Memorandum

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To	Barrow Emerson, SamTrans Melissa Reggiardo, SamTrans	Date	October 23, 2014
Copies		Reference number	
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Subject	ECR BRT Funding Strategies		

1 Background and Overview

The El Camino Corridor Bus Rapid Transit (BRT) Phasing Plan study developed ten service concepts for consideration, with three concepts moving forward for additional review and potential funding identification. The three concepts for further consideration include:

1. Year 2020 Full Rapid (Rapid Overlay + ECR)

   The 2020 Full Rapid service concept consists of 15-minute headways, and 37 stops in each direction from Daly City to Palo Alto. The ECR local service (i.e., the existing ECR) continues to operate its existing schedule and serves the current stop pattern (15-minute headways and 102 existing northbound (NB) stops and 104 existing southbound (SB) stops).

2. Year 2020 Hybrid A (76 stops with 12-minute service frequencies)

   The 2020 Hybrid A service concept consists of 12-minute headways and 76 stops between Daly City and Palo Alto. Hybrid service will provide faster service than the ECR local service and provide more local access than the Rapid in higher demand segments. ECR local service will be discontinued in this concept.

3. Year 2040 Full BRT

   The 2040 Full BRT (bus rapid transit) consists of 15-minute headways and 37 enhanced stops in each direction from Daly City to Palo Alto. This concept retains the ECR local service with 15-minute headways and 102 existing NB stops and 104 existing SB stops.

The purpose of this memo is to identify potential funding sources for the capital costs for these three concepts.

2 Summary of Capital Costs

Capital costs for these three concepts are divided into two components:

- **Direct Costs** – These costs include labor, equipment, and material necessary for the contractor to place a permanent unit of work in the field; and
- **Other Costs** – Other costs include indirect costs related to workforce mobilization, contingency, soft costs, overhead, as well as profit.

Capital costs for the three service concepts are shown in Table 1 below (information was already presented in the Capital Cost Memo).

Table 1: Capital Costs by Service Concept

Service Concept	Direct Cost Elements	Direct Cost Estimates	Soft Cost Estimates	Total Capital Costs
2020 Full Rapid	• Enhanced stops • Real-time passenger information • New, additional vehicles • Transit signal priority (TSP)	$ 19,733,000	$22,224,000	$41,975,000
2020 Hybrid A	• Enhanced stops • Minor stop improvements • Real-time passenger information • New, additional vehicles • TSP	$9,884,000	$11,141,000	$21,025,000
2040 Full BRT	• Dedicated bus lanes (center or side running) • Pavement improvements to existing lanes (mixed flow operation) • Queue jump lanes • Drainage and utility relocation • Enhanced stations • Ticket vending machines (TVM) • Real-time passenger information • New, additional vehicles • TSP	$83,140,000	$93,710,000	$176,850,000

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3 Potential Capital and Operating Funding Sources

This section identifies potential funding sources and comments on their relevance to the service concepts. Note – this section only identifies potential sources, but does not comment on the likelihood that SamTrans would be able to procure such funding. Recommended sources to seek funding from are presented Section 4.

3.1 Regional Level – MTC Funds

3.1.1 Transit Performance Initiative Program

In October 2012, the Metropolitan Transportation Commission (MTC) committed $82 million over four years in federal Cycle 2 / Surface Transportation Program (STP) and Congestion Mitigation and Air Quality Improvement (CMAQ) funds to the Transit Performance Initiative (TPI) Incentive Program. The first two cycles of the program have passed. The TPI is composed of two programs:

- **TPI Initiative** – This is a capital program intended to fund low-cost capital improvements that improve speed and operations and reduce congestion and environmental impacts in the region's urban trunk network of major transit lines. Funding requests are based on individual need; there is no defined upper or lower-bound for the amounts.
- **TPI Incentive** – This is an incentive program that rewards agencies that improve ridership and service productivity. The TPI Incentive program is funded for FY2012-13 through FY2015-16 at $15 million per year and is to be used for projects focused on increasing ridership and/or productivity. Several agencies in the Bay Area receive such funding including SamTrans. The annual $15 million that is available is allocated to the recipients based on a funding formula, which is 70% based on annual ridership, 20% on the annual increase in ridership, and 10% on the increase in passengers per revenue hour. This formula will be applied for the first four years of the program, after which, funding would be liked to agency performance as a whole, with the formulas based on National Transit Database reporting.

All regional agencies are eligible for funding from either TPI program.

Guidelines for the second round, which closed in Spring of 2014, included:

- All Federal Transit Administration (FTA)-eligible Bay Area transit operators may apply[1].
- Improvement of operating speed and/or ridership on high-use trunk routes remains the primary goal; however, other routes with significant potential for improvement in these measures are eligible. System-wide or multi-location projects that would have a positive impact on specific corridors are also eligible.
- Project implementation schedule will be similar to the first round (FY2012-13)[2]. Projects should be under construction within 18 months of funding approval.

[1] Operators whose service fulfills the parameters of the funding requirements

In the initial round nearly $28 million was allocated, with $27 million for the second round. The second round project applications are still being evaluated by MTC. The first round of Rapid- or BRT-related projects selected for funding include:

- AC Transit – Line 51 Corridor Speed Protection and Restoration ($10 million)
- VTA – Stevens Creek Limited 233 Transit Signal Priority ($700,000)

Options studied under the ECR BRT Phasing Study will not be ready for consideration in the second round of funding, although there is $27 million in funds remaining for the last two years of the program (FY2015-16).

3.1.2 Cap and Trade Funding Framework

In response to the adoption of Plan Bay Area, MTC created the Cap and Trade Funding Framework to address climate change concerns. The Cap and Trade Funding Framework will guide regional investment priorities for the $3.6 billion in cap and trade revenues the Bay Area expects to receive over the next thirty years. MTC staff developed five investment categories and initial funding amounts. Table 2 below shows the funding breakdown.

Table 2: Cap and Trade Proposed Funding Categories and Investment Amounts

Funding Category	Amount ($ millions)
Transit Core Capacity Challenge Grants Program	900
Transit Operating and Efficiency Program	450
One Bay Area Grants	1,500
Climate Initiatives	300
Goods Movement	450
Total	$3,600

Source: MTC, 2014.

The principles behind the Cap and Trade Framework include:

- Funds must have a strong nexus to Greenhouse Gas (GHG) reduction;
- Distribution will serve to strategically advance the implementation of Plan Bay Area;
- Investment categories will be structured to provide co-benefits and leverage investments across categories and from multiple sources; and
- All investment categories should include funding that benefits disadvantaged communities – defined as MTC's Communities of Concern.

While the guidelines and criteria for the categories have not been finalized, of the five categories, the Transit Operating and Efficiency Program has the most potential as a funding source for the options studied as part of the ECR BRT Phasing Plan Study. It is unclear at this time if the funds will be made eligible for either capital or operating costs, or both.

[2] MTC memorandum 9/4/2013 to Transit Finance Working Group regarding Transit Performance Initiative – Investment Program Update

3.1.3 Regional Transportation Improvement Program

The State Transportation Improvement Program (STIP) provides capital funding for a significant number of transportation projects around the State. MTC is responsible for developing regional project priorities for the STIP for the nine counties of the Bay Area. The Regional Transportation Improvement Program (RTIP) is the region's proposal to the State for STIP funding. Only projects that have been identified within the RTIP are eligible for STIP funding consideration, so the first step for a project to be considered for STIP funds is to be listed within the RTIP.

Each county receives a fiscally constrained share target. For FY2014, San Mateo County's share was just over $21 million, which covers programming for the five fiscal years from 2014-15 through 2018-19.

The RTIP is updated every two years. This memo recommends the inclusion of the final recommended ECR BRT project into the RTIP for future consideration for regional funds.

3.2 State Level

The State of California has created a number of different funding mechanisms for transportation capital costs. Most of the funding mechanisms, such as the STIP, are distributed through to the regional metropolitan planning organizations, such as MTC, and those programs are described in the regional level section (Section 3.1). The California State Infrastructure Bank, described below, is separate from the MTC funding programs.

3.2.1 California State Infrastructure Bank – Infrastructure State Revolving Fund Program

The Infrastructure State Revolving Fund (ISRF) Program provides loan financing to public agencies and non-profit corporations for a wide variety of capital funding for infrastructure and economic development projects. ISRF Program funding is available in amounts ranging from $50,000 to $25 million, with loan terms of up to 30 years. Interest rates are set on a monthly basis.

Financing applications are continuously accepted**.** Eligible applicants include, but are not limited to, any subdivision of a local government, including cities, counties, special districts, assessment districts, joint powers authorities and non-profit corporations (as deemed eligible). Eligible project categories include, but are not limited to: city streets, county highways, state highways, drainage, water supply and flood control, educational facilities, environmental mitigation measures, parks and recreational facilities, port facilities, public transit, sewage collection and treatment, solid waste collection and disposal, water treatment and distribution, defense conversion, public safety facilities, and power and communications facilities.

3.3 Federal Level

In 2012, Moving Ahead for Progress in the 21st Century (MAP-21) was signed into law, reauthorizing surface transportation programs through FY2014. All projects that receive any amount of federal

funding or undergo a federally required action are required to be included in MTC's TIP, which prioritizes projects/programs within a financially constrained environment. Competition is quite strong both nationally and within the Bay Area to receive federal funds.

3.3.1 Transportation Investment Generating Economic Recovery (TIGER) Discretionary Grant Program

The TIGER Discretionary Grant program is managed by the US Department of Transportation (DOT) to invest in road, rail, transit and port projects that promise to achieve critical national objectives. In FY2014, $600 million was appropriated through September 30, 2016 for national infrastructure investments. A highly competitive grant program, 72 projects were awarded funding through the FY14 TIGER program, out of 797 projects that applied. Project funding amounts ranged from $85,000 for a planning study to $105 million for an intermodal freight program.

3.3.2 New Starts/Small Starts

The Federal Transit Administration (FTA) sponsored New Starts/Small Starts Program provides grants for new and expanded rail, bus rapid transit, and ferry systems that reflect local priorities to improve transportation options in key corridors. Eligible BRT projects are those operating in mixed traffic that represent a substantial investment in the corridor, including:

- Traffic signal priority;
- Defined stations; and
- Operation of short-headway, bi-directional services for a substantial part of weekdays and weekend days[3].

Elements that are emphasized as part of project justification include increased mobility, environmental benefits, congestion relief, relationship to economic development and higher density land uses, and cost effectiveness.

Eligible New Starts projects must have a total project cost at or exceeding $250 million, with funding requests above $75 million. Eligible Small Starts projects must have a total project cost of less than $250 million, with funding requests under $75 million. Both programs require a 20% local match.

3.3.3 Bus and Bus Facilities (Section 5339)

Another federal program is the Bus and Bus Facilities Program which can be used to fund bus procurement, bus maintenance facilities, bus shelters and signage, transportation centers, intermodal terminals, and park-and-ride facilities. This method of funding is secured through Congressional earmarks and requires 20% local match. Previously grants have ranged from $50,000 - $15 million.

[3] Capital Investment Program Presentation – Listening Session, APTA Annual Meeting, 10/3/2012.

3.3.4 Urbanized Formula Funds (Section 5307)

Federal funding is provided for transit capital projects based on a formula of population, population density, and other factors associated with transit service and ridership. The formula grants are appropriated annually by Congress and distributed through MTC. SamTrans currently uses this funding source for replacing buses.

3.3.5 Highway Funds/Flexible Funds

Highway funds may be used to finance transit capital projects through a mechanism called flexible funding. There are two mechanisms that, if flexed, add additional funds to the urbanized formula funds. These include:

- **Surface Transportation Program (STP):** STP can be used for roadway or transit improvements and facilities. These funds may be utilized (as capital funding) for public transportation capital improvements, car and vanpool projects, fringe and corridor parking facilities, bicycle and pedestrian facilities, and intercity or intracity bus terminals and bus facilities.
- **Congestion Mitigation and Air Quality Program (CMAQ):** CMAQ is apportioned based on population and the level of non-attainment for air quality standards. Its purpose is to fund projects and programs that help attain or maintain national ambient air quality standards and reduce congestion. These are considered "flexible funds" and can be used for FHWA and FTA projects. Measures currently funded by the MTC include the, the Regional Bicycle and Pedestrian Program, Lifeline Program, the Free Transit Program, TransLink® (universal fare card), Regional Rideshare, and TOS/Incident Management strategies on the highway system.

4 Proposed Concept Capital Funding Strategies

This section recommends the most relevant and applicable funding sources for each service concept.

4.1 2020 Full Rapid

The 2020 Full Rapid service concept has estimated capital costs of $42.0 million, including 17 new 60' diesel-hybrid vehicles. Table 3 below shows the line item capital cost estimate for this service concept.

Table 3: 2020 Full Rapid Capital Cost Estimate

	Description	Quantity	Unit	Unit Cost	Total Capital Cost
Rapid Service Option: Concept 2: 2020 Full Rapid					
	Enhanced Stations (Both Directions)	74	ea	$ 62,660	$ 4,637,000
	Real-Time Passenger Information	74	ea	$ 10,200	$ 755,000
	New 60 ft. Diesel Low Floor Transit Bus (equipped with CAD/AVL)	-	ea	$ 543,000	$ -
	New 60 ft. Diesel-Hybrid Low Floor Transit Bus (equipped with CAD/AVL)	17	ea	$ 770,000	$ 13,090,000
	Transit Signal Priority (TSP) on Rapid Service Buses	17	ea	$ 5,000	$ 85,000
	Transit Signal Priority (TSP) at Intersection	120	ea	$ 9,710	$ 1,166,000
	Total Direct Cost				**$ 19,733,000**
	Maintenance of Traffic (MOT)			4%	$ 789,320
	Indirects			15%	$ 2,959,950
	Total Construction Cost (Direct + Indirect)				**$ 23,482,270**
	Overhead & Profit			10%	$ 2,348,227
	Total Construction Price (TCC + OH&P)				**$ 25,830,497**
	Contingency			25%	$ 6,457,624.25
	Total Construction Price				**$ 32,288,121**
	Soft Costs			30%	$ 9,686,436.38
	Total Project Price				**$ 41,974,558**
		$ 1,635,800	**$/Mile**		**$ 41,975,000**

Length of Rapid Service Option: Concept 2: 2020 Full Rapid: 25.66 Miles

Note: Final costs are rounded up to the nearest thousand.

It is recommended that the 2020 Full Rapid service concept capital costs be provided through the MTC TPI program to the fullest extent (i.e., the maximum amount of funding should be sought from this program), with other funding sourced from regional sources such as the Cap and Trade fund, followed by federal sources in that order. The table below highlights the proposed funding options this service concept:

Potential Federal Source(s)	Potential Regional Source(s)
• FTA Small Starts • FTA Section 5309 for vehicles	• TPI for TSP • TPI for enhanced stations and real time information • Cap and Trade funds (fund request dependent on to-be-release eligibility rules)

4.2 2020 Hybrid A (76 Stops, 12 minute headway)

The 2020 Hybrid A service concept has estimated capital costs of $21 million, including 3 new 60' diesel-hybrid vehicles. The table below shows the line item capital cost estimate for this service concept.

Table 4: 2020 Hybrid A Capital Cost Estimate

	Description	Quantity	Unit	Unit Cost	Total Capital Cost
Hybrid Service Option: Concept 5: 2020 Hybrid A (76 Stops - 12 Min)					
	Enhanced Stops (Both Directions)	74	ea	$ 62,660	$ 4,637,000
	Stops with Minor Improvements (Both Directions)	78	ea	$ 11,420	$ 891,000
	Real-Time Passenger Information	74	ea	$ 10,200	$ 755,000
	New 60 ft. Diesel Low Floor Transit Bus (equipped with CAD/AVL)	-	ea	$ 543,000	$ -
	New 60 ft. Diesel-Hybrid Low Floor Transit Bus (equipped with CAD/AVL)	3	ea	$ 770,000	$ 2,310,000
	Transit Signal Priority (TSP) on Rapid Service Buses	25	ea	$ 5,000	$ 125,000
	Transit Signal Priority (TSP) at Intersection	120	ea	$ 9,710	$ 1,166,000
	Total Direct Cost				**$ 9,884,000**
	Maintenance of Traffic (MOT)			4%	$ 395,360
	Indirects			15%	$ 1,482,600
	Total Construction Cost (Direct + Indirect)				**$ 11,761,960**
	Overhead & Profit			10%	$ 1,176,196
	Total Construction Price (TCC + OH&P)				**$ 12,938,156**
	Contingency			25%	$ 3,234,539
	Total Construction Price				**$ 16,172,695**
	Soft Costs			30%	$ 4,851,808.50
	Total Project Price				**$ 21,024,504**
		$ 819,400	**$/Mile**		**$ 21,025,000**

Length of Hybrid Service Option: Concept 5: 2020 Hybrid A (76 Stops - 12 Min): 25.66 Miles

Note: Final costs are rounded up to the nearest thousand.

It is recommended that the 2020 Hybrid A service concept capital costs be provided through the MTC TPI program to the fullest extent (i.e., the maximum amount of funding should be sought from this program), with other funding sourced from regional sources such as the Cap and Trade fund, followed by federal sources in that order. The table below highlights the proposed funding options this service concept:

Federal	Regional
• FTA Small Starts • FTA Section 5309 for vehicles	• TPI for TSP • TPI for enhanced stations, stop improvements and real time information • Cap and Trade funds (fund request dependent on to-be-release eligibility rules)

4.3 2040 Full BRT

The 2040 Full BRT service concept has estimated capital costs of $176.9 million, including 14 new 60' diesel-hybrid vehicles and a number of roadway improvements. Table 5 below shows the line item capital cost estimate for this service concept.

Table 5: 2040 Full BRT Capital Cost Estimate

	Description	Quantity	Unit	Unit Cost	Total Capital Cost
BRT Service Option: Concept 10: 2040 Full BRT					
	Enhanced BRT Stations (Both Directions)	74	ea	$ 210,340	$ 15,565,000
	Real-Time Passenger Information	74	ea	$ 10,200	$ 755,000
	Ticket Vending Machines (TVM)	74	ea	$ 96,910	$ 7,171,000
	New 60 ft. Diesel Low Floor Transit Bus (equipped with CAD/AVL)	-	ea	$ 548,000	$ -
	New 60 ft. Diesel-Hybrid Low Floor Transit Bus (equipped with CAD/AVL)	14	ea	$ 770,000	$ 10,780,000
	Mixed Flow Operations (Outside Bus Lane)	14.8	Miles	$ 77,000	$ 1,137,000
	Bus Lanes (Center-Running)	10.9	Miles	$ 4,231,000	$ 46,118,000
	Bus Lanes (Side Running)	-	Miles	$ 3,864,000	$ -
	Transit Signal Priority (TSP) on BRT Buses	14	ea	$ 5,000	$ 70,000
	Transit Signal Priority (TSP) at Intersection	120	ea	$ 9,710	$ 1,166,000
	Queue Jump Lane (both direction)	6	ea	$ 63,000	$ 378,000
	Total Direct Cost				**$ 83,140,000**
	Maintenance of Traffic (MOT)			4%	$ 3,325,600
	Indirects			15%	$ 12,471,000
	Total Construction Cost (Direct + Indirect)				**$ 98,936,600**
	Overhead & Profit			10%	$ 9,893,660
	Total Construction Price (TCC + OH&P)				**$ 108,830,260**
	Contingency			25%	$ 27,207,565.00
	Total Construction Price				**$ 136,037,825**
	Soft Costs			30%	$ 40,811,347.50
	Total Project Price				**$ 176,849,173**
		$ 6,892,000	**$/Mile**		**$ 176,850,000**

Length of BRT Service Option: Concept 10: 2040 Full BRT: 25.66 Miles

Note: Final costs are rounded up to the nearest thousand.

It is recommended that the 2040 Full BRT service concept capital costs be provided through the MTC TPI program to the fullest extent (i.e., the maximum amount of funding should be sought from this program), with other funding sourced from regional sources such as the Cap and Trade fund, followed by federal sources in that order. Options for funding beyond the MTC TPI program include:

Federal	Regional
• FTA New Starts • FTA Section 5309 for vehicles	• TPI for mixed flow operations, queue jump lanes, TSP, and some station enhancements • Cap and Trade funds (fund request dependent on to-be-release eligibility rules)

5 Summary

The MTC TPI and Cap and Trade Framework appear to be the most viable potential capital funding sources for the options studied under the ECR BRT Phasing Plan. As regional funds, TPI and Cap and

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Trade will facilitate faster implementation with less bureaucratic issues than using federal funds and will likely serve as the principal funding source at this time.

The service options discussed in this memo may also be a good candidate for Small/New Starts capital funding given that all the service meet the program eligibility requirements as well as the project justification metrics under the MAP-21 evaluation and rating criteria.

The TPI-Incentive program is a potential operating funding source once the initial formula-driven program closes in two years. SamTrans could directly apply for operating costs through this funding stream.

As the ECR BRT project continues planning towards preliminary engineering, the timing for implementation and construction may be well suited to apply and qualify for a number of regional and federal funding sources beyond FY15.