Report System
CHRIS	California Historic Resources Inventory System
CIDH	cast-in-drilled hole
CNEL	Community Noise Equivalent Level
CNG	Compressed Natural Gas
CNPS	California Native Plant Society
CO	Carbon Monoxide
Connector	BART-Oakland International Airport Connector
Corps	U.S. Army Corps of Engineers
CR	cultural resources
CS	community services
CWA	Clean Water Act
dB	Decibel
dBA	Decibel A-Weighted
DC	Direct Current
DEIR	Draft Environmental Impact Report (CEQA)
DEIS	Draft Environmental Impact Statement (NEPA)
EA	Environmental Assessment (NEPA)
EBMUD	East Bay Municipal Utility District
EBRPD	East Bay Regional Parks District
EDR	Environmental Data Resources, Inc.
EIR	Environmental Impact Report (CEQA)
EIR/EIS	Joint Environmental Impact Report/Environmental Impact Statement
EIS	Environmental Impact Statement (NEPA)
EJ	environmental justice
EMF	electromagnetic fields
EMFAC2000	California Emission Factor Model (Version 2000)

Convention/Abbreviation	Definition
EN	energy
EOP	Emergency Operations Plan
EPA	U.S. Environmental Protection Agency
ESRI	Environmental Systems Research Institute, Inc.
FAA	Federal Aviation Administration
FAR	Federal Aviation Regulation
FEIR	Final Environmental Impact Report
FEIS	Final Environmental Impact Statement
FEMA	Federal Emergency Management Agency
FERC	Federal Energy Regulation Commission
FESA	Federal Endangered Species Act
FINDS	Facility Index System/Facility Identification Initiative Program Summary Report
FTA	Federal Transit Administration
FTE	full-time employees
Gateway Study	City of Oakland and Port of Oakland Hegenberger Road-98th Avenue Gateway Development Study
GE	geology, soils and seismicity
Gwh	gigawatt hours
HASR	Historic Architectural Survey Report
HAZNET	Hazardous waste information systems
HM	hazardous materials
HMBP	Hazardous Material Business Plan
HPE	Historic Preservation Element
HWCL	California Hazardous Waste Control Law
HY	hydrology and water quality
I-580	Interstate 580
I-880	Interstate 880
IOUs	investor-owned utilities
KW	Kilowatt
KWh	Kilowatt-Hour
Lbs	pounds
Ldn, or LDN	Day-Night Average Sound Levels
Leq, or Leq(h)	Equivalent Noise Level, Hourly Equivalent Noise Level
Lmax	Peak Noise Level
LOS	Level of Service
LPA	Locally Preferred Alternative
LTS	Less-than-Significant Effects
LU	land use
LUST	Leaking Underground Storage Tank
MAP	Million Annual Passengers
MCE	Maximum Credible Earthquake
mg/l	milligrams per liter
mph	Miles Per Hour
MTBE	methyl tertiary butyl ether
MTC	Metropolitan Transportation Commission
MVEI (7G)	California Motor Vehicle Emissions Inventory Model (Version 7G)
mw	Megawatts
MWH	Mega Watt Hours
NA	Not Analyzed or Not Applicable
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NFPA	National Fire Protection Association
NI	no impact
NMFS	National Marine Fisheries Service
NO_2	Nitrogen Dioxide
NOx	Nitrogen Oxides
NOI	Notice of Intent (NEPA)
NOP	Notice of Preparation (CEQA)
NPDES	National Pollution Discharge Elimination System
NRHP	National Register of Historic Places
NV	noise and vibration
NWS	National Weather Service
O_3	Ozone
OAATF	Oakland Airport Access Task Force
OAQPS	Office of Air Quality Planning and Standards (U.S. EPA)
OES	Office of Emergency Services
OFSA	Oakland Fire Services Agency
OIA	Oakland International Airport

Convention/Abbreviation	Definition
OSCAR	City of Oakland General Plan, Open Space, Conservation and Recreation Element
Pb	Lead
Pcph	passenger car equivalents per hour
PG&E	Pacific Gas & Electric Company
PM	Particulate Matter
PM_{10}	Particulate Matter with an Equivalent Aerodynamic Diameter of 10 Micrometers or Less
Pphpd	Persons per hour per direction
Ppm	Parts per million (10^6) by volume or weight
Ppv	peak particle velocity
PS	Potentially Significant Effects
PUC	California Public Utilities Commission
PX	California Power Exchange
QB	Quality Bus
R&D	Research and Development
RAPC	Regional Airport Planning Committee
ROG	Reactive Organic Gas(es)
RTIP	Bay Area Regional Transportation Improvement Program
RTP	Regional Transportation Plan
RWQCB	Regional Water Quality Control Board
S	Significant Effects
SCI	Subsurface Consultants, Inc.
SCRAM	Support Center for Regulatory Air Models
SE	Socioeconomics
sec/veh	Seconds per vehicle
SEMS	Standardized Emergency Management System
SFBRWQCB	San Francisco Bay Regional Water Quality Control Board
SIC	Standard Industrial Classification
SO_2	Sulfur Dioxide
SO_x	Oxides of Sulfur
SWPPP	Storm Water Pollution Prevention Plan
TDS	total dissolved solids
TEA	Transportation Equity Act
TR	Transportation
TRB	Transportation Research Board
UDC	Utility Distribution Companies
ug/m^3	micrograms per cubic meter
UMTA	Urban Mass Transportation Administration
Unocal	Union Oil of California
UPRR	Union Pacific Railroad
USGS	U. S. Geologic Survey
USTs	Underground Storage Tanks
UT	Utilities
V/C	Volume-to-Capacity Ratio
VdB	Root mean square vibration velocity scale
VMT	Vehicle Miles Traveled
Vph	Vehicles Per Hour
VQ	visual quality
WSCC	Western Systems Coordinating Council