Chapter 1 Purpose of and Need for Project

1.1 Introduction

The AC Transit East Bay Bus Rapid Transit Project would provide high quality, fast and frequent express bus service along an approximately 17-mile-long corridor extending from Downtown Berkeley and the University of California at Berkeley at the northern end, through Downtown Oakland, to San Leandro at the southern end. This corridor has characteristics that are highly conducive to transit use and particularly well-suited to bus rapid transit (BRT). The corridor is home to 260,000 residents and contains some of the highest employment and residential densities in the East Bay.

The East Bay BRT Project corridor is centered on Downtown Oakland, the East Bay's largest city, which provides work for 70,000 people. The northern end of the corridor is anchored by the University of California at Berkeley (UC Berkeley), host to 31,350 students and 15,360 employees. An additional 13,520 employees work in Downtown Berkeley. South of Downtown Oakland, a third of the corridor passes through some of the San Francisco Bay Area's densest residential neighborhoods, averaging 13,440 persons per square mile (21 persons per acre).[1] The southern end of the corridor is anchored by the BayFair Bay Area Rapid Transit (BART) station, a major transfer station for three BART lines and seven local bus routes. The station also serves the Bayfair Center, a regional shopping mall that is currently under expansion.

The Oakland and San Leandro portions of the corridor include substantial numbers of low-income, ethnic minority, and transit-dependent populations. AC Transit buses in this corridor currently carry approximately 24,000 riders a day. This is nearly 12 percent of AC Transit's total ridership and rivals the numbers of passengers carried along many light rail systems in California. More details on corridor characteristics can be found in Sections 4.1, Land Use, and 4.4., Community Impacts.

The proposed BRT project would achieve the following needed service and efficiency improvements:

- **High Frequency, High Capacity Bus Service** averaging 3.5 to 5 minutes during peak travel periods to improve service capacity and reduce passenger wait times.
- **Faster, More Reliable Service** using dedicated transit lanes and transit signal priority to avoid competition with other vehicles and obtain faster and more reliable travel times. More widely spaced station stops, pre-paid ticketing and low-floor boarding would decrease the time spent on stops and starts and on the boarding process. Transit stations would facilitate ease of entry and exit by minimizing the distance between the platform and the vehicle.
- **Increased Operational Efficiency.** Improving transit reliability and increasing bus speeds will reduce per rider costs, while reducing stops and starts will decrease transit vehicle wear and tear and reduce maintenance and fuel costs.

[1] For comparison, the city-wide population density of San Francisco is 16,000 persons per square mile.

- **Improved Safety and Security, Convenience, and Comfort.** BRT stations will offer fare machines, real-time arrival information, shelters, benches, security features, boarding platforms, and other amenities. Buses would be aesthetically pleasing, low-floor, level-boarding, multi-door, low-emissions buses.

Proposed project features and facilities are described in greater detail in Section 2.2.2, Build Alternative: General Alignment and Features.

The East Bay BRT Project is included in both Track 1 of the Metropolitan Transportation Commission's Regional Transportation Plan (RTP) and its Regional Transit Expansion Plan (RTEP). The project is included in the Tier 1 list of projects to be funded by increased bridge toll revenues approved with Regional Measure 2. The project is included in the Alameda Countywide Plan and is on the list of local projects to receive funding from federal transportation programs authorized under the Safety Accountable Flexible Efficient Transportation Act – Legacy for Users (SAFETEA-LU). The proposed project corridor also enjoys a high degree of readiness for capital improvements due to existing working relationships with the local jurisdictions and the Alameda County Congestion Management Agency (ACCMA).

1.1.1 Project Location

The proposed BRT alignment would follow primarily Telegraph Avenue in the northern portion of the corridor and International Boulevard/East 14th Street in the southern portion. The alignment would begin near the Downtown Berkeley BART Station, continue along the south side of the UC Berkeley campus to Telegraph Avenue, and then follow Telegraph Avenue to Broadway and Downtown Oakland. The alignment would continue south of Downtown Oakland along International Boulevard/East 14th Street through Downtown San Leandro to the Bayfair Center shopping mall and terminate at the BayFair BART Station or, alternatively, at the San Leandro BART Station.

The project location and vicinity are shown in Figures 1.1-1, 1.1-2a and 1.1-2b.

1.1.2 Uses of this Environmental Impact Statement/Environmental Impact Report

This Environmental Impact Statement / Environmental Impact Report (EIS/EIR) is prepared pursuant to the requirements of the National Environmental Policy Act (NEPA), the Council on Environmental Quality regulations implementing NEPA (40 CFR 1500-1508) and the California Environmental Quality Act (CEQA, Title 14, California Code of Regulations, Guidelines for Implementation of the California Environmental Quality Act, Sections 15000 to 15387). As required by NEPA and CEQA, this document informs the public and governmental decision-makers of environmental effects associated with the project and describes the measures that would be undertaken to mitigate those effects. This document will be used by federal, state, regional, and local agencies to assess the environmental impacts of the project on resources under their jurisdiction, make discretionary decisions regarding the project, or exercise review and permit authority over the project. It is anticipated that on approval of this document, local jurisdictions will include the proposed project in their land use planning and zoning processes and will depict the proposed project on the circulation element maps of their respective general plans.

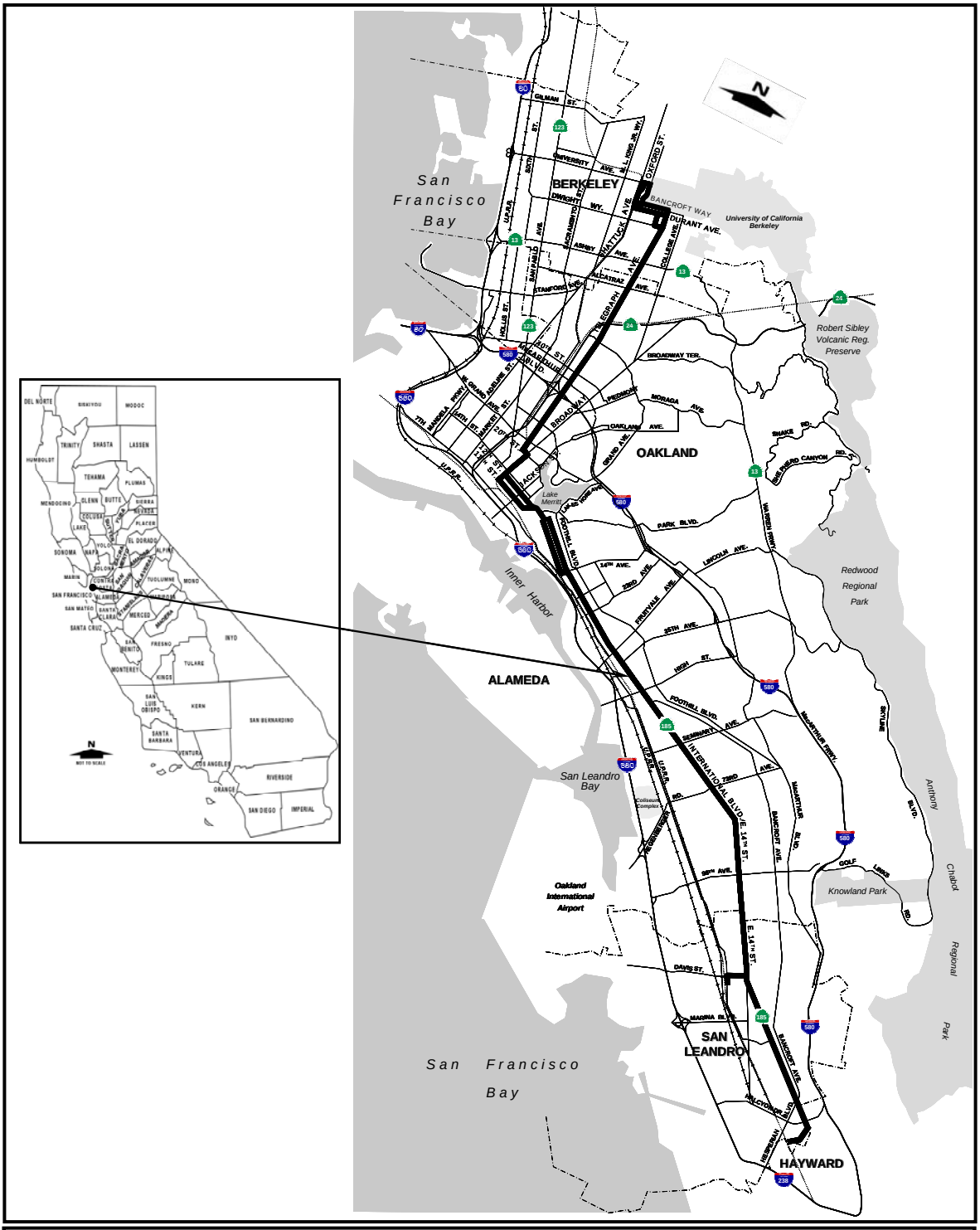

Figure 1.1-1: Project Location

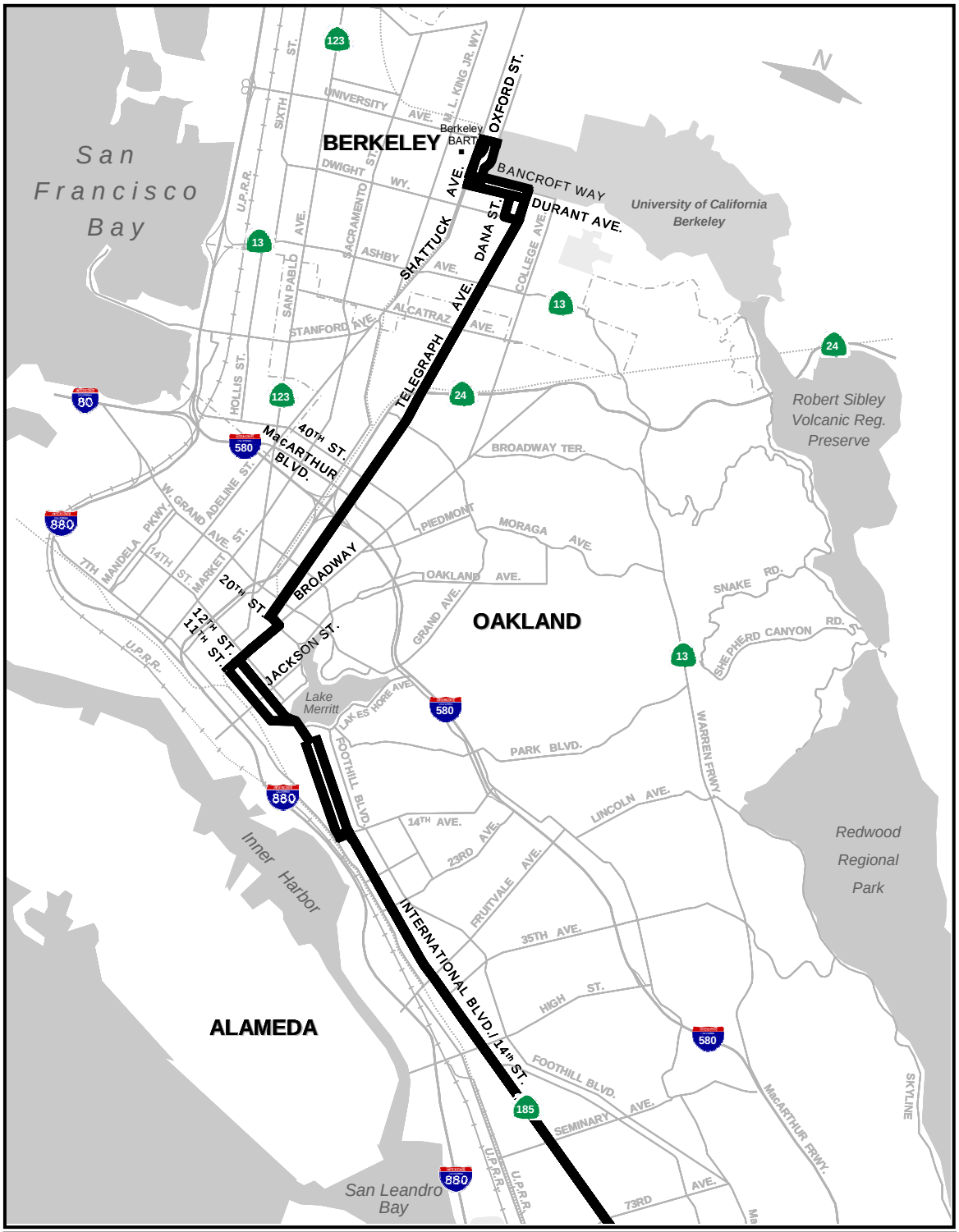

Figure 1.1-2a: Project Vicinity

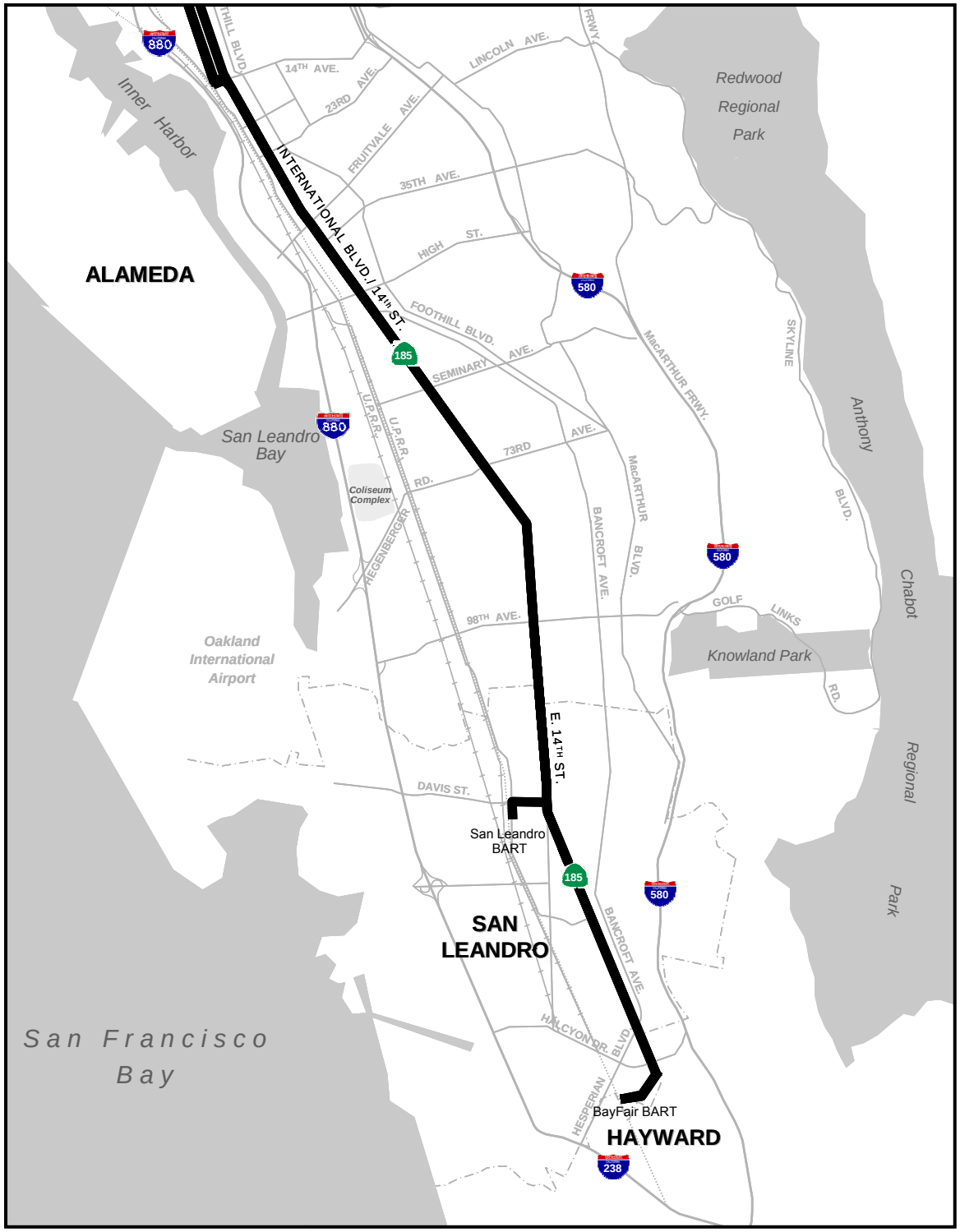

Figure 1.1-2b: Project Vicinity

1.2 Purpose of and Need for the Proposed Project

1.2.1 Project Purpose

Recognizing the importance of the Berkeley/Oakland/San Leandro transit corridor, AC Transit proposes a project that is designed to:

- **Improve transit service and better accommodate high existing bus ridership.** The project would provide improved service to current riders, including low-income and transit-dependent populations, by offering higher frequency, faster, and more reliable service, along with improved security, cleanliness, and comfort.

- **Increase transit ridership by providing a viable and competitive transit alternative to the private automobile.** The project would attract new riders by offering improved transit service and facilities, transit travel times competitive with auto travel, and a rail-like experience proven to attract riders from autos.

- **Improve and maintain efficiency of transit service delivery and lower AC Transit's operating costs per rider.** The project would improve fleet speeds and service efficiencies by reducing delays from running in mixed-flow traffic and during slow boarding and alighting of passengers. The investment in bus-only lanes, stations, and multi-door boarding means that the improvement in travel time and reliability will continue into the future, without continual service degradation due to increased traffic congestion and increased boardings.

- **Support local and regional planning goals to organize development along transit corridors and around transit stations.** Providing BRT infrastructure of dedicated transit lanes and highly visible transit stations offers a sense of permanence that can help cities attract investment in transit oriented development.

1.2.2 Project Need

Meeting the four-fold project purpose described above would respond to the following corridor and AC Transit needs:

1.2.2.1 CONDITIONS THAT DISCOURAGE TRANSIT USE

Although high transit ridership testifies to the attractiveness of transit service in the proposed project corridor, existing service and facility deficiencies compromise service delivery and limit new ridership gains.

Heavy passenger counts and steadily worsening traffic conditions degrade schedule reliability and transit travel times. Buses traveling in mixed-flow traffic experience delays in traffic, delays getting to and from the curb to board and alight passengers, and delays from heavy cross traffic at intersections. As Figure 1.2-1 illustrates, average bus fleet speeds have declined at a rate of 1 percent per year for the last two decades. Buses currently average only 11 miles per hour in revenue service. In the proposed project corridor, it takes an average of 92 minutes to travel the 17 miles from

Berkeley to San Leandro during peak periods. Declining transit vehicle speeds make transit non-competitive with automobiles for those with access to a private vehicle. Variable and increasing travel times make transit schedules unreliable.

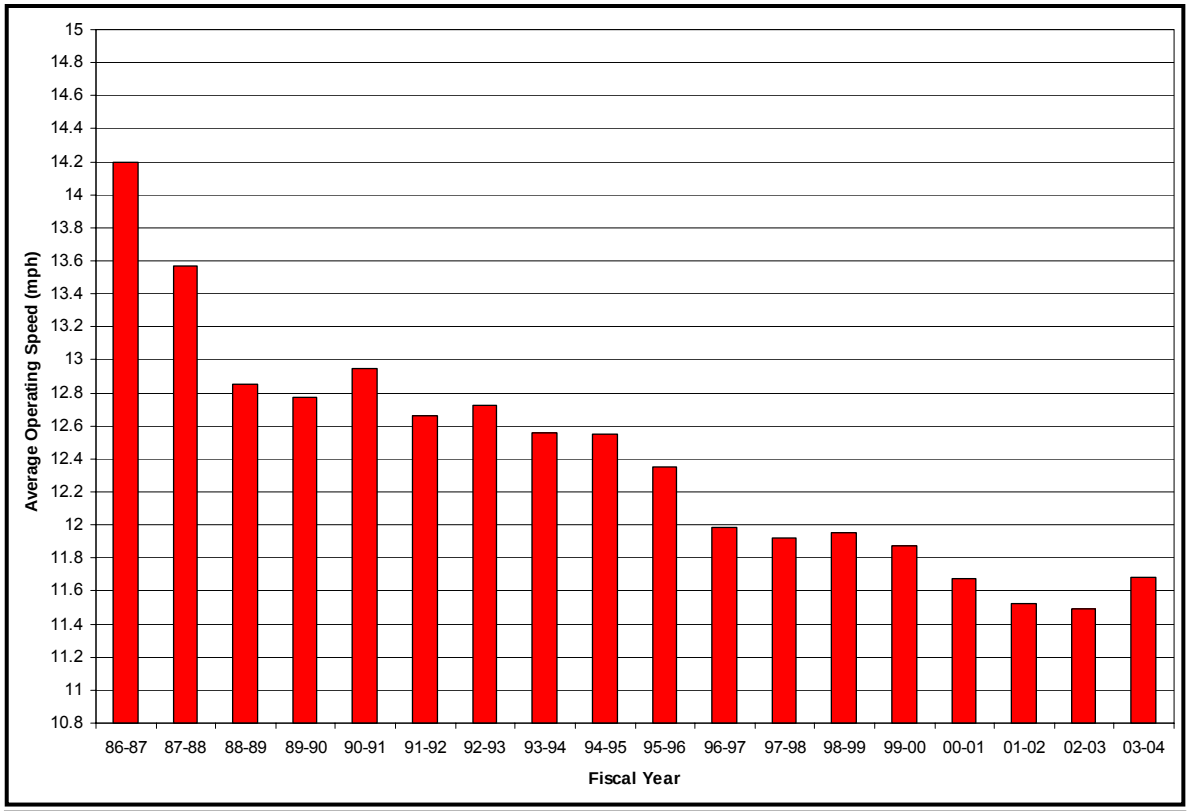

Figure 1.2-1: AC Transit Bus Fleet Average Operating Speed

1.2.2.2 SERVICE INEFFICIENCIES THAT DRIVE UP AC TRANSIT'S COSTS

Steadily declining transit vehicle speeds contribute to increasing inefficiencies in corridor transit service—even where high ridership exists. When buses cannot run according to schedule, schedule reliability suffers and passenger loads are distributed unevenly. Some buses run fully loaded and leave passengers to wait for the next bus while other buses run with empty seats. Adding more buses to address the problem only adds to congestion and results in higher operating, including fuel, costs. Running more buses under stop-and-go traffic conditions also adds to bus wear, increasing service and maintenance requirements, staffing needs, and costs.

The proposed BRT service would address these schedule reliability, bus loading and congestion problems directly by using dedicated bus lanes to take the buses out of mixed-flow traffic. Improved schedule reliability and ease of bus access would not only speed boarding, but would also enable AC Transit to increase corridor transit capacity without increasing operating, fuel, and maintenance costs commensurately. Ridership and overall operating costs would increase, but per rider costs would drop, demonstrating improved operating efficiency.

This expected improvement in operating efficiency is shown in Figure 1.2-2, which shows that the existing (2003) cost per rider in the corridor is about $3.50 in 2005 dollars. By 2025, cost per rider is expected to increase slightly in constant 2005 dollars to about $3.60 under the No-Build Alternative, which includes the addition of Rapid Bus service in the corridor. With the proposed BRT service, costs would decrease by 20 to 33 percent or an estimated decrease of $0.73 to $1.23 per rider compared with the 2025 No Build, depending on which BRT option is implemented.

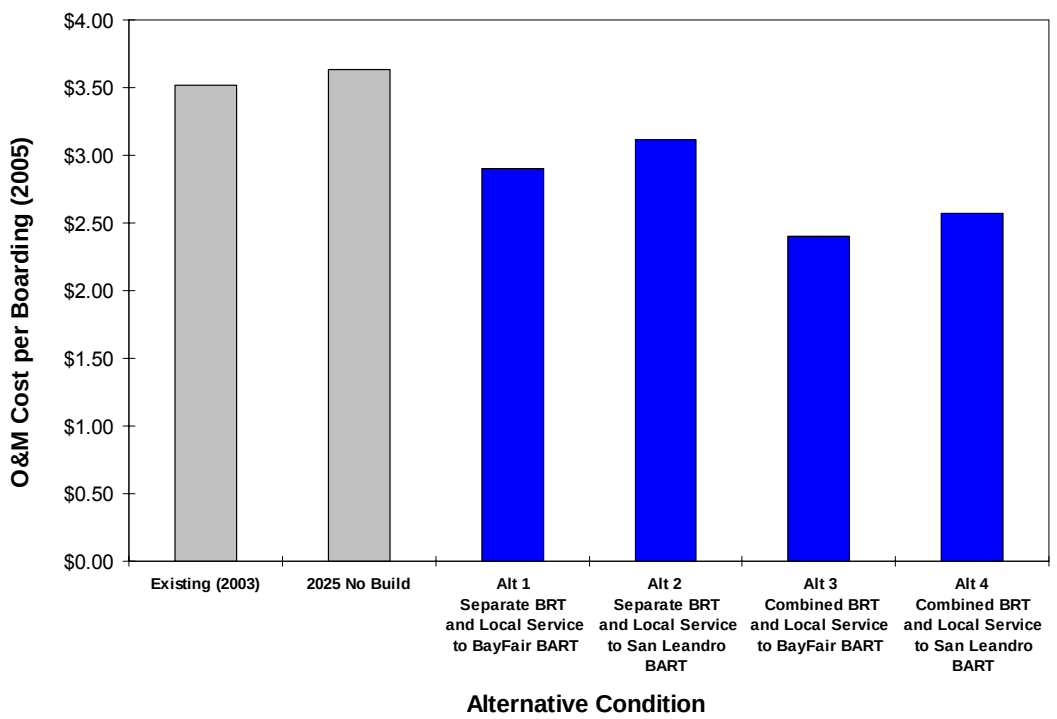

Figure 1.2-2: Corridor Operating and Maintenance Cost per Boarding

1.2.2.3 CAPACITY AND RELIABILITY CONSTRAINTS COMPROMISE ACCESSIBILITY

Corridor buses frequently operate with full loads and standees. Yet the need to operate its buses in mixed-flow traffic limits AC Transit's ability to expand corridor transit capacity. Adding more buses to the line is inefficient and costly, since they would face the same operating constraints that delay buses currently. Faster buses running on time—as would be the case with the proposed BRT project—would offer increased capacity more reliably and cost-effectively.

Transit riders left standing at bus stops translates to time lost from work and family, lost productivity, and deteriorated quality of life. Reduced accessibility to jobs and other corridor activities compromises individual opportunities and constrains corridor and regional economics. Potential transit riders who can commute by private automobile may abandon transit; others may forego

meaningful employment if transit appears undependable. Moreover, buses tend to "bunch up" into platoons reflecting traffic conditions whereby one or more buses appear to miss a scheduled pick-up stop and then several buses arrive at a stop at the same time. When reduced schedule reliability is combined with declining operating speeds, the negative effect on transit ridership is compounded.

Figure 1.2-3 illustrates the estimated effect on corridor boardings if operating speed and schedule reliability could be improved. Figure 1.2-3 shows that improved speed alone would generate more than a 15 percent increase in boardings while improved speed and reliability would increase boardings by over 50 percent.

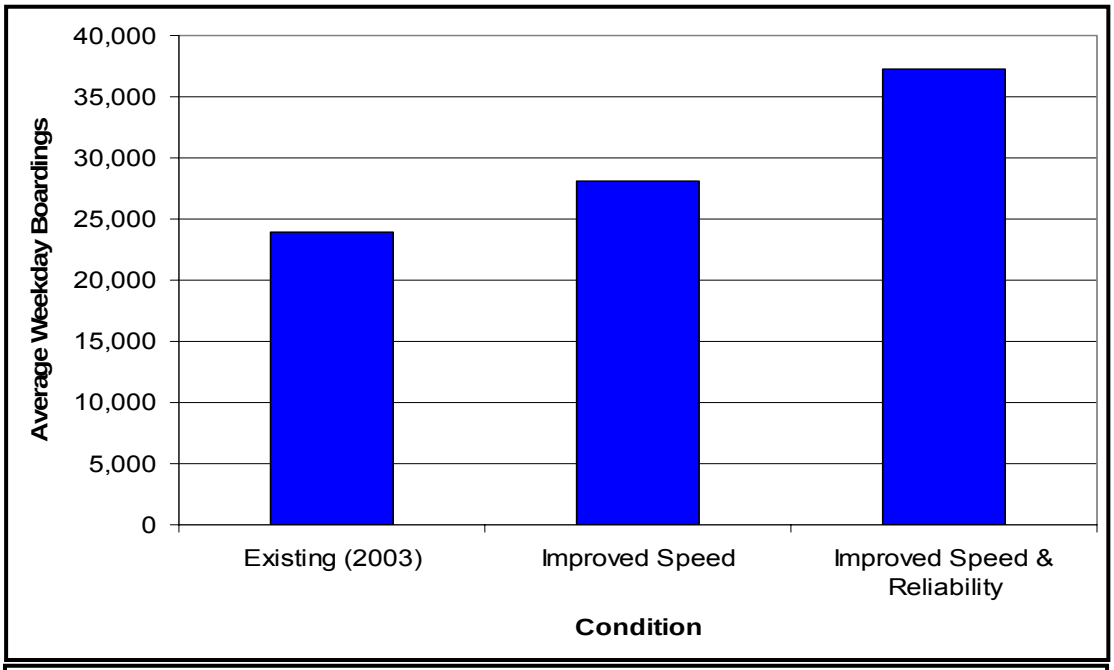

Figure 1.2-3: Ridership Impact of Improved Speed and Reliability

The proposed project would address existing service deficiencies by providing dedicated transit lanes and transit signal priority to take transit out of mixed-flow traffic and speed transit vehicles through signalized intersections. The result would be more reliable schedule adherence and shorter transit travel times, making transit much more competitive with the automobile.

1.2.2.4 DELAYS IN BOARDING

The boarding process also contributes to delay. In addition to traffic delays incurred when the bus attempts to pull to the curb, impedances during passenger boarding include individuals having to carefully step up from the curb into the bus doorway and, when on-board, needing to put coins and bills into the farebox while managing packages, strollers, or other carry-ons. Many passengers with disabilities need the assistance of lifts or ramps to enter and exit buses.

Bus-only lanes provided by the East Bay BRT Project would work in conjunction with BRT stations and level boarding platforms to greatly facilitate passenger access to the vehicle. Low-floor vehicles and raised boarding platforms would allow near-level boarding, enabling passengers, including those with disabilities, to simply walk or roll onto the bus. Boarding and alighting would be possible through any of several doors; this would shorten bus dwell times, the time spent at a passenger stop. Proof-of-payment with pre-paid fare collection would eliminate the need for passengers to dig for their wallets or feed a farebox. Boarding more passengers in less time would provide more transit seats without the added costs of additional buses and drivers.

1.2.2.5 FUTURE TRAVEL DEMAND MEANS INCREASED CONGESTION

Travel demand forecasts suggest that without capacity increases, by the year 2025, corridor traffic will operate under heavily congested conditions. Vehicle trips along the proposed East Bay BRT Project alignment and immediately parallel (or alternate) arterials are projected to increase substantially, from approximately 7,100 in 2003 to 8,700 in 2025 during the p.m. peak hour in the vicinity of Alcatraz Avenue (north alignment segment), and, similarly, from approximately 4,700 to 5,800 in the vicinity of High Street (south alignment segment).[2] In each case, this amounts to a 23 percent increase in volumes. One result will be deteriorating roadway network performance, expressed in terms of intersection level-of-service. Of the 88 intersections analyzed for the preparation of this environmental document, the number operating at level of service E or F, the worst levels of service, is expected to increase from six in 2003 to 18 in 2025. These locations are indicated in Figure 1.2-4. This increase means that by 2025, almost 20 percent of analyzed corridor intersections are expected to operate at extremely congested levels. Increasing travel demand tends also to expand peak congestion periods over several hours in the morning and evening. There is little opportunity to increase auto traffic capacity along corridor arterials without acquiring substantial amounts of right-of-way and relocating numerous residences and businesses. Increased congestion highlights the need to provide transit high capacity in a dedicated lane to allow buses to bypass congestion.

Improving transit service will provide travelers an alternative to driving in increasingly congested conditions. Investing in transit facilities and equipment would help transit to capture a larger share of the travel market, reducing the reliance on single-occupancy vehicles, improving the efficiency of the local roadway network, reducing the need for roadway expansion and improving air quality.

[2] Volumes in the north are along College Avenue, Telegraph Avenue, and Adeline Street near their intersection with Alcatraz Avenue; volumes in the south are along Foothill Boulevard, International Boulevard, and San Leandro Street near their intersection with High Street.

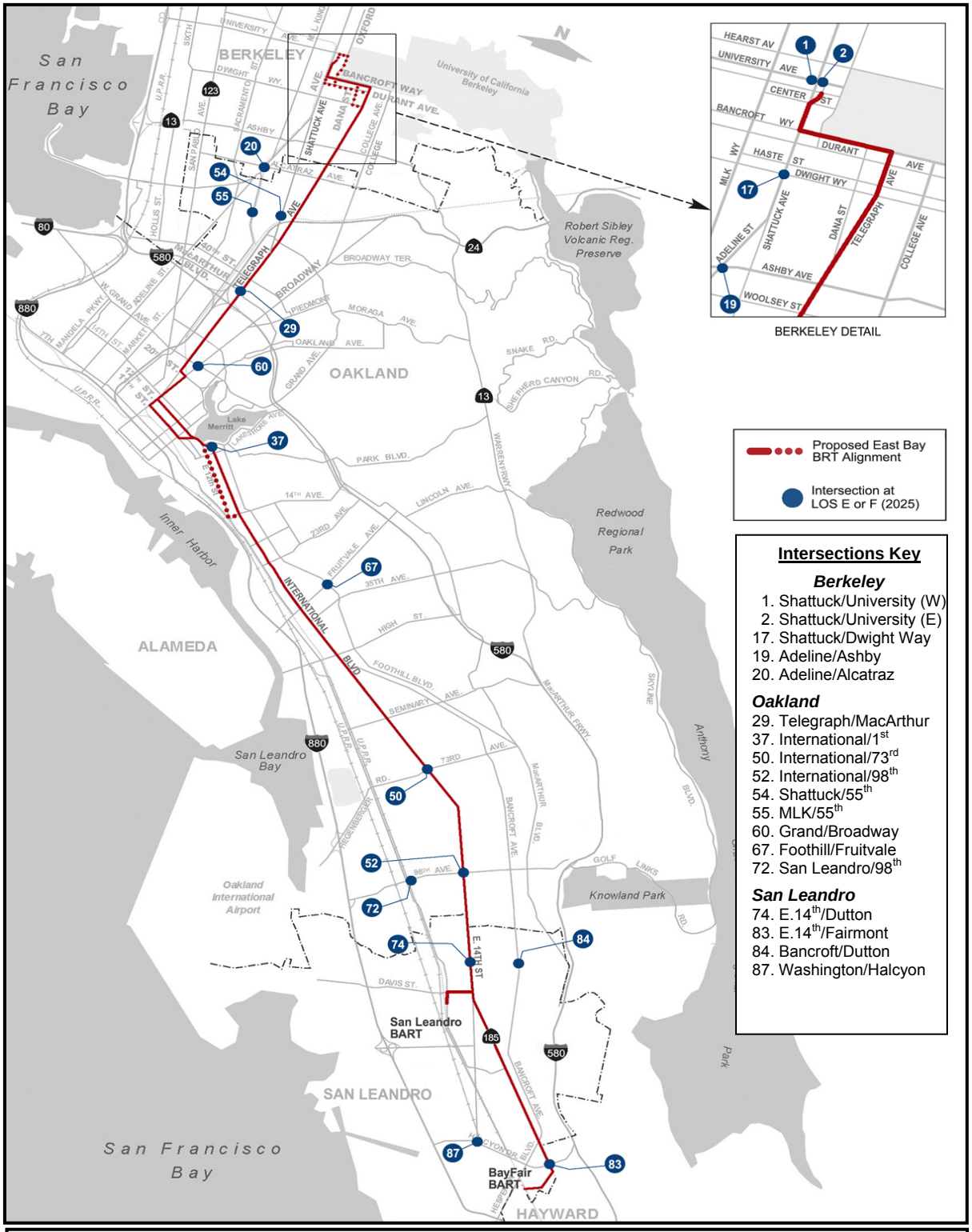

Figure 1.2-4: Intersections Operating at LOS E or F in 2025

1.2.2.6 CORRIDOR CHARACTERISTICS INDICATE ADDITIONAL DEMAND FOR TRANSIT

The proposed BRT corridor is home to important East Bay employment, educational, and activity centers where trip-making by workers, shoppers, students, visitors, and others is concentrated. The corridor connects the downtown central business districts of all three cities. These centers include a mix of activities and land uses in pedestrian-oriented, higher-density patterns of development. Several hospital complexes and numerous shopping districts, churches, civic centers, and entertainment/recreation facilities are also located within the corridor. Of the 16 major employment centers in the cities of Berkeley, Oakland, and San Leandro, 12 are located in the proposed project corridor. These employers are projected to have over 140,000 jobs in the year 2025.

Figure 1.2-5 shows employment densities in the project corridor. The overall employment density was 14 jobs per acre in 2000, and ranged as high as 74 jobs per acre in downtown Oakland. Figure 1.2-6 shows the areas of major employment growth in the project corridor and surrounding areas, between 2000 and 2025. The major areas of growth include Downtown Oakland, Downtown Berkeley and UC Berkeley, the industrial areas of West and East Oakland and western San Leandro, and near the Oakland Estuary in the city of Alameda. These areas represent either locations zoned for higher density office and retail development (downtowns) or locations with a number of vacant or underutilized parcels (industrial areas that are transitioning to more specialized uses).

The corridor also includes several institutions of higher learning. Three of these, UC Berkeley, Laney College, and Berkeley City College (formerly Vista College), have a combined average weekday enrollment of approximately 49,000 students. In addition, the corridor is home to numerous middle and secondary schools. The combined average weekday enrollment at 10 public high schools and 10 public junior high schools/middle schools in the corridor is about 18,000 students.

Several key activity centers along the project corridor face growing constraints on auto access. These include UC Berkeley; Downtown Berkeley; expanding neighborhood retail and commercial districts such as Temescal and Fruitvale in Oakland; and Downtown San Leandro. The vitality of these centers will increasingly depend on accessibility by non-auto modes. UC Berkeley, in a long-range development plan currently under review, proposes growth in student population and research and office space that would be acceptable to the City of Berkeley only if the concomitant increase in travel would not overtax the surrounding roadway network.

Of AC Transit's five highest-volume bus routes, three operate in the Berkeley/Oakland/San Leandro corridor—Routes 40/40L, 43, and 82/82L. These three routes carry approximately 38,000 riders per day, of whom 24,000 board within the corridor, as compared to AC Transit's total daily ridership of about 206,000. A single line – Bus Route 82/82L, which runs along International Boulevard/East 14th Street – carries over 20,000 riders a day and is one of the most heavily used bus routes in the entire Bay Area.

There is a large existing travel market of 255,000 daily trips trying to reach major employment centers and educational institutions in the East Bay BRT corridor, including Downtown Oakland, UC Berkeley, Downtown Berkeley, and Downtown San Leandro. Of these total weekday trips, 115,000

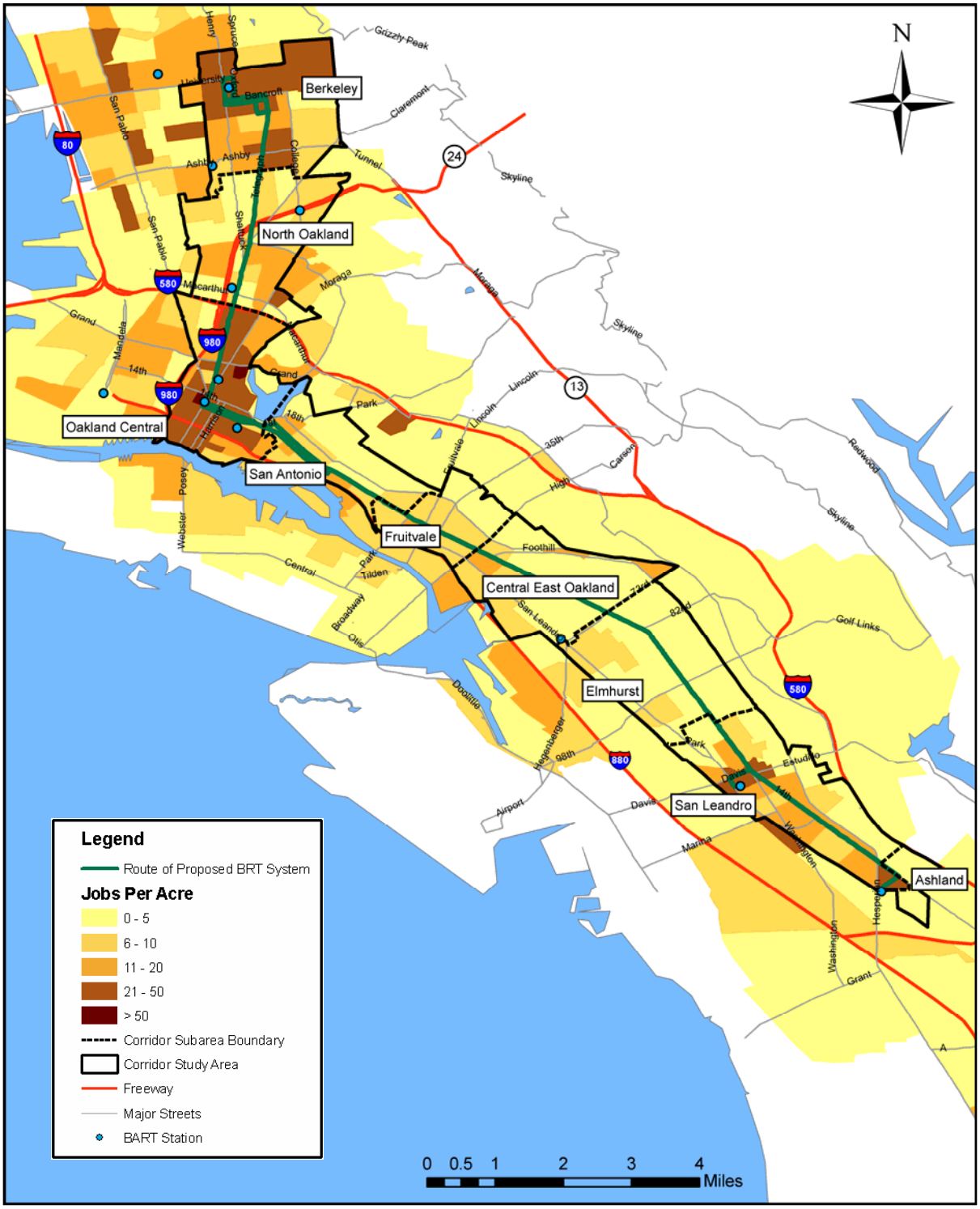

Figure 1.2-5: Employment Density in the Corridor and Vicinity, 2000

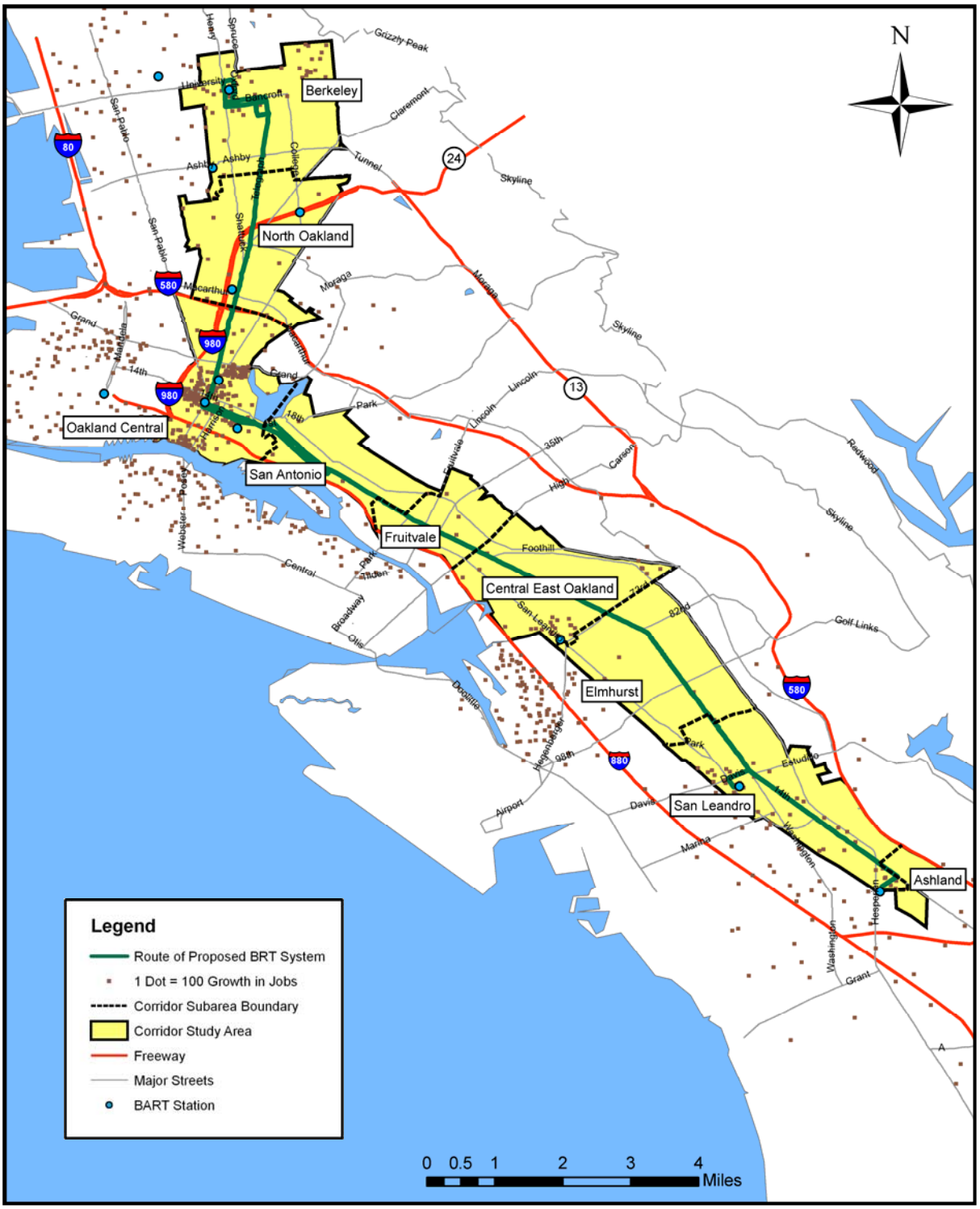

Figure 1.2-6: Employment Growth, 2000 to 2025

are currently not well served by either BART or existing AC Transit service.[3] In addition, there are approximately 67,000 students enrolled on an average weekday at UC Berkeley, Laney College, Berkeley City College, and the public high schools, junior high schools, and middle schools in the corridor, all of which are located in dense, built-up urban areas where the costs of expanding roadways or parking are prohibitive.

Transit ridership forecasts for 2025 show a potential to double the number of corridor boardings to almost 50,000 per weekday under certain scenarios.[4] However, market analysis and customer preference research indicate that 60 to 70 percent of potential transit riders consider travel time and reliability as very important to their travel experience. Therefore, to succeed in attracting people who currently drive, transit service in the project corridor must be reliable and time-competitive.

While corridor characteristics suggest that there is substantial corridor travel demand that could be served by transit, the existing service also lacks amenities that would make it more attractive to new riders. Bus stops lack shelters and benches, lighting, and security features. There are long queues to board, and limited capacity results in standing loads. As previously mentioned, bus speeds are slow and schedule adherence can be unreliable. These service characteristics can compromise the transit-riding experience, sending a new prospective rider back to his or her automobile. The proposed BRT project would result in an upgraded and streamlined service operating in dedicated lanes, with modern station amenities including shelters, a place to sit, communications systems, ticket vending machines, real-time service information, lighting, and security features. BRT vehicles would be modern and rail-like, offering ease of boarding and reflecting a modern, high-tech transit riding experience.

The improved transit reliability and speed provided by BRT, as well as the increased passenger comfort and security while waiting for and riding on transit and amenities such as real-time information, would help to make transit a viable and competitive alternative to the automobile for travel in the corridor.

1.2.2.7 SUPPORT TRANSIT-ORIENTED RESIDENTIAL AND COMMERCIAL DEVELOPMENT OF THE CORRIDOR

The proposed project corridor is primarily an inner city route that serves densely-populated neighborhoods. About half of the total population and employment of the cities of Berkeley, Oakland, and San Leandro lies within the corridor. The majority of corridor residents (about 62 percent) live in the southern part of the corridor, between Downtown Oakland and the San Leandro border. About 28 percent of the corridor population resides in the north corridor, in north Oakland and Berkeley, and about ten percent in the central corridor area in Downtown Oakland.

Figure 1.2-7 shows population densities in the project corridor and surrounding areas in 2000. Population densities, ranging from approximately 10 persons per acre on the low end to over 60 persons per acre in the highest-density areas, are substantially higher than in the surrounding East Bay

[3] AC Transit *Draft Short Range Transit Plan (SRTP)*, November 2005.
[4] See Chapter 3, Section 3.1.4. Corridor boardings of 49,320, including 46,670 on BRT service itself, are forecast for a scenario offering approximately 3.6-minute peak period BRT service along the project alignment.

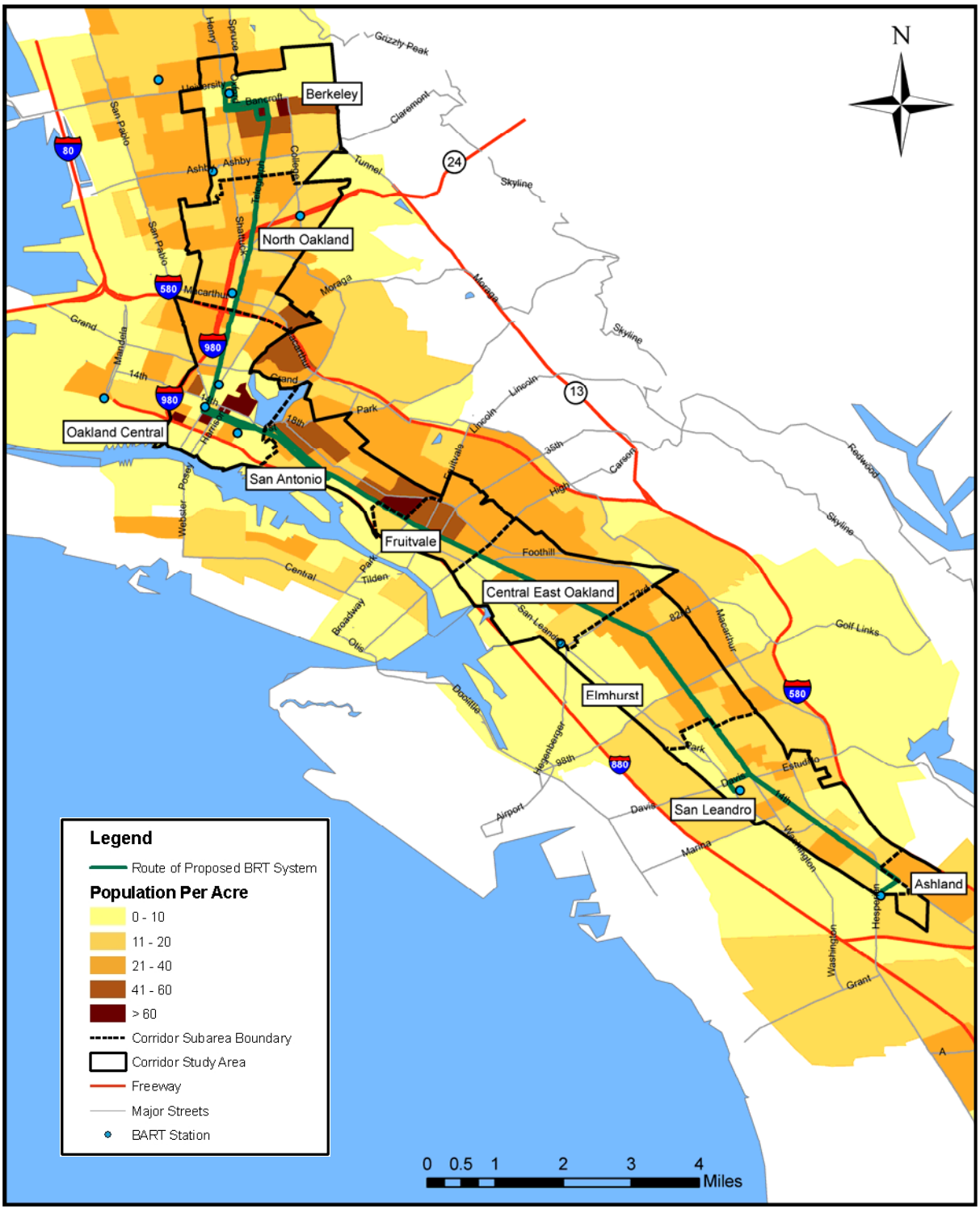

Figure 1.2-7: Population Density in the Corridor and Vicinity, 2000

region. The highest-density concentrations of population are located in Downtown Oakland, in Berkeley just south of UC Berkeley, and in the parts of Oakland north and south of downtown.

Over the next couple of decades, corridor population is projected to grow steadily, from 261,100 (2000 census) to approximately 304,400 by 2025, or 16.5 percent, with major growth areas shown in Figure 1.2-8. Population growth will be highest in Downtown Oakland, including Jack London Square; Berkeley south of the UC Berkeley campus, which includes substantial student housing; central Berkeley; and in West Berkeley, West Oakland, and along the project corridor through East Oakland and San Leandro where infill and redevelopment opportunities exist. Cities are attempting to focus this growth and improve the efficiency of the transportation network. Building upon strong existing transit-supportive land use patterns, the cities of Berkeley, Oakland, and San Leandro are carrying out extensive development and redevelopment efforts along Telegraph Avenue, International Boulevard/East 14th Street, and other areas in the corridor. Land use and zoning policies encourage and promote higher-density, transit-oriented development in the downtown areas and along major arterial streets and transit corridors.

At the northern end of the corridor, major efforts have been focusing on revitalizing Downtown Berkeley and Telegraph Avenue in the vicinity of the UC Berkeley campus, to make these areas cleaner, safer, more attractive, and more accessible places for people to visit and shop. Much of the Oakland portion of the corridor lies within redevelopment project areas and a large part of the south corridor area is within Oakland's Enterprise and Empowerment Zone. A major focus of Oakland's updated *General Plan* policies is to invest in transit-oriented development at transit nodes and stations such as the Fruitvale Transit Village, in the Fruitvale BART Station area. Phase 1 of the Transit Village is complete and includes over 250,000 square feet of space for commercial activities and community (health and child care) services. Phase 2 will add over 200 housing units. In San Leandro, the *General Plan* envisions reshaping the East 14th Street corridor from a three-mile commercial strip to a series of transit-oriented "districts" focused around the downtown, Bayfair Center, and other destinations. The San Leandro BART Station area is adjacent to downtown and is under development as a transit village with commercial and residential uses. The project would directly serve Downtown San Leandro.

The corridor is already a strong market for transit, both for AC Transit's local bus service and for the regional rail service provided by BART. By providing high quality, reliable, comfortable, and secure BRT service, the proposed project would contribute to transit-oriented development efforts by increasing the access to corridor jobs, education, and service markets. The placement of BRT infrastructure demonstrates an investment in the corridor and provides a greater sense of permanence than typical bus facilities. Such facilities can help stimulate further transit-oriented development.

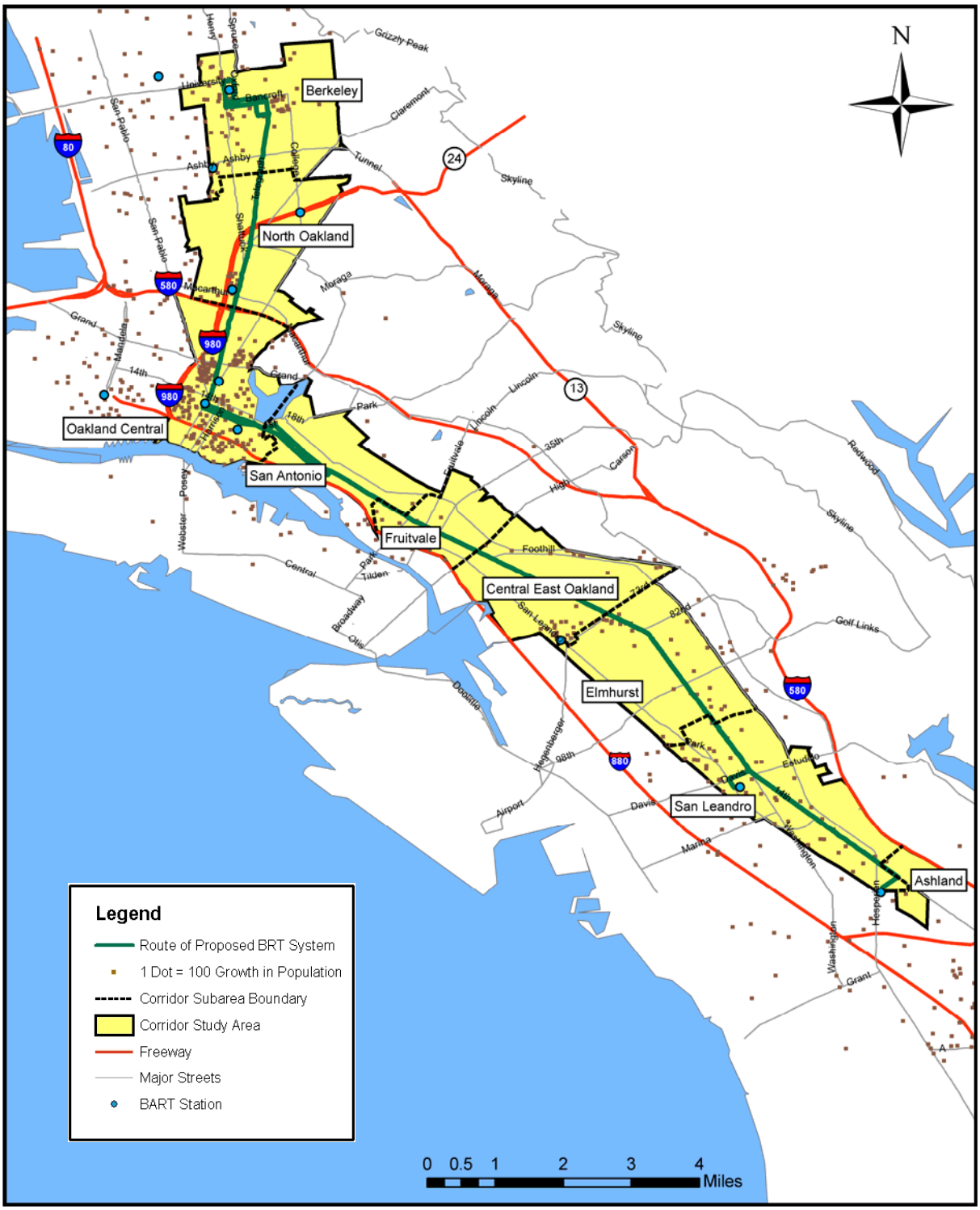

Figure 1.2-8: Corridor Population Growth, 2000 to 2025

1.2.2.8 BETTER SERVE LOW-INCOME AND TRANSIT-DEPENDENT POPULATIONS IN THE PROJECT CORRIDOR

The population in the project corridor includes a large number of people with low incomes, the major concentrations of which are shown in Figure 1.2-9[5]; seniors age 65 and over; youth and children age 18 and under; and disabled persons. Twenty percent of the households in the corridor are without private transportation. These population groups are less likely to have automobiles available and are, therefore, more likely to use transit. By improving access to important employment and educational centers in the East Bay, the BRT project would contribute to improved mobility and greater access to jobs for these corridor residents.

From the standpoint of environmental justice, which pertains to the effects of federal actions on minority and low income populations, the proposed East Bay BRT Project would be viewed favorably. Eight of nine communities, or sub areas, along the alignment are potential environmental justice communities based on the fact they contain 50 percent or more minority or low-income populations or the percentage of minority or low-income populations is more than 10 percentage points greater than the Alameda County average (data based on 2000 U.S. Census). In the long term, these communities would receive greater benefits from the project than drawbacks. The major adverse effects of the project are temporary and would occur during construction, when traffic and, to some extent, bus service are disrupted by transitway, BRT station and roadway construction. Local access to businesses along the project alignment would also be temporarily disrupted although detours and reroutes would be designated. Over the long term, however, the mobility benefits—from higher bus frequencies, shorter transit travel times, and increased transit capacity, among other benefits—are considerable.

1.3 Project Background

1.3.1 Major Investment Study

AC Transit did a systematic study of its busiest bus routes in the early 1990s. That study, the Alternative Modes Analysis, was completed in April 1993. It identified priority corridors and candidate technologies for major transit investments that would serve AC Transit's ridership cost-effectively. The study also looked into ways to reduce noise and air pollution from AC Transit's operations. It identified the Berkeley/Oakland/San Leandro corridor as the best single corridor for further evaluation.

Over a three-year period from 1999 to 2002, AC Transit conducted a Major Investment Study (MIS) of the Berkeley/Oakland/San Leandro corridor to examine alternatives for improved transit service. The MIS established nine key service objectives that guided the identification and evaluation of improvement options. These are shown in Figure 1.3-1. The objectives have continued to influence the study process as it continues through the environmental review phase.

[5] Low income areas in Figure 1.2-9 are based on the percentage of population living in households with incomes below the federal poverty level in 2000.

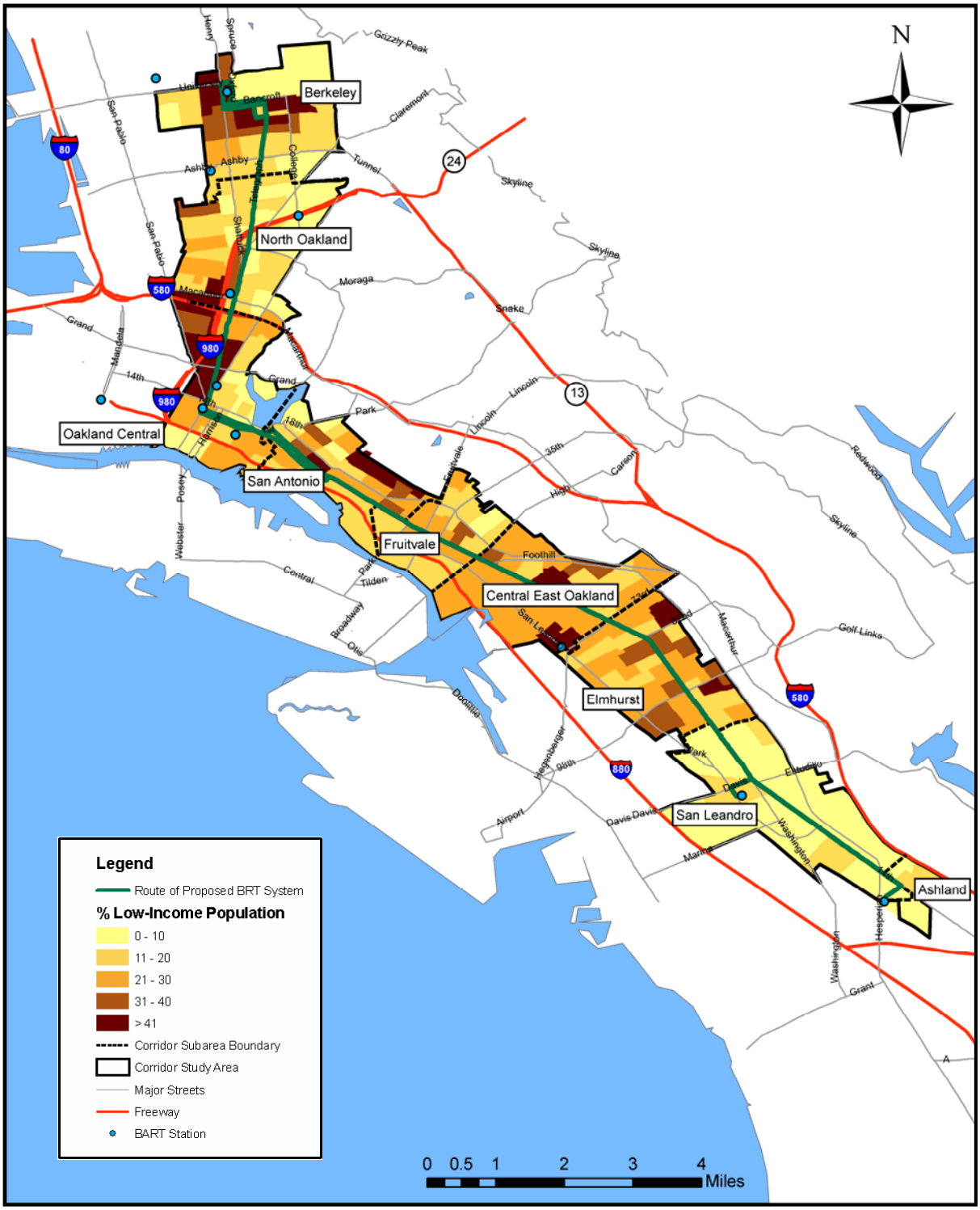

Figure 1.2-9: Households with Incomes below the Poverty Level

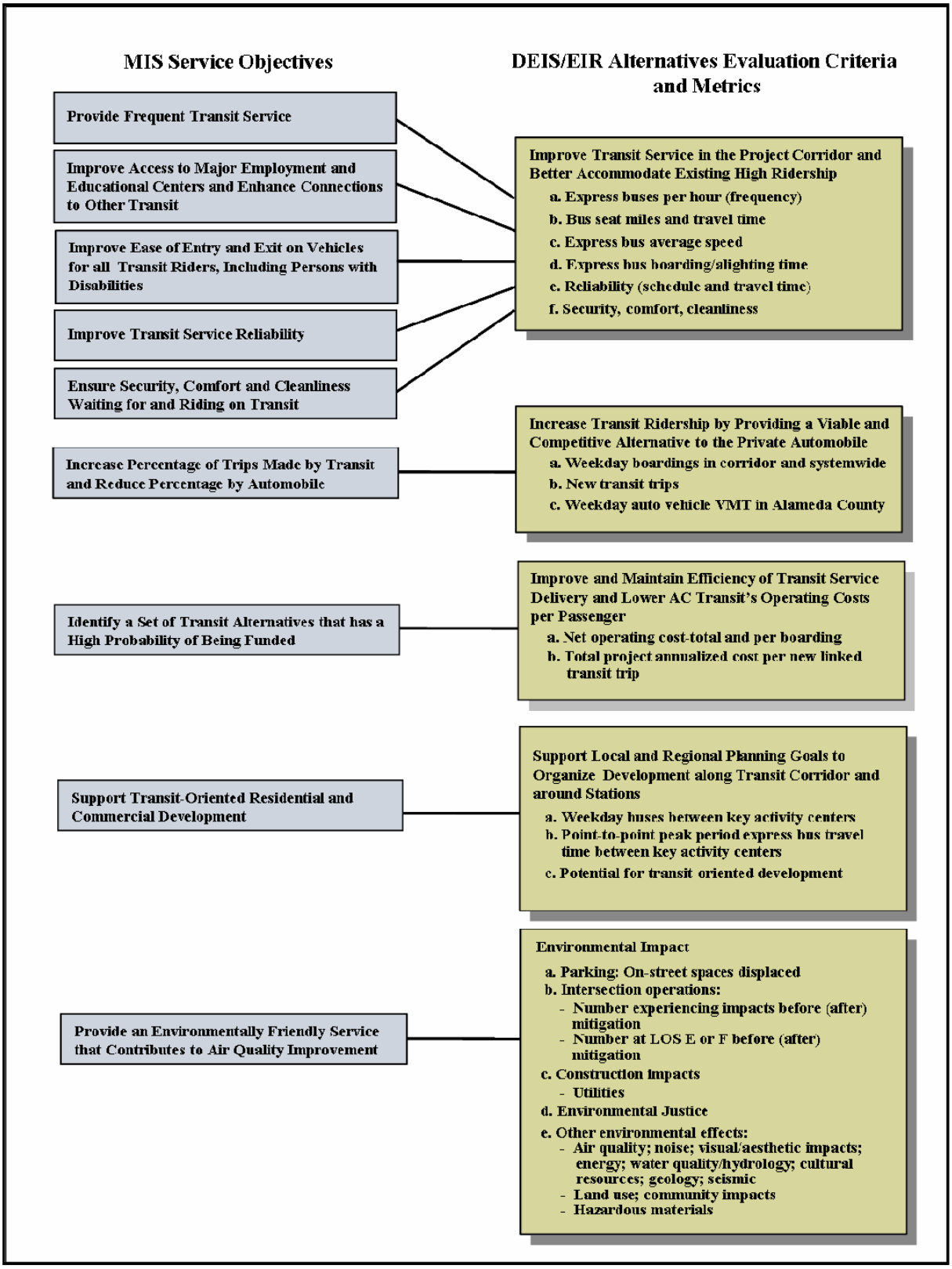

Figure 1.3-1: MIS Objectives and DEIS/DEIR Performance Measures

The service objectives established during the MIS were converted to various, specific performance measures by which to evaluate the environmental, operational, and financial attributes of the Build Alternatives carried forward for further review in this EIS/EIR. The correspondence of MIS service objectives and EIS/EIR evaluation measures is shown in Figure 1.3-1.

The MIS identified three modal options that could best meet established objectives[6] while satisfying the needs of the market. The modal alternatives examined were Light Rail Transit (LRT), Bus Rapid Transit (BRT), and Enhanced Bus. Several other technologies were ruled out because of their high cost, unproven nature, or lack of suitability for operations in a dense urban environment. Three alignment alternatives in the northern portion of the corridor and three in the southern portion were analyzed for each of these modes. Referenced by their major arterials, the northern alignments were Telegraph Avenue, College Avenue/Broadway, and Shattuck Avenue/Telegraph Avenue. The southern alignments were International Boulevard/East 14th Street, Foothill Boulevard/Bancroft Avenue and San Leandro Street/San Leandro Boulevard.

On August 2, 2001, the AC Transit Board of Directors adopted BRT as the Locally Preferred Alternative (LPA), with the understanding that LRT should be considered as a long-term goal. BRT, featuring high-capacity express operations along dedicated lanes on existing roadways, was selected because it could provide many of the same features as LRT and would attract a large number of new riders at a much lower cost and with fewer traffic, parking, and construction impacts than LRT.

The LPA alignment primarily would use Telegraph Avenue in the northern portion of the corridor and International Boulevard/East 14th Street in the southern portion. Although an alignment following College Avenue/Broadway in the northern portion would have attracted more riders, Telegraph Avenue was selected because it would provide a more reliable and faster service with somewhat lower capital costs and fewer traffic and construction impacts. This alignment also has greater capacity for redevelopment and comes closer to meeting the service objectives established for the project. The alignment following Shattuck Avenue/Telegraph Avenue was not selected because it would miss many major activity centers, duplicate the BART alignment, and have additional traffic and construction impacts on narrow Shattuck Avenue.

In the southern portion of the corridor, the Foothill Boulevard/Bancroft Avenue and San Leandro Street/San Leandro Boulevard alignments would not have served the major activity centers of East Oakland as well as the International Boulevard/East 14th Street alignment. Moreover, Bancroft Avenue is narrow in sections and a dedicated transitway would have involved greater parking and roadway impacts than would have resulted with the International Boulevard alignment. The San Leandro Street/San Leandro Boulevard alignment offers a wider cross section and would have accommodated the BRT transitway; however, it duplicates BART service over much of its length.

Because of these disadvantages, and following the adoption of the LPA, the MIS concluded with the withdrawal of the College Avenue/Broadway, Shattuck Avenue/Telegraph Avenue, Foothill Boulevard/Bancroft Avenue, and San Leandro Street/San Leandro Boulevard alignments from further consideration. The LPA mode and alignment, consisting of BRT running along Telegraph Avenue,

International Boulevard and 14th Street, were adopted for more detailed environmental studies in the present document.

The MIS was conducted with input and guidance from key stakeholder agencies, elected officials, community leaders, and the general public. Public participation and agency consultation for this project have been accomplished through a variety of formal and informal means, including project development team meetings; formal meetings with elected officials, community leaders, members of the general public, focus groups, and resource agency staff; circulation of draft documents and flyers; and informal consultations with stakeholders from the neighborhoods and communities within the proposed project corridor. These outreach efforts are summarized in Chapter 7, Consultation and Coordination.

1.3.2 Funding and Programming

The main sources of project funding include Regional Measure 2 (Bridge Tolls), approved by Bay Area voters in March 2004; Alameda County Measure B Sales Tax, passed in November 2000; and state and federal transportation funds. Table 1.3-1 presents the sources of $102.05 million in committed funding identified for the implementation of both Rapid Bus and East Bay BRT service. Rapid Bus is an approved project already in implementation and consists of a subset of the components of the full BRT system. Of the $102.05 million, $42.73 million has already been committed to expenditures on Rapid Bus related items, leaving $59.32 million available for the construction of the BRT system. Rapid bus elements are preserved as part of the BRT system and their expense is a part of the overall BRT cost.

Table 1.3-1: AC Transit Rapid Bus and East Bay BRT Project Committed Funding (Capital Improvements)

Funding Source	Amount (Millions of $2005)
Regional Measure 2 (Bridge Tolls)	$65.00
Alameda County Measure B (Sales Tax)	$20.23
CMA Transportation Improvement Program	$9.39
Federal Planning Grants	$2.73
Federal Statewide Transportation Improvement Program (STIP)	$2.70
SAFETEA-LU Grants	$2.00
Total	**$102.05**
Source: AC Transit, 2006	

Total costs for the BRT project are estimated to range from $310 million to $400 million, depending upon alignment variation and level of transitway improvements. This leaves a funding gap of approximately $250 to $340 million. AC Transit has identified funding sources to fill the gap and is actively working to secure these sources. These sources include the State Infrastructure Bond Program, State Transportation Improvement Program (STIP), State Traffic Congestion Relief Program (TCRP), Federal Small Starts Program, Federal Transit Agency (FTA) Section 5307—

[6] Service objectives established during the MIS phase are described in Chapter 2, Section 2.1.2.

Urbanized Area Formula Funds, FTA Section 5309—Capital Program Discretionary Bus, and the Transportation Fund for Clean Air (TFCA). See Section 8.2.2, Potential Sources of Funding, for more information on these sources.

1.3.3 Related Projects and Planning

The project corridor and vicinity have been the focus of planning efforts by the cities of Berkeley, Oakland, and San Leandro; UC Berkeley; and regional transportation agencies. City, county, and state projects that have been proposed as a result of these planning efforts are listed below.

1.3.3.1 CITY OF BERKELEY

Projects, plans, and policies for the northern portion of the project corridor in the City of Berkeley have focused on the revitalization of Downtown Berkeley, particularly in the vicinity of the UC Berkeley campus.

- The *Draft Southside Plan* for areas in the vicinity of the UC Berkeley campus proposes increased density and encourages the development of additional housing for students and others along transit corridors close to the campus. The plan will be incorporated into the City's *General Plan*, zoning ordinance, and other planning policies.

- The UC Berkeley *Long-Range Development Plan* (LRDP) is being updated to develop a new physical plan for accommodating increased and changing campus activity through 2015. The LRDP update addresses increased enrollment demand, the need to seismically retrofit or replace existing campus buildings, physical growth demand, and new interdisciplinary research initiatives.

- *Upper Telegraph Avenue Improvements* are proposed in the vicinity of the UC Berkeley campus to make it a clean, safer, and more attractive place for people to visit and shop. Joint efforts involve the City, the University, and local businesses and property owners.

1.3.3.2 CITY OF OAKLAND

Projects, plans, and policies for the central portion of the project corridor in the City of Oakland focus on revitalizing major transit corridors, including Telegraph Avenue and the Fruitvale BART and MacArthur BART areas, as mixed-use communities with concentrations of commercial, civic, and residential uses.

- *Telegraph Avenue Streetscape Improvements* between 16th Street and 20th Street and between 20th Street and 51st Street, focusing on neighborhood-serving retail, façade improvements, streetscape and traffic calming strategies, and community service uses.

- *Telegraph Avenue Bicycle Lane* between Route 24 and 20th Street.

- *Uptown Mixed-Use Project*, a large-scale housing and commercial development bounded by 20th Street on the north, Telegraph Avenue on the east, 18th Street on the south, and San Pablo Avenue on the west in Downtown Oakland.

- *Jack London Square Development* to expand housing, retail, dining, and entertainment activities within the area.

- *Lake Merritt Master Plan* to provide improved access and amenities for Lake Merritt and the surrounding area.

- *MacArthur BART Transit Village* project, a mixed-use development project that would include up to 700 units of new housing, 60,000 to 100,000 square feet of commercial/retail space, and expansion of the existing Surgery Center.

- *Fruitvale Transit Village, Phase 2*, providing mixed-use retail, housing, and community/health opportunities at the Fruitvale BART Station.

1.3.3.3 CITY OF SAN LEANDRO

Projects, plans, and policies for the southern portion of the project corridor in the City of San Leandro focus on mixed-use and higher-density infill development, and public investments in streetscape improvements.

- *Washington Square Redevelopment*, providing improved plaza amenities, a new bus shelter, and pedestrian access to BART.

- *East 14th Street South Area Median Project* from 136th Street to 145th Street.

- *BayFair BART* project to redevelop Bayfair Center and the BART Station.

1.3.3.4 COUNTYWIDE PROJECTS

The Alameda County Congestion Management Agency is spearheading a joint effort by 25 federal, state, regional, jurisdictional, and transit partners to plan and implement a multimodal advanced transportation management system, dubbed the SMART Corridors Project, along the Interstate 80 and Interstate 880 corridors. The goal of the project is to allow the participating agencies to better manage congestion and improve transportation mobility, efficiency, and safety along the regional arterial roadways in these corridors. The program has proposed the following transportation improvements in the project vicinity:

- *Interstate 80 SMART Corridor*, providing improved traffic and transit operations between 17th Street in Downtown Oakland and the City of Hercules, via San Pablo Avenue; emergency vehicle pre-emption; and traffic signal priority for Rapid Buses operating in the corridor.

- *Interstate 880 SMART Corridor*, focusing on improved traffic and transit operations from Downtown Oakland to Union City via International Boulevard, East 14th Street, Hesperian Boulevard, San Leandro Boulevard, and Union City Boulevard.
- *Broadway SMART Corridor*, providing improved traffic and transit from 3rd Street to 20th Street in Oakland.

1.3.3.5 STATEWIDE PROJECTS

The California Department of Transportation has proposed the following transportation improvements in the project vicinity:

- *State Route 185 Rebuild*, reconstructing State Route 185 between Jackson Street/Foothill Boulevard in Downtown Hayward and Davis Street in Downtown San Leandro.

1.3.4 Permits and Approvals Required

Table 1.3-2 lists the permits and approvals that would be required for the East Bay BRT Project.

Table 1.3-2: Anticipated Permits and Approvals Required

Agency	Approval or Permit
Cities of Berkeley, Oakland and San Leandro	Encroachment permit required for work within public right-of-way.
	Engineering design for repavement of the street to be approved by the Office of Transportation in Berkeley, Public Works Department in Oakland, and the Engineering and Transportation Department in San Leandro.
	The geometrics of street, pavement markings, use of streets and sidewalks must be approved by the Berkeley Office of Transportation in Berkeley, the Public Works Department in Oakland, and the Engineering and Transportation Department in San Leandro. The cities would also review proposed staging and access.
	The Public Works Department of each city will need to approve proposed alterations to street lighting circuitry and/or traffic signals within their jurisdiction.
California Department of Transportation (Caltrans)	Encroachment permit required to perform design surveys. As Responsible Agency for State Route 185 (portion of International Blvd.), Caltrans will use this environmental document to approve project implementation within State right-of-way.
EBMUD, PG&E and the Telecommunication Companies	AC Transit would coordinate with utility providers regarding temporary or permanent relocation of utilities, if any. California Public Utilities Commission would approve Pacific Gas & Electric Company Notice of Construction for any relocation of power lines pursuant to GO 131-D.
State Department of Water Resources	National Pollutant Discharge Elimination System (NPDES) Permit for construction activities will be required. This includes contractor's preparation of a Stormwater Pollution Prevention Plan (SWPPP).
The Alameda County Tree Ordinance	Ordinance No: 0-2004-23 requires an authorization by an encroachment permit issued by the Director of the Alameda County Public Works Agency to remove (or cause to be removed) any tree from the county right-of-way.
Source: Parsons, 2005	