

# Appendix H

**Technical Memoranda #9 & 11**  
Opportunities for Moving  
Forward



# Opportunities Moving Forward **Countywide Transit Plan**

FINAL Technical Memoranda #9 and #11



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Alameda County Transportation Commission

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## Acronyms

Acronym/Abbreviation	Definition
511	Northern California traffic, transit, rideshare, and bicycling information system
AB	Assembly Bill
AC Transit	Alameda-Contra Costa Transit District
ACE	Altamont Corridor Express
AHSC	Affordable Housing and Sustainable Communities
Alameda CTC	Alameda County Transportation Commission
ATP	Active Transportation Program
AVL	Automated Vehicle Location
BART	Bay Area Rapid Transit
BATA	Bay Area Toll Authority
BNSF	Burlington Northern and Santa Fe Railway
BRT	Bus Rapid Transit
Caltrans	California Department of Transportation
COA	Inner East Bay Comprehensive Operational Analysis
CIG	Capital Investment Grants
CMAQ	Congestion Mitigation and Air Quality
CPI	Consumer Price Index
CSTA	California State Transportation Agency
DART	Dallas Area Rapid Transit
EBOTS	Emeryville, Berkeley, Oakland Transportation Study
FTA	Federal Transit Administration
GGRF	Greenhouse Gas Reduction Fund
GHG	Greenhouse Gas
IGA	Intergovernmental Agreements
HH	Households
HSR	High Speed Rail Authority
LADOT	Los Angeles Department of Transportation
LAVTA	Livermore Amador Valley Transit Authority
LCTOP	Low Carbon Transit Operations Program
LTF	Local Transportation Fund
MPO	Metropolitan Planning Organization
MTC	Metropolitan Transportation Commission
OBAG	One Bay Area Grants
PDA	Priority Development Area
PILOT	Payments in Lieu of Taxes
RM2	Regional Measure 2
SFCTA	San Francisco County Transportation Authority
SFMTA	San Francisco Municipal Transportation Agency
SIB	State Infrastructure Bank
STBG	Surface Transportation Block Grant Program
TEP	Transportation Expenditure Plan

Acronym/Abbreviation	Definition
TIF	Tax Increment Financing
TOD	Transit Oriented Development
TCRP	Transit Cooperative Research Program
TDA	Transportation Development Act
TIFIAS	Transportation Infrastructure Finance and Innovation
TIGER	Transportation Investment Generating Economic Recovery
ITRC	Transit and Intercity Rail Capital
TNC	Transportation Networks Companies
TSP	Transit Sustainability Project of MTC
TriMet	Tri-County Metropolitan Transportation District of Oregon
UPRR	Union Pacific Railroad
US DOT	United States Department of Transportation
WETA	San Francisco Bay Area Water Emergency Transportation Authority



## 1.0 Introduction

As adopted in March 2015 by the Alameda County Transportation Commission (Alameda CTC), the vision of the Countywide Transit Plan is to “create an efficient and effective transit network that enhances the economy and the environment, and improves the quality of life” in Alameda County.

Alameda County’s transit system is robust and has extensive coverage. The market analysis conducted as part of this study identified that Alameda County has a highly transit competitive market, but that ridership is not commensurate with what the market analysis suggests. As with its counterparts across the U.S,

the challenges faced by transit operators in Alameda County include funding for operations, maintenance, rehabilitation, and improvements. This memorandum summarizes existing funding sources and financing instruments and provides an analysis of funding needs over time.

A thorough analysis of existing and future market conditions of transit in Alameda County, documented in Technical Memoranda #3 and #5, identified both issues and opportunities with transit operations and performance.

Through the countywide transit plan planning process, a multi-tier structure (see Figure 2) was developed as an organizational tool to frame the discussion of the existing array of transit services, their core functions and responsibilities, potential interaction and overlap, and as a way to discuss future needs and proposed network recommendations.

It is important to note that the tier structure does **not** imply a hierarchy of importance among the transit services or tiers. The purpose of the transit tier structure is to facilitate the understanding of different transit markets, service operations, and operational characteristics; illustrate how they relate to the proposed network improvements; and describe how they combine to help create a comprehensive transit network. It also helps demonstrate the need for partnerships among the agencies and entities that are responsible for public transportation policy, planning, and operations within each tier and between tiers.

Figure 1: Plan Development Process

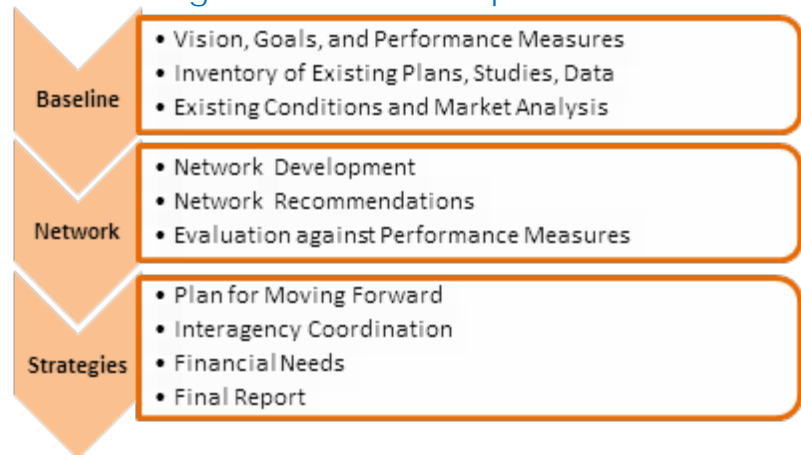
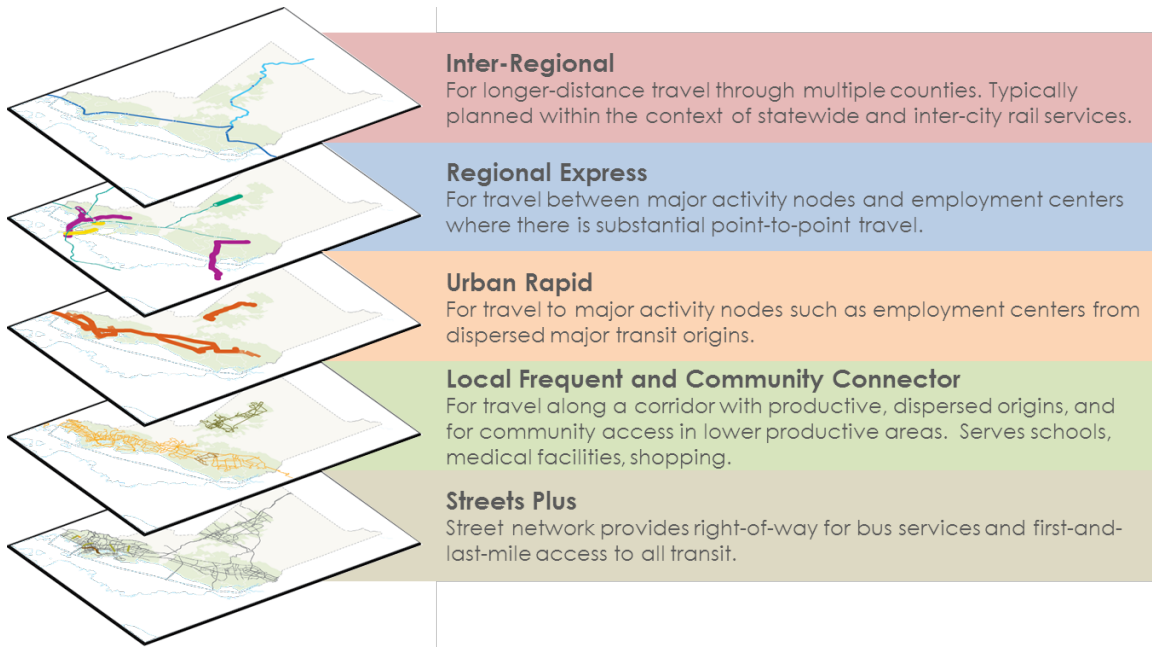


Figure 2: Transit Tier Structure





Note: Local Frequent tier and Community Connector tier serve local trips within communities and cities and have, therefore, been combined for illustration purposes.

This Technical Memorandum introduces strategies and defines key roles for Alameda CTC and its partner agencies to move network recommendations forward. It also introduces strategies to address the system integration opportunities within and across tiers as identified in Technical Memorandum #5. The strategies focus on both physical and institutional integration of the service tiers recognizing that they must function as an integrated system in order to deliver effective transit services to the public.

## 1.1 Roles and Responsibilities

Collaboration among agencies is essential to move the network recommendations and strategies forward. Each jurisdiction covers defined geographical and political jurisdictions, while their functional responsibilities vary considerably, and include differing focus areas on planning, strategy development, funding and financing, monitoring, and service provision. The roles and responsibilities of the entities may overlap and interact with one another. As a result, collaboration is essential to seek common purpose, maximize efficient use of resources, avoid duplication of efforts, and provide optimal transportation infrastructure and service. Table 1 presents many key roles and responsibilities of partner agencies that have a relationship to transit.

Table 1: Roles and Responsibilities of Local and Regional Government Entities Related to Transit

Alameda CTC	Metropolitan Transportation Commission
<ul style="list-style-type: none"> <li>• Collects and administers countywide transportation sales taxes and voter-approved vehicle registration fees</li> <li>• Allocates funding from regional and state sources</li> <li>• Sets programmatic and project priorities for Measures B and BB and the Vehicle Registration fee, Measure F</li> <li>• Adopts Direct Local Distribution performance measures</li> <li>• Develops countywide plans and establishes short- and long-range vision for transportation</li> <li>• Provides policy guidance for transportation investments</li> <li>• Serves as a convener/facilitator for local, regional, and federal agencies</li> <li>• Advocates for Alameda County at regional, state, and federal levels</li> <li>• Delivers major capital projects and programs such as the Affordable Student Transit Pass Program, Safe Routes to Schools and Senior and Disabled Transportation services</li> </ul>	<ul style="list-style-type: none"> <li>• Develops regional transportation plans and sustainable communities strategy</li> <li>• Allocates funding from federal, state, and bridge toll sources</li> <li>• Administers grant programs</li> <li>• Develops the Bay Area Regional Transportation Plan</li> <li>• Performs specific planning studies</li> <li>• Develops and delivers system management services, facilities, and operations</li> <li>• Promotes and facilitates service improvements, fare integration among transit operators, including regional fare card (Clipper) and ridesharing and commuter information</li> <li>• Serves as convener/facilitator for other regional agencies and stakeholders</li> <li>• Advocates for Bay Area at state and federal levels</li> </ul>
Transit Providers	Cities
<ul style="list-style-type: none"> <li>• Receive local, regional, state, and federal funds</li> <li>• Provide local, regional, or interregional bus (<i>AC Transit, LAVTA, and Union City Transit</i>), rail (<i>BART, ACE, and Capitol Corridor</i>), or ferry (<i>WETA</i>) services</li> <li>• Plan system upgrades and extensions             <ul style="list-style-type: none"> <li>▪ Major Corridor Study and Service Expansion Plan (<i>AC Transit</i>) and Comprehensive Operational Analyses (<i>LAVTA, AC Transit</i>)</li> <li>▪ System preservation and maintenance and extensions including Silicon Valley and Livermore extensions (<i>BART</i>)</li> <li>▪ New routes and terminals (<i>WETA</i>)</li> <li>▪ ACE Forward</li> </ul> </li> <li>• Conduct service and strategic planning</li> <li>• Own land, facilities and equipment, including stations, parking, park and ride lots, maintenance facilities</li> <li>• Manage and operate paratransit services</li> <li>• Manage transfer facilities at rail stations (<i>BART</i>)</li> </ul>	<ul style="list-style-type: none"> <li>• Control and plan land use (zoning, development, design)</li> <li>• Own, manage, and maintain streets and bicycle/pedestrian facilities</li> <li>• Lead and implement complete streets projects</li> <li>• Own and operate an independent local transit system (<i>Union City</i> only)</li> <li>• Fund operations and maintenance of local transportation system (including some local shuttle services)</li> <li>• Plan and operate local senior and disabled transportation services</li> </ul>

...table continues on next page

Table 1: Roles and Responsibilities of Local and Regional Government Entities Related to Transit (continued)

Alameda County	Caltrans/High-Speed Rail Authority (HSR)
<ul style="list-style-type: none"> <li>• Controls and plans land use in unincorporated areas (zoning, development, design, etc.)</li> <li>• Owns and manages/maintains roads, bridges, and bicycle/pedestrian facilities in unincorporated areas</li> <li>• Leads and implements complete streets projects</li> <li>• Performs and collaborates on countywide planning</li> </ul>	<ul style="list-style-type: none"> <li>• Administers state and federal funds, including those expended by local agencies through the Local Assistance Program (Caltrans)</li> <li>• Owns, operates, and maintains state highway system, including arterials and bridges (Caltrans)</li> <li>• Plans for state transportation investments, including development of long-range plans, new projects, operations, and maintenance (Caltrans)</li> <li>• Works with local jurisdictions to make improvements (Caltrans)</li> <li>• Responsible for planning, designing, building and operation of the high-speed rail system in California (HSR)</li> </ul>
Private and Non-Profit Sector	Federal Agencies
<ul style="list-style-type: none"> <li>• Offers transit incentives and devises parking policies (e.g., discount transit passes, subsidies for last-mile transportation options, parking cash-out, reduced parking requirements, such as limited resident or employee parking per occupant, employee, square footage, or similar measurement)</li> <li>• Provides private transit services to their facilities</li> <li>• Works with transit operators to support transit service to their facilities</li> <li>• Secures existing under- and unused parking spaces at key locations (e.g., churches and shopping centers) for park-and-ride uses for transit</li> <li>• Builds infill or higher density development around transit nodes</li> <li>• Designs buildings and campuses in a bicycle and pedestrian-friendly manner</li> <li>• Provides transit-enhancing amenities such as shade, shelters, benches, maps, and schedule information</li> <li>• Provides personalized and private on-demand transportation service (taxis and Transportation Network Companies)</li> </ul>	<ul style="list-style-type: none"> <li>• Allocate federal funding from formula and discretionary programs</li> <li>• Review and monitor federally funded programs</li> <li>• Develop policies related to transit and paratransit regulations</li> </ul>

The large number of transportation-related entities and transit operators in Alameda County and the region can make regional mobility complex, costly, and challenging for many riders to navigate.<sup>1</sup>

However, regional mobility transcends jurisdictional boundaries and institutional requirements. Commuters desire the fastest, simplest, and most efficient route from home to work or school; shippers desire the same to move goods and freight. Through their payment of taxes, fares, tolls, and fees, users expect to receive value through an effective transportation system that takes them from point A to point B. Not only do individuals and companies expect regional connectivity, but regions as a whole also depend on effective transportation with an integrated system to maintain and enhance

<sup>1</sup> See Technical Memorandum #2 – Existing Conditions and Market Analysis

economic well-being and competitiveness. Regional mobility also transcends transportation infrastructure and services; it responds to and impacts the land uses that surround roadways and transit lines. The reality of Alameda County, the Bay Area, and metropolitan regions throughout the country is that jurisdictional boundaries and institutional requirements exist, and that issues, priorities, capabilities, and responses vary and sometimes differ from area to area and entity to entity. In Alameda County, agency coordination can play a large role in enhancing transit services.

## **2.0 Strategies for Moving Transit Forward**

Transit service functions best when planned and operated as a complete network. In these instances, coordinated routing and scheduling of service takes into account transfers between routes and rider demand. Therefore, system integration strategies involve both physical connections between transit services and the street network and institutional coordination of services and information.

Best-case examples of organizational and funding structures that aim toward greater system integration have been implemented across the country. Their intent is to break down barriers, enhance convenience, and maximize the effectiveness of the region's financial investment in transportation. System integration in Alameda County and elsewhere starts at the planning level and ends with the actual user experience. It is multi-faceted and incremental. Strategy development, fare and fee structures, fare and fee payment, service availability and schedules, information and communications, land use coordination, and on-going efficiency programs are among the tools available to achieve an efficient and effective transit network that enhances the economy and the environment, and improves the quality of life in Alameda County.

The identification of many roles and responsibilities related to transit listed in Table 1 leads directly to the development of recommended collaborative strategies. They range from policy-level actions (institutional) to implementation of corridor-specific and localized improvements (physical). Opportunities and strategies may be physical or institutional - or both. Strategies are organized to cover network/service enhancements, interagency coordination, and phasing. The strategies presented below are intended to support meeting the Alameda CTC adopted vision and goals for the transit plan, by responding to issues identified in Technical Memorandum #2 and the network opportunities presented in Technical Memorandum #5. In addition, the strategies have been informed by case studies documented in the 2014 TCRP Report #173<sup>2</sup> informed some of the strategies. These strategies are presented in Table 2.

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<sup>2</sup> Transportation Research Board, Transit Cooperative Research Program Report 173 – *Improving Transit Integration Among Multiple Providers*, Volume I: Transit Integration Manual, 2014

Table 2: List of Strategies to Achieve Goals of the Transit Plan

**VISION:** Create an efficient and effective transit network that enhance the economy and the environment while improving the quality of life in Alameda County

<div style="text-align: right;"><b>GOAL</b></div> <div style="text-align: left;"><b>STRATEGIES</b></div>	Increase transit mode share	Increase system effectiveness	Increase the effectiveness of inter-regional transit travel	Increase cost efficiency	Improve access to work, education, services and recreation	Reduce emissions	Achieve a state of good repair
Establish an integrated fare structure and policy	●	●	●		●	●	
Develop a regional coordinated schedule across all operators		●	●		●		
Target resources to expand Transbay service capacity	●	●	●		●	●	
Strengthen inter-modal connections among buses, trains, and alternative modes	●	●	●		●	●	
Provide Common Information Tools and Shared Branding and Marketing	●		●		●	●	
Monitor Service Delivery Standards and Performance Measures		●		●		●	
Expand Affordable Fare Strategies	●	●			●	●	
Develop a Countywide Passenger and Freight Rail Strategy			●			●	
Coordinate Land Use and Transportation Decision Making	●	●			●	●	
Reduce Costs		●		●			
Maintain all Assets to their Optimal Conditions		●		●		●	●

## 2.1 Network Service Enhancements

Network enhancements involve transit service, customer service, and policies. They consist of concrete actions involving physical improvements and/or institutional changes necessary to accomplish greater transit connectivity in Alameda County and the Bay Area.

### **Establish an integrated fare structure and policy allowing riders to transfer between systems and routes**

Transit operators have their own fare structures based on local policies, traditions, practices, and financial needs. This generally works well for riders on short trips within individual jurisdictions but is less efficient or convenient when trying to travel across jurisdictions. For many travelers the cost of the trip may be one factor in their choice for using transit; the lack of consistency, such as differing fare by time of day, restrictions when transfers are allowed, uncertainty, and even the inconvenience of needing to carry change or having to separately purchase multiple transit passes cause complexity and affect ridership potential.

The cost to use transit remains an important factor for many transit patrons or potential riders. Current fare policy and structures tend to penalize riders transferring between services operated by different operators. This “transfer penalty” is a common theme across multiple comments received at Alameda CTC’s public outreach meetings associated with this plan development. The Metropolitan Transportation Commission (MTC) has identified the following three most common fare-related issues<sup>3</sup>:

- Customers attempting to use more than one system are often faced with a confusing array of transfer and fare policies.
- Customers using two bus systems sometimes pay two fares for a linked trip.
- Transit agencies have different age definitions for youths, students, and seniors, creating confusion for customers using multiple systems.

In its April 2015 report, *Seamless Transit*, the San Francisco Bay Area Planning and Urban Research Association (SPUR) recommends standardizing fares and developing an integrated regional transit pass and other fare products that maximize region-wide transit ridership. These solutions reflect the priorities outlined in the Transit Sustainability Project developed in 2012, which recommended that transit agencies coordinate to “consider fare policies focused on the customer that improve regional/local connections.”<sup>4</sup>

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<sup>3</sup> MTC, [Transit Connectivity Report](#), 2005

<sup>4</sup> MTC, [Transit Sustainability Project](#), Resolution No. 4060. Attachment B. 2012

- Unified Fares for Regional Passes - The current fare system offers a common payment card, the Clipper Card, for nearly every operator, but not a unified fare program. For transit operators the challenge of implementing different fare structures lies in the fact that each operator uses fares based on different revenue models and different fare validation systems. In order to address these challenges a unified fare payment system would require an initial agreement on cost and revenue sharing based on estimated usage by jurisdiction. However this agreement could be calibrated by the accurate usage data generated through the regional pass technology, which could more accurately identify ridership and fare shares by jurisdiction, allowing partner agencies to regularly readjust the formula.

### **Clipper Card 2.0**

The current regional Clipper pass has been available for 10 years. The current system was designed in the 1990s; some of the equipment is difficult to replace or obsolete. It was state-of-the-art in 2006; today, it is undergoing an update to capture advances in technology and lessons learned from its first iteration.

While MTC and the transit operators are working toward launching the next generation of Clipper by 2020, the agencies need to be prepared for even more advanced iterations for the next decade:

- A regional fare product that encourages riders to use multiple operators
  - Regional harmonization of the discount rates (e.g., youth, low-income)
  - Upgrades such as smartphone applications, direct credit cards scanning,
  - Modules for paying for other transportation services, such as parking, car sharing services, and tolls
- Implement Mobile Ticketing - Mobile and smartphones have become an increasingly popular and integral part of our lives over the last 10 years. Given the regional nature of the transit network in the Bay Area, implementing a mobile payment system would require close coordination with other counties and regional agencies.

### The Trend toward Mobile Ticketing

Transit systems across the country are introducing mobile ticketing solutions that allow riders to pay using their smartphones. Several transit service operators, including the Los Angeles Department of Transportation (LADOT), the San Francisco Municipal Transportation Agency (SFMTA), and Portland (TriMet), have introduced mobile ticketing solutions that allow riders to pay using their smartphones. Unfortunately, in some places, these initiatives faced some challenges; to avoid these, it is important to:

- Coordinate with the other agencies in the Bay Area to offer a regional mobile ticketing application
- Offer a user-friendly application
- Extend mobile ticketing to all kinds of fares (e.g., one-use tickets, day pass, monthly pass)
- Include a regional trip calculator to the mobile ticketing application

### Develop a regional coordinated schedule across all operators to improve service connections and address possible overlaps in service

Given the myriad of transit trip origins and destinations, combined with the presence of multiple transit operators serving different jurisdictions, it is unrealistic to expect direct, one-seat ride service for all transit users. This is especially so in the Bay Area with its multitude of transit operators. It is realistic, however, to achieve better schedule coordination to minimize transfer walks and waits so that journeys can be completed as quickly and seamlessly as possible.

This can be accomplished by service and facility coordination among interfacing operators:

- Better synchronizing service spans and scheduled arrival and departure times where routes operated by different entities meet to minimize wait time between buses in areas with lower frequency services; this is particularly important in areas with lower frequency services.
- Inform all operators of pending seasonal service and schedule adjustments, modify to maintain service and schedule connectivity, and implement seasonal adjustments on mutually agreed upon dates
- Jointly provide transfer hub facilities to make transferring easy and where passengers only need to walk a few steps to make their connection without trekking multiple blocks and crossing traffic
- Provide a safe, clean, and comfortable environment that includes shelters and benches for longer transfer waits as needed



- A joint information platform to enhance inter-operator communications, information sharing, and joint information dissemination to the public:
- Employ direct communication links between operators when delays occur to minimize missed transfer connections
- Merge and share real-time next bus information

### **Target resources to expand Transbay service capacity**

Capacity limitations of Bay Area Rapid Transit (BART) due to its single Transbay tube, fleet, and resources are placing demands and strains on other operators, including AC Transit and WETA, to provide additional services that would expand capacity. The MTC Core Capacity Transit Study focuses on investments to transport commuters on BART, AC Transit and WETA from the East Bay (including Alameda County), and it explores potential new connections across the Bay.

Given that a second Transbay tube is not within the near-term horizon of this study and that needs continue to grow, obtaining capital and operating funds for additional bus and ferry service is a common issue among transportation entities and operators. Performance measures also need to be developed that recognize the high level of utilization as well as the high operating costs due to the distance and time required to cross the bay, peak direction ridership patterns, and fares. Project findings point to the need for robust service in the Transbay market, but the extent of need and limitations of the fleet have not been identified by this Plan.

### **Strengthen inter-modal connections among buses, trains, and alternative modes through targeted local and regional improvements**

Intermodal service is only as good as the actual physical and schedule connection between modes. Passengers alighting from commuter trains may miss a connection to a light rail or subway train due to less-than-optimal pedestrian connectivity between stations. Similarly, commuters may avoid using transit altogether due to concern over where to store their bicycles or other non-motorized equipment. When the daily commute via transit becomes uncertain, a reduced willingness to use transit may result. In addition, given that all transit trips start as walk, bicycle, or auto trips and use the street network for access to the transit system, the state of street infrastructure is of paramount importance. Primary responsibility for maintaining the streets resides with Alameda County, individual jurisdictions, and/or the California Department of Transportation (Caltrans). Infrastructure improvements can enhance the capacity of streets by incorporating features that facilitate transit and bicycle and pedestrian access and connectivity.

Strengthening intermodal connections and related infrastructure can expand the reach of transit, broadening its utility and increasing its modal share through the following strategies:

- Provide priority for transit services and facilities through the establishment of:
  - Upgraded Intelligent Transportation Systems (ITS) and signal grid systems on street networks to facilitate the flow of buses.
  - Transit priority zones to avoid congestion and delays to maintain transit flow—Zones can be incorporated into street design where high concentrations of transit activities are present, including convergence of bus routes, intermodal transfers, and heavy passenger activity.
  - Improved east-west transit corridors—Because of the largely north-south orientation of Alameda County’s roadway network, east-west transit connections can be improved through the use of transit priority treatments such as bus bulbs at major stops and transit signal priority.
  - Enhanced roadway access for transit to rail stations—Rail stations are often areas of intense activity and congestion, delaying multimodal transit connections. More direct access to park-and-ride facilities, priority treatments, and potential separation of bus access routes to and from stations can provide more seamless, timely, and reliable connections for transferring passengers.
- Improve bicycle and pedestrian access and connections with transit, such as the following:
  - Provide bicycle storage capabilities on all transit vehicles and secure storage at all significant stops and stations.
  - Enhance bicycle connectivity in areas adjacent to transit centers and stations. This includes provision of new bicycle routes, lanes, or paths.
  - Implement bicycle sharing programs that provide bicycles to transit passengers allowing them to bridge any first- and last-mile gaps in their trip. This program is set up as a daily or hourly rental service and can also include monthly or annual service plans. It may be administered as a self-service program with a kiosk payment system or managed with a bicycle valet manager.
- Work with cities to prioritize pedestrian improvements that enhance pedestrian safety and that connect transit with neighborhoods, jobs, services, and activity centers. Pedestrian improvements could include the following:
  - Where possible, provide shade, greenery, seating, lighting and shelter at transit access points. Ensure regular cleaning and maintenance of shelter facilities and lights.

- Enhance street infrastructure to improve the provision of transit service. Street infrastructure should provide convenient access to the transit service from residences and businesses, enabling transit to move efficiently through the community.
- Develop or strengthen land use guidelines at both the micro scale (e.g., building design, access) and the macro scale (e.g., locating higher intensity land uses in areas well-served by transit) and are elaborated in Technical Memorandum #10. Such enhancements could include the following:
  - Design street networks to minimize out-of-direction travel for pedestrians walking to and from stations and bus stops.
  - Minimize barriers to pedestrian and bicycle access.
  - Provide sidewalks of adequate width on all streets.
  - Provide clean, well-lighted bus stops with access to transit information.
- Identify ways to coordinate public-private partnerships to enhance first-mile/last-mile connections through shared use of transfer facilities, schedule design that facilitates easy transfers, and corporate financial participation and promotion.

### **SFMTA Commuter Shuttle Policy and Pilot Program**

SFMTA is conducting an 18-month pilot that will test a limited network of shared Muni and commuter shuttle stops. Shuttle service providers must apply and pay for a permit to use the network. This pilot aims to minimize impacts of commuter shuttles while supporting their beneficial operations. The pilot addresses commuter shuttles that operate within San Francisco and between San Francisco and jobs in other cities. The commuter shuttle policy creates a shuttle zone network with shared Muni and shuttle-only zones and permits shuttles that are free and open to the public to use the shuttle zone network.

- Explore partnering with private transportation network companies (TNC) or taxis, to expand the reach of the transit network while reducing per trip cost and time for riders.
- Expand Alameda CTC's Transportation Demand Management Programs to expand travel choices, education and guaranteed rides home for those who choose to travel in shared ride or on non-motorized options.

### **Reducing First-Mile/Last-Mile Travel Time**

Transit operators in Dallas, Atlanta, Los Angeles, Memphis, and Minneapolis have partnered with at least one TNC. Dallas Area Rapid Transit (DART) riders can now access Uber via the agency's mobile ticketing app, a program intended to simplify access to mass transit stations. A similar arrangement has been developed between Uber and the Metropolitan Atlanta Rapid Transit Authority. Transit agencies in Los Angeles and Minneapolis now cover Uber trips as part of their "guaranteed ride home" programs, which reimburse regular commuters who need to travel outside rush hour for an emergency.

Santa Clara County provides a similar service "in-house." VTA's Flex Program is another example of technology-enabled transportation programs that combine elements of both demand-responsive shuttles and technology features of the TNCs. The program recently launched an on-demand transit service (called Flex), where riders can request shuttle buses using smartphone apps or personal computers for their first-mile/last-mile transit solutions. AC Transit is planning to implement a Flex service in Newark in summer 2016.

### **Provide Common Information Tools and Shared Branding and Marketing**

The extent and availability of transit services are not always apparent in operator information tools. Connectivity can be enhanced by presenting information on networks, routes, and schedules in common, shared and joint formats, including branding and marketing. Strategies include the following:

- Provide clear and consistent transit schedules and information.
- Provide one-call/one-click access to transit schedules and information of all providers.
- Provide real-time transit and first- and last-mile connecting information and options through kiosks, message signs etc. at transit stations.
- Develop a countywide transit map, similar to and incorporating lessons learned from San Francisco's efforts to develop a new transit map. This effort would require regional coordination that could be led by the Northern California traffic, transit, rideshare, and bicycling information system (511).
- Leverage opportunities offered by private enterprises, such as Google Maps, to disseminate information.
- Establish common graphics to convey system information for all operators as a common brand.

- Market connecting transit services as part of a unified regional transit system.

### **Monitor Service Delivery Standards and Performance Measures**

Transit agencies have varying priorities for allocating service between productivity-based routes and coverage routes<sup>5</sup>. In major urban areas, such as the Bay Area, transit service is primarily focused on productivity-based routes that meet the needs of the greatest number of people and contribute most to addressing regional transportation demand. Coverage service is typically much lower-frequency and, for some particularly isolated neighborhoods, addressed strictly through demand-response service.

Monitoring and evaluating how service delivery standards and performance measures are addressing the transit plan's vision and goals is important for future investment strategies and service delivery. For example, Alameda CTC's Mass Transit Program Performance Measures for Direct Local Distribution require annual regular reporting to evaluate how the Measure BB funds are being used and how transit is functioning against the performance measures.

### **Expand Affordable Fare Strategies**

Affordable fare strategies should be implemented to expand access to transit for low-income residents. MTC and Alameda CTC have worked on several programs and projects that improved universal access to transportation. Strategies include the following:

- Expand the student fare program – Several programs are already in place in Alameda County: Cal State's students get free transit in exchange for a per-student fee, AC Transit offers an Easy Pass program for employers or institutions that offer transit solutions to employers through structured fees. More, recently adopted by Alameda CTC, the Affordable Student Transit Pass pilot program is testing different models of student transit pass programs that can serve different geographical areas of the county to increase ridership. Launched for selected middle and high schools for the moment, an expansion to other schools throughout the county is already planned.

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<sup>5</sup> Transit plays a role in providing mobility to residents in areas with fewer riders and less intense development. This type of service is typically referred to as "coverage" service, since it is based on the transit service "covering" a service area. Conversely, service to higher-demand corridors is referred to as "productivity-based" service.

### **University Pass Program—Eugene, Oregon**

The Lane Transit District in Eugene, Oregon, entered into an agreement with the University of Oregon in 1987 that allows students unlimited use of the transit system in exchange for a fee paid by all students each term. In the first year of the program, student ridership more than doubled—it is now three times the pre-1987 level. The program, called Group Pass, was subsequently made available to other organizations, institutions, and businesses (public and private). It is now used by more than 80 firms and organizations representing 40,000 individuals in a transit service area of 300,000 people. These types of pre-paid programs are now common across the country, especially at universities, including many in Alameda County.

- Implement a joint-fare product pilot program to reduce transfer barriers between transit operators and enable customers to select the optimal mode for each trip.
- Support MTC and participate in its low-income program—In 2015, MTC launched a study to determine if a transit fare program based on household income would be feasible and effective. The study, which is expected to be completed in 2016, aims to make transit more affordable for low-income residents and move toward a more consistent regional standard for fare discounts.
- Consider organizational partnerships that could help to promote, solicit, and manage corporate and private donations to reduce fares for persons with demonstrated financial needs. The organization would work with social and medical service entities to determine individual needs and distribute reduced fares.

### **Fare assistance organization for low income individuals**

Several transit agencies across the country have helped establish non-profit, charitable organizations to subsidize fare for low income individuals. In Cincinnati, Ohio, the Southwest Ohio Regional Transit Authority, operator of the Metro bus system, created the Everybody Rides Metro Foundation (ERM). It is a 501c(3) foundation, not affiliated with the transit authority, with the goal of supporting self-sufficiency by providing the financial means for low income persons to access jobs, job training, and essential community services. ERM solicits donations from corporations, other charitable foundations and individuals and works with public and private sector human service organizations to provide fare assistance to individuals on a temporary basis. ERM purchase bus passes and distributes them to nearly 90 social service agencies in the region; the agencies then distribute passes to individuals with demonstrated needs. It currently provides about 330,000 rides annually to about 35,000 agency clients.

### **Develop a Countywide Passenger and Freight Rail Strategy**

There is growing demand for both freight and passenger service on Alameda County's railroad corridors. The Capitol Corridor and Altamont Corridor Express (ACE) provide a critical role in inter-regional and statewide rail linkages, as well as congestion relief on highly congested freeway corridors. As a first step to address the competing demands of freight and passenger rail, Alameda County has adopted a countywide rail strategy to achieve a wide range of economic, mobility, and sustainability goals as part of its goods movement plan.

To realize the vision of enhanced passenger and freight rail services, investments in intermodal and mainline capacity, system connectivity, grade crossing improvements, and implementation of quiet zones are recommended. In addition, separation of freight and passenger services to the extent possible is a key priority.

Implementation of this rail strategy involves Alameda CTC forging partnerships between freight and passenger rail stakeholders, including the following:

- Freight providers – UPRR and BNSF Railway
- Port of Oakland
- Alameda County and cities
- California State Transportation Agency
- Capitol Corridor and ACE

- MTC
- Community organizations
- California Air Resources Board

### **Coordinate Land Use and Transportation Decision Making**

Land use and transportation have a synergistic but often uncoordinated and sometimes even counterproductive relationship. For instance, transit relies significantly on walk-up access to generate ridership. If surrounding land uses are low density and lack a pedestrian infrastructure, the potential for ridership gain is much less than that of areas with higher densities and greater walkability. Conversely, transit has the potential to efficiently focus infrastructure investments by attracting significant levels of development along transit corridors and near stations. It also provides access to jobs and opportunities for all residents, not only those with access to, or the ability to use, a motor vehicle and supports local land use development decisions

Coordination of land use and transportation starts at the policy and planning level. It can be as site specific as locating activity centers along transit corridors and be broader and more complex such as locating transit to help open up new development and redevelopment opportunities. Greater coordination can be accomplished through various strategies and actions, such as the following:

- Involve and coordinate with transit agencies regarding land use decisions:
  - Early coordination between transit agencies and local jurisdictions, beyond regular development reviews, can offer the opportunity of joint project development that serves both jurisdiction and transit needs.
  - Coordinated multi-modal planning supports conditions for transit to perform well and supports reducing conflicts between transit and bicycle needs.
- Encourage transit-friendly development:
  - Create transit overlay zoning (transit-oriented communities) with special requirements for development in those zones.
  - Locate public buildings and facilities in areas well served by transit.
  - Create land use guidelines that orient buildings and the front doors of residential and commercial buildings to the sidewalk.
  - Provide incentives for developers to locate near transit and make their projects transit-friendly.



### **Transit and land use coordination**

BART has been a leader in working with communities and developers to create “transit villages” around stations. These large-scale developments have attracted national attention, and BART is expanding its program. Coordinating transit and land use can also involve smaller but equally significant changes that enable greater access to transit and expand the customer base for transit at stops and stations. Denver, Colorado’s Blueprint Denver initiative established a detailed revision to the functional classification of its streets that targets several arterials for transit use through zoning and building codes that encourage building fronts and entrances along the sidewalk edge and provision for transit priority. Blueprint Denver also created three “Main Street Zone Districts” to encourage a mix of housing, office and commercial uses in existing high transit corridor. Form-based codes were applied to the districts to steer building forms toward the street and transit while allowing flexible land uses and relaxed parking requirements. Alameda CTC’s Multi-modal Arterial Plan has developed street typologies and modal priorities working with transit operators and local jurisdictions that support complete and connected networks for transit and all other modes.

### **Reduce Costs**

The MTC Transit Sustainability Project (TSP) initiative highlighted opportunities for greater efficiency and coordination between agencies. Schedules, fares, and functional consolidations have been explored. Strategies include the following:

- Assess the application of specific strategies developed for the TSP, including opportunities to reduce costs through better coordination among service providers.
- Require that all projects include value engineering to determine if capital costs can be reduced without compromising safety, customer benefit, environmental impacts, or aesthetics.
- Audit operating costs and compare with peers to identify areas where efficiencies can be achieved.

- Develop programs, such as enhanced travel training programs and facilities, to support paratransit riders on fixed-route service as physical and developmental disabilities allow.

### **Maintain all Assets to their Optimal Condition**

The Federal Transit Administration (FTA) is strongly encouraging transit agencies to develop detailed plans that identify the actions necessary to maintain fixed and mobile assets in optimal condition. Assets include fixed facilities such as operations centers, maintenance bases, transit stations and shelters, fixed guideways and systems, and rolling stock (trains, buses, support vehicles). Assets must be managed properly to provide reliable and safe service for passengers and safe conditions for employees and the public. Effective asset management should build upon comprehensive planning:

- State of Good Repair (SOGR) analyses should be conducted by all transit agencies in accordance with FTA guidelines to inventory assets and their conditions, identify essential capital needs, costs and timetables, including useful life thresholds, replacement needs and rehabilitation/renovation opportunities. In addition, SOGR analyses should identify where new and modified policies, procedures and practices should be developed.

## **2.2 Interagency Coordination**

Creating seamless connections and programs between transit systems and modes will require better coordination among agencies. Improved coordination will allow implementation of integration strategies involving dissemination of transit information, fares, fare payment systems and branding of services.

Partnerships and coordination are essential to accomplish the Transit Plan's recommendations and overall vision. They are also essential for bus operators, as they do not own or maintain the streets upon which they operate and must rely on partnerships with local and regional agencies. For example, any project that involves AC Transit's service area must be coordinated with the jurisdiction that the project corridor passes through. Close cooperation regarding operations, planning, and capital improvements is essential to support both transit and local jurisdictional needs.

The institutional environment in which public transit must operate in the Bay Area is complex and multifaceted, especially so in Alameda County. Therefore, common and individual roles and responsibilities of government entities that play a part in implementation of the network recommendations are identified. Alameda CTC plays a major role in some instances and a support role in others. The roles vary depending on the specific recommendation. It is recognized that strategies may change as specific recommendations move forward.

## Common Strategies

Common strategies for interagency coordination include the following:

- Intergovernmental Agreements (IGAs) can address a range of coordination strategies, from mergers to agreements regarding operations or funding of capital improvements. Implementation of major transit corridor projects typically requires several IGAs or Memoranda of Understanding to document the responsibilities for planning, design, construction, and ongoing operation and maintenance of the corridor project.
- A committee for interagency coordination can undertake institutional-related initiatives through formal agreements and partnerships that define roles and cost/staff sharing. A policy-level committee can be useful for coordinated decision-making and information sharing for activities such as capital projects, operational plans, and customer information across jurisdictional boundaries. Its work can also lead to formal inter-agency partnerships to undertake complex, multi-jurisdictional and multimodal projects. The policy-level committee would be responsible for setting up permanent and ad hoc staff/technical level committees. These would be helpful for project and plan coordination and technical discussions, such as service span and schedule coordination for interfacing services. Recommendations developed by the staff/technical level committees would be presented to the policy-level committee for interagency coordination for consideration and approval. Because of the interregional transit opportunities, partners could include not only Alameda County jurisdictions and transit operators, but other county, regional and state partners (i.e. Caltrans, High Speed Rail, CalSTA).
- Shared technology is an important tool that can provide for smoother customer experience and improved transit operations among multiple operating entities. Technologies that improve customer convenience include a common fare, customer service information, and trip planning systems. Transit operations can be more efficient and effective through the use of common technology across jurisdictions and transit agencies for systems such as transit signal priority, automated vehicle location (AVL), and fare distribution and collection.
- Integrating operating procedures across transit providers can improve the customer experience and result in increased transit usage. Examples include a common procedure for transfer requirements (time restrictions, direction of travel) and integrating requirements for eligibility and use of paratransit service. In addition, a one-call/one-click clearinghouse for services for persons with disabilities can be established to maximize the effectiveness of all federal, state, and local resources allocated to transportation for persons with disabilities and help reduce paratransit costs for transit operators.

- Performance monitoring can aid in the development of a shared understanding of needs. Joint reporting of performance or other indicators can reinforce shared goals and objectives among multiple entities. Key to this is agreement between partner agencies on key performance indicators.
- Funding integration costs even when federal funds pay for a large percentage of a project, multiple sources are applied and local funding is required. Funding from multiple sources can be combined to fund a project and can lead to “buy-in” from each of the funding agencies. Funding for projects can also be stretched by coordinating planned improvements. For example, combining a planned transit project and planned roadway work on the same street to be completed as a single project.
- Evaluation of items of common interest, such as capital priorities or the effectiveness of pilot programs or joint operations, is a useful tool in establishing agreement among entities.

### **Alameda CTC as a Coordinator**

Alameda CTC has a unique position to advance network recommendations. The CTC is a transportation planning and funding entity for Alameda County, controlling funds from Measures B and BB, as well as a vehicle registration fee. It also makes programming recommendations for regional, state, and federal funding sources. Therefore, Alameda CTC has a degree of authority in shaping criteria for when and how uncommitted funds are expended. This can be done by sponsoring specific projects or exerting influence on what and how transportation investments are made.

Alameda CTC’s role as a “convener/facilitator” is critical to moving the network recommendations forward. A “convener” is an entity empowered to assemble members or constituent parties to share or effectuate a common purpose by managing development and delivery processes to achieve transportation results that support countywide mobility while respecting local community needs. The convener is responsible for keeping the process on track and moving forward. Because all cities and transit agencies are represented on the commission, Alameda CTC is well suited for this role by providing a countywide perspective. The short- and long-range planning efforts developed by Alameda CTC, combined with specific corridor studies, direct project and program delivery, and performance monitoring, can effectively support coordination, collaboration, and funding to support the Transit Plan goals.

## Roles for Partner Agencies

The six service tiers provide a framework for moving forward with improved connectivity initiatives by identifying various roles for partner agencies:

- **Inter-regional Tier**—Inter-regional Tier services pass through multiple counties and frequently share rights-of-way with freight rail services. Planning for improving and enhancing these services is primarily carried out by multi-county agencies such as Regional Joint Power Authorities/Boards and/or the State of California. These entities could be included in a steering committee for the countywide passenger and freight rail strategy described in Section 2.1.
- **Regional Express Tier**—The Regional Express Tier includes transit that operates both within and beyond Alameda County. Because this tier involves other counties, other county transportation authorities will be heavily involved. Implementation of the proposed Regional Express capacity improvements will serve to supplement, and in some cases directly connect with, BART, ACE, and Capitol Corridor.

These operators should participate in the policy and technical committees for interagency coordination to focus on the short- and mid-range responses to the Transbay passenger capacity issue to suggest resource sharing and allocation to meet this pressing challenge and to address other inter-regional transit needs throughout the County at key gateways.

- **Urban Rapid Tier** – the characteristics of Urban Rapid Tier are frequent all-day bus service combined with a variety of transit-preferential treatments with respect to signalization, lane usage, and roadside upgrades. The Urban Rapid Tier includes transit that operates largely within Alameda County. The proposed Urban Rapid improvements directly connect with BART, ACE, and Capitol Corridor in most cases.

Agencies responsible for transit planning and operations, as well as the regional and local street and traffic networks, should be represented on the policy and staff/technical interagency committee for coordination to facilitate implementation of major improvements.

- **Local Frequent and Community Connector Tier**—Local Frequent and Community Connector Tier includes transit services that serve local trips within Alameda County communities and cities. Alameda CTC has not identified specific recommendations for this tier. It is assumed that local jurisdictions and transit agencies will have the primary responsibility for planning and operating these services. Alameda CTC could fund increases in service frequency, span, and/or coverage as planned by these entities. Coordination will be focused among

transit operators, jurisdictions, and first- and last-mile transportation option providers.

- Streets Plus Tier—Local jurisdictions have primary responsibility for improvements that fall under the Streets Plus Tier. Regular coordination, including locally oriented permanent or ad hoc committee meetings, should be undertaken so that the needs of all stakeholders are addressed when issues are identified and solutions are developed.

## 2.3 Phasing

The individual transit corridor projects contained in this plan will need to be phased due to funding, staff resources, and operational limitations. Priorities and a general implementation plan will be developed in conjunction with local partners and in consideration of more detailed cost estimates and funding availability. In addition, phasing of certain types of improvements may be helpful. Some features or improvements may lend themselves to implementation prior to other planned elements. For example, broad implementation of transit priority across multiple corridors may be an efficient option for implementing that type of system and would yield immediate benefit to transit operations. Therefore, there are different methods by which Alameda CTC can move forward with implementation once local and regional priorities and time horizons are considered.

### Staggered Start Delivery of Network Recommendations

Most of the proposed network modifications fall into the Urban Rapid tier, which includes primarily AC Transit and WHEELS operators. AC Transit's Major Corridor Study examined eleven transit corridors, six of which will be considered [by the AC Transit Board of Directors](#) for bus rapid transit (BRT) level of investments, four for Rapid Bus improvements, and one for enhanced bus improvements. AC Transit is recommending a staggered start for the more significant projects identified in the Major Corridors Study. The staggered start works well for staffing of projects and with anticipated funding streams. Although multiple projects would not typically be in the same phase (planning, design, or construction) at the same time, there would be multiple corridor projects in development (at different phases) concurrently. The staggered start option can allow all projects to be completed by 2040.

In addition to the corridors evaluated in the Major Corridors Study, this plan identified other high ridership routes from market analysis and working in cooperation with the transit operators and local jurisdictions. These routes are recommended for further study and delivery over the longer term.

### Prioritizing New Starts

Five of the Transit Network recommended ~~BRT~~ projects qualify for New Starts funding based on their preliminary \$300 million+ capital cost estimate. New Starts funding is highly competitive and it is atypical for a region to have two concurrent New Starts projects in the development phase. To position Alameda County for New Starts funding, three actions are suggested

- Conduct a New Starts project rating assessment for each eligible project:

It is assumed that each of the five major ~~BRT~~ projects meets Federal Transit Administration's (FTA) definition of what constitutes an eligible New Starts project. In order to receive New Starts funding, projects must be evaluated and rated by FTA according to specific project justification and local financial commitment criteria (Table 2).

Table 3: New Starts Criteria

Category	Criteria
Project Justification	<ul style="list-style-type: none"> <li>• Mobility Improvements</li> <li>• Cost effectiveness (cost per rider)</li> <li>• Congestion relief</li> <li>• Environmental benefits</li> <li>• Land use</li> <li>• Economic development</li> </ul>
Local Financial Commitment	<ul style="list-style-type: none"> <li>• Contingency amounts</li> <li>• Funding stability, reliability, availability</li> <li>• Funding to operate, maintain, recapitalize system</li> </ul>

Each criterion is rated on a five-point scale, from Low to High. To qualify for funding, projects must achieve an overall rating of at least Medium (point three on the five point scale) and receive at least Medium summary ratings for both project justification and local financial commitment.

As each of the five major ~~BRT~~ corridors proceeds through the project development phase, an assessment should be conducted to determine how it potentially rates in criteria and category. Achieving Medium or better scores is not essential to enter the New Starts process. The assessment is designed, however, to identify strengths and areas in which improvement is necessary, proving Alameda CTC and its partners to focus attention and resources and better position the projects for funding eligibility.

- Determine regional New Starts priorities:

Conducting an initial New Starts rating assessment will help Alameda CTC, MTC, and other regional partners to prioritize which project or projects it wishes to further develop and advance as a candidate New Starts project.

Although the project with the highest estimated rating would be a likely candidate for advancement, other considerations include geographical distribution of New Starts projects throughout the Bay Area, as decision-making on the federal level can be based, in part, on evenly distributing funds throughout the U.S. For example, projects in Alameda County and San Mateo County may have similar levels of justification and support within the Bay Area, but federal decision-makers opt to consider only one New Starts project for the Bay Area as a whole.

Therefore, achievement of regional consensus on which projects to pursue as New Starts requires collaboration and consistency of project scope and analysis among the Bay Area's policy and funding entities.

- Determine what other federal and non-federal funds can be applied to a New Starts project:

New Starts projects can also include other federal funding sources such as transportation formula grants, fixed guideway modernization grants, bus and bus-related equipment and facilities grants (Section 5339) and flexible funding from the federal highway program. These funds are not allowed to be used as the non-federal share, but can help reduce the amount requested of the New Starts program and, therefore, make the project more competitive for New Starts funding. Congestion Mitigation and Air Quality (CMAQ) is used by several agencies nationwide to supplement funding for their New Starts projects because of its flexibility for use on several different types of projects and components. Transportation Infrastructure Finance and Innovation (TIFIA), which was created to help finance large projects, is an additional option.

On a local and regional level, similar decisions would need to be made, such as reserving Measure BB funds as matching funds for New Starts.

As with achieving consensus of regional New Starts priorities, similar collaboration among regional policy and funding entities, including Alameda CTC, will enhance New Starts competitiveness.

### **Incremental Implementation of Projects**

Implementation of the Transit Network Recommendations is by no means restricted to competing on a national level for New Starts funding. Another phased implementation option may be to build common sections of transit corridors (segments that are used by multiple corridors), such as the downtown Oakland Transit Zone, independent of and before corridor projects. Those segments will provide immediate benefits and will simplify future corridor development.



Individual transit corridor projects are often implemented as discrete projects. If using federal funding, project evaluation and funding approval by the FTA are linked to a particular complete transit corridor. As a result, a corridor-by-corridor implementation “requirement” will need to be accommodated as part of any phased implementation plan.

Four incremental approaches are suggested:

- Seek Small Starts funding for smaller projects:

Six of the Transit Network recommended ~~BRT projects~~ corridors may qualify for Small Starts funding. This is an important consideration as Small Starts projects are subject to fewer interim FTA approvals and a more streamlined project development process.

- Develop New Starts-scale projects incrementally through Small Starts:

Small Starts is awarded as a single grant per project. However, if proposed improvements along a longer corridor are divided into separate projects, each of which has independent utility and meets the requirements of the Small Starts program, each project could potentially apply for a separate Small Starts grant.

- Develop projects incrementally using other federal sources:

Projects can be funded by separate New Starts grants on a segment-by-segment basis—as long as the initial segment(s) have independent utility, New Starts is not designed to fund a project on a piecemeal basis by cost category.

Four federal programs are worth pursuing on an annual basis for shorter term solutions:

- STBG – for streetscape projects, including complete streets solutions, signal synchronization and other streetscape improvements along the corridors.
- CMAQ – for transit-related projects that improve air quality such as queue jumps and signal priority.
- TIGER Program – for innovative street and transit projects along the corridor.
- Active Transportation Program (ATP) – for bikeway and pedestrian improvements in the corridor.

Projects can still be eligible for New Starts funding but developed incrementally. Non-New Starts funding can be used, for example, to construct exclusive lanes or help develop a Transit Signal Priority system. These improvements would result in three significant benefits:

- Improvements in the operation of the existing system that can be quickly realized
- Build capacity, ridership, and interest in additional improvements in the corridor, including New Starts and Small starts investments.

- Reduce the level of New Starts funding requested, thereby enhancing the project’s competitiveness.

Whereas the STBG and CMAQ funds are distributed through MTC’s Regional Transportation Improvement Program, which is approved every two years for a three to five year program of projects, TIGER and ATP are annual discretionary grant programs.

- Develop projects incrementally using other state and local sources:

The state Cap and Trade program has the most significant amount of new, uncommitted funding for transit projects. Alameda CTC should consider the Transit and Intercity Rail Capital (TIRC) Program for ~~the BRT~~ projects that will generate the most air quality improvements (generally those with higher ridership potential) and the Affordable Housing and Sustainable Communities (AHSC) Program for projects where Alameda CTC can partner with a city/community with a housing authority and affordable housing needs along transit corridors. MTC also has a variety of streets and roads funding programs that could be used to improve the corridors in the near term.

### 3.0 Funding Options

The wide array of potential funding sources and financing mechanisms relevant to the Network Recommendations is summarized in Table 3.

Table 4: Most Likely Funding Sources for Alameda County O&M and New Capital Needs

Funding Source	Description	Eligible Uses	Funding Agency
<b>Federal</b>			
FTA: Section 5307 (Urbanized Area Formula)	Grants to Urbanized Areas (UZAs) for capital, planning, and operating expenses in certain circumstances.	Operating (preventive maintenance and ADA) and maintenance expenses for existing services; capital funding for new projects.	MTC
FTA: Section 5337 (State of Good Repair)	High Intensity Fixed Guideway (97% of funding) and High Intensity Motorbus (3% of funding).	Replacement and rehabilitation of existing fixed-guideway systems and high-intensity bus	MTC
FTA: Section 5339 (Bus and Bus Facilities)	Capital investments in bus and bus facilities.	Capital funding for existing and new bus transportation projects	MTC, FTA
FTA: Section 5309 (Capital Investment Grants)	Grants for fixed guideway investments such as new and expanded rapid rail, commuter rail, light rail, streetcar, BRT, and ferry.	Capital funding for new projects	FTA
FHWA: Surface Transportation Block Grant Program (STBG)	Program funds to states and metropolitan planning organizations (MPOs)	Maintenance expenses for existing services; capital funding for new projects	MTC, California Transportation Commission
FHWA: Congestion Mitigation and Air Quality (CMAQ)	Program funds to air quality maintenance or non-attainment areas (regions that do not meet the National Ambient Air Quality Standards for ozone, carbon monoxide, or particulate matter)	Maintenance expenses for existing services; capital funding for new projects; a portion of funds can be used for operations to support a demonstration or pilot project for a period of three years	MTC, California Transportation Commission
US DOT: Transportation Investment Generating Economic Recovery (TIGER)	Highly competitive, discretionary grant program for capital costs of road, rail, transit, and port projects.	Replacement of existing systems; capital funding for new projects	US DOT

Financing: Transportation Infrastructure Finance and Innovation (TIFIA)	Credit program to provide assistance to eligible major transportation projects of critical national and regional importance.	Financing mechanism for new capital projects	US DOT
<b>Regional / State</b>			
Transportation Development Act (TDA)	Allocation of sales tax revenue under the California Transportation Development Act of 1971, for transportation purposes.	O&M expenses for existing services (not to exceed 50% of the operating budget of any individual transportation service entity); capital funding for new projects	MTC, Local Operators
Regional Measure 2 (RM2)	Funded by revenues from tolls on the region's seven state-owned toll bridges.	Capital funding for existing and new projects	Bay Area Toll Authority (BATA), MTC
Assembly Bill (AB) 664, Bridge Tolls	Bridge toll revenues and are programmed annually by MTC for partial local match to Federal Section 5307 and 5337 formula grant funds.	Mainly used to match transit capital projects programmed for FTA formula funds in the Transportation Improvement Program	MTC
Cap-and-Trade	The Greenhouse Gas Reduction Fund (GGRF) is appropriated to state agencies for 1) Sustainable Communities and Clean Transportation Funding, 2) Clean Energy and Energy Efficiency Funding, and 3) Natural Resources and Waste Diversion.	Rail and bus capital projects; operational improvements that result in increased ridership and reduced greenhouse gas emissions	Multiple agencies
Financing: State Infrastructure Bank	Flexible project funding through loans, debt service guarantees, lines of credit, and other capital financing support.	New capital projects	Caltrans
<b>Local</b>			
San Francisco County Transportation Authority (SFCTA) Proposition K Sales Tax	Half-cent sales tax for transportation projects in San Francisco County.	O&M expenses for BART	SFCTA
Contra Costa Measure J Sales Tax	Half-cent retail sales tax in Contra Costa County (25-years).	O&M expenses for BART	Contra Costa
Measure BB	2014 extension for the existing Measure B in Alameda County.	O&M expenses for existing services; capital funding for new projects	Alameda CTC
<b>Private</b>			
Value Capture	Strategies to capture new and increased value of existing land and properties generated as a result of a major transit capital investment.	Funding/financing for new capital projects	TBD

### 3.1. Existing Services – Operating and Maintenance (O&M) Funding

Several funding sources can be used to pay for the operating needs of existing services. Most are committed and include dedicated local revenues controlled by the operators. They include fares, non-operating revenues such as advertising, and county sales taxes. Committed sources also include funds that pass through or are typically estimated by the MTC, including federal grants, TDA funds, and bridge tolls.

Between FY 2017 and FY 2040, MTC's draft Plan Bay Area 2040<sup>6</sup> includes preliminary committed operating revenue projections of \$49.87 billion for the six agencies in Alameda County. This leaves a gap of approximately \$367 million (less than one percent).

Similarly, various revenue sources are dedicated to capital replacement and rehabilitation by statute or policy. They include federal and regional formula grants and certain county transportation sales taxes. Between FY 2017 and FY 2040, MTC's draft Plan Bay Area 2040 estimates preliminary committed capital revenue projections of \$9.18 billion for the six agencies in Alameda County. This leaves a gap of approximately \$13.83 billion (60 percent).

The following major funding sources, listed in Table 3, are used for O&M needs.

#### **Federal- Section 5307 Urbanized Area:**

Funding is provided nationwide to urbanized areas for public transportation capital, planning, and preventative maintenance activities. It is allocated on a formula-basis with a minimum required 20 percent local match.

#### **Federal- Section 5337 State of Good Repair:**

Section 5337 is available to fixed guideway facilities in operation for at least seven years. Funds may only be used on existing fixed guideway transit in need of asset replacement or modernization; Section 5337 cannot be used for a new transit investment. There are two sub-programs:

- High Intensity Fixed Guideway (including rail, BRT, and passenger ferries);
- High Intensity Motorbus (such as buses operating in high occupancy vehicle lanes).

Funds are allocated between the two programs using a 97/3 percent split and required a minimum 20 percent local match.

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<sup>6</sup> Memorandum to Partnership Technical Advisory Committee regarding Plan Bay Area 2040 Needs Assessment Update, January 2016

**Federal- Section 5339 Bus and Bus Facilities:**

Section 5339 is for capital investments in bus and bus facilities, primarily allocated by formula. Remaining funds are competitively allocated with no single grantee receiving more than 10 percent of the annual discretionary program. A sub-program provides grants for bus and bus facility projects that support low and zero-emission vehicles. A minimum 20 percent local match is required.

**State - Transportation Development Act (TDA):**

The intent of the TDA is to improve existing public transportation services and encourage regional transportation coordination. Funding is allocated among transit and non-transit related projects that adhere to regional transportation plans. TDA has two major funding sources: Local Transportation Fund (LTF) and STA fund, both allocated to areas of each county based on population, taxable sales, and transit performance.

- Local Transportation Fund (LTF): used for the deposit of TDA revenues, derived from a one-quarter cent general sales tax. Eligible projects include development and support of the public transportation needs. Some counties have the option of using LTF for local streets and road project if they can show there are no unmet transit needs.
- STA Fund: derived from the statewide fuel excise tax and appropriated by the Legislature to the State Controller's Office, which then allocates the tax revenue, by formula, to planning agencies and other selected entities. Statute requires that 50 percent of STA funds be allocated according to population and 50 percent be allocated according to operator revenues from the prior fiscal year.

**Regional- Bridge Tolls:**

Regional measures and assembly bills generate toll revenues to fund public transportation projects within the Bay Area, including:

- Regional Measure 2 (RM2): increased the toll rate by \$1 on for the region's seven state-owned toll bridges to fund transportation projects that improve congestion.<sup>7</sup> Eligible projects include transit capital improvement projects.
- AB 664: allocates toll revenue collected on the San Francisco-Oakland Bay, Dumbarton, and San Mateo-Hayward bridges to transportation projects near the bridges. The funds are programmed annually by MTC to provide partial local match to federal Section 5307 and 5337 formula grant funds. They are split 70 percent for the East Bay and 30 percent for the West Bay.

**Local- San Francisco County Transportation Authority (SFCTA) Proposition K Sales Tax:**

This half-cent sales tax in San Francisco County is dedicated to transit and paratransit improvements, streets and traffic safety, and transportation system management.

<sup>7</sup> MTC Regional Measure 2 (2016) <http://mtc.ca.gov/our-work/invest-protect/toll-funded-investments/regional-measure-2>

**Local- Contra Costa Measure J:**

This half-cent retail sales tax funds transportation projects in Contra Costa County through 2034.

**Local Measure B and Measure BB - Alameda County**

This half-cent sales tax for transportation purposes in Alameda County is controlled by the Alameda County CTC, focusing on capital projects and programs that improve the countywide transportation system.

**3.2. Transit Network Recommendations Capital Funding**

Once operational, each of the recommendations is expected to have access to several revenue streams. For example, each project will generate fare and non-operating revenues as well as additional federal formula grants to help fund its needs. However, it is expected that the projects will add to the projected operating and capital maintenance unfunded gap.

Closing the gap will most likely be addressed, in part, by allocating discretionary funding sources, where applicable, to help sustain the existing transportation network. Preliminary estimates for total transportation revenues forecasted for MTC's draft Plan Bay Area 2040 are approximately \$287 billion between FY 2017 and FY 2040. They are available for numerous transportation uses including local streets and roads, state highways, and transit operating and capital needs. Nearly all of this funding is for committed transportation projects and programs; however, approximately 15 percent (\$43 billion) is also available for discretionary purposes.

A portion of the discretionary funds is typically used towards closing the gap for existing services. The remaining discretionary funds are focused on strategic investments in the region's transportation network that growth. Alameda County represents approximately 21 percent of the Bay Area's population and employment<sup>8</sup>. As such, it could compete for approximately one-fifth of the discretionary funds to help pay for the new recommended transit investments, which would equal approximately \$9 billion of new funding.

The following major funding sources, listed previously in Table 3, are used for capital expansion needs.

**Federal- Section 5309 Fixed Guideway Capital Investment Grants (CIG):**

FTA's largest discretionary resource for funding major transit capital investments has three sub-programs:

- New Starts: fixed guideway projects (heavy rail, light rail transit, commuter rail, BRT, streetcars) costing more than \$300 million or requiring more than \$100 million

<sup>8</sup> Source: Association of Bay Area Governments (2013)

in CIG funding. The CIG share of a total project cost cannot exceed 60 percent, although in practice the CIG share rarely exceeds 50 percent of capital costs.

- **Small Starts:** projects costing less than \$300 million and requiring less than \$100 million in CIG funding.
- **Core Capacity:** capital investment projects of any cost to add capacity to existing rail or BRT systems.

Projects are evaluated and rated according to several project justification and local financial commitment. A project's rating, however, is only one of several important technical factors that FTA considers when recommending CIG funding to Congress. A project's readiness and the technical capacity of the sponsor are other key factors.

### **Federal- Surface Transportation Block Grant Program (STBG):**

STBG is distributed by the federal Highway Administration (FHWA) to states and MPOs using a highway-based funding formula.

### **Federal- Congestion Mitigation and Air Quality Improvement Program (CMAQ):**

CMAQ funds are distributed by FHWA on a formula basis to air quality maintenance or non-attainment areas for transportation projects and programs to reduce congestion and improve air quality. Funds can be used for the capital costs of transit projects and up to three years of the operating costs of new transit service.<sup>9</sup>

### **Federal- Transportation Investment Generating Economic Recovery (TIGER) Program:**

TIGER is administered by the U.S. Department of Transportation to support capital costs of road, rail, transit, and port projects that have a significant impact on the nation, a region, or a metropolitan area. TIGER is highly competitive. Compliance with its evaluation criteria, demonstrated commitment of local match, and broad local consensus - including support from both traditional and non-traditional partners - are key requirements. Preferred projects have performed considerable project development such as, completed environmental clearance). The TIGER program typically delivers \$10-\$20 million in capital funding.

### **State/Regional- Cap and Trade:**

Cap and Trade is a market-based approach to gradually reduce greenhouse gas (GHG) emissions. Participating entities are incentivized to invest in cleaner technologies that will decrease their carbon emissions to reduce their need for allowances.

The Greenhouse Gas Reduction Fund (GGRF) is appropriated to State agencies for designated purposes. These appropriations are classified by three categories. The most relevant of these categories is the Sustainable Communities and Clean Transportation

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<sup>9</sup> American Road & Transportation Builders Association (ARTBA) 2015 "Fixing America's Surface Transportation Act" <http://www.artba.org/newsline/wp-content/uploads/2015/12/ANALYSIS-FINAL.pdf>



Funding Program in which 40 percent is allocated at the discretion of the state and 60 percent are allocated among four different sub-programs:

- Affordable Housing and Sustainable Communities (AHSC): funds “sustainable community” initiatives such as TODs. AHSC will receive 20 percent of annual proceeds, half of which must be spent on affordable housing projects.
- Low Carbon Transit Operations Program (LCTOP): administered by Caltrans, it provides operating and capital assistance to transit agencies to reduce GHG emissions and improve mobility. Eligible recipients include transportation planning agencies, county transportation commissions, and transit operators. LCTOP will receive 5 percent of annual proceeds.
- Transit and Intercity Rail Capital (TIRC): works in coordination with the California State Transportation Agency (CSTA) to fund bus and rail capital improvements that target disadvantaged communities, expand rail systems, reduce GHG emissions, improve safety, and enhance connectivity to high-speed rail. The program will receive 10 percent of annual proceeds.
- High Speed Rail Projects: covers certain costs of the high-speed rail projects. This program will receive 25 percent of annual proceeds.
- State Transportation Improvement Program: The California Transportation Commission administers the State Transportation Improvement Program (STIP). The STIP is updated every two years during even years. Alameda CTC submits recommended programming of the Alameda County share of the Regional Improvement Program (RIP) portion of the STIP cycle to MTC, which in turn, submits the region’s proposed STIP programming to the California Transportation Commission for adoption into the STIP. Transit capital may be funded with the STIP.
- Other: Many other state and regional sources are available to support some capital and operating funds, including, but not limited to Jobs Access and Reverse Commute (JARC), Transportation Fund for Clean Air (TFCA), State Transit Assistance Funds (STA), [Transportation Development Act \(TDA\)](#), and transit agency sales tax and/or property tax revenues.

MTC created a funding framework that assigns Cap-and-Trade funds over the next 26 years<sup>10</sup> to six comprehensive program categories:

- One Bay Area Grants (OBAG): a competitive program is administered by congestion management agencies at the county level to fund complete streets, and bicycle and pedestrian improvements.
- Transit Core Capacity Grant Program: focuses on the region’s highest priority capital needs- vehicle replacement and expansion and facilities improvements at AC Transit, BART and SFMTA.

<sup>10</sup> MTC’s Funding Framework For Cap and Trade Funds (2014)  
[http://mtc.ca.gov/sites/default/files/Cap\\_and\\_Trade\\_Fact\\_Sheet.pdf](http://mtc.ca.gov/sites/default/files/Cap_and_Trade_Fact_Sheet.pdf)

- Transit Operating and Efficiency Program: is responsible for improving transit services with a 40 percent distribution to core capacity transit operators (AC Transit, BART, and SFMTA) and 60 percent to the remaining transit operators.
- Climate Innovation: supports safe routes to school programs, which include streets and roads. Eligible categories include technology advancements and strategies to reduce demand for driving.
- Goods Movement Program: aims to improve the efficiency of the movement of goods within and through the region or mitigate the associated environmental impacts.
- High Speed Rail Program: to support high-speed rail efforts.

### Local- Measure BB:

This half-cent sales tax for transportation purposes in Alameda County is controlled by the Alameda County CTC,<sup>11</sup> focusing on capital projects and programs that improve the countywide transportation system.<sup>12</sup>

The 30 year Alameda Countywide Transportation Plan proposes \$7.8 billion in spending to improve and maintain transportation infrastructure and systems. The two largest portions are \$3.7 billion for public transit and paratransit and \$2.3 billion for street maintenance. In addition, \$400 million is earmarked for a BART extension to Livermore. The 2014 Transportation Expenditure Plan (2014 TEP) guides the revenues of the sales tax toward capital projects and programs that improve the countywide transportation system. As such, priorities of Measure BB include:

- Expanding BART, bus, ferry and rail services
- Keeping fares affordable for youth, seniors, and people with disabilities
- Providing traffic relief by improving local streets and roads and highway corridors
- Improving air quality and provide clean transportation by expanding bicycle and pedestrian paths and the regional rail network
- Creating good jobs within Alameda County by requiring local contracting and supporting community developments that improve access to jobs and schools.

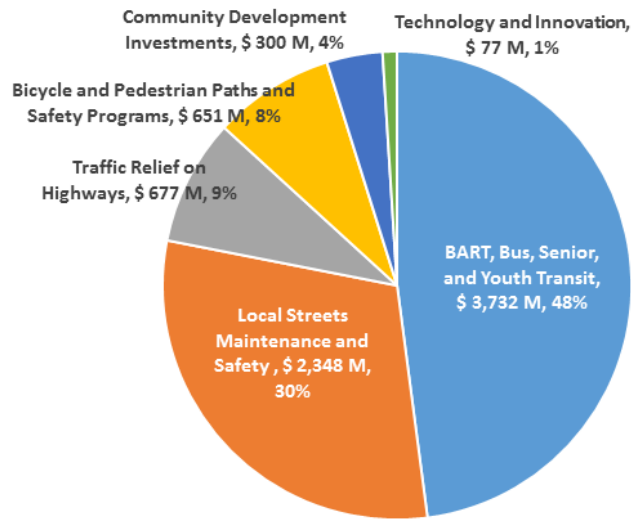
Local agencies and transit jurisdictions receive Measure BB direct local distributions of the revenue, as stated in the 2014 TEP. The local distributions total approximately \$70 million annually and are prioritized by the recipient to support transportation investments. In addition, the 2014 TEP also designates funding to additional programs as shown in Figure 3.

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<sup>11</sup> Alameda CTC Measure B (2012) <http://www.alamedactc.org/measureb>

<sup>12</sup> Alameda CTC Measure BB (2012) [http://www.alamedactc.org/app\\_pages/view/17260](http://www.alamedactc.org/app_pages/view/17260)

Figure 3: Total Measure BB Investments, Alameda County Transportation Expenditure Plan 2014-2015



The most relevant of these programs is the BART, Bus, Senior, and Youth Transit component. It constitutes about half the investment and includes five separate sub-programs that could be used to fund some of the construction as well as ongoing operating and maintenance costs of the Transit Network Recommendations:

- Transit Operations, Maintenance, and Safety: will be distributed periodically, emphasizing demonstrations or pilot projects which can leverage other funds.
- Affordable Transit for Seniors and People with Disabilities: will be provided to transit operators to provide specialized transportation service mandated under the Americans with Disabilities Act (ADA). Funds will be provided to each part of the County based on its population of residents over age 70 for local programs.
- Rapid Bus and Transit Improvements: may be used for project development, design, construction, access and enhancement of the rapid transit corridors as local matching funds to attract outside funds to the other corridors which are currently under development.
- BART Extension and System Improvements: used for projects that increase the capacity and utility of the existing system and provide local funding for a proposed BART extension in the eastern part of the county.
- Major Transit Corridor and Commuter Rail Improvements: Investments include maintenance and service enhancements on exiting rail lines and the development of transportation investments for the future high speed rail connecting Alameda County to the Bay Area.

### 3.3. Financing Mechanisms

Funding and financing are interrelated but differ. Funding refers to federal and regional/state grants as well as local revenue streams used to pay for project capital

expenses and ongoing operating and maintenance costs. The funding drawdown amount in any given year is limited by the amount of resources available in that year. Financing is a debt mechanism that consists of borrowing against future funding sources to meet current needs.

Available financing mechanisms include:

**Federal: Transportation Infrastructure Finance and Innovation (TIFIA):**

TIFIA is a credit program to provide assistance to eligible major transportation projects of critical national and regional importance including highways and bridges, intelligent transportation systems, intermodal connectors, transit vehicles and facilities, intercity buses and facilities, freight transfer facilities, and passenger rail vehicles and facilities. State departments of transportation, transit operators, special authorities, local governments and private firms are eligible applicants. US DOT offers three types of credit assistance: direct loans, loan guarantees, and standby lines of credit.

**Federal/State- State- State Infrastructure Bank (SIB):**

California participates in this US DOT pilot program which provides flexible project funding through loans, debt service guarantees, lines of credit, and other capital financing support. California's SIB is the Transportation Finance Bank, which offers loans of up to six years to public and private entities for any stage of eligible highway construction or transit capital project.<sup>13</sup>

**Local- Value Capture Mechanisms:**

An array of financing strategies could be used to capture new and increased value of existing land and properties generated as a result of a major transit capital investment. A portion of this increase in value can then be recovered by local jurisdictions to help offset the costs of such improvements.

- Tax Increment Financing (TIF): involves the creation of a special district to raise revenue for public improvements by capturing a portion of the additional assessed value generated by private sector development. The tax base is frozen at predevelopment levels, and all or a portion of property tax revenues derived from increases in assessed values (the tax increment) are applied to a special fund created to retire tax-exempt bonds originally issued for development of the district. The initial TIF revenue yield is relatively low. However, revenue generally increases over time as redevelopment and escalation leads to increased property values. TIFs are often applied for periods of 20 to 30 years. While most TIFs capture the incremental increase in property values, some states allow the capture of other taxes as well.
- Payments in Lieu of Taxes (PILOT): is an alternative approach to TIF that provides more revenue and is easier to borrow against than standard TIF applications.

<sup>13</sup> Caltrans *California State Infrastructure Bank - Annual Report FY 2006-2007*  
[http://www.dot.ca.gov/docs/reports/Report\\_CaliforniaInfrastructureBank\\_ACC.pdf](http://www.dot.ca.gov/docs/reports/Report_CaliforniaInfrastructureBank_ACC.pdf)

PILOTS are often used to promote economic development by allowing certain properties to forego annual tax assessment and payments for a specified period of time.

- **Special Assessment:** an additional property tax applied to parcels of land that receive a special benefit from one or more public improvements funded by assessment revenues. The additional tax is applied to existing and future properties. Special assessments are typically applied for a 20- to 30-year period and generate a consistent revenue stream. Commercial and residential properties are often taxed at different rates.
- **Joint Development:** a partnership between a public entity and a private developer to develop certain assets. According to FTA guidance, the development and the property must have a physical and a functional relationship. Joint development can occur when an agency owns land that can be leased to the developer for a long period of time. This enables the developer to build on the land with a low risk of losing the capital investment. In exchange, rents are paid to the agency, creating a revenue stream that can be bonded against to support the development of a transit improvement. The revenue potential can vary depending on market conditions. Joint development can also take the form of the sale of development rights for upfront capital funding.
- **Air Rights:** refer to the right to develop, occupy, and control the vertical space above a property. Air rights can be bought, leased, or transferred. This is most often seen in transit projects where the space above a transit station is developed by a private developer to build Transit Oriented Developments (TODs).
- **Developer Contributions:** often provide in-kind or monetary contributions to facilitate construction of infrastructure that results in a positive impact on property values. Contributions are often negotiated to reflect the benefit the developer derives from the project. If funding is negotiated, project sponsors often request the money during the early portion of the debt service period. This enables the project sponsor to better leverage other funding options. In some instances, developers receive increased density allowances in return for their contributions.