

MONTEREY / COUNTY of MONTEREY
THREE-YEAR MAINTENANCE OF EFFORT
REPORT FOR YEARS 2015 - 2017

Year 1

Fund Source	Amount	Year
GENERAL FUND	\$ 2,440,234	Fiscal 2015
Total Expended on Transportation	\$ 2,440,234	

Year 2

Fund Source	Amount	Year
GENERAL FUND	\$ 2,555,294	Fiscal 2016
Total Expended on Transportation	\$ 2,555,294	

Year 3

Fund Source	Amount	Year
GENERAL FUND	\$ 2,919,095	Fiscal 2017
Total Expended on Transportation	\$ 2,919,095	

Three-Year Average of Transportation Expenditures:

\$ 2,638,208

I, the undersigned, certify that the above information is true and correct to the best of my knowledge.



Signature

LAUREN LAI, Dec. 19, 2018
Lauren Lai, CPA
Finance Director

**City of Monterey / Monterey County
TAMC Annual Program Compliance Report
Year 2018 Balance Sheet**

REVENUES

Carryover from Previous Year	\$ -
Measure X Revenues	\$ 947,334.73
Earning on Interest	\$ -
TOTAL REVENUES:	\$ 947,334.73

EXPENDITURES

37c1651 Citywide Traffic Signal Adaptive System	\$ 170,072.28
35c1850 Measure X Transport Safety Critical Maint	\$ 86,262.00
35c1851 Measure X Transport Safety Projects	\$ 65,251.00
TOTAL EXPENDITURES:	\$ 321,585.28

FUND BALANCE, END OF PERIOD	<u>\$ 625,749.45</u>
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CITY OF MONTEREY
TRANSPORTATION SAFETY AND INVESTMENT
PLAN ACCOUNT FUND
JUNE 30, 2018

CITY OF MONTEREY
TRANSPORTATION SAFETY AND INVESTMENT PLAN ACCOUNT FUND
TABLE OF CONTENTS
June 30, 2018

The financial statements present only the Transportation Safety and Investment Plan Account Fund and do not purport to, and do not, present fairly the financial position of the City of Monterey, as of June 30, 2018, the changes in its financial position, or, where applicable, its cash flows for the fiscal year then ended in accordance with accounting principles generally accepted in the United States of America.

The City of Monterey published its Comprehensive Annual Financial Report for fiscal year ended June 30, 2018 at www.monterey.org/City-Hall/Budget-and-Finance/Annual-Financial-Reports.

Financial Statements:

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NOTE 1 – SIGNIFICANT ACCOUNTING POLICIES

Basis of Accounting

The accounting and financial reporting treatment applied to a fund is determined by its measurement focus. The Transportation Safety and Investment Plan Account Fund of the City of Monterey is a special nonmajor governmental fund type. Governmental funds are accounted for using a current financial resources measurement focus. The application of this measurement focus provides that, in general, only current assets and current liabilities are present on the balance sheet. Operating statements of these funds present revenues and expenditures.

The modified accrual basis of accounting is used for the Transportation Safety and Investment Plan Account Fund. Under the modified accrual basis of accounting, revenues are recognized when they become susceptible to accrual (i.e., both measurable and available). Measurable means that the amount of the transaction can be determined. Available means the funds are collectible within the current period or soon enough thereafter to be used to pay liabilities of the current period. For this purpose, the City considers revenues to be available if they are collected within 60 days of the end of the current fiscal period.

Expenditures of governmental funds are generally recognized when the related fund liability is incurred.

Reporting Entity

The financial statements present only the Transportation Safety and Investment Plan Account Fund and do not purport to, and do not present, the City's financial position and changes in financial position. The City of Monterey's Comprehensive Annual Financial Report (CAFR) and basic financial statements are available from the Finance Department on the City's website at www.monterey.org/City-Hall/Budget-and-Finance/Annual-Financial-Reports.

NOTE 2 – CASH DEPOSITS

The City follows the practice of pooling cash and investments for all funds (including the Transportation Safety and Investment Plan Account Fund) under its direct daily control. Interest earned on pooled cash and investments is allocated periodically to the various funds based on average cash balances.

NOTE 3 – MAINTENANCE OF EFFORT

The Measure X Master Programs Funding Agreement between the City of Monterey and the Transportation Agency for Monterey County required that the City must expend each fiscal year from its general fund for street and highway purposes an amount not less than the annual average of its expenditures from its general fund during the preceding three fiscal years, as reported to the Controller pursuant to Streets and Highways Code section 2151 ("Maintenance of Effort"). For purposes of this calculation, an average of the prior three (3) years spent for local transportation purposes will be used. Exemptions from this calculation include one-time capital expenses, and expiration of any voter-approved fund sources that were used for local transportation purposes. In the case of expired voter-approved fund sources, the three-year average baseline would be recalculated in the next annual verification period without said expired fund sources. Revenues from a fee imposed or contribution first received by a local jurisdiction on or after January 1, 2016 which are used on or after July 1, 2016, by that local jurisdiction for maintenance or improvement purposes on its streets and highways shall be considered as general fund expenditures for the purposes of compliance with the provisions of this Section in the fiscal year in which such expenditures are made. The following eligible expenditures were made:

For the fiscal year ended June 30, 2015:	\$2,440,234
For the fiscal year ended June 30, 2016:	\$2,555,294
For the fiscal year ended June 30, 2017:	\$2,919,095

Three year average of above expenditures:	\$2,638,208
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Total expenditures from the general fund for street and highway purposes for the fiscal year ended June 30, 2018 was \$2,794,699. The City is in compliance with the Maintenance of Effort requirement of the Measure X Master Programs Funding Agreement between the City of Monterey and the Transportation Agency for Monterey County.

**MONTEREY / COUNTY of MONTEREY
THREE-YEAR MAINTENANCE OF EFFORT
REPORT FOR YEARS 2015 - 2017**

Year 1

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Three-Year Average of Transportation Expenditures:

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Signature

LAUREN LAI Dec. 19, 2018
Lauren Lai, CPA
Finance Director

CITY OF MONTEREY**TRANSPORTATION SAFETY AND INVESTMENT PLAN ACCOUNT FUND****BALANCE SHEET**JUNE 30, 2018

ASSETS

Cash and investments	\$	763,164
Accounts receivable	\$	-
Interest receivable	\$	-
 Total assets	 \$	 763,164

LIABILITIES AND FUND BALANCE

Liabilities

Accounts payable	\$	137,415
Accrued payroll and benefits	\$	-
Due to TAMC	\$	-
Due to other funds	\$	-

Total Liabilities	\$	137,415
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Fund Balance:

Restricted	\$	625,749
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Total Fund Balance	\$	625,749
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Total Liabilities and Fund Balance	\$	763,164
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The notes to basic financial statements are an integral part of this statement.

CITY OF MONTEREY**TRANSPORTATION SAFETY AND INVESTMENT PLAN ACCOUNT FUND****STATEMENT OF REVENUES, EXPENDITURES, AND CHANGES IN FUND BALANCE**JUNE 30, 2018

REVENUES

Transportation Safety and Investment Plan Account revenue	\$	947,335
Use of money and property	\$	-
Total revenues	\$	947,335

EXPENDITURES

Streets and roads maintenance	\$	-
Transportation	\$	-
Capital outlay	\$	-
Total Expenditures	\$	-
Excess (deficiency) of revenues over expenditures	\$	947,335

OTHER FINANCING SOURCES (USES)

Transfers in	\$	-
Transfers out	\$	(321,586)
Total other financing sources (uses)	\$	(321,586)
Net change in fund balance	\$	625,749
Fund balance, beginning of fiscal year	\$	-
Fund balance, end of fiscal year	\$	625,749

The notes to basic financial statements are an integral part of this statement.

CITY OF MONTEREY

TRANSPORTATION SAFETY AND INVESTMENT PLAN ACCOUNT FUND

STATEMENT OF REVENUES, EXPENDITURES, AND CHANGES IN FUND BALANCE

BUDGET AND ACTUAL

JUNE 30, 2018

	<u>Budgeted Amounts</u>	<u>Actual Amounts</u>	<u>Variance with Budget Postive (Negative)</u>
REVENUES			
Transportation Safety and Investment Plan Account revenue	\$ -	\$ -	\$ -
Use of money and property	\$ -	\$ -	\$ -
 Total revenues	<u>\$ -</u>	<u>\$ -</u>	<u>\$ -</u>
 EXPENDITURES			
Streets and roads maintenance			
Transportation			
Capital outlay	\$ -	\$ -	\$ -
 Total Expenditures	<u>\$ -</u>	<u>\$ -</u>	<u>\$ -</u>
 Excess (deficiency) of revenues over expenditures	<u>\$ -</u>	<u>\$ -</u>	<u>\$ -</u>
 OTHER FINANCING SOURCES (USES)			
Transfers in			
Transfers out	\$ -	\$ -	\$ -
 Total other financing sources (uses)	<u>\$ -</u>	<u>\$ -</u>	<u>\$ -</u>
 Net change in fund balance	<u>\$ -</u>	<u>\$ -</u>	<u>\$ -</u>
 Fund balance, beginning of fiscal year	<u>\$ -</u>	<u>\$ -</u>	<u>\$ -</u>
 Fund balance, end of fiscal year	<u><u>\$ -</u></u>	<u><u>\$ -</u></u>	<u><u>\$ -</u></u>

NOTES TO FINANCIAL STATEMENTS

For the year ended June 30, 2018 there were no adopted operating budgets for Transportation Safety & Investment Plan Special Revenue Funds.

City of Monterey

Monterey, California

**Independent Auditors' Reports for
TAMC Ordinance No. 2016-01
Transportation Safety and Investment Plan Audit**

For the Year Ended June 30, 2018



City of Monterey

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**REPORT ON INTERNAL CONTROL OVER FINANCIAL REPORTING AND ON COMPLIANCE AND
OTHER MATTERS BASED ON AN AUDIT OF FINANCIAL STATEMENTS PERFORMED IN
ACCORDANCE WITH GOVERNMENT AUDITING STANDARDS**

Independent Auditors' Report

To the Honorable Mayor and the Members of City Council
of the City of Monterey
Monterey, California

We have audited, in accordance with the auditing standards generally accepted in the United States of America and the standards applicable to financial audits contained in *Government Auditing Standards* issued by the Comptroller General of the United States, the financial statements of the governmental activities, the business-type activities, each major fund, and the aggregate remaining fund information of the City of Monterey, California (the "City") as of and for the year ended June 30, 2018, and the related notes to the financial statements, which collectively comprise the City's basic financial statements, and have issued our report thereon dated December 19, 2018.

Internal Control Over Financial Reporting

In planning and performing our audit of the financial statements, we considered the City's internal control over financial reporting ("internal control") to determine the audit procedures that are appropriate in the circumstances for the purpose of expressing our opinions on the financial statements, but not for the purpose of expressing an opinion on the effectiveness of the City's internal control. Accordingly, we do not express an opinion on the effectiveness of the City's internal control.

A *deficiency in internal control* exists when the design or operation of a control does not allow management or employees, in the normal course of performing their assigned functions, to prevent, or detect and correct, misstatements on a timely basis. A *material weakness* is a deficiency, or a combination of deficiencies, in internal control such that there is a reasonable possibility that a material misstatement of the entity's financial statements will not be prevented, or detected and corrected on a timely basis. A *significant deficiency* is a deficiency, or a combination of deficiencies, in internal control that is less severe than a material weakness, yet important enough to merit attention by those charged with governance.

Our consideration of internal control was for the limited purpose described in the first paragraph of this section and was not designed to identify all deficiencies in internal control that might be material weaknesses or significant deficiencies. Given these limitations, during our audit we did not identify any deficiencies in internal control that we consider to be material weaknesses. However, material weaknesses may exist that have not been identified.

To the Honorable Mayor and the Members of City Council
of the City of Monterey
Monterey, California
Page 2

Compliance and Other Matters

As part of obtaining reasonable assurance about whether the City's financial statements are free from material misstatement, we performed tests of its compliance with certain provisions of laws, regulations, contracts, and grant agreements, noncompliance with which could have a direct and material effect on the determination of financial statement amounts. However, providing an opinion on compliance with those provisions was not an objective of our audit, and accordingly, we do not express such an opinion. The results of our tests disclosed no instances of noncompliance or other matters that are required to be reported under *Government Auditing Standards*.

Purpose of this Report

The purpose of this report is solely to describe the scope of our testing of internal control and compliance and the results of that testing, and not to provide an opinion on the effectiveness of the entity's internal control or on compliance. This report is an integral part of an audit performed in accordance with *Government Auditing Standards* in considering the entity's internal control and compliance. Accordingly, this communication is not suitable for any other purpose.

A handwritten signature in black ink that reads "The PwC Group, LLP". The signature is written in a cursive, flowing style.

Santa Ana, California
December 19, 2018



**REPORT ON COMPLIANCE WITH TAMC ORDINANCE NO. 2016-01
TRANSPORTATION SAFETY AND INVESTMENT PLAN AND
REPORT ON THE SCHEDULE OF REVENUES, EXPENDITURES, AND CHANGE IN FUND BALANCE**

Independent Auditors' Report

To the Honorable Mayor and the Members of City Council
of the City of Monterey
Monterey, California

Report on Compliance with TAMC Ordinance NO. 2016-01 Transportation Safety and Investment Plan

We have audited the City of Monterey, California's (the "City") compliance with the types of compliance requirements described in the Transportation Agency for Monterey County's (the "TAMC") Ordinance No. 2016-01 and in the Measure X Master Programs Funding Agreement (the "Agreement") between TAMC and the City applicable to the City's Transportation Safety and Investment Plan Account Fund for the fiscal year ended June 30, 2018.

Management's Responsibility

Management is responsible for compliance with the requirements of laws, regulations, contracts, and grants applicable to the Transportation Safety and Investment Plan Account Fund.

Auditors' Responsibility

Our responsibility is to express an opinion on the City's compliance based on our audit in accordance with the compliance requirements described in the TAMC's Ordinance No. 2016-01 and in the Agreement between TAMC and the City. The Agreement requires that the independent auditor shall perform at least the following tasks: (1) determine whether the recipient expended all Measure X funds received in compliance with Measure X, the Measure X Investment Plan, and the Policies & Project Descriptions, as they may be adopted or amended by TAMC from time to time, and the Agreement, (2) determine whether the Measure X revenues received and expended were accounted for and tracked in its own separate budget and fund titled "Transportation Safety & Investment Plan Account" and were not be comingled with any other funds and that the accounting system provides adequate internal controls and audit trails to facilitate an annual compliance audit for each fund type and the respective usage and application of said funds, and (3) determine whether the City met the Maintenance of Effort requirements imposed by Measure X and State law. We conducted our audit of compliance in accordance with auditing standards generally accepted in the United States of America, the standards applicable to financial audits contained in *Government Auditing Standards*, issued by the Comptroller General of the United States and the Agreement. Those standards and the Agreement require that we plan and perform the audit to obtain reasonable assurance about whether noncompliance with the compliance requirements referred to above that could have a direct and material effect on the City's Transportation Safety and Investment Plan Account Fund occurred. An audit includes examining, on a test basis, evidence about the City's compliance with those requirements and performing such other procedures as we considered necessary in the circumstances.

We believe that our audit provides a reasonable basis for our opinion on compliance. However, our audit does not provide a legal determination of the City's compliance.

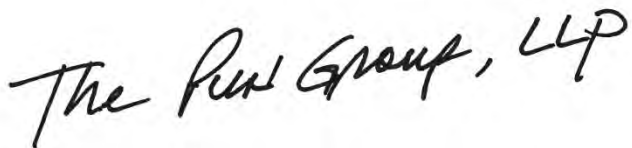
Opinion on Compliance with the Transportation Safety and Investment Plan Account Fund

In our opinion, the City complied, in all material respects, with the compliance requirements referred to above that are applicable to the City's Transportation Safety and Investment Plan Account Fund described in the TAMC's Ordinance No. 2016-01 and in the Measure X Master Programs Funding Agreement between TAMC and the City for the fiscal year ended June 30, 2018.

This report is intended solely for the information and use of City Council, management of the TAMC and for filing with the appropriate regulatory agencies and is not intended to be and should not be used by anyone other than these specified parties.

Report on the Schedule of Revenues, Expenditures, and Change in Fund Balance

We have audited the financial statements of the governmental activities, the business-type activities, each major fund, and the aggregate remaining fund information of the City of Monterey, California as of and for the year ended June 30, 2018, and the related notes to the financial statements, which collectively comprise the City's basic financial statements. We issued our report thereon dated December 19, 2018, which contained unmodified opinions on those financial statements. Our audit was conducted for the purpose of forming opinions on the financial statements that collectively comprise the basic financial statements. The accompanying Schedule of Revenues, Expenditures, and Change in Fund Balance is presented for purposes of additional analysis and is not a required part of the basic financial statements. Such information is the responsibility of management and was derived from and relates directly to the underlying accounting and other records used to prepare the basic financial statements. The information has been subjected to the auditing procedures applied in the audit of the financial statements and certain other procedures, including comparing and reconciling such information directly to the underlying accounting and other records used to prepare the basic financial statements or to the basic financial statements themselves, and other additional procedures in accordance with auditing standards generally accepted in the United States of America. In our opinion, the Schedule of Revenues, Expenditures, and Change in Fund Balance is fairly stated in all material respects in relation to the basic financial statements as a whole.

A handwritten signature in black ink that reads "The PwC Group, LLP". The signature is written in a cursive, flowing style.

Santa Ana, California

June 24, 2019, except for the Schedule of Revenues, Expenditures, and Change in Fund Balance, which is as of December 19, 2018.

City of Monterey
Schedule of Revenues, Expenditures, and Change in Fund Balance
Transportation Safety and Investment Plan Account Fund
For the Year Ended June 30, 2018

REVENUES:

Transportation Safety and Investment Plan Account	<u>\$ 947,335</u>
Total revenues	<u>947,335</u>

EXPENDITURES:

Capital outlay	<u>321,585</u>
Total expenditures	<u>321,585</u>

Change in fund balance	625,750
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FUND BALANCE:

Beginning of year	<u>-</u>
End of year	<u><u>\$ 625,750</u></u>

City of Monterey
Notes to the Schedule of Revenues, Expenditures, and Change in Fund Balance
Transportation Safety and Investment Plan Account Fund
For the Year Ended June 30, 2018

Note 1 – Reporting Entity

The financial reporting entity consists of the primary government, City of Monterey, California (the “City”), organizations for which the primary government is financially accountable, and other organizations for which the nature and significance of their relationship with the primary government are such that exclusion would cause the reporting entity’s financial statements to be misleading or incomplete.

The financial operations of the Transportation Safety and Investment Plan Account Fund are accounted for in the Transportation Safety and Investment Plan Account Special Revenue Fund in the City’s financial statements.

Note 2 – Summary of Significant Accounting Policies

Basis of Accounting

The activity of the Transportation Safety and Investment Plan Account reported within the special revenue fund of the City. The City utilizes the modified accrual basis of accounting for the special revenue funds as described in Note 1 to the City’s basic financial statements. The accompanying Schedule of Revenues, Expenditures, and Change in Fund Balance (the “Schedule”) is presented in accordance with accounting principles generally accepted in the United States of America (“U.S. GAAP”).

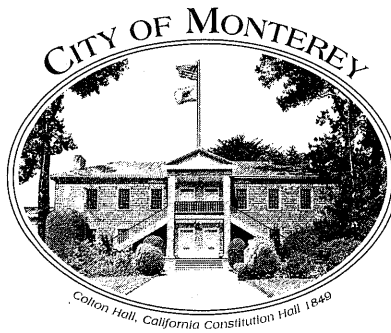
Schedule of Revenues, Expenditures and Change in Fund Balance

The accompanying Schedule presents the activity of the Transportation Safety and Investment Plan Account Fund of the City and, therefore, does not present the financial position or results of operations of the City. Only Measure X revenues received from TAMC and expenditures expended in accordance with Measure X, the Measure X Investment Plan, the Policies & Project Descriptions, and the Measure X Master Program Funding Agreement are included in the Schedule.

City of Monterey
Schedule of Findings and Responses
Transportation Safety and Investment Plan Account Fund
For the Year Ended June 30, 2018

There are no findings noted for the year ended June 30, 2018.

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FINANCE DEPARTMENT

Measure X Project Report

December, 2018

Measure X Transportation Safety Projects

North Fremont Project

This project is the perfect example of using Measure X funding in addition to Active Transportation Program and Regional Surface Transportation grant funding to enhance transportation safety.

Crossing distances across North Fremont at each existing intersection are excessively long due to skewed side streets and crosswalks. These long crosswalks substantially increase pedestrian exposure and generate excessive pedestrian timing delay. Crosswalk lengths crossing North Fremont Street will be reduced by straightening out the angle of the crosswalk. Audible pedestrian signals and countdown pedestrian heads will be added to all signalized intersections to dramatically increase ADA accessibility. New curb ramps will be installed at all intersections.

The benefits and positive impacts of this project occur between Casa Verde and Casanova where there is the potential to increase biking through the construction of Class IV bike lanes and the ADA improvements that link employment centers, residents, shopping areas and recreational facilities.

North Fremont has a very high number of commercial driveways, on street parking and a high volume of right turns. North Fremont carries an Average Daily Traffic of 30,000 and the speed limit is 35 mph. A Class II facility at this location would have attracted adults with a higher confidence and higher "traffic-tolerance" and would not be as attractive to all potential users (of different ages and abilities).

The Class IV lanes that are being built received great support from the Bike and Pedestrian Committee as well as residents and the business community. Groups such as Families of Color of Monterey County also strongly supported the Class IV bike lanes which enhanced safety, mobility choices and promoted social equity.

Roger Geller's "Four types of Transportation Cyclists" survey results, showed that up to 71% of the population would be attracted to bicycling if the bicycle network was designed to reduce the stress associated with potential motor vehicle conflicts. This is in addition to the 8% to 19% who are confident to use any bike facility. A San Francisco survey showed that 7 in 10 people cite safety concerns as a major impact on their decision to bike and 55% don't feel safe riding a bike adjacent to traffic (Class III or II).

The proposed Class IV facility offers a much higher degree of safety and comfort and the ability to attract users of all ages and abilities. The Class IV is the alternative that best fulfills the Active Transportation Program goals of increasing walking and biking trips, increasing safety for all users, increasing mobility, supporting GHG reduction and enhancing public health. Class IV bike lanes have shown to have 89% fewer injuries among bike riders. Class IV bike lanes also minimize conflicts between pedestrians and bicyclists riding on the sidewalk (who are not comfortable riding near traffic).

Other jurisdictions that have installed Class IV bike lanes have seen an increase of upwards of 300% in ridership. The City expects to see an increase in bicyclists of 200% which amounts to 140 new daily riders in the Class IV bike lanes from Casa Verde to Casanova. The City expects an increase in 50% of pedestrians, which amounts to 330 new pedestrian trips due to improved ADA access and shortened crossings.

The project broke ground in June of 2018 and expected completion is September 2019.

Completed improvements include:

North Fremont/Casa Verde Way (NE & SE corners)

- Work consisted of rebuilding new concrete sidewalks, curb ramps, electrical & underground improvements

North Fremont/Casanova Avenue (SE corner)

- Work consisted of rebuilding new concrete sidewalks, curb ramps, electrical & underground improvements

Underground Storm Drain Improvements along North Fremont Street

- Work consisted of installing drainage improvements along North Fremont and at intersections

Median work (ongoing)

- Pour concrete curbs and bike path along the median
- Re-open North Fremont to 2 lanes in both directions @ completion of median work and re-open parking along North Fremont Street

- Expected completion for median work – end of January 2019

Upcoming Work (start immediately after median work – Feb 2019)

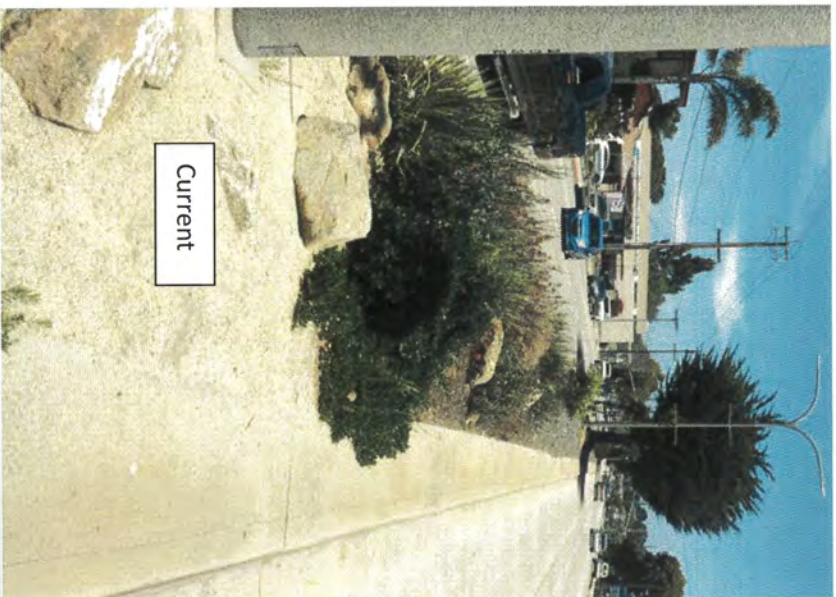
- Install new curb ramps on remaining corners of Casa Verde & Casanova Ave intersections
- Install new drainage improvements at Ramona Ave
- Install new curb ramps on all corners of Airport Road Ramona Ave intersections
- Install new traffic signal poles on Casa Verde, Airport Road, Ramona Ave, and Casanova Ave intersections

The City has conducted extensive outreach to businesses and residents and created a project specific website at:

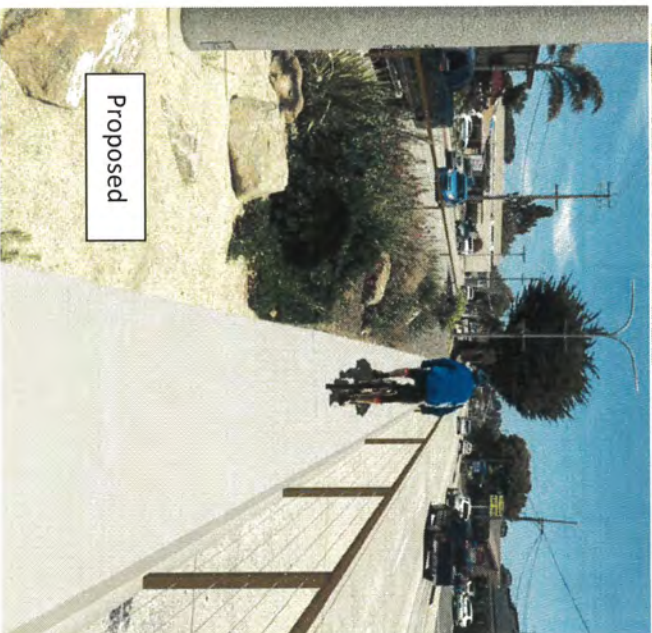
<https://monterey.org/City-Hall/Featured-Projects/The-NFremont-Bike-and-Pedestrian-Access-and-Safety-Improvements-Project>

And also developed Frequently Asked Questions webpage to address concerns

<https://monterey.org/Portals/0/MajorProjects/NorFremontBikPed/North-Fremont-FAQs-and-Memos-FINAL.pdf>



Current



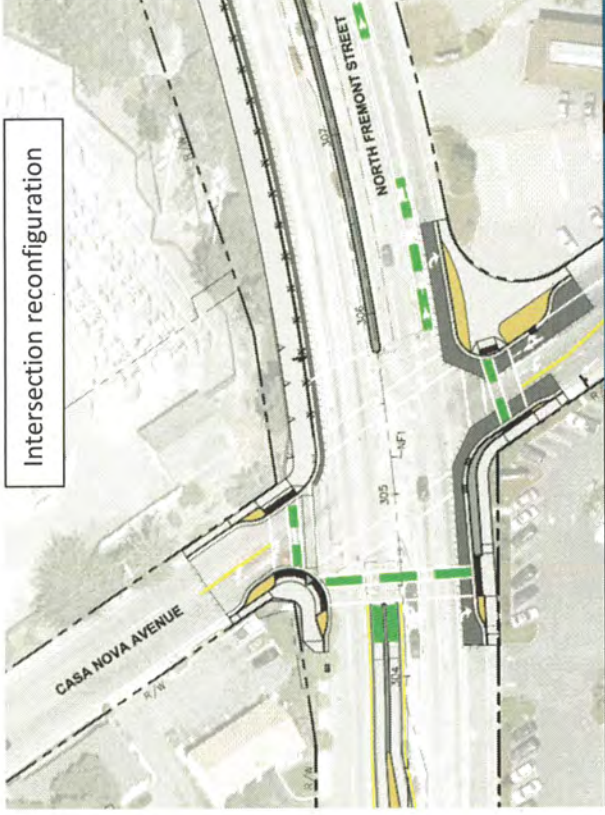
Proposed



Current



Proposed



Intersection reconfiguration



New curb ramps at Casa Verde

New Curb being poured along the medians for
the Class IV bike lane



New Curb being poured along the medians for the Class IV bike lane





FINANCE DEPARTMENT

Measure X Project Report

December, 2018

Measure X Citywide Traffic Signal Adaptive System (and Critical Maintenance)

Adaptive traffic control systems are the latest technology for improving traffic conditions by better synchronizing and controlling traffic signals. The system uses vehicle detection and artificial intelligence software to respond accurately and immediately to real-time traffic conditions. This enables the system to use green light time efficiently and to progress traffic through a corridor with few or no stops, and therefore less fuel consumed and fewer emissions. By eliminating idling due to stops and the resulting acceleration, vehicles burn less fuel and expel fewer pollutants and particulate matter. There are also travel time, quality of life, economic, and safety benefits from the system. The system consists of installing additional vehicle detection and in-cabinet processors as well as software and engineering services.

The City of Monterey applied for, and was awarded grants from the Monterey Bay Air Resources District (MBARD) for the development and installation of an adaptive signal control system. The first system was installed on Lighthouse Avenue, from Reeside to Hoffman. The City also received funding from the Neighborhood Improvement Program.

Measure X funding was used to fund critical equipment upgrades that are necessary for the installation of the adaptive system as well as video detection. Measure X funding enabled the City to expand the adaptive system to all of Del Monte Avenue in 2018.

The City of Monterey experiences significant arterial roadway congestion, which is creating inefficient traffic flow resulting in considerable emissions of pollutants and particulate matter. This degrades quality of life as well as air quality.

City of Monterey staff extensively researched the different adaptive systems and based on a study of 12

different systems, conducted by Kimley Horn and Associates, the City chose to deploy the SCOOT (Split Cycle Offset Optimization Technique) system.

The Lighthouse Corridor has 5 intersections currently running on the SCOOT system (Hoffman to Reeside), and now the Del Monte corridor has 8 intersections running on Scoot, for a total of 3 miles.

In order to implement the SCOOT system at additional intersections, existing traffic signal equipment has and will have to be upgraded (cabinets, controllers and communications) and new vehicle detection will need to be installed. Measure X funding was used to upgrade outdated and failing equipment to not only improve the reliability of the City's traffic signal system, but to also install a state of the art adaptive system. The expedited installation on Del Monte Avenue would not have been possible if the City had relied solely on grants, Measure X

In addition to realizing significant reductions in emission of motor vehicle emissions, completing these projects will result in saving motorists considerable time and fuel.

The project just completed, using Measure X and grant funding, was the Del Monte Avenue corridor, which varies in cross-section from four to seven lanes depending upon the intersection and the Average Daily Traffic can be as high as 52,000. The project included the following intersections along the Del Monte Avenue corridor:

1. Washington Street
2. Figueroa Street
3. Camino El Estero
4. Camino Aguajito
5. Sloat Avenue
6. Cunningham Road (Naval Post Graduate School)
7. Casa Verde Way
8. English Avenue

The SCOOT system also is completely compatible with the SIEMENS TACTICS central system that the City of Monterey uses to manage their signal system.

SCOOT requires both software and hardware asset installation and construction and the project included such assets as:

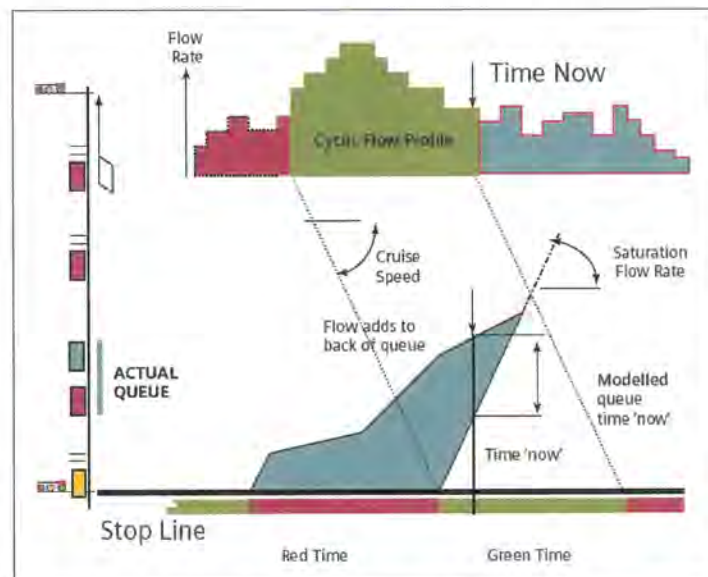
- Video detection on all approaches of all eight intersections
- Cabinet upgrades
- Controller and/or software (SEPAC 3.57b) upgrades
- SCOOT expansion license
- Urban Traffic Control database programming
- SCOOT database programming
- SCOOT Communication Server programming
- Calibration, Validation and Fine tuning of the adaptive model

The project was completed consistent with the baseline schedule and observation of adaptive performance was good during the AM, off-peak and PM peak periods observed. During the project, several issues created challenges for the field and office work of the implementation team, which was mitigated by additional resource hours, without amendment to scope or fee.

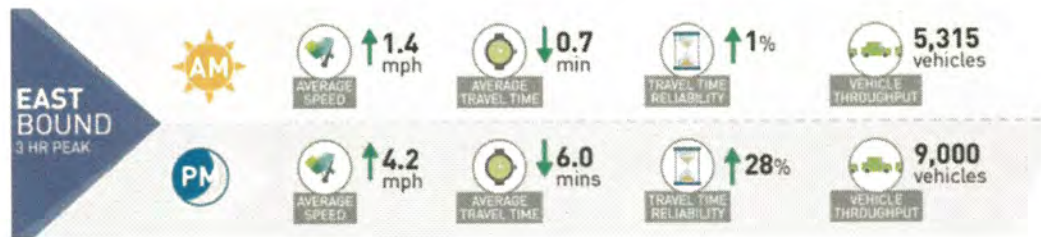
Coordinated traffic signals on the corridor will benefit all modes of travel by improving traffic flow and maintaining more consistent travel speeds. MST has a BRT service on Lighthouse and North Fremont (the next phase of adaptive implementation) that will also greatly benefit from this project and offer a substantial savings for bus travel, improving the ability for travelers to reach the corridor on modes other than via automobile.

SCOOT Operations

A typical SCOOT implementation is comprised of multiple intersections all connected to the SCOOT Server, forming a network. The system continually makes calculations on every link in the network. The diagram (Fig. 2, below) shows an example operation where the gray area represents the traffic queue. The goal of SCOOT is to reduce the gray area, known as the split, which will reduce congestion and delays.



Typical SCOOT operations

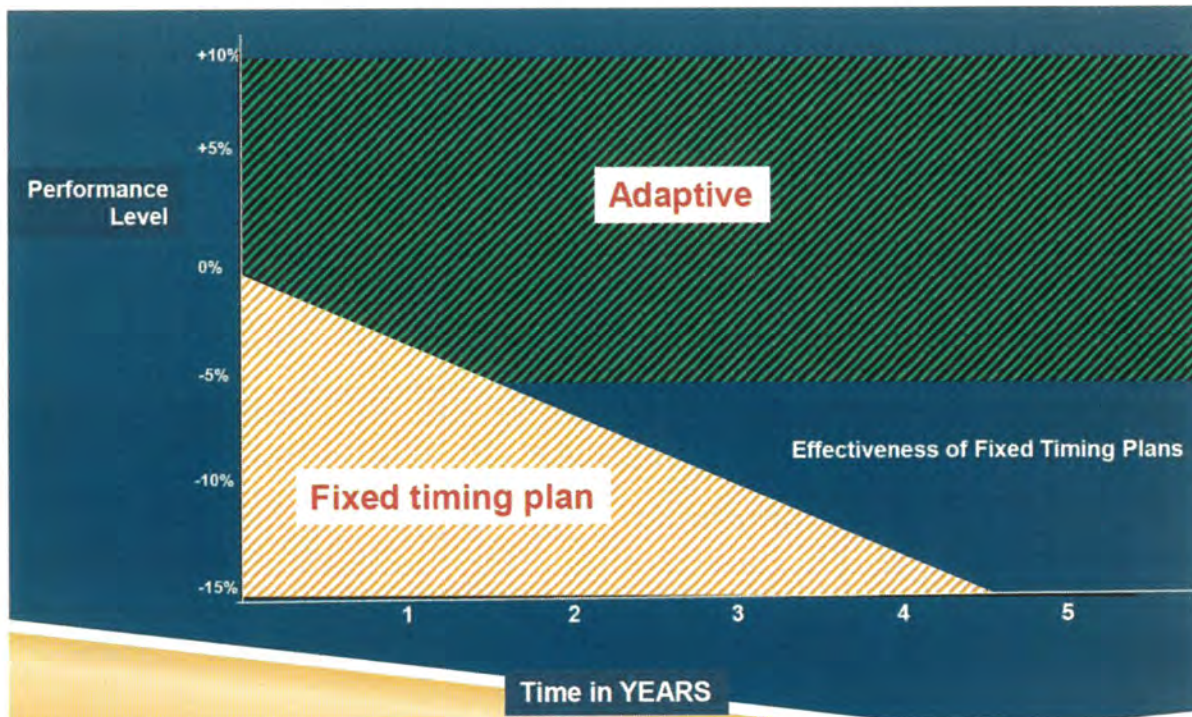


YEARLY SAVINGS PER VEHICLE DURING PEAK PERIODS
(AM WESTBOUND, PM EASTBOUND ONLY)



Seattle SCOOT results

Performance of Adaptive Systems

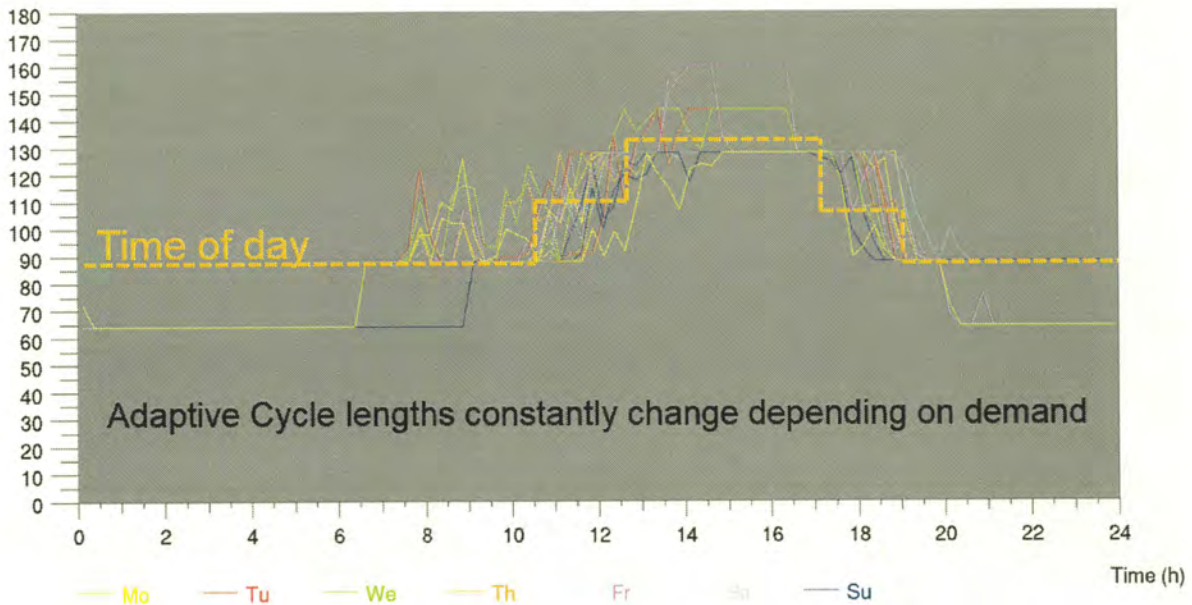


The traditional signal timing process is time consuming and requires substantial amounts of manually collected traffic data. Traditional Time-of-Day signal timing plans do not accommodate variable and unpredictable traffic demands. This produces customer complaints, frustrated drivers, and degraded safety. In the absence of complaints, months or years might pass before inefficient traffic signal timing settings are updated. With an adaptive system, information is collected and signal timing is updated continually. Special events, construction, or traffic incidents typically wreak havoc on traffic conditions. While large-scale construction projects and regular events can be anticipated, determining their impact on traffic conditions can be extremely difficult. Other disruptions, such as crashes, are impossible for time-of-day signal timing to accommodate.

Adaptive Cycle Lengths by Time of Day vs Time of Day

Cycle Time
(seconds)

RLH Bacfile (1-Aug-2017 to 14-Aug-2017)



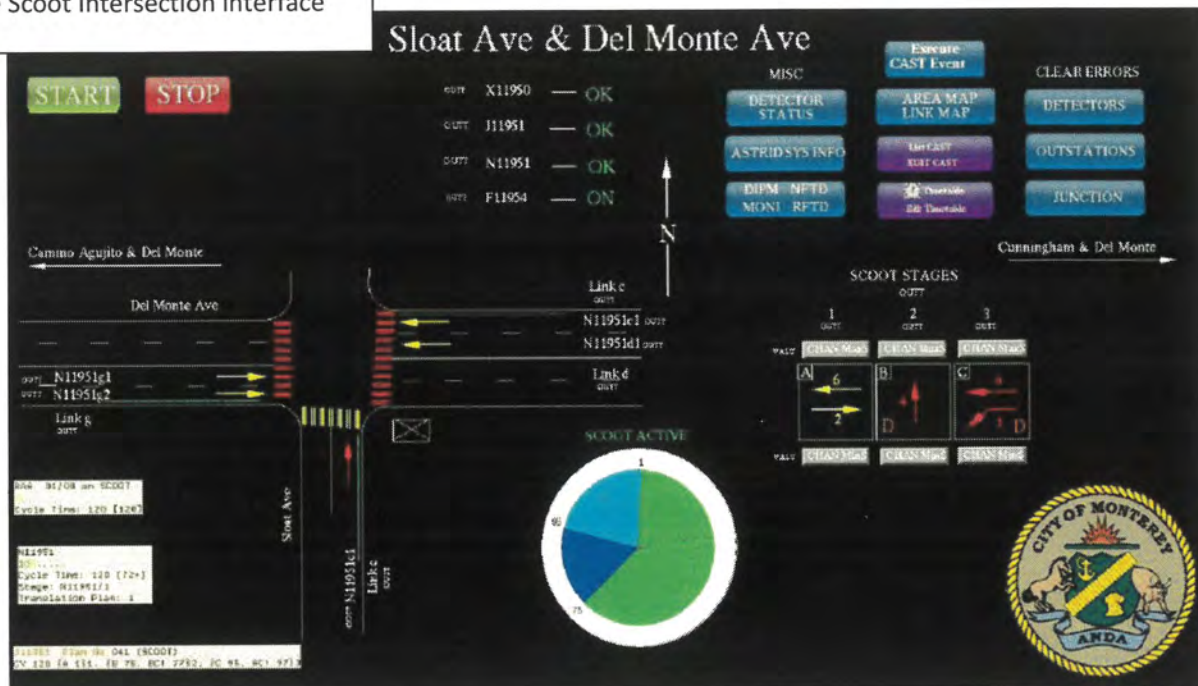
Typical time of day cycle lengths follow the dashed yellow line. As seen on the graph, SCOOT constantly adjusts the Cycle Time to serve the different peaks and demands.

Lighthouse Adaptive - Before and After Study

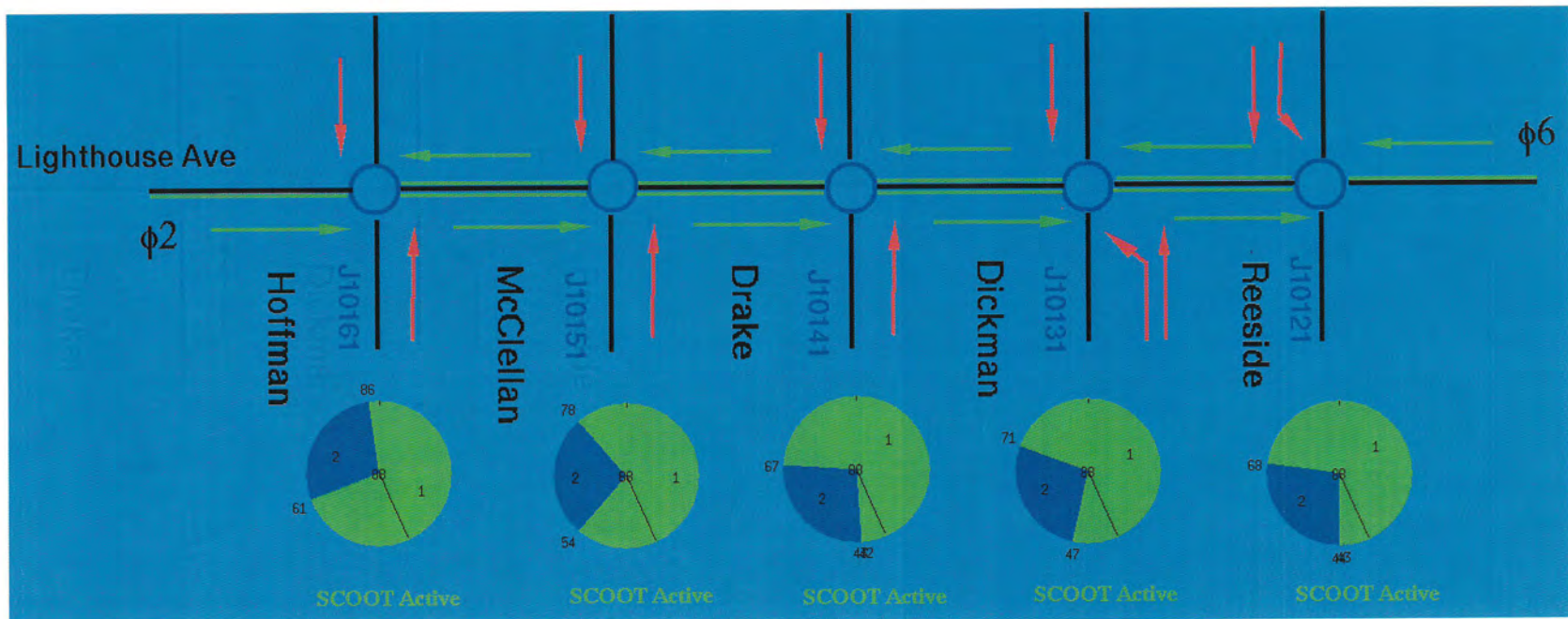


Results of the Lighthouse SCOOT implementation "Before and After" Study

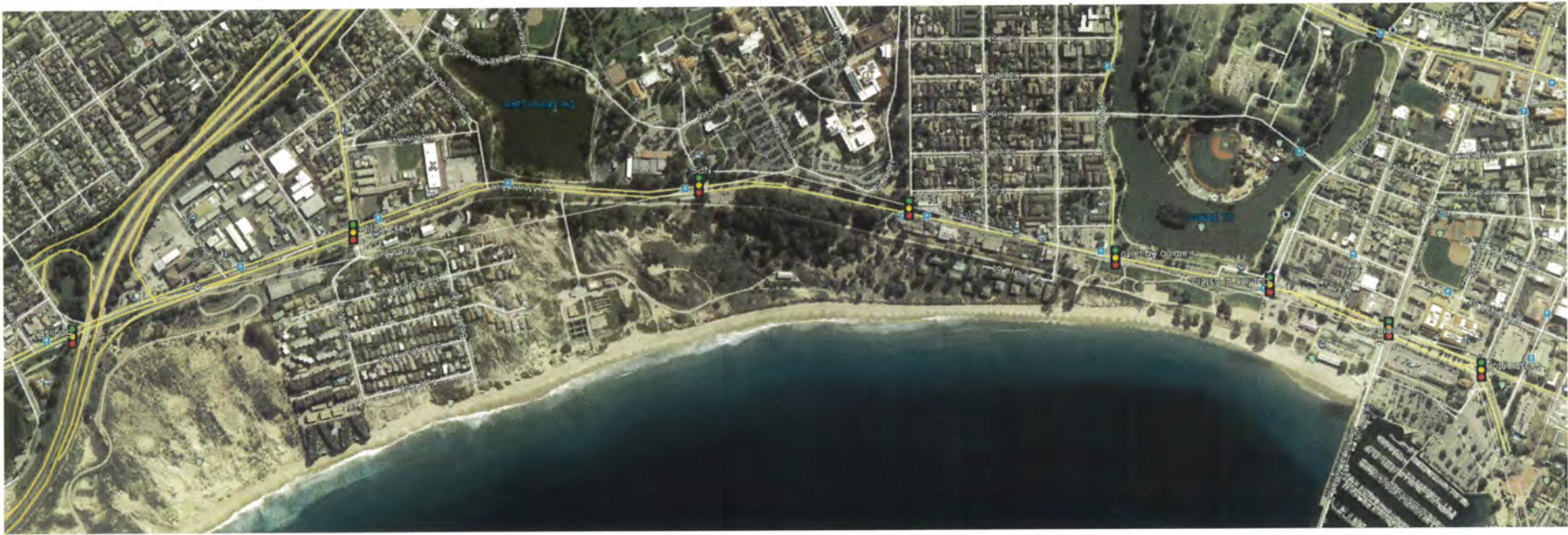
Sample Scoot Intersection interface



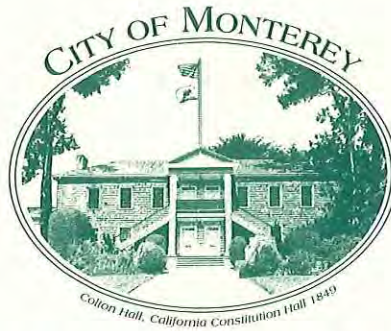
Video detection zones



Lighthouse Avenue with intersections running on SCOOT. The system is capable of adjusting cycle length, offsets and splits every 2.5 minutes depending on demand. The system is not only reacting to real time traffic but also predicting the future demand.



Del Monte Avenue Corridor with intersections running on SCOOT



PUBLIC WORKS DEPARTMENT

December 19, 2018

Mr. Todd Muck
Deputy Executive Director
Transportation Agency for Monterey County 55-B Plaza Circle
Salinas, CA 93901

Re: City of Monterey Measure X Compliance

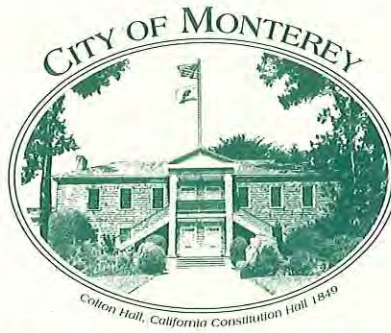
Dear Mr. Muck,

Please see the enclosed documents from the City of Monterey regarding compliance to Measure X, Article IV Reporting Requirements, items 4 and 5.

Sincerely,

A handwritten signature in blue ink, appearing to read "Alyssa Huerta", is written over the word "Sincerely,".

Alyssa Huerta
Administrative Assistant II
Public Works – Engineering



PUBLIC WORKS DEPARTMENT

December 19, 2018

Mr. Todd Muck
Deputy Executive Director
Transportation Agency for Monterey County 55-B Plaza Circle
Salinas, CA 93901

Re: Pavement Management Program Annual Report Letter

Dear Mr. Muck,

The City of Monterey confirms that it has a Pavement Management Program that conforms to the criteria established by the Transportation Agency for Monterey County and included in the Measure X Agreement with the Local Agency. An approved Pavement Management Program must be in place to be eligible for Measure X funds.

The Pavement Management Program utilizes a software system developed by:

☒ Metropolitan Transportation Commission StreetSaver
☐ Other _____

The system was updated by the City of Monterey and contains, at a minimum, the following elements:

- Inventory of all existing pavements under the local agency jurisdiction:
Centerline miles: **102.50**
Total lane miles (or equivalent units): **220.92**
The last update of the inventory was completed on: **October 24, 2018**
- Pavement Condition Index (PCI): **62**
- Identification of sections of pavement needing maintenance, rehabilitation, or replacement.
Total lane miles (or equivalent units) **192.25** (PCI > 90)
- Estimated budget needs to rehabilitate or replace deficient sections for the current year and the next three years: **\$54,787,873 (Unconstrained Needs)**

You may direct any questions regarding the system to Thomas Korman, P.E. at (831) 646-3475.

Sincerely,


Steve Wittry, P.E.
Public Works Director

Progress and Schedule

						Completed By							
						DEC	JUL	DEC	DEC	DEC	DEC	DEC	DEC
						'18	'19	'19	'20	'21	'22	'23	'24
Fiber Communication Citywide Signals		\$ 500,000	Estimate										
Adaptive Lighthouse	Hoffman to Reeside	\$ 500,000	Completed										
Adaptive Del Monte Ph 1	Washington to Sloat	\$ 600,000	In Progress										
Adaptive Del Monte Ph 2	NPS to English	\$ 265,000	In Progress										
Adaptive Lighthouse	David to Prescott	\$ 290,000	Estimate										
Adaptive N Fremont	Casa Verde to Casanova	\$ 480,000	Estimate										
Adaptive Munras/Fremont	Soledad to Fremont/EI Estero	\$ 740,000	Estimate										
Adaptive Foam	Cannery Row to David	\$ 740,000	Estimate										
Adaptive Pacific	Soledad to Scott	\$ 630,000	Estimate										
Adaptive Franklin	Monroe to Figueroa	\$ 770,000	Estimate										
Upgrade remaining Intersections		\$ 250,000	Estimate										