2.0 RESPONSE TO COMMON COMMENTS ON THE DRAFT EIS/EIR
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2.0 Response to Common Comments on the Draft EIS/EIR

2.1 Proposed Project Alignment and Transit Service

Numerous comments received from agencies, businesses, organizations, and citizens addressed the location of the BRT transitway and the nature of the proposed transit service. The majority of comments related to this topic touched upon one or more of the following issues:

- What other alignment options have been considered?
- Is it necessary to provide dedicated lanes for the BRT transitway?
- Why are some of the dedicated lanes median-running, while others are side-running? Can existing street medians be retained where median-running lanes are proposed?
- Given that portions of the proposed BRT route run generally parallel to the existing Freemont-Richmond BART service, is the proposed project a redundant transit service?
- Can the project’s purpose and need be fulfilled by enhancing AC Transit feeder bus service to BART stations, instead of implementing the proposed BRT service?

Alignment Options Considered

As discussed in Section 2.1.1, alternative route alignments and types of transit service were evaluated in a Major Investment Study (MIS)\(^1\), which was conducted on behalf of AC Transit between 1999 and 2002. The MIS examined existing and projected future land use, employment, transportation, and other conditions along an 18-mile corridor between the University of California, Berkeley and San Leandro. As described in the AC Transit Berkeley-Oakland-San Leandro Corridor MIS Final Report Volume 2: Development of Alternatives (MIS Final Report) (CS 2002x), 10 alternative transit technologies, four route alignments north of downtown Oakland, two route alignments in downtown Oakland, and three route alignments south of downtown Oakland were initially considered. Subsequently, three transit service technologies (i.e., light rail transit (LRT), BRT, and enhanced bus\(^2\)), two northern route alignments and two downtown Oakland route alignments were evaluated against the following nine service objectives:

1) Improve access to major employment and educational centers and enhance connections to other AC Transit services, BART, ferry services, and other transit providers
2) Improve transit service reliability
3) Provide frequent transit service
4) Ensure security, cleanliness, and comfort waiting for or riding on transit
5) Support transit-oriented residential and commercial development
6) Increase the percentage of trips made by transit and reduce the percentage by automobile
7) Identify a set of transit improvements that has a high probability of being funded
8) Improve ease of entry and exit on vehicles for all transit riders including persons with disabilities

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\(^1\) As required by Title 23, Part 450.318 of the Code of Federal Regulations, corridor planning studies are required when a major transportation improvement, potentially funded by federal sources, is planned in a metropolitan area.

\(^2\) Bus service in mixed flow lanes, but with enhancements such as transit signal priority and queue-jump lanes.
9) Provide an environmentally friendly transit service that contributes to air quality improvement

As described in Chapter 5 of Volume 2 of the MIS Final Report, alternative routes were identified to serve major employment and educational centers within the corridor described above. In addition, connections to other transit systems and support of transit-oriented residential and commercial development were considered in defining and analyzing alternative alignments. As discussed in Chapter 6 of Volume 2 of the MIS Final Report, the following route alignments were considered:

**North of downtown Oakland:**
- Shattuck Avenue/Telegraph Avenue
- Telegraph Avenue
- College Avenue/Broadway
- Telegraph Avenue/Broadway (via 51st Street)

**Downtown Oakland:**
- North/south through service (i.e., on BRT route from Berkeley to San Leandro, using Broadway to International Boulevard via either 14th Street [both directions of travel] or a combination of 11th Street [eastbound] and 12th Street [westbound] in downtown Oakland)
- Jack London service (i.e., two BRT routes, one from Berkeley to near Jack London Square; another from downtown Oakland to San Leandro)

**South of downtown Oakland:**
- Foothill Boulevard/Bancroft Avenue
- International Boulevard/East 14th Street
- San Leandro Street/San Leandro Boulevard

2.1.2 **DEDICATED TRANSIT LANES**

With respect to dedicated transit lanes, the following service objectives identified in the MIS process are applicable:

2) Improve transit service reliability
6) Increase the percentage of trips made by transit, and reduces the percentage by automobile

As summarized in Chapter 8 of Volume 2 of the MIS Final Report, special transit lanes were considered to be one of the key considerations in satisfying existing transit customers and winning new customers, given the moderate to severe traffic congestion at several locations along the proposed alignment (CS, 2002x, p. 53). As described on page 27 of Chapter 6 of the Summary Report of the Final MIS (CS, 2002y), BRT would provide a 25 to 40 percent travel time improvement as compared to existing bus service, due primarily to special transit lanes and proof of payment ticket validation. By contrast, enhanced bus service—which would implement
some BRT\textsuperscript{3} elements but use mixed flow traffic lanes—would reduce travel time by 10 to 15 percent versus existing bus service. It should be noted that certain segments of the proposed project would provide BRT service within mixed flow lanes. These locations were selected based on unique local conditions, such as narrow roadway widths and potential conflicts with existing AC Transit local bus service.

2.1.3 **Median-Running BRT Lanes**

Where dedicated transit lanes are proposed, the majority would be provided in the median of the roadway segment. Within a two-way roadway, median-running lanes minimize conflicts between BRT vehicles and right turning vehicular traffic, which would not have to cross the path of the BRT in order to execute right turns. Left turning vehicles, from the along-BRT street to a cross street would need to cross the BRT lanes, but in all cases this would be done from a designated, signal controlled left-turn bay. BRT through and auto left-turn movements would be on separate phases of the traffic signal cycle. In addition, median-running transit lanes facilitate access to and from on-street parking for vehicular traffic. Vehicular traffic would operate in the lane next to the parking lane and not need to cross the BRT lane or other barriers to access the parking lane.

Side-running shared transit lanes are provided primarily along one-way portions of the proposed alignment (i.e., one-way streets such as 11\textsuperscript{th} and 12\textsuperscript{th} streets in downtown Oakland) where they present few conflicts with existing traffic patterns. The right-most through traffic lane would be designated for BRT vehicles only with the exception of at intersections where right turning vehicles could enter the lane just prior to turning and where autos needed to enter a BRT lane to access curb parking next to the BRT lane. Side-running lanes are generally less desirable than median-running lanes where right-turn conflicts are common and frequent local access to midblock land uses and parking is needed.

Median-running transit lanes will be designed to retain as much of existing raised, landscaped medians as possible, being aligned on the outside of the median (that is, the landscaped median would be between the two BRT lanes). Median landscaping adjacent to the transitway is part of the federally funded Small Starts BRT project, as it helps to delineate the exclusive lanes. Existing landscaped medians along International Boulevard from approximately 81\textsuperscript{st} Avenue to the San Leandro boarder (Durant Avenue) would be retained. In fact, landscaped medians would be added where feasible as part of the project from approximately 36\textsuperscript{th} Avenue south along International Boulevard.

The East Bay BRT Project is defined to include the purchase of new dual-sided door buses, where boarding and alighting can occur on either the left-side or the right-side of the bus. These buses allow for the provision of platforms between the opposing median-running transitway lanes, as opposed to split platforms for each station, located between each transitway lane and the general purpose lanes. A single platform can serve both directions of travel, allowing for a more efficient use of station space. This reduces both project cost as well as parking space displacement.

\textsuperscript{3} LRT would provide an additional two to 10 percent reduction, in addition to BRT travel time decreases.
2.1.4 **BRT AND BART**

It should be noted that existing local bus service in the project corridor, although generally parallel to BART, carried approximately 20 percent of AC Transit’s total ridership at the time of the MIS Final Report (CS 2002y). The MIS Final Report recommended the BRT improvements now under consideration. Currently, bus services along the Telegraph Avenue corridor between central Berkeley and downtown Oakland and along the International corridor between downtown Oakland and San Leandro BART carry about 15 percent of AC Transit’s ridership (measured in terms of daily bus boardings). Bus trips along the proposed project alignment are typically different than transit trips made on BART; average bus person-trip lengths are shorter. (Cambridge Systematics Ridership Forecasts, 2009). Because bus trips connect to the numerous activity centers in between widely spaced BART stations, BRT is expected to better serve those neighborhoods that are not well served by BART. Bus riders are typically from lower income, more transit dependent households than BART riders, according to rider surveys conducted on both systems throughout the years (see, for example, 2002 *On-Board Passenger Survey*—*Systemwide Results, October 2003*, Alameda Contra-Costa Transit District, prepared by the Public Research Institute; 2008 *BART Station Profile Study*, BART Marketing and Research Department. AC Transit adult rider median household income was under $30,000 per year in 2002; BART rider median household income was more than twice that—approximately $80,000 in 2008. Even adjusting for the time difference between the two surveys, AC Transit riders are predominantly from lower income households compared to BART riders). Thus, despite the project’s physical length and the fact it sometimes parallels BART, it will serve different travel markets reflecting the fact existing and expected future bus travel behavior is much different than BART travel behavior.

As discussed above, BRT alignment alternatives were defined to maximize service to the main transit markets in the corridor; specifically, education and employment centers. As described in Chapter 2 of the Summary Report of the MIS Final Report, the proposed project alignment is expected to better serve approximately 45 percent of the future travel market projected to access portions of Berkeley, Oakland, and San Leandro as compared to existing BART and AC Transit service.

2.1.5 **BRT VERSUS BART FEEDER BUS SERVICE**

As discussed in Section 1.3 of the Final EIS/EIR, one of the four purposes of the proposed project is “improve transit service and better accommodate high existing bus ridership.” Although consideration of an enhanced feeder bus service in the study corridor as opposed to a new BRT service has been suggested by commenters, neither the MIS nor the Draft EIS/EIR evaluated such an alternative. This is because feeder service would be predominantly east-west and serve lower density and higher income neighborhoods. BART feeder buses would likely serve a similar demographic group as currently rides BART. It was determined in prior systems-level planning studies not to meet travel needs in AC Transit’s high demand corridors and therefore does not fulfill the proposed project’s purpose as described above. The Alternatives Modes Analysis (April 1993) for example, looked at the major bus travel corridors in the AC Transit service area and recommended high capacity modes (i.e., rapid bus, BRT, or LRT) be evaluated as the preferred means for improving mobility in a select few corridors. The MIS
continued the evaluation of modes and service alignments in the Berkeley-Oakland-San Leandro corridor and recommended a preferred mode (BRT) and alignment (Telegraph Avenue/International Boulevard) for a major transit investment that would achieve various transportation goals and service objectives established in a comprehensive public and agency involvement process.

2.2 Current and Future Systems Design

Various agencies, businesses, organizations, and/or citizens commented on the Draft EIS/EIR with respect to the design of station facilities and the BRT vehicles. Most of the comments related to one or more of the following:

- What are the interior and exterior features of the proposed BRT vehicles?
- What specific amenities will be provided at each station?
- What considerations have been given to safety and security at the proposed stations?
- Will the stations and buses be accessible to the elderly and persons with disabilities?
- How will the station design accommodate bicyclists and other transit/shuttle service in the corridor?
- Will wayfinding signage be used to direct BRT riders to nearby BART stations?
- Will the design of each station be identical or will any aesthetic adjustments be made to fit the character of the surrounding community?

2.2.1 BRT Vehicles

Section 2.1.2 provides a description of the proposed features of the BRT vehicles and stations of the LPA. The East Bay BRT Project includes the purchase of new dual-sided door buses, where boarding and alighting can occur on either the left-side or the right-side of the bus. These buses allow for the provision of platforms between the opposing median-running transitway lanes, as opposed to split platforms for each station, located between each transitway lane and the general purpose lanes. A single platform can serve both directions of travel, allowing for a more efficient use of station space. This reduces both project cost as well as parking space displacement. BRT buses will be low-floor articulated, approximately 60 feet in length and 8.5 feet wide, with average seating for 43 and full load capacity of 75 passengers.

AC Transit will be required to procure a fleet of 31 dual-sided door buses for peak-period service plus seven spares for the opening of the East Bay BRT system.

2.2.2 Station Amenities and Security

As discussed in Section 2.3.2.1, for the comfort and convenience of passengers, stations in Oakland and San Leandro would be equipped with windscreens and framed canopy shelters with benches, ticket vending machines and ticket validators, and passenger information kiosks with active data displays. Safety and security features would include raised platforms that minimize the distance from the platform to the low-floor buses, well lit canopy shelters that are open to view from the street, emergency telephones/intercoms at all major transfer stations, and tactile warning bands along platform edges. All stations would be under surveillance by on-site security cameras. Monitoring would be possible at AC Transit’s operations control center for East Bay
BRT service. Fare inspectors and law enforcement officers would provide another layer of safety and security protection. These individuals would be available to assist passengers during an emergency.

2.2.3 **ADA (Support for the Mobility Impaired)**

All station elements and routes of access to and from the station from the street crosswalk or sidewalk would be ADA-compliant (i.e., conform to design standards established by the Americans with Disabilities Act of 1990 [ADA], as amended). Buses would include a ramp that could be extended to provide a continuous surface between the bus floor and the platform for individuals with limited mobility and/or wheelchairs. Tactile warning bands along platform edges would warn visually impaired passengers that they are at or approaching the platform edge. Passenger kiosks would have ADA-compliant audio capability for announcing information such as actual bus arrival times.

2.2.4 **Bicycles and Other Modes/Wayfinding**

The proposed BRT project includes features to accommodate users of other transportation modes including bicycles, local buses, and BART. At certain locations, where local buses also could stop to pick up and drop off passengers, stations would be extended to 120 feet to accommodate two buses simultaneously. For additional information regarding proposed facilities to accommodate bicyclists and other transit users, see Section 3.3.3.2 of the Final EIS/EIR. Bicycle racks would be provided on the front of the BRT vehicle, and wayfinding signage would be provided at stations to facilitate access to BART and other transit service.

2.2.5 **Station Aesthetics**

The proposed stations would be relatively similar in appearance to each other; however, aesthetic adjustments may be made at individual stations in coordination with the Cities of Oakland and San Leandro to better fit the visual character of local settings.

2.3 Environmental

Individuals from a variety of agencies, businesses, organizations, and individual citizens commented on the Draft EIS/EIR regarding a range of environmental issues. Specifically, most of the comments focused on one or more of the following topics:

- Environmental impacts⁴:
  - What are the proposed project’s impacts with respect to greenhouse gas emissions and global climate change?
  - What visual resource impacts would result from the removal of street trees?
  - Substantiate the statement that the proposed project would not result in an adverse impact to cultural resources within the City of Berkeley.
  - What are the noise and vibration impacts of the proposed project?

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⁴ Resource-specific responses to common comments on environmental impacts are provided for parking (Section 7.9.9), pedestrian/bicycle impacts (Section 7.9.10), and traffic (Section 7.9.16)
2.3.1 **GLOBAL CLIMATE CHANGE**

The proposed project impacts on global climate change are addressed in Section 4.14. This analysis accounts for changes to Appendix G of the CEQA Guidelines to provide significance thresholds for greenhouse gas emissions and project consistency with emission reduction plans. The results of this analysis indicate that GHG emissions likely to be generated by implementation of the East Bay BRT Project will not have a “cumulatively considerable” impact on global climate change.

2.3.2 **VISUAL QUALITY**

As discussed in Section 4.6 of the Final EIR/EIS and the Visual Impact Analysis addendum (Kimley-Horn, 2011) the proposed project would result in changes to the existing visual quality and character of the project corridor in locations where proposed station facilities may noticeably stand out among existing dominant visual resources (e.g. historic districts, artwork, or monuments), or where characteristic landscaping and streetscape elements would be removed to accommodate proposed traffic mitigation. Specifically, adverse visual effects were identified for portions of the corridor on International Boulevard (at 34th Avenue, 82nd Avenue, 98th Avenue, and Durant Avenue).

Project effects were determined to be slightly adverse for these portions of the corridor due to removal of medians and/or landscaping (including trees), and/or partial obscuring of views of storefronts with the proposed bus platforms and associated station elements. While it would not be feasible to replace existing medians or landscaping at a couple of locations due to right-of-way constraints, the total area of landscaping to be provided by the project would be substantially larger than the total area removed. City guidelines would include requirements and limitations on height, bulk, setback, landscaping, and character. Compliance with these guidelines and coordination with the cities Oakland and San Leandro during the design review phase would help to ensure that the overall visual character and quality of the corridor is not adversely affected.

2.3.3 **CULTURAL RESOURCES**

Proposed improvements in the City of Berkeley are limited to ticket vending machines, passenger information, and shelters. BRT would operate in existing mixed flow lanes. No
dedicated lanes are proposed; therefore no street improvements or manipulation of other existing features that would impact historic resources are anticipated. As discussed in Section 4.7, monitoring by a qualified archaeologist during the project’s construction would determine whether any underground or otherwise unidentified resources are disturbed. Impacts to identified cultural resources in the City of Berkeley would be less than significant.

2.3.4 **Noise and Vibration**

Noise and vibration impacts are addressed in Section 4.13. No substantial impacts have been identified from the project. The noise and vibration analysis reflects updated (year 2009) traffic data and the specific noise and vibration characteristics of the proposed transit vehicles upon project opening. In the long term, as the AC Transit fleet turns over and technology advances, noise and vibration effects from bus operations can be expected to lessen.

2.3.5 **Energy Consumption and Air Quality**

The proposed project’s impacts to energy consumption are described in Section 4.15. The air quality section (see Section 4.12) addresses the emissions characteristics of the proposed transit vehicles. Both the energy and air quality effects of BRT operations, which are projected to be minimal, can be expected to improve relative to the conclusions presented in this document as new vehicles are added to the AC Transit fleet. This analysis takes into account AC Transit’s intent to procure new 60-foot articulated dual-sided diesel-electric hybrid buses by 2015. It also accounts for improved fuel economy for this type of bus operating in 2035 traffic conditions.

2.3.6 **Induced Growth and Community Impacts**

The proposed project’s impacts on growth inducement are covered in Section 4.2. As discussed in this section, the East Bay BRT project would not by itself cause rapid development but when supported by cities’ transit-oriented development policies, could support Smart Growth, which is encouraged and planned for within the region. Community impacts (including environmental justice) are described in Section 4.4. As discussed in this section, incorporation of mitigation measures would reduce low-income and minority impacts to a less than significant level. The major adverse effects of the project on environmental justice populations are temporary and will occur during construction, when traffic and, to some extent, bus service would be disrupted by transitway, BRT station, and roadway construction. Local access to businesses along the project alignment will also be temporarily disrupted although detours and reroutes would be designated. In the long-term the mobility benefits from higher bus frequencies, shorter transit travel times, and increased transit capacity, among other benefits, are considerable. Transportation benefits of the proposed project will accrue to all area residents, regardless of socioeconomic status.

2.3.7 **CEQA Compliance**

This is a project level EIR as defined in Section 15161 of the 2010 CEQA Guidelines. The Draft EIS/EIR fully evaluated\(^5\) four Build Alternatives with respect to both environmental effects and consistency with the proposed project’s purpose and need. As discussed above, numerous transit mode and route alignment options were previously evaluated in the two-year MIS process. Also,

\(^5\) Unlike CEQA, NEPA requires that all project alternatives be evaluated at an equal level of detail.
Section 2.2 describes alternatives previously considered but withdrawn. Chapter 6 provides a comparison of the LPA to No-Build conditions and other previously withdrawn alternatives as required by Section 15126.6 of the 2010 CEQA Guidelines.

2.4 Fares

Public review of the Draft EIS/EIR resulted in comments from individuals, organizations, and agencies regarding fares on the proposed BRT project. Most of the comments touched on one or more of the questions listed below:

- Will fare increases be necessary to cover the projected operations and maintenance (O&M) shortfall identified in the Draft EIS/EIR?
- Will the BRT service be affordable?
- Will shared benefits package elements, such as a fare free zone, be implemented?
- How will fares be collected, both on and off the vehicle, and how will fare payment be enforced?

2.4.1 O&M Funding Shortfall

Chapter 8 summarizes the financial analysis of the LPA; as described, if sufficient financial capacity exists to pay for the LPA, then there will also be sufficient capacity to pay for the less costly DOSL Alternative.

As described in Section 8.2, funding to cover any increase in O&M costs of BRT service compared to the No-Build condition is expected to come from various sources including federal funds; future growth in local sales and property taxes the district receives to support its operations; and increased farebox revenues, among other sources. In fact, when accounting for fare revenues that offset a portion of operating costs, East Bay BRT service would generate more fare revenues than No-Build Rapid Bus service because it attracts substantially more riders. The net result is the total O&M shortfall for BRT is not significantly different from the O&M shortfall projected for the No-Build Rapid Bus condition. For the LPA, that shortfall is minor, roughly one percent. AC Transit has also expressed a commitment not to reduce the overall level of service, measured in terms of vehicles miles and/or vehicles hours of revenue service, in the project corridor or systemwide in order to provide East Bay BRT service. (Note: Service adjustments could well occur throughout time, as they have historically, to respond to changes in operating funds made available to the district. Such adjustments would not result from BRT service per se except, as noted, to streamline bus operations in the project corridor and match service levels to shifts in demand.)

2.4.2 Affordability

As discussed in Chapter 2, no special or higher fares are planned for proposed BRT service. The fare policy for the BRT is expected to be the same as on other AC Transit buses operating in AC Transit’s East Bay service area. BRT riders would be able to use the proposed project for the same fare as local transit service operated by AC Transit. Transfers would be possible between BRT buses and other buses and BART similar to how transfers are handled under existing
conditions throughout the AC Transit system. Tickets would be available at all current AC Transit sales outlets.

2.4.3 **Fare Reductions**

Fare reductions are not proposed either for BRT service or systemwide in the foreseeable future. As discussed in Chapter 8, reducing fares would generate more transit ridership, but the loss in fare revenue, and the probable concomitant need to reduce service due to a greater shortfall in operating income, could result in adverse transit service impacts. Service cuts would be expected to result in ridership loss and such losses would reduce any gain in ridership resulting from reduced fares.

2.4.4 **Free Fare Zone**

The proposed project does not assume implementation of any free fare zones (e.g., for local trips within a downtown or campus area), although such zones could be created in the future at the discretion of the AC Transit Board.

2.4.5 **Fare Collection**

With respect to fare collection, BRT service would differ from the rest of the system. Self-service, off-board fare payment/collection is proposed. Users would buy tickets at vending machines on passenger platforms or at existing ticket outlets. Monthly passes, multiride tickets, and Clipper tickets would be valid payment methods. Once on-board the bus, BRT riders would be required to show proof of payment (i.e., validated tickets) to fare inspectors monitoring the system at random. BRT ticket vending machines (TVM) would be located at all BRT stations within the corridor. TVMs would issue single and multiride tickets for those people who do not have a monthly pass, a Clipper pass, or tickets purchased elsewhere.

The AC Transit Board determines fare level policies. Fares are a function of the overall operating cost of the system and represent a small portion of the total operating cost. Systemwide, AC Transit recovers just under 20 percent of O&M costs from fares; BRT service is projected to perform better, achieving more than 40 percent coverage of O&M from fares. See the AC Transit website for information on current fares at [http://www2.actransit.org/riderinfo/](http://www2.actransit.org/riderinfo/).

2.5 **Ridership Forecasting and Modeling**

During public review of the Draft EIS/EIR, several comments were received regarding ridership forecasting and modeling. Many of the comments related to one or more of the following topics:

- What land use projections were used to forecast ridership?
- What share of BRT ridership will be diverted from the automobile mode, as compared to shifts from other transit modes? What share of BRT patronage is attributed to population growth?
- Please provide BART ridership loss to the proposed project by BART station, rather than systemwide numbers.
Why was BRT ridership forecast based on the “walk to local transit” mode? Should the model incorporate other features of BRT that could make this mode more attractive than local bus service?

What refinements were made to the Alameda Model to improve route choice estimation?

To what extent would ridership be stimulated by fare reductions?

Does the modeling identify the proportion of riders who would travel the entire length of the alignment?

Can disaggregated ridership data be provided with respect to origin and destination?

Substantiate the statement on page 1-15 regarding transit rider preferences with respect to travel time. Specify the survey methodology.

2.5.1 Ridership

The ridership model was populated with updated future year land use based on Association of Bay Area Governments (ABAG) Projections 2009, which is the latest land use data set available for the region, and land use allocations by Traffic Analysis Zone (TAZ) from ABAG Projections 2007, the latest allocations that were available. As discussed in Section 3.1, at the time of developing the ridership forecasts, ABAG projections 2009 had city-wide totals for population and employment projections, but had not yet at the time split these into the finer grained TAZ allocation required for the forecasting effort. ABAG Projections 2007 TAZ allocations were available and used for this analysis.

2.5.2 Walk to Local Transit Mode

Walk access to transit, either BRT directly or to transit lines offering transfers to and from BRT, was assumed to be the main—and preferred—form of access. There are multiple local and transbay bus routes that intersect the corridor and “feed” existing Route 1 and Route 1R services. BART and several other intercity and local transit providers also connect to the corridor. There are no planned park-and-ride facilities serving BRT in the project plans. Park-and-ride to BRT was assumed not to be possible at BART and other potential transit parking facilities. This gives a more reliable and realistic framework for estimating future BRT ridership, which would result from walk (or bike) and other transit access, not park-and-ride.

2.5.3 Alameda Model

As discussed in Section 3.1, a refined version of the Alameda County Transportation Commission’s Countywide Travel Model (Alameda Model) was developed to model both transit ridership and traffic conditions. The Alameda Model is a modified version of the model that was used for the project’s Draft EIS/EIR. Additional traffic analysis zones (TAZ) were added, along with more collector streets to provide a greater level of network detail. The Alameda Model was populated with updated future year land use based on Association of Bay Area Governments (ABAG) Projections 2009, which is the latest land use data set available for the region, and land use allocations by TAZ from ABAG Projections 2007, the latest allocations that were available. As discussed in Section 3.1, at the time of developing the ridership forecasts, ABAG projections 2009 had city-wide totals for population and employment projections, but had not yet at the time split these into the finer grained TAZ allocation required for the forecasting effort. ABAG Projections 2007 TAZ allocations were available and used for this analysis. The Alameda Model
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has three transit modes available for use: local bus, express bus, and BART. To be conservative, AC Transit modeled the new BRT route using the local bus mode, without making any upward adjustment to ridership for LRT-like amenities (such as built-up station structures, ease-of-boarding, ease-of-use, etc.).

The transit model was validated by comparing transit boardings, alightings, and loadings predicted by the transit model for the year 2009 to actual data collected on existing routes currently providing service along the alignment (i.e., Routes 1 and 1R).

For both the Draft and Final EIS/EIRs, the model’s transportation network—roadways, bus routes, rail lines, and other coded facilities—were checked to verify that they accurately reflect both existing (for calibration of the model) or future conditions (for forecasts of future travel demand). The calibration exercise, which is critical for a model to accurately represent travel behavior, was extensive and detailed. For the Final FEIS/EIR phase, TAZs were subdivided into smaller zones along the BRT corridor to improve route choice options. Individuals originating in or destined to those zones relatively near the BRT line and with convenient access to the service are the most likely users of BRT. In generating forecasts of BRT ridership during the Draft EIS, it was found that large TAZs could result in more users of BRT service than deemed reasonable; model adjustments to limit diversions to BART were implemented. The Final FEIS/EIR network and travel zone refinements eliminated the need for such adjustments.

FTA has been involved in enhancement of the model and ridership forecasts, to ensure that results meet requirements under the Small Starts process.

2.6 New Project Alternatives

Many comments were received regarding the consideration of other transit modes in the selection of alternatives as well as the selection of the BRT route and service. The most common comments generally reflected the following issues:

- What other transit modes were considered but rejected in the MIS and subsequent alternatives analyses? What was the justification for rejecting these alternatives?
- How was the route alignment and northern and southern limits of the route determined?
- Was grade separation (e.g., a tunnel) studied?
- Justify BRT service decisions including dedicated lanes, station spacing, and BRT vehicle frequency.
- How is the proposed project superior to the rapid bus concept (i.e., no-build)?

2.6.1 Transit Modes Considered but Rejected

The MIS studied a variety of vehicle/transit mode alternatives, some of which were ruled out due to high costs, unproven technology, or unsuitability for operations in a dense urban environment. These mode alternatives included heavy and high-speed rail, among others. LRT, BRT, and enhanced bus were identified as the alternatives that could best meet service objectives for the proposed project and needs of the travel market. LRT and enhanced bus were withdrawn by the
PSC as a result of engineering, environmental, ridership, and financial evaluations. A more detailed discussion of this analysis can be found in Section 2.1.1.

2.6.2 Preferred Route Alignment

As discussed above in Section 7.9.1, the MIS defined the service objectives for the new transit service in the corridor, identified and narrowed the corridor and vehicle/technology alternatives, evaluated the relative costs and benefits of those alternatives, and identified an LPA for further study.

The Berkeley-Oakland-San Leandro corridor was selected for transit improvements based on transit needs and transit market opportunities in this area. At the time of the MIS and Draft EIS/EIR technical studies, bus routes in this corridor carried 40,000 riders a day—nearly 20 percent of AC Transit's total ridership and roughly the number of passengers carried by many LRT systems in California. This was compelling evidence of transit demand and market opportunity in the employment and activity centers located between Berkeley and San Leandro.

As part of the MIS, AC Transit identified the alignments that would best serve the market opportunities and met service objectives. The corridor was divided into three segments—Berkeley, Oakland, and San Leandro—and in each segment several alignments were compared by ability to serve market opportunities. Based on this analysis and preliminary consideration of environmental and social impacts, the LPA route alignment included primary use of Telegraph Avenue in the northern portion of the corridor, and International Boulevard/East 14th Street in the southern portion (AC Transit Berkeley/Oakland/San Leandro MIS, Volume 2: Development of Alternatives, September 9, 2002). This decision is documented in Section 2.1.1.

Using the MIS LPA as a base, a number of alignment variations were evaluated further in the Draft EIS/EIR and alignments considered and withdrawn were documented in Section 2.4.2 of that document. Based on the findings of the Draft EIS/EIR, and input provided by the agencies traversed by the proposed project, a final LPA has been determined and is described in detail in Section 2.3.2.

2.6.3 Grade Separation

Grade separations of transit service, either bridging over busy intersections or tunneling under them and other obstacles were given only limited consideration as ways to further improve bus speeds and reduce traffic conflicts. Such features are costly and difficult to construct, especially in built-up urban areas. The added cost was not deemed affordable nor would it be consistent with the objective of BRT—to provide low- to moderate-cost operational improvements for a limited capital investment on a per mile basis.

2.6.4 Dedicated Lanes, Station Spacing, and Vehicle Frequency

One of the main features and benefits of BRT is having a bus only, grade-separated or at-grade exclusive right-of-way. The design for this project is influenced by national and international research showing that having dedicated bus lanes with exclusive BRT operations provides a high level of speed and reliability, especially in congested corridors. There are certain limited
segments of the corridor where dedicated bus lanes are impractical and mixed-flow lanes are more appropriate. This occurs when dedicated bus lanes impede local bus operations that would need to be maintained, when there is a major local planning process already underway, when there are unique circumstances in roadway configuration, when there is low vehicular traffic, and/or when the roadway width is narrow. In addition, the City of Berkeley has rejected BRT within dedicated lanes within the city limits. Due to this change, BRT service within Berkeley would revert to mixed-flow lane operations, consistent with existing transit service along this portion of the route alignment. The proposed project is designed to maintain the goal of a high level of speed and reliability in BRT operations where feasible and practical. Station spacing and vehicle frequency also support this goal, as discussed in Section 7.9.15.

2.6.5 **BRT versus Rapid Bus Service (Oakland Bus Bulbs Alternative)**

BRT and Oakland Bus Bulbs Alternative service can offer similar benefits, such as quicker boarding and alighting, and preboarding fare payment; however, BRT offers distinct additional benefits in that service is more reliable, transit signal priority (and therefore speed and reliability) is enhanced because bus travel is more predictable, and dedicated lanes and LRT-like stations give BRT a stronger identity and attractiveness to users. Transit operations with mixed flow traffic operations and bus bulbs would be subject to degradation over time as congestion increases. By contrast, the time savings gained by the use of dedicated bus lanes is preserved into the future. Further information on the Oakland Bus Bulbs Alternative is documented in *AC Transit Oakland Bus Bulbs Analysis: Telegraph – International Corridor* (Cambridge Systematics, 2011).

2.7 **Implementation and Operations**

A number of the public review comments focused on how the proposed project would operate, the funding implications on existing local transit service due to project implementation, and construction-related impacts and mitigation. Most of the comments on this topic related to one or more of the following issues:

- How will BRT service be adjusted in the event that the dedicated lane is blocked due to an incident, bus breakdown, unauthorized parking, or other obstruction?
- Will local bus service be disrupted or discontinued if there is a funding shortfall for the BRT project?
- What mitigation measures are proposed to alleviate construction-related impacts on traffic circulation, access, and parking?

2.7.7 **BRT Operations Adjustments During Bus Lane or Traffic Lane Blockages**

Section 2.2.2.3 provides a discussion of BRT service adjustments to be implemented in cases where the transitway is blocked, as described below:

When in revenue service, BRT buses would normally operate only in their designated lanes. As is standard for mixed traffic, buses would operate on the right side of a bidirectional median transitway or next to the right side parking lane or curb when in a one-way side-running
transitway. Buses normally would not pass other buses; however, in the event of a breakdown in operations, for example a bus blocking its normally used BRT lane, other buses could pass the blockage by moving to the opposite bus lane or traffic lane to the right, as long as there was no oncoming bus (median transitway) or other conflicting traffic. Buses in a median transitway also could leave the transitway and move to the right side adjacent mixed traffic lane in order to bypass an obstacle. A bus stalled in the station could be bypassed similarly, although passenger boarding and alighting would be allowed only at stations or designated curb stops where passenger boarding and alighting would be safe. All failure operating procedures for East Bay BRT service would be incorporated in a bus operations plan, and operator rules would be established by AC Transit.

At times, the adjacent traffic may be blocked due to an accident, double parked vehicle, police action, construction or other obstruction. In these cases, motorists will be permitted to use the dedicated bus lane to pass the obstruction. To allow a safe merge of non-transit vehicles into the bus lane, there will be no substantial physical barriers separating the mixed flow traffic lanes from the bus lanes. Individual motorists would be responsible for merging only when no bus is approaching and it is safe to do so. Motorists would be prohibited from using the bus lanes at all other times.

2.7.1 **FUNDING**

Following circulation of the Draft EIS/DEIR in 2007, AC Transit performed a detailed value analysis of the capital costs of a BRT project in an effort to reduce costs and qualify for federal funding. From the perspective of its construction, AC Transit has been able to identify a more cost-effective, fundable project as a result. The preferred project will be built with a combination of local, state and federal dollars. The federal Small Starts funding of $75 million is for BRT improvements only; they cannot be used for other projects.

BRT operations are not projected to cost substantially more than for Rapid Bus operations, when accounting for the offsetting effects of higher passenger revenues due to increased ridership. The unit cost per passenger carried is estimated to be less for BRT than for existing rapid bus service (see Chapter 9, Evaluation of Alternatives, which includes bus operations performance measures for both the No-Build/Rapid Bus and the East Bay BRT alternatives). New BRT service is not anticipated to cause a disruption or cutback in other district services. If other services in the study area change in the future, it would be to better coordinate with BRT service. Overall, AC Transit is committed to maintain at least the same level of service in the study area, measured in terms of vehicles miles of service, after BRT is implemented compared to the No-Build condition.

2.7.2 **CONSTRUCTION IMPACTS**

Table S.4-1 summarizes impacts and avoidance, compensation and mitigation measures for project-related construction impacts including traffic circulation, access, and parking. As described in this table, one lane of vehicular traffic would be maintained in each direction during business hours, with pedestrian access to be maintained during construction. Where necessary, traffic detours would be designated and bicycle traffic would be rerouted to parallel roadways.
during construction. While the implementation of the East Bay BRT Project will result in the permanent removal of curbside parking spaces in certain segments of along-BRT arterials (see Chapter 3, Section 3.4), mitigation measures are proposed to maintain parking availability for retail/commercial uses at an acceptable level. During construction there will be additional temporary loss of parking in some segments of the along-BRT arterials. This will occur where the roadway and curbs are being reconstructed to accommodate BRT and related project improvements. In most instances, because the loss is temporary, no replacement of the parking lost is proposed. However, as discussed in Section 4.16 (page 8 of the technical memorandum AC Transit East Bay BRT Project, Response to City of Oakland Draft EIS/EIR Comment Letters [CS 2008]), AC Transit and its contractors will be responsible for adequately signing traffic, pedestrian, and bicycle routes; detours and alternative routes; and parking access.

Because of the importance of access and parking to retail/commercial uses, AC Transit will provide signing and other information to direct motorists to alternate parking locations that serve the affected retail/commercial uses. Where parking is especially constrained, AC Transit will work with affected communities, and their respective cities, to provide temporary expansion of parking through shared use of existing private or otherwise restricted parking lots or vacant parcels. AC Transit will work with communities to establish construction staging and traffic control at a localized level of detail. Local agencies having jurisdiction of these areas would approve any traffic handling or construction staging plans.

2.8 Outreach and Marketing

Comments were received from agencies, businesses, organizations, and citizens addressing the outreach efforts associated with the Draft EIS/EIR and the marketing of the BRT system during operation. Most of the comments related to this topic touched upon one or more of the following issues:

- What public outreach procedures were conducted in support of the proposed project?
- How will the proposed project be marketed to prospective riders, particularly those who are not transit dependent?
- Are there plans to “brand” the project?

2.8.1 Public Outreach

Public hearing and notification requirements during the NEPA process are addressed in 23 CFR 771.111 and 771.119(e) and RCW 47.52. This regulation outlines when a public hearing or opportunity for public hearing is required. The rule also specifies that the local agency should advertise the Notice of Action (NOA) through local media to solicit public comment and circulate the Draft EIS/EIR to those agencies with jurisdiction by law, parties that have expressed an interest, either through the scoping process or in response to the NOA, and other entities potentially affected by any of the alternatives. The circulation period must last a minimum of 45 days and a public hearing must be held with at least 15 days prior notice. In addition, outreach to the public and to responsible and trustee agencies was carried out in accordance with CEQA Guidelines, Sections 15083 and 15085 through 15087. A Notice of Preparation (NOP) was circulated to local, state, and federal agencies in May 2003. At that time,
the environmental documentation was issued a State Clearinghouse number (i.e., 2003052070). Early public consultation for the proposed project was conducted in the form of numerous meetings, workshops, and other public involvement efforts. The Draft EIS/EIR and a Notice of Completion form were submitted to the State Clearinghouse in April 2007.

Copies of the Draft EIS/EIR were distributed to the list of key stakeholders as identified in Appendix C, Distribution List. The document also was made available for review at AC Transit’s offices, at Caltrans’ District 4 offices in Oakland, and on the AC Transit and Caltrans’ websites. The document was circulated for 45 days, during which time a public hearing was held. Information about the availability of the Draft EIS/EIR was mailed to residents and businesses within 300 feet of the corridor. Notice of the availability of the environmental document and the date, place, and time for the public hearing was provided to the public through print ads and by other means consistent with environmental regulations. All written comments received during the comment period have been responded to in writing, either by modifying the project, modifying or supplementing the analysis presented herein, making factual corrections, or explaining why the comments do not warrant modifications to the document or project.

This level of public notification meets the spirit and intent of the NEPA regulations. Section 7.1, documents dozens of meetings held in the project corridor in all three cities since 1999, providing ample opportunity for public comments and involvement in the project decision-making process. This chapter and Volume 2 of this Final EIS/EIR also include the responses to the comments received during the public meetings and the circulation period for the Draft EIS/EIR.

2.8.2 MARKETING TO PROSPECTIVE RIDERS

As the preferred alternative for the East Bay BRT project is about to begin revenue service (target date—2015), AC Transit will develop and systematically implement a public information campaign to inform potential riders about the new service, including how to use it. Many elements of any such campaign will be similar to the actions AC Transit undertakes in advance of any major service change; the District is experienced in, and recognizes the importance of, informing the public about change. However, the proposed BRT service includes features not currently available to riders, such as BRT stations with level boarding and alighting of buses, self-service, and off-board fare payment and collection, and introduces a new operating environment for buses: dedicated transit lanes in the median in many areas and shared transit lanes next to the parking lane or curb in limited segments. For existing and prospective bus riders to safely and conveniently take advantage of BRT service, general and targeted education will be undertaken. Public service announcements will be made; written and verbal communications will describe when the service will be initiated, the hours and frequency of service, the steps riders should follow for fare payment, the transit information and safety and security features provided at stations, whom to contact with service questions, and how to respond and/or whom to contact in emergency situations, among other rider information.

Outreach to public and private schools along the corridor will be undertaken to ensure that children and young adults understand the changes in store and how to safely use new BRT service. School-age youth are a large transit dependent population relying on bus service for
mobility. As BRT service will replace existing Route 1R and Route 1 service along the corridor, AC Transit will provide information on-board Route 1R and Route 1 buses to notify these riders of the pending transition BRT-only service in the corridor. Notices will also be provided on connecting bus services and at major transit facilities along the project corridor. Finally, additional District staff will be available during the first days of BRT revenue operations to assist riders in using the service.

2.8.3 PROJECT BRANDING

AC Transit will hire a marketing firm to create a brand and a marketing campaign for the BRT project. A new logo will be developed for use by AC Transit after adoption of this document.

2.9 Parking

During the public review of the Draft EIS/EIR, a number of comments were received addressing the proposed project’s parking impacts. The majority of these comments on this topic related to one or more of the following issues:

- Provide more detail about the timing of the parking studies.
- How will parking loss be mitigated?
- To what extent will parking loss lead to additional parking demand in nearby residential areas?
- To what extent would parking relocation adversely impact trip duration?

2.9.1 PARKING SURVEYS

Refer to Section 3.4 for a discussion of parking impacts along the entire corridor. Detailed parking surveys were conducted along the corridor to measure parking use and peak parking demand from retail and other commercial land uses. A description of the survey methods including dates of surveys is contained in this section.

2.9.2 PARKING SUPPLY, RELOCATION, AND MITIGATION

Under the LPA, on-street parking supply along the project alignment may be displaced to accommodate dedicated travel lanes or various types of bus stations (i.e., median- or side-running), proposed streetscape designs, or other required roadway improvements to mitigate traffic impacts. The resulting impact is the loss of some on-street parking to local businesses. Visitors to these neighborhoods may be required to park further away (usually within one to two blocks).

Because parking occupancies can vary substantially on a block-to-block basis, AC Transit would find sufficient parking (either on-alignment or on cross streets) such that the utilization of the spaces on a multiblock (or segment) basis does not exceed 85 percent of spaces remaining post-BRT\(^6\). The 85 percent utilization number is based upon research studies that indicate that parking usage achieves optimal efficiency when occupancy is between 85 and 95 percent (The Dimensions of Parking, 4th Edition, Urban Land Institute and National Parking Association, 2009).

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\(^6\) Spaces post-BRT include metered spaces to be replaced, if any, plus those spaces unaffected by BRT and other project improvements.
Replacement of displaced metered spaces at a one-for-one ratio also is identified in this document as a mitigation measure. In areas where the commercial activity is lower fewer impacts were identified because the existing parking utilization is low. As indicated in Section 3.4, mitigation for parking impacts consists of identifying new replacement parking or substitution parking. AC Transit would help fund or build additional parking supply in new surface lots or in structures that are under development or planned by other entities. New supply is not needed in all cases and parking supply will be created by substituting underused and unrestricted parking for time-restricted spaces that will increase free parking available through increased turnover.

Metering or time restriction of nonresidential cross street curb space would be implemented as mitigation to minimize the effect of spillover to adjacent neighborhoods. With metering of unrestricted spaces, the parking turnover will increase, maximizing and increasing the availability of the supply and minimizing the potential for commercial visitors to park in residential spaces.

2.10 Pedestrian/Bicycle Impacts

Many of the comments on the Draft EIS/EIR pertaining to pedestrian and bicycle impacts addressed one or more of the following topics:

- How will the proposed project facilitate safe and convenient bicycle and pedestrian access to and from the BRT stations and vehicles?
- What impacts would the proposed project have on the quality of the pedestrian or bicyclist experience?
- To what extent will traffic mitigation measures impact pedestrian and/or bicycle accessibility in the vicinity of the proposed project?
- How will traffic diversion to nearby residential streets impact pedestrian and bicycle accessibility?
- Substantiate claims regarding “bicycle friendliness” of the proposed project.

For more detailed descriptions of impacts and accommodations to bicycles and pedestrians, see Section 3.3 Non-Motorized Transportation.

2.10.1 Bicycle Impacts

All bicycle facilities proposed by the three cities as shown in their adopted bicycle master plans in the project alignment have been integrated into the cross section drawings of the project (see the bicycle maps for each city in the project corridor in Section 3.3). Only minor modifications were made from the adopted plans in order to fit the bicycle facilities into the cross sections, which include narrowing lanes near the intersections to make room for turn lanes. In some instances, “sharrows” are used to merge bicycles around the bus stops. Bike lanes are shown as 5 feet wide in each cross section where bicycles are accommodated.

The proposed addition or expansion of bicycle lanes to Telegraph Avenue, East 12th Street, and International Boulevard is a significant improvement for cyclists, creating dedicated facilities for
uninterrupted bicycle travel over long distances; however, since the City of Berkeley voted to accept the BRT project without the dedicated bus lanes, any improvements to bike lanes in Berkeley are no longer part of the BRT project and will be funded and implemented separately by the City of Berkeley. Thus, wherever bike facilities exist or are proposed by the cities of Berkeley, Oakland and San Leandro along the BRT alignment, they will be retained with minor modifications by the East Bay BRT project.

AC Transit is evaluating allowing bicycles to be brought into the BRT buses. Raised platforms at station areas would allow bicycles to be loaded directly onto the buses for level boarding. The decision on bicycle accommodation will be taken into consideration when the make and manufacturer of the BRT vehicles is selected. The ability of the interior configuration of the buses purchased to accommodate bicycles must be evaluated relative to space availability during peak hour travel. Other factors to be weighed include the vehicle and platform design to allow front-loading of bicycles, loading times that may delay the bus schedule, and the trade-offs between other passengers and cyclists needs for this accommodation. Bike storage racks are not being planned for the BRT stations due to space constrictions on the sidewalks and center medians.

2.10.2 PEDESTRIAN IMPACTS

All existing crosswalks would be retained unless it was determined that a particular crosswalk would present a safety hazard or an alternate crosswalk offered better pedestrian access. For the entire BRT corridor, 22 crosswalks were added at intersections, 35 crosswalks were modified to accommodate a new station or a new signal, and only 3 crosswalks were removed. At intersections with traffic signal control, high visibility crosswalks would be signalized as part of the traffic signal control system. At unsignalized intersections, crosswalks would be demarcated and in some cases where warranted for safety or to control high volume pedestrian movements, pedestrian signals would be provided, including indicators to oncoming traffic.

Pedestrians could cross traffic lanes and the BRT transitway only at any designated high visibility crosswalk. Pedestrians would be prohibited from crossing the median transitway between intersections unless a special crosswalk with warning lights for oncoming bus or auto traffic was provided (such “midblock” crosswalks currently exist in the vicinity of the University of California, Berkeley). See the project design drawings contained in Appendix A for exact locations of improved crosswalks, which occur at dozens of locations along the corridor.

At intersections with median stations or dedicated left-turn lanes, the mixed-flow traffic lane would be shifted closer to the curb than with most existing configurations. Traffic would then operate close to the sidewalk. Pedestrians would need to be aware of the proximity of traffic lanes at intersections, just like in the current traffic configuration.

With the implementation of a BRT transitway in the median of arterials such as Telegraph Avenue and International Boulevard, the number of mixed-flow through traffic lanes will be reduced from two in each direction to one. That is expected to both reduce the level of traffic...
compared to the No-Build condition and reduce auto travel speeds. This reduction in volume and speed would improve conditions for pedestrians.

2.10.3 **“BICYCLE FRIENDLINESS”**

Overall, the BRT corridor is expected an improvement on current conditions for both cyclists and pedestrians for several reasons. The addition of dedicated BRT lanes would be expected to slow traffic, benefitting bicyclists and pedestrians. Specifically, street redesign to accommodate the BRT transitway and stations including removing a lane of traffic in each direction along portions of Telegraph Avenue, International Boulevard, and East 14th Street, would be expected to lower traffic speeds, thereby improving the overall bicycle friendliness of the street. See Section 3.3 for more details including the provision of bike lands as part of the LPA. In addition, moving the user from the curb lane to the median eliminates “leapfrogging” of bicyclists and buses.

2.11 Project Process

Businesses, organizations, and citizens had various questions concerning the process of preparing this document. The majority of comments related to this topic touched upon one or more of the following issues:

- How have public comments on the Draft EIS/EIR been incorporated into the final document?
- What additional analyses have been performed since the completion of the Draft EIS/EIR?
- What additional steps are necessary to finalize the environmental document?

2.11.1 **PUBLIC COMMENT RESPONSES**

All written comments received during the public comment period for the Draft EIS/EIR have been responded to in writing either by modifying the project, modifying or supplementing the analyses contained in the document, making factual corrections, or explaining why the comments do not warrant modification to the document or project.

AC Transit received approximately 1,000 individual comments during public review of the Draft EIS/EIR. In December 2007, AC Transit completed a detailed analysis of the comments and grouped them into 16 subject areas to identify key issues raised during public review. Responses to each individual comment are presented in Volume II of this EIS/EIR. References to subject area responses are indicated where such responses address components of the individual comments. Both the subject area responses and individual comment responses include references to specific sections of this document where modifications to the document have been made in response to a comment.

In response to comments received during public review of the Draft EIS/EIR, the following alignment and BRT lane modifications have been made to the proposed project:
The City of Berkeley has rejected BRT within dedicated lanes within the city limits and because of this change, BRT service within Berkeley will be provided in mixed-flow lanes, similar to existing transit service along this portion of the route alignment.

In the Eastlake District of Oakland, which is just south of Lake Merritt, southbound BRT will be side-running in a shared BRT lane along East 12th Street from 1st Avenue to 14th Avenue, turning onto 14th Avenue and continuing east to International, then entering the median transitway on International. Northbound BRT will transition from median-running south of 14th Avenue to become side-running, north of 14th Avenue, and then continue along International to 1st Avenue in a shared BRT lane.

The project will terminate at San Leandro BART in the south. The dedicated BRT lanes in the median of International Boulevard in East Oakland will continue for approximately five blocks along East 14th Street in San Leandro, ending at Sunnyside Drive. BRT buses will travel in the mixed-flow lanes between Sunnyside Drive and San Leandro BART on East 14th Street, Davis Street, and San Leandro Boulevard.

Station locations in some neighborhoods have been modified and in some instances stations have been added to improve traffic flow, pedestrian access, and intermodal transfers, among other objectives.

Bike lanes are now included in the project definition. Class II lanes are currently provided on Shattuck Avenue and proposed (as class 2.5 lanes—see Chapter 3, Section 3.3 for detail) on Bancroft Way. Class II lanes exist or are also proposed for almost the entire length of Telegraph Avenue from Dwight Way in Berkeley to 20th Street/Thomas Berkley Way in Downtown Oakland. They will be provided on East 12th Street through the Lake Merritt dam and estuary and from 1st Avenue to 14th Avenue; along International Boulevard from 54th Avenue to 81st Avenue; and for segments of E. 14th Street in San Leandro and on Davis Street and San Leandro Boulevard to the project terminus at San Leandro BART. Elsewhere unstriped Class III bike routes are proposed, including along Telegraph Avenue from Bancroft Way to Dwight Way in Berkeley and along International Boulevard from 81st Avenue to the San Leandro city limit. Class III bike routes will be designated in San Leandro along the segment of E.14th Street not able to support Class II bike lanes. Bike facilities in San Leandro are consistent with the San Leandro Bicycle Master Plan. When BRT becomes operational, Class II and Class III lanes will exist, along with BRT facilities, along the majority of the BRT alignment from downtown Berkeley to San Leandro BART. New traffic signals and pedestrian-only signals have been added.

AC Transit made a commitment to procure BRT buses that can load and unload passengers on both sides of the vehicle (dual sided door buses). This allows the construction of a single center platform—rather than two separate platforms—at each BRT stop in median running BRT alignments. The center median station configuration has less displacement of curbside parking along the BRT alignment.

These and other modifications responded to both public comments and city staff proposals.

2.11.2 **ADDITIONAL ANALYSIS**

The following analyses have been modified or supplemented in this document in response to comments received on the Draft EIS/EIR during public review:
- Additional study of traffic effects resulting from diversion of vehicles onto neighborhood streets. The analysis looks at both the street operational performance after diversions and the potential for diverted traffic to cut-through residential neighborhoods.
- Comparison of the benefits and impacts of Oakland Bus Bulbs Proposal improvements relative to BRT.
- More detailed evaluation of construction impacts on trees and landscaped medians.
- Updated technical analyses performed in the Draft EIS/EIR including noise and vibration, air quality, traffic, parking, community and cultural resources, and hazardous materials, among other impact areas.

A comprehensive update of information presented in the Draft EIS/EIR was completed to assure the public and stakeholders that impact assessments are current.

2.11.3 **Next Steps**

A notice of availability of the document has been published in the Federal Register and newspapers of widespread circulation within the project area. Electronic copies of this document have been posted on AC Transit’s and Caltrans’ web sites. Hard copies of the document are available at several libraries and have been distributed to agencies, organizations, and individuals that specifically requested a copy of the document during the public comment period.

CEQA Regulations require that a 45-day review period follow the notice of the availability of the Final EIS/EIR. Within this period, the CEQA and NEPA lead agencies (AC Transit and FTA) will conduct a final review of the project and the public and other agencies can comment on the Final EIS/EIR before a final decision is made. Upon making a final decision regarding implementation of the proposed project, a notice of availability of a Record of Decision will be published in the Federal Register and newspapers of widespread distribution within the project area. In the event that any significant impacts are anticipated from the proposed project after implementation of proposed avoidance, minimization, and mitigation measures, AC Transit would issue a Statement of Overriding Considerations in compliance with CEQA Guidelines.

2.12 Project Funding and Costs

During public review of the Draft EIS/EIR, numerous commenters inquired about project funding and costs. The majority of comments related to this topic focused on the following:

- The DEIS states that the project is expected to cost $400 Million, but the cap for FTA Small Starts funding is $250 Million. How does AC Transit expect to reconcile this discrepancy?
- If the project isn’t fully funded and other sources aren’t immediately found, is the community at risk for a partially completed project? How does AC Transit propose to fill the funding gap?
2.12.1 **SMALL STARTS FUNDING**

As noted in the comment, a project must cost less than $250 million in year of expenditure dollars to qualify for FTA Small Starts funding (other eligibility criteria also apply). The cost of the LPA identified and analyzed in this Final EIS/EIR is $205.1 million, under the Small Start threshold.

The LPA reflects modifications made to BRT alternatives examined in the Draft EIS/EIR. Major modifications affecting project capital costs include:

- A shorter project, based on the cities’ LPA selection process, 14.38 miles now versus 17 miles in the Final EIS/EIR.
- Elimination of dedicated bus lanes and new stations in Berkeley.
- Less costly guideway and station platform construction methods which ensures a smooth operating surface without extensive demolition of existing pavement.
- Reduced scale of control center improvements.
- Elimination of unneeded vehicle costs.

The LPA capital cost incorporates a conservative high level of contingency at this stage of design to protect against any unforeseen changes in costs in the future.

2.12.2 **FUNDING SOURCES**

As described in Chapter 8, a range of federal, state, and local funding sources have been identified for the project. At present, some $33.2 million needs to be identified to pay for the non-federal portion of the LPA. Several options are under investigation to fill this gap, including new sources of revenue, such as Certificates of Participation, and continuation of existing sources, such as Measure B. However, if the gap cannot be fully filled, one option is to proceed with the shorter design variant described in the Final EIS/EIR. The Downtown Oakland to San Leandro (DOSL) Alternative can be fully funded with currently available revenues, and would allow a portion of the full LPA to be implemented while remaining funds needed to implement the full project are assembled from other sources.

2.13 **Purpose and Need**

This subject area includes comments that are directly tied to both the purpose and need for the project as defined in the Draft EIS/EIR. The Draft EIS/EIR states that there are four project goals that necessitate the development of the BRT system:

- Improve transit service and better accommodate existing high bus ridership.
- Increase transit ridership by providing a viable and competitive transit alternative to the private automobile.
- Improve and maintain efficiency of transit service delivery and lower AC Transit’s operating costs per rider.
- Support local and regional planning goals to organize development along transit corridors and around transit stations.
As discussed in Chapter 1, Purpose and Need; the above referenced project goals are supported by the following project needs:

- **Conditions that Discourage Transit Use.** Although high transit ridership testifies to the need for transit service in the proposed project corridor, existing service and facility deficiencies compromise service delivery and limit new ridership gains. Section 1.2.2.1 of the FEIS/EIR provides additional supporting data relative to AC Transit bus feet average operating speed and percent of bus trips completed on schedule (Line 1R statistics).

- **Service Inefficiencies that Drive up AC Transit’s Costs.** Low transit vehicle speeds and unreliable travel times contribute to increasing inefficiencies in corridor transit service – even when high ridership exits. 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. Ridership and overall operating costs would increase, but per rider costs would drop, demonstrating improved operating efficiency (See Section 1.2.2.2 of the FEIS/EIR).

- **Capacity and Reliability Constraints Compromise Accessibility.** Corridor buses frequently operate with full loads and standees. Yes the need to operate its buses in mixed-flow traffic limits AC Transit’s ability to expand corridor transit capacity. When reduced schedule reliability is combined with declining operating speeds, the negative effect on transit ridership is compounded (See Section 1.2.2.3 of the FEIS/EIR).

- **Delays in Boarding.** Impedances during passenger boarding results in delays to service. Bus-only lanes provided by the proposed project would work in conjunction with BRT stations and level boarding platforms to greatly facilitate passenger access to the vehicle. Boarding more passengers with less dwell time recues run time, effectively providing more transit seats without the added costs of additional buses and drivers, increasing the efficiency of the system (See Section 1.2.2.4 of the FEIS/EIR).

- **Future Travel Demand Means Increased Congestion.** Travel demand forecasts suggest that by the year 2035, without any capacity increases, corridor traffic will operated under heavily congested conditions. Increasing travel demand also tends to expand peak congestion periods over several hours in the morning and evening. Improving transit service will provide travelers an alternative to driving in increasingly congested conditions (See Section 1.2.2.5 of the FEIS/EIR).

- **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. Of AC Transit’s five highest-volume bus routes, two operate in the Berkeley-Oakland-San Leandro corridor – Routes 1 and 1R. These two routes carry approximately 25,000 riders per day in the corridor, representing one tenth of AC Transit’s total daily ridership. Transit ridership forecasts for 2035 show an increase in the number of average corridor boardings, from approximately 25,000 today to 34,000 per weekday for the 2035 No-Build Alternative (See Section 1.2.2.6 of the FEIS/EIR).

- **Support Transit Oriented Residential and Commercial Development of the Corridor.** 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 (See Section 1.2.2.7 of the FEIS/EIR)

- **Better Service 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, seniors age 65 and older; youth and children age 18 and younger; and persons with disabilities. These population groups are less likely to have automobiles and are, therefore, more likely to use transit. Twenty percent of the households in the corridor are without private automobiles. By improving access to important employment and educational centers in the East Bay, the proposed BRT project would contribute to improved mobility and greater access to jobs and services for these corridor residents (See Section 1.2.2.8 of the FEIS/EIR).

2.14 Safety and Security

Comments received during the public review of the Draft EIS/EIR related to the proposed project’s safety and security touched upon one or more of the following topics:

- How will potential conflicts among bicyclists, pedestrians, passenger cars, trucks, emergency vehicles, and transit vehicles be avoided or managed?
- How will security be provided at stations and along walking routes to and from stations?
- How will illegal left-turn “scofflaws” be deterred?

2.14.1 **Motorized versus Non-Motorized Conflicts**

As discussed below, in recent implementation of BRT and LRT systems in other locations, collision rates in the project corridor were found to increase during the first few months following project implementation if drivers (and pedestrians) are unfamiliar with the changed conditions. For autos and trucks, this is largely due to drivers’ initial confusion about the restricted left turning movements and disobeying traffic signals or other traffic controls to make illegal (albeit unintentional) left turns across the path of an oncoming bus. As drivers become familiar with the new driving rules, the collision rates do go down. Training of bus operators and aggressive outreach to drivers and the public in general is necessary to avoid an increase in collisions once the preferred BRT project becomes operational. To make individuals aware of the new transportation environment, outreach to schools, community organizations and neighborhood associations in the project corridor is required. Strict enforcement of traffic laws also is needed so drivers do not adopt poor driving behavior. Finally, prominent signage is necessary to direct drivers, cyclists, and pedestrians.

As discussed in Chapter 2, Alternatives, and Chapter 3, Transportation, Section 3.2, Traffic, the following features will be included in the approved East Bay BRT project:

- Signing and traffic signal controls will be installed to restrict left turns to only those locations where they can be made safely.
Where turns are proposed on the along-BRT arterials, left turn lanes separated from the through traffic lanes will be provided; left turns from the along-BRT arterials will only be allowed at signalized intersections.

Separate left turn phases will be part of the traffic signal cycle and autos allowed to turn only when the left turn phase is green. Through movements, including through bus movements will not be allowed during the turn phase.

Barriers or similar features will be installed along the BRT transitway to provide motorists (and non-motorized traffic) strong indicators that movements across the transitway are not allowed. For example, the outside of the BRT lane will incorporate a rumble strip or mountable curb that, although able to be crossed by emergency vehicles, will discourage motorists and pedestrians from trying to access the transitway.

To reduce the potential for conflicts between buses and non-motorized traffic, the approved East Bay BRT project will include these features:

- Bike lanes will be designated and bike lane signage installed where bike-auto-bus traffic in the same street cross section is planned.
- Where bike lane widths will not support striping of a designated lane and bikes and autos must share the roadways, wider sharrow lanes (than the standard 11 to 12-foot traffic lanes) will be provided where practicable to allow separation of bike from auto traffic.
- Signing will be installed to direct cyclists to alternate routes where bike routes are dropped or cannot be provided in the same street cross section.
- Crosswalks will be clearly marked and incorporate appropriate protection devices to ensure safe crossing of along-BRT arterials.
- Wayfinding, including signs and striping, will be installed to direct pedestrians to and from stations along safe pathways.
- Railings, warning strips and other active and passive features will be part of BRT stations to discourage pedestrians from trying to access platforms at other than protected crosswalks.

### 2.14.2 Security at Transit Stations

AC Transit plans to incorporate emergency call boxes or intercom devices at every major transfer station. As discussed in Section 3.1.5, video surveillance cameras will be added all stations. All stations will be patrolled by Alameda County Sheriff Deputies, who, along with the city police departments, will be the first responders in case of a reported problem or emergency at one of the stations. Patrolling local streets will remain the responsibility of local law enforcement agencies.

### 2.14.3 Illegal Movements

Please see Section 3.1 Vehicular Traffic for more detailed descriptions of traffic operations planning.

Dedicated lanes for the BRT are restricted to buses and emergency vehicles only. Violators are subject to ticketing by local law enforcement agencies. The dedicated lanes will be clearly
demarcated with signage, rumble strips, or small curbs so they will not be confused with general travel lanes.

AC Transit recognizes that removing traffic lanes for BRT in congested corridors may create a bottleneck prohibiting access by emergency vehicles; therefore, emergency vehicles may use the dedicated lanes whenever needed. Response times for emergency vehicles will not be degraded in the corridor.

Left turns at signalized intersections will be provided where these left turns currently exist or are proposed as part of the project; however, between signalized intersections, left turns across the BRT lanes from either along the BRT streets or from cross streets, will be prohibited for safety reasons. The distances between signalized intersections will be kept to a minimum to allow for ample left-turn and U-turn opportunities. Cross streets where left turns are prohibited allow only right turns in and right turns out. These intersections have been proven to be safer than full intersections with full left turns. Drivers who violate the left-turn prohibitions can be ticketed like as for other traffic violation.

2.15 Station Locations
Many comments were received regarding potential station locations and the process that the placement of stations and platforms was decided. The most common comments generally reflected the following issues:

- What is the rationale for the station spacing and location? To what extent does station planning consider adjacent or nearby land uses, such as medical facilities, educational facilities, shopping areas, etc.?
- How does station planning facilitate interaction among transit modes (i.e., BART to BRT, etc.)?

2.15.1 Station Placement
The process of placing stations at appropriate locations began in previous phases of project development and has been refined over time. Specifically, Section 2.2.2.2 of the Draft EIS/EIR provides a description of the proposed operating plans under consideration at that time. As noted in the Draft EIS/EIR, there were two overarching operating plans. The first designated separate BRT and local service and offered both BRT express and local bus service on the project alignment. Because the background local bus service and stops would remain, BRT stations would be fairly widely spaced (0.4 to 0.5 miles apart) under this operating plan. The second operating strategy proposed the combining of local and express service into a single BRT-only service, called “combined BRT and local service” (or all-in-one service). Local service provided by the Route 1 bus would be discontinued and only BRT buses would operate on the project alignment. BRT stations would be located closer together to compensate for the removal of some local bus stops.

The service plans for the LPA and DOSL Alternative studied in this Final EIS/EIR reflect refinements to the project made in response to public and agency comments on the Draft EIS/EIR and during outreach conducted from 2008 to 2010. In 2009, the AC Transit Board,
acting on the recommendation of its BRT PSC, adopted the combined service plan. As a result, the average distance between stations would be 0.3 miles, with a maximum distance between stations of 0.45 miles (47 stations are proposed along a 14.38 mile alignment). Ninety percent of the stations would be less than 0.4 miles apart. Section 2.3.2.3 describes this combined service plan for the LPA. The DOSL Alternative service plan is described in Section 2.3.3.3.

The selection of the preferred BRT alignment and station locations began during the transportation system level studies that predate the EIS/EIR process. Of the nine service objectives outlined in the MIS prepared for the project, five objectives relate directly to the spacing and placement of BRT stations that are as follows:

- Improve access to major employment and educational centers and enhance connections to other AC Transit services, BART, ferry services, and other transit providers
- Improve transit service reliability
- Provide frequent transit service
- Support transit-oriented residential and commercial development
- Increase the percentage of trips made by transit and reduce the percentage of trips by automobile

As demonstrated by these objectives, nearby land uses, employment/educational centers, and connections to other transit providers were considered in the selection of the preferred route as well as in the placement of stations. Stations must be placed in locations that can generate ridership, either to or from the immediate area. To get people to ride the bus and stop driving personal vehicles, BRT must be convenient, reliable, timely, and must serve origins and destinations that are attractive to riders. The MIS also described a detailed study of opportunities for ridership in various portions of the corridor. The AC Transit Berkeley/Oakland/San Leandro Corridor MIS Final Report Volume 2: Development of Alternatives, prepared in September 2002, further evaluates the market opportunities for improving transit services in the corridor, and the enhancements that BRT could potentially provide to the transit system. This included an assessment of the strength of preference of existing transit customers and potential new customers for travel time, schedule reliability, comfort, and security.

Regarding specific station locations, potential candidates for BRT stations were identified using passenger on-off count data collected by AC Transit. (AC Transit Winter Signup 2008-2009). There is a strong correspondence of proposed BRT stations and existing high volume stops on Routes 1 and 1R. This is discussed further in Section 2.31. First, stations were located where transfer activity to other transit providers would be high or should be facilitated. Pedestrian counts at intersections in the corridor, along with an inventory of high volume pedestrian areas are detailed in Section 3.3.1, Pedestrian Conditions.

Second, additional stations were proposed wherever there were centers of activity not located near major bus stops. These locations included, but were not limited to, senior housing developments, large churches, schools, medical facilities and neighborhood commercial centers.
Third, walking distance to/from BRT stations was considered in locating stops. The objective was to limit walk distances to/from transit even in corridor segments where existing transit boardings and alightings are lighter than elsewhere. This means that some stations may be provided to ensure walk distances anywhere along the alignment do not exceed approximately 0.25 miles, assuming a passenger walks to the nearest proposed station.

Finally, pedestrian and traffic circulation and operational safety were considered in selecting station locations. Traffic includes bus operations as well as auto and truck traffic. If a station location would pose difficult access or an unsafe condition for pedestrians or traffic, the station was moved to a better location, typically still nearby.

### 2.15.2 Interaction with Other Modes

As discussed above in Section 7.9.5, pedestrian access to transit, either BRT directly or to transit lines offering transfers to and from BRT, was assumed to be the main—and priority—form of access. As shown in the alignment drawings contained in Appendix A, the proposed project is designed to facilitate access to and from other transit modes including BART and local bus service.

### 2.16 Traffic

During public review of the Draft EIS/EIR, agencies, businesses, organizations, and citizens provided a number of oral and written comments regarding the traffic-related implications of the proposed project. The bulk of comments related to this topic touched upon one or more of the following issues:

- How much traffic diversion would be created by the proposed project and to what extent would new congestion be created on parallel roadways and nearby residential communities as a result of diversion?
- How will traffic mitigation affect non-motorized access?
- What travel demand forecast was used? Is this level of modeling appropriate to reflect localized conditions?
- Has the analysis correctly estimated the anticipated shift from passenger car to transit mode resulting from the proposed project?
- What are the traffic safety implications of dedicated lanes and turn prohibitions?

### 2.16.1 Traffic Diversion and Mitigation

Section 3.2 includes a discussion of the traffic and circulation impacts. Peak hour analysis was performed for 129 study intersections along the BRT corridor and parallel routes to assess traffic impacts resulting from the proposed project. The LPA implements various roadway improvements along the alignment including implementation of dedicated BRT lanes along the majority of the corridor. As discussed in Section 3.2, the dedicated BRT lanes result in reductions to vehicular capacity (i.e., elimination of through travel lanes). Other roadway changes include modifications to access to and from cross streets (for example, removal of left-turn pockets, restriction of vehicles to right-turn in and out only, and closure of several cross streets). Feasible mitigation measures are identified in this document to alleviate the proposed...
project’s traffic impacts. In certain cases, mitigation measures identified to improve traffic conditions were considered infeasible where the improvements in question would impede pedestrian or bicycle access.

As noted in Section 3.2, the analysis accounts for anticipated changes to neighborhood circulation patterns resulting from the LPA as well as potential increases in delay along alternate diversion routes. To address impacts due to diversion of traffic, AC Transit will undertake a neighborhood traffic management program in coordination with city staff (Section 3.2.8.3). According to this policy, if studies post-BRT implementation determine there are substantial diversions of traffic onto local streets and through residential neighborhood caused by the East Bay BRT project, traffic calming devices will be considered on likely diversion routes to deter motorists from using neighborhood streets. AC Transit would assist in the funding of these measures.

2.16.2 **TRAVEL DEMAND MODEL AND MODE SHIFTS**

The operational analysis and neighborhood diversion study evaluate opening year (2015) and future year (2035) traffic volume projections from the Alameda Countywide Travel Demand Model maintained by the Alameda County Transportation Commission. This model uses a sophisticated set of transportation mode choice and transit assignment equations that tradeoff between the time and cost of using BRT versus other transit options versus driving. This allows the model to project potential shifts in mode choice as a result of the proposed project.

2.16.3 **TRAFFIC SAFETY**

BRT facilities will be designed in conformance with applicable state and local traffic operations and safety laws and regulations. System safety guidelines will be established during the detailed project design phase and guide the design process. Peer reviews will be conducted during design and prior to the opening of revenue operations that will address safety as a critical item. The East Bay BRT design will thereby incorporate features from similar projects that have been proven to enhance traffic safety. As noted in the section above, extensive signing, striping and other active and passive measures will be part of the project design and control auto/bus/bicycle/pedestrian movements. As BRT buses will continue to operate within the limits of public streets, whether in dedicated transit lanes or in mixed flow lanes, intersection controls in the form of traffic signals and signing (e.g., that latter at non-signalized intersections) will be updated to incorporate proven technologies and features that maximize safety.