

# C/CAG

## CITY/COUNTY ASSOCIATION OF GOVERNMENTS OF SAN MATEO COUNTY

*Atherton • Belmont • Brisbane • Burlingame • Colma • Daly City • East Palo Alto • Foster City • Half Moon Bay • Hillsborough • Menlo Park  
Millbrae • Pacifica • Portola Valley • Redwood City • San Bruno • San Carlos • San Mateo • San Mateo County • South San Francisco • Woodside*

**1:15 p.m., Thursday, January 21, 2016**  
**San Mateo County Transit District Office<sup>1</sup>**  
**1250 San Carlos Avenue, 2<sup>nd</sup> Floor Auditorium**  
**San Carlos, California**

### TECHNICAL ADVISORY COMMITTEE (TAC) AGENDA

- |  |               |              |
|--|---------------|--------------|
| 1. Public comment on items not on the Agenda (presentations are customarily limited to 3 minutes).   | Porter/Hurley | No materials |
| 2. Issues from the last C/CAG Board meeting (Dec 2015, Jan 2016): <ul style="list-style-type: none"><li>• Approved – Appointment of Justin Murphy - City of Menlo Park and Peter Vorametsanti – City of Millbrae to the CMP TAC</li><li>• Approved – Amend. 4 to the contract with Iteris for Smart Corridor System Integration Support for a time extension</li><li>• Approved – Appointment of Doug Kim – SamTrans and Elizabeth Scanlon – JPB to the CMEQ Committee</li><li>• Approved – CFP for the C/CAG-TA Shuttle Program for FYs 16/17 &amp; 17/18</li><li>• Adopted – 2015 CMP for San Mateo County</li></ul> | Hoang         | No materials |
| 3. Approval of the minutes from November 19, 2015  | Hoang         | Page 1-2     |
| 4. Review and recommend approval of the Alternative Fuel Readiness Plan for San Mateo County (Action)  | Hoang         | Page 3-58    |
| 5. Review and recommend approval of the Fiscal Year 2016/17 Expenditure Plan for the Transportation Fund for Clean Air (TFCA) County Program Manager Fund for San Mateo County (Action)  | Hoang         | Page 59-61   |
| 6. MTC Active Transportation Round 3 Call for Projects (Information)   | Wong          | Page 62-68   |
| 7. Receive an update on the MTC One Bay Area Grant 2 (OBAG 2) program (Information)  | Higaki        | Page 69-119  |
| 8. Regional Project and Funding Information (Information)  | Higaki        | Page 120-126 |
| 9. Executive Director Report   | Wong          | No materials |
| 10. Member Reports   | All           |              |

---

<sup>1</sup> For public transit access use SamTrans Bus lines 260, 295, 390, 391, KX or take CalTrain to the San Carlos Station and walk two blocks up San Carlos Avenue. Driving directions: From Route 101 take the Holly Street (west) exit. Two blocks past El Camino Real go left on Walnut. The entrance to the parking lot is at the end of the block on the left, immediately before the ramp that goes under the building. Enter the parking lot by driving between the buildings and making a left into the elevated lot. Follow the signs up to the levels for public parking.

2015 TAC Roster and Attendance									
No.	Member	Agency	Jan	Feb	Apr	Jun	Aug	Sep	Nov
1	Jim Porter (Co-Chair)	San Mateo County Engineering	x	x	x	x	x		x
2	Joseph Hurley (Co-Chair)	SMCTA / PCJPB / Caltrain	x	x	x		x	x	x
3	Afshin Oskoui	Belmont Engineering	x	x	x		x	x	
4	Randy Breault	Brisbane Engineering	x		x	x	x	x	
5	Syed Murtuza	Burlingame Engineering	x	x	x	x	x	x	x
6	Bill Meeker	Burlingame Planning							
7	VACANT	Caltrans							
8	Sandy Wong	C/CAG	x	x	x	x	x	x	x
9	Brad Donohue	Colma Engineering	x	x	x		x	x	x
10	John Fuller	Daly City Engineering		x	x	x	x	x	x
11	Tatum Mothershead	Daly City Planning	x	x		x		x	
12	Paul Willis	Hillsborough Engineering	x	x	x	x	x	x	x
13	Jeff Moneda	Foster City Engineering	x		x		x	x	x
14	Van Ocampo	Pacifica Engineering	x	x		x		x	x
15	Jessica Manzi	Redwood City Engineering	x			x	x	x	x
16	Jimmy Tan	San Bruno Engineering	x	x		x	x		
17	Jay Walter	San Carlos Engineering	x	x		x	x		x
18	Brad Underwood	San Mateo Engineering	x	x	x	x	x	x	x
19	Brian McMinn	South San Francisco Engineering		x	x	x	x	x	x
20	Billy Gross	South San Francisco Planning	x		x	x	x	x	x
21	Kenneth Folan	MTC							

# **CONGESTION MANAGEMENT PROGRAM (CMP) TECHNICAL ADVISORY COMMITTEE (TAC)**

**November 19, 2015  
MINUTES**

The meeting of the Technical Advisory Committee (TAC) was held in the SamTrans Offices located at 1250 San Carlos Avenue, 2<sup>nd</sup> Floor Auditorium, San Carlos, CA. Co-chair Hurley called the meeting to order at 1:15 p.m. on Thursday, November 19, 2015.

TAC members attending the meeting are listed on the Roster and Attendance on the preceding page. Others attending the meeting were: Joel Slavit – SMCTA; Pete Rasmussen – SMCTA; Niki Nagaya – City of Menlo Park; Jean Higaki, John Hoang, Tom Madalena, Eliza Yu, Jeff Lacap – C/CAG; and other attendees not noted.

**1. Public comment on items not on the agenda.**

None.

**2. Issues from the last C/CAG Board meeting.**

John Hoang reported the following items:

- Approved the proposed 2016 STIP for San Mateo County
- Authorized the filing of an application for \$9,399,000 in funding from the RTIP for the US 101 HOV/Express Lane Project from SC Line to I-380
- Approved the formation of the C/CAG Water Committee
- Approved the appointment of Vice Mayor Gary Pollard from Foster City on the BPAC

**3. Approval of the Minutes from September 17, 2015.**

Approved.

**4. Receive a presentation and update on the Alternative Fuel Readiness Plan for San Mateo County**

(This item was presented after Item 5) John Hoang introduced the item and Ashley Henderson, from LCA, presented the highlights of the Alternative Fuel Readiness Plan (Plan) including key elements such as the need and objectives for the Plan, different alternative fuels and its potential impacts on the County, existing incentives for vehicle and infrastructure, challenges to deployment and infrastructure development including cost, and local policy options.

**5. Measure A Pedestrian and Bicycle Program Call for Projects**

Joel Slavit, TA Manager, presented an overview of the Pedestrian and Bicycle Program 2015 Call for Projects, providing an overview of the TA Pedestrian and Bicycle Program and highlighting eligibility requirements, process, evaluation criteria, schedule, as well as summarizing the proposed changes to the program and the next steps.

**6. Review and recommend approval of the Call for Projects for the C/CAG and San Mateo County Transportation Authority Shuttle Program for Fiscal Year 2016/2017 & Fiscal Year 2017/2018**

Tom Madalena presented information on the Shuttle Program FYs 2016/17 & 2017/18 Call for Projects highlighting new policy, shuttle performance benchmarks, and proposed timeline.

**7. Review and recommend approval of the Final 2015 Congestion Management Program (CMP) and Monitoring Report**

Jeff Lacap presented the Final 2015 CMP and monitoring report.

**8. Review and recommend approval of Participating in the Highway 101 Pilot Ramp Metering Project**

Eliza Yu introduced the item and X.Y. Lu, from PATH, presented on the project objectives and expected results.

**9. Regional Project and Funding Information**

Jean Higaki presented information pertaining to Federal funding, project delivery, and pertinent regional policies that may affect local agencies.

**10. Executive Director Report**

Sandy Wong , C/CAG Executive Director, reported that Matt Fabry testified at the Municipal Regional Permit hearing in Oakland. The State pilot program on road charge is seeking 50000 volunteers. The Smart Corridor project is wrapping up and a soft turn-on is planned for December. The US 101 carpool/express project is currently developing scope for the environmental phase. The Governor's Office has assigned Tony Harris to the project.

**11. Member Reports**

Co-Chair Hurley reported that Brian Lee is currently at City of Half Moon Bay.

Meeting adjourned at 3:30 p.m.

## C/CAG AGENDA REPORT

Date: January 16, 2016  
To: Congestion Management Technical Advisory Committee (CMP TAC)  
From: John Hoang  
Subject: Review and recommend approval of the Alternative Fuel Readiness Plan for San Mateo County

(For further information or response to questions, contact John Hoang at 650-363-4105)

---

### **RECOMMENDATION**

That the CMP TAC review and recommend approval of the Alternative Fuel Readiness Plan for San Mateo County.

### **FISCAL IMPACT**

\$356,418 (\$275,810 - Grant; \$80,608 - In-kind match)

### **SOURCE OF FUNDS**

California Energy Commission; C/CAG Congestion Relief Plan

### **BACKGROUND**

C/CAG received a grant from the California Energy Commission in June 2014 to develop an Alternative Fuel Readiness Plan (AFRP) for San Mateo County and 20 cities therein to prepare for the commercialization of alternative transportation fuels including electric, hydrogen, biofuels, propane, and natural gas. A project Task Force was formed comprising of cities (Menlo Park, San Mateo, South San Francisco, Portola Valley) and industry representatives to help guide the development process.

The AFRP Report includes the following elements:

- Analysis existing and potential incentives for increased usage of alternative fuels;
- Challenges and opportunities for sharing best practices for planning, permitting, deployment, maintenance and inspection of Alternative Fuel Infrastructure (AFI);
- Training materials for fleet operators, planners, first responders, and decision-makers regarding AFI development;
- Strategies and best practices to increase procurement of alternative fuels;
- Marketing analyses, marketing materials, and outreach strategies that communicate the benefits of alternative fuel usage to targeted groups such as fleet owners/operators; and
- Strategies to assist alternative fuel wholesalers/retailers, with the intent of increasing the availability and/or reducing the cost of alternative fuels.

At the November 19, 2015 meeting, the TAC received a presentation that highlighted key elements of the AFRP Report. This information was also presented to the C/CAG Resource Management and Climate Protection Committee (RMCP), Congestion Management and Environmental Quality (CMEQ) Committee, as well as the Board.

The draft AFRP Report and Summary Report is provided to the TAC at this time for review and comments. Staff request that the TAC recommend approval, contingent upon incorporation of comments received from the C/CAG committees. It is anticipated that the document will continue to be revised and edited before a final draft Report is presented to the Board for adoption.

#### **ATTACHMENTS**

1. Alternative Fuel Readiness Plan for San Mateo County – Summary Report
2. Alternative Fuel Readiness Plan for San Mateo County (Full Report) available online only at: <http://ccag.ca.gov/committees/congestion-management-program-technical-advisory-committee/>

# Alternative and Renewable Fuel and Vehicle Technology Program

## DRAFT FINAL PROJECT REPORT

# Alternative Fuel Readiness Plan for San Mateo County: Summary Report



Prepared for: California Energy Commission

Prepared by: Life Cycle Associates, LLC

Logo of company can be placed here if desired.

MONTH YEAR  
CEC-XXX-XXXX-XXX

**Prepared by:**

**Primary Author(s):**

Ashley Henderson  
Stefan Unnasch  
Susan Boland  
Jennifer Pont  
Sandra Kaminski

Life Cycle Associates, LLC  
884 Portola Road  
Portola Valley, CA 94028  
650-461-9048  
www.lifecycleassociates.com

**Agreement Number: ARV-13-018**

**Prepared for:**

**California Energy Commission**

Sharon Purewal  
**Agreement Manager**  
**California Energy Commission**

John Hoang  
**Project Manager**  
**City and County Association of Governments for San Mateo County**

XXXX XXXXXX  
**Deputy Director**  
**DIVISION NAME GOES HERE**

Robert P. Oglesby  
**Executive Director**

**DISCLAIMER**

This report was prepared as the result of work sponsored by the California Energy Commission. It does not necessarily represent the views of the Energy Commission, its employees or the State of California. The Energy Commission, the State of California, its employees, contractors and subcontractors make no warrant, express or implied, and assume no legal liability for the information in this report; nor does any party represent that the uses of this information will not infringe upon privately owned rights. This report has not been approved or disapproved by the California Energy Commission nor has the California Energy Commission passed upon the accuracy or adequacy of the information in this report.



## **ACKNOWLEDGEMENTS**

John Hoang, CCAG

Kim Springer, County of San Mateo Office of Sustainability

Sandy Wong, CCAG Executive Director

Mary Ann Nihart, CCAG Chair

### Task Force Members

Brandi de Garmeaux, Town of Portola Valley

Gogo Heinrich, City of San Mateo

Heather Abrams, City of Menlo Park

Justin Novell, Dave Bockhaus, City of South San Francisco

Adam Walter, Propel Fuels

### Other Contributors

Dan Abrams, City of Redwood City Fire Department

Brian Molver, San Mateo County Sheriff's Office of Emergency Services

## PREFACE

Assembly Bill 118 (Núñez, Chapter 750, Statutes of 2007), created the Alternative and Renewable Fuel and Vehicle Technology Program (ARFVT Program). The statute, subsequently amended by AB 109 (Núñez) Chapter 313, Statutes of 2008), authorizes the California Energy Commission to develop and deploy alternative and renewable fuels and advanced transportation technologies to help attain the state's climate change policies. The Energy Commission has an annual program budget of about \$100 million and provides financial support for projects that:

- Develop and improve alternative and renewable low-carbon fuels.
- Enhance alternative and renewable fuels for existing and developing engine technologies.
- Produce alternative and renewable low-carbon fuels in California.
- Decrease, on a full-fuel-cycle basis, the overall impact and carbon footprint of alternative and renewable fuels and increase sustainability.
- Expand fuel infrastructure, fueling stations, and equipment.
- Improve light-, medium-, and heavy-duty vehicle technologies.
- Retrofit medium- and heavy-duty on-road and non-road vehicle fleets.
- Expand infrastructure connected with existing fleets, public transit, and transportation corridors.
- Establish workforce training programs, conduct public education and promotion, and create technology centers.

The Energy Commission issued solicitation PON-13-603 to provide funding opportunities under the ARFVT Program for the development of Alternative Fuel Readiness Plans. To be eligible for funding under PON-13-603, the projects must also be consistent with the Energy Commission's *ARFVT Investment Plan*, updated annually. In response to PON-13-603, the City/County Association of Governments of San Mateo County (C/CAG) submitted an application, which was proposed for funding in the Energy Commission's Notice of Proposed Awards May 9, 2014, and the agreement was executed as ARV-13- 018 on June 26, 2014.

## ABSTRACT

The City/County Association of Governments of San Mateo County (C/CAG), as the County's Congestion Management Agency (CMA) responsible for transportation planning has undertaken the preparation of an Alternative Fuel Readiness Plan for San Mateo County (AFRP). This document will serve as a resource and guidance to San Mateo County jurisdictions, which includes the 20 cities and unincorporated County, public agencies, private companies, and individuals regarding the increased use and incorporation of alternative fuel vehicles and alternative fuel infrastructure in communities within San Mateo County. This Plan provides an overview of each alternative fuel in the marketplace and The growth of the alternative fuel market will depend on the availability of sufficient refueling infrastructure and affordable and desirable alternative fuel vehicle options. Governments can help with infrastructure development and vehicle purchasing through incentives, funding, regulations, and outreach and education programs. The Plan lays out a number of policy options for local governments to consider. This may include zoning plans, streamlined permitting, coordination with other agencies to increase government fleet alternative fuel vehicle purchases, and regional siting plan development. The Plan also presents outreach strategies and marketing materials, and provides aggregated training resources for emergency personnel. An analysis of future vehicle populations and fuel demand in San Mateo County was performed, and showed that while gasoline demand will decline, demand for all forms of alternative fuels used in vehicles will increase, and will require a corresponding increase in public refueling dispensers. Local governments will be best prepared for this increase if they begin to plan for alternative fuel readiness now.

**Keywords:** Alternative fuel, readiness plan, San Mateo County, C/CAG, public policy, infrastructure planning, electric vehicle supply equipment, zero emission vehicle

Please use the following citation for this report:

Last name, First name, Second author, Third author. (Life Cycle Associates). 2016. *Alternative Fuel Readiness Plan for San Mateo County*. California Energy Commission. Publication Number: CEC-XXX-XXXX-XXX.

# ACRONYMS

AB	Assembly bill
ABAG	Association of Bay Area Governments
ADA	Americans with Disabilities Act
AF	Alternative fuel
AFI	Alternative fuel infrastructure
AFV	Alternative fuel vehicle
AHJ	Authority having jurisdiction
AQIP	Air Quality Improvement Program
ARFVTP	Alternative and Renewable Fuel and Vehicle Technology Program
ATVMLP	Advanced Technology Vehicles Manufacturing Loan Program
B20	Biodiesel 20%
BAAQMD	Bay Area Air Quality Management District
BD	Biodiesel
BEV	Battery electric vehicle
Btu	British thermal unit
C/CAG	City and County Association of Governments of San Mateo County
CA	California
CAFE	Corporate Average Fuel Economy
CAP	Climate action plan
CARB	California Air Resources Board
CEC	California Energy Commission
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
CI	Carbon intensity
CNGV	Compressed natural gas vehicle
CO <sub>2e</sub>	Carbon dioxide equivalents
CSE	Center for Sustainable Energy
CVRP	California Vehicle Rebate Project
DGS	Department of General Services
DOE	Department of Energy
E85	Ethanol 85%
EISA	Energy Independence and Security Act
EO	Executive order
EPA	Environmental Protection Agency
EV	Electric vehicle
EVSE	Electric vehicle supply equipment
FCEV	Fuel cell electric vehicle

FFV	Flexible fuel vehicle
GHG	Greenhouse gas
REET	Greenhouse Gases, Regulated Emissions, and Energy Use in Transportation
HOV	High occupancy vehicle
HVIP	Hybrid and Zero-Emission Truck and Bus Voucher Incentive Project
ICEV	Internal combustion engine vehicle
IRS	Internal Revenue Service
kg	Kilogram
LCFS	Low Carbon Fuel Standard
LNGV	Liquefied natural gas vehicle
LPGV	Liquefied petroleum gas vehicle
MOU	Memorandum of understanding
mpg	Miles per gallon
MPO	Metropolitan Planning Organization
MTC	Metropolitan Transportation Commission
MUD	Multi-unit dwelling
NAFTC	National Alternative Fuels Training Consortium
NFPA	National Fire Protection Association
NGV	Natural gas vehicle
NREL	National Renewable Energy Laboratory
OEM	Original equipment manufacturer
PEV	Plug-in electric vehicle
PG&E	Pacific Gas & Electric
PHEV	Plug-in hybrid electric vehicle
RD	Renewable diesel
RFS2	Renewable Fuel Standard (U.S.) version 2
SB	Senate bill
SMC	San Mateo County
TOU	Time-of-use
TZEV	Transitional zero emission vehicle
U.S.	United States
UBC	Uniform Building Code
UFC	Uniform Fire Code
V	Volts
WTT	Well-to-tank
WTW	Well-to-wheels
WWTP	Waste water treatment plant
ZEV	Zero emission vehicle

# TABLE OF CONTENTS

Acknowledgements .....	i
PREFACE .....	ii
ABSTRACT .....	iii
ACRONYMS .....	iv
TABLE OF CONTENTS .....	vi
<b>1. Need for Alternative Fuel Readiness Planning .....</b>	<b>1</b>
Policy Background .....	2
Scope of the Plan .....	5
<b>2. Introduction to Alternative Fuels .....</b>	<b>6</b>
Electricity .....	6
Hydrogen .....	7
Natural Gas and Biogas .....	8
Liquefied Petroleum Gas .....	9
Liquid Biofuels: Ethanol, Biodiesel, and Renewable Diesel .....	9
Greenhouse Gas Emissions .....	9
Advantages and Disadvantages of Each AFV .....	10
<b>3. Incentives for Alternative Fuels .....</b>	<b>12</b>
<b>4. Challenges to AFV and AFI Development .....</b>	<b>15</b>
Vehicle Cost .....	15
Fuel Cost .....	18
Fueling Infrastructure Cost .....	18
Technical Challenges .....	20
Regulatory Challenges .....	20
Educational Challenges .....	20
<b>5. Increased Procurement Strategies .....</b>	<b>22</b>
Cost Strategies .....	22
Regulatory Strategies .....	23

Higher Level Policies .....	24
Zoning & Building Codes .....	24
Permitting .....	26
Signage .....	26
Multi-Unit Dwellings (MUDs) .....	26
<b>6. Education and Outreach .....</b>	<b>29</b>
Communication Strategy .....	30
Training Resources .....	31
Alternative Fuels Regulations .....	31
Safety Considerations .....	32
General Safety Training Resources .....	34
Noteworthy Resources for First Responders .....	34
<b>7. Alternative Fuel Demand in San Mateo County .....</b>	<b>37</b>
Retail and Infrastructure Plan .....	37
<b>8. Conclusions &amp; Next Steps .....</b>	<b>43</b>
<b>REFERENCES .....</b>	<b>45</b>

# 1. Need for Alternative Fuel Readiness Planning

Transportation accounts for nearly 40 percent of California’s total energy consumption and roughly 39 percent of the state’s greenhouse gas emissions<sup>1</sup>. Gasoline and diesel- powered vehicles produce about 50% of California’s criteria pollutants and 38% of its greenhouse gas emissions<sup>2</sup>. For this reason, transportation related emissions have become a major focus of California’s efforts to reduce its climate change impacts and other vehicular pollutants. California has set ambitious statewide goals and targets for reducing its greenhouse gas emissions (GHGs) and is employing a variety of strategies to achieve these goals, many of which include reducing impacts from transportation. Cities and counties have an important role to play in achieving these goals. For San Mateo County, 60% of GHG emissions are attributed to transportation.

Alternative fuel vehicles (AFVs) offer an important option for reducing GHG emissions. Alternative fuels allow for the continued use of personal vehicles, buses, and trucks, while reducing the environmental impacts from motorized transportation. In recognizing the need for addressing environmental impacts caused by transportation fuels, and in the interest of preparing for fast growing AFV industry, C/CAG has undertaken the preparation of an Alternative Fuel Readiness Plan for San Mateo County. The intent of this document is to serve as a resource and guidance to jurisdictions, public agencies, private companies, and individuals regarding the implementation of AFVs and alternative fuel infrastructure (AFI) in San Mateo County.

## Background

The State of California has enacted a series of laws and executive orders over the past decade to support environmental and climate change goals. These goals motivate many of the initiatives now driving alternative fuel vehicle and infrastructure development in California. They include GHG emission reduction targets, zero emission vehicle (ZEV) population goals, renewable electricity requirements, and a 50% reduction in overall petroleum use. The recent passage of SB 350 (Leon, 2015) sets ambitious interim targets for 2030 of a 40% reduction in GHGs, 50% renewable electricity generation, a 50% energy efficiency increase in buildings, and requires public utilities to invest in electric vehicle charging infrastructure.

These goals will be achieved through a mix of incentives, grant and funding opportunities, and legal requirements. So far, California is on track to meet or exceed its 2020 goals of a reduction in GHGs to 1990 levels and an electric grid that is 33% renewable (Clegern, 2015). The Bay Area also expects to exceed its ARB appointed SB 375 sustainable communities goal of a 7% per capita reduction in GHGs from cars and light-duty trucks by 2020. California’s various targets are summarized in [Figure 2](#).

---

<sup>1</sup> (CEC, 2013)

<sup>2</sup> (CaFCP, 2012)



**Figure 2. Major Goals and Targets for Greenhouse Gas Reductions in California**

<b>GREENHOUSE GAS EMISSIONS</b>	<ul style="list-style-type: none"> <li>• 2020: GHGs reduced to 1990 levels <sup>1</sup></li> <li>• 2030: GHGs reduced to 40% below 1990 levels <sup>6</sup></li> <li>• 2050: GHGs reduced to 80% below 1990 levels <sup>7</sup></li> </ul>
<b>SUSTAINABLE COMMUNITIES</b>	<ul style="list-style-type: none"> <li>• 2010: ARB sets reduction goals for metropolitan areas <sup>3</sup></li> <li>• 2020: Metropolitan areas meet 1<sup>st</sup> GHG reduction targets <sup>3</sup></li> <li>• 2035: Metropolitan areas meet 2<sup>nd</sup> GHG reduction targets <sup>3</sup></li> </ul>
<b>ZERO EMISSION VEHICLES</b>	<ul style="list-style-type: none"> <li>• 2015: Metropolitan areas have infrastructure plans for ZEVs <sup>4</sup></li> <li>• 2020: California infrastructure supports 1 million ZEVs <sup>4</sup></li> <li>• 2025: 15% of new cars sales are ZEVs, 1.5 million ZEVs total on roads <sup>4</sup></li> <li>• 2050: Transportation GHGs are less than 80% of 1990 levels <sup>4</sup></li> </ul>
<b>RENEWABLE ELECTRICITY</b>	<ul style="list-style-type: none"> <li>• 2013: 20% of electricity from renewable sources <sup>5</sup></li> <li>• 2020: 33% of electricity from renewable sources <sup>5</sup></li> <li>• 2020: 12,000 MW of new electricity generated after 2010 <sup>5</sup></li> <li>• 2030: 50% of electricity from renewable sources <sup>6</sup></li> </ul>
<b>GREEN STATE BUILDINGS</b>	<ul style="list-style-type: none"> <li>• 2018: State agency energy purchases 20% less than 2003 <sup>7</sup></li> <li>• 2020: State agency GHGs 20% less than 2010 levels <sup>7</sup></li> <li>• 2025: 50% of state agency buildings will be Zero Net Energy <sup>7</sup></li> <li>• 2030: 50% increase in energy efficiency in existing buildings <sup>8</sup></li> </ul>
<b>SOLID WASTE REDUCTION</b>	<ul style="list-style-type: none"> <li>• 2025: 75% recycling, composting, or source reduction of solid waste <sup>8</sup></li> </ul>
<b>PETROLEUM REDUCTION</b>	<ul style="list-style-type: none"> <li>• 2030: 50% reduction in petroleum use <sup>9</sup></li> </ul>

1. California Global Warming Solutions Act of 2006 (Assembly Bill 32 (AB 32); Stats. 2006 chapter 488). [http://www.leginfo.ca.gov/pub/05-06/bill/asm/ab\\_0001-0050/ab\\_32\\_bill\\_20060927\\_chaptered.pdf](http://www.leginfo.ca.gov/pub/05-06/bill/asm/ab_0001-0050/ab_32_bill_20060927_chaptered.pdf)

2. Executive Order S-3-05. <http://gov.ca.gov/news.php?id=1861>.

3. Sustainable Communities and Climate Protection Act of 2008 (SB 375, Steinberg, Statutes of 2008). [http://www.leginfo.ca.gov/pub/07-08/bill/sen/sb\\_0351-0400/sb\\_375\\_bill\\_20080930\\_chaptered.html](http://www.leginfo.ca.gov/pub/07-08/bill/sen/sb_0351-0400/sb_375_bill_20080930_chaptered.html).

4. Executive Order B-16-12. <http://gov.ca.gov/news.php?id=17472>.

5. California Renewable Energy Resources Act (SBX1 2, Simitian, Statutes of 2011). [http://www.leginfo.ca.gov/pub/11-12/bill/sen/sb\\_0001-0050/sbx1\\_2\\_bill\\_20110412\\_chaptered.html](http://www.leginfo.ca.gov/pub/11-12/bill/sen/sb_0001-0050/sbx1_2_bill_20110412_chaptered.html).

6. SB 350, De León. Clean Energy and Pollution Reduction Act of 2015.

7. Executive Order B-18-12. <http://gov.ca.gov/news.php?id=17508>

8. AB 341, Chesbro, Statutes of 2011. [http://www.leginfo.ca.gov/pub/11-12/bill/asm/ab\\_0301-0350/ab\\_341\\_bill\\_20111006\\_chaptered.html](http://www.leginfo.ca.gov/pub/11-12/bill/asm/ab_0301-0350/ab_341_bill_20111006_chaptered.html).

9. Executive Order B-30-15. <https://www.gov.ca.gov/news.php?id=18938>

San Mateo County jurisdictions and government agencies may be subject to additional emission reduction targets from future climate change legislation. These may be in the form of expectations from the California Air Resources Board (CARB) or the Bay Area Air Quality Management District (BAAQMD). Additional statewide requirements may include

road taxes, signage requirements, and comprehensive GHG reporting. New climate change goals will be easier to achieve if the cities are already well-educated on alternative fuels and have strategies in place for their increased use.

Alternative fuel readiness requires a comprehensive understanding of:

- Current availability of alternative fuels in San Mateo County,
- Number of vehicles and amount of alternative fuel that can be expected in the future, and
- New policies, strategies, and educational plans to address the changing landscape.

Integrating alternative fuels into the current practices will require overcoming a number of obstacles, including differences in cost from fossil fuels, technical issues such as availability of fueling infrastructure, adaptation of rules and regulations for alternative fuels, and education of consumers and government officials on the benefits of and incentives for alternative fuels. This plan provides information to address many of these challenges.

## Scope of the Plan

This Summary Report covers the main points from the full version of the Alternative Fuel Readiness Plan for San Mateo County, which addresses the following topics in depth:

- Introduction to the motivations for being alternative fuel ready, including federal and state legislation, state and local goals, and existing programs to increase alternative fuel use.
- Overview of alternative fuels and alternative fuel vehicles, including fuel production, vehicle operation basics, and fuel, vehicle, and infrastructure costs.
- Description of all the federal, state, and local programs and incentives that exist to encourage the production of alternative fuels, the construction of alternative fuel infrastructure, and the purchase of alternative vehicles.
- Challenges to the growth of the AFV market and its supporting infrastructure, including economic challenges, regulatory challenges, and educational needs.
- Potential solutions to these problems and offer recommendations for the City and County of San Mateo to improve its readiness for AFVs and increase procurement.
- Training recommendations and resources that can help to prepare government employees and safety officials for the integration of AFVs and AFI in San Mateo County.
- Strategies for outreach and communication to San Mateo County stakeholders about alternative fuel readiness.
- Assistance strategies for infrastructure development, including vehicle population projections, fuel volume projections, minimum infrastructure requirements, and a siting plan for public stations.
- Describes general conclusions and next steps that San Mateo County jurisdictions can take to implement the policies and changes recommended by the Plan.

## 2. Introduction to Alternative Fuels

Over the past decade, alternative fuels have been recognized as an important means of addressing three national and statewide challenges: the desire to lower carbon emissions; the need for more energy security; and rising or volatile oil prices. Increased popularity of alternative fuels has resulted in higher levels of infrastructure development as well as a wealth of efficient technologies for alternative fuel transportation.

The most common alternative fuels include electricity, hydrogen, compressed natural gas, liquefied natural gas, liquefied petroleum gas, ethanol, biodiesel, and renewable diesel. Using these fuels instead of conventional fuels helps to reduce petroleum use, air pollution, and GHG emissions.

### Electricity

Plug-in electric vehicles (PEVs) operate on battery power with electric motors and are considered alternative fuel vehicles. The vehicles are either battery only or plug-in hybrid with gasoline engines and hybrid power trains. In California, the majority of power plants run on natural gas, making its power grid relatively low carbon intensity compared to other parts of the country. By 2020, California's electricity supply must be produced from 33% renewable sources such as wind, solar, and hydropower, which will bring the emissions profile for the CA grid down even more. Therefore electric vehicles, which have no tail pipe emissions, are much lower in GHG and air emissions than gasoline or diesel cars, especially given the efficiency of energy conversion in electric vehicles. PEVs are charged at home, the workplace, or public locations (See Figure 3).

**Figure 3. Electric Vehicle Charging at Public Station**



On average, plug-in hybrid electric vehicles (PHEVs) can travel on battery power alone for 15 – 35 miles, and 300+ miles in gasoline-electric hybrid mode. The average battery electric vehicle (BEV) can travel between 70 and 100+ miles on a fully charged battery, although Teslas can

travel up to 250 miles (CARB, 2015). Manufacturers expect that in 2017 there will be three (3) BEV models with driving ranges of 150-200 miles priced under \$40,000; the Chevy Bolt, the Tesla Model 3, and the Nissan Leaf v2 (BACC, 2015). BEVs that have ranges up to 350 miles may be available later in the decade (Schorske, 2011).

There are primarily three different types of electric vehicle supply equipment (EVSE), each of which charges electric vehicle (EV) batteries at different rates. AC Level 1 charging stations are the most basic, making use of the typical household AC 120 volt (V) plug. Most EVs come with a cord and adapter that allows the driver to connect directly to AC 120 V outlets. Level 1 chargers add about 2 to 5 miles of range per hour of charging. AC level 2 chargers use 240 V outlets (usually residential) or 208 V outlets (usually commercial), and require installation of special charging equipment). These add between 10 and 20 miles per hour of charging. DC fast chargers (DCFC) use 480 V DC input and allow for rapid charging. DCFCs can add 60 to 80 miles to a PHEV or EV in about 20 minutes (DOE, 2013). Table 1 shows typical charging times it takes to fully charge batteries for PHEVs and BEVs using different types of charging equipment. These times may vary depending on battery capacity. Current models of PHEVs do not always have the ability to charge on DCFCs, but this could easily change over time if the prevalence of DCFC stations increases.

**Table 1. EV Charging Times**

Charger Type	PHEV time to full charge	BEV time to full charge
AC Level 1	3 hours	8 to 37 hours
AC Level 2	1.5 hours	3 to 16 hours
DC Fast Charger	n/a	~30 minutes

Source: ICF International, 2013. Bay Area Plug-In Electric Vehicle Readiness Plan Summary 2013; prepared for BAAQMD.

## Hydrogen

Fuel cell electric vehicles (FCEVs) take hydrogen fuel and break the molecules into protons and electrons to create an electric fuel cell within the car. The electricity is then used to power the vehicle’s motor, so the ultimate driving mechanism is electric power. Like EVs, FCEVs does not emit tailpipe emissions. Fuel cell vehicles are 2 to 3 times more efficient than an ICEV (DOE, 2013). Most hydrogen fuel is currently produced by steam reforming of natural gas, although it can also be produced through electrolysis of water. There are also efforts under way to mimic photosynthesis and produce dihydrogen (H<sub>2</sub>) directly from water (hypersolar.com, 2015). In California, one third of the hydrogen sold must be produced using renewable energy sources, such as wind or solar, and SB 1505 requires that on a statewide per-mile basis, well-to-wheel emissions of greenhouse gases for the average hydrogen powered vehicle in California are at least 30 percent lower than emissions for the average new gasoline vehicle in California (Lowenthal, 2006).

Several hydrogen fuel cell vehicle models are currently or will soon be available on the US commercial market. In June of 2014, Hyundai became the first car company to release an FCEV for private consumer purchase. Toyota has also announced that it will release its Mirai FCEV in 2015, and Honda will be launching a concept FCEV in 2015. California's 2014 annual report finds that 125 FCEVs are currently registered with the Department of Motor Vehicles (DMV), and projects that this will increase to 6,650 by 2017 and 18,500 by 2020. No FCEVs are currently sold in San Mateo County because there are no fueling stations open at this time. However, four (4) stations are currently in development and should be open by the end of 2016.

Work performed by UC Irvine, UC Davis, and the California Fuel Cell Partnership determined that an initial network of 68 strategically placed stations operating statewide by 2016 would enable the launch of an early commercial market of 10,000-30,000 FCEVs. 45 of the stations will be located in 5 cluster communities (Berkeley, South San Francisco/Bay Area, West Los Angeles, Torrance, and Orange County) and 23 additional stations will seed new markets in less populated areas or provide destination fueling.

## **Natural Gas and Biogas**

Natural gas vehicles use either liquefied or compressed natural gas in a compression or spark-ignited engine. Between 80% and 90% of the natural gas used in the U.S. is domestically produced. Most natural gas is drawn from wells or extracted in conjunction with crude oil production. Natural gas can also be mined from subsurface porous rock reservoirs through extraction processes, such as hydraulic fracturing (DOE, 2013). Organic materials and other waste products provide a resource for renewable natural gas (RNG). This type of fuel has very low carbon intensity because the feedstock would alternatively be burned or landfilled. Biogas refers to methane produced from renewable or waste sources, such as emissions from the biodegradation of landfill or waste water organic matter. Biogas is cleaned and converted to renewable natural gas which is then burned in natural gas vehicles. Compressed natural gas (CNG) and liquefied natural gas (LNG) vehicles are typically operated by fleets such as San Francisco International Airport's (SFO's) Super Shuttle. These fleets often maintain their own fueling stations, however, some provide access to public vehicles.

Natural gas vehicles can be either bi-fuel, meaning they run equally well on gasoline/diesel and natural gas, or dedicated, meaning they can only run on natural gas (Whyatt, 2010). Due to its gaseous property at room temperature and atmospheric pressure, natural gas is used to fuel vehicles in either a compressed or liquefied form. CNG is a compressed, highly pressurized form of natural gas, where the gas is stored in cylinders at a pressure of 3,000 to 3,600 pounds per square inch. LNG is a super-cooled (-260°F) liquefied version. Most natural gas fueling stations dispense CNG, which is more widely available than LNG. CNG-fueled engines can be spark-ignited, like conventional gasoline-fueled engines, or compression-ignited, similar to a conventional diesel engine (Whyatt, 2010). CNG vehicles typically get about the same fuel economy as a conventional internal combustion engine vehicle (ICEV) and have similar driving capabilities to gasoline and diesel vehicles in terms of acceleration, speed, and power. However, the CNG driving range is shorter for an equivalent tank size since the volume of the natural gas is higher, which results in a lower energy content per unit volume.

## Liquefied Petroleum Gas

Liquefied petroleum gas (LPG), also known as propane, is a liquid fuel used to power light-, medium-, and heavy-duty propane vehicles. LPG is produced as a by-product of natural gas processing and crude oil refining. It is stored under pressure, and as pressure is released, the liquid propane vaporizes and turns into a gas that is used for combustion. Propane vehicles work much like spark-ignition gasoline-powered vehicles, and have similar power, acceleration, and cruising speed. Propane vehicles may be manufactured to be propane-dedicated or converted from gasoline or diesel vehicles using qualified retrofit systems.

## Liquid Biofuels: Ethanol, Biodiesel, and Renewable Diesel

Biofuels are fuels produced from any biological raw material. Feedstock options for liquid biofuel production that are in commercial production today include:

- Sugar and starch crops: e.g. corn, sugarcane, sugar beets
- Cellulosic materials: e.g. switchgrass, forest residue, bagasse, municipal waste
- Oils and fats: e.g. soybean oil, used cooking oil, animal fats, algae oil

Ethanol is primarily produced from corn and sugarcane. New technologies are being developed for waste feedstocks as well. Ethanol makes up 10% of the gasoline in California. It can also be used in vehicles classified as Flexible Fuel. Flexible fuel vehicles (FFVs) are capable of running on a range of ethanol and gasoline blends of up to 85% ethanol by volume. Ethanol has lower energy content than gasoline, so drivers get less mileage for the same volume of fuel. However, handling is similar if not improved, since ethanol has a higher octane level than gasoline and affords the driver increased power and performance (DOE, 2013). Special diagnostic equipment in the FFV detects the ethanol-to-gasoline ratio, and adjusts its performance accordingly.

Vegetable oils and animal tallow are used to produce biodiesel and renewable diesel, another low GHG option for vehicle fuel. These fuels are generally blended into diesel fuel at about a 4% level. These fuels are also sold at higher level blends for use in conventional diesel vehicles. Biodiesel blends have been sold at up to 20% biodiesel, but drivers must be cautious not to violate their warrantee. Blending renewable diesel with regular diesel poses no risk to engine functioning, and is not prohibited by manufacturers at concentration.

These liquid biofuels are sold in conventional retail stations either as low level blends in gasoline or diesel or as high level blends which operate in conventional or flexible fueled vehicles.

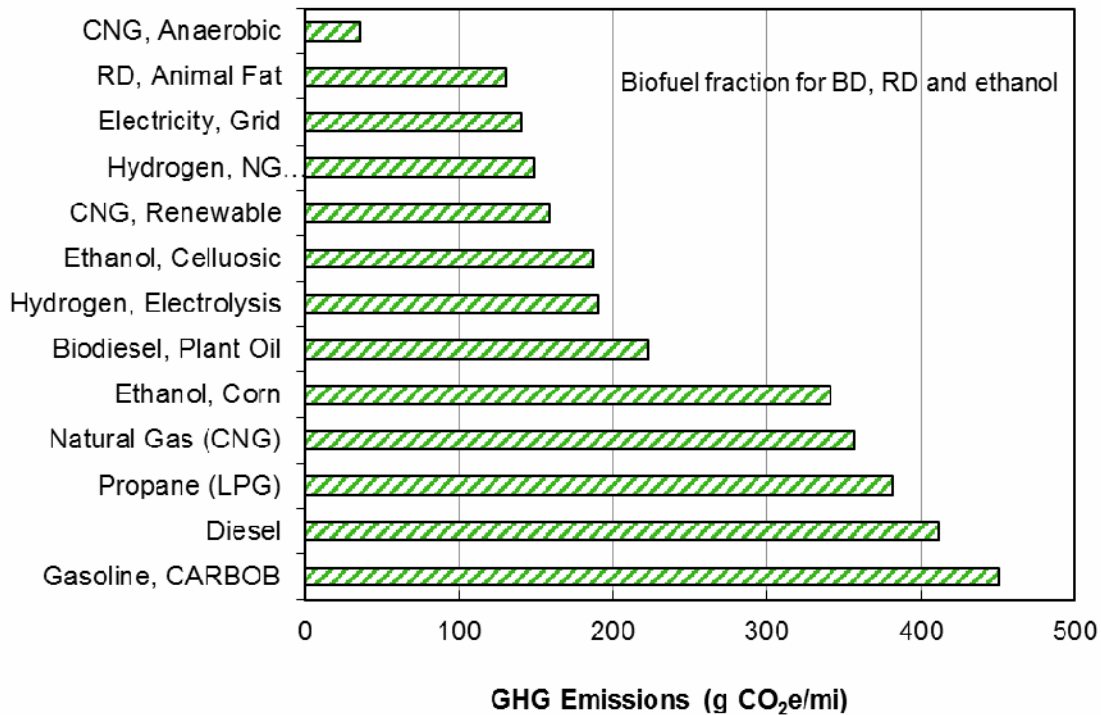
## Greenhouse Gas Emissions

Figure 4 shows an estimate of the amount of GHG emissions generated by the production and combustion of a wide range of fuels used to power vehicles. ARB provides a list of default carbon intensities for each type of fuel under the Low Carbon Fuel Standard (LCFS). We have adjusted the carbon intensity of the fuels based on the energy density of each fuel and the average fuel economy of the type of vehicle that the fuel is used in. This gives an estimate of the grams of CO<sub>2e</sub> emitted per mile, which allows for a comparison of fuels based on their actual usage activities. As Figure 4 shows,



the method of production makes a large difference in the CI of the fuel. For example, the emissions per mile of BioCNG made from anaerobic digestion of waste water sludge are much lower than the emissions per mile of CNG produced from landfill gas. The vehicle also affects the total well to wheel carbon intensity (WTW CI). Petroleum based diesel has a lower WTW CI as compared to gasoline because diesel vehicles are more efficient than gasoline vehicles.

**Figure 4. Greenhouse Gas Emissions per Mile**



Source: Carbon intensities calculated from CARB, July 2015. Proposed third LCFS 15-day regulation order. <http://www.arb.ca.gov/regact/2015/lcfs2015/lcfs15appa.pdf>. See Appendix C of Full Report for more detail.

Note: In Figure 4, the emissions shown for biodiesel, renewable diesel, and ethanol, which are typically blended into petroleum fuels, are based on the assumption of a 100% fraction of that alternative fuel.

## Advantages and Disadvantages of Each AFV

Drivers are accustomed to the prices and maintenance activities associated with petroleum fueled vehicles. However, AFVs contain new and different technologies, and require new approaches to fueling, use, and maintenance. The strengths and weaknesses of each type of AFV should be well understood so that consumers and policy makers can make informed decisions. For example, some vehicles are more cost effective but have a shorter travel range while others require more expensive fuel but have a longer driving range. Refueling/recharging time may also be an important consideration.

Table 2 displays a brief overview of the pros and cons of each type of alternative fuel vehicle showing the carbon intensity of each AFV from the fuel production stage through combustion



in each vehicle type. For comparison purposes, the WTW CI of gasoline is about 100 grams of carbon dioxide equivalents (g CO<sub>2e</sub>/MJ), and diesel is about 102 g CO<sub>2e</sub>/MJ.

**Table 2. Advantages of Different Alternative Fuels**

AFV Fuel	Well to Wheel Carbon Intensity <sup>1</sup> (gCO <sub>2e</sub> /MJ)	Pros	Cons
Electricity <sup>4,5</sup>	30.93	ZEV & very efficient Low fuel cost Many incentives available for vehicle purchase	High vehicle price Short driving range Long charging time Second meter needed for lowest EV rates
Hydrogen <sup>3</sup>	Reforming <sup>5</sup> : 32.8 Electrolysis <sup>2</sup> : 41.9	ZEV & very efficient Long driving range Short fueling time Scalable in size	High vehicle cost High fuel cost Low infrastructure density
Natural Gas	RNG <sup>5</sup> : -34.7 to 31 Fossil CNG <sup>1</sup> : 76 Fossil LNG <sup>5</sup> : 94.4	Low fuel cost Clean burning fossil fuel Long driving range	Low infrastructure density Low efficiency compared to diesel
Ethanol	2 <sup>nd</sup> Generation Cellulosic <sup>6</sup> : 25 Sugar Cane <sup>6</sup> : 56.7 Corn <sup>1</sup> : 75	Large quantities available Works in existing stations Vehicle cost is like ICEV Long driving range Short fueling time	E85 fuel cost is higher than gasoline
Biodiesel <sup>7</sup> / Renewable Diesel <sup>8</sup>	23/23	Works in existing stations Long driving range Short fueling time Used in diesel vehicles	Warrantee may be voided by high biodiesel blends Limited supply
Propane (not in LCFS yet)	78 to 83	Long driving range Short fueling time ICEVs may be converted	Low infrastructure density Few dedicated vehicles available for sale

1. See Appendix C of Full Report for source attribution of carbon intensities.

2. Assumes 33% of hydrogen feedstocks are renewable per SB 1505. Electrolysis path assumes 33% solar power.

3. Hydrogen CI is EER adjusted by a factor of 2.5.

4. Electricity CI is EER adjusted by a factor of 3.4.

5. CARB, July 2015. Proposed third LCFS 15-day regulation order. <http://www.arb.ca.gov/regact/2015/lcfs2015/lcfs15appa.pdf>

6. Based on established LCFS pathways.

7. 2014 volume weighted average

8. Yeh, S. & J. Witcover, J. Bushnell. 2015. Status Review of California's Low Carbon Fuel Standard April 2015 Issue (REVISED VERSION). UCD-ITS-RR-15-07. [http://www.its.ucdavis.edu/wp-content/themes/ucdavis/pubs/download\\_pdf.php?id=2491](http://www.its.ucdavis.edu/wp-content/themes/ucdavis/pubs/download_pdf.php?id=2491).

### 3. Incentives for Alternative Fuels

AFVs offer many advantages over conventionally fueled vehicles. These vehicles generate lower GHG emissions throughout their life cycle and produce lower quantities of pollutants such as dust particulates, smog, and sulfur dioxide. Communities may also enjoy economic benefits from reduced public health costs associated with improvements in air quality from AFVs. PEVs and FCEVs are quieter than conventional vehicles since they have electric batteries instead of combustion engines, thereby reducing noise pollution. Additionally, alternative fuels like renewable electricity, hydrogen gas, bioCNG, and biomass-based ethanol are typically domestically produced, resulting in an increase in energy independence.

As with any new technology, the roll out of AFVs faces some challenges. Since the public benefit of increasing the use of AFVs is significant in spite of these challenges, various incentives exist in order to make them more attractive to consumers and speed their deployment. The following list summarizes the types of policies and incentives that governments employ to encourage the use of AFVs and the construction of alternative fueling infrastructure:

- Tax credits, exemptions, and deductions;
- Vehicle purchase subsidies and rebate programs;
- AFV refueling equipment deductions;
- Reduced vehicle registration fees for AFVs;
- Corporate tax credit for EV purchase/recharge equipment;
- HOV lane access; and
- Free parking or charging.

Some mandatory requirements and regulations that have also been put in place are likely to result in an increase in the use of AFVs, such as:

- Criteria air pollutant and GHG emission regulations;
- Fuel economy regulations; and
- Government fleet AFV or ZEV requirements.

Rebates and tax credits can reduce the purchase price of an alternative fuel vehicle significantly. Table 3 summarizes the monetary incentives available from different government entities for the purchase of new AFVs. (EM refers to electric motorcycles.) Note that the Bay Area Air Quality Management District incentives are only available to public agencies. Values shown are for the maximum amount possible at this time.

**Table 3. Vehicle Purchase Rebates and Tax Credits**

<b>AFV Type</b>	<b>BAAQMD Public Agency PEV Program</b>	<b>CARB Clean Vehicle Rebate Program</b>	<b>IRS Tax Credit</b>
BEV	\$2,500	\$2,500	\$7,500
PHEV	\$1,000	\$1,500	\$4,000
EM	\$2,500	\$900	\$2,500
FCEV	\$2,500	\$5,000	\$0

Many other kinds of incentives are available for infrastructure installation, vehicle purchase, fuel production, and new business or technology development. Table 4 displays a summary of all the available incentives currently offered to consumers, businesses, and government agencies in San Mateo County.

**Table 4. Summary of Existing AFV Incentives**

Incentives	Federal	State	Regional/Local
Fuel	Excise tax credits	SB-1257 Utility User Tax Exemption for Public Transit Vehicles	PG&E EV Rate Plans
	Renewable Fuel Standard	California Low Carbon Fuel Standard (LCFS)	
Infrastructure	Zero Emissions Airport Vehicles and Infrastructure Pilot Program	Alternative and Renewable Fuel and Vehicle Technology Program (ARFTVP)	BAAQMD <i>Charge!</i> Program
		AB 8 and Hydrogen Fuel Cell Vehicles	Plan Bay Area EV Charger Network
		SB 1128 Sales Tax Exclusion	
Vehicle	Advanced Technology Vehicles Manufacturing Loan Program (ATVMLP)	Clean Vehicle Rebate Project (CVRP)	BAAQMD Public Agency PEV Rebate Program
	PEV Tax Credits	Hybrid and Zero-Emission Truck and Bus Voucher Incentive Project (HVIP)	BAAQMD Light- and Heavy-duty EV Fleet Funding
	MAP-21	SB 1128 Sales Tax Exclusion	MTC Feebate Program
	CAFE Standard	High Occupancy Vehicle Lane (HOV)	MTC PEV Buy-Back Program
Other	DOE Loan Guarantees	AB 118 Advanced Technology Demonstration Projects	One Bay Area Innovative Grants Program
	DOE Clean Cities Coalitions		
	DOE EV Everywhere Workplace Charger	Voluntary Accelerated Vehicle Retirement Program	
	DOE Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR)		

## 4. Challenges to AFV and AFI Development

AFVs are a crucial part of California’s strategy to combat climate change and other transportation-related health and environmental impacts. The market for AFVs contains more options today than ever before, and AFV technologies have become a viable alternative to gasoline and diesel fuels. However, challenges to widespread adoption could slow or even derail their contribution to this important goal. Our research shows that the challenges facing AFV adoption, AFI development, and local readiness for AFVs fall into four main categories:

1. Economic challenges:
  - Vehicles and infrastructure have high up-front costs relative to gasoline and diesel.
  - Grants and incentives may be difficult or complicated to obtain.
2. Technical challenges:
  - Alternative fueling station density for most fuels currently is low.
  - Vehicle and fueling station hardware systems may be incompatible across technologies.
  - Most AFVs have a smaller driving range than ICEVs.
  - Recharging/refueling time for some AFVs takes much longer than ICEVs.
3. Regulatory challenges:
  - Local rules, standards, and regulations may need to be updated to ensure that building and zoning codes cover alternative fuels.
  - Permitting process may be slow due to unfamiliarity and caution on the part of government officials and building inspectors.
4. Educational challenges:
  - Consumers are wary of new and unfamiliar technologies.
  - Consumers and investors are unaware of incentive programs.
  - Consumers may not have full understanding of economic and environmental benefits of AFVs.
  - Emergency responders need additional training on alternative fuels.

### Vehicle Cost

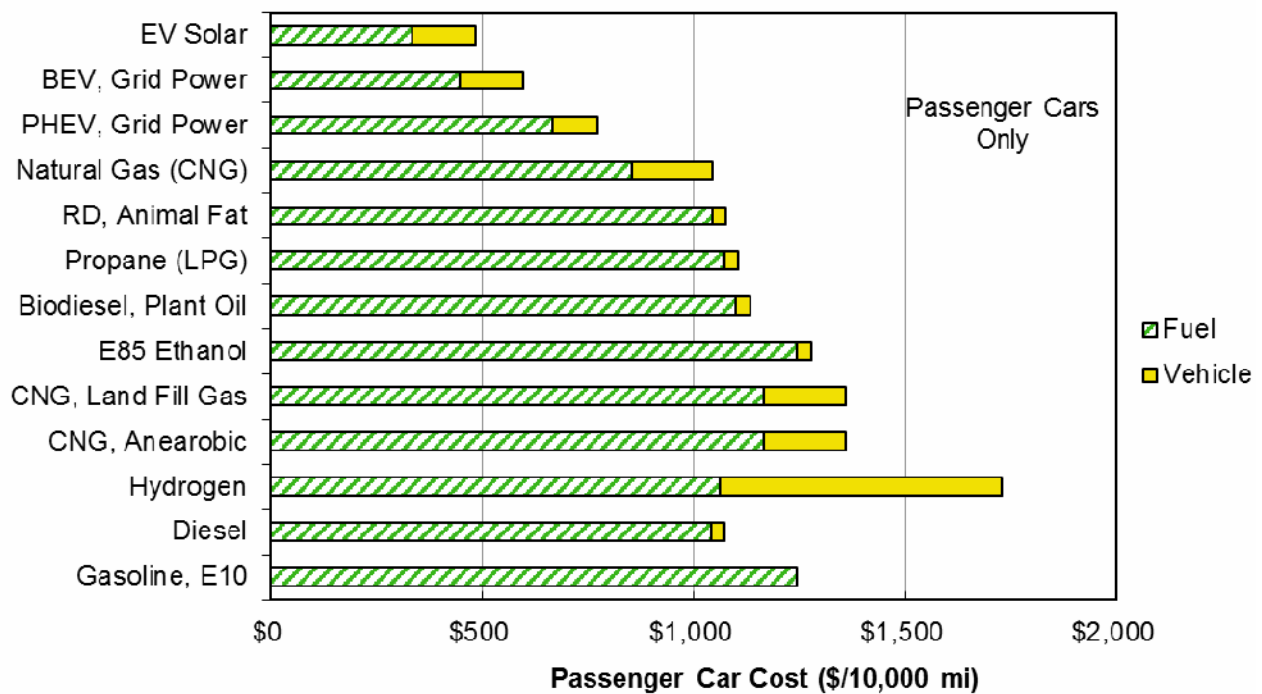
In most cases, the up-front cost of purchasing an AFV is a primary barrier for consumers. Most vehicle operators are accustomed to the costs of petroleum-fueled vehicles. In contrast with gasoline and diesel ICEVs, AFVs have high up-front costs but lower lifetime maintenance and fuel costs. This trade-off requires an adjustment in the way vehicle purchases are analyzed. Individuals must learn to view alternative fuel vehicle purchasing as an investment that pays off over time.

The cost of owning an AFV over time should be compared to the cost of owning a conventional gasoline or diesel ICEV since this is the default choice. This difference is called the incremental cost, which may amount to a net cost or net saving. As shown in Figure 5, the cost of owning an

AFV is equal to the incremental cost of the vehicle as compared to and ICEV plus the difference in cost of fuel and maintenance.

The first half of the bar shows the cost of fueling the vehicle over 10,000 miles, and the second half shows the incremental cost of owning the vehicle (since all the vehicles are compared to gasoline, gasoline vehicle cost is zero). As seen below, while all AFVs cost more than ICEVs, in some cases the efficiency of the vehicle, its low maintenance costs, and the cost of the fuel amount to a net savings over 10,000 miles. This is the case with all of the PEVs and every form of diesel (BD, RD, and petroleum based). Hydrogen vehicles are currently more expensive than gasoline vehicles, but are expected to decrease over time due to increasing sales volumes and economies of scale. CNG passenger vehicles have a higher incremental cost than gasoline, and are not expected to grow significantly as a sector. However, they are expected to grow in the truck category. The prices of BEVs, PHEVs, and FCEVs have been adjusted to account for the currently available federal and state incentives (\$10,000 for BEVs, \$5,500 for PHEVs, and \$5,000 for FCEVs). Gasoline is assumed to be sold at \$3.27 a gallon.

**Figure 5. Incremental Vehicle Cost<sup>1,2</sup>**



1. Fuel prices from Energy Information Administration 2015 Annual Energy Outlook.  
 2. Vehicle costs taken from Transitions to Alternative Vehicles and Fuels, National Academy of Sciences, 2013 and adjusted for tax credits and rebates.

Consumers may be able to reduce vehicle costs by taking advantage of incentives or innovative purchasing strategies that make AFVs more affordable for both individual consumers and fleet managers. The strategies outlined in Table 5 offer both government and individual buyers a variety of ways to reduce or distribute vehicle costs.

**Table 5. Alternative Fuel Vehicle Procurement Strategies**

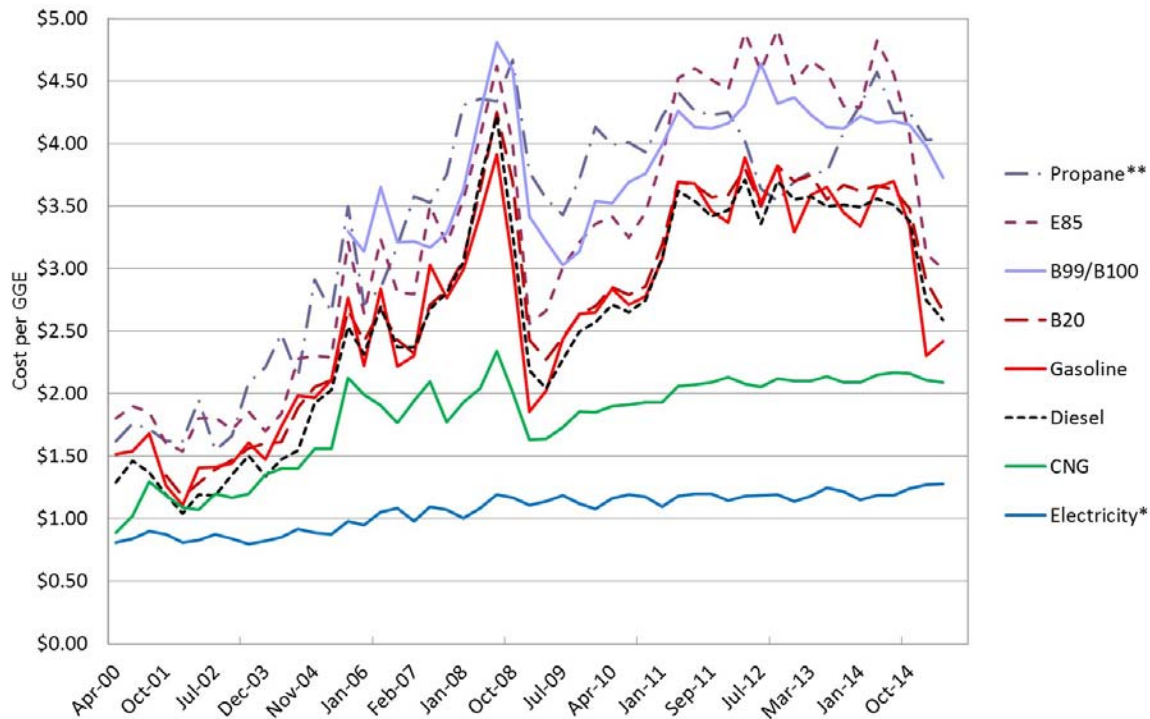
<b>Procurement Approach</b>	<b>Description</b>	<b>Pros</b>	<b>Cons</b>
Direct Purchase	Pay full cost of vehicle at time of purchase.	Lower total cost than leasing. No restrictions on resale. Non-complex purchase method.	Large up-front investment. Technology and value risks are assumed by purchaser.
Aggregate Purchase Program	Submit high volume purchase orders to manufacturers to bring down cost per vehicle.	Allows for lower total cost of vehicle.	Requires that purchasers have similar vehicle needs and specifications.
Loan Financing	Vehicle is paid for over a pre-negotiated time period with interest applying to balance of financed amount. Vehicle ownership is transferred after final payment.	Reduces up-front cost and distributes costs over time. A large down payment reduces monthly payments.	Loan interest and processing fees can result in higher total cost of ownership. Technology and value risks are assumed by purchaser.
Vehicle Lease	Vehicle is paid for through monthly payments over pre-negotiated lease term. Leasing company retains title after final payment, with option to purchase.	Allows government entities to capture tax credits. Reduces up-front cost and distributes costs over time. Allows for evaluation without ownership.	Loan interest and processing fees can result in higher total cost of ownership. Some government entities have no-lease policies.
Service Lease	Energy service cost financing allows consumer to pay back vehicle cost over time based on fuel savings. Car sharing programs allow use when needed. Battery service allows decoupling of battery from vehicle price.	Reduces up-front cost of purchase. Reduces risk of maintenance and resale value concerns.	May only be available to larger fleets. Places large onus on service providers.

(Harrigan, 2015; Nigro, 2015)

## Fuel Cost

Fuel prices have proven to be highly variable over time. In the last 15 years, U.S. average gasoline prices have ranged from as little as \$1.50 in 2000 to almost \$4.00 in 2008. As demonstrated in Figure 6, the price of liquid alternative fuel prices is closely tied to the price of petroleum. Liquid alternative fuels are primarily used in vehicles, and petroleum options are a viable substitute if alternative fuel prices rise too high. However, natural gas and electricity prices are more independent of petroleum price because transportation only accounts for a small portion of their markets.

**Figure 6. U.S. Average Retail Fuel Prices**



Sources: Alternative fuel prices taken from Clean Cities Alternative Fuel Price Reports (<http://www.afdc.energy.gov/fuels/prices.html>). Electricity prices are taken from EIA's Real Prices Viewer (<http://www.eia.gov/forecasts/steo/realprices/>).

## Fueling Infrastructure Cost

Developing the infrastructure to provide alternative fuels to AFV owners is necessary but expensive. The cost of developing a refueling station varies widely based on the ground footprint, tank storage requirements, fuel and pipeline availability, and many other factors. EV charging stations are the least costly type of alternative fueling station to install since they have the smallest footprint and need only be connected to the existing electric grid network. However, in order to access the lowest electricity rates, customers may need to install a second meter. According to PG&E, the cost of installing electrical equipment for a second meter ranges from \$1,000 to \$3,000. The second meter itself costs \$100. Hydrogen and natural gas fueling stations, which require storage tanks and have a larger physical footprint, are much more expensive and may cost as much as double the price of a conventional gasoline station to install.



Table 6 shows the range of different infrastructure installation costs across fueling stations. A conventional gasoline and diesel station costs at most \$150,000. In contrast, a CNG fast-fill station can cost up to \$1 million and a hydrogen station can cost up to \$4 million.

**Table 6. Infrastructure Installation Cost**

Fueling Station Type	Fuel Type	Cost of Single Station
Level 1 Basic Charging EV	Electricity <sup>1</sup>	\$0 to \$1000
Level 2 Basic Charging EV		\$500 to \$2,600
Level 2 Smart Charging EV		\$4,500 to \$17,000
DC Fast Charge EV		\$19,000 to \$40,000
CNG Time-Fill	Natural Gas <sup>2</sup>	\$5,500 to \$50,000
CNG Fast-Fill		\$400,000 to \$1.8 Million
LNG Fast-Fill <sup>3</sup>		\$1 to \$4 Million
250 kg/Day <sup>4</sup>	Hydrogen	\$0.9 Million
400-500 kg/Day <sup>5</sup>		\$1.5-\$4 Million
1000-2000 gallon storage	LPG <sup>6</sup>	\$45,000-\$70,000
12,000-18,000 gal storage		\$120,000-\$220,000
30,000 gallon storage		\$225,000-\$300,000
2 Nozzle Dispenser & Tank	E85 <sup>7</sup>	\$150,000
Blending Equip (1 Terminal)	Biodiesel <sup>8</sup>	\$200,000
Conventional Station <sup>9</sup>	Gasoline/Diesel	\$50,000-\$150,000

High costs and distant returns discourage investment in alternative fuel infrastructure by traditional investors. Local governments have a role to play in connecting private developers with funding or creating public-private partnerships to encourage AFI development. Government agencies can help to identify incentives, grants, or other funding opportunities to partially cover the cost of construction. Once funding has been identified, a site must be located and construction permits and inspections will be required. These activities all fall under the purview of local government, meaning government agencies have the ability to implement more streamlined processes.

<sup>1</sup> California Department of General Services. 2014. Electric Vehicle Supply Guidance Document.

<sup>2</sup> Department of Energy, Energy Efficiency and Renewable Energy. 2014. Costs Associated With Compressed Natural Gas Vehicle Fueling Infrastructure.

<sup>3</sup> Energy Information Administration. 2015. AFDC. energy.gov.

<sup>4</sup> Tyson Eckerle, Garderet, R. 2012. Incentivizing Hydrogen Infrastructure Investment Phase 1. Energy Independence Now Report.

<sup>5</sup> California Fuel Cell Partnership, 2014. *Hydrogen Fueling Stations*. [http://cafcp.org/sites/files/H2-Station-profiles\\_public-compr.pdf](http://cafcp.org/sites/files/H2-Station-profiles_public-compr.pdf).

<sup>6</sup> Smith, M., Gonzales, J. 2014. Costs Associated With Propane Vehicle Fueling Infrastructure. Department of Energy Report.

<sup>7</sup> EPA RFS2 Final Regulatory Impact Analysis, Feb 2010. <http://www.epa.gov/otaq/renewablefuels/420r10006.pdf>

<sup>8</sup> Provided by NBB Petroleum Liaison to Shelby Neal (NBB), email dated September 11, 2014.

<sup>9</sup> Electric Vehicle Transportation Center. 2014. Hydrogen Fueling Stations Infrastructure. <http://evtc.fsec.ucf.edu/reports/EVTC-RR-02-14.pdf>.

Some government fleets are already operating on alternative fuels and may have their own refueling station. If these stations are made available for public fueling as well as fleet needs, this increases the intensity of their use, reducing the return on investment time for infrastructure construction, and also helps serve the demand of alternative fuel drivers in the area.

The following list summarizes some potential ways to fund public AFI development:

- Engage in public/private partnerships where government funding covers cost of construction but independent contractors construct, manage, and maintain station.
- Take advantage of government grants, funding, and incentive programs.
- Create a coalition of stakeholders who stand to gain from the existence of AFI, such as government entities, local businesses, and car manufacturers.

## **Technical Challenges**

AFVs use new technologies and run on nonconventional fuel sources. As such, these vehicles require an adjustment in consumer habits and expectations due to their operational differences from ICEVs in terms of fueling time, range limitations, and home charging. In addition, refueling or recharging infrastructure must be in place to support AFV populations, meaning that the two must develop at a compatible rate in each geographic area. Currently, station density for most alternative fuels is low. Manufacturers typically will not sell vehicles in a given market area until the available supporting infrastructure reaches a density that allows the vehicle to function as intended, implying that infrastructure development should precede vehicle sales by at least a small increment of time. Table 7 summarizes the technical challenges inherent to AFVs, which are discussed in detail in the following section.

## **Regulatory Challenges**

Regulatory challenges include any aspect of alternative vehicle fueling and operation that must be regulated or permitted by government agencies. Zoning laws, fire and safety codes, permitting, and parking regulation are all areas of regulatory concern. Regulations around new technologies and alternative fuels are a challenge to both the regulators and applicants. In some cases, regulations and codes have only been adopted for gasoline and diesel fuels. Permitting officials, inspectors, and developers may have a difficult time understanding how these rules apply to alternative fuels. Parking laws may also need to be revised to accommodate PEV charging spots or spots reserved for other types of AFVs, and new signs may be required for both AFV parking and AFI retail stations.

## **Educational Challenges**

Current understanding of AFVs and alternative fuels by the public is limited and may include uninformed or outdated beliefs. Educating the relevant stakeholder groups (consumers, government officials, and safety personnel) is essential for the acceptance and safe operation of alternative fuel vehicles. Stakeholders will benefit from learning more about the technology of

AFVs, their environmental benefits, their life cycle costs, and the facts about safety requirements for the different fuels.

**Table 7. Technical Challenges**

<b>Issue</b>	<b>AFV Impacts</b>	<b>Local Challenge</b>	<b>Solutions</b>
Fuel Station Density	Driving time to fuel station is too long for customer convenience.	Public fueling infrastructure is less than what is needed for 2030 vehicle projections.	Support strategies to increase local infrastructure development.
EVSE Density	BEV drivers need public stations for emergency charging, long trips, and commutes.	Free charging at businesses or public stations is inefficient. 12% of residents live in multi-unit dwellings.	Charge at least a nominal fee for EV charging. Support policies to increase public charging.
Range Anxiety	Range anxiety is a limitation for BEV, NGV, LPGVs.	Limited AFI available.	Support strategies to increase local infrastructure development.
Vehicle & Station Coordination	Coordinating vehicle/station will support driver access and minimize station cost.	Ensure that public infrastructure is sufficient for demand and geographically strategic.	Endorse proper signage for AFI stations. Support strategies to increase local infrastructure development.
Alternative Fuel Supply	CA needs low CI fuels to achieve LCFS goals.	Fuel production resources in SM county are limited.	Ensure availability of fuels produced in other parts of the county. Support development of local AFI.
Fueling/Charging Time	Long fueling time detracts from customer AFV experience.	Need rapid charge stations to achieve PEV alliance goals.	Implement streamlined permitting for EVSE.
Hardware Compatibility	Vehicle refueling hardware may not be compatible with all stations.	Need for AFV and AFI hardware compatibility in existing stations.	Support regulations to require refueling compatibility standards.
Fuel Station Layout	Codes require offset distances for fuel station layout and public garages.	Many cities have not yet adopted standards for alternative fuel stations.	Innovative station layouts can comply with codes and standards. Permit officials need to be aware.

## 5. Increased Procurement Strategies

Existing policies and incentives are already having a large effect on the growth of alternative fuel vehicles in California and San Mateo County. Car manufacturers, fuel providers, and consumers are currently taking advantage of various state and federal incentives described in Chapter 3.

Local policies are another important piece of the puzzle. Local governments can work to connect local communities with state and federal opportunities and inform stakeholders of their existence. Local governments may also consider incentivizing the purchase of AFV and installation of AF charging infrastructure in local communities. A range of solutions can be employed to address the various challenges described above.

### Cost Strategies

Economic challenges are key barriers to the increased use of AFVs. For one, the upfront cost of the alternative fuel vehicle is often significantly higher than that of a comparable gasoline or diesel vehicle. In many instances the purchase price of a PEV, diesel, or CNG vehicle is higher than a conventional gasoline vehicle but the fuel price is lower. The vehicle operators may incur lower life cycle costs however the upfront cost remains an issue.

Governments, businesses, and consumers interested in purchasing AFVs can employ a variety of financing and procurement strategies to make AFVs more affordable. Each strategy's pros and cons should be evaluated by the purchasing entity, be it a government agency, private fleet manager, or individuals. Some strategies to consider for making vehicles more affordable are summarized in Table 8. These approaches are explained in more detail in the AFRP Full Report.

With the anticipated increase in number of alternative fuel vehicles, San Mateo County agencies will need to plan for an increase in the number of alternative fueling stations, both public and private. With high station infrastructure costs and distant returns that may discourage investments, local governments can play a role to in connecting private developers with funding opportunities as well as creating public-private partnerships. The following list summarizes some ways stakeholders can collaborate to provide funds for public AFI development:

- Engage in public/private partnerships where government funding covers cost of construction but independent contractors complete construction and manage and maintain refueling station.
- Take advantage of government grants and incentive programs providing funds or other resources to support infrastructure development.
- Create a coalition of stakeholders who may benefit from the existence of AFI, such as government entities, local businesses, and automobile manufacturers.

**Table 8. Alternative Fuel Vehicle Procurement Strategies**

<b>Procurement Approach</b>	<b>Description</b>	<b>Pros</b>	<b>Cons</b>
Direct Purchase	Pay full cost of vehicle at time of purchase.	Lower total cost than leasing. No restrictions on resale. Non-complex purchase method.	Large up-front investment. Technology and value risks are assumed by purchaser.
Aggregate Purchase Program	Submit high volume purchase orders to manufacturers to bring down cost per vehicle.	Allows for lower total cost of vehicle.	Requires that purchasers have similar vehicle needs and specifications.
Loan Financing	Vehicle is paid for over a pre-negotiated time period with interest applying to balance of financed amount. Vehicle ownership is transferred after final payment.	Reduces up-front cost and distributes costs over time. A large down payment reduces monthly payments.	Loan interest and processing fees can result in higher total cost of ownership. Technology and value risks are assumed by purchaser.
Vehicle Lease	Vehicle is paid for through monthly payments over pre-negotiated lease term. Leasing company retains title after final payment, with option to purchase.	Allows government entities to capture tax credits. Reduces up-front cost and distributes costs over time. Allows for evaluation without ownership.	Loan interest and processing fees can result in higher total cost of ownership. Some government entities have no-lease policies.
Service Lease	Energy service cost financing allows consumer to pay back vehicle cost over time based on fuel savings. Car sharing programs allow use when needed. Battery service allows decoupling of battery from vehicle price.	Reduces up-front cost of purchase. Reduces risk of maintenance and resale value concerns.	May only be available to larger fleets. Places large onus on service providers.

(Harrigan, 2015; Nigro, 2015)

## **Regulatory Strategies**

Regulation is an area where San Mateo County jurisdictions have an opportunity to positively influence the growth of AFVs. Local governments have jurisdiction over zoning, permitting, and building regulations. This is important, because the highest growth rates for technology

market share are associated with the presence of clear standards. The next most important factors are the price of gasoline and government subsidies for the purchase of green vehicles (Plotkin, 2013; Zoepf, 2011). The areas of AFV policy that city and county governments have the most direct jurisdiction over are:

- Zoning laws and building codes,
- Parking allowances and space requirements,
- Permitting requirements and fees,
- Local signage requirements and placement, and
- Government owned vehicles.

### **Higher Level Policies**

A number of higher level decisions can help to pave the way for AFV/I friendly policies. Simply stating the desire to increase access to AFVs and AFI in a city's general plan can open the door to future initiatives. Designating a dedicated Director of Sustainability is another important option towards increasing access to alternative fuels. The available grants and incentives are constantly changing. A Sustainability Director may assume the responsibility of organizing local outreach programs and seeking out grants and other resources, tasks which are likely to fall through the cracks if not explicitly assigned to at least one individual. Another solution is to require that contractors working on municipal contracts meet certain environmental standards, such as the use of alternative fuels in their fleets. Including sustainability and environmental performance in evaluation criteria provides significant economic motivation for companies to be environmentally responsible.

Setting specific goals and targets for local city and county procurements is a targeted way to encourage the transformation to a lower emission vehicle population. For instance, the County of San Mateo established a 30MPG target for the county sedan fleet, which has prompted the purchase of hybrid vehicles in the last few years. County of San Mateo currently has 189 hybrid vehicles in its agency fleets, which makes up 25% of its total government vehicles. The County installed one electric vehicle charging station in the Redwood City Motorpool in 2013, and has plans to install 7 more throughout the county so that city fleets can expand their use of BEVs.

### **Zoning & Building Codes**

San Mateo County cities and the County may consider revising zoning and building codes to accommodate or encourage the installation of EV charging stations or the construction of other AFI. Building codes in California are divided into codes for residential and nonresidential buildings. Residential buildings are classified as either 1) Homes of one to four units, or 2) Multi-unit dwellings (MUDs) of five units or more. Nonresidential buildings include buildings for business, industrial, institutional, and retail uses. Although cities and the County are obligated by law to enforce the building codes outlined in California's Codes and Regulations, Title 24, Chapter 3, however, local governments can elect to modify them under limited circumstances to accommodate local climatic, geological or topographical conditions.

The mandatory residential Cal Green Building standards dictate that in newly constructed multi-family dwellings with 17 or more units, “3 percent of the total number of parking spaces provided for all types of parking facilities, but in no case less than one, shall be electric vehicle charging stations (EVCS) capable of supporting future EVSE” (Title 24: Part 11, Supplement, 2015). Nonresidential standards include a requirement that businesses designate a percentage of parking spaces for low-emitting vehicles or have wiring capable of supporting EVSE as described in Table 9.

**Table 9. Nonresidential EV Parking Standard: Required EV Charging Spaces**

Current Mandatory	Current Voluntary	Proposed Mandatory <sup>1</sup>
3% of spots in lots with 51 spaces or more	4-6% of spots, regardless of number of spaces	6% of spaces in lots with 10 spaces or more

Source: (California Building Standards Commission, 2015)

1. Effective January, 2017 if adopted.

Building codes and standards exist for all of the different alternative fuels. However, only some are mandatory and many local jurisdictions have not adopted all of them. Official standards provide guidance on how to handle each alternative fuel (see Table 10). Ensuring that building and construction codes and standards have been adopted for all alternative fuels and are well-understood is a helpful step towards creating an AFI friendly culture.

**Table 10. Key Codes and Standards for Alternative Fuels**

Fuel	Public Stations	Key Codes & Standards	Local Regulatory Factors
PEV	Fast charge along highway, Level II in shopping mall.	NEC, Cal Green Building Code	Multiple sites are needed. Parking, ADA, and other constraints affect planning.
Hydrogen	Integrated hydrogen production, storage, and compression with existing gasoline station.	NFPA 2, 55	Standards for station installation may not be incorporated in local codes. Equipment requires larger standoff distances to buildings and adjacent properties. May require large sites.
CNG	Integrated CNG compression, storage, and dispensing with existing gasoline station.	NFPA 52	
LPG	Integrate separate dispenser with local gasoline/diesel station.	NFPA 58	Conditional use permit. Local rules on signage.
E85		NFPA 30, 30A	
Biodiesel			
RD			

## Permitting

The permitting process can impose large costs on a developer if it invite delays or involve high or unpredictable fees. Therefore, permitting for AFI development should be streamlined to the

greatest extent possible. The streamlining mechanism itself will vary by fuel type since the requirements of different infrastructure and construction process varies greatly. However, it is important for developers and consumers to be able to account for the monetary cost of permitting and the time required to obtain a construction permit.

## **Signage**

Cities are responsible for approving the signs posted on city streets. Caltrans is the lead agency tasked with installing signs “along highway corridors and local roads to provide directions to PEV charging and hydrogen stations” within 3 miles of highways and other major roadways (Melaina, 2014). It is up to local agencies whether or not they choose to install street signs indicating the location of alternative fueling stations. ZEV signage requirements are laid out in the CA Department of Transit Traffic Operations Policy Directive 13-01 (CA DOT, 2013). Retail stations are required to display signs showing the types of fuel available. However, sign limits may prevent alternative fuels from being represented when all the signs are already being used by the station host.

## **Multi-Unit Dwellings (MUDs)**

Multi-unit dwellings (MUDs) present a special case when it comes to EV charging access. As the popularity of PEVs grows, more PEV owners are likely to be renters instead of home-owners, or to live in multi-unit dwellings (MUDs). In San Mateo County, about 12% of the population currently lives in MUDs. However, a number of unique challenges face MUD residents who want to install charging stations in their building, allowing them to access the convenience and cheaper rates of off-peak home charging.

A recent California law, Assembly Bill (AB) 2565, confirms the legal right of drivers to install EVSE in rental properties, ensuring that they will be able to charge at home even if they don’t own their home. The law is primarily aimed at renters in MUDs and includes a number of restrictions to this effect; the law does not apply to residential properties with less than five parking spaces, properties that are subject to rent control, residential leases where no parking is provided as part of the lease, or residential properties where EV charging stations already account for at least 10% of available parking spaces.

Governments, property managers, and residents can employ different strategies to overcome some of the logistical challenges. The question of electricity payment is often a sensitive one. Ideally, a separate meter allows the electricity used for PEV fueling to be directly charged to the PEV driver. In the case of multiple charger users, MUDs can select a charging unit with a flexible billing system so that PEV drivers can pay-as-they-go. Government policies can further encourage MUD PEV charging by requiring the installation of EVSE in new buildings or giving preferential permitting to buildings that have EVSE. Providing residents with access to an impartial mediator or a public registry of PEV ready buildings can also help drivers to easily identify buildings that will make charging easy and negotiate MUD EVSE challenges.

Table 11 summarizes the local policies that can help to address the range of AF, AFV, and AFI challenges and incentivize the use and purchase of alternative fuels. These are divided into policies that address fuel production, vehicle purchase, and infrastructure development, and confront the four categories of challenges that these technologies face.



**Table 11. Summary of Local Policy Options**

	<b>Fuel</b>	<b>Vehicles</b>	<b>Infrastructure</b>
<b>Economics</b>	<ul style="list-style-type: none"> <li>• Sell LCFS carbon credits from fuel production.</li> <li>• Offer reduced price PEV charging in public locations.</li> </ul>	<ul style="list-style-type: none"> <li>• Take advantage of and advertise state and local rebate opportunities.</li> <li>• Lease instead of purchase vehicles to defray cost and capture federal tax credits.</li> <li>• Aggregate AFV purchase orders with other agencies to reduce cost of manufacturing.</li> <li>• Restructure fleet vehicle budgets to account for lower fuel costs over time.</li> <li>• Join Silicon Valley Clean Cities Coalition</li> </ul>	<ul style="list-style-type: none"> <li>• Apply for grants and educate investors about available incentives.</li> <li>• Obtain funds for low-interest loan programs.</li> <li>• Make city fueling stations open-access.</li> <li>• Engage in public-private AFI partnerships.</li> <li>• Identify pre-permitted sites that can be easily converted for AFI retail.</li> <li>• Require new buildings have EVSE ready wiring.</li> </ul>
<b>Technology</b>	<ul style="list-style-type: none"> <li>• Encourage utilities to upgrade grid capacity.</li> <li>• Support hardware compatibility standards.</li> </ul>	<ul style="list-style-type: none"> <li>• Create supportive business environment for AFV/I R&amp;D.</li> </ul>	<ul style="list-style-type: none"> <li>• Support legislation that creates government funded skeleton AFI networks.</li> </ul>
<b>Regulation</b>	<ul style="list-style-type: none"> <li>• Require fuel retail signage to represent all fuels available at a site.</li> </ul>	<ul style="list-style-type: none"> <li>• Include AFV/I goals in General Plan.</li> <li>• Create public fleet AFV goals or emissions targets.</li> </ul>	<ul style="list-style-type: none"> <li>• Have dedicated Sustainability official</li> <li>• Adopt AFI friendly building codes.</li> <li>• Include PEV spots in parking requirements.</li> </ul>
<b>Education</b>	<ul style="list-style-type: none"> <li>• Outreach to local agencies about waste-to-energy fuel production options.</li> </ul>	<ul style="list-style-type: none"> <li>• Outreach to consumers and fleet managers about AFV incentives and benefits.</li> <li>• Outreach to technicians about training opportunities.</li> </ul>	<ul style="list-style-type: none"> <li>• Educate indirect AFI beneficiaries.</li> <li>• Include AFVs in first responder emergency training curricula.</li> </ul>

## 6. Education and Outreach

In order for AFVs to succeed in San Mateo County, all of the potential stakeholders must be informed and involved. Therefore, it is important to ensure that educational opportunities exist for consumers, investors, government officials, safety personnel, and support staff such as technicians and mechanics. Local agencies and businesses may also want to consider turning organic waste from municipal collections or waste water treatment into renewable fuels such as biomethane once they are aware of the potential savings and environmental benefits.

Government officials in planning and permitting departments have an important role to play in AFI development. As alternative fuel infrastructure permit applications become more common, officials will have to interpret local codes and zoning rules as they apply to alternative fuels. Education and outreach efforts should include building inspectors, planning department employees, and council members, who have the power to support alternative fuels from the top down. These individuals are particularly key and will benefit greatly from guidance about how local laws apply to new technologies and alternative fuels.

Fire and emergency response training about alternative fuels is also needed in San Mateo County. Conversations with local fire and police marshals showed that the availability of AFV training resources, including teaching materials, time, and money, was very limited. Training topics and resources are also covered in the AFRP, and further details on this can be found in Chapter 6.

City and county outreach to consumers and investors will help to spread knowledge about the costs, benefits, and incentives available for alternative fuel vehicles and infrastructure. As part of this Alternative Fuel Readiness Plan (AFRP), C/CAG has developed a strategy for outreach to community stakeholders regarding AFVs, which is described in Chapter 7.

Several entities in San Mateo County are already demonstrating the feasibility of turning organic waste products into energy. South San Francisco Scavenger waste management company at the Blue Line Transfer Station has installed a biodigester that converts food waste into natural gas, which they use to fuel half of their waste collection trucks (see Figure 7). The City of San Mateo is capturing the biomethane produced from its waste water treatment facility and scrubbing it to produce natural gas to fuel city fleets. Other companies and agencies in San Mateo County that generate significant amounts of organic waste could consider taking this approach to fuel production. Further education about the costs and benefits of this type of technology will help those entities to decide if they are interested in waste-to-energy solutions.



**Figure 7. SSF Scavenger Company CNG Fueling Infrastructure**

## **Communication Strategy**

The AFRP serves as a blueprint for San Mateo County to efficiently transition to the increased use and commercialization of alternative transportation fuels in the marketplace. For that to happen, stakeholders need to become actively engaged and understand the reasons for transitioning to AFs. This requires active marketing, communication, and educational outreach to three main target audiences: San Mateo government agencies and fleets; businesses and private fleets; and consumers. Communication efforts are aimed at creating awareness of the existence of the Alternative Fuel Readiness Plan and conveying the benefits of alternative fuel production usage. The following list outlines specific recommendations for communication efforts that should take place in San Mateo County:

- Make the AFRP report accessible on the CCAG and city websites.
- Conduct face-to-face presentations and workshops informing key stakeholders about the AFRP, its goals, and AF opportunities.
- Develop a multi-stage email campaign to make each city and jurisdiction in San Mateo County aware of the AFRP and encourage them to facilitate AF usage in their area.
- Create a website section about alternative fuels on the CCAG homepage, including links to background information, grant opportunities, incentives, case studies and other resources.
- Use the video produced during this project to showcase AF usage in San Mateo County.
- Conduct community events showcasing AFVs and participate in other local events by setting up an AF information booth and/or passing out informational brochures.

- Conduct school events that educate children in K-12 about AFs.

## Training Resources

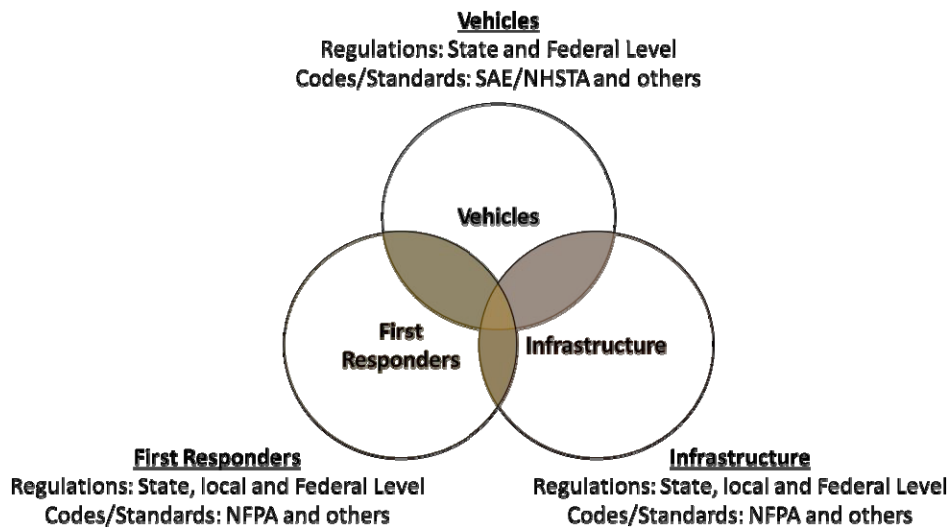
Many stakeholders and obligated parties, such as operators, first responders, and government officials remain unfamiliar with the specific techniques and practices needed for safe vehicle operation, maintenance, and refueling. It is important for them to understand:

- Alternative Fuel Properties
- Codes, Standards, and Signage
- Infrastructure and Facility Requirements
- Safety and Permitting
- Environmental and Health Considerations
- First Responder Training Considerations and Resources
- Non First Responder Training Resources

## Alternative Fuels Regulations

Aspects of AF use and storage are addressed in a standardized manner in a range of federal, state and local safety and hazard regulations. Three basic groupings for codes and standards envelop all aspects of AFs and AFVs use and deployment. These are: (1) vehicles; (2) built infrastructure; and (3) emergency responders. Each of these three groupings have different regulatory and consensus codes and standards. This is illustrated in Figure 8 (Blake, 2010; Durso, 2010; Farr, 2010; Grant, 2010).

**Figure 8. Basic Groups of AFV Related Codes and Standards**



**Source:** Adapted from U.S. National Electric Vehicle Safety Standards Summit Summary Report (Grant, 2010)

### *Vehicles*

Vehicle safety concerns relating to the vehicle and all its components are regulated on a federal level, and are addressed by NHSTA and other vehicle oriented codes and standards such as those outlined by SAE (Grant, 2010).

### *Infrastructure*

Infrastructure, including buildings, roadways and zoning requirements are regulated at the state, local and federal levels. Regulations are based on numerous model consensus codes and standards from NFPA and other organizations. Enforcing these requirements are the state and local fire marshals, fire inspectors, building officials, electrical inspectors, public health officials, and others with similar official enforcement duties (Grant, 2010).

### *First Responders*

The concerns and interests of emergency responders are self-regulated, following model codes and standards provided by NFPA and other standards developers.

## **Safety Considerations**

Regulations and first responder experience do not encompass all of the risks and hazards associated with alternative fuels. Training is needed to address potential hazards, labelling concerns, operating practices, and other factors (DOE, 2015a, 2015b, 2013; U.S. DOT, 1999). Some examples of the safety, fire, health, and environmental considerations for each alternative fuel are:

- Flammability
- Corrosivity
- Health impacts (asphyxiation, acute toxicity, chronic toxicity)
- High pressure
- Cryogenic temperature
- Mechanical energy (includes energy stored as potential or kinetic energy)
- Electrical energy

**Source:** U.S. DOT, 1999. Clean Air Program: Summary of the Safety, Health, environmental and System Risks of Alternative Fuels. Report Number: FTA-MA-90-7007-95-1 and DOT-VNTSC-FTA-95-5. Cambridge, MA

Safety considerations for each fuel are discussed below.

### *Bio-/Renewable Diesel*

Important safety considerations for the biodiesel component of biodiesel fuel blends include:

- Corrosivity - elastomer or polymer component failure due to the composition difference between biodiesel fuel and gasoline or conventional diesel fuel is a type of corrosivity hazard.
- Toxicity hazard - ingestion of a fuel which has been billed as non-toxic, but which is generally an ester of a fatty acid and methanol.

## *Electricity*

Important safety considerations for electricity include:

- Flammability - fires caused by electrical malfunctions, such as short circuits.
- Corrosivity, toxicity, or high temperatures - can occur from direct contact with battery electrolyte.
- Electrical energy hazard - electric shock.

## *CNG*

Important safety considerations for CNG include:

- Flammability - fires or explosions caused by ignition of gas leaks. Gas leaks can occur from fuel dispenser or fuel system damage, use of improper components, or poor overall design and maintenance.
- Toxicity - natural gas can accumulate in enclosed spaces causing asphyxiation. The odorant may not provide sufficient warning of the actual gas concentration.
- High-pressure hazard - fuel tank explosion, missile damage from failure or improper assembly or disassembly of fuel system components.

## *LNG*

Important safety considerations for LNG include:

- Flammability - fires or explosions can occur from ignition of leaks of fuel. Non-odorized fuel gas increases the hazard.
- Toxicity - asphyxiation from exposure to non-odorized fuel gas.
- Cryogenic hazards - LNG presents several hazards associated with the cryogenic property of the fuel: Personal injury may occur from exposure to cold fuel or fuel vapors. Structural failure can occur due to stress from contraction of structural members exposed to cold fuel or fuel vapors. Structural failure can also occur due to embrittlement of materials exposed to cold fuel or fuel vapors.

## *LPG*

Important safety considerations for propane include:

- Flammability - propane gas can collect in low spaces; large propane vapor clouds can detonate.
- Toxicity hazard - propane gas can collect in low spaces, displacing air and may cause asphyxiation.

## *Hydrogen*

Important safety considerations for hydrogen include:

- Flammability - fire or explosion from ignition (especially static ignition) of gas releases or gas leaks. Note that hydrogen fuel is a non-odorized flammable gas.
- High pressure hazard – hydrogen gas is stored at high pressures (2,400 to 3,600 psi), fuel tank explosion, missile damage from failure or improper assembly or disassembly of hydrogen fuel system parts.

### *Ethanol and Ethanol Blends*

Important safety considerations for ethanol and ethanol blends include:

- Flammability - vapors in fuel tanks are within the flammable range for typical ambient temperatures.
- Corrosivity – ethanol is slightly acidic and can corrode some active metals.
- Toxicity hazard – fuel ethanol is denatured with natural gas or gasoline.

### **General Safety Training Resources**

Open source training materials for AFs are freely available online. These training and informational materials are prepared by stakeholders such as government bodies, trade associations and vehicle/technology manufacturers. Rather than attempt to cover all available materials, a subjective attempt was made to identify a handful of high quality materials for use and dissemination to the stakeholders in San Mateo County. Table 12 shows a list of AF training resources available online. The table includes materials from a range of different agencies and stakeholder organizations. Materials include safety aspects of operations and maintenance tasks as well as accident response for the vehicles and fuel distribution network. More training materials are listed in Chapter 5.

### **Noteworthy Resources for First Responders**

The National Alternative Fuels Training Consortium (NAFTC) is the only nationwide alternative fuel vehicle and advanced technology vehicle training organization in the U.S.. The NAFTC develops curricula and disseminates training about alternative fuels, alternative fuel vehicles, and advanced technology vehicle education. All courses and workshops are customizable to audience needs.

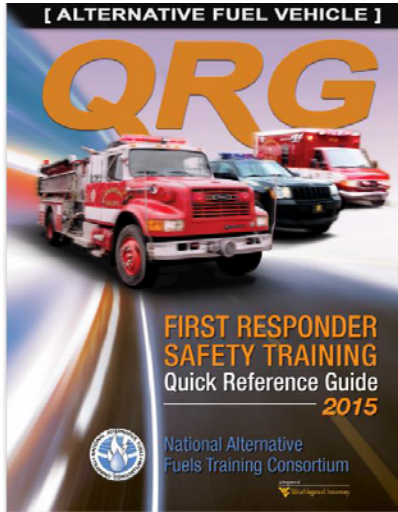
The first responder stakeholders in San Mateo County are in discussions with NAFTC to hold a series of training seminars in the County. Participants of the NAFTC training receive access to state-of-the art curricula, unsurpassed train-the-trainer courses and workshops, timely instructor updates, and professional development training. As a result, participants of the training are on the leading edge of alternative fuels, alternative fuel vehicles, and advanced technology vehicle education. NAFTC offers comprehensive training sessions on:

- Introduction to Alternative Fuels
- Electric Drive
- Hydrogen & Fuel Cells
- Natural Gas & Propane
- Biodiesel & Ethanol
- First Responder
- Fleet Applications
- Fuel Economy & Idle Reduction

NAFTC also develops the Alternative Fuel Vehicle Quick Reference Guide (QRG) for Emergency Responders shown in Figure 9, which has now been distributed to every fire truck in San Mateo County. The QRG 100-page guidebook covering all alternative fuel vehicles and includes identifying photos of each make and model. Each section includes detailed diagrams of

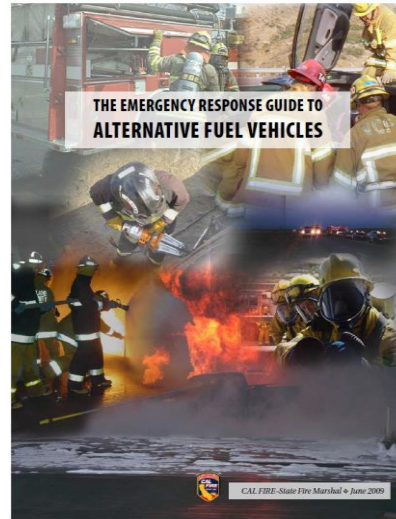
the vehicles, switches, and valves, with additional photos and diagrams of the under hood components. This guide is also available as a mobile app. Another noteworthy resource for first responders is the Emergency Response Guide for Alternative Fuel Vehicles produced by CAL FIRE State Fire Marshal, shown in Figure 10.

**Figure 9: Alternative Fuel Vehicle Quick Reference Guide**



Source: <http://afvsafetytraining.com/qrg.html>

**Figure 10: Alternative Fuel Vehicle Emergency Response Guide**



Source: <http://osfm.fire.ca.gov/training/pdf/alternativefuelvehicles/Altfuelintroduction.pdf>



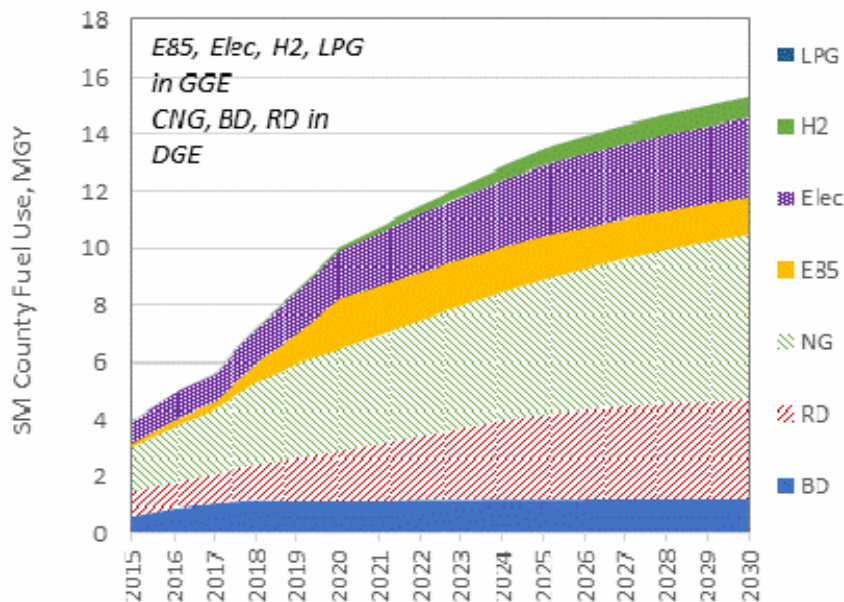
**Table 12: Open Access General Safety Training Material**

<b>Training Material</b>	<b>Organization</b>	<b>Websites</b>
Biofuels and Emerging Issues for Emergency Responders	Environmental Protection Agency	<a href="http://www.epa.gov/oem/docs/oil/fss/fss09/kimblebiofuels.pdf">http://www.epa.gov/oem/docs/oil/fss/fss09/kimblebiofuels.pdf</a>
Biodiesel and Ethanol	Environmental Protection Agency	<a href="http://www.nrt.org/production/NRT/RRT3.nsf/Resources/Sep2009ppt_1/\$File/Ethanol%20&amp;%20Biodiesel%20presentation.rev1.ppt">www.nrt.org/production/NRT/RRT3.nsf/Resources/Sep2009ppt_1/\$File/Ethanol &amp; Biodiesel presentation.rev1.ppt</a>
ETANKFIRE Ethanol Tank Fire Fighting	SP Technical Research Institute of Sweden	<a href="http://www.sp.se/en/index/research/etankfire/Sidor/default.aspx">http://www.sp.se/en/index/research/etankfire/Sidor/default.aspx</a>
Resources	Ethanol Emergency Response Coalition	<a href="http://www.ethanolresponse.com/pages/resources">http://www.ethanolresponse.com/pages/resources</a>
Resources	Ethanol & Biodiesel Response Considerations - Training Materials and Videos	<a href="http://www.nrt.org/.../Ethanol%20&amp;%20Biodiesel%20presentation.rev1.ppt">www.nrt.org/.../Ethanol%20&amp;%20Biodiesel%20presentation.rev1.ppt</a>
Emergency Response Guidebook: A Guidebook for First Responders	US DOT- Pipeline and Hazardous Materials Transportation Incident	<a href="http://phmsa.dot.gov/pv_obj_cache/pv_obj_id_7410989F4294AE44A2EBF6A80ADB640BCA8E4200/filename/ERG2012.pdf">http://phmsa.dot.gov/pv_obj_cache/pv_obj_id_7410989F4294AE44A2EBF6A80ADB640BCA8E4200/filename/ERG2012.pdf</a>
Courses and Workshops	National Alternative Fuels Training Consortium	<a href="http://naftc.wvu.edu/course_workshop_information">http://naftc.wvu.edu/course_workshop_information</a>
First Responder Quick Reference Guide	National Alternative Fuels Training Consortium	<a href="http://afvsafetytraining.com/qrg.html">http://afvsafetytraining.com/qrg.html</a>
First Responder Quick Reference Guide - Mobile app	National Alternative Fuels Training Consortium	<a href="http://afvsafetytraining.com/qrg.html">http://afvsafetytraining.com/qrg.html</a>
2012 Emergency Response Guidebook Mobile App	US DOT- Pipeline and Hazardous Materials Transportation Incident	<a href="http://phmsa.dot.gov/portal/site/PHMSA/menuitem.6f23687cf7b00b0f22e4c6962d9c8789/?vgnextoid=f6db5aaa0581d310VgnVCM1000001ecb7898RCRD&amp;vgnnextchannel=c8e71dec94973110VgnVCM1000009ed07898RCRD&amp;vgnnextfmt=print">http://phmsa.dot.gov/portal/site/PHMSA/menuitem.6f23687cf7b00b0f22e4c6962d9c8789/?vgnextoid=f6db5aaa0581d310VgnVCM1000001ecb7898RCRD&amp;vgnnextchannel=c8e71dec94973110VgnVCM1000009ed07898RCRD&amp;vgnnextfmt=print</a>
Clean Transportation Education Project, U.S. DOE Clean Cities	University of Oregon - Chemistry Labs	<a href="http://chemlabs.uoregon.edu/safety/NFPA.html">http://chemlabs.uoregon.edu/safety/NFPA.html</a>
Alternative Fuel Vehicle Instructor Qualifications	California State Fire Training	<a href="http://osfm.fire.ca.gov/training/pdf/alternativefuelvehicles/Altfuelinstreq.pdf">http://osfm.fire.ca.gov/training/pdf/alternativefuelvehicles/Altfuelinstreq.pdf</a>
State Fire Training	Office of the State Fire Marshall	<a href="http://osfm.fire.ca.gov/training/training.php">http://osfm.fire.ca.gov/training/training.php</a>
Emergency Response Guides	California Fuel Cell Partnership	<a href="http://cafcp.org/toolkits/safety/downloads">http://cafcp.org/toolkits/safety/downloads</a>

## 7. Alternative Fuel Demand in San Mateo County

Alternative fuel use will grow in proportion to California’s Low Carbon Fuel Standard (LCFS) requirements. Life Cycle Associates modeled the expected changes in San Mateo County’s vehicle populations through 2030 based on purchasing trends and regulatory mandates. ARB’s Emission Factors (EMFAC) 2014 model was used to estimate the number of AFVs registered in San Mateo County through 2030 (CARB, 2014). EMFAC provides projections of gasoline, diesel, and electric drive vehicles by vehicle class. EMFAC reports all electric drive VMTs together, combining PHEV, BEV, and FCEVs. The California ZEV mandate was used to estimate the split of electric drive vehicles between PHEVs, BEVs, and FCEVs, which changes over time. Gasoline and E85 volumes were adjusted based on CEC recorded gasoline volumes for 2014<sup>11</sup>. These projected fuel demand volumes are shown in Figure 11. Fuel demand for FCEVs and PEVs is expected to grow quickly, although it will remain a small percentage of total vehicle fuel demand. Renewable diesel, biodiesel, and ethanol volumes are presented here as isolated volumes, but will primarily be blended into gasoline and diesel in practice. Natural gas shows considerable growth due to increased use of CNG trucks.

**Figure 11. Projected Fuel Demand**



### Retail and Infrastructure Plan

Achieving optimal public refueling accessibility requires some planning on the part of public agencies, which have the power to incentivize construction in certain areas and emphasize the need for even distribution of infrastructure. Desirable public refueling site qualities include:

<sup>11</sup> Volumes used were presented at the ARB LCFS workshop on October 27, 2014.

- High residential density.
- High commercial density.
- Proximity to major roads and highways.
- Reasonable driving distance between refueling stations of the same type.
- Accessibility to low-density tourist destinations like beaches, parks, etc.

Each refueling location has its own maximum dispensing capacity, based on storage tank size and dispensing time. For example, hydrogen refueling takes only about 5 minutes, so hydrogen stations are not very limited by dispensing time, but hydrogen fuel must be stored onsite and takes up a large amount of space, especially given the land footprint of large hydrogen setback requirements. Electric vehicles, on the other hand, can take between half an hour and several hours to charge, which limits the number of cars a station can serve. However, no onsite storage is required since the station is simply connected to the electric grid.

It is a waste of fuel if drivers have to drive long distances to find fuel when they need it. An optimal siting plan will account for the total demand but ensure that refueling locations are geographically distributed in convenient locations without excessive distances between sites or over supplying any one area. Table 13 displays the projected fuel volume demand for 2030.

**Table 13. San Mateo County Projected Fuel Volumes in 2030**

Fuel	Units	Quantity
Gasoline (E10)	Million gal/yr as gasoline	182
Diesel	Million gal/yr as diesel	26
Ethanol	Million gal/yr as E10	18.2
	Million gal/yr as E85	6.5
CNG	Million gal/yr as diesel	5.8
Electricity	MWh/yr	95,348
Hydrogen	Million kg/yr	701
Biodiesel	Million gal/yr as diesel	1.2
RD	Million gal/yr as diesel	2.71
LPG	Million gal/yr as gasoline	10,025*

\* LPG volume calculated based on DMV data and held constant.

Table 14 shows the number of stations required to service the demand from the projected fuel volumes. Gasoline volumes are expected to decrease by a third by 2030, so we estimate that station demand will decrease by the same amount. Diesel stations for 2015 are based on an assumption that 55% of current gasoline stations contain diesel outlets. However, the number of diesel stations in 2030 increases based on the relative increase in diesel volumes expected. Calculation assumptions are described in the sections below and in Chapter 8. Siting plans for the San Mateo County geographic area are shown in Figure 12 through Figure 14.

The use of high level blends may expand in order to meet the requirements of the LCFS, which was readopted in September of 2015. For example, this study projects the number of E85 fueling dispensers in San Mateo County will need to increase from 1 to 13 in to achieve compliance

with LCFS volume requirements. Fuel retailers can integrate dispensers for these fuels into existing retail fuel stations.

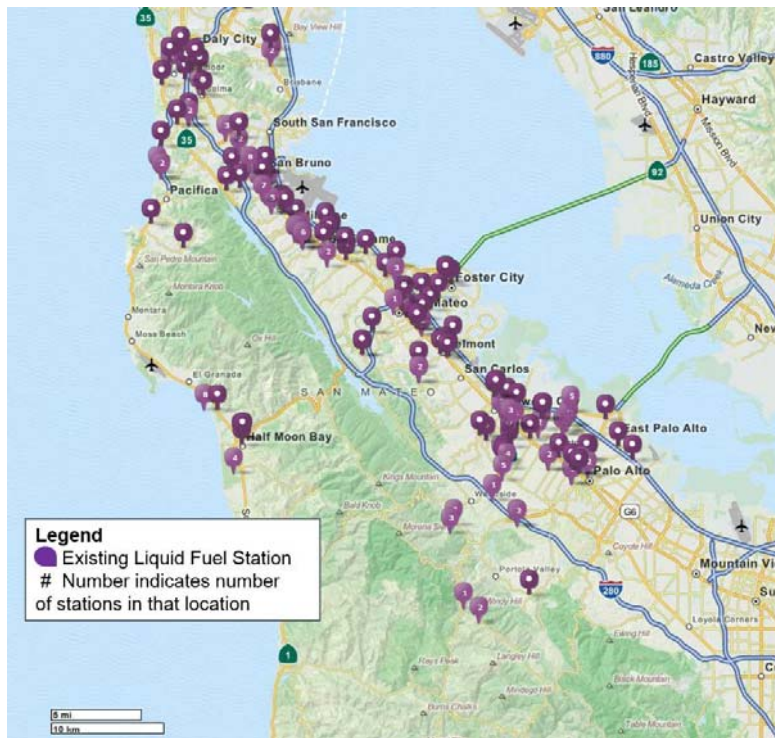
**Table 14. Infrastructure Demand in San Mateo County**

Fuel Type	2015 <sup>1</sup>	2030 <sup>2</sup>
Gasoline	197	130
Diesel	109	123
Electricity <sup>3*</sup>		
Level 2- Residential	3408	23,343
Level 2- Work	222	3056
Level 2- Public	152	222 to 370
DCFC	22	22
Hydrogen	0 (4 in development)	5 to 8
NG	4	18
BD	1 (now sells RD)	5
RD	1	Blended into Diesel
E85	1	13

1. AFDC, 2015. Alternative fueling station counts by state. [http://www.afdc.energy.gov/fuels/stations\\_counts.html](http://www.afdc.energy.gov/fuels/stations_counts.html)
2. EMFAC model.
3. Level 2 residential charging calculated based on assumption of 90% BEV owners and 30% PHEV owners.\*Number of individual charging ports.

Liquid fuels such as biodiesel, renewable diesel, and E85 are compatible with gasoline stations after slight modifications, so currently existing gasoline stations are the most likely siting location for future liquid fuel dispensers. These sites are shown in Figure 12.

**Figure 12. Existing Liquid Fueling Sites**



Source: Google Maps

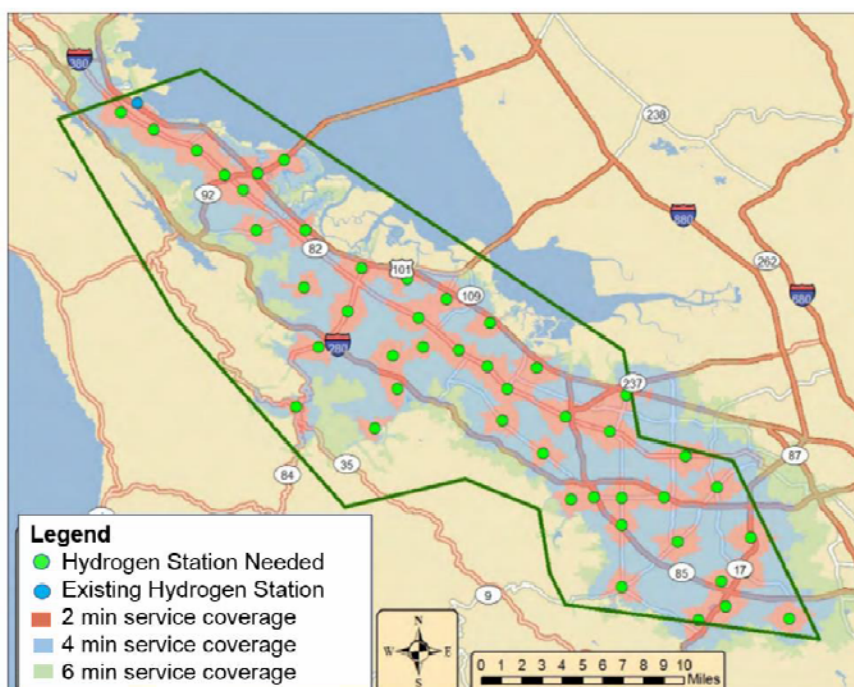
Note: Not all existing fueling stations are represented.

The CEC has determined that the current level of gasoline station coverage can be duplicated for hydrogen with only 13 to 21 percent of the outlets, provided that the outlets are strategically located. For the South Bay Area, they recommend a total of 47 hydrogen stations, or 21.8% of existing gasoline stations. This would allow for a maximum of 6 minutes of travel time between stations. They also recommend that stations sited near residential areas be prioritized since 75% of refueling trips begin or end at the home (Brown, 2013). Their analysis factored in median household income, population density, travel density, zoning and land use constraints, and planned and existing infrastructure. Figure 13 displays the hydrogen fueling locations recommended in the CEC's analysis for the South Bay. This map also shows coverage by driving time, giving the 2, 4, and 6 minute station driving range.

There are 4 hydrogen stations currently in development in San Mateo County. One is in South San Francisco, and it is already under construction. A second station is located in Woodside, and it has received approval to build. The remaining two stations, in Redwood City and Foster City, are still in the planning and pre-permitting phase. That means San Mateo is well on its way to developing the 5-8 fueling stations it will need in 2030. The locations shown in Figure 13 offer information about promising locations, although it unlikely that they will all be needed by 2030.



**Figure 13. Peninsula Hydrogen Station and Driving Coverage Map**



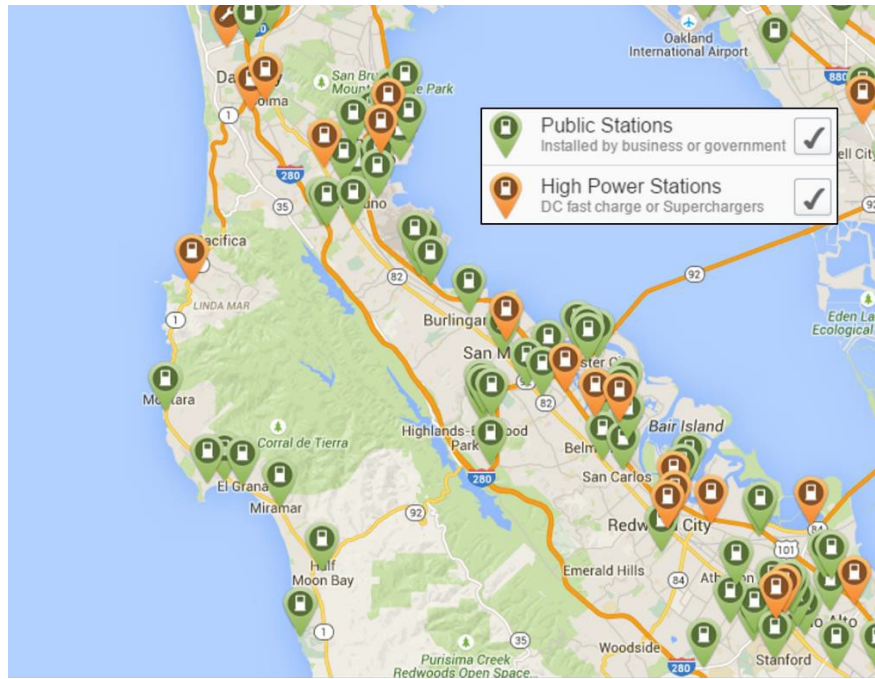
Source: Brown, T., Stephens-Romero, S., Soukup, J., Manlicic, K., Samuelsen, S., 2013. The 2013 Strategic Plan for the Inaugural Rollout of Hydrogen Fueling Stations in California. doi:600-10-002

For residential chargers, it is generally assumed that 90 percent of BEV owners and 30 percent of PHEV owners will purchase and install Level 2 chargers (CSE for ARB, 2013). Based on projected 2030 populations of BEV (14,460) and PHEV (34,429) populations, this translates to a total of 23,343 residential Level 2 chargers installed by 2030.

For workplace charging equipment, a recent study by the California Energy Commission estimates that 15 percent of the PEV population will utilize workplace charging with 2.4 charging sessions per day per unit (Melaina, 2014). In 2015, this formula results in 136 workplace chargers- at present there are 222. By 2030, this results in 3056 workplace chargers – a large increase.

Finally, the number of DC fast charge stations located along freeways needs to be considered. The West Coast Electric Highway plan is to locate DC fast charge EVSE every 25 to 50 miles along major highways (WA DOT, 2014). The 101 and 280 freeways each run approximately 25 miles North-South through San Mateo County. Therefore the county would require 2 DC fast charge stations, one on each freeway. Highway 101 has one DC Fast Charger, but Highway 280 has none. Figure 14 shows that publicly accessible EVSE is already quite widespread through San Mateo County. However, some gaps in coverage are apparent.

**Figure 14. San Mateo County EV Charging Sites**



In addition to placing infrastructure in areas that are highly trafficked and densely populated, AFV drivers want to be able to travel to tourist destinations such as beaches, state parks, harbors, and shopping districts, which should be included in AFI site planning.

## 8. Conclusions & Next Steps

San Mateo County will be the site of significant growth in alternative fuel demand in the years to come. Cities will be far more prepared for this increase if they consider its possible requirements and impacts in advance. The first step is to understand the current state of alternative fuels in California: what they are, how they work, what incentives are available for them, and how they are regulated. The second step is for each government entity to consider the role it chooses to play in their integration into the vehicle network of its fleets and its residents. What policies and incentives should be offered to make alternative fuels more available and appealing? Third, it is necessary to assess the local influx of alternative fuels that is expected in the coming years. With this knowledge, cities can collaborate to develop siting and zoning plans to ensure sufficient coverage of each fuel. And last but not least, cities need to communicate these plans and this knowledge to residents, investors, and the community at large.

Next steps for implementing the Plan may include:

### **1. Educate and train government staff on issues related to alternative fuels regulation.**

- Review guidelines for streamlined permitting, such as developing checklists and templates, arranging pre-submittal meetings, allowing online submission of permits, and streamlining processing procedures.
- Adopt and become familiar with existing standards for alternative fuel infrastructure stations, including those from National Fire Protection Association, California Code of Federal Regulations, and any local codes or standards.
- Review California's Title 24 Green Building Code. The 2013 Green Building Code currently applies throughout the state, but sections of it were most recently updated as of July, 2015, including those that deal with electric vehicle capacity and parking. Staff should receive training to ensure that they are familiar with the most recent updates.
- Review signage requirements for refueling stations and parking spots, including maximum number of allowable signs at stations and surrounding area and approved signs per CA Department of Transit Traffic Operations Policy Directive 13-01.

### **2. Implement outreach and marketing strategies specified in the Plan.**

- Create a webpage on city or county website with information and useful resources about alternative fuels. Include background information, grant and funding opportunities, and links to coalitions and advocacy groups.
- Organize community events, such as workshops on alternative fuel vehicle options and incentives, Earth Day Festivals, and Ride and Drive demonstration events.
- Introduce educational events at K-12 schools to introduce children to alternative fuels.
- Distribute brochures about alternative fuels at relevant gatherings.

### **3. Introduce initiatives to increase alternative fuel vehicle use in San Mateo County fleets.**

- Coordinate with other agencies to develop aggregate purchase orders.



- Identify funding opportunities from BAAQMD, CARB, CEC, DOE, etc. for building refueling infrastructure, purchasing vehicles, or converting organic feedstocks into biomethane.
- Perform environmental cost benefit analyses for different AFV options based on individual fleet needs (range, capacity, overnight storage).
- Include green procurement requirements in contracting evaluation.

#### **4. Explore public-private partnership opportunities.**

- Build refueling stations on public land and outsource construction and maintenance to a private company.
- Purchase or lease fleet vehicles from a retailer who can capture the federal tax incentive for PEVs and pass on savings.
- Explore options for converting potential feedstocks (e.g. landfill gas, waste water, or municipal waste) into alternative fuels for use in vehicles. The sale of LCFS credits can help to offset the cost of infrastructure. Construction and technology may be leased or purchased from private company, additional funding may be available from public sources.
- Consider the possibility of partnering with companies that can fund infrastructure development through the sale of advertising space.

## REFERENCES

- BACC, 2015. *Accelerating EV Adoption: Context & Opportunities for Municipal Action*. RICAPS Webinar.
- Blake, C., Buttner, W., Rivkin, C., 2010. Vehicle Codes and Standards: Overview and Gap Analysis: Technical Report, NREL/TP-560-47336.
- Brown, T., Stephens-romero, S., Soukup, J., Manliclic, K., Samuelsen, S., California Energy Commission, 2013. The 2013 Strategic Plan for the Inaugural Rollout of Hydrogen Fueling Stations in California. doi:600-10-002
- C/CAG, 2015. DRAFT Transportation climate action plan for San Mateo County. San Mateo, CA.
- CA DOT, 2013. *Traffic Operations Policy Directive 13-01: Zero Emission Vehicle Signs and Pavement Markings*.
- CaFCP, 2012. A California Road Map: Bringing Hydrogen Fuel Cell Electric Vehicles.
- California Building Standards Commission, 2015. *Revision Record for the State of California 2013 Title 24, Part 11, California Green Building Code*.
- CARB, 2014. EMFAC2014. URL <http://www.arb.ca.gov/emfac/>
- CARB, 2015. Drive Clean California. [driveclean.ca.gov](http://driveclean.ca.gov). URL <http://driveclean.ca.gov/>
- CEC, 2013. 2013 Integrated Energy Policy Report. Publication Number: CEC-100-2013-001-CMF. doi:Publication Number: CEC-100-2013-001-CMF
- Clegern, D., 2015. California greenhouse gas inventory shows state is on track to achieve 2020 AB 32 target. <http://www.arb.ca.gov/>. URL <http://www.arb.ca.gov/newsrel/newsrelease.php?id=740>
- CSE for ARB, 2013. California Plug-in Electric Vehicle Driver Survey Results May 2013. San Diego, CA.
- DOE, 2013. Alternative Fuels Data Center. [afdc.energy.gov/](http://www.afdc.energy.gov/). URL <http://www.afdc.energy.gov/fuels/>
- DOE, 2015a. Alternative Fuels Data Center: Hybrid and Plug-In Electric Vehicles.
- DOE, 2015b. Alternative Fuels Data Center: Propane Basics. URL <http://www.afdc.energy.gov/pdfs/46996.pdf>

- Durso, F., 2010. *Plugged In*. NFPA Journal, Natl. Fire Prot. Assoc. Quincy MA.
- Farr, R., 2010. *The Enforcement Infrastructure: In Support of Electric Vehicles and Similar Alternative Energy Transportation*, in: Presentation at U.S. National Electric Vehicle Safety Standards Summit. Detroit MI.
- Grant, C.C., 2010. U.S. National Electric Vehicle Safety Standards Summit Summary Report. Detroit, Michigan.
- Harrigan, M., Head, D.A., Bay Area Climate Collaborative, 2015. *Ready Set Charge Fleets*.
- Heberger, M., Cooley, H., Herrera, P., Gleick, P.H., Moore, E., 2009. The Impacts of Sea Level Rise on the California Coast. PIER Research Report, CEC-500-2009-024-D, Sacramento, CA: California Energy Commission.
- ICF International, 2013. Bay Area Plug-In Electric Vehicle Readiness Plan Summary 2013; prepared for BAAQMD.
- Kema Services Inc., 2012. County of San Mateo Government Operations Climate Action Plan.
- Lowenthal, 2006. *Environmental and Energy Standards for Hydrogen Production*. Senate Bill 1505. California Senate.
- Melaina, M., Helwig, M., CEC, NREL, 2014. California Statewide Plug-in Electric Vehicle Infrastructure Assessment: CEC-600-2014-003. Prepared for California Energy Commission.
- Nigro, N., Frades, M., C2ES, 2015. Business models for financially sustainable EV charging networks.
- Plotkin, S., Stephens, T., McManus, W., Argonne National Laboratory, 2013. *Vehicle Technology Deployment Pathways: An examination of timing and investment constraints*. Prepared for the U.S. Department of Energy, in: Transportation Energy Futures Report Series. p. 66.
- Schorske, R., 2011. Accelerating California's Electric Vehicle Transition.
- U.S. DOT, 1999. Clean Air Program: Summary of the Safety, Health, anvironmental and System Risks of Alternative Fuels. Report Number: FTA-MA-90-7007-95-1 and DOT-VNTSC-FTA-95-5. Cambridge, MA.
- WA DOT, 2014. West Coast Electric Highway. Westcoastgreenhighway.com. URL <http://www.westcoastgreenhighway.com/electrichighway.htm> (accessed 5.1.15).

Whyatt, G., 2010. Issues Affecting Adoption of Natural Gas Fuel in Light- and Heavy-Duty Vehicles. Prepared for DOE Contract DE-AC05-76RL01830. Alexandria, VA.

Zoepf, S.M., 2011. *Automotive Features: Mass Impact and Deployment Characterization*.

## C/CAG AGENDA REPORT

Date: January 21, 2016

To: Congestion Management Program Technical Advisory Committee (TAC)

From: John Hoang

Subject: Review and recommend approval of the Fiscal Year 2016/17 Expenditure Plan for the Transportation Fund for Clean Air (TFCA) County Program Manager Fund for San Mateo County

(For further information or questions contact John Hoang at 363-4105)

---

### **RECOMMENDATION**

That the that the TAC review and recommend approval of the Fiscal Year 2016/17 Expenditure Plan for the Transportation Fund for Clean Air (TFCA) County Program Manager Fund for San Mateo County.

### **FISCAL IMPACT**

\$1,279,674.76 (Admin. - \$54,674.76; Projects - \$1,225,000.00)

### **SOURCE OF FUNDS**

The Bay Area Air Quality Management District (BAAQMD) is authorized under Health and Safety code Section 44223 and 44225 to levy a fee on motor vehicles. Funds generated by the fee are referred to as the Transportation Fund for Clean Air (TFCA) funds and are used to implement projects to reduce air pollution from motor vehicles. Health and Safety Code Section 44241(d) stipulates that forty percent (40%) of funds generated within a county where the fee is in effect shall be allocated by the BAAQMD to one or more public agencies designated to receive the funds, and for San Mateo County, C/CAG has been designated as the County Program Manager to receive the funds.

### **BACKGROUND**

For the past several years, C/CAG has allocated the TFCA funds to projects implemented by the San Mateo County Transit District (SamTrans) and the Peninsula Traffic Congestion Relief Alliance (Commute.org). Funds provided to SamTrans help fund the SamTrans Shuttle Program for the BART shuttles, which provide peak commute period shuttle service from BART stations to employment sites in San Mateo County. Funds provided to Commute.org help fund the Countywide Voluntary Trip Reduction Program, which is a program that provides incentives to reduce single occupant vehicle trips as well as shuttle program management and includes carpool incentives, vanpool incentives, school pool incentives and a “Try Transit Program”. Commute.org also manages shuttles on behalf of member cities.

The BAAQMD County Program Manager Fund Expenditure Plan Guidance for TFCA (Guidance) for Fiscal Year 2017 is utilized for the FY 2016/17 Program. Cost Effectiveness (C-E), as defined in the Guidance, is used as screening criteria for all projects considered for allocation under the TFCA program. For instance, ridesharing projects (e.g., Voluntary Trip Reduction Program, implemented by Commute.org) must result in a C-E of less than \$90,000 per ton of reduced emissions. Existing Shuttle/Feeder bus Service (e.g., SamTrans BART Shuttles) must show a C-E of less than \$175,000 per ton of reduced emissions.

In previous years, the Voluntary Trip Reduction Program has met the C-E criteria and it is anticipated that the program will continue to meet the criteria for the upcoming FY 2016/17. The SamTrans BART Shuttle, however, has had issues meeting the C-E over the recent years. Meeting the C-E goal has been challenging due to a variety of factors including the methodology, assumptions, and survey data used in the calculation as well as the requirement to evaluate each shuttle route individually as opposed to evaluating all the route together as part of one project. With the expectation that only some of the seven (7) SamTrans BART shuttle route currently receiving TFCA fund will meet the C-E requirements, it was determined that the total amount of funds allocated to SamTrans be reduced in the FY 2016/17 program cycle.

Staff recommends allocating the remaining available TFCA FY 2016/17 funds for alternative fuel light-duty vehicles (gross vehicle weight rating (TVWR) of 14,000 lbs. or lighter). As defined by the BAAQMD and applied to this program, alternative light-duty vehicle types and equipment eligible for funding will include the purchase or lease of new hybrid-electric, electric, fuel cell, and CNG/LNG vehicles certified by the California Air Resource Board. In the next month, Staff will develop program guidelines to provide more clarity for implementing the proposed countywide Alternative Fuel Vehicle program and meeting the C-E criteria. The intent of this program is to allocate funds to the local jurisdictions for acquiring alternative fuel vehicles.

For FY 2016/17, the estimated administration budget is \$54,674.76 (approx. 5%) with the remaining \$1,225,000 proposed to be available for projects. Similar to the previous seven program TFCA funding cycles, it is recommended that funds be provided to SamTrans and Commute.org for the FY 2016/17 TFCA Program allocation. In addition, it is also recommended that funds be allocated to the new Alternative Fuel Vehicle program.

It is recommended that the SamTrans Shuttle Program receive an allocation of \$200,000 for its current shuttle program. This funding recommendation, which is lower than previous years due to identified challenges in meeting the program effectiveness requirements, shall be contingent upon SamTrans submitting an acceptable work plan and C-E calculations to qualify for use of the funds.

It is also recommended that the Commute.org receive an allocation of \$525,000, which is a slight increase from last year's allocation amount. The funds allocated for Commute.org will be subjected to the submission of an acceptable work plan for use of the funds. In addition, these funds will be combined with C/CAG Congestion Relief Plan funds for the Countywide Voluntary Trip Reduction Program.

New for the FY 2016/17 program is a recommendation to allocate the remaining \$500,000 to fund a countywide Alternative Fuel Vehicle program to provide alternative vehicles to the San Mateo County jurisdictions.

A summary of the recommended C/CAG TFCA Program for Fiscal Year 2016/17 is shown below:

Administration	\$54,674.76
SamTrans	\$200,000
Commute.org	\$525,000
Alternative Fuel Vehicles (New)	\$500,000
Total funds obligated	\$1,279,674.76
Total funds anticipated	\$1,279,674.76
Balance	\$0

For information, the TFCA funding distribution for the past four years are as follows:

<i>Agency</i>	<i>Project</i>	<i>2012/13</i>	<i>2013/14</i>	<i>2014/15</i>	<i>2015/16</i>
C/CAG	Administration	\$47,781	\$52,526	\$53,337	\$54,940
SamTrans	Employer Based Shuttle Projects	\$554,400	\$566,000	\$582,000	\$601,000
Commute.org	Countywide Voluntary Trip Reduction Program	\$435,600	\$445,000	\$457,500	\$472,300
Totals		\$1,037,781	\$1,063,526	\$1,092,837	\$1,128,240

**ATTACHMENTS**

None

## **C/CAG AGENDA REPORT**

Date: January 16, 2016  
To: Congestion Management Technical Advisory Committee (CMP TAC)  
From: Sandy Wong  
Subject: Receive draft information on the MTC Active Transportation Program Cycle 3 Guidelines

(For further information or response to questions, contact Sandy Wong at 599-1409)

---

### **RECOMMENDATION**

That the CMP TAC receive the draft information on the MTC Active Transportation Program Cycle 3 Guidelines.

### **FISCAL IMPACT**

None.

### **SOURCE OF FUNDS**

State funds.

### **BACKGROUND**

The Metropolitan Transportation Commission (MTC) staff is in the process of presenting their draft guidelines on the Active Transportation Program Cycle 3. The approval of these guidelines is on a fast-track schedule. Call for projects will likely be released early Spring. C/CAG staff would like to keep our member agencies' staff informed of this upcoming funding opportunity.

### **ATTACHMENT**

Draft MTC Active Transportation Program Cycle 3 Guidelines dated January 14, 2016



## Active Transportation Program Cycle 3 Guidelines

Highlight of Proposed Changes: January 14, 2016

---

### Program Years and Estimated Funding for Cycle 3 ATP

- FY 2019-20: \$10 million (Regional); \$60 million (Statewide)
- FY 2020-21: \$10 million (Regional); \$60 million (Statewide)
- Funding may increase due to increased FAST Act funding

### Proposed Guideline Updates

Due to the short timeframe to adopt the rATP3 Guidelines, staff recommends keeping the statewide application process, with minor changes as described below:

1. Revise the Disadvantaged Communities portion of the Statewide Application as follows:
  - a. Reduce scoring for Disadvantaged Communities from 10 points to 6 points in statewide application, and add 4 points for projects identified in an approved Community-Based Transportation Plan (CBTP). Proof of CBTP consistency will be provided in the supplemental regional application.
  - b. MTC will continue to use the Communities of Concern definition to meet the 25% statutory minimum for Disadvantaged Communities.
2. Create a set aside for smaller funding requests to encourage smaller project applications
  - a. 20% of rATP funds (\$4M) for project requests \$1 million and under, and may receive state-only funds. If this target is not met, projects requesting \$1 million and under scoring five or fewer points under the lowest-scoring funded project may be added to the Program to meet the 20% target.
  - b. Remaining rATP funds (\$16M) may be used for project requests of any size.
  - c. Existing minimum project size requirements from CTC still apply (\$250,000 minimum, except for non-infrastructure, SRTS, and plans).
3. Maintain existing supplemental regional criteria (plus CBTP addition from bullet 1)
  - a. Regional priority (5 points)
  - b. Completion of environmental document (3 points)
  - c. Consistency with OBAG Complete Streets Policy (2 points)
  - d. Consistency with Countywide Plan/Goals (0 or -2 points)
  - e. Deliverability (0 or -5 points)
  - f. CBTP consistency (see bullet 1a, above)
4. Maintain match requirement from Cycle 2
  - a. 11.47% match required, waivers for COC, non-infrastructure, SRTS, and construction projects where pre-construction was funded using non-federal non-ATP funds
5. Maintain adoption of Contingency Project List

### Schedule

- January 2016 – Discussion at Working Groups
- February 10/24, 2016 – PAC and Commission consideration of rATP3 Guidelines (Res. 4218)
- March 16-17, 2016 – CTC approves both statewide and MTC's regional ATP3 Guidelines
- April 2016 – Applicant workshops around the region
- June 1, 2016 – Application due date
- December 14/21 – Est. PAC and Commission consideration of rATP3 Program (Res. 4218, Rev.)
- Early 2017 – Est. CTC adoption statewide and regional ATP3 projects (April 1, 2017 is deadline)



# COMPLETE STREETS CHECKLIST

Project title:

County:

Jurisdiction/agency:

Project location:

Contact name:

Contact phone:

Contact e-mail:

## Preamble

Recent federal, state and regional policies call for the routine consideration of bicyclists and pedestrians in the planning, design and construction of all transportation projects. These policies—known as “Routine Accommodation” guidelines—are included in the federal surface transportation act (SAFETEA-LU), Caltrans Deputy Directive 64, and MTC Resolution 3765, which calls for the creation of this checklist.

In accordance with MTC Resolution 3765, agencies applying for regional transportation funds must complete this checklist to document how the needs of bicyclists *and* pedestrians were considered in the process of planning and/or designing the project for which funds are being requested. For projects that do not accommodate bicyclists *and* pedestrians, project sponsors must document why not. According to the resolution, the checklist is intended for use on projects at their earliest conception or design phase.

This guidance pertains to transportation projects that could in any way impact bicycle and/or pedestrian use, whether or not the proposed project is designed to accommodate either or both modes. Projects that do not affect the public right-of-way, such as bus-washers and emergency communications equipment, are exempt from completing the checklist.

## I. Existing Conditions

### 1 PROJECT AREA

- a. What accommodations for bicycles and pedestrians are included on the current facility and on facilities that it intersects or crosses?

- b. If there are no existing pedestrian or bicycle facilities, how far from the proposed project are the closest parallel bikeways and walkways?

- c. Please describe any particular pedestrian or bicycle uses or needs along the project corridor which you have observed or of which you have been informed.

- d. What existing challenges could the proposed project address for bicycle and pedestrian travel in the vicinity of the proposed project?

### 2 DEMAND

What trip generators (existing and future) are in the vicinity of the proposed project that might attract walking or bicycling customers, employees, students, visitors or others?

### 3 COLLISIONS

In the project design, have you considered collisions involving bicyclists and pedestrians along the route of the facility? If so, what resources have you consulted?

## II. Plans, Policies and Process

### 4 PLANS

- a. Do any adopted plans call for the development of bicycle or pedestrian facilities on, crossing or adjacent to the proposed facility/project? If yes, list the applicable plan(s).

- b. Is the proposed project consistent with these plans?

### 5 POLICIES, DESIGN STANDARDS & GUIDELINES

- a. Are there any local, statewide or federal *policies* that call for incorporating bicycle and/or pedestrian facilities into this project? If so, have these policies been followed?

- b. If this project includes a bicycle and/or pedestrian facility, have all applicable *design standards* or *guidelines* been followed?

### 6 REVIEW

If there have been BPAC, stakeholder and/or public meetings at which the proposed project has been discussed, what comments have been made regarding bicycle and pedestrian accommodations?

## III. The Project

### 7 PROJECT SCOPE

What accommodations, if any, are included for bicyclists and pedestrians in the proposed project design?

### 8 HINDERING BICYCLISTS/PEDESTRIANS

- a. Will the proposed project remove an existing bicycle or pedestrian facility or block or hinder bicycle or pedestrian movement? If yes, please describe situation in detail.

- b. If the proposed project does not incorporate both bicycle and pedestrian facilities, or if the proposed project would hinder bicycle or pedestrian travel, list reasons why the project is being proposed as designed.

- Cost (What would be the cost of the bicycle and/or pedestrian facility and the proportion of the total project cost?)

- Right-of-way (Did an analysis lead to this conclusion?)

- Other (Please explain.)

### 9 CONSTRUCTION PERIOD

How will access for bicyclists and pedestrians be maintained during project construction?

### 10 ONGOING MAINTENANCE

What agency will be responsible for ongoing maintenance of the facility and how will this be budgeted?



Project:

[All checklists](#)

Checklist:

### Online Checklist (blank)



Name
Description
Status
Project
City
Contact Name
Contact Email
Contact Phone
Contact Address

**1a What accommodations for bicycles and pedestrians are now included on the current facility and on facilities that it intersects or crosses?**

- Class I bicycle paths
- Class II bicycle lanes
- Class III bicycle routes
- Bicycle Boulevards
- Bicycle parking
- Sidewalks on one side or both sides of street**
- Frequent crosswalks**
- Narrow unpaved path
- Pedestrian-actuated traffic signals or routine pedestrian cycle
- Bicycle actuated traffic signals or routine bicyclist cycle
- High visibility crosswalks
- Pedestrian-level lighting
- ADA-compliant ramps**
- Traffic signal push buttons**
- Refuge islands on roadways**
- Transit shelter
- Wide curb lanes
- Right turn only lanes
- Transit vehicle stops
- Pedestrian count down signals
- None

**Other**

Please provide specifics of any items checked above.

**1b If there are no existing pedestrian or bicycle facilities, how far from the proposed project are the closest parallel bikeways and walkways?**

- 0-1/4 mile
- 1/4 mile to 1/2 mile
- 1/2 mile to 1 mile
- 1+ mile

**Other**

**1c Please indicate any particular pedestrian uses or needs along the project corridor that you have observed or have been informed of.**

- Improved lighting
- Lack of sidewalk
- Intersection improvements**
- Mid-block crossings
- Elderly or disabled
- School age children
- Transit shelter

Lack of ADA facilities  
 Narrow curb lanes  
 Lack of bicycle parking  
 Unresponsive signals to bicycles  
 Long signal cycles which require pedestrians to wait long periods of time  
 Choke points  
 RR crossings  
 No bike racks on buses  
 Short signal crossing times  
 Narrow undercrossings  
 Right turn only lanes  
 None

Other

1d What existing challenges could the proposed project improve for bicycle, pedestrian, or transit travel in the vicinity of the proposed project?

Unresponsive signals to bicycles  
 Lack of bicycle parking  
 Freeway on-off ramps  
 Narrow curb lanes  
 Choke points  
 RR crossings  
 No bike racks on buses  
 Wide roadway crossings  
 Long signal cycles which require pedestrians to wait long periods of time  
 Short signal crossing times  
 Narrow undercrossings, overcrossings  
**Sidewalk obstruction or missing sidewalk**  
 Pedestrian-level lighting  
**ADA compliant facilities**  
 Transit vehicle stops

Other

2a What trip generators (existing and future) are in the vicinity of the proposed project that might attract walking or bicycling customers, employees, students, visitors or others?

Educational institutions  
 Transit stations  
 Senior centers  
 High-density land uses  
**Downtowns**  
 Shopping areas  
 Medical centers  
 Major public venues  
 Government buildings  
 Parks

Other

3a Have you considered collisions involving bicyclists and pedestrians along the route of the facility?

If so, what resources have you consulted?

4a Do any adopted plans call for the development of bicycle or pedestrian facilities on, crossing or adjacent to the proposed facility/project?

City or town bicycle plan  
 Countywide bicycle plan  
 City or town pedestrian plan  
 Countywide pedestrian plan  
 Combined bicycle and pedestrian plan  
 ADA transition plan  
 General plan  
 Specific plan  
 Regional transportation Plan  
 Sales tax expenditure plan  
 Station area access plan  
**No plans**

Other

Is the proposed project consistent with these plans?		No
5a	Do any local, statewide or federal policies call for incorporating bicycle and/or pedestrian facilities into this project?	Caltrans Deputy Directive 64 Caltrans Highway Design Manual (Chapter 1000) ACR 211 MUTCD 2003 MUTCD California supplement Americans with Disabilities Act Accessibility Guidelines (ADAAG) MTC Pedestrian Districts Study
Other		
If so, have the policies been followed?		
5b	If this project includes a bicycle and/or pedestrian facility, have all applicable design standards or guidelines been followed?	
6a	If there have been BPAC, stakeholder and/or public meetings at which the proposed project has been discussed, what comments have been made regarding bicycle and pedestrian accommodations?	
7a	What accommodations, if any, are included for bicyclists and pedestrians in the proposed project design?	Class I bicycle paths Class II bicycle lanes Class III bicycle routes Bicycle Boulevards Bicycle parking <b>Sidewalks on both sides of street</b> Widened sidewalks <b>Frequent crosswalks</b> Narrow unpaved path Bicycle actuated traffic signals High visibility crosswalks Pedestrian-level lighting <b>ADA-compliant ramps</b> Traffic signal push buttons Refuge islands on roadways
Other		
8a	Will the proposed project remove an existing bicycle or pedestrian facility or block or hinder bicycle or pedestrian movement? If yes, please describe situation in detail.	
8b	If the proposed project does not incorporate either bicycle or pedestrian facilities, or if the proposed project would hinder bicycle or pedestrian travel, list reasons why the project cannot be re-designed to accommodate these facilities.  What would be the cost of the bicycle and/or pedestrian facility?  What is the bicycle and/or pedestrian facility's proportion of the total project cost?  Right-of-way. (Did an analysis lead to this conclusion?)	
9a	How will access for bicyclists and pedestrians be maintained during project construction?	Alternative signed bicycle route Alternative signed pedestrian route Separated pedestrian pathway
Other		
10a	What agency will be responsible for ongoing maintenance of the facility?	
10b	How will ongoing maintenance be budgeted?	
J:\COMMITTEE\Active Transportation Working Group\2016\Jan 2016\Blank Complete Streets Checklist.pdf		Sponsor admin user

## C/CAG AGENDA REPORT

Date: January 21, 2016

To: C/CAG Congestion Management Program Technical Advisory Committee

From: Sandy Wong, Executive Director

Subject: Receive an update on the MTC One Bay Area Grant 2 (OBAG 2) program.  
(For further information or questions contact Jean Higaki at 599-1462)

---

### **RECOMMENDATION**

That the C/CAG TAC receive an update on the MTC One Bay Area Grant 2 (OBAG 2) program.

### **FISCAL IMPACT**

Unknown.

### **SOURCE OF FUNDS**

N/A

### **BACKGROUND**

On November 18, MTC adopted the policies for the next cycle of the One Bay Area Grant Program (OBAG 2). MTC's objective of OBAG 2 is to support the region's Long Range Plan / Sustainable Communities Strategy (SCS), Plan Bay Area 2040, by directing investments to the region's priority development areas and rewarding housing production. Information from MTC's proposal is attached.

MTC's major proposed changes from OBAG 1 to OBAG 2 are as follows:

- Compared to OBAG 1, overall revenues drop about 3% which results in a decrease to all programs.
- The distribution formula is revised to give higher weight to moderate and affordable housing production.
- Programs previous funded with regional funds are being moved to the county programs. This includes funding for specific County Federal Aid Secondary (FAS) Program, required by statute, as well as Safe Routes to School, and CMA Planning Base. There is no net change in funding for these programs.
- The Complete Streets requirement is estimated to be amended. Jurisdictions that have not updated their circulation element after 2010 to meet the State's Complete Streets Act requirements will need to adopt a complete streets resolution per the MTC model used for OBAG 1, if they have not already done so.

- Agencies must have housing elements adopted by the California Department of Housing and Community Development (HDC) by May 31, 2015. Agencies must continue to submit the annual housing Element Report to HCD to remain eligible for funding.
- MTC has directed staff to develop anti-displacement policy recommendation and return to the commission in February 2016 with a recommendation.

C/CAG staff is in the process of developing a framework to present to the committees in February 2016.

#### **ATTACHMENTS**

1. MTC Resolution No.4202 project selection criteria and programming policy for OBAG 2 adopted on November 18, 2015.





METROPOLITAN  
TRANSPORTATION  
COMMISSION

Agenda Item 8

Joseph P. Bort MetroCenter  
101 Eighth Street  
Oakland, CA 94607-4700  
TEL 510.817.5700  
TDD/TTY 510.817.5769  
FAX 510.817.5848  
E-MAIL info@mtc.ca.gov  
WEB www.mtc.ca.gov

## *Memorandum*

TO: Commission

DATE: November 12, 2015

FR: Deputy Executive Director, Policy

RE: Proposal for Second Round of the One Bay Area Grant Program (OBAG 2)

The Programming and Allocations Committee referred to the Commission for approval MTC Resolution No. 4202, the project selection criteria and programming policy for the second round of the One Bay Area Grant Program (OBAG 2) covering Fiscal Years 2017-18 through 2021-22. The Committee recommended several revisions to the resolution and requested additional information from staff on several issues, discussed below.

### Committee Actions

- ***Refer MTC Resolution No. 4202 to the Commission for approval with the following revisions:***

***1) Extend the deadline for four jurisdictions that did not have their housing elements certified by the California Department of Housing and Community Development (HCD) by May 31, 2015 to June 30, 2016.***

Four jurisdictions in the Bay Area did not meet the 2015 deadline for a state-certified housing element: Fairfax, Dixon, Monte Sereno, and Half Moon Bay. Since that time, HCD fully certified the housing element for Half Moon Bay, and conditionally certified the housing elements for the other three cities. Given the progress made to date and the limited resources of these smaller jurisdictions, the Committee approved a revision to the proposal to extend the deadline for the four jurisdictions to have their housing elements certified by HCD to June 30, 2016 in order to be eligible to receive OBAG 2 funding. This revision has been incorporated into Resolution No. 4202, where appropriate.

***2) Develop recommendation for anti-displacement policies and provide additional information on housing preservation funding.***

The Committee asked staff to develop potential anti-displacement and affordable housing policies for possible consideration for OBAG 2, and return to the Committee in February 2016. A placeholder has been added to Resolution No. 4202. The Committee also requested that staff investigate the possibility of a housing preservation fund that could potentially be used to keep affordable units affordable. In early 2016, staff will convene a workshop with local jurisdictions and stakeholders to further consider anti-displacement strategies, and will also develop options for a "Naturally Occurring Affordable Housing" (NOAH) fund. Given that this addition will affect the counties' call for projects, the resolution has also been modified to delay the schedule for project submittal by 3 months.

**3) *Defer decision on a county distribution formula to the full Commission.***

Three alternative county distribution formulas were presented to the Committee for consideration (see Tables 1 and 2 below). After discussion, the Committee referred the county distribution formula to the full Commission without recommendation.

**County Distribution Formula**

The three formulas that were presented to the Committee are summarized in Table 1.

**Table 1. OBAG Distribution Factor Alternatives**

	Population	Housing Production	Housing RHNA	Housing Affordability
<b>OBAG 1</b>	50%	25%	25%	50%
<b>OBAG 2</b> 1. Affordable Housing	50%	30%	20%	60%
<b>OBAG 2</b> 2. Affordable + Moderate	50%	30%	20%	60%*
<b>OBAG 2</b> 3. Housing Production	50%	50%	0%	60%

\*Includes moderate as well as low and very low income levels for RHNA and housing production.

In response to Committee questions, Table 2 summarizes the percentage distribution and dollar amount for each county under the three scenarios. As a reminder, the figures below reflect uncapped housing production. For reference, page 4 of Attachment 2 includes both uncapped and capped figures.

**Table 2. OBAG 2 County Distribution Formula Options**

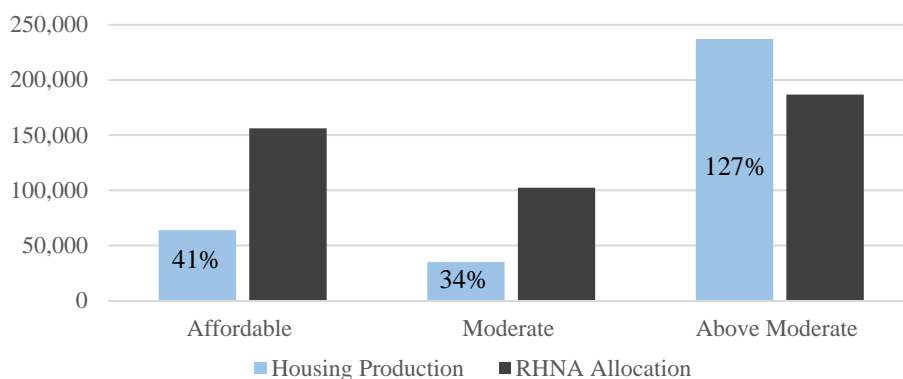
County	OBAG 2 1. Affordable Housing		OBAG 2 2. Affordable + Moderate		OBAG 2 3. Housing Production	
	% Share	Amount \$ in millions	% Share	Amount \$ in millions	% Share	Amount \$ in millions
Alameda	20.1%	\$71	19.8%	\$70	19.2%	\$68
Contra Costa	13.7%	\$48	14.7%	\$52	14.1%	\$50
Marin	2.8%	\$10	2.8%	\$10	3.0%	\$11
Napa	2.2%	\$8	2.2%	\$8	2.2%	\$8
San Francisco	12.9%	\$45	12.3%	\$43	13.4%	\$47
San Mateo	8.5%	\$30	8.5%	\$30	7.9%	\$28
Santa Clara	27.7%	\$98	27.1%	\$96	27.3%	\$97
Solano	5.2%	\$18	5.5%	\$19	5.4%	\$19
Sonoma	7.1%	\$25	7.2%	\$26	7.7%	\$27

- ***Additional detail on housing production and RHNA allocations by county and jurisdiction.***

Attachment 1 provides additional detail on the housing production data that is used in the county distribution formula. The information, which is provided by ABAG staff, comes primarily from annual housing element reports, and information from adopted and certified housing elements, draft housing elements, 702 permitting information.

Over the last two RHNA periods (1999-2006 and 2007-2014), Bay Area jurisdictions have produced more than 330,000 total housing units or 75% of the total RHNA allocations (capping units to RHNA results in nearly 300,000 in total housing units, or 67% of RHNA allocations). Unfortunately, the level of housing production has not been uniform across income levels. While jurisdictions have exceeded their RHNA allocations for above moderate-income units overall, they have fallen short on the production of affordable and moderate-income housing (see Figure 1).

**Figure 1. Bay Area Housing Production and Regional Housing Needs Assessment (RHNA) Allocation\* | 1999-2014**



\*Production is not capped to RHNA allocations.

- Information on Bay Area household income limits and associated housing unit costs.**

Committee members also requested information on household income and affordability by county. The California Department of Housing and Community Development (HCD) develops State Income Limits each year which define the median income and household income levels for very low-, low- and moderate-income households for each county. The 2015 income limits and Area Median Income (AMI) for the nine Bay Area counties are shown in Table 3, below.

**Table 3. 2015 Bay Area Counties Income Limits and Area Median Incomes**

County	Very Low Income (50% AMI) 4-Person HH	Low Income (80% AMI) 4-Person HH	Area Median Income (AMI) 4-Person HH	Moderate Income (120% AMI) 4-Person HH
Alameda	\$46,750	\$71,600	\$93,500	\$112,200
Contra Costa	\$46,750	\$71,600	\$93,500	\$112,200
Marin	\$58,600	\$93,850	\$103,000	\$123,600
Napa	\$43,650	\$69,800	\$86,100	\$103,300
San Francisco	\$58,600	\$93,850	\$103,000	\$123,600
San Mateo	\$58,600	\$93,850	\$103,000	\$123,600
Santa Clara	\$53,150	\$84,900	\$106,300	\$127,550
Solano	\$41,300	\$65,000	\$82,600	\$99,100
Sonoma	\$41,300	\$65,000	\$82,600	\$99,100

Note that all three alternative county distribution formulas under consideration include very low- and low-incomes in the affordability weighting. Alternative 2 (Affordable + Moderate) includes moderate-income as well as very low- and low-income.

### **Jurisdiction Performance/Incentive**

The Committee also discussed whether county funds should be distributed to jurisdictions within a county on a formula basis. Staff did not recommend doing this for a few reasons. First, CMAs usually strive to balance funding programs and may use several programs to deliver project throughout their counties. So for instance, a project in one area might be funded with OBAG funds, and in another area a project might be funded with local sales tax funds. This gives the counties and the jurisdictions the flexibility to account for eligibility or other local issues. Additionally, CMAs generally consider project readiness when making funding decisions; if funds were distributed solely on a formula basis, this consideration would not be as possible as funds could either sit unused while a project develops, or could be insufficient to fund a ready to go project in a smaller jurisdiction. Finally, direct distribution would also detract from the primary purpose of the program, which is to fund priority, transformative transportation projects focused in Priority Development Areas (PDAs) throughout the region.

- ***Information on jurisdictions' RHNA housing allocations compared to their OBAG 1 grant awards.***

The OBAG Report Card, located at: [http://files.mtc.ca.gov/pdf/OBAG\\_Report\\_Card.pdf](http://files.mtc.ca.gov/pdf/OBAG_Report_Card.pdf), provides information on the sixteen jurisdictions with the largest housing unit allocations, comparing their potential “jurisdiction share” based on the OBAG 1 formula, to their actual OBAG 1 grants received. As discussed in the report, jurisdictions with high percentages in the OBAG 1 formula generally received high shares of OBAG 1 grant funding, see Table 4 below. In aggregate, the sixteen jurisdictions received higher shares of funding than in the previous round (“Cycle 1”).

**Table 4. OBAG 1 Formula Compared to Grant Distribution for Jurisdictions Taking on the Most Housing** | Reproduced from OBAG Report Card, February 2014

City	Housing Unit Growth	OBAG 1 Jurisdiction Formula Share	OBAG 1 Actual Grant Distribution
San Jose	129,280	15.8%	10.6%
San Francisco	92,480	12.2%	12.8%
Oakland	51,450	5.3%	7.3%
Sunnyvale	19,030	2.0%	3.2%
Concord	18,070	1.5%	1.5%
Fremont	17,630	2.7%	2.9%
Santa Rosa	16,030	2.7%	1.2%
Santa Clara	13,780	1.9%	1.1%
Milpitas	12,620	1.4%	0.9%
Hayward	12,320	1.7%	0.5%
Fairfield	11,120	1.5%	0.5%
San Mateo	10,180	1.3%	0.6%
Livermore	9,700	1.4%	0.4%
Richmond	9,690	1.6%	2.3%
Mountain View	9,400	1.1%	0.4%
Berkeley	9,280	1.4%	3.3%
<b>Totals</b>	<b>442,060</b>	<b>56%</b>	<b>50%</b>

**Other Committee Requests for Information**

- *Additional detail on the Regional Active Operations Management Program and Regional Transit Priority Programs.*

The Committee requested additional detail on the regional transit and operations programs. The funding frameworks anticipated for each program are provided in Table 5 and Table 6 for informational purposes. The Commission will be asked to approve the actual projects funded under these programs as part of the OBAG 2 regional programming action, anticipated at a later date.

**Table 5. OBAG 2 Transit Priorities Program Framework**

Program	Potential Funding Level \$ in millions
BART Car Replacement	\$150
Clipper Next Generation System	\$20
Transit Performance Initiative (TPI)/ Transit Capital Priorities Program (TCP)	\$19
<b>Total</b>	<b>\$189</b>

**Table 6. OBAG 2 Regional Active Operational Management Framework**

<b>Program</b>	<b>Potential Funding Level</b> \$ in millions
511 Next Generation	\$39
Rideshare	\$10
<b>Columbus Day Initiative</b>	
Freeway Performance	\$66
Arterial/Transit Performance	\$18
Connected Vehicles/Shared Mobility	\$5
<b>Transportation System Management</b>	
Field Equipment Devices O&M	\$19
Incident Management	\$13
<b>Total</b>	<b>\$170</b>

- *NACTO-designed projects are eligible to receive OBAG 2 funds.*

Caltrans and the Federal Highway Administration (FHWA) have both endorsed the use of National Association of City Transportation Officials’ (NACTO) Urban Bikeway Design Guide to design bicycle and pedestrian facilities. Therefore, NACTO designed projects would be eligible for OBAG2 funding under current rules.

  
 \_\_\_\_\_  
 Alix Bockelman

**Attachments:**

- Attachment 1 – Bay Area Housing Production and RHNA, 1999-2006 and 2007-2014
- Attachment 2 – Power Point Presentation
- Attachment 3 – MTC Resolution No. 4202 (with revisions made since the November 4 Programming and Allocations Committee)

J:\PROJECT\Funding\T4-MAP21\MAP21 - STP-CMAQ\MAP21 Programming\MAP21 OBAG 2\OBAG 2 Development\Outreach\Commission\OBAG 2 memo\_v2.docx

**Bay Area Housing Production and Regional Housing Need Allocation (RHNA) 2007-2014**

NAPA COUNTY	Very Low			Low			Moderate			Above Moderate			Total		
	RHNA	Permits Issued	Percent of RHNA Met	RHNA	Permits Issued	Percent of RHNA Met	RHNA	Permits Issued	Percent of RHNA Met	RHNA	Permits Issued	Percent of RHNA Met	RHNA	Permits Issued	Percent of RHNA Met
American Canyon	169	0	0%	116	0	0%	143	2	1%	300	86	29%	728	88	12%
Calistoga	17	14	82%	11	9	82%	18	2	11%	48	8	17%	94	33	35%
Napa	466	88	19%	295	26	9%	381	162	43%	882	495	56%	2,024	771	38%
St. Helena	30	2	7%	21	8	38%	25	16	64%	45	25	56%	121	51	42%
Yountville <sup>2</sup>	16	20	125%	15	22	147%	16	12	75%	40	20	50%	87	74	85%
Napa County	181	11	6%	116	6	5%	130	74	57%	224	326	146%	651	417	64%
<b>County Totals</b>	<b>879</b>	<b>135</b>	<b>15%</b>	<b>574</b>	<b>71</b>	<b>12%</b>	<b>713</b>	<b>268</b>	<b>38%</b>	<b>1,539</b>	<b>960</b>	<b>62%</b>	<b>3,705</b>	<b>1,434</b>	<b>39%</b>

SAN FRANCISCO COUNTY	Very Low			Low			Moderate			Above Moderate			Total		
	RHNA	Permits Issued	Percent of RHNA Met	RHNA	Permits Issued	Percent of RHNA Met	RHNA	Permits Issued	Percent of RHNA Met	RHNA	Permits Issued	Percent of RHNA Met	RHNA	Permits Issued	Percent of RHNA Met
San Francisco <sup>5</sup>	6,589	3,920	59%	5,535	1,481	27%	6,754	1,234	18%	12,315	13,468	109%	31,193	20,103	64%
<b>County Totals</b>	<b>6,589</b>	<b>3,920</b>	<b>59%</b>	<b>5,535</b>	<b>1,481</b>	<b>27%</b>	<b>6,754</b>	<b>1,234</b>	<b>18%</b>	<b>12,315</b>	<b>13,468</b>	<b>109%</b>	<b>31,193</b>	<b>20,103</b>	<b>64%</b>

SAN MATEO COUNTY	Very Low			Low			Moderate			Above Moderate			Total		
	RHNA	Permits Issued	Percent of RHNA Met	RHNA	Permits Issued	Percent of RHNA Met	RHNA	Permits Issued	Percent of RHNA Met	RHNA	Permits Issued	Percent of RHNA Met	RHNA	Permits Issued	Percent of RHNA Met
Atherton	19	18	95%	14	0	0%	16	0	0%	34	-8	-24%	83	10	12%
Belmont	91	0	0%	65	0	0%	77	4	5%	166	45	27%	399	49	12%
Brisbane <sup>5</sup>	91	0	0%	66	0	0%	77	7	9%	167	137	82%	401	144	36%
Burlingame	148	0	0%	107	0	0%	125	9	7%	270	93	34%	650	102	16%
Colma	15	0	0%	11	0	0%	13	0	0%	26	2	8%	65	2	3%
Daly City <sup>2</sup>	275	76	28%	198	51	26%	233	43	18%	501	386	77%	1,207	556	46%
East Palo Alto	144	4	3%	103	0	0%	122	74	61%	261	119	46%	630	197	31%
Foster City	111	15	14%	80	40	50%	94	5	5%	201	248	123%	486	308	63%
Half Moon Bay <sup>8</sup>	63	0	0%	45	0	0%	53	0	0%	115	18	0%	276	18	7%
Hillsborough	20	76	380%	14	10	71%	17	8	47%	35	22	63%	86	116	135%
Menlo Park	226	66	29%	163	11	7%	192	24	13%	412	188	46%	993	289	29%
Millbrae	103	2	2%	74	3	4%	87	18	21%	188	461	245%	452	484	107%
Pacifica	63	5	8%	45	1	2%	53	44	83%	114	158	139%	275	208	76%
Portola Valley <sup>8</sup>	17	0	0%	12	0	0%	14	0	0%	31	0	0%	74	0	0%
Redwood City	422	82	19%	304	84	28%	358	94	26%	772	2,442	316%	1,856	2,702	146%
San Bruno	222	16	7%	160	299	187%	188	281	149%	403	170	42%	973	766	79%
San Carlos	137	2	1%	98	5	5%	116	14	12%	248	121	49%	599	142	24%
San Mateo	695	163	23%	500	56	11%	589	105	18%	1,267	863	68%	3,051	1,187	39%
South San Francisco	373	108	29%	268	7	3%	315	10	3%	679	128	19%	1,635	253	15%
Woodside	10	7	70%	7	5	71%	8	5	63%	16	42	263%	41	59	144%
San Mateo County <sup>2</sup>	343	62	18%	247	69	28%	291	1	0%	625	445	71%	1,506	577	38%
<b>County Totals</b>	<b>3,588</b>	<b>702</b>	<b>20%</b>	<b>2,581</b>	<b>641</b>	<b>25%</b>	<b>3,038</b>	<b>746</b>	<b>25%</b>	<b>6,531</b>	<b>6,080</b>	<b>93%</b>	<b>15,738</b>	<b>8,169</b>	<b>52%</b>

Bay Area Housing Production and Regional Housing Need Allocation (RHNA) 1999-2006

	Very Low			Low			Moderate			Above Moderate			Total (Uncapped)		
	RHNA	Permits Issued	Percent of RHNA Met	RHNA	Permits Issued	Percent of RHNA Met	RHNA	Permits Issued	Percent of RHNA Met	RHNA	Permits Issued	Percent of RHNA Met	RHNA	Permits Issued	Percent of RHNA Met
<b>NAPA COUNTY</b>															
American Canyon <sup>1</sup>	230	114	50%	181	60	33%	353	51	14%	559	2,110	377%	1,323	2,335	176%
Calistoga <sup>3</sup>	44	3	7%	31	15	48%	41	0	0%	57	60	105%	173	78	45%
Napa <sup>1</sup>	703	177	25%	500	351	70%	859	582	68%	1,307	1,287	98%	3,369	2,397	71%
St. Helena <sup>1</sup>	31	10	32%	20	10	50%	36	22	61%	55	82	149%	142	124	87%
Yountville <sup>1</sup>	21	0	0%	15	2	13%	20	19	95%	31	46	148%	87	67	77%
Napa County <sup>1</sup>	405	30	7%	272	45	17%	466	63	14%	826	106	13%	1,969	244	12%
<b>County Totals</b>	<b>1,434</b>	<b>334</b>	<b>23%</b>	<b>1,019</b>	<b>483</b>	<b>47%</b>	<b>1,775</b>	<b>737</b>	<b>42%</b>	<b>2,835</b>	<b>3,691</b>	<b>130%</b>	<b>7,063</b>	<b>5,245</b>	<b>74%</b>

	Very Low			Low			Moderate			Above Moderate			Total (Uncapped)		
	RHNA	Permits Issued	Percent of RHNA Met	RHNA	Permits Issued	Percent of RHNA Met	RHNA	Permits Issued	Percent of RHNA Met	RHNA	Permits Issued	Percent of RHNA Met	RHNA	Permits Issued	Percent of RHNA Met
<b>SAN FRANCISCO COUNTY</b>															
San Francisco <sup>1</sup>	5,244	4,203	80%	2,126	1,101	52%	5,639	661	12%	7,363	11,474	156%	20,372	17,439	86%
<b>County Totals</b>	<b>5,244</b>	<b>4,203</b>	<b>80%</b>	<b>2,126</b>	<b>1,101</b>	<b>52%</b>	<b>5,639</b>	<b>661</b>	<b>12%</b>	<b>7,363</b>	<b>11,474</b>	<b>156%</b>	<b>20,372</b>	<b>17,439</b>	<b>86%</b>

	Very Low			Low			Moderate			Above Moderate			Total (Uncapped)		
	RHNA	Permits Issued	Percent of RHNA Met	RHNA	Permits Issued	Percent of RHNA Met	RHNA	Permits Issued	Percent of RHNA Met	RHNA	Permits Issued	Percent of RHNA Met	RHNA	Permits Issued	Percent of RHNA Met
<b>SAN MATEO COUNTY</b>															
Atherton <sup>1</sup>	22	0	0%	10	0	0%	27	0	0%	107	5	5%	166	5	3%
Belmont <sup>1</sup>	57	24	42%	30	20	67%	80	10	13%	150	287	191%	317	341	108%
Brisbane <sup>1</sup>	107	7	7%	43	1	2%	112	7	6%	164	93	57%	426	108	25%
Burlingame <sup>1</sup>	110	0	0%	56	0	0%	157	72	46%	242	32	13%	565	104	18%
Colma <sup>2</sup>	17	0	0%	8	73	913%	21	0	0%	28	14	50%	74	87	118%
Daly City <sup>1</sup>	282	11	4%	139	22	16%	392	0	0%	578	383	66%	1,391	416	30%
East Palo Alto <sup>3</sup>	358	57	16%	148	155	105%	349	15	4%	427	492	115%	1,282	719	56%
Foster City <sup>1</sup>	96	88	92%	53	0	0%	166	44	27%	375	401	107%	690	533	77%
Half Moon Bay <sup>2</sup>	86	0	0%	42	106	252%	104	0	0%	226	250	111%	458	356	78%
Hillsborough <sup>3</sup>	11	0	0%	5	15	300%	14	19	136%	54	109	202%	84	143	170%
Menlo Park <sup>2</sup>	184	0	0%	90	0	0%	245	11	4%	463	204	44%	982	215	22%
Millbrae <sup>1</sup>	67	0	0%	32	0	0%	90	0	0%	154	262	170%	343	262	76%
Pacifica <sup>1</sup>	120	0	0%	60	10	17%	181	0	0%	305	169	55%	666	179	27%
Portola Valley <sup>1</sup>	13	12	92%	5	3	60%	13	2	15%	51	44	86%	82	61	74%
Redwood City <sup>1</sup>	534	36	7%	256	70	27%	660	18	3%	1,094	341	31%	2,544	465	18%
San Bruno <sup>1</sup>	72	138	192%	39	187	479%	110	0	0%	157	542	345%	378	867	229%
San Carlos <sup>2</sup>	65	0	0%	32	0	0%	89	1	1%	182	207	114%	368	208	57%
San Mateo <sup>1</sup>	479	125	26%	239	85	36%	673	50	7%	1,046	1,511	144%	2,437	1,771	73%
South San Francisco <sup>1</sup>	277	121	44%	131	71	54%	360	104	29%	563	1,014	180%	1,331	1,310	98%
Woodside <sup>2</sup>	5	0	0%	3	0	0%	8	0	0%	25	126	504%	41	126	307%
San Mateo County <sup>1</sup>	252	31	12%	146	0	0%	454	0	0%	828	1,982	239%	1,680	2,013	120%
<b>County Totals</b>	<b>3,214</b>	<b>650</b>	<b>20%</b>	<b>1,567</b>	<b>818</b>	<b>52%</b>	<b>4,305</b>	<b>353</b>	<b>8%</b>	<b>7,219</b>	<b>8,468</b>	<b>117%</b>	<b>16,305</b>	<b>10,289</b>	<b>63%</b>



Date: November 18, 2015  
W.I.: 1512  
Referred by: P&A

Attachment A  
Resolution No. 4202

**OBAG 2**  
**One Bay Area Grant Program**  
**Project Selection Criteria and Programming Policy**

**OBAG 2 – One Bay Area Grant Program  
Project Selection Criteria and Programming Policy**

**TABLE OF CONTENTS**

**Background..... 1**  
**Revenue Estimates and Program Architecture..... 1**  
**Program Categories and Project List..... 5**  
**General Programming Policies ..... 6**  
**Regional Programs..... 11**  
**County Programming Policies ..... 14**  
**County Programs..... 18**

**Appendices**

- Appendix A-1 Regional and County Program Categories
- Appendix A-2 County Program Fund Distribution
- Appendix A-3 Regional and County Planning Activities
- Appendix A-4 County Federal-Aid Secondary (FAS)
- Appendix A-5 County Safe Routes to School (SRTS)
- Appendix A-6 Priority Conservation Area (PCA)
- Appendix A-7 CMA Call for Projects Guidance
- Appendix A-8 County PDA Investment and Growth Strategy
- Appendix A-9 Priority Conservation Area (PCA) Implementation
- Appendix A-10 Checklist for CMA and Local Jurisdiction Compliance with MTC Resolution 4202

The One Bay Area Grant Program (OBAG 2) is the second round of the federal funding program designed to support the implementation of *Plan Bay Area*, the region's first Sustainable Communities Strategy (SCS). OBAG 2 covers the five-year period from FY 2017-18 to FY 2021-22. The proposed revenue estimates, funding approach, programming policies, project guidance, and timeline for OBAG 2 are outlined in this attachment.

## **BACKGROUND**

The inaugural One Bay Area Grant Program (OBAG 1) was approved by the Commission in May 2012 (MTC Resolution 4035). The OBAG 1 program incorporated the following program features:

- Targeting project investments to the region's Priority Development Areas (PDAs);
- Rewarding jurisdictions that accept housing allocations through the Regional Housing Need Allocation (RHNA) process and produce housing;
- Supporting open space preservation in Priority Conservation Areas (PCAs); and
- Providing a larger and more flexible funding pot to deliver transportation projects in categories such as Transportation for Livable Communities (TLC), bicycle and pedestrian improvements, local streets and roads preservation, and planning activities, while also providing dedicated funding opportunities for Safe Routes to School activities and PCAs.

The early outcomes of the OBAG 1 program are documented in the One Bay Area Grant Report Card located at: ([http://files.mtc.ca.gov/pdf/OBAG\\_Report\\_Card.pdf](http://files.mtc.ca.gov/pdf/OBAG_Report_Card.pdf)). The key findings of the report highlight a variety of improvements as compared to previous federal highway funding programs, including: increased grant and project size, complexity, and multi-modality; significant investments in active transportation and TLC projects; region wide achievement of PDA investment targets; and compliance with local performance and accountability requirements. Considering the positive results achieved in OBAG 1, and in order to further extend the timeframe for OBAG to meet its policy goals, OBAG 2 maintains largely the same framework and policies.

## **REVENUE ESTIMATES AND PROGRAM ARCHITECTURE**

OBAG 2 funding is based on anticipated future federal transportation program apportionments from the regional Surface Transportation Program (STP) and Congestion Mitigation and Air Quality Improvement (CMAQ) Programs. The programming capacity estimated for OBAG 2 amounts to \$790 million (down from \$827 million programmed with OBAG 1). The decrease in revenues between program cycles reflects annual apportionment amounts in the federal surface transportation act (Moving Ahead for Progress in the 21<sup>st</sup> Century Act, or MAP-21) authorized after approval of OBAG 1 not keeping pace with estimated growth rates, as well as changes in state and federal programs that impacted estimated regional funding levels (such as the elimination of the Transportation Enhancements (TE) program).

The OBAG 2 program continues to integrate the region's federal transportation program with California's climate statutes and the Sustainable Communities Strategy (SCS), and contributes to

the implementation of the goals and objectives of the Regional Transportation Plan. Funding distribution formulas to the counties will continue to encourage land-use, housing and complete streets policies that support the production of housing with supportive transportation investments. This is accomplished through the following principles:

**1. Realistic Revenue Assumptions:**

OBAG 2 funding is based on anticipated future federal transportation program apportionments. In recent years, the Surface Transportation Program/Congestion Mitigation and Air Quality Improvement programs (STP/CMAQ) have not grown, and changes in the federal and state programs (such as elimination of the Transportation Enhancement (TE) program) have resulted in decreases that were not anticipated when OBAG 1 was developed. For OBAG 2, a 2% annual escalation rate above current federal revenues is assumed, consistent with the mark-up of the Developing a Reliable and Innovative Vision for the Economy (DRIVE) Act by the Senate Environment and Public Works Committee. Even with the 2% escalation, revenues for OBAG 2 are 4% less than OBAG 1 revenues.

If there are significant changes in federal apportionments over the OBAG 2 time period, MTC will return to the Commission to recommend adjustments to the program. These adjustments could include increasing or decreasing funding amounts for one or more programs, postponement of projects, expansion of existing programs, development of new programs, or adjustments to subsequent programming cycles.

Upon enactment and extension of the federal surface transportation authorizations expected during the OBAG funding period, MTC will need to closely monitor any new federal programs, their eligibility rules, and how funding is distributed to the states and regions. It is anticipated that any changes to the current federal programs would likely overlap to a large extent with projects that are currently eligible for funding under 23 U.S.C., although the actual fund sources may no longer mirror the current STP and CMAQ programs. Therefore, any reference to a specific fund source in the OBAG 2 programming serves as a proxy for replacement fund sources for which MTC has discretionary project selection and programming authority.

OBAG 2 programming capacity is based on apportionment rather than obligation authority. Because obligation authority (the amount actually received) is less than the apportionment level, there is typically a carryover balance from year to year of unfunded commitments. MTC's current negative obligation authority imbalance is \$51 million, and has held steady the past few years as a result of the region's excellent delivery record. Successful project delivery has allowed MTC to capture additional, unused obligation authority (OA) from other states, enabling the region to deliver additional projects each year. Because this negative balance has held steady, there does not appear to be a need to true-up the difference at this time. MTC staff will continue to monitor this OA shortfall throughout the OBAG 2 period and make adjustments as necessary in the next round of programming.

## 2. Support Existing Programs:

The OBAG program as a whole is expected to face declining revenues from \$827 million in OBAG 1 to \$790 million in OBAG 2. Therefore, no new programs are introduced with OBAG 2 and the funding reduction is spread among the various transportation needs supported in OBAG 1.

- The regional pot of funding decreases by 4%. With the exception of regional planning activities (which grows to account for escalation) and the Priority Conservation Area (PCA) program (which receives additional funds redirected from an OBAG 1 project), all other funding programs are either maintained at, or decreased from, their OBAG 1 funding levels.
- The base OBAG 2 county program decreases by 4%, primarily due to the elimination of the federal Transportation Enhancement (TE) program which contributed to the OBAG 1 funding pot. As compared to the county program under OBAG 1, largely the same planning and project type activities are proposed to be eligible under OBAG 2.

The OBAG 2 program categories and commitments for the regional and county programs are outlined in Appendix A-1.

## 3. Support Plan Bay Area's Sustainable Communities Strategy by Linking OBAG Funding to Housing:

### County Program Distribution Formula

OBAG 1's county distribution formula leveraged transportation dollars to reward jurisdictions that produce housing and accept housing allocations through the Regional Housing Need Allocation (RHNA) process. The formula also considered the share of affordable housing within housing production and RHNA allocations.

In OBAG 2, the county distribution formula is updated to use the latest housing data from the Association of Bay Area Government (ABAG). The formula is also based on housing over a longer time frame, considering housing production between 1999 and 2006 (weighted 30%) and between 2007 and 2014 (weighted 70%) in order to mitigate the effect of the recent recession and major swings in housing permit approvals.

At the request of the Commission at the July 2015 meeting of the Programming and Allocations Committee, staff developed three alternative OBAG 2 county distribution formulas for consideration (the alternatives are depicted in Attachment 2 to the November 4, 2015 Programming and Allocations Committee item). In comparison to the OBAG 1 formula, each of these alternatives place an additional emphasis on affordable housing. One of the alternatives expands the definition of affordable housing to include housing for moderate income households. Another alternative focuses on housing production, removing consideration of RHNA from the formula. This section will be updated to reflect the county distribution adopted by the Commission.

The distribution formula is further adjusted to ensure that CMA base planning funds are no more than 50% of the total distribution for that county. The resulting proposed county program formula distributions are presented in Appendix A-2.

Priority Development Areas (PDAs)

OBAG 2 continues to support the SCS for the Bay Area by promoting transportation investments in Priority Development Areas (PDAs).

- PDA Investment targets remain at OBAG 1 levels: 50% for the four North Bay counties and 70% for the remaining counties.
- PDA Investment and Growth Strategies should play a strong role in guiding the County CMA project selection and be aligned with the Plan Bay Area update cycle.

Priority Conservation Areas (PCAs)

OBAG 2 maintains the two separate Priority Conservation Area (PCA) programs as introduced in OBAG 1, with one program dedicating funding to the four North Bay counties and one competitive program for the remaining counties.

**4. Continue Flexibility and Local Transportation Investment Decision Making:**

OBAG 2 continues to provide the same base share of the funding pot (40%) to the county CMAs for local decision-making. The program allows CMAs the flexibility to invest in various transportation categories, such as Transportation for Livable Communities (TLC), bicycle and pedestrian improvements, local streets and roads preservation, and planning and outreach activities.

In addition to the base county program, two previously regional programs, Safe Routes to School and the Federal-Aid Secondary (rural roads), have been consolidated into the county program with guaranteed minimum funding amounts to ensure the programs continue to be funded at specified levels.

**5. Cultivate Linkages with Local Land-Use Planning:**

As a condition to access funds, local jurisdictions need to continue to align their general plans' housing and complete streets policies as a part of OBAG 2 and as separately required by state law.

Complete Streets Requirements

Jurisdictions must adopt a complete streets resolution by the date the CMAs submit their OBAG 2 project recommendations to MTC, incorporating MTC's required complete streets elements as outlined in [MTC's Complete Streets Guidance](#).

Alternatively, to recognize local jurisdictions' efforts to update their general plan circulation element to incorporate the provisions of the 2008 Complete Streets Act in response to the provisions stated in OBAG 1, a jurisdiction may adopt a significant revision to the circulation element of the general plan that complies with the Act after January 1, 2010 and before the date the CMAs submit their OBAG 2 project recommendations to MTC.

The approach above focuses on the adoption of local complete streets resolutions, while acknowledging the jurisdictions that took efforts to update their circulation element in anticipation of future OBAG requirements.

#### Housing Elements Requirements

Jurisdictions (cities and counties) must have a general plan housing element adopted and certified by the California Department of Housing and Community Development (HCD) for 2014-2022 RHNA by May 31, 2015. Jurisdictions that have failed to meet this deadline must have their housing elements certified by HCD by June 30, 2016 in order to be eligible to receive OBAG 2 funding.

Furthermore, under state statute, jurisdictions are required to submit Housing Element Annual Reports by April 1 every year. All cities and counties receiving OBAG 2 funding must comply with this requirement during the entire OBAG 2 funding period or risk deprogramming of OBAG 2 funding.

The complete streets and housing requirements are not required for jurisdictions with no general plan or land use authority such as Caltrans, CMAs or transit agencies under a JPA or district (not under the governance of a local jurisdiction). However, in such instances the jurisdiction in which the project is physically located must meet these requirements, except for transit/rail agency property such as, track, rolling stock or a maintenance facility.

#### Anti-Displacement Policies

Staff will return in February 2016 with recommendations related to anti-displacement policies for possible consideration.

### **6. Continue Transparency and Outreach to the Public Throughout the Process:**

CMAs will continue to report on their outreach process as part of their solicitation and selection of projects for OBAG. Each CMA will develop a memorandum addressing outreach efforts, agency coordination, distribution methodology and Title VI compliance. CMA reporting requirements are provided in Appendix A-10, the Checklist for CMA and Local Jurisdiction Compliance with MTC Resolution 4202.

## **PROGRAM CATEGORIES AND PROJECT LIST**

Appendix A-1 outlines the OBAG 2 program categories and commitments.

Attachment B of Resolution 4202 contains the list of projects to be programmed under the OBAG 2 program. Attachments B-1 and B-2 list the projects receiving OBAG 2 funding through the regional programs and county programs respectively. The project lists are subject to project selection actions (conducted by MTC for most of the regional programs and by the CMAs for the county programs and other funds distributed to them). MTC staff will update Attachments B-1 and B-2 as projects are selected or revised by the Commission and CMAs and are included in the federal Transportation Improvement Program (TIP).

## GENERAL PROGRAMMING POLICIES

The following programming policies apply to all projects funded in OBAG 2:

- 1. Public Involvement.** MTC is committed to a public involvement process that is proactive and provides comprehensive information, timely public notice, public access to key decisions, and opportunities for continuing involvement. MTC provides many methods to fulfill this commitment, as outlined in the *MTC Public Participation Plan*, Resolution No. 4174. The Commission's adoption of the OBAG 2 program, including policy and procedures, meets the provisions of the *MTC Public Participation Plan*. MTC's advisory committees and the Bay Area Partnership have been consulted in the development of funding commitments and policies for this program; and opportunities to comment have been provided to other stakeholders and members of the public.

Furthermore, investments made in the OBAG 2 program must be consistent with federal Title VI requirements. Title VI prohibits discrimination on the basis of race, color, income, and national origin in programs and activities receiving federal financial assistance. Public outreach to and involvement of individuals in low income and minority communities covered under Title VI of the Civil Rights Act and the Executive Order pertaining to Environmental Justice is critical to both local and regional decisions. Additionally, when CMAs select projects for funding at the county level, they must consider equitable solicitation and selection of project candidates in accordance with federal Title VI requirements (as set forth in Appendix A-7).

- 2. Commission Approval of Programs and Projects and the Transportation Improvement Program (TIP).** Projects approved as part of the OBAG 2 program must be amended into the TIP. The federally-required TIP is a comprehensive listing of all San Francisco Bay Area surface transportation projects that receive federal funds, and/or are subject to a federally required action, such as federal environmental clearance, and/or are regionally significant for air quality conformity or modeling purposes. It is the project sponsor's responsibility to ensure their project is properly programmed in the TIP in a timely manner. Where CMAs are responsible for project selection, the Commission will revise the TIP to include the resulting projects and Attachment B to this Resolution may be updated by MTC staff to reflect these revisions. Where responsibility for project selection is assigned to MTC, TIP amendments and a revision to Attachment B to add or delete a project will be reviewed and approved by the Commission. Changes to existing projects in Attachment B may be made by MTC staff following approval of a related TIP revision.
- 3. Minimum Grant Size.** Funding grants per project must be a minimum of \$500,000 for counties with a population over 1 million (Alameda, Contra Costa, and Santa Clara counties) and \$250,000 for counties with a population under one million (Marin, Napa, San Francisco, San Mateo, Solano, and Sonoma counties). The objective of a grant minimum requirement is to maximize the efficient use of federal funds and minimize the number of federal-aid projects which place administrative burdens on project sponsors, CMAs, MTC, Caltrans, and Federal Highway Administration (FHWA) staff.



To provide flexibility, an alternative averaging approach may be used. For this approach, a CMA may program grant amounts no less than \$100,000 for any project, provided that the overall average of all grant amounts within their County CMA Program meets the county minimum grant amount threshold. This lower threshold of \$100,000 also applies to Safe Routes to School projects, which are typically of smaller scale.

Furthermore, all OBAG 2 programming amounts must be rounded to thousands.

- 4. Air Quality Conformity.** In the Bay Area, it is the responsibility of MTC to make a regional air quality conformity determination for the TIP in accordance with federal Clean Air Act requirements and Environmental Protection Agency (EPA) conformity regulations. MTC evaluates the impact of the TIP on regional air quality during the update of the TIP. Non-exempt projects that are not incorporated in the current finding for the TIP will not be considered for funding in the OBAG 2 program until the development of a subsequent air quality finding for the TIP. Additionally, the U.S. Environmental Protection Agency has designated the Bay Area as a non-attainment area for fine particulate matter (PM<sub>2.5</sub>). Therefore, based on consultation with the MTC Air Quality Conformity Task Force, projects deemed Projects of Air Quality Concern (POAQC) must complete a hot-spot analysis as required by the Transportation Conformity Rule. Generally, POAQC are those projects that result in significant increases in, or concentrations of, emissions from diesel vehicles.
- 5. Environmental Clearance.** Project sponsors are responsible for compliance with the requirements of the California Environmental Quality Act (Public Resources Code § 21000 et seq.), the State Environmental Impact Report Guidelines (14 California Code of Regulations Section § 15000 et seq.), and the National Environmental Protection Act (42 U.S.C. § 4321 et seq.) standards and procedures for all projects with federal funds.
- 6. Application and Resolution of Local Support.** Once a project has been selected for funding, project sponsors must submit a completed project application for each project through MTC's Funding Management System (FMS). The project application consists of two parts: 1) a project submittal and/or TIP revision request to MTC staff through FMS, and 2) a Resolution of Local Support approved by the project sponsor's governing board or council and submitted in FMS. A template for the Resolution of Local Support can be downloaded from the MTC website using the following link: <http://www.mtc.ca.gov/funding/obag2>
- 7. Project Screening and Compliance with Regional and Federal Requirements.** MTC staff will perform a review of projects proposed for OBAG 2 to ensure 1) eligibility; 2) consistency with the region's long-range plan; and 3) project readiness. In addition, project sponsors must adhere to directives such as the Complete Streets Requirements, Housing Element Requirements, and the Regional Project Funding Delivery Policy (MTC Resolution No. 3606), as outlined below, and provide the required matching funds. Project sponsors should note that fund source programs, eligibility criteria, and regulations may change as a result of the passage of new surface transportation authorization legislation. In this situation, MTC staff will work to realign new fund sources with the funding commitments approved by the Commission.

- ▶ **Federal Project Eligibility:** STP is the most flexible source of federal funding, with a wide range of projects that may be considered eligible. Eligible projects include roadway and bridge improvements (construction, reconstruction, rehabilitation, resurfacing, restoration), public transit capital improvements, pedestrian and bicycle facilities, transportation system management, transportation demand management, transportation control measures, mitigation related to an STP project, surface transportation planning activities, and safety. More detailed eligibility requirements can be found in 23 U.S.C § 133 and at: <http://www.fhwa.dot.gov/map21/factsheets/stp.cfm>.

CMAQ is a more targeted funding source. In general, CMAQ funds may be used for new or expanded transportation projects, programs, and operations that help reduce emissions. Eligible project categories that meet this basic criteria include: Transportation activities in an approved State Implementation Plan (SIP), Transportation Control Measures (TCMs), alternative fuels, traffic flow improvements, transit expansion projects, new bicycle and pedestrian facilities and programs, travel demand management, outreach and rideshare activities, telecommuting programs, intermodal freight, planning and project development activities, and experimental pilot projects. For more detailed information, refer to FHWA's revised guidance provided at: [http://www.fhwa.dot.gov/environment/air\\_quality/cmaq/policy\\_and\\_guidance/](http://www.fhwa.dot.gov/environment/air_quality/cmaq/policy_and_guidance/).

MTC reserves the right to assign specific fund sources to projects based on availability and eligibility requirements. In the event that a new surface transportation authorization is enacted during implementation of OBAG 2 that materially alters these programs, MTC staff will work with the CMAs and project sponsors to match projects with appropriate federal fund programs.

- ▶ **RTP Consistency:** Projects funded through OBAG 2 must be consistent with the adopted Regional Transportation Plan (currently *Plan Bay Area*). Project sponsors must identify each project's relationship with meeting the goals and objectives of the RTP, including the specific RTP ID number or reference. RTP consistency will be verified by MTC staff for all OBAG 2 projects. Projects in the County program will also be reviewed by CMA staff prior to submitting selected projects to MTC.
- ▶ **Complete Streets Policy:** Federal, state and regional policies and directives emphasize the accommodation of bicyclists, pedestrians, and persons with disabilities when designing transportation facilities. MTC's Complete Streets Policy (MTC Resolution No. 3765) created a checklist that is intended for use on projects to ensure the accommodation of non-motorized travelers is considered at the earliest conception or design phase. The county CMAs ensure that project sponsors complete the checklist before projects are considered by the county for OBAG 2 funding and submitted to MTC. The CMAs are required to make completed checklists available to their Bicycle and Pedestrian Advisory Committee (BPAC) for review prior to CMAs' project selection actions.

Related state policies include: Caltrans Complete Streets Policy Deputy Directive 64 R1, which stipulates pedestrians, bicyclists and persons with disabilities must be considered in all programming, planning, maintenance, construction, operations, and project development activities and products; and the California Complete Streets Act of 2008, which requires local agency general plan circulation elements to address all travel modes.

- **Project Delivery and Monitoring:** OBAG 2 funding is available in the following five federal fiscal years: 2017-18, 2018-19, 2019-20, 2020-21, and 2021-22. Funds may be programmed in any of these years, conditioned upon the availability of federal apportionment and obligation authority (OA), and subject to TIP financial constraint requirements. In addition, in order to provide uninterrupted funding to ongoing efforts and to provide more time to prepare for the effective delivery of capital projects, priority of funding for the first year of programming apportionment (FY 2017-18) will be provided to ongoing programs, such as regional and CMA planning, non-infrastructure projects, and the preliminary engineering phase of capital projects.

Specific programming timelines will be determined through the development of the Annual Obligation Plan, which is developed by MTC staff in collaboration with the Bay Area Partnership technical working groups and project sponsors. Once programmed in the TIP, the funds must be obligated by FHWA or transferred to the Federal Transit Administration (FTA) within the federal fiscal year the funds are programmed in the TIP. Additionally, all OBAG 2 funds must be obligated no later than January 31, 2023.

Obligation deadlines, project substitutions and redirection of project savings will continue to be governed by the MTC Regional Project Funding Delivery Policy (MTC Resolution No. 3606 and any subsequent revisions). All funds are subject to obligation, award, invoicing, reimbursement and project close-out requirements. The failure to meet these deadlines may result in the de-programming and redirection of funds to other projects.

To further facilitate project delivery and ensure all federal funds in the region are meeting federal and state regulations and deadlines, every recipient of OBAG 2 funding is required to identify and maintain a staff position that serves as the single point of contact (SPOC) for the implementation of all FHWA-administered funds within that agency. The person in this position must have sufficient knowledge and expertise in the federal-aid delivery process to coordinate issues and questions that may arise from project inception to project close-out. The agency is required to identify the contact information for this position at the time of programming of funds in the TIP, and to notify MTC immediately when the position contact has changed. This person will be expected to work closely with FHWA, Caltrans, MTC and the respective CMA on all issues related to federal funding for all FHWA-funded projects implemented by the recipient.

Project sponsors that continue to miss delivery milestones and funding deadlines for any federal funds are required to prepare and update a delivery status report on all projects with FHWA-administered funds they manage, and participate, if requested, in a consultation meeting with the county CMA, MTC and Caltrans prior to MTC approving future programming or including any funding revisions for the agency in the TIP. The purpose of the status report and consultation is to ensure the local public agency has the resources and technical capacity to deliver FHWA federal-aid projects, is fully aware of the required delivery deadlines, and has developed a delivery timeline that takes into consideration the requirements and lead-time of the federal-aid process within available resources.

By applying for and accepting OBAG 2 funding, the project sponsor is acknowledging that it has and will maintain the expertise and staff resources necessary to deliver the federal-aid project within the project-funding timeframe.

- ▶ **Funding Exchange:** Sometimes federal funds may not be the best fit for projects being implemented to meet plan and program goals and objectives. In such cases, federal OBAG funding may be exchanged with non-federal funds. MTC staff will work with the CMAs when such opportunities arise. Such exchanges must be consistent with MTC's fund exchange policy (MTC Resolution No. 3331) and the locally-funded project must be included in the federal TIP.
- ▶ **Local Match:** Projects funded with STP or CMAQ funding require a non-federal local match. Although local match requirements are subject to change, the current local match requirement for STP and CMAQ funded projects in California is 11.47% of the total project cost, with FHWA providing up to 88.53% of the total project cost through reimbursements. For capital projects, sponsors that fully fund the project development or Preliminary Engineering (PE) phase with non-federal funds may use toll credits in lieu of a match for the construction phase. For these projects, sponsors must still meet all federal requirements for the PE phase.
- ▶ **Fixed Program and Specific Project Selection:** Projects are chosen for the program based on eligibility, project merit, and deliverability within established deadlines. The OBAG 2 program is project-specific and the funds programmed to projects are for those projects alone.

The OBAG 2 program funding is fixed at the programmed amount; therefore, any project cost increases may not be covered by additional OBAG 2 funds. Project sponsors are responsible for securing the necessary match, and for cost increases or additional funding needed to complete the project, including contingencies.

## **REGIONAL PROGRAMS**

The programs below comprise the OBAG 2 Regional Programs, managed by MTC. Funding amounts for each program are included in Appendix A-1. Individual projects will be added to Attachment B-1 and B-2 as they are selected and included in the federal TIP.

### **1. Regional Planning Activities**

This program provides funding to support regional planning and outreach activities.

Appendix A-3 details the funding amounts and distribution for planning and outreach activities.

### **2. Pavement Management Program**

This continues the region's acclaimed Pavement Management Program (PMP) and related activities including the Pavement Technical Assistance Program (PTAP), training, and regional and statewide local streets and roads needs assessment. MTC provides grants to local jurisdictions to perform regular inspections of their local streets and roads networks and to update their pavement management systems which is a requirement to receive certain funding. MTC also assists local jurisdictions in conducting associated data collection and analysis efforts including local roads needs assessments and inventory surveys and asset management analysis that feed into regional planning efforts. MTC provides, training, research and development of pavement and non-pavement preservation management techniques, and participates in the statewide local streets and roads needs assessment effort.

To support the collection and analysis of local roads asset conditions for regional planning efforts and statewide funding advocacy, to be eligible for OBAG 2 funding for local streets and roads, a jurisdiction must:

- Have a certified Pavement Management Program (StreetSaver® or equivalent) updated at least once every three years (with a one-year extension allowed); and
- Fully participate in the statewide local streets and road needs assessment survey (including any assigned funding contribution); and
- Provide updated information to the Highway Performance Monitoring System (HPMS) at least once every 3 years (with a one-year grace period allowed).

### **3. Regional Priority Development Area (PDA) Planning & Implementation**

Funding in this program implements the following:

Regional PDA Planning and Implementation: The PDA Planning Program places an emphasis on intensifying land uses at and near transit stations and along transit corridors in PDAs. The key goals of the program are to: increase supply of affordable and market rate housing, jobs and services within the PDA planning area; boost transit ridership and thereby reduce vehicle miles traveled by PDA residents, employees and visitors; increase walking and bicycling by improving multi-modal access and effectively managing parking; and locate key services and retail within the PDA planning area. Funding is available for regional planning and implementation efforts and grants to jurisdictions to provide PDA planning support, and typically fund specific plans and programmatic Environmental Impact Reports. PDA plans funded through the program focus on a range of transit-supportive elements including market demand analysis, affordable housing strategies, multi-modal connectivity including pedestrian-friendly design standards, parking

demand analysis, infrastructure development, implementation planning and financing strategies and strategies to advance the Air District's Planning Healthy Places guidelines<sup>1</sup>. The PDA Planning Program will give priority to cities with high risk of displacement in order to support the development of local policies and programs.

#### **4. Climate Initiatives Program**

The purpose of the OBAG 2 Climate Initiatives Program is to support the implementation of strategies identified in Plan Bay Area to achieve the required CO<sub>2</sub> emissions reductions per SB375 and federal criteria pollutant reductions. Investments focus on projects and programs with effective greenhouse gas emission reduction results.

#### **5. Priority Conservation Area (PCA) Program**

The Priority Conservation Area (PCA) Program provides funding for the development of plans and projects to assist in the preservation and enhancement of rural lands. Specifically, projects must support Plan Bay Area by preserving and enhancing the natural, economic and social value of rural lands and open space amidst a growing population across the Bay Area, for residents and businesses. The PCA program includes one approach for the North Bay counties (Marin, Napa, Solano, and Sonoma) and a second approach for the remaining five counties.

In the North Bay, each of the four CMAs will take the lead to develop a county-wide program, building on PCA planning conducted to date to select projects for funding.

For the remaining counties, MTC will partner with the Coastal Conservancy, a California State agency, to program the PCA funds. MTC will provide federal funding which will be combined with the Coastal Conservancy's own program funds in order to support a broader range of projects (i.e. land acquisition and easement projects) than can be accommodated with federal transportation dollars alone. The Coastal Conservancy, MTC, and ABAG staff will cooperatively manage the call for proposals.

The minimum non-federal match required for PCA-program funding is 2:1.

As a part of the update to *Plan Bay Area*, MTC is exploring implementing a Regional Advance Mitigation Planning (RAMP) Program. RAMP would mitigate certain environmental impacts from multiple planned transportation projects, rather than mitigating on a less-efficient per-project level. Partnering arrangements can be established to leverage multiple fund sources in order to maximize benefits of the RAMP and PCA programs. As such, PCA funds may be used to deliver net environmental benefits to a RAMP program project.

In instances where federal funds may not be used for this purpose, sponsors may exchange OBAG 2 funds with eligible non-federal funds. Such exchanges must be consistent with MTC's fund exchange policy (MTC Resolution No. 3331).

Appendix A-9 outlines the framework for this program including goals, project screening, eligibility, eligible sponsors, and project selection.

---

<sup>1</sup> Guidance will be developed in partnership with BAAQMD, CMAs, ABAG, and city staff pending the release of these guidelines in early 2016.

## **6. Regional Active Operational Management**

This program is administered at the regional level by MTC to actively manage congestion through cost-effective operational strategies that improve mobility and system efficiency across freeways, arterials and transit modes. Funding continues to be directed to evolving MTC operational programs such as next generation 511, Freeway Service Patrol (FSP), incident management program, managed lanes and regional rideshare program. Funding will also be directed to new initiatives such as the Columbus Day Initiative that deploys advanced technologies and Transportation Management Systems that ensures the existing and new technology infrastructure is operational and well-maintained.

### Columbus Day Initiative

The Columbus Day Initiative (CDI) builds on the proven success of its predecessor program (the Freeway Performance Initiative), which implemented traditional fixed time-of-day freeway ramp metering and arterial signal timing projects that achieved significant delay reduction and safety on Bay Area freeways and arterials at a fraction of the cost of traditional highway widening projects. The CDI aims to deliver cost-effective, technology-driven operational improvement projects such as, adaptive ramp metering, hard shoulder running lanes, queue warning signs, connected vehicle technologies, shared mobility technologies, and regional arterial operations strategies. Projects would target priority freeway and arterial corridors with significant congestion. Funding for performance monitoring activities and corridor studies is included to monitor the state of the system and to identify and assess the feasibility of operational strategies to be deployed.

### Transportation Management Systems

This program includes the operations and management of highway operations field equipment; critical freeway and incident management functions; and Transportation Management Center (TMC) staff resources needed to actively operate and maintain the highway system.

## **7. Transit Priorities Program**

The objective of the Transit Priorities Program is to assist transit operators to fund major fleet replacements, including the BART Car Replacement Phase 1 project, fixed guideway rehabilitation and other high-scoring capital needs, including replacement of Clipper equipment and development of Clipper 2.0, that are consistent with MTC's Transit Capital Priorities policy for programming federal transit funds (MTC Resolution 4140 or successor resolution).

The program also implements elements of the Transit Sustainability Project by making transit-supportive investments in major transit corridors that can be carried out within two years through the Transit Performance Initiative (TPI). The focus of TPI is on making cost-effective operational improvements on significant trunk lines which carry the largest number of passengers in the Bay Area including transit signal prioritization, passenger circulation improvements at major hubs, boarding/stop improvements and other improvements to improve the passenger experience.

## COUNTY PROGRAMMING POLICIES

The policies below apply to the programs managed by the county Congestion Management Agencies (CMAs) or substitute agency:

- ▶ Program Eligibility: The CMA, or substitute agency, may program funds from its OBAG 2 county fund distribution to projects that meet the eligibility requirements for any of the following transportation improvement types:
  - Planning and Outreach Activities
  - Local Streets and Roads Preservation
  - Bicycle and Pedestrian Improvements
  - Transportation for Livable Communities
  - Safe Routes To School
  - Priority Conservation Areas
  - Federal Aid Secondary (FAS) Improvements

- ▶ Fund Sources & Formula Distribution: OBAG 2 is funded primarily from two federal fund sources: STP and CMAQ. The CMAs will be provided a breakdown of specific OBAG 2 fund sources, with the understanding that actual fund sources are subject to change. Should there be significant changes to federal fund sources, MTC staff will work with the CMAs to identify and realign new fund sources with the funding commitments approved by the Commission. Furthermore, due to strict funding availability and eligibility requirements, the CMAs must adhere to the fund source limitations provided. Exceptions may be granted by MTC staff based on actual fund source availability and final federal apportionment levels.

Consistent with OBAG 1, 60% of available OBAG 2 funding is assigned to Regional Programs and 40% assigned to the base County CMA Programs. The Safe Routes to School (SRTS) and Federal Aid Secondary (FAS) programs augment the county base funding, bringing the final proportionate share to 55% regional and 45% county. The Base county funds (SRTS & FAS have their own formula distribution) are distributed to each county based on the OBAG 2 county distribution formula (see page 3). Counties are further guaranteed that the funding amount for planning purposes will not exceed 50% of their total distribution. This results in the county of Napa receiving additional funding. This planning guarantee clause results in a slight deviation in the final OBAG 2 fund distribution for each county. The base County CMA Program fund distribution after the planning guarantee adjustment is shown in Appendix A-2.

- ▶ Priority Development Area (PDA) Policies
  - PDA minimum investment: CMAs in larger counties (Alameda, Contra Costa, San Mateo, San Francisco, and Santa Clara) shall direct at least 70% of their OBAG 2 investments to PDAs. For North Bay counties (Marin, Napa, Solano, and Sonoma) this minimum target is 50% to reflect the more rural nature of these counties. CMA planning and outreach costs partially count towards PDA minimum investment targets (70% or 50%, in line with each county's PDA



minimum investment target). The guaranteed minimum for Priority Conservation Area (PCA), Safe Routes to School (SRTS), and Federal Aid Secondary (FAS) do not count towards PDA targets. The PDA/non-PDA funding split is shown in Appendix A-2.

- PDA boundary delineation: Refer to [http://gis.mtc.ca.gov/interactive\\_maps/](http://gis.mtc.ca.gov/interactive_maps/) which provides a GIS overlay of the PDAs in the Bay Area to exact map boundaries including transportation facilities. This map is updated as ABAG approves new PDA designations.
  - Defining proximate access to PDAs: The CMAs may determine that a project located outside of a PDA provides proximate access to the PDA, and thus counts towards the county's minimum PDA investment target. The CMA is required to map these projects along with the associated PDA(s) and provide a policy justification for designating the project as supporting a PDA through proximate access. This information should assist decision makers, stakeholders, and the public in evaluating the impact of the investment on a nearby PDA, to determine whether or not the investment should be credited towards the county's PDA minimum investment target. This information must be presented for public review when the CMA board acts on OBAG programming decisions.
  - PDA Investment & Growth Strategy: Updates to each county's PDA Investment & Growth Strategy are required every four years and must be adopted by the CMA Board. The updates should be coordinated with the countywide plan and Regional Transportation Plan (RTP) updates to inform RTP development decisions. Interim status reports are required two years after each update to address needed revisions and provide an activity and progress status. See Appendix A-8 for details.
- ▶ Project Selection: County CMAs or substitute agencies are given the responsibility to develop a project selection process. The process should include solicitation of projects, identifying evaluation criteria, conducting outreach, evaluating project applications, and selecting projects.
- Public Involvement: In selecting projects for federal funding, the decision making authority is responsible for ensuring that the process complies with federal statutes and regulations. In order to ensure that the CMA process for administering OBAG 2 is in compliance with federal regulations, CMAs are required to lead a public outreach process as directed by Appendix A-7.
  - Unified Call for Projects: CMAs are requested to issue one unified call for projects for their OBAG 2 program. Final project lists are due to MTC by ~~October 31, 2016~~[January 31, 2017](#), with all associated project information submitted to MTC using the Fund Management System (FMS) by ~~November 30, 2016~~[February 28, 2017](#). On a case-by-case basis and as approved in advance by MTC staff, these deadlines may be waived to allow coordination

with other county-wide call for projects or programming needs. The goal is to coordinate the OBAG2 call for projects, and provide project sponsors the maximum time to deliver projects.

- Project Programming Targets and Delivery Deadlines: CMAs must program their block grant funds over the OBAG 2 period (FY 2017-18 through FY 2021-22). In general, the expectation is that on-going activities such as CMA planning, non-infrastructure projects and the Preliminary Engineering (PE) phase of projects would use capacity in the first year, followed by the capital phases of project in later years.
  - OBAG 2 funding is subject to the provisions of the Regional Project Delivery Policy (MTC Resolution 3606, or its successor) including the deadlines for Request for Authorization (RFA) submittal and federal authorization/obligation. Additionally, the following funding deadlines apply for each county, with earlier delivery strongly encouraged:
    - At least half of the OBAG 2 funds, must be obligated (federal authorization/FTA Transfer) by January 31, 2020.
    - All remaining OBAG 2 funds must be obligated by January 31, 2023.
- Performance and Accountability Policies: Jurisdictions need to comply with the following policies, as well as other requirements noted in the document, in order to be eligible recipients of OBAG 2 funds.
- Adopt a complete streets resolution by the date the CMAs submit their OBAG 2 project recommendations to MTC, incorporating MTC's required complete streets elements as outlined in [MTC's Complete Streets Guidance](#).

Alternatively, to recognize local jurisdiction's efforts to update their general plan circulation element to incorporate the provisions of the 2008 Complete Streets Act in response to the provisions stated in OBAG 1, a jurisdiction may adopt a significant revision to the circulation element of the general plan that complies with the Act after January 1, 2010.

For compliance, a substantial revision of the circulation element, passed after January 1, 2010, shall "...plan for a balanced, multimodal transportation network that meets the needs of all users of streets, roads, and highways for safe and convenient travel in a manner that is suitable to the rural, suburban, or urban context of the general plan," while complying with the other provisions of CA Government Code Section 65302 and Complete Streets Act of 2008.

The approach above focuses on the adoption of local complete streets resolutions, while acknowledging the jurisdictions that took efforts to update their circulation element in anticipation of future OBAG requirements.

- Jurisdictions (cities and counties) must have a general plan housing element adopted and certified by the California Department of Housing and Community Development (HCD) for 2014-2022 RHNA by May 31, 2015.
- Jurisdictions that have failed to meet this deadline must have their housing elements certified by HCD by June 30, 2016 in order to be eligible to receive OBAG 2 funding.
- Furthermore, under state statute, jurisdictions are required to submit Housing Element Annual Reports by April 1 every year. All cities and counties receiving OBAG 2 funding must comply with this statute during the entire OBAG 2 funding period or risk deprogramming of OBAG 2 funding.
- Anti-Displacement Policies. Staff will return in February 2016 with recommendations related to anti-displacement policies for possible consideration.
- For jurisdictions with local public streets and roads, to be eligible for OBAG 2 funding, the jurisdiction must:
  - Have a certified Pavement Management Program (StreetSaver® or equivalent) updated at least once every three years (with a one-year extension allowed);
  - Fully participate in the statewide local streets and road needs assessment survey; and
  - Provide updated information to the Highway Performance Monitoring System (HPMS) at least once every 3 years (with a one-year grace period allowed).
- For a transit agency project sponsor under a Joint Powers Authority (JPA) or district (not under the governance of a local jurisdiction), or an agency where housing and complete streets policies do not apply, the jurisdiction where the project is located (such as station/stop improvements) will need to comply with the policies and other requirements specified in this attachment before funds may be programmed to the project sponsor. However, this is not required if the project is transit/rail agency property such as, track, rolling stock or a transit maintenance facility.
- OBAG 2 funds may not be programmed to any jurisdiction out of compliance with the policies and other requirements specified in this attachment.
- The CMA will be responsible for tracking progress towards all OBAG 2 requirements and affirming to MTC that a jurisdiction is in compliance prior to MTC programming OBAG 2 funds to its projects in the TIP. CMAs will provide the following prior to programming projects in the TIP (see Appendix A-10):

- o Documentation of the approach used to select OBAG 2 projects including outreach efforts, agency coordination, Title VI compliance, and the methodology used for distributing funds within the county;
- o The board adopted list of projects recommended for OBAG 2 funding;
- o Self-certification that all projects recommended for funding are consistent with the current RTP (including documentation) and have completed project-specific Complete Streets Checklists (including documentation);
- o Identification of the Single-Point of Contact assigned by the jurisdiction for all FHWA-funded projects, including OBAG 2 projects;
- o Documentation of local jurisdiction compliance with MTC's Complete Streets Policy, including a list of the status of each jurisdiction, a letter from the CMA for each jurisdiction describing how the jurisdiction meets the policy requirements, and supporting documentation for each local jurisdiction (resolutions and/or circulation elements)
- o Documentation of local jurisdiction compliance with MTC's Housing Element requirements, including a list of the status of each jurisdiction's Annual Housing Element Progress Report as well as any supporting documentation for each jurisdiction (progress reports and copies of submittal letter to HCD). This documentation will be required annually from CMAs (April 30 each year) throughout the OBAG 2 programming period;
- o Documentation for any projects recommended for funding that apply toward the county's minimum PDA investment target. This includes mapping of all mappable projects (projects with a physical location). For projects that are not physically located within a PDA, the CMA is required to map each project along with the associated PDA(s) and provide a policy justification for designating each project as supporting a PDA through proximate access. CMAs must also document that this information was used when presenting its program of projects to their board and the public; and
- o Self-certification that the PDA Investment and Growth Strategy has been completed and adopted by the CMA Board, or will be adopted in coordination with the RTP update. Documentation of required updates and interim progress reports must also be submitted by the CMAs throughout the OBAG 2 period.

## **COUNTY PROGRAMS**

The categories below comprise the eligible OBAG 2 County Programs, administered by the nine county CMAs. The CMAs should ensure that the project selection process and selected projects meet all of eligibility requirements throughout this document as well as in federal statutes and

regulations. MTC staff will work with CMAs and project sponsors to resolve any eligibility issues which may arise, including air quality conformity exceptions and requirements.

## **County CMA Program**

The base OBAG 2 County program accounts for 40% of the total funding available through OBAG 2 and is distributed to each county according to the OBAG 2 county formula after accounting for the CMA Planning minimum guarantee (see Appendices A-2 and A-3). This program includes CMA planning and outreach as well as the various projects selected through each county's competitive call for projects. Projects selected through the base county program are subject to the PDA investment minimum requirements.

### **1. CMA Planning and Outreach**

This category provides funding to the county Congestion Management Agency (CMA) or substitute agency to support programming, monitoring and outreach activities. Such efforts include, but are not limited to: county-based planning efforts for development of the RTP/Sustainable Communities Strategy (SCS); development of PDA growth strategies; development and implementation of a complete streets compliance protocol; establishing land use and travel forecasting process and procedures consistent with ABAG/MTC; ensuring the efficient and effective delivery of federal-aid local projects; and undertaking the programming of assigned funding and solicitation of projects.

The minimum funding level for the CMA planning and outreach program continues OBAG 1 commitments by escalating FY 2016-17 amounts at 2% per year. In addition, counties are guaranteed that the base funding level for the CMA's planning and outreach program will not exceed 50% of the county's total OBAG 2 County Program distribution. Actual CMA planning and outreach amounts for each county, are shown in Appendix A-3.

At their discretion, the CMAs may choose to designate additional funding from their County Program to augment their planning and outreach efforts.

All funding and activities will be administered through an interagency agreement between MTC and the respective CMA.

### **2. Local Streets and Roads Preservation**

This category is for the preservation of local streets and roads on the federal-aid system. To be eligible for funding of any Local Streets and Roads (LSR) preservation project, the jurisdiction must have a certified Pavement Management Program (StreetSaver® or equivalent). In addition, selected pavement projects should be based on the needs analysis resulting from the established Pavement Management Program (PMP) for the jurisdiction. This requirement ensures that streets selected for investment are cost effective. MTC is responsible for verifying the certification status of jurisdictions. The current certification status of area jurisdictions can be found at <http://www.mtc.ca.gov/services/pmp/>.

Furthermore, to support the collection and analysis of local roads asset conditions for comprehensive regional planning efforts and statewide funding advocacy, a jurisdiction must

fully participate in the statewide local streets and road needs assessment survey to be eligible for OBAG 2 funding for pavement rehabilitation.

Eligibility requirements for specific project types are included below:

▶ Pavement Rehabilitation:

All pavement rehabilitation projects, including projects with pavement segments with a Pavement Condition Index (PCI) below 70, must be consistent with segments recommended for treatment within the programming cycle by the jurisdiction's PMP.

▶ Preventive Maintenance:

Only projects where pavement segments have a PCI of 70 or above are eligible for preventive maintenance. Furthermore, the local agency's PMP must demonstrate that the preventive maintenance strategy is a cost effective method of extending the service life of the pavement.

▶ Non-Pavement:

Eligible non-pavement activities and projects include rehabilitation or replacement of existing features on the roadway facility, such as bridge structures, storm drains, National Pollutant Discharge Elimination System (NPDES), curbs, gutters, culverts, medians, guardrails, safety features, signals, signage, sidewalks, ramps, complete streets elements and features that bring the facility to current standards. Jurisdictions must have a certified PMP to be eligible to receive funding for improvements to non-pavement features.

Activities that are not eligible for funding include: Air quality non-exempt projects (unless granted an exception by MTC staff), new roadways, roadway extensions, right of way acquisition for future expansion, operations, routine maintenance, spot application, enhancements that are above and beyond repair or replacement of existing assets (other than bringing roadway to current standards or implementing complete streets elements) and any pavement application not recommended by the PMP unless otherwise allowed above.

Federal-Aid Eligible Facilities: Federal-aid highways as defined in 23 U.S.C. 101(a)(6) are eligible for local streets and roads preservation funding. A federal-aid highway is a public road that is not classified as a rural minor collector or local road (residential) or lower. Project sponsors must confirm the eligibility of their roadway through the Highway Performance Monitoring System (HPMS) prior to the application for funding.

### ***3. Bicycle and Pedestrian Improvements***

This category funds a wide range of bicycle and pedestrian improvements including Class I, II and III bicycle facilities; cycle tracks; bicycle education, outreach, sharing and parking; sidewalks, ramps, pathways and pedestrian bridges; user safety and supporting facilities; and traffic signal actuation. Bicycle and pedestrian projects may be located on or off the federal-aid highway system.

Additional eligibility requirements will apply to bicycle and pedestrian projects that are funded with CMAQ funds rather than STP funds, given the more limited scope of the CMAQ funding program. According to CMAQ eligibility requirements, bicycle and pedestrian facilities must not be exclusively recreational and should reduce vehicle trips resulting in air pollution reductions. Also, the hours of operation need to be reasonable and support bicycle/pedestrian needs, particularly during commute periods. For example, the policy that a trail be closed to users before sunrise or after sunset may limit users from using the facility during the portions of peak commute hours, particularly during times of the year with shorter days.

#### **4. Transportation for Livable Communities**

The purpose of Transportation for Livable Communities (TLC) projects is to support community-based transportation projects that bring new vibrancy to downtown areas, commercial cores, high-density neighborhoods, and transit corridors; enhancing their amenities and ambiance and making them places where people want to live, work and visit. The TLC program supports the RTP/SCS by investing in improvements and facilities that promote alternative transportation modes rather than the single-occupant automobile.

General project categories include the following:

- Transit station improvements such as plazas, station access, pocket parks, and bicycle parking.
- Transit expansions serving PDAs.
- Complete Streets improvements that improve bicycle and pedestrian access and encourage use of alternative modes.
- Cost-effective, technology-driven active operational management strategies for local arterials and for highways when used to augment other fund sources or match challenge grants.
- Transportation Demand Management (TDM) projects including car sharing, vanpooling traveler coordination and information, and Clipper®-related projects.
- Transit access projects connecting high density housing/jobs/mixed land use to transit, such as bicycle/pedestrian paths and bridges and safe routes to transit.
- Streetscape projects focusing on high-impact, multi-modal improvements or associated with high density housing/mixed use and transit, such as bulb outs, sidewalk widening, crosswalk enhancements, audible signal modification, mid-block crossing and signals, new striping for bicycle lanes and road diets, pedestrian street lighting, medians, pedestrian refuges, wayfinding signage, tree grates, bollards, permanent bicycle racks, signal modification for bicycle detection, street trees, raised planters, planters, costs associated with on-site storm water management, permeable paving, and pedestrian-scaled street furniture including bus shelters, benches, magazine racks, garbage and recycling bins.
- Mobility management and coordination projects that meet the specific needs of seniors and individuals with disabilities and enhance transportation access for populations beyond those served by one agency or organization within a community. Examples include the integration and coordination of services for individuals with disabilities, seniors, and low-income individuals; individualized travel training and trip

- planning activities for customers; the development and operation of one-stop transportation traveler call centers to coordinate transportation information on all travel modes and to manage eligibility requirements and arrangements for customers among supporting programs; and the operation of transportation brokerages to coordinate providers, funding agencies and passengers. Selected projects may need to transfer the STP/CMAQ funds received to FTA.
- PDA planning and implementation, including projects that incentivize local PDA transit oriented development housing (within funding eligibility limitations unless exchanged).
  - Density incentives projects and non-transportation infrastructure improvements that include density bonuses, sewer upgrade, land banking or site assembly (these projects require funding exchanges to address federal funding eligibility limitations).

Activities that are not eligible for funding include: air quality non-exempt projects (unless granted an exception by MTC staff), new roadways, roadway extensions, right of way acquisition for future expansion, operations, and routine maintenance.

### **Additional County Programs**

In addition to the base County CMA Program, OBAG 2 directs additional funds to the CMAs to distribute to eligible project types. These programs are the Safe Routes to School (SRTS) program, the Federal Aid Secondary Shares Continuation (FAS) program, and for the North Bay Counties, the Priority Conservation Area (PCA) program.

#### **1. Safe Routes to School**

Eligible projects for the Safe Routes to School (SRTS) program include infrastructure and non-infrastructure projects that facilitate reduction in vehicular travel to and from schools. It is important to note that this program is funded exclusively by the CMAQ funding program. Given the intent of the CMAQ program to reduce vehicular emissions, the OBAG 2 SRTS program is targeted towards air quality improvement rather than the health or safety of school-aged children. Despite this limitation, project eligibility under CMAQ largely overlaps with typical eligibility requirements for Safe Routes to School programs. Detailed examples of eligible projects are provided below:

##### Eligible Non-Infrastructure Projects

###### Public Education and Outreach Activities

- Public education and outreach can help communities reduce emissions and congestion by inducing drivers to change their transportation choices
- Activities that promote new or existing transportation services, developing messages and advertising materials (including market research, focus groups, and creative), placing messages and materials, evaluating message and material dissemination and public awareness, technical assistance, programs that promote the Tax Code provision related to commute benefits, and any other activities that help forward less-polluting transportation options



- Air quality public education messages: Long-term public education and outreach can be effective in raising awareness that can lead to changes in travel behavior and ongoing emissions reductions; therefore, these activities may be funded indefinitely
- Non-construction outreach related to safe bicycle use
- Travel Demand Management (TDM) activities including traveler information services, shuttle services, carpools, vanpools, parking pricing, etc.

#### Eligible Infrastructure Projects

- Constructing bicycle and pedestrian facilities (paths, sidewalks, bike racks, support facilities, etc.), that are not exclusively recreational and reduce vehicle trips
- Programs for secure bicycle storage facilities and other facilities, including bicycle lanes, for the convenience and protection of bicyclists, in both public and private areas
- New construction and major reconstructions of paths, tracks, or areas solely for the use by pedestrian or other non-motorized means of transportation when economically feasible and in the public interest
- Traffic calming measures

#### Exclusions found to be ineligible uses of CMAQ funds

- Walking audits and other planning activities (Upon the CMA's request and availability of funds, STP funds will be provided for these purposes)
- Crossing guards, vehicle speed feedback devices, and traffic control that is primarily oriented to vehicular traffic rather than bicyclists and pedestrians
- Material incentives that lack an educational message or exceed a nominal cost

Within the SRTS program, funding is distributed among the nine Bay Area counties based on K-12 total enrollment for private and public schools as reported by the California Department of Education for FY 2013-14 (see Appendix A-5). SRTS funding distributed to CMAs based on enrollment is not subject to the PDA minimum investment requirements. However, if a CMA chooses to augment the SRTS program with additional funding from their base OBAG 2 County CMA program, this additional funding is subject to the PDA minimum investment requirements.

Before programming projects into the TIP, the CMAs shall provide the SRTS projects, recommended county program scope, budget, schedule, agency roles, and federal funding recipient.

In programming the funds in the TIP, project sponsors may consider using non-federal funds to fund SRTS activities ineligible for federal funding. In such instances, the sponsor is allowed to use toll credits for the federal project, conditioned upon a minimum of 11.47% in non-federal funds being dedicated for SRTS activities. Separate accounting of a federalized project and a non-federalized project to fund a single program can be challenging, so care should be taken when using this option.

CMAs with an established SRTS program may choose to program local funds for SRTS projects in lieu of OBAG 2 funds and use the OBAG 2 funding for other eligible OBAG 2 projects. In such instances the local SRTS project(s) must be identified at the time the CMA submits the county OBAG 2 program to MTC and subsequently programmed in the federal TIP.

## **2. Federal Aid Secondary (FAS) Shares**

The Federal Aid Secondary (FAS) program, which directed funding to rural roads, was eliminated in 1991 with the passage of the Intermodal Surface Transportation Efficiency Act (ISTEA). However, California statutes provide for the continuation of minimum funding levels to counties, guaranteeing their prior FAS shares for rural county roads.

The county CMA's are required to ensure the counties receive their guaranteed annual funding through the CMA-managed OBAG county program. The county of San Francisco has no rural roads, and therefore does not receive FAS funding. In addition, the counties of Marin, Napa, and San Mateo may exchange their annual guaranteed FAS funding with state funding from Caltrans, as permitted by state statute. Caltrans takes these federal funds "off the top" before distributing regional STP funds to MTC. The CMA's for these three counties are not required to provide FAS guaranteed funding to these three counties for years in which these counties request such an exchange, as the statutory requirement is met through this exchange with Caltrans.

Counties may access their FAS funding at any time within the OBAG 2 period for any project eligible for STP funding. Guaranteed minimum FAS funding amounts are determined by California's Federal-Aid Secondary Highways Act (California Code § 2200-2214) and are listed in Appendix A-4. This FAS funding is not subject to the minimum PDA investment requirement. Any additional funding provided by the CMA's to the counties from the OBAG 2 county base formula distribution is subject to the minimum PDA investment requirements.

## **3. Priority Conservation Area (PCA)**

The Priority Conservation Area (PCA) Program provides funding for the development of plans and projects to assist in the preservation and enhancement of rural lands and open space. Generally, eligible projects include PCA planning activities, bicycle and pedestrian access to open space and parklands, visual enhancements and habitat/environmental enhancements. Specifically, projects must support Plan Bay Area by preserving and enhancing the natural, economic and social value of rural lands amidst a growing population across the Bay Area, for residents and businesses.

Land acquisition for preservation purposes is not federally eligible, but may be facilitated through CMA-initiated funding exchanges.

The PCA funding program includes one approach for the North Bay program (Marin, Napa, Solano, and Sonoma) and a second for the remaining five counties. In the North Bay, each CMA will receive dedicated funding, lead a county-wide program building on PCA planning conducted to date, and select projects for funding. For the remaining counties, MTC will partner with the Coastal Conservancy, a California State agency, to program the PCA funds. Appendix A-9 outlines the framework for this program including goals, project screening eligibility, eligible sponsors, and project selection.

Any CMA may use additional funding from its base OBAG 2 County Program to expand its dedicated PCA program (North Bay counties), augment grants received from the regionally

competitive PCA program (remaining counties), or develop its own county PCA program (all counties).

The PCA program requires a 2:1 minimum non-federal match.

As a part of the update to *Plan Bay Area*, MTC is exploring implementing a Regional Advance Mitigation Planning (RAMP) Program. RAMP would mitigate certain environmental impacts from multiple planned transportation projects, rather than mitigating on a less-efficient per-project level. Partnering arrangements can be established to leverage multiple fund sources in order to maximize benefits of the RAMP and PCA programs. As such, PCA funds may be used to deliver net environmental benefits to a RAMP program project.

In instances where federal funds may not be used for this purpose, sponsors may exchange OBAG 2 funds with eligible non-federal funds. Such exchanges must be consistent with MTC's fund exchange policy (MTC Resolution No. 3331).

**Appendix A-1**

**OBAG 2  
Program Categories  
FY 2017-18 through FY 2019-22  
November 2015**

Regional Program		OBAG 1		OBAG 2	
		Regional Distribution		% Share	Amount
<b>Regional Categories</b>		<b>\$499</b>		<b>\$436</b>	
1	Regional Planning Activities	2%	\$8	2%	\$10
2	Pavement Management Program	2%	\$9	2%	\$9
3	Regional PDA Planning & Implementation	4%	\$20	5%	\$20
4	Climate Initiatives	4%	\$22	5%	\$22
5	Priority Conservation Area	2%	\$10	4%	\$16
6	Regional Active Operational Management	37%	\$184	39%	\$170
7	Transit Capital Priorities	40%	\$201	43%	\$189
		<b>\$454</b>		<b>Regional Program Total: 55% \$436</b>	
Local PDA Planning ( <i>within county program for OBAG 2</i> )		4%	\$20		
Safe Routes To School ( <i>Moved to county program for OBAG 2</i> )		5%	\$25		
Federal-Aid Secondary - FAS ( <i>within county program for OBAG 2</i> )		-	-		
		<b>9% \$45</b>			
<b>Regional Program Total:</b>		<b>\$499</b>		<b>OBAG 2 Total: 55% \$436</b>	

County Program	OBAG 1		OBAG 2			
	Base Formula STP/CMAQ/TE * with adjustments	Final Distribution Including SRTS & PDA	Base Formula - Proposed - with adjustments	SRTS **	FAS **	Total - Proposed - Distribution ***
<b>Counties Total</b>						
<b>Total:</b>	<b>\$327</b>	<b>\$372</b>	<b>\$316</b>	<b>\$25</b>	<b>\$13</b>	<b>45% \$354</b>

\\mtcfs2.ad.mtc.ca.gov\j\_drive\PROJECT\Funding\T4-MAP21\MAP21 - STP-CMAQ\MAP21 Programming\MAP21 OBAG 2\OBAG 2 Development\County Fund Distribution\OBAG 2 Dist CAPPED\_for print MLA.xlsx\COMMISSION MEMO

<b>OBAG Total:</b>	OBAG 1: <b>\$827</b>	OBAG 2: <b>\$790</b>
--------------------	----------------------	----------------------

- \* **OBAG 1:** In OBAG 1, the county CMAAs received \$327 M with \$18 M in RTIP-TE and \$309 M in STP/CMAQ
- \* **OBAG 1:** RTIP-TE funding is no longer part of OBAG 2
- \*\* **SRTS:** SRTS moved to County Program and distributed based on FY 2013-14 K-12 school enrollment
- \*\* **FAS:** Federal-Aid Secondary (FAS) distributed based by statutory requirements.
- \*\* **FAS:** San Francisco has no rural roads and therefore is not subject to State Statute requirements regarding Federal-Aid Secondary (FAS) guarantee
- \*\*\* **OBAG2:** Final county distribution includes SRTS & FAS and adjusted so a county CMA's base planning is no more than 50% of total

## Appendix A-2

### OBAG 2 County Fund Distribution FY 2017-18 through FY 2021-22 November 2015

#### OBAG 2 - Base Funding Formula Distribution

County	OBAG 2 Base *	PDA Percentage	PDA/Anywhere Split	PDA	Anywhere
Alameda	TBD	70%	70/30	TBD	TBD
Contra Costa	TBD	70%	70/30	TBD	TBD
Marin	TBD	50%	50/50	TBD	TBD
Napa	TBD	50%	50/50	TBD	TBD
San Francisco	TBD	70%	70/30	TBD	TBD
San Mateo	TBD	70%	70/30	TBD	TBD
Santa Clara	TBD	70%	70/30	TBD	TBD
Solano	TBD	50%	50/50	TBD	TBD
Sonoma	TBD	50%	50/50	TBD	TBD
<b>Total:</b>	<b>TBD</b>			<b>TBD</b>	<b>TBD</b>

\\mtcfs2.ad.mtc.ca.gov\j\_drive\PROJECT\Funding\T4-MAP21\MAP21 - STP-CMAQ\MAP21 Programming\MAP21 OBAG 2\OBAG 2 Development\County Fund Distribution\OBAG 2 Dist CAPPED\_for print MLA.xlsx]COMMISSION MEMO

- \* OBAG 2 County Base amount subject to PDA investment - does not include SRTS, FAS or PCA
- \* Includes adjustment to ensure a county's base planning activities is no more than 50% of the total distribution

## Appendix A-4

### OBAG 2 Federal-Aid Secondary FY 2017-18 through FY 2021-22 November 2015

#### OBAG 2 - Federal-Aid Secondary (FAS)

County	FAS			
	Regional Percentage	Annual FAS Funding *	5-Year FAS Funding	Total OBAG 2 Rounded
			5	
Alameda	14.2%	\$355,761	\$1,778,805	\$1,779,000
Contra Costa	10.7%	\$268,441	\$1,342,205	\$1,343,000
Marin	6.7%	\$167,509	\$837,545	\$838,000
Napa	9.5%	\$237,648	\$1,188,240	\$1,189,000
San Francisco **	0.0%	\$0	\$0	\$0
San Mateo	7.1%	\$178,268	\$891,340	\$892,000
Santa Clara	13.6%	\$340,149	\$1,700,745	\$1,701,000
Solano	12.0%	\$301,159	\$1,505,795	\$1,506,000
Sonoma	26.1%	\$652,790	\$3,263,950	\$3,264,000
<b>Total:</b>	<b>100.0%</b>	<b>\$2,501,725</b>	<b>\$12,508,625</b>	<b>\$12,512,000</b>

\\mtcfs2.ad.mtc.ca.gov\j\_drive\PROJECT\Funding\T4-MAP21\MAP21 - STP-CMAQ\MAP21 Programming\MAP21 OBAG 2\OBAG 2 Development\County Fund Distribution\[OBAG 2 Dist CAPPED\_for print MLA.xlsx]COMMISSION MEMO

\* As provided by Caltrans per State Statute

\*\* San Francisco has no rural roads

## Appendix A-5

### OBAG 2 Safe Routes to School County FY 2017-18 through FY 2021-22 November 2015

#### OBAG 2 - Safe Routes To School County Distribution

County	Public School Enrollment (K-12) *	Private School Enrollment (K-12) *	Total School Enrollment (K-12) *	FY 2013-14 Percentage	Total OBAG 2 Rounded
Alameda	222,681	24,036	246,717	21.4%	\$5,340,000
Contra Costa	173,020	15,825	188,845	16.4%	\$4,088,000
Marin	32,793	7,104	39,897	3.5%	\$864,000
Napa	20,868	2,913	23,781	2.1%	\$515,000
San Francisco	58,394	24,657	83,051	7.2%	\$1,797,000
San Mateo	94,667	15,927	110,594	9.6%	\$2,394,000
Santa Clara	276,175	41,577	317,752	27.5%	\$6,878,000
Solano	63,825	4,051	67,876	5.9%	\$1,469,000
Sonoma	70,932	5,504	76,436	6.6%	\$1,655,000
<b>Total:</b>	<b>1,013,355</b>	<b>141,594</b>	<b>1,154,949</b>	<b>100%</b>	<b>\$25,000,000</b>

\\mtcfs2.ad.mtc.ca.gov\j\_drive\PROJECT\Funding\T4-MAP21\MAP21 - STP-CMAQ\MAP21 Programming\MAP21 OBAG 2\OBAG 2 Development\County Fund Distribution\OBAG 2 Dist CAPPED\_for print MLA.xlsx]COMMISSION MEMO

\* From California Department of Education for FY 2013-14

**Appendix A-6**

**OBAG 2  
 Priority Conservation Area  
 FY 2017-18 through FY 2021-22  
 November 2015**

**OBAG 2 - Priority Conservation Area (PCA)**

<b>PCA Program</b>	<b>Total OBAG 2</b>
<b>Northbay Program</b>	
Marin	\$2,050,000
Napa	\$2,050,000
Solano	\$2,050,000
Sonoma	\$2,050,000
Subtotal:	\$8,200,000
<b>Remaining Counties Competitive Program</b>	
Subtotal:	\$8,200,000
<b>Total</b>	
Total:	\$16,400,000



# One Bay Area Grant (OBAG 2) Checklist for Local Compliance with MTC Resolution No. 4202

Federal Program Covering FY 2017-18 through FY 2021-22

The intent of this checklist is to delineate the requirements for local jurisdictions included in the OBAG Grant Program (Resolution No. 4202), as adopted by MTC on November 18, 2015. This checklist must be completed by local jurisdictions and submitted to the CMA to certify compliance with the OBAG 2 requirements listed in MTC Resolution No. 4202. MTC will not take action to program projects for a local jurisdiction until the CMA affirms that the jurisdiction has met all requirements included in OBAG 2.

<b>1. Compliance with the Complete Streets Act of 2008</b>	<b>YES</b>	<b>NO</b>	<b>N/A</b>
a. Has the jurisdiction met MTC’s Complete Street Requirements for OBAG 2 prior to the CMA submitting its program to MTC through either of the following methods?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1. Adopting a Complete Streets resolution incorporating MTC’s nine required complete streets elements; or			
2. Adopting a significant revision to the General Plan Circulation Element after January 1, 2010 that complies with the California Complete Streets Act of 2008.			
b. Has the jurisdiction submitted documentation of compliance with Item a. (copy of adopted resolution or circulation element) to the CMA as part of this Checklist?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. Has the jurisdiction submitted a Complete Streets Checklist for any project for which the jurisdiction has applied for OBAG 2 funding?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>2. Housing Element Certification</b>	<b>YES</b>	<b>NO</b>	<b>N/A</b>
a. Has the jurisdiction’s General Plan Housing Element been certified by the California Department of Housing and Community Development (HCD) for 2014-2022 RHNA prior to May 31, 2015? <u>If not, has the jurisdiction’s Housing Element been fully certified by HCD by June 30, 2016?</u>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Has the jurisdiction submitted the latest Annual Housing Element Report to HCD by April 1, 2016?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

---

If “NO” or “N/A –Not Applicable” is marked in any box on the checklist, please include a statement at the end of the checklist to indicate why the item was not met. Page 1

c. Does the jurisdiction acknowledge that the Annual Housing Element Report must be submitted to HCD each year through the end of the OBAG 2 program (FY22) in order to be eligible to receive funding?

d. Has the jurisdiction submitted documentation of compliance with Item 2 (copy of certified housing element or annual report, or letter of compliance from HCD) to the CMA as part of this Checklist?

**3. Local Streets and Roads** **YES NO N/A**

a. Does the jurisdiction have a certified Pavement Management Program (StreetSaver® or equivalent) updated at least once every three years (with a one-year extension allowed)?

b. Does the jurisdiction fully participate in the statewide local streets and roads needs assessment survey?

c. Does the jurisdiction provide updated information to the Highway Performance Monitoring System (HPMS) at least once every 3 years (with a one-year grace period allowed)?

**4. Projects Sponsored by Other Agencies** **YES NO N/A**

a. Does the jurisdiction acknowledge that the jurisdiction in which a project is located must comply with OBAG 2 requirements (MTC Resolution No. 4202) in order for any project funded with OBAG 2 funds to be located within the jurisdiction, even if the project is sponsored by an outside agency (such as a transit agency)?

**5. Regional Project Delivery Requirements** **YES NO N/A**

a. Does the jurisdiction acknowledge that it must comply with the regional Project Delivery Policy and Guidance requirements (MTC Resolution No. 3606) in the implementation of the project, and that the jurisdiction must identify and maintain a Single Point of Contact for all projects with FHWA-administered funding?

**6. Anti-Displacement** **YES NO N/A**

a. Staff will return in February 2016 with recommendations related to anti-displacement policies for possible consideration.

If “NO” or “N/A –Not Applicable” is marked in any box on the checklist, please include a statement at the end of the checklist to indicate why the item was not met. Page 2

<b>7. Completion of Checklist</b>	<b>YES</b>	<b>NO</b>	<b>N/A</b>
-----------------------------------	------------	-----------	------------

**Has the jurisdiction completed all sections of this checklist?**

If the jurisdiction has checked "NO" or "N/A" to any of the above questions, please provide an explanation below as to why the requirement was not met or is considered not applicable:

<b>Attachments</b>
--------------------

- Documentation of local jurisdiction's compliance with MTC's Complete Streets Requirements, including copy of adopted resolution or circulation element (Checklist Item 1).
- Documentation of compliance with MTC's Housing Element Requirements, such as a copy of certified housing element or annual report, or a letter of compliance from HCD (Checklist Item 2).

---

If "NO" or "N/A –Not Applicable" is marked in any box on the checklist, please include a statement at the end of the checklist to indicate why the item was not met. Page 3

## **Review and Approval of Checklist**

---

This checklist was prepared by:

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date

\_\_\_\_\_  
Name & Title (print)

\_\_\_\_\_  
Phone

\_\_\_\_\_  
Email

This checklist was approved for submission to <INSERT NAME>City/County by:

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date

\_\_\_\_\_  
City Manager/Administrator or designee

**OneBayArea**

## **One Bay Area Grant 2 Program**

January 2016

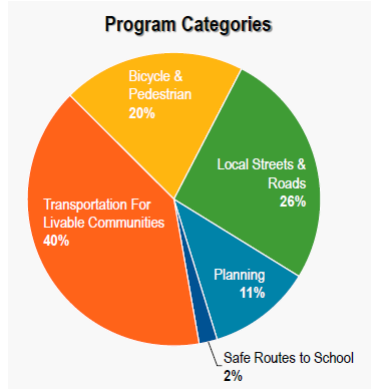


### **\* What is the One Bay Area Grant 2?**

The One Bay Area Grant 2 (OBAG 2) is the second cycle of a funding approach, initiated by the Metropolitan Transportation Commission (MTC) that integrates the region's federal transportation program with California's climate law (Senate Bill 375, Steinberg, 2008) and the Sustainable Communities Strategy (SCS).

## \* Results of OBAG 1

### OBAG 1 County Program: Project Selection Outcome Summary



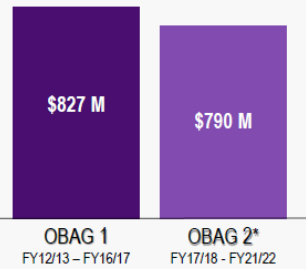
## \* What is the intent of OBAG 2?

### OneBayArea Grant: A Comprehensive Funding Approach

- Reward jurisdictions that accept and produce housing near transit
- Target OBAG investments in Priority Development Areas (PDAs) to support the Sustainable Communities Strategy
- Provide local funding and more flexibility on how money can be spent
- Distribute funding through a model that considers housing commitments and production
- Support open space preservation in Priority Conservation Areas (PCAs)
- Complete Street policies to better incorporate active transportation elements and transit

## OBAG 2: Funding Assumptions

- OBAG 1 revenues were below expectations
- 2% annual escalation for future federal revenues, consistent with recent introduction of the Developing a Reliable and Innovative Vision for the Economy (DRIVE) Act
- STP/CMAQ funds only, no STIP or TE
- Five-year program from federal FY 2017-18 through FY 2021-22 to maintain program size
- \$790M available for OBAG 2
- No new programs
- Balance needs of existing programs



\* OBAG 2 Program Proposal

## OBAG 2: Local Program Recommendations (Administered by the CMAs)

Millions \$, rounded

Program	OBAG 1	OBAG 2
Local PDA Planning*	\$20	*
Safe Routes to School**	\$25	\$25
Funding for Rural Roads (FAS)***	-	\$13
County CMA Program (40% Baseline)	\$327	\$316
<b>Totals</b>	<b>\$372</b>	<b>\$354</b>

\*Local PDA Planning Program levels in OBAG 2 is at the discretion of the CMAs.

\*\*Safe Routes to School Program was a regional program in OBAG 1 and is now distributed through the Local CMA Program.

\*\*\*Funding required by statute to the counties for their rural road system, last time addressed in the funding cycle prior to OBAG 1.

## OBAG 2: County Distribution Formula Options

	Population	Housing Production	Housing RHNA	Housing Affordability
OBAG 1	50%	25%	25%	50%
OBAG 2 1. Affordable Housing	50%	30%	20%	60%
OBAG 2 2. Affordable + Moderate	50%	30%	20%	60%*
OBAG 2 3. Housing Production	50%	50%	0%	60%

Note: OBAG 2 based on housing over a longer time frame, considering housing production between 1999 and 2006 (weighted 30%) and between 2007 and 2014 (weighted 70%).

\*Includes moderate as well as low and very low income levels for RHNA and housing production.

## OBAG 2: Formula Shares by County

County	OBAG 2 1. Affordable Housing		OBAG 2 2. Affordable + Moderate		OBAG 2 3. Housing Production	
	1b. Uncapped % Share	1a. Capped % Share	2b. Uncapped % Share	2a. Capped % Share	3b. Uncapped % Share	3a. Capped % Share
Alameda	20.1%	20.2%	19.8%	19.9%	19.2%	19.3%
Contra Costa	13.7%	13.5%	14.7%	14.6%	14.1%	13.9%
Marin	2.8%	2.8%	2.8%	2.8%	3.0%	3.0%
Napa	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%
San Francisco	12.9%	13.0%	12.3%	12.4%	13.4%	13.6%
San Mateo	8.5%	8.5%	8.5%	8.4%	7.9%	7.8%
Santa Clara	27.7%	27.5%	27.1%	26.9%	27.3%	27.1%
Solano	5.2%	5.2%	5.5%	5.5%	5.4%	5.4%
Sonoma	7.1%	7.1%	7.2%	7.2%	7.7%	7.7%

Note: Distributions include SRTS and FAS and an adjustment to ensure a county's CMA base planning is no more than 50% of the county's total

11/12/2015

OneBayArea Grant

4



## OBAG 2: Cultivate Linkages with Local Land Use Planning

- Local jurisdictions need to continue to align their general plans' housing and complete streets policies as part of OBAG 2 per SB 375 and other state laws
- For OBAG 2, jurisdictions need to either have updated their circulation elements after January 1, 2011 to meet the State's Complete Streets Act of 2008, or adopt a complete streets resolution per the MTC model used for OBAG 1



### \* OBAG 2 Calls for Projects

C/CAG Staff is developing the framework for OBAG2 and expects to issue a call for projects for the following programs later this year (late spring/ early summer)

- Local Streets and Roads
- Bicycle and Pedestrian Improvement Program
- Transportation for Livable Communities
- Safe Routes to School

## C/CAG AGENDA REPORT

Date: January 21, 2016  
To: C/CAG CMP Technical Advisory Committee (TAC)  
From: Jean Higaki, Transportation System Coordinator  
Subject: Regional Project and Funding Information.

(For further information or response to questions, contact Jean Higaki at 650-599-1462)

---

### RECOMMENDATION

Regional Project and Funding Information

### FISCAL IMPACT

None.

### SOURCE OF FUNDS

N/A

### BACKGROUND

C/CAG staff routinely attends meetings hosted by the Metropolitan Transportation Commission (MTC) and receives information distributed by the MTC pertaining to Federal funding, project delivery, and other regional policies that may affect local agencies. Attached to this report includes relevant information from MTC.

- FHWA policy for inactive projects - The current inactive list is attached. Project sponsors are requested to visit the Caltrans site regularly for updated project status at:  
<http://www.dot.ca.gov/hq/LocalPrograms/Inactiveprojects.htm>

Caltrans provides their policy for the management of Inactive Obligations at:

<http://www.dot.ca.gov/hq/LocalPrograms/InactiveProjects/FHWA%20FY14%20Inactive%20Guidance%20Letter.pdf>

- Project Delivery – Projects scheduled to deliver in the FFY 2016/17 must submit their obligation request for construction phase by November 1, 2016. Active Transportation Program projects programmed for delivery in 2016/17 should avoid the May CTC meeting and allocate funding at the March meeting as the 2017 TIP development lock down may interfere with programming changes.
- Miscellaneous MTC/ Caltrans Federal Aid Announcements

MTC Pavement Conditions Report - In January of 2016, MTC will be calculating the regional PCI scores for all jurisdictions in the region and plans to release the annual pavement condition report in April 2016. The last report was published on April 13, 2015. All jurisdictions must

update their StreetSaver database work completed in 2015. Jurisdiction PCI scores will be based on the score calculated as of December 31, 2015 in the StreetSaver database. The deadline for updating StreetSaver is **January 22, 2016**. Contact Nicholas Richter [nrichter@mtc.ca.gov](mailto:nrichter@mtc.ca.gov) for any questions.

Pavement Management Program (PMP) Certification – Status of PMP certification status is attached. Jurisdictions without a current PMP certification are will not be eligible to receive OBAG 2 funds for local Streets rehabilitation or will have their OBAG project removed from the annual obligation plans until their PMP certification is in good standing. Contact Christina Hohorst, PTAP Manager, via email at [chohorst@mtc.ca.gov](mailto:chohorst@mtc.ca.gov) to update your certification.

2017 TIP Development - MTC is beginning the process of developing the 2017 TIP. Attached is the proposed list of non-exempt projects that are submitted to MTC for inclusion in the 2017 TIP on January 21, 2016. As part of the air quality conformity analysis MTC models projects that are not specifically exempted from regional air quality conformity analysis by 40 CFR 93.126 and 40 CFR 93.127 (non-exempt projects). The most common type of non-exempt projects are those that either expand or reduce the capacity of the transit, freight, highway or local road systems. If there is a “non-exempt” project that is not on the list that should be included please contact Eliza Yu at [eyu@smc.gov.org](mailto:eyu@smc.gov.org) as soon as possible.

Staff will be reaching out to jurisdictions regarding updating the status of projects to clean up the TIP by archiving closed out projects.

Pavement Management Technical Assistance Program (P-TAP) - MTC is in the process of retaining services of consultants for projects associated with the P-TAP 17 solicitation of projects. Attached is a list of awarded P-TAP projects in San Mateo County.

New Federal Transportation Act – On December 4, 2015, the FAST Act (Fixing America’s Surface Transportation Act), establishing funding levels and federal policy for our nation’s highways and public transit systems for fiscal years (FY) 2016 through FY 2020. It is estimated that the new act will add approximately \$30 million in additional CMAQ funding and \$39 million in additional STP funds to the region.

## **ATTACHMENTS**

1. Caltrans Inactive list generated on 1/11/16 (Caltrans)
2. MTC PMP Certification Status as of 1/7/16
3. 2017 TIP Development attachment of proposed non-exempt projects
4. MTC P-TAP 17 award list

Inactive Obligations  
Local, State Administered/Locally Funded and Rail Projects

Updated on  
11/11/2016

Project No.	Status	Agency Action Required	State Project No	Prefix	Agency	Description	Latest Date	Authorization Date	Last Expenditure Date	Last Action Date	Total Cost	Federal Funds	Expenditure Amt	Unexpended Bal
5029027	Inactive	Submit invoice to District by 02/20/2016	0400021108L	BPMP	Redwood City	VARIOUS BRIDGES IN CITY OF REDWOOD CITY, PREVENTATIVE MAINTENANCE	02/17/2015	06/22/2011	02/17/2015	02/17/2015	\$30,000.00	\$26,559.00	\$13,249.74	\$13,309.26
5029032	Inactive	Submit invoice to District by 02/20/2016	0414000103L	BPMP	Redwood City	BRIDGE PREVENTATIVE MAINTENANCE	02/05/2015	03/21/2014	02/05/2015	02/05/2015	\$26,250.00	\$23,239.00	\$248.77	\$22,990.23
5029033	Inactive	Submit invoice to District by 02/20/2016	0414000186L	STPL	Redwood City	WHIPPLE AND VETERANS, ROAD REHABILITATION	02/17/2015	02/17/2015		08/20/2015	\$999,648.00	\$548,000.00	\$0.00	\$548,000.00
5102042	Inactive	Submit invoice to District by 02/20/2016	0413000451L	CML	San Mateo	VARIOUS LOCATIONS SOUTH OF CYPRESS AVE, PEDESTRIAN IMPROVEMENTS	02/12/2015	06/19/2013	02/12/2015	06/11/2015	\$1,680,514.00	\$1,339,924.00	\$117,350.00	\$1,222,574.00
5299013	Inactive	Submit invoice to District by 02/20/2016	0415000126L	STPL	Millbrae	MILLBRAE DOWNTOWN AND EL CAMINO REAL CORRIDOR, MILLBRAE PRIORITY DEVELOPMENT AREA SPECIFIC PLAN	02/06/2015	02/06/2015		02/06/2015	\$650,000.00	\$500,000.00	\$0.00	\$500,000.00
5438011	Inactive	Submit invoice to District by 02/20/2016	0400021118L1	HPLUL	East Palo Alto City/County Association of Governments of San	BAY ROAD: CLARKE/ILLINOIS TO COOLEY LANDING (BAY TRAIL), ROAD WIDEN, RESURFACE, STREETScape, BIKE LANE	02/27/2015	04/04/2012	02/27/2015	02/27/2015	\$1,206,250.00	\$1,064,000.00	\$484,937.30	\$579,062.70
6419022	Inactive	Submit invoice to District by 02/20/2016	0415000215L	STPL	Association of Governments of San	VARIOUS LOCATION AROUND THE COUNTY OF SAN MATEO COUNTY, PLANNING ASSIST TO SUPPORT TRANS, FOCUS ON PARKING	02/11/2015	02/11/2015		02/11/2015	\$342,000.00	\$302,000.00	\$0.00	\$302,000.00
5029024	Future	Submit invoice to District by 05/20/2016	0400021045L-N	BPMP	Redwood City	BRIDGE PARKWAY OVER MARINE WORLD LAGOON, PREVENTATIVE MAINTENANCE	04/30/2015	04/13/2011	04/30/2015	04/30/2015	\$75,000.00	\$66,398.00	\$31,817.18	\$34,580.82
5029025	Future	Submit invoice to District by 05/20/2016	0400021046L-N	BPMP	Redwood City	BRIDGE PARKWAY(RIGHT) OVER MARINE WORLD LAGOON, EAST OF MARINE WORLD PARKWAY, PREVENTATIVE MAINTENANCE	04/30/2015	04/13/2011	04/30/2015	04/30/2015	\$75,000.00	\$66,398.00	\$31,817.18	\$34,580.82
5029029	Future	Submit invoice to District by 05/20/2016	0412000259L1	SRTSLNI	Redwood City	MULTIPLE SCHOOLS IN REDWOOD CITY SCHOOL DISTRICT, NON INFRASTRUCTURE, SRTS EDUCATION	05/28/2015	05/22/2012	05/28/2015	05/28/2015	\$204,000.00	\$204,000.00	\$127,808.67	\$76,191.33
5029030	Future	Submit invoice to District by 05/20/2016	0412000272L1	SRTSL	Redwood City	CHARTER ST BETWEEN STAMBAUGH AND SPRING, CROSSWALK, BULB OUT, CURB RAMP	04/14/2015	04/26/2012	04/14/2015	04/14/2015	\$577,293.00	\$577,293.00	\$290,660.66	\$286,632.34
5029034	Future	Submit invoice to District by 05/20/2016	0415000314L	STPL	Redwood City	REDWOOD CITY DOWNTOWN, PLANNING STUDY OF SEQUOIA STATION AND STREETCAR	04/17/2015	04/17/2015		04/17/2015	\$508,302.00	\$450,000.00	\$0.00	\$450,000.00
5102046	Future	Invoice under review by Caltrans. Monitor for progress.	0415000308L	CMLNI	San Mateo	CITYWIDE, CITY CAR SHARE PROGRAM NON-INFRASTRUCTURE	05/22/2015	05/22/2015		06/11/2015	\$265,152.00	\$210,000.00	\$0.00	\$210,000.00
5268020	Future	Submit invoice to District by 05/20/2016	0415000290L	STPL	Belmont	BELMONT VILLAGE, SPECIFIC IMPLEMENTATION PLAN	04/09/2015	04/09/2015		04/09/2015	\$550,000.00	\$440,000.00	\$0.00	\$440,000.00
5273024	Future	Submit invoice to District by 05/20/2016	0414000273L	HPLUL	Menlo Park	WILLOW RD - MIDDLEFIELD TO HAMILTON, UPGRADE SIGNALS	05/01/2015	05/01/2015		07/09/2015	\$253,000.00	\$202,400.00	\$0.00	\$202,400.00
5350020	Future	Submit invoice to District by 05/20/2016	0414000311L	STPL	Pacifica	LINDA MAR BLVD BETWEEN DE SOLO DR TO ADOBE DR, PAVEMENT REHABILITATION	05/19/2015	06/08/2014	05/19/2015	05/19/2015	\$508,695.00	\$431,000.00	\$368,283.24	\$62,716.76
5935052	Future	Submit invoice to District by 05/20/2016	04925333L	BRLO	San Mateo County	CRYSTAL SPRINGS DAM BRIDGE 35C0043 , ENVIRONMENTAL MITIGATION	06/09/2015	02/04/2010	06/09/2015	06/09/2015	\$565,000.00	\$500,195.00	\$176,286.92	\$323,908.08
22X0001	Future	Submit invoice to District by 05/20/2016	0413000406L	ER	Portola Valley	5500 BLOCK OF ALPINE ROAD, STITCH PIER 62' LENGTH AT 30' DEEP	06/09/2015	05/15/2014	06/09/2015	06/09/2015	\$295,000.00	\$261,164.00	\$73,482.09	\$187,681.91

**PMP Certification**  
**January 7, 2016**

Expired
Expiring within 60 days
Certified

Note: Updated report is posted monthly to:

[http://mtc.ca.gov/sites/default/files/PMP\\_Certification\\_Status\\_Listing.xlsx](http://mtc.ca.gov/sites/default/files/PMP_Certification_Status_Listing.xlsx)

\* "Last Major Inspection" is the basis for certification and is indicative of the date the field inspection was completed.

County	Jurisdiction	Last Major Inspection*	Certified	P-TAP Cycle	Certification Expiration Date
Marin	Tiburon	12/31/2012	Pending	16	4/30/2016
Napa	American Canyon	10/31/2013	Pending	17	4/30/2017
Napa	Calistoga	8/31/2014	Yes	17	9/1/2016
Napa	Napa	12/31/2013	Pending	17	4/30/2017
Napa	Napa County	10/31/2013	Pending	17	4/30/2017
Napa	St. Helena	8/31/2014	Yes	15	9/1/2016
Napa	Yountville	8/31/2014	Yes	15	9/1/2016
San Francisco	San Francisco	8/31/2013	Pending	16	4/30/2016
San Mateo	Atherton	9/30/2014	Yes	17	10/1/2016
San Mateo	Belmont	11/30/2014	Yes	15	12/1/2016
San Mateo	Brisbane	8/31/2014	Yes	17	9/1/2016
San Mateo	Burlingame	9/30/2013	Pending	16	4/30/2016
San Mateo	Colma	10/31/2013	Pending	16	4/30/2016
San Mateo	Daly City	12/31/2014	Yes	17	1/1/2017
San Mateo	East Palo Alto	8/31/2013	Pending	17	4/30/2017
San Mateo	Foster City	8/31/2013	Pending	16	4/30/2016
San Mateo	Half Moon Bay	8/31/2013	Pending	16	4/30/2016
San Mateo	Hillsborough	9/30/2014	Yes	17	10/1/2016
San Mateo	Menlo Park	6/30/2013	Pending	16	4/30/2016
San Mateo	Millbrae	7/31/2014	Yes	15	8/1/2016
San Mateo	Pacifica	11/30/2012	Pending	16	4/30/2016
San Mateo	Portola Valley	8/31/2012	Pending	16	4/30/2016
San Mateo	Redwood City	12/31/2014	Yes	15	1/1/2017
San Mateo	San Bruno*	7/31/2013	Pending	16	4/30/2016
San Mateo	San Carlos	8/31/2013	Pending	17	4/30/2017
San Mateo	San Mateo	11/30/2012	Pending	16	4/30/2016
San Mateo	San Mateo County	8/31/2013	Pending	17	4/30/2017
San Mateo	South San Francisco	7/31/2013	Pending	16	4/30/2016
San Mateo	Woodside	10/31/2013	Pending	17	4/30/2017
Santa Clara	Campbell	9/30/2013	Pending	16	4/30/2016
Santa Clara	Cupertino	8/31/2014	Yes	17	9/1/2016
Santa Clara	Gilroy	6/30/2014	Yes	17	7/1/2016
Santa Clara	Los Altos	9/30/2013	Pending	16	4/30/2016
Santa Clara	Los Altos Hills	6/30/2014	Yes	15	7/1/2016
Santa Clara	Los Gatos	12/31/2012	Pending	16	4/30/2016
Santa Clara	Milpitas	8/31/2014	Yes	15	9/1/2016
Santa Clara	Monte Sereno	5/31/2013	Pending	17	4/30/2017
Santa Clara	Morgan Hill	8/31/2013	Pending	17	4/30/2017
Santa Clara	Mountain View	7/31/2014	Yes	17	8/1/2016
Santa Clara	Palo Alto	10/31/2014	Yes	15	11/1/2016
Santa Clara	San Jose	3/30/2014	Yes	17	4/1/2016
Santa Clara	Santa Clara	8/31/2014	Yes	15	9/1/2016
Santa Clara	Santa Clara County	12/31/2014	Yes	17	1/1/2017
Santa Clara	Saratoga	6/30/2014	Pending	17	4/30/2017
Santa Clara	Sunnyvale	4/30/2014	Yes	17	5/1/2016
Solano	Benicia	8/31/2014	Yes	15	9/1/2016

Attachment B - 2017 TIP - Call for New Non-Exempt Projects - Project Info Template								
County	Sponsor	RTP ID	Primary Sub-Mode	Project Description	Total Project Cost	FFY of Expected ROW obligation	FFY of Expected CON obligation	Calendar Year of Completion
San Mateo	C/CAG	240060	Auto	HOV/ HOT on US 101: Evaluate a 13 mile hybrid of new HOV lane segments and auxiliary lane segments based on ROW opportunities/constraints	\$117 mil	2019	2020	2023
San Mateo	San Mateo City	240160	Bike/Ped	US 101 Peninsula Ave/ Poplar Ave Interchange Area Safety Improvements: Peninsula/101 and Poplar/101 partial interchanges for safety and access improvements	\$81 mil	2020/2021	2022	2024
San Mateo	East Palo Alto	21607	Bike/Ped	Modify University Avenue overcrossing of U.S. 101 to improve operational efficiency and safety (includes widening of overcrossing, constructing new southbound off-ramp and auxiliary lane, and adding bicycle lanes)	\$7 mil	N/A	2016	2019
San Mateo	San Bruno/ SSF	22271	Auto	Skyline Blvd (SR 35) - Widening from I-280 Sneath - Widen from 2 lanes to 4 lanes	\$22.1 mil	2020	2021	2023
San Mateo	County of San Mateo	240114	Bike/Ped	Hwy 1 Congestion throughput and safety improvements - Between Gray Whale Cove and Miramar, pedestrian crossings, left-turn lanes and medians at six locations.	\$6 mil	N/A	2018	Phase 1 2019, Phase 2 2022
San Mateo	Pacifica	240067	Auto	Manor Drive Overcrossing: Widen the existing Manor Drive overcrossing from Palmetto Ave (to the west) and Oceana Blvd (to the east) with larger turning radii at corners and new traffic signals at intersections. Includes a new NB on-ramp to SR1 at Milagra Drive.	\$24 mil	2019	2021	2021
San Mateo	San Mateo City	21613	Auto	92/82 Interchange-Modify existing on/off ramps at the SR92/El Camino Real (SR82) interchange to improve the ingress and egress of the interchange. Phase I would be to build the westbound modifications, and Phase II would be to build the eastbound modifications.	\$21 mil	2017	2017	2019

Attachment B - 2017 TIP - Call for New Non-Exempt Projects - Project Info Template								
County	Sponsor	RTP ID	Primary Sub-Mode	Project Description	Total Project Cost	FFY of Expected ROW obligation	FFY of Expected CON obligation	Calendar Year of Completion
San Mateo	Menlo Park	21606	Auto	US 101 at Willow Road Interchange: Reconstruction of the 101/ Willow Road Interchange. Reconfigure interchange, modify ex. ramps, widen bridge, ramp metering and HOV lanes.	\$64 mil	2015	2016	2019
San Mateo	Half Moon Bay	21893	Auto	SR 92 safety/ operational improvements - Widen shoulders and travel lanes to current standards, as well as sight improvement along SR 92 from 0.6 miles east of SR 1 to Pilarcitos Creek.	\$5.3 mil	2018	2019	2023
San Mateo	Half Moon Bay	22751	Auto	Improve safety on Route 1, including adding protected left and right turn lanes at Route 1, adding through lanes on Route 1 at signalized intersections, and constructing new pedestrian/bicycle path	\$7 mil	2016	2019	2021
San Mateo	Belmont	New for 2017 RTP		Ralston Ave Corridor between US 101 and SR 92: Evaluation fo existing intersections' LOS, walkability analysis, and evaluate existing bike lanes for complete streets compatability	\$9.3 mil	2017	2019	2021

	Jurisdiction	County	Funding Requested <sup>1</sup>	Consultant Assigned	(\$) <sup>2</sup>
22	Atherton	San Mateo	16,140	Harris	16,140
	Belmont	San Mateo	20,700		-
23	Brisbane	San Mateo	15,000	Harris	15,000
24	Daly City	San Mateo	34,620	Harris	34,620
25	East Palo Alto	San Mateo	15,000	Adhara	15,000
	Half Moon Bay	San Mateo	30,000		-
26	Hillsborough	San Mateo	24,960	Harris	24,960
	Millbrae	San Mateo	17,280		-
	Portola Valley	San Mateo	100,000		-
27	San Carlos	San Mateo	25,860	Harris	25,860
	San Mateo	San Mateo	100,000		-
28	San Mateo County	San Mateo	91,980	Harris	94,800
	South San Francisco	San Mateo	41,670		-
29	Woodside	San Mateo	15,000	AMS	15,000
	<b>Subtotal:</b>		<b>548,210</b>		<b>241,380</b>
30	Cupertino	Santa Clara	41,400	Adhara	41,400
31	Gilroy	Santa Clara	35,820	Capitol	36,090
	Los Altos Hills	Santa Clara	18,090		-
	Milpitas	Santa Clara	100,000		-
32	Monte Serreno	Santa Clara	15,000	Capitol	15,000
33	Morgan Hill	Santa Clara	35,070	AMS	35,070
34	Mountain View	Santa Clara	42,000	Harris	42,000
35	San Jose	Santa Clara	200,000	Adhara	100,000
	Santa Clara	Santa Clara	74,220		-
36	Santa Clara County	Santa Clara	20,000	AMS	20,000
37	Saratoga	Santa Clara	42,330	Adhara	42,330
38	Sunnyvale	Santa Clara	78,120	Adhara	78,120
	<b>Subtotal:</b>		<b>702,050</b>		<b>410,010</b>
	Faifield	Solano	100,000		-
	Rio Vista	Solano	15,000		-
39	Suisun City	Solano	22,830	Capitol	22,830
	Vallejo	Solano	96,060		-
	Sonoma County	Sonoma	100,000		-
	<b>Subtotal:</b>		<b>333,890</b>		<b>22,830</b>
	<b>Grand Total:</b>		<b>3,973,890</b>		<b>1,538,878</b>

<sup>1</sup> Please Note: Funding amounts may change as a result of possible modifications to project scopes.

<sup>2</sup> Funding Requested reflects jurisdiction requests for Non-Pavement Asset Management projects and/or a PS&E project in addition to a PMS project or instead of a PMS project.