



METROPOLITAN
TRANSPORTATION
COMMISSION

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Memorandum

TO: Operations Committee

DATE: September 5, 2014

FR: Executive Director

W.I. 1234

RE: Arterial Operations Program:

- (i) Next Generation Arterial Operations Program FY 2014-15 Cycle of Projects (\$4,250,000)
- (ii) Contract Amendment – Program for Arterial System Synchronization – Systems Engineering Support: Iteris, Inc. (\$430,000)

This memorandum requests Committee approval of the Next Generation Arterial Operations Program (NextGen AOP) FY 2014-15 Cycle of Projects (\$4,250,000) and a contract amendment with Iteris, Inc. (Iteris), in an amount not to exceed \$430,000 to provide systems engineering services for the NextGen AOP.

Background – PASS and TPI

The region's arterials carry heavy traffic and experience significant congestion during peak and non-peak periods. Over the past 15 years, MTC has been administering the Program for Arterial System Synchronization (PASS) (under various program names), which provides technical assistance to Bay Area agencies to re-time traffic signals to improve signal coordination across jurisdictions and provide signal timing priority for transit vehicles. Over the past four years, approximately 1,500 signals have been successfully re-timed. Effective management of arterials is an essential tool for MTC's Freeway Performance Initiative (FPI) program.

Building on the success of PASS, MTC launched a next generation PASS, referred to as the NextGen AOP, to assist local agencies in implementing advanced technologies to better manage and operate their arterials. NextGen AOP will implement and explore the benefits of advanced technologies that can improve travel time and travel time reliability for autos and transit vehicles along arterials, as well as improve the safety of motorists, transit riders, pedestrians, and bicyclists. These technologies could include adaptive signal control systems, transit signal priority, real-time traffic monitoring, and other innovative operational strategies.

Similar to the NextGen AOP, MTC also administers the Transit Performance Initiative (TPI) Investment Program, which is a competitive program to fund low-cost capital investments that improve operations and customer experience on major transit corridors and systems, and that can be implemented quickly. While the two programs have slightly different emphases (TPI focuses on major transit corridors and NextGen AOP focuses on arterial operations), they share a common goal of improving transit service and traffic flow along busy arterials. MTC issued a call for projects in March 2014 for Round 2 TPI funding and received seven applications. MTC staff will be recommending grant awards to five projects that improve speed, reduce travel times,

increase travel time reliability, enhance customer experience, and can be implemented in 18 to 24 months, consistent with the TPI program objectives. MTC's Programming and Allocations Committee will take action on these five grant awards at its September meeting.

NextGen AOP FY 2014-15 Projects (\$4,250,000)

In April 2014, MTC issued a call for projects for NextGen AOP and received applications for 21 projects. Staff evaluated each application against the evaluation criteria: 1) ability to improve travel time and travel time reliability for autos and transit; 2) ability to improve safety for all modes (transit riders, motorists, bicyclists, and pedestrians; 3) project readiness; and 4) project management capacity. Other factors that were considered included whether the corridor serves as a freeway reliever route and is located within a high growth area. Based on its evaluation, staff recommends approval of the four NextGen AOP projects identified in Attachment A, along with fact sheets for each project. Due to the converging objectives of both the NextGen AOP and TPI programs, two transit agencies (AC Transit and LAVTA/City of Dublin) applied for, and are recommended for, funding under both programs.

NextGen AOP Phase 1 Consultant Services (\$430,000)

NextGen AOP projects would be implemented in two phases: Phase 1 would involve a systems engineering analysis to develop a concept of operations and system requirements per federal regulations for more complex Intelligent Transportation System projects funded by federal funds; and Phase 2 would involve project implementation (i.e., procure, deploy, and test capital equipment) and before/after project evaluation. Staff anticipates that projects funded under NextGen AOP will be delivered within one to two years.

Consultant services are needed to perform the Phase 1 work (systems engineering analysis) for the NextGen AOP projects listed in Attachment A. In May 2013, MTC released a Request for Qualifications (RFQ) to select consultants to provide specific technical services for PASS and related pilot projects, and in July 2013, this Committee approved a contract with Iteris. Over the last three years, Iteris has provided systems engineering analysis services for over 25 agencies, including the San Mateo City/County Association of Governments and the City of Santa Rosa. In addition, Iteris is currently conducting courses for the Federal Highway Administration's National Highway Institute that teach local agencies how to use systems engineering principles to implement advanced traffic signal system projects. As such, staff recommends amending the Iteris contract to conduct the Phase 1 work. Consultant assignments for Phase 2 will occur after staff meets with project sponsors and refines project scopes in accordance with the systems engineering analyses. Staff will seek Committee approval for contract amendments for Phase 2 at a later date.

Recommendation

Staff recommends that this Committee approve the NextGen AOP FY 2014-15 Cycle of Projects listed in Attachment A. Staff also recommends that this Committee authorize the Executive Director or his designee to negotiate and enter into a contract amendment with Iteris in an amount not to exceed \$430,000 to perform systems engineering services for the NextGen AOP projects.



Steve Heminger

SH:lz

**Attachment A:
Next Generation Arterial Operations Program (NextGen AOP) Projects**

#	Project Sponsors	Project Corridors	FPI/ SAFE ¹ (millions)	TPI ² (millions)
1	City of Fremont	Fremont Blvd	\$1.00	n/a
2	County of Santa Clara	All county expressways	\$0.75	n/a
3	Alameda-Contra Costa Transit District (AC Transit)	Hesperian Blvd., and others (TBD) ³	\$0.50	\$5.00
4	Livermore Amador Valley Transit Authority (LAVTA), City of Dublin	Dublin Blvd	\$0.50	\$1.01
Total			\$2.75	\$6.01
Contingency			\$1.50	n/a
Total Budget			\$4.25	\$6.01

¹ Estimated project costs include consultant fees (including a systems engineering analysis) and capital costs for all ITS equipment, including software and hardware. Capital costs are estimated to be approximately 50% to 70% of the project's budget.

² A portion of the estimated funds from TPI will be used for NextGen AOP projects. Final fund amounts will be determined based upon discussions with the project sponsors to further define the scope of each project and implementation process.

³ Final project corridors and the scope of each corridor will be determined during project initiation meetings with the project sponsors.

Attachment A: NextGen AOP – Fact Sheet

City of Fremont – Fremont Boulevard Adaptive Signal Control Project

Recommended NextGen AOP Funding: \$1.0 M

Lead Project Sponsor: City of Fremont

Project Location: Fremont Boulevard (between Decoto Road and Mowry Avenue) in City of Fremont

Project Description: This project will implement Adaptive Signal Control System, Transit Signal Priority, and Bluetooth[®]-based travel time collection system along the corridor.

Project Benefits: These improvements are estimated to result in:

- Travel time savings: 15% (1 to 2 minutes)
- Reduction in number of stops: 15%
- Improvement of transit on-time performance and service reliability

Project Schedule: Project Completion: March 2016

Project Map:



Attachment A: NextGen AOP – Fact Sheet

County of Santa Clara – County Expressways Real-Time Traffic Monitoring and Predictive Traffic Signal Coordination Project

Recommended NextGen AOP Funding: \$0.75 M

Lead Project Sponsor: County of Santa Clara

Project Location: All Expressways in County of Santa Clara

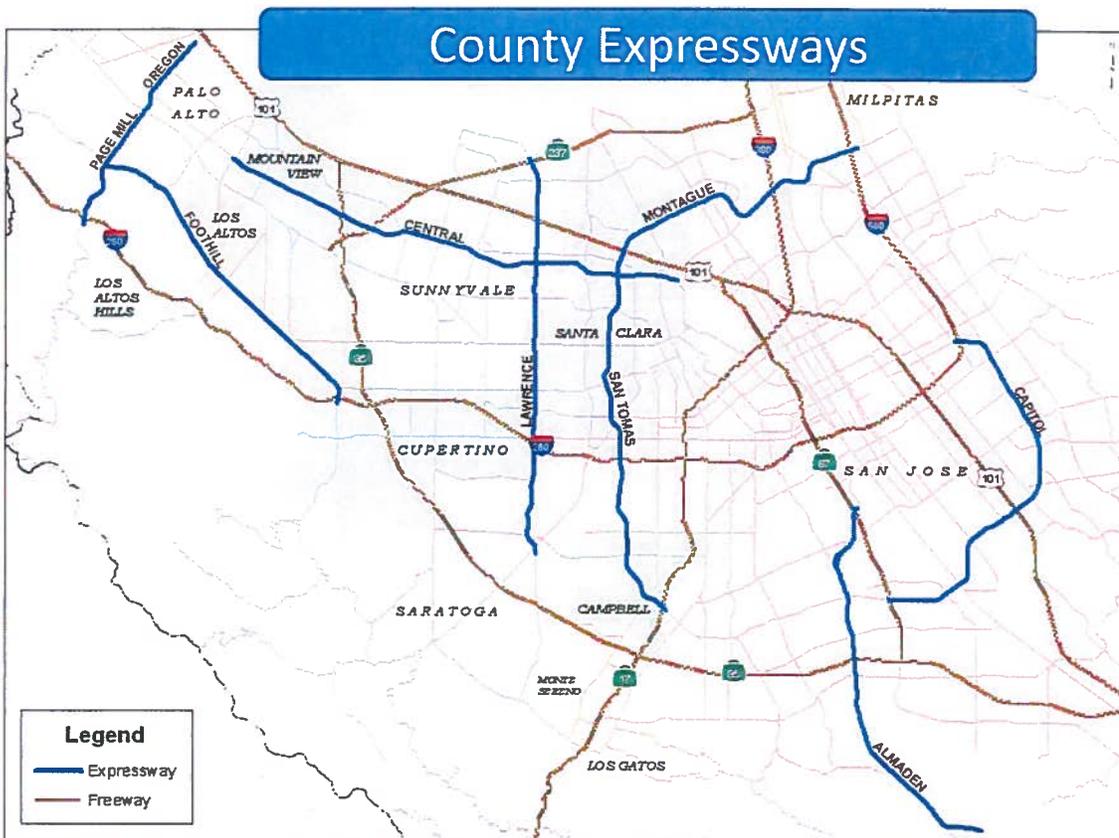
Project Description: This project will implement real time traffic monitoring and predictive signal timing on all County Expressways to advance the existing traffic responsive (TR) signal timing to the next level. This project will also improve the County's congestion map to include predictive travel times to inform motorists on anticipated traffic condition, thus providing choices on when to start their trips.

Project Benefits: These improvements are estimated to result in:

- Travel time savings: 5% (5 to 8 minutes)
- Reduction in number of stops: 5%

Project Schedule: Project Completion: March 2016

Project Map:



Attachment A: TPI Investment Program – Fact Sheet

AC Transit – South Alameda County Major Corridors Travel Time Improvement Project

Recommended Funding: \$5.5M (\$5.0M TPI; \$0.5M NextGen AOP)

Estimated Total Project Cost: \$9.0 M

Lead Implementing Agency/ Sponsor: AC Transit

Project Location: Major corridors in south Alameda County served by AC Transit Routes 97 and 99. Jurisdictions/partners are Cities of Fremont, Hayward, San Leandro, and Union City; Alameda County; and Caltrans.

Project Description: This project will implement segments of Adaptive Traffic Control Systems, corridor-wide Transit Signal Priority, signal coordination, and relocation of key bus stops from near side to far side.

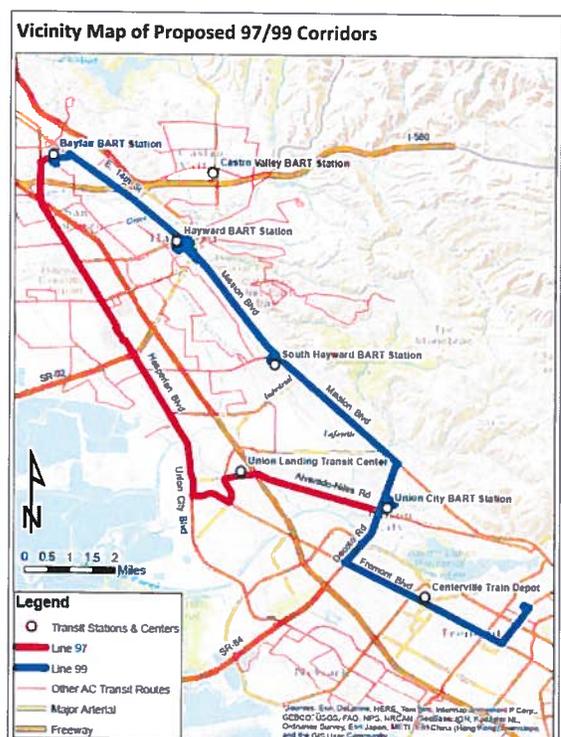
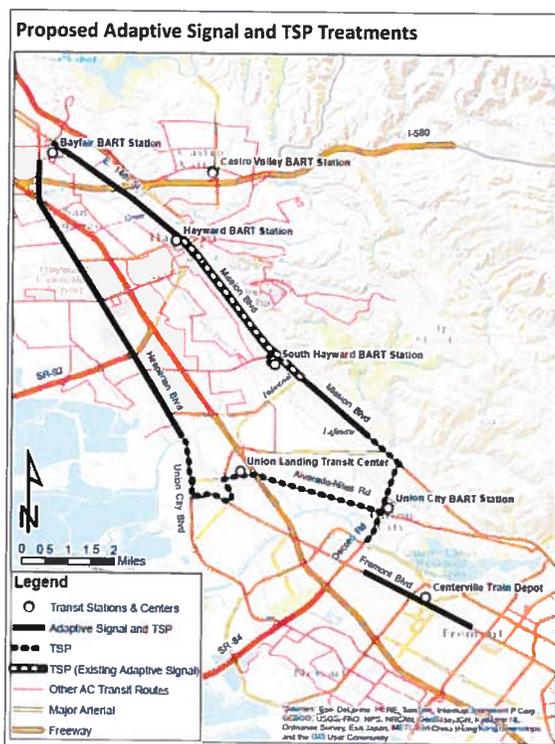
Project Benefits: These improvements are estimated to result in:

- Travel time savings: 15% (Line 97), 10% (Line 99) (3 to 6 minutes)
- Reduction of one bus from operational requirement on Line 97 (\$565,000 operational cost savings annually)
- Estimated increase in ridership over 5-year period: 11%, resulting in additional \$270,000 in fare box recovery
- Improvement of on-time performance and service reliability

Realization of full benefits is based on full project implementation; staff will work with AC Transit to prioritize improvements to maximize benefits of available funding

Project Schedule: Environmental Clearance: February 2015
Project Completion: December 2016

Project Maps:



Attachment A: TPI Investment Program – Fact Sheet

LAVTA/City of Dublin – Dublin Boulevard Transit Performance Initiative Project

Recommended Funding: \$1.5M (\$1.0M TPI; \$0.5M NextGen AOP)

Estimated Total Project Cost: \$1.7 M

Lead Implementing Agency/ Sponsor: LAVTA, City of Dublin

Project Location: Dublin Boulevard, a 4.3-mile long arterial in the City of Dublin

Project Description: Adaptive Signal Control Technology along the corridor to improve Transit Signal Priority performance, corresponding intersection upgrades, and bus stop enhancements including real-time passenger information systems.

Project Benefits: These improvements are estimated to result in:

- 20% bus travel time reduction in peak periods (2 to 3 minutes)
- 25% bus travel time reduction in non-peak periods (2 to 3 minutes)
- Elimination of one coach per day, with same frequency and schedule, due to time savings -- \$373,000 annual operating cost savings
- 10-15% increase in ridership due to time savings and passenger information systems

Project Schedule: Environmental Clearance: March 2015
Project Completion: December 2015

Project Map:



REQUEST FOR COMMITTEE APPROVAL

Summary of Program of Projects

Work Item No.: 1234

Project Title: NextGen AOP FY 2014-15 Cycle of Projects

Cycle of Projects: (See Attachment A to the Executive Director's September 5, 2014 Memorandum)

Program Description: A program (NextGen AOP) that improves arterial operations by implementing advanced technologies, including adaptive signal control systems, transit signal priority, real-time traffic monitoring, and other innovative operational strategies.

Funds for Projects: NextGen AOP FY 2014-15 = \$4,250,000 (Attachment A)

Funding Source: STP/CMAQ = \$3,750,000
SAFE = \$500,000

Fiscal Impact: Included in the proposed FY 2014-15 MTC Budget

Motion by Committee: That the projects listed in Attachment A to the Executive Director's September 5, 2014 Memorandum for the FY 2014-15 Cycle of Projects for the Arterial Operations Program are approved.

Operations Committee:

Approved: _____
Jake Mackenzie, Chair

Approved: Date: September 12, 2014

REQUEST FOR COMMITTEE APPROVAL

Summary of Proposed Contract Amendment

Work Item No.: 1234

Consultants: Iteris, Inc., Santa Ana, CA

Project Title: PASS FY 2014-15 Technical Consultant Support

Purpose of Project: Provide consulting services to provide technical services for Phase 1 NextGen AOP projects in Attachment A, which includes systems engineering analyses for advanced traffic signal systems for Bay Area jurisdictions to improve arterial operations for all modes.

Brief Scope of Work: Perform Phase 1 (systems engineering analyses, concept of operations and system requirements for adaptive traffic signal systems) for NextGen AOP projects.

Project Cost Not to Exceed: \$430,000 (this amendment);
\$500,000 (total contract before this amendment);
\$930,000 (total authorized contract after this amendment).

Funding Source: STP/CMAQ = \$430,000

Fiscal Impact: Included in the FY 2014-15 agency budget

Motion by Committee: That the Executive Director or his designee is authorized to negotiate a contract amendment with Iteris, Inc. for the purposes described above and in the Executive Director's September 5, 2014 Memorandum, and that the Chief Financial Officer is directed to set aside funds in the amount of \$430,000 for such contract amendment.

Operations Committee:

Jake Mackenzie, Chair

Approved: Date: September 12, 2014