Arterial Operations Committee (AOC)

10:15 A.M. - 12 P.M., Tuesday, November 10, 2015
(10:00 – 10:15 A.M. Networking Time)
Conference Room 171
Metropolitan Transportation Commission
101 Eighth Street, Oakland, CA 94607

Chair: Donald Shupp, WP Signal
Vice-Chair: Obaid Khan, City of Dublin
Staff Liaison: Linda Lee, MTC
   Ganesh Karkee, MTC

For more information, please visit the Arterial Operations website at http://www.mtc.ca.gov/services/arterial_operations/

Meeting Agenda

1. **Introductions (Donald Shupp)**
   a. *Meeting Notes from September 8, 2015**
   b. *Member Reports/Updates**

2. **New Technologies for Arterial Operations**
   a. *NextGen Arterial Operations Program Project Status (Lin Zhang, MTC)**
   b. *Connected Vehicle Program Update (Virginia Lingham, MTC)**

3. **AOP Task Force (Saravana Suthanthira, ACTC)***
   - *Summary of AOP Task Force Meetings on September 22 and October 27, 2015*

4. **Featured Presentation**
   - *Arterial Travel Time Using Wireless Vehicle Detection - Arterial Data Collection (Katherine Mertz, Sensys Networks)*

   Utilizing the same platform for signal actuation, Sensys Networks' Arterial Travel Time system provides a completely anonymous travel time solution ideal for traveler information, corridor timing optimization and before/after studies.

5. **Other Business**
   a. *Welcome our new AOC 2016 Chair – Obaid Khan, City of Dublin*
   b. *Request for nominations and selection of AOC 2016 Vice-chair*

6. **Adjournment (Donald Shupp)**
   - *Next Meeting: Tuesday, January 12, 2016 @ 10:15 A.M.*

*Attachment included

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Arterial Operations Committee
Notes from September 8, 2015 meeting

1. **Introductions**
   - Meeting called to order at 10:20 A.M. in Conference Room 171 of the Joseph P. Bort MetroCenter. All members introduced themselves. Meeting notes from the July 14, 2015 meeting were approved without any changes.
   - Ganesh Karkee (MTC) provided updates on the PASS FY 14/15 cycle projects. The Final Project Reports with Benefit Cost Analysis for the 11 projects have been finalized. The new timing plans for the remaining one project will be implemented in Fall 2015.
   - Lin Zhang (MTC) provided updates on the PASS FY 15/16 cycle of projects. There are eight projects in the PASS FY 15/16 cycle. MTC, in partnership with Caltrans, local agencies and the project consultants, completed the kick-off meetings for all of the projects. The Scope, Schedule and Budget for all projects will be finalized by the end of September 2015.
   - Brian Burkhard (Jacobs) made an announcement about the upcoming ITS-CA Annual Meeting in Southern California, September 21-23, 2015.
   - Lin mentioned the upcoming Tech Transfer Seminar, which is scheduled for September 30, 2015, 12:30-4:30 PM. He said that in the past, these seminars have been attended by about 40-60 people. However, for this seminar, 108 people have registered. The online registration is closed, since the meeting room capacity has been reached.

2. **New Technologies for Arterial Operations**
   - Lin provided an update on the Next Generation Arterial Operations Program (NextGen AOP). Below is a summary of the documents that have been completed by the consultant since July 2015.
     - Draft and Final Systems Engineering Management Plans (SEMP) for the AC Transit project
     - Draft Concept of Operations (ConOps) for the AC Transit and LAVTA/Dublin projects
     - Final System Requirements and draft Verification Plan for the Fremont project
     - Final Verification Plan for the County of Santa Clara project

     Ongoing tasks include: finalizing the ConOps for the AC Transit and LAVTA/Dublin projects, and finalizing the Verification Plan for the Fremont project.
   - Virginia Lingham (MTC) provided updates on National Policies and Initiatives related to Connected Vehicles (CV). She discussed the major milestones of the CV Program from its inception to the anticipated milestones in the future. She will provide CV Program updates at every future AOC meeting, as needed.

3. **AOP Task Force**
   - Saravana said that the Task Force meetings will be extended to the end of this year. She briefly reviewed the meeting notes from the July and August 2015 Task Force meetings.
     - There was a discussion about future AOP funding for the Plan Bay Area update. Ananth asked whether the AOP could fund pedestrian/bicycle detector projects at isolated intersections. Saravana said the AOP will not fund any capital improvement projects. Linda added that the intent of the AOP is to fund low-cost operational improvement projects at the corridor level, rather than projects at a single intersection.

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- o Ananth said there should be some language included in the program goals and objectives on improving operational efficiency without negatively affecting other operational standards. Linda asked Ananth to provide MTC with any preferred language to be included in the AOP goals and objectives.
- o At the August Task Force meeting, there was a discussion about how the AOC functions more like a working group, rather than a "committee". As such, the AOC will be renamed as the "Arterial Operations Working Group."
- o Linda provided more details about the future AOP funding discussion. She explained that MTC is in the process of updating the agency's Regional Transportation Plan (RTP), also referred to as "Plan Bay Area 2040". MTC will be submitting an application for its package of regional projects, which includes the AOP. MTC staff presented two funding options to the Task Force: Option 1 (Traditional) would continue to focus on traditional signal coordination projects (e.g., time-of-day signal timing plans); and Option 2 (Technology) would move away from traditional time-of-day signal timing and focus on more advanced technologies that improve arterial operations. The AOP Task Force recommended that MTC include Option 2 in its Plan Bay Area 2040 application, with a 25-year funding level of approximately $106 million.
- o Brian asked about the method used to come up with the funding levels. Linda briefly explained that MTC's Travel Demand Model was used to estimate the number/length of congested arterials in the Bay Area, and then average costs (for each initiative) were applied.
- o David asked whether we solicited needs from the local agencies as part of the process. If these agencies are not on-board, the AOP may not be successful. Linda said needs were solicited from the Task Force members, who represent the different AOC member groups, including local agencies.
- o Einar said he had comments on the AOP goals and objectives. Linda asked him to send his comments to David Man, who represents Caltrans on the Task Force.
- o Ananth suggested there should be some tangible benefit metrics for the proposed initiatives (such as NexGen AOP with Transit Signal Priority). It would be helpful to quantify benefits for each initiatives.

4. **Featured Presentation**
   - Virginia made a presentation titled, "Connected Vehicle Concept Scenarios for the SF Bay Area." In the presentation she shared examples of deployment concepts MTC considered for the USDOT Connected Vehicle Pilot Deployment project and other projects; explored known challenges with vehicle-to-infrastructure deployments; and discussed local needs and challenges. The presentation has been posted on MTC's Arterial Operations Committee website.
     - o Einar Acuna (Caltrans) asked about other test bed sites, besides the one on El Camino Real in and around Palo Alto. Virginia responded that there were test beds around the country that are part of the national affiliated test bed program (more info at http://www.its.dot.gov/connected_vehicle/pdf/DOT_CVBrochure.pdf). Donald Shupp (WP Signal) mentioned that the Contra Costa Transportation

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Authority is developing a test bed at the former Naval Weapons Station in Concord.

o Einar mentioned that Caltrans is testing a GPS-enabled pedestrian-signal application this week.

o Linda Lee (MTC) asked whether other agencies are currently working on CV technology. Ananth Prasad (Santa Clara County) said that the County's NextGen AOP Bluetooth project would include Bluetooth devices that could be retrofitted to accommodate Dedicated Short Range Communication (DSRC) equipment. Ananth was informed that they needed to get Federal Communications Commission (FCC) licenses for these devices and asked for clarification on whether this would be the implementing agency's responsibility to obtain these licenses. Virginia said that she will check with the local stakeholders.

o Saravana Suthanthira (ACTC) asked about MTC's CV Pilot Deployment project award status, and when MTC is expected to hear from FHWA about the project awards. Virginia said the announcements will be made soon.

5. **Adjournment**
   ▪ The meeting adjourned at 12 P.M. The next meeting will be held on Tuesday, November 10, 2015.

Arterial Operations Committee
Notes from September 8, 2015 meeting

Arterial Operations Committee

Attendees from meeting on Tuesday, September 8, 2015

#	Name	Agency	Phone No.	E-Mail
1	Ali Hatefi	Hillsborough	650.375.7446	ahatefi@hillsborough.net
2	Allen Chen	St. Francis Elec.	510.695.0582	achen@sfe-inc.com
3	Ananth Prasad	SCL County	408.494.1342	ananth.prasad@rda.sccgov.org
4	Brian Burkhard	Jacobs	415.747.1008	brian.burkhard@jacobs.com
5	Brian Sowers	Kimley-Horn	925.398.4862	brian.sowers@kimley-horn.com
6	Dan Blomquist	San Anselmo	415.258.4654	dblomquist@townofsananselmo.org
7	David Huynh	Iteris	510.423.0742	dxh@iteris.com
8	David Mahama	DKS	510.267.6613	dcm@dksassociates.com
9	Donald Shupp	WP Signal	510.276.6400	shupp@wpsignal.com
10	Einar Acuna	Caltrans	510.622.5741	einar_a_acuna@dot.ca.gov
11	Francisco Martin	Fehr & Peers	510.587.9422	f.martin@fehrandpeers.com
12	Ganesh Karkee	MTC	510.817.5625	gkarkee@mtc.ca.gov
13	Lawrence Henriquez	South San Francisco	650.554.8263	lawrence.henriquez@ssf.net
14	Lin Zhang	MTC	510.817.5616	lzhang@mtc.ca.gov
15	Linda Lee	MTC	510.817.5825	llee@mtc.ca.gov
16	Maria Tribelhorn	DKS		maria@dksassociates.com
17	Nikki Nagaya	Menlo Park	650.330.6781	nhnagaya@menlopark.org
18	Randolph Craig	Danville	925.314.3375	rcraig@danville.ca.gov
19	Rene Baile	Menlo Park	650.330.6770	rcbaile@menlopark.org
20	Rich Shinn	Iteris	925.872.0834	RJS@iteris.com
21	Ron Hernandez	Econolite	510.207.2281	rhernandez@econolite.com
22	Saravana Suthanthira	Alameda CTC	510.208.7426	ssuthanthira@alamedactc.org
23	Virginia Lingham	MTC	510.817.5826	vlingham@mtc.ca.gov

Program for Arterial System Synchronization (PASS) FY 15/16 Cycle - Project Status Update (As of 10/30/2015)

#	County	Project Sponsor	Project Corridor (# of signals)	# of Signals	GPS Clocks	Project Services and Plans	Consultant	Project Status*
1	Alameda	Fremont	Fremont Blvd (8), Mowry Ave (8), Stevenson Blvd (8)	24	0	Weekday (AM/MD/PM) (24); Weekend (two peak periods) (24)	Iteris	1B
2	Alameda	Hayward	Tennyson Rd (13)	13	6	Weekday (AM/MD/PM) (13)	Iteris	1B
3	Alameda	Oakland	40th St (8), Harrison St (15), Jackson St (10), MacArthur Blvd (10)	43	40	Weekday (AM/MD/PM) (43); Weekend (two peak periods) (43)	KHA	1B
4	Alameda	San Leandro	San Leandro Blvd (7)	7	1	Weekday (AM/MD/PM) (7); Weekend (three peak periods) (7)	Iteris	1B
5	Napa	Napa	Hwy 121 (12), Redwood Rd/ Trancas St (9), Soscol Ave (5)	26	17	Weekday (AM/MD/PM) (14); Weekend (two peak periods) (14); Data Collection Only (12)	TJKM	1B
6	Contra Costa	Oakley	Main St (5)	5	5	Weekday (AM/MD/PM) (5); Weekday (Two school Peaks) (5)	TJKM	1B
7	Santa Clara	Sunnyvale	Java Dr (5), Mathilda Ave/ Sunnyvale Saratoga Rd (24), Maude Ave (4), Tasman Dr (4)	37	0	Weekday (AM/MD/PM) (37); Weekend (two peak periods) (17)	DKS	1B
8	San Mateo	South SF	Hickey Blvd (5), Gateway Blvd (5)	10	8	Weekday (AM/MD/PM) (10); Weekend (two peak periods) (10); Weekday (One school Peak) (5)	TJKM	1B
			Total	**165**	**77**			

1B = Final Scope, Schedule and Budget.
(#) Indicates the number of signals.

NextGen Arterial Operations Program Project Status

#	Key Deliverable	NextGen AOP Projects			
		AC Transit	LAVTA/ Dublin	City of Fremont	County of Santa Clara
1	1a. Draft SEMP	Completed	Completed	Completed	n/a
	1b. Final SEMP	Completed	Completed	Completed	n/a
2	2a. Draft User Needs Report	Completed	Completed	Completed	Completed
	2b. Final User Needs Report	Completed	Completed	Completed	Completed
3	3a. Draft ConOps	Completed	Completed	Completed	n/a
	3b. Final ConOps	**Completed****	**Completed****	Completed	n/a
4	4a. Draft System Requirements	**Completed****	**Completed****	Completed	Completed
	4b. Final System Requirements	*	**Completed****	Completed	Completed
5	5a. Draft Verification Plan	*	**Completed****	Completed	Completed
	5b. Final Verification Plan	*	*	**Completed****	Completed
6	6a. Draft Procurement Document	*	*	**Completed****	n/a
	6b. Final Procurement Document	*	*	*	n/a
7	7. Vendor Selection	*	*	*	n/a

*Note: * Deliverables to be completed later.*
    *** Deliverables completed in the last two months (between the last and current AOC meetings)*

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Memorandum

TO: Arterial Operations Committee (AOC) DATE: November 3, 2015

FR: Virginia Lingham, MTC

RE: Connected Vehicle Program Update

USDOT Connected Vehicle Pilot Deployment Site Selection

On September 14th, 2015, the USDOT announced the selection of three connected vehicle deployment sites as Wave 1 participants in the Connected Vehicle Pilot Deployment Program. The three sites collectively envision a broad spectrum of applications enabled by connected vehicle technologies driven by site-specific needs. The three sites include: 1) using connected vehicle technologies to improve safe and efficient truck movement along I-80 in southern Wyoming; 2) exploiting vehicle-to-vehicle (V2V) and intersection communications to improve vehicle flow and pedestrian safety in high-priority corridors in New York City; and 3) deploying multiple safety and mobility applications on and in proximity to reversible freeway lanes in Tampa, Florida.

More information, including project fact sheets and presentations from the recent kick-off meeting, are available at: http://www.its.dot.gov/pilots/

Connected Vehicle Program at MTC Moves Forward

MTC and the One California team were disappointed not to be selected as one of the USDOT pilot sites; however, we are moving forward, both collectively and individually, with connected vehicle deployments throughout California.

MTC is currently working to define its Connected Vehicle Program, revise the SF Bay Area deployment concept that was presented in the pilot proposal, and procure and deploy connected vehicle projects throughout the region.

Stay Connected

For more information about Connected Vehicles topics, visit:
  ➢ www.its.dot.gov/landing/cv.htm
  ➢ www.dot.ca.gov/research/operations/one_california
  ➢ www.safercar.gov/v2v/
  ➢ www.itsa.org/industryforums/connectedvehicle
  ➢ www.transportationops.org
  ➢ www.pcb.its.dot.gov/t3_archives.aspx

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Memorandum

TO: Arterial Operations Committee (AOC)   DATE: November 3, 2015

FR: Linda Lee, MTC

CC: AOP Task Force

RE: AOP Task Force – September 22, 2015 Meeting Summary

The AOP Task Force held a meeting on September 22, 2015. This memo provides a summary of the key discussion items:

- The meeting opened with a review of the AOP Task Force activities:
  - Attached is a summary of the Task Force activities that were discussed at the first meeting in June. The group reviewed the activities that have been completed, and discussed whether any new activities should be added.

  - The first two activities have been completed: 1) Development of the Program's mission statement, goals and objectives; 2) Development of a 25-year funding plan for Plan Bay Area 2040. A new activity was added to include the development of a near-term (5-year) funding plan for the Program.

- Possible revisions to the PASS eligibility requirements were discussed –
  - Attached are the proposed revisions to the PASS eligibility requirements, as discussed by the Task Force.

  - The group discussed possible revisions to the local match requirement. It was agreed that keeping the local match requirement was good, as a local match shows a commitment to the project by the project sponsor, and it allows MTC to leverage these funds to do more projects each year. As an example, for the current PASS FY 15/16 cycle, the Program received approximately $160,000 in local matching funds, with most of this coming from Tier 3 projects that required a 30% match.

  - There was some discussion about the current local match percentages (10%, 20%, and 30% for Tiers 1, 2, and 3, respectively) and whether they were too high and should be adjusted. In

the end, the group proposed the following revised percentages: 10%, 15%, and 20% for Tiers 1, 2, and 3, respectively.

- There was also discussion about the local match requirement, as it applies to State-owned intersections. As with all other agencies applying for PASS funding, Caltrans must also provide a local match. However, the group discussed the idea of a discounted (flat rate, not based on tiers) local match requirement, since State-owned intersections are along regionally significant corridors. The group agreed to a 10% local match requirement, and this match could be met by either Caltrans and/or the local agency.

- There was some concern expressed about the criteria related to jobs/housing growth, i.e., Tier 1, criteria 3. Specifically, since PASS projects are to address current operational conditions, this criteria should not be linked to current or future/projected land use. Therefore, there was a recommendation to replace the job/housing growth criteria with a criteria that was better linked to current arterial operations. After some discussion, the group agreed on using traffic volume as the new criteria. The group proposed either 1) Average Daily Traffic (ADT) > 20,000 vehicles; or 2) Peak hour traffic volume > 600 vehicles per hour per lane. Agencies can meet either ADT or peak hour volume threshold, but not required to meet both.

- The next AOP Task Force meeting is October 27, 2015.

Arterial Operations Program
Task Force Activities

Revised 9-22-2015

		ACTIVITY	STATUS
1	Review mission statement, goals and objectives	The Task Force will review and revise, if necessary, the current mission statement, goals and objectives to ensure they make sense and are relevant to today's environment.	Completed
2	Develop a 25-year funding plan for PBA 2040	The Task Force will assist in the development of a recommended long-range funding plan for the Arterial Operations Program for MTC's RTP update (referred to as "Plan Bay Area 2040" or "PBA 2040").	Completed
3	Review new PASS eligibility requirements	The Task Force will review the PASS project eligibility requirements (reliever routes, high transit services, high-growth cities with respect to jobs/housing) from the recent FY15/16 cycle to determine if modifications are needed.	
4	Determine the future of BASIS	Originally developed as a needs assessment tool for assessing funding needs for the RTP, the Task Force will revisit the purpose/need and consider modifying the data set, as it is currently too broad and the data is difficult to collect, populate, and maintain.	
5	Research funding options	The Task Force will research funding opportunities that can support arterial improvements. Such funding alternatives should not only include new sources, but also existing MTC funding programs, where there may be overlaps, e.g., Transit Performance Initiative, Local Street and Roads, etc.	
6	Review focus of Technical Transfer Seminars	The Task Force will consider establishing educational goals that could include the latest technologies in arterial improvements.	
7	Develop OBAG2 funding plan	The Task Force will assist in the development of a recommended 5-year OBAG2 expenditure plan	
8	Explore option for AOWG to report to PTAC	MTC Staff will explore the possibility for the AOWG to report to the Partnership Technical Advisory Committee (PTAC), similar to what the Local Streets & Roads Working Group does.	

PASS Eligibility Requirements
Recommended Revisions September 22, 2015

Tier	Eligibility Requirements	
	Characteristics	**Local Match** *
Tier 1	Tier 1 projects must meet the following three requirements: 1) Arterial functions as a reliever route to nearby freeway(s); 2) Arterial serves transit lines with high ridership. Specifically, the total of all lines has at least an average of 1,000 weekday boardings; and 3) Arterial has a minimum Average Daily Traffic (ADT) volume of 20,000 vehicles, or a minimum peak hour traffic volume of 600 vehicles per hour per lane Arterial is located within a city that is projected to experience a substantial growth in housing and/or jobs between 2010 and 2040. Refer to Attachment B for the Top 20 Cities in the Bay Area (source: ABAG Projections).	10% local cash match
Tier 2	Tier 2 projects must meet the following two requirements: 1) Arterial functions as a reliever route to nearby freeway(s); and 2) Arterial serves transit lines with high ridership. Specifically, the total of all lines has at least an average of 1,000 weekday boardings.	2015% local cash match
Tier 3	Tier 3 projects can meet any of the following three requirements: 1) Arterial functions as a reliever route to nearby freeway(s); 2) Arterial serves transit lines with high ridership. Specifically, the total of all lines has at least an average of 1,000 weekday boardings; or 3) Arterial has a minimum Average Daily Traffic (ADT) volume of 20,000 vehicles, or a minimum peak hour traffic volume of 600 vehicles per hour per lane Arterial is located within a city that is projected to experience a substantial growth in housing and/or jobs between 2010 and 2040. Refer to Attachment B for the Top 20 Cities in the Bay Area (source: ABAG Projections).	2030% local cash match

Other corridor characteristics for consideration, but not required for eligibility:
  a) Arterials with significant changes in traffic patterns and volumes
  b) Arterials include traffic signals from multiple jurisdictions
  c) Signals along an arterial that is impacted by modifications to nearby freeway interchanges, implementation of ramp metering, road widening, intersection upgrades, or lane configuration changes
  d) Project is in conjunction with other established regional programs, such as Transit Performance Initiative, Freeway Performance Initiative, Ramp Metering, Safe Routes to Schools, Safe Routes to Transit, Complete Streets, SMART corridors, Integrated Corridor Management, etc.

Note:
* For State-operated signalized intersections only, a 10% local cash match is required for any tier and can be met by either Caltrans and/or the local agency. Any financial commitments between Caltrans and the local agency to meet this requirement must be demonstrated in the project application.

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Memorandum

TO: Arterial Operations Committee (AOC)   DATE: November 3, 2015

FR: Linda Lee, MTC

CC: AOP Task Force

RE: AOP Task Force – October 27, 2015 Meeting Summary

The AOP Task Force held a meeting on October 27, 2015. This memo provides a summary of the key discussion items:

- The meeting opened with an announcement that Barrow Emerson will no longer be working at SamTrans, and that his replacement for the Task Force will be Melissa Reggiardo.

- Additional revisions to the PASS eligibility requirements were discussed –
  - At the September meeting, there was a proposal to set the minimum ADT volume at 20,000 vehicles for project eligibility. However, some members of the Task Force requested to revisit this topic at the October meeting and discuss whether or not this threshold was reasonable.

  - The group discussed the importance of tying the eligibility requirements back to the overall AOP goals and objectives.

  - After some lengthy discussions, the group agreed to do additional research before deciding on a reasonable ADT threshold. A member of the Task Force will share ADT data that have been previously collected along major arterials in the Bay Area; MTC staff will review ADT data from past PASS projects; and the cities representing the Task Force will provide ADT volumes for some selected arterials. Upon review of this data, the Task Force should be in a better position to establish a reasonable ADT threshold for project eligibility.

  - As for the other eligibility requirements, the following additional revisions were made: 1) the peak hour volume threshold was revised to clarify that it refers to the peak direction; 2) Tier 2 was revised to allow applicants to meet any two of the three requirements; and 3) a clarifying footnote was added to the term "reliever route" for evaluation purposes, since the definition of this term could be somewhat subjective. (See attached for revised requirements.)

- The future of the BASIS (Bay Area Signalized Intersection System) database was discussed –
  - To kick off the discussion, a brief overview of the BASIS database was provided (see attached).

  - The two primary questions that need to be answered are: What is the need for BASIS in the future; and if it is retained, who will be responsible for keeping the data up-to-date? The Task force agreed that perhaps the more important question is the latter one. That is, if the data is not kept up-to-date, then the database will serve no purpose.

  - There was discussion about how maintaining data, or having some sort of asset management system, can be a challenge for small cities, and that it would be nice to have a regional database to support future funding initiatives, plan for updates, identify gaps, etc. For example, based on controller information from the database, it would be helpful to identify corridors for new technology deployment such as Connected Vehicles. Cities also use tools like this to estimate lifecycle costs.

  - The group discussed how the BASIS data can be integrated with MTC's StreetSaver database, which is used for the agency's Pavement Management Program. There was an attempt to do this several years ago, as some sample BASIS data was provided to MTC's StreetSaver group for testing. However, no further work was done, since no funding was available to integrate the rest of the data and to keep the data updated going forward.

  - As for how the data can be kept up-to-date, there was a suggestion that perhaps the CMAs could coordinate regular updates among cities within their jurisdiction on a yearly (or more frequent) basis. While ACTC would be willing to do this for Alameda County cities as it did in 2012 for collecting data to develop BASIS, it is not known if the other CMAs would have the same willingness. Follow-up with other CMAs will be needed, should this be an option.

  - The group reviewed the current list of 20 attributes to determine which should be included in the database. However, it was decided that before any final decisions are made about which attributes to include or exclude, there needs to be clear direction on the future purpose of the database, which would then dictate the final list of attributes.

  - There was some discussion about potential liability issues due to public information requests related to lawsuits and accidents and, therefore, we need to be careful about what type of data is kept in this database.

  - There was a suggestion to conduct some research to determine whether other MPOs have similar databases or asset management tools, and if so, how they address some of the same issues related to purpose, updates, data, etc.

- The group also agreed to conduct an online survey among the local jurisdictions in the Bay Area to determine who has databases or GIS map layers of their signals, as well as to get a sense of their willingness to keep the data updated in a regional database, should BASIS be retained. A set of draft survey questions will be sent to the Task Force for feedback prior to sending out to the cities.

• The next AOP Task Force meeting is November 18, 2015.

Tier	Eligibility Requirements	
	Characteristics	**Local Match***
Tier 1	Tier 1 projects must meet the following three requirements: 1) Arterial functions as a reliever route to nearby freeway(s)**; 2) Arterial serves transit lines with high ridership. Specifically, the total of all lines has at least an average of 1,000 weekday boardings; and 3) Arterial has a minimum Average Daily Traffic (ADT) volume of 20,000 vehicles, or a minimum peak hour traffic volume of 600 vehicles per hour per lane in the peak direction. ~~Arterial is located within a city that is projected to experience a substantial growth in housing and/or jobs between 2010 and 2040. Refer to Attachment B for the Top 20 Cities in the Bay Area (source: ABAG Projections).~~	10% local cash match
Tier 2	Tier 2 projects must meet any two of the following three~~two~~ requirements: 1) Arterial functions as a reliever route to nearby freeway(s)**.~~; and~~ 2) Arterial serves transit lines with high ridership. Specifically, the total of all lines has at least an average of 1,000 weekday boardings. ~~2)~~3) Arterial has a minimum Average Daily Traffic (ADT) volume of 20,000 vehicles, or a minimum peak hour traffic volume of 600 vehicles per hour per lane in the peak direction.	~~20~~15% local cash match
Tier 3	Tier 3 projects can meet any of the following three requirements: 1) Arterial functions as a reliever route to nearby freeway(s)**; 2) Arterial serves transit lines with high ridership. Specifically, the total of all lines has at least an average of 1,000 weekday boardings; or 3) Arterial has a minimum Average Daily Traffic (ADT) volume of 20,000 vehicles, or a minimum peak hour traffic volume of 600 vehicles per hour per lane in the peak direction. ~~Arterial is located within a city that is projected to experience a substantial growth in housing and/or jobs between 2010 and 2040. Refer to Attachment B for the Top 20 Cities in the Bay Area (source: ABAG Projections).~~	~~20~~30% local cash match

Other corridor characteristics for consideration, but not required for eligibility:
  a) Arterials with significant changes in traffic patterns and volumes
  b) Arterials include traffic signals from multiple jurisdictions
  c) Signals along an arterial that is impacted by modifications to nearby freeway interchanges, implementation of ramp metering, road widening, intersection upgrades, or lane configuration changes
  d) Project is in conjunction with other established regional programs, such as Transit Performance Initiative, Freeway Performance Initiative, Ramp Metering, Safe Routes to Schools, Safe Routes to Transit, Complete Streets, SMART corridors, Integrated Corridor Management, etc.

Note:
* For State-operated signalized intersections only, a 10% local cash match is required for any tier and can be met by either Caltrans and/or the local agency. Any financial commitments between Caltrans and the local agency to meet this requirement must be demonstrated in the project application.

**Arterials that function as reliever routes are those that become de-facto diversion routes whenever incidents occur on nearby parallel freeways. Project applicants must provide some type of data to demonstrate the corridor functions in this capacity.

Bay Area Signalized Intersection System (BASIS)

Arterial Operations Program (AOP)
Task Force Meeting
October 27, 2015

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What is BASIS?

A central repository of information related to signalized intersections in the Bay Area

➤ Includes basic location information, and technological design and coordination status of each traffic signal

➤ Includes a spatial, online mapping system that can perform queries, generate reports, and produce maps

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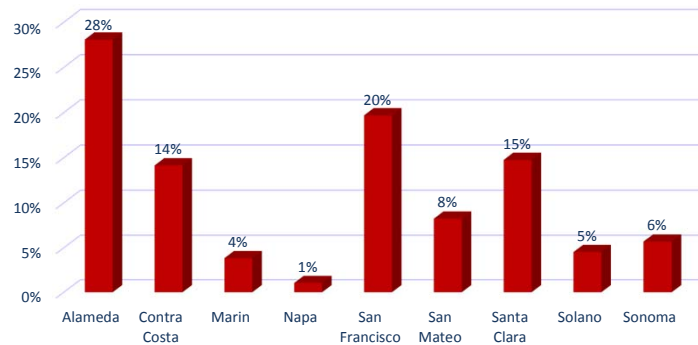
What was BASIS' Original Purpose?

- To inform future regional transportation planning efforts

- To assess needs

- To assess project performance

  - Regional Transportation Plan (RTP)

  - Program for Arterial System Synchronization (PASS)

- To assist local agencies in signal inventory

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Signals in the Bay Area

- **Total # of Signals in Bay Area: 10,000 (estimated)**
- **Total # of Signals in BASIS: approx. 6,000 (60%)**

Distribution of Signals in BASIS by County

County	Percentage
Alameda	28%
Contra Costa	14%
Marin	4%
Napa	1%
San Francisco	20%
San Mateo	8%
Santa Clara	15%
Solano	5%
Sonoma	6%

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Current Database Attributes

- Intersection location
- Corridor
- Agency
- Ownership
- Signal ID
- Controller type
- Date of controller installation
- Software used

- Cabinet type
- Detection type
- Bicycle detection
- Pedestrian signal
- Signal Coordination
- Type of interconnect
- Date of last retiming

- Transit signal priority
- Emergency vehicle preemption
- Railroad preemption
- Incident management flush plan
- School peak timing plan

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What is the Future of BASIS?

- What is the need for it today?

- Should it be retained?

- If retained,

  ➤ Who will be allowed to access it? How?

  ➤ How will it be maintained/kept up-to-date?

  ➤ Should the data attributes be changed?

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