

**Board Report**

File #: 2019-0451, **File Type:** Motion / Motion Response**Agenda Number:** 6.

**PLANNING AND PROGRAMMING COMMITTEE
JULY 17, 2019****SUBJECT: SOUTH BAY SMART NET PROJECT****ACTION: RECEIVE AND FILE****RECOMMENDATION**

RECEIVE AND FILE status report on Motion 6.1 from the April 25, 2019 Board of Directors meeting regarding the South Bay SMART-Net project.

ISSUE

The Board of Directors authorized the use of up to \$4.4 million in South Bay Measure M Multi-year Subregional Program (MSP) Transportation System Mobility Improvement Program (TSMIP) funds to construct the South Bay SMART-Net project. As a condition of funding, Metro staff was directed by the Chief Executive Officer to work with the South Bay Cities Council of Governments (SBCCOG) to develop a viable list of transportation projects within 60 days that could be implemented in conjunction with the South Bay SMART-Net project. These projects would establish the transportation mobility nexus needed to justify the use of MSP TSMIP funds. Transportation projects that leverage the South Bay SMART-Net project have been identified to show benefit to the transportation system. This report presents Metro staff's efforts in adding transportation projects eligible to receive Measure R and M Highway Subregional funds to the South Bay fiber-optic system.

BACKGROUND

The SBCCOG proposed to construct a fiber-optic broadband infrastructure to connect public services in the South Bay subregion. The project would support enhancement for mobility and accessibility systems and networks that serve South Bay residents through services offered by its municipalities. The goals of the SMART-Net project were identified to be enhanced economic development and business retention; wholesale broadband service within the South Bay cities to government buildings and community organizations; and enabling and supporting for public Wi-Fi and Smart City activities.

SBCCOG requested \$4.4 million in South Bay Measure M MSP TSMIP funds for the SMART-Net project. Under the Measure M Guidelines for Intelligent Transportation Systems (ITS) and Transportation Technology projects, the SMART-Net project would have been eligible for funding if there was a nexus to the transportation system. The initial project description for SMART-Net did not provide a component of "information sharing for highway/arterial and/or transit systems" as stated in

the Measure M Guidelines. This report recommends transportation projects that can utilize the SMART-Net to improve and enhance traffic operations and communications in the South Bay subregion.

DISCUSSION

Metro Highway Program staff worked with the City of Manhattan Beach, Los Angeles County Department of Public Works (LACDPW), Regional Integration of ITS (RIITS), and SBCCOG to identify projects that can utilize the SMART-Net to improve and enhance the transportation system. The following four transportation projects were developed to leverage the South Bay SMART-Net project.

1) **RIITS SMART-Net Integration** - This project will establish a high-speed connection through the South Bay SMART-Net to connect RIITS with the South Bay subregion. RIITS will become more reliable and resilient with the increase in network redundancy, and would enhance data exchange and increase access to transportation-related operational data to South Bay cities. This data sharing will enhance traffic management operations, system performance evaluation, and regional transportation data distribution.

2) **LACDPW Traffic Control System (TCS) and Information Exchange Network (IEN) SMART-Net Integration** - This project will establish a virtual private network (VPN) connection through the South Bay SMART-Net to connect traffic signal control field elements in ten South Bay cities to the County of Los Angeles (County) traffic management center (TMC). In addition, the VPN connection through the South Bay SMART-Net will provide a secondary high-speed connection to the South Bay cities that are part of the IEN. LACDPW will have a more reliable and redundant network to effectively manage traffic operations on major corridors in the South Bay subregion.

3) **Manhattan Beach TCS SMART-Net Integration** - This project will establish a VPN connection through the South Bay SMART-Net to connect traffic signal control field elements in the City of Manhattan Beach to the County's TMC. This VPN connection will create a secondary high-speed network connection that will enhance central monitoring and control of the local traffic signals. Manhattan Beach will have a more reliable and redundant network to effectively manage traffic operations on major corridors in the city.

4) **Signal Phase and Timing (SPaT) Data Sharing SMART-Net Integration** - This project will establish a secured connection through the South Bay SMART-Net to connect the central TCS of a city to a third-party data server. This high-speed connection will have the ability to share SPaT data to vehicles that are equipped to receive the data. This Connected Vehicle application provides information to drivers on the operation of the intersection, and will maintain safe driving speeds on roadways, improve traffic operations at intersections and corridors, and reduce harsh driving maneuvers. Currently, the City of Torrance and LACDPW are working with a third-party data service provider to broadcast SPaT data to passenger vehicles.

These projects can be implemented in conjunction with the construction of the South Bay SMART-Net project. The planning for the VPN connections should commence at least six months prior to the completion and activation of the SMART-Net broadband service. The City of Manhattan Beach, City of Torrance, LACDPW, RIITS, and SBCCOG have provided concurrence and letters of commitment for these projects, which are included in an attachment.

FINANCIAL IMPACT

Since this is a multi-year project, the Project Managers, the Cost Center Manager, and the Senior Executive Officer, Program Management, Highway Program will be responsible for budgeting the costs in current and future years.

Impact to Budget

The source of funds for this project is Measure M MSP TSMIP. This fund source is not eligible for Metro bus and rail operating and capital expenditures.

IMPLEMENTATION OF STRATEGIC PLAN GOALS

Recommendation supports the following goals of the Metro Vision 2028 Strategic Plan:

Goal 1: Provide high-quality mobility options that enable people to spend less time traveling. The South Bay subregion can increase the mobility for all users by utilizing the South Bay SMART-Net to enhance traffic signal operations on major arterial corridors in the South Bay subregion.

Goal 4: Transform LA County through regional collaboration by partnering with the Council of Governments and the local jurisdictions to identify needed improvements to improve mobility.

NEXT STEPS

Metro will work with the SBCCOG to execute a Letter of No Prejudice to immediately commence work on the SMART-Net project. Upon Board approval of the Measure M MSP TSMIP South Bay Subregional funding, the SBCCOG will be notified and a Funding Agreement will be executed with funds programmed in FY 2019-20. Staff will continue to work with the SBCCOG and the participating agencies to implement the four projects identified in this report.


ATTACHMENTS

Attachment A - Project Summary Table
Attachment B - Project Fact Sheets
Attachment C - Letters of Commitment

Prepared by: Edward Alegre, Senior Manager, (213) 418-3287
Steven Gota, Deputy Executive Officer, (213) 922-3043
Abdollah Ansari, Senior Executive Officer, (213) 922-4781

Reviewed by:

Richard Clarke, Chief Program Management Officer, (213) 922-7557



Phillip A. Washington
Chief Executive Officer

Project Summary Table

| Project Title | Regional Integration of Intelligent Transportation Systems (RIITS) South-Bay SMART-Net Integration | Los Angeles County Department of Public Works Traffic Signal Control South-Bay SMART-Net Integration | Manhattan Beach Central Traffic Signal Control South Bay SMART-Net Integration | Signal Phase and Timing (SPAT) Data Sharing SMART-Net Integration |
|---------------------------|---|---|--|---|
| Project Summary | Establish a high-speed connection through the South Bay SMART-Net to connect RIITS to a broadband internet service provider to improve regional transportation data exchange. | Establish a virtual private network (VPN) connection through the South Bay SMART-Net to connect traffic signal control field elements in 10 South Bay cities. | Establish a virtual private network (VPN) connection through the South Bay SMART-Net to connect City of Manhattan Beach traffic signal control field elements to the County TMC. | Establish a secured connection through the South Bay SMART-Net to connect the City of Torrance central traffic control system (TCS) to a third party data server. |
| Benefits | Enhances traffic management operations, system performance evaluation, and regional transportation data distribution. | Increases ability to centrally monitor and control the signalized intersections along the major arterial corridors in the South Bay. | Allows the County to more consistently leverage the capabilities of the County central traffic control system used in Manhattan Beach. | Reduces harsh driving maneuvers, improved acceleration/deceleration at intersections, and maintain safe driving speeds along streets. |
| Need | Provides broadband redundancy to improve access to data that supports real-time transportation operations. | Creates necessary communications redundancy to minimize any potential disruption in connectivity to field signal traffic control elements. | Creates a necessary communications redundancy to minimize any potential disruption to central management of signalized intersections. | Establishes high-speed connection between local TCS and third party data providers to support second-by-second SPaT broadcast. |
| Dependencies | Requires physical SMART-Net connection | Requires physical SMART-Net connection | Requires physical SMART-Net connection | Requires physical SMART-Net connection |
| Funding | Project is covered under the SMART-Net grant and RIITS program. | Project is covered under the SMART-Net grant and existing Traffic Forum funding. | Project is covered under the SMART-Net grant and future City of Manhattan Beach project. | Project is covered under the SMART-Net grant and through third party support. |
| Schedule | To be completed within 2 months of establishing SMART-Net broadband connection. | To be completed within 2 months of establishing SMART-Net broadband connection. | To be completed within 2 months of establishing SMART-Net broadband connection. | To be completed within 2 months of establishing SMART-Net broadband connection. |
| Agency Concurrence | Yes | Yes | Yes | Yes |

REGIONAL INTEGRATION OF INTELLIGENT TRANSPORTATION SYSTEMS (RIITS) SMART-NET INTEGRATION PROJECT

Project Description:

This project will establish a high-speed connection through the South Bay SMART-Net to connect RIITS to a broadband internet service provider. This connection will create a secondary high-speed network connection that will supplement existing and planned fiber connections deployed in the sub-region to enhance data exchange and provide a central storehouse for transportation-related operational data. Several regional partners such the County of Los Angeles Department of Public Works (LACDPW), California Department of Transportation (Caltrans), and others will have reliable access to data that could support planning, policy, and operational decision-making. Attachment A provides a high-level logical diagram illustrating the connections.

Project Benefits:

RIITS coordinates with data-contributing partner agencies and manages, operates, and maintains RIITS. For example, Southern California 511 is the regional traveler information program that operates within RIITS. Additionally, it provides partner agencies with a central repository to exchange data across city and county jurisdictions through the RIITS communication network. The RIITS network provides users with the potential to utilize data for system performance evaluation, planning and policy analysis and the improvement of traffic management operations. With the secondary connection, RIITS becomes more reliable and resilient with increased network redundancy. In addition, SMART-Net would provide increased bandwidth and consequentially allow for

KEY PROJECT ATTRIBUTES & STAKEHOLDERS

1. Leverages SMART-Net to provide high-speed data connections
2. Provides broadband internet connection redundancy at a reduced cost
3. Provides backbone network for future RIITS connections



the exchange of high-resolution data at a lower cost. Connection to SMART-Net will not only maintain connection to the Los Angeles County's Information Exchange Network (IEN), City of Los Angeles Automated Traffic Surveillance and Control (ATSAC), and Caltrans' Los Angeles Regional Transportation Management Center (LARTMC), but it permits for possible future data connections (such as connections to traffic management centers, transit operation centers, etc.) through RIITS and other participating South Bay cities.

Project Need:

Currently, the RIITS Program lacks broadband internet redundancy. RIITS loses broadband internet connectivity frequently, leaving RIITS partners vulnerable to unreliable access to data, which also has the potential to adversely affect real-time system operations. With the secondary high-speed connection to SMART-Net's broadband service provider, RIITS will be able to better manage access to transportation data in the region. Additionally, it allows RIITS to ingest high-resolution data flows that require higher bandwidth that is not be possible with its current architecture.

Dependencies:

For this project to move forward, the SMART-Net service provider will need to establish a broadband connection with RIITS, located in the Metro Headquarters in Downtown Los Angeles. RIITS would be established as an additional node on SMART-Net to provide regional communications for transportation organizations.

Cost:

It is anticipated that the fixed costs associated with the establishment of this fiber optic connection can be covered under the South Bay SMART-Net Project, which will deploy regional broadband connections between city nodes in the South Bay Cities subregion. RIITS will work with the South Bay Cities Council of Governments (SBCCOG) to identify any additional costs necessary to establish the RIITS connection that are beyond the scope of the South Bay SMART-Net project and cover the costs under the RIITS Program budget.

Schedule:

This project can be implemented in conjunction with the build-out of the SMART-Net project. Planning for the establishment of the connection should commence 6 months prior to the completion and activation of the SMART-Net broadband service to RIITS. The network design

and implementation should be coordinated by SMART-Net contractor and the RIITS Program Administrator during this period with the connections established and operational within 2 months after the SMART-Net broadband connection is activated.

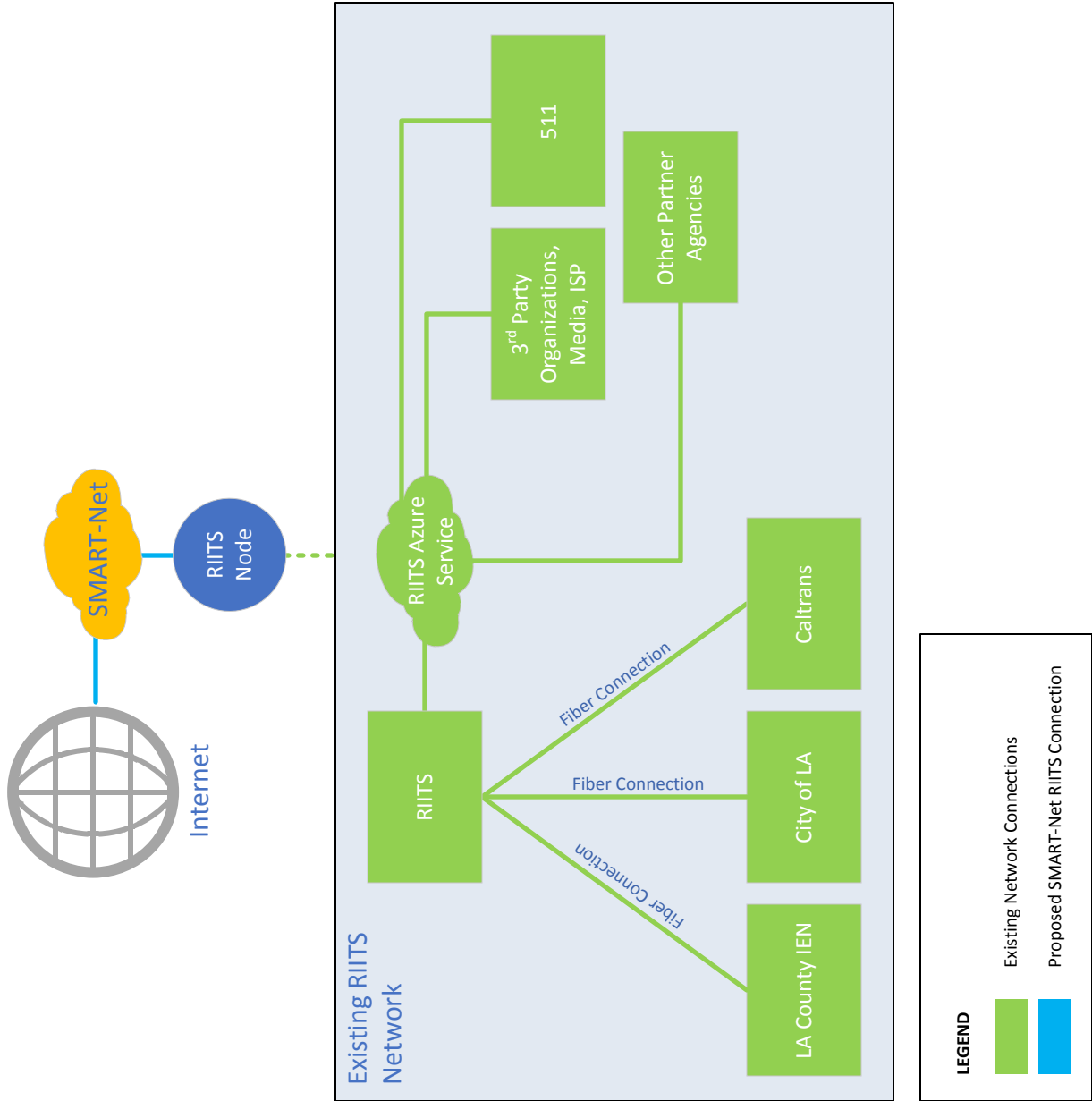
Project Concurrence:

RIITS Program

South Bay Cities Council of Governments

Metro Highway Program, ITS

Attachment A



LA COUNTY DPW TRAFFIC CONTROL SYSTEM AND INFORMATION EXCHANGE NETWORK SMART-NET INTEGRATION PROJECT

Project Description:

This project will establish a virtual private network (VPN) connection through the South Bay SMART-Net to connect traffic signals in six cities (cities of Carson, El Segundo, Hawthorne, Lawndale, Lomita, and Manhattan Beach) to the County of Los Angeles (County) traffic management center (TMC) in Alhambra. The VPN will also connect traffic control systems (TCS) in four cities (cities of Gardena, Inglewood, Redondo Beach, and Torrance) to the County TMC. The County will also establish a SMART-Net node in Alhambra to make the connection to the South Bay subregion. Attachment A provides a high-level logical diagram illustrating the connections.

The VPN connection will create a secondary high-speed network connection that will supplement existing and planned wireless and wired connections being deployed in the subregion to enhance central monitoring and control of the local traffic signals in six cities in the region (cities of Carson, El Segundo, Hawthorne, Lawndale, Lomita, and Manhattan Beach). The VPN connection through the South Bay SMART-Net will also provide a secondary high-speed network connection to the South Bay cities that are part of the Information Exchange Network (IEN).

Project Benefits:

By establishing a secondary high-speed connection to the SMART-Net, the County of Los Angeles will be able to maintain communications with traffic signal control field elements (traffic signal controllers, detectors, cameras, etc.) in the

KEY PROJECT ATTRIBUTES & STAKEHOLDERS

1. Increases reliability of central traffic signal monitoring and control for multiple cities within the SB region
2. Leverages SMART-Net to provide high-speed data connection to signal control field elements and the County TMC
3. Provides additional traffic signal control communications redundancy at a reasonable cost
4. Leverages SMART-NET to provide high speed data connection to the IEN



region when there are service disruptions along the fiber-optic line currently used to connect Los Angeles County Department of Public Works (LACDPW) to the South Bay subregion. The increased communications reliability will allow LACDPW to more consistently and effectively leverage the capabilities of the County's central traffic control system (KITS) that is used to monitor and control the intersections along the major arterial corridors in the region. More reliable communications will ensure the County can monitor the operations of existing traffic signal control assets, centrally adjust traffic signal timing in real-time as needed, provide greater insight into corridor operations and maintenance needs, allow for the exchange of data needed to support the central distribution of signal phase and timing (SPaT) information, and support the growing number of signal-related intersection mobility and safety applications being implemented throughout the County. Additionally, a secondary network will also enable the County IEN to send and push data to the respective IEN sites located in the South Bay subregion.

Project Need:

Currently, the signalized intersections communicating with the County KITS central traffic control system are connected to the County TMC through a fiber-optic communications connection running through the City of Los Angeles ATSAC to the County TMC in the City of Alhambra. When this connection goes down, LACDPW loses the ability to centrally monitor and control the existing South Bay traffic signals managed and maintained by the County, which includes the signals in the cities of Carson, El Segundo, Hawthorne, Lawndale, Lomita, and Manhattan Beach. This project will create necessary communications redundancy that will minimize any potential disruption in service and allow for the central traffic signal control system benefits to be maintained in a more consistent manner. This will effectively allow the County to participate in event and incident management with those that are part of the LA County KITS system.

In addition, the County can properly control system elements and select appropriate timing plans when needed for cities that are part of the LA County KITS system. The secondary high-speed connection will enhance video distribution capabilities to the County who maintains and owns cameras in the South Bay subregion.

Currently, about 70% of the South Bay agencies are connected to the LA County IEN through various connection methods. By establishing a secondary high-speed connection through the

SMART-Net, all IEN sites in the South Bay subregion will have a redundant connection to the County's TMC.

Below is a table of what TCS each agency in the South Bay subregion has, as well IEN details.

| | Agency | TCS type | IEN Connection | Connection Method* |
|-----|-----------------------|-----------------|-----------------------|---------------------------|
| 1. | Carson | KITS | Yes | T1 |
| 2. | El Segundo | KITS | Yes | Fiber |
| 3. | Lawndale | KITS | Yes | Fiber |
| 4. | Lomita | KITS | Yes | Cell Broadband |
| 5. | Hawthorne | KITS | Yes | Fiber |
| 6. | Manhattan Beach | KITS | Yes | Fiber |
| 7. | Gardena | QuickNet | Yes | Fiber |
| 8. | Inglewood | Transparity | Yes | T1->Fiber |
| 9. | Redondo Beach | KITS/Centracs | No | VPN and Fiber |
| 10. | Torrance | Centracs | Yes | Fiber |
| 11. | Hermosa Beach | None | None | N/A |
| 12. | Palos Verdes | None | None | N/A |
| 13. | Palos Verdes Estates | None | None | N/A |
| 14. | Rancho Palos Verdes | None | None | N/A |
| 15. | Rolling Hills Estates | None | None | N/A |

* Indicated as a connection method by each city is how the final run of communication is coming back to the County from the Cities. Except for Carson and Lomita, all Cities are making use of the LADOT fiber.

Dependencies:

For this project to move forward the County will need to establish a SMART-Net node adjacent to the County's TMC in Alhambra that will connect the County to the South Bay. In addition, the County will need to establish a VPN connection from the County Node to another SMART-Net node (e.g. City of Manhattan Beach). This VPN connection ensures bi-lateral communications is maintained.

Cost:

It is anticipated that the fixed costs associated with the establishment of the node and VPN connection can be covered under the SMART-Net grant. Additionally, there are funds available

to support center-to center and center-to-field communications in multiple South Bay Traffic Forum Call for Projects grants provided by Metro to LACDPW to support this type of work.

Schedule:

This project can be implemented in conjunction with the build-out of the South Bay SMART-Net project. Planning for the establishment of the VPN should commence 6 months prior to the completion and activation of the SMART-Net broadband service in the City of Manhattan Beach and LACDPW. VPN design and implementation should be coordinated by both all participating agencies during this period with the VPN connection established and operational within 2 months after the SMART-Net broadband connection is activated.

Project Concurrence:

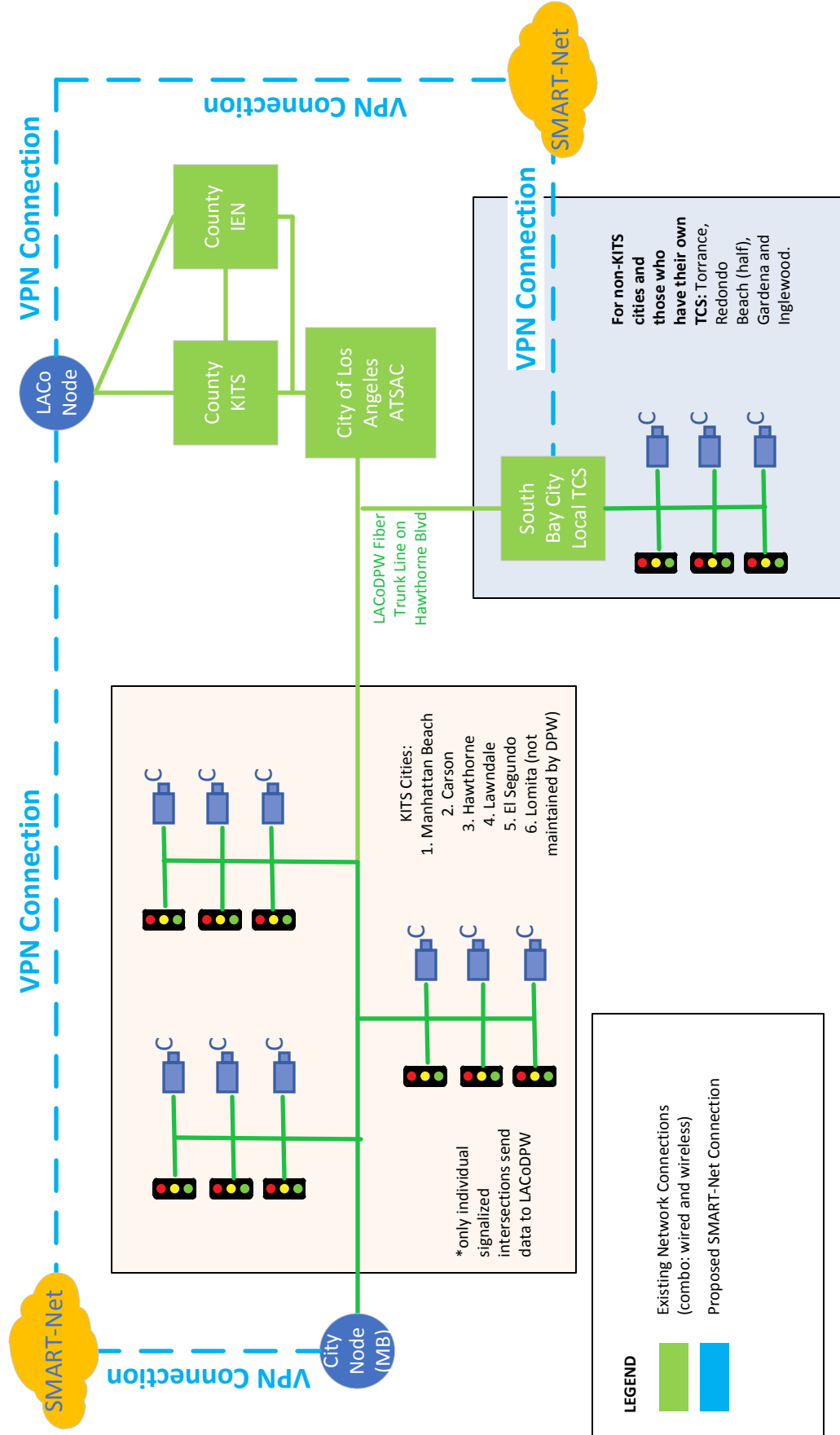
City of Manhattan Beach

Los Angeles County Department of Public Works

South Bay Cities Council of Governments

Metro Highway Program, ITS

Attachment A



MANHATTAN BEACH TRAFFIC CONTROL SYSTEM SMART-NET INTEGRATION PROJECT

Project Description:

This project will establish a virtual private network (VPN) connection through the South Bay SMART-Net to connect traffic signal control field elements on Artesia Blvd, Aviation Blvd, Highland Ave, Manhattan Beach Blvd, Marine Ave, and Rosecrans Ave Blvd in the City of Manhattan Beach (City) to the County of Los Angeles (County) traffic management center (TMC) in Alhambra. This VPN connection will create a secondary high-speed network connection that will complement existing wireless and fiber connections deployed in the subregion to enhance central monitoring and control of the local traffic signals in the City. Attachment A provides a high-level logical diagram illustrating the connections.

Project Benefits:

By establishing a secondary connection to the fiber-optic local traffic signal control network in Manhattan Beach, the County will be able to maintain communications with traffic signal control field elements (traffic signal controllers, detectors, cameras, etc.) in the City when there are service disruptions along the fiber-optic line currently used to connect LA County Department of Public Works (LACDPW) to the South Bay subregion. The increased communications reliability will allow the County to more consistently and effectively leverage the capabilities of the County central traffic control system (KITS) that is used to monitor and control the intersections along the major arterial corridors in the City. More reliable communications will ensure the County can monitor the operations of existing traffic signal control assets, centrally adjust traffic signal timing in real-time as needed, provide

KEY PROJECT ATTRIBUTES & STAKEHOLDERS

1. Increases reliability of central traffic signal monitoring and control for the major arterial corridors in the City of Manhattan Beach
2. Leverages SMART-Net to provide high-speed data connection to signal control field elements and the County TMC
3. Provides additional communications resiliency for other South Bay County operated intersections.



greater insight into corridor operations and maintenance needs, allow for the exchange of data needed to support the central distribution of signal phase and timing (SPaT) information, and support the growing number of signal-related intersection mobility and safety applications being implemented throughout the County.

Project Need:

Currently, the signalized intersections communicating with the County's KITS central traffic control system are connected to the County's TMC through a fiber-optic communications connection running through the City of Los Angeles ATSAC to the County's TMC in Alhambra. When this connection goes down LACDPW loses the ability to centrally monitor and control the existing South Bay traffic signals managed and maintained by the County, including the signals in Manhattan Beach. This project will create a necessary communications redundancy that will minimize any potential disruption in service and allow for the central traffic signal control system benefits to be maintained in a more consistent manner.

Dependencies:

For this project to move forward the City will need to connect to the South Bay SMART-Net and establish a VPN connection through the broadband connection to the County's TMC in Alhambra. Furthermore, LACDPW will need to support the City in establishing the VPN to ensure bi-lateral communications is maintained across the newly established VPN connection. This project will also need to be coordinated with the delivery of the Manhattan Beach Advanced Traffic Signal (MBATS) System project that is being considered to deploy additional detection, CCTV cameras, fiber optic signal interconnect, and new signal control hardware and firmware along major corridors in the City.

Cost:

It is anticipated that the fixed costs associated with the establishment of this VPN connection can be covered under the MBATS System project which will deploy fiber-optic communications to all signalized intersections along the afore mentioned corridors within the city limits. Additionally, there are funds available to support center-to-center and center-to-field communications in multiple South Bay Traffic Forum Call for Projects grants provided by Metro to LACDPW to support this type of work. The ongoing costs to maintain the VPN connections will need to be absorbed by the City and LACDPW. There are no additional ongoing recurring costs for the City or the County as the recurring broadband needs to support the VPN will be

covered under existing and future SMART-Net or other broadband service agreements for each respective agency.

Schedule:

This project can be implemented in conjunction with the build-out of the South Bay SMART-Net project. Planning for the establishment of the VPN should commence 6 months prior to the completion and activation of the SMART-Net broadband service in the City. VPN design and implementation should be coordinated by both participating agencies during this period with the VPN connection established and operational within 2 months after the SMART-Net broadband connection is activated.

Project Concurrence:

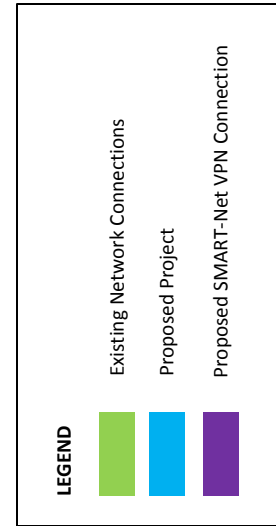
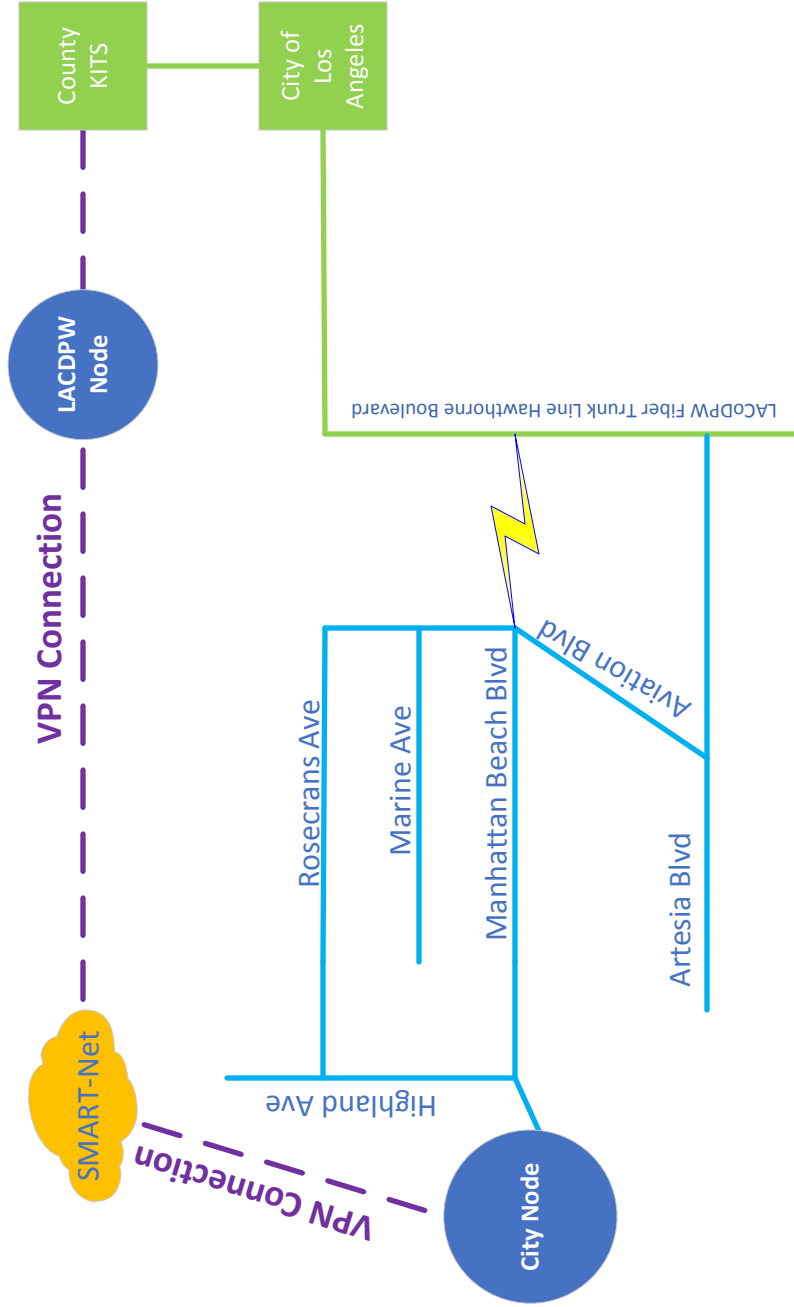
City of Manhattan Beach

Los Angeles County Department of Public Works

South Bay Cities Council of Governments

Metro Highway Program, ITS

Attachment A



SIGNAL PHASE AND TIMING (SPaT) DATA SHARING AND SMART-NET INTEGRATION PROJECT

Project Description:

This project will establish a secured connection through the South Bay SMART-Net to connect an agency's central traffic control system (TCS) to a 3rd party data server. This secured connection will create a high-speed network connection that will have the ability to share signal phase and timing (SPaT) data from the TCS to vehicles that are equipped to receive the data. Attachments A and B provides a high-level logical diagram illustrating the connections.

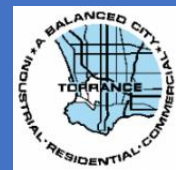
With advances in connected vehicle technology and applications, SPaT data from the traffic signal controller is being used to create applications to provide countdown and/or speed advisories as a vehicle approaches an intersection. The application, known as Eco-Approach and Departure or Eco-Drive, is currently integrated in passenger vehicles (such as Audi). Traffic Technology Services (TTS) is a data provider to automotive OEMs and pushes out the SPaT data through its servers.

Project Benefits:

By providing SPaT data to passenger vehicles, there is the opportunity for drivers to reduce harsh driving maneuvers, accelerate or decelerate accordingly at intersections, and maintain safe driving speed along streets. This may result in managed congestion, reduction in incidents at intersections, and improvement in air quality conditions.

KEY PROJECT ATTRIBUTES & STAKEHOLDERS

1. Ability to share Signal Phase and Timing (SPaT) data to vehicles to manage congestion and acceleration/deceleration at intersections.
2. Leverages SMART-Net to provide high-speed data connection to third-party data service providers (such as Traffic Technology Services [TTS]).
3. Manages congestion, reduces incidents, and improves air quality.



Project Need:

Currently, a secured connection can be established at an agency's traffic management center to share SPaT data with TTS. However, these connections may not offer high-speed capabilities. Since SPaT data needs to be pushed out on a second-by-second basis to ensure accuracy at the intersection, the South Bay SMART-Net project would provide the high-speed connection to TTS.

Dependencies:

While this project will establish a direct secured connection through the broadband connection, there are dependencies with the City of Manhattan Beach Traffic Control System SMART-Net Integration project and Los Angeles County Department of Public Works (LACDPW) Traffic Control System and Information Exchange Network SMART-Net Integration Project. If the City of Manhattan Beach and LACDPW projects are implemented, it will create a communications redundancy for LACDPW to share SPaT data to TTS or 3rd party data service provider.

In addition, the City of Torrance is proposing a Transportation Management System Improvements project through the Measure M Transportation System and Mobility Improvements Program. This project proposes to install managed ethernet switches city-wide at all signalized intersections. The ethernet switches would provide the City of Torrance the ability to communicate and monitor the field devices at each intersection. Also, the City of Torrance would need to establish a SMART-Net node in order to utilize the broadband connection. With this node, the project would allow for the transmitting of SPaT data from each intersection to the City's central traffic control system, and ultimately sharing data with TTS through the secured connection established through SMART-Net.

Cost:

It is anticipated that the fixed costs associated with the establishment of this secured connection can be covered through 3rd party agreements with the respective agency.

Schedule:

This project can be implemented at any time once the agency's TCS can support SPaT data sharing. The design and implementation should be coordinated by both participating agencies and TTS or 3rd party data service provider.

Project Concurrence:

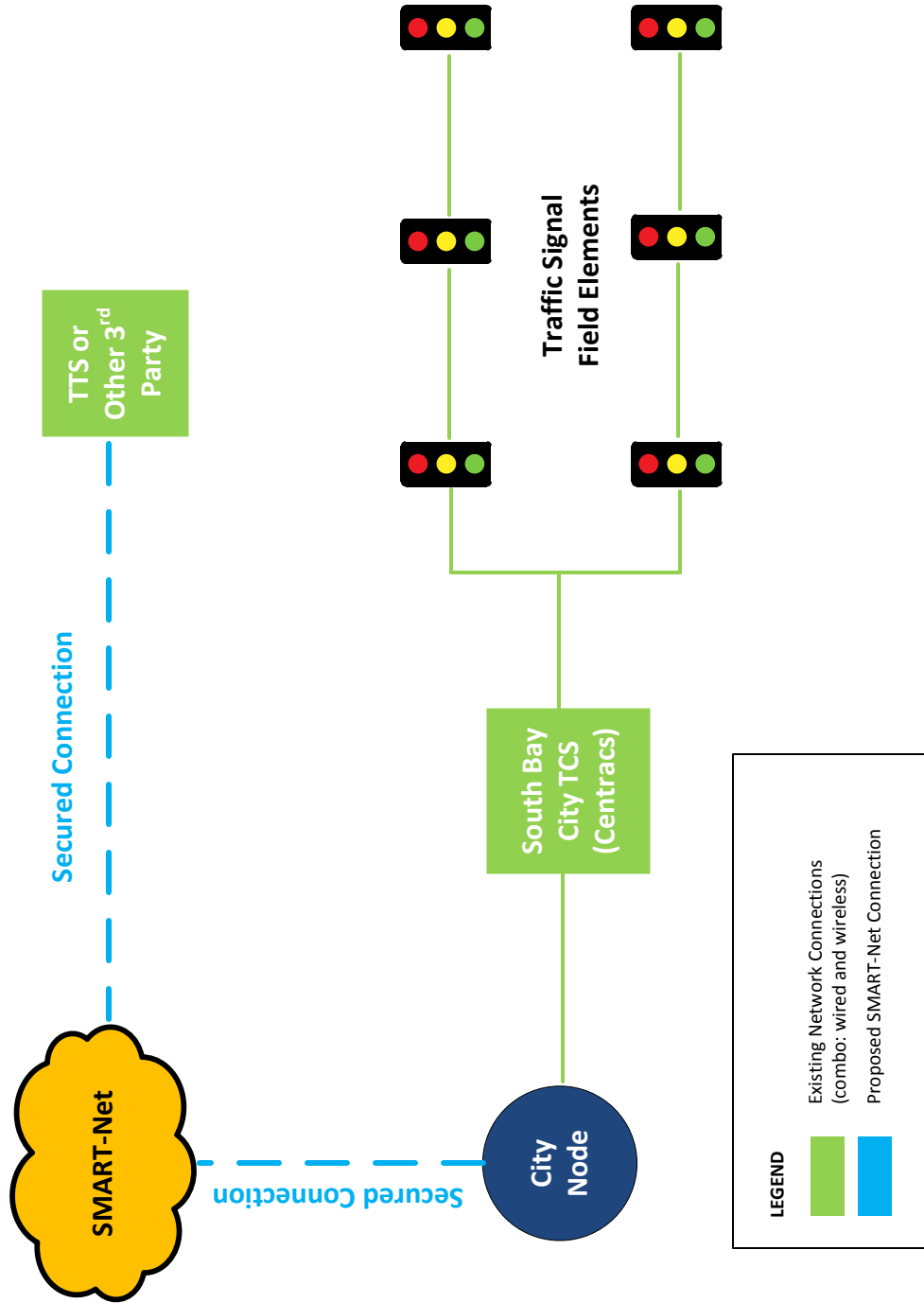
City of Torrance

Los Angeles County Department of Public Works

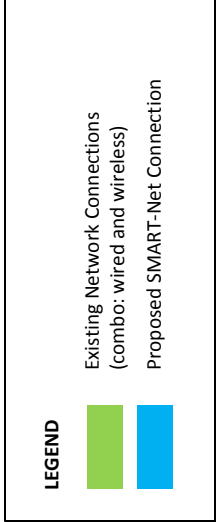
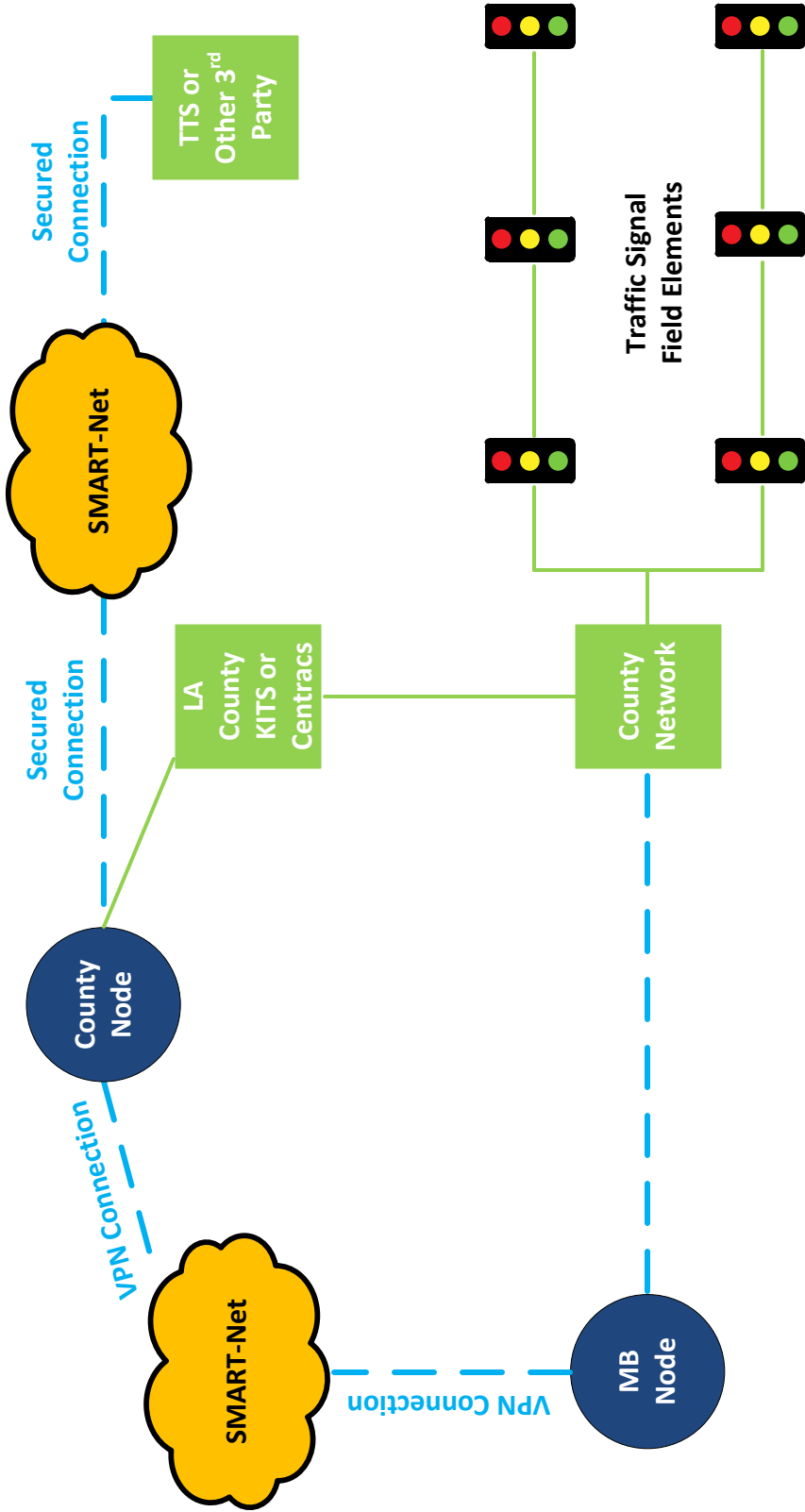
South Bay Cities Council of Governments

Metro Highway Program, ITS

Attachment A



Attachment B





20285 S. Western Ave., #100
 Torrance, CA 90501
 (310) 371-7222
sbccog@southbaycities.org
www.southbaycities.org

June 7, 2019

Steven Gota
 Deputy Executive Officer
 Los Angeles County Metropolitan Transportation Authority (Metro)
 One Gateway Plaza
 Los Angeles, CA 90012

Dear Mr. Gota:

The South Bay Cities Council of Governments (SBCCOG) is pleased to provide this letter of commitment for the following transportation projects:

1. Regional Integration of Intelligent Transportation Systems (RITTS) SMART-Net Integration
2. Los Angeles County Department of Public Works (LACDPW) Traffic Control System and Information Exchange Network (IEN) SMART-Net Integration
3. Manhattan Beach Traffic Control System SMART-Net Integration
4. Signal Phase and Timing (SPaT) Data Sharing SMART-Net Integration

SBCCOG has worked with Metro staff to identify how the South Bay SMART-Net project can be used to provide reliable, resilient, and redundant connections in the South Bay subregion to support improved mobility. SBCCOG has reviewed these transportation projects that Metro staff has recommended and concurs that all projects will provide a transportation benefit to the South Bay subregion.

SBCCOG agrees that these projects provide the transportation mobility nexus needed to justify the use of South Bay Measure M Multi-year Subregional Program (MSP) Transportation System Mobility Improvement Program (TSMIP) funds. SBCCOG is committed to working with Metro, LACDPW, the Regional Integration of Intelligent Transportation Systems (RIITS) program, and South Bay cities to ensure that the appropriate SMART-Net nodes are established, and that these projects are integrated into the South Bay SMART-Net to provide reliable and resilient connections to support transportation system improvements.

Sincerely,

Jacki Bacharach
 Executive Director
 South Bay Cities Council of Governments

LOCAL GOVERNMENTS IN ACTION

Carson El Segundo Gardena Hawthorne Hermosa Beach Inglewood Lawndale Lomita
 Manhattan Beach Palos Verdes Estates Rancho Palos Verdes Redondo Beach Rolling Hills
 Rolling Hills Estates Torrance Los Angeles District #15 Los Angeles County



June 10, 2019

Steven Gota
Deputy Executive Officer
Los Angeles County Metropolitan Transportation Authority (Metro)
One Gateway Plaza
Los Angeles, CA 90012

Dear Mr. ~~Gota~~ ^{STEVE}:

The Regional Integration of Intelligent Transportation Systems (RIITS) is pleased to provide this letter committing to integrating SMART-Net. RIITS has worked with Highway Programs staff to identify how SMART-Net can be used to provide connections to the South Bay subregion. Upon completion, a high-speed connection throughout the South Bay will include network communications to supplement existing and planned fiber-optic communications to enhance data exchange and provide increased access to a central repository for transportation-related operational data. The sharing of operational data benefits the South Bay cities by enhancing traffic management operations, system performance evaluation, and regional transportation data exchange by connecting the South Bay to Southern California transportation systems.

RIITS provides the transportation mobility nexus needed to support the use of South Bay Measure M Multi-year Subregional Program (MSP) Transportation System Mobility Improvement Program (TSMIP) funds. RIITS is committed to working with South Bay Cities Council of Governments (SBCCOG) and Metro to establish a connection to the South Bay. We will work with SBCCOG to identify and pay reasonable incremental costs, if any, beyond the scope of what is included in the use of TSMIP funds and recurring costs for the use and access to SMART-Net.

Thank you in advance for your continued support of RIITS. We look forward to work with you and the SBCCOG. I may be reached at 213.922.2665, or via email at fogelk@metro.net, to answer questions you have related to implementation of SMART-Net.

Sincerely,

A handwritten signature in blue ink that reads "Kali K. Fogel".

Kali K Fogel
Senior Highway Operations Program Manager
RIITS

Cc: K. Coleman, Deputy Executive Officer
File



MARK PESTRELLA, Director

COUNTY OF LOS ANGELES

DEPARTMENT OF PUBLIC WORKS

"To Enrich Lives Through Effective and Caring Service"

900 SOUTH FREMONT AVENUE
ALHAMBRA, CALIFORNIA 91803-1331
Telephone: (626) 458-5100
<http://dpw.lacounty.gov>

ADDRESS ALL CORRESPONDENCE TO:
P.O. BOX 1460
ALHAMBRA, CALIFORNIA 91802-1460

IN REPLY PLEASE

REFER TO FILE: **T-6**

June 17, 2019

Mr. Steven Y. Gota
Deputy Executive Officer
Los Angeles County Metropolitan Transportation Authority
One Gateway Plaza
Los Angeles, CA 90012

Dear Mr. Gota:

The Los Angeles County Public Works is pleased to provide this letter of commitment for implementation of Public Works' Information Exchange Network (IEN) SMART-Net Integration project. Our staff has worked with Metro staff to identify how the South Bay SMART-Net project can be used to provide reliable, resilient, and redundant connections in the South Bay subregion to support improved mobility. As the maintaining agency for traffic signals in the South Bay Cities of Carson, El Segundo, Hawthorne, Lawndale, and Manhattan Beach, Public Works has a key role in transportation. As the lead agency for the IEN, Public Works enables the exchange of traffic signal data countywide to facilitate the coordination of signal timing across jurisdictional boundaries.

The implementation of the South Bay SMART-Net project will establish a secondary high-speed connection for Public Works' Traffic Control System to the South Bay cities, as well as provide for a substantially higher bandwidth for systems residing at Public Works' Traffic Management Center, including the IEN. This connection will increase the ability to centrally monitor and control signalized intersections along major arterial corridors.

Mr. Steven Y. Gota
June 17, 2019
Page 2

This Public Works project provides the transportation mobility nexus needed to support the use of South Bay Measure M Multi-year Subregional Program and Transportation System Mobility Improvement Program funds. Public Works is committed to working with South Bay Cities Council of Governments and Metro to prioritize the establishment of a SMART-Net node at the County's Traffic Management Center in Alhambra. In addition, our agency will work with the City of Manhattan Beach to establish a virtual private network connection to create the necessary communications redundancy to the South Bay subregion.

Very truly yours,

MARK PESTRELLA
Director of Public Works

A handwritten signature in blue ink that reads "Emiko Thompson". The signature is fluid and cursive, with a long horizontal stroke at the end.

EMIKO THOMPSON
Assistant Deputy Director
Traffic Safety and Mobility Division

JW:sv
P:\TSM\Pub\TRAFFIC\SOUTH BAY\SMART NET SUPPORT LETTER.DOCX



City of Manhattan Beach

1400 Highland Avenue, Manhattan Beach, CA 90266
Phone: (310) 802-5000 Fax: (310) 802-5001 TDD: (310) 546-3501

June 12, 2019

Steven Gota
Deputy Executive Officer
Los Angeles County Metropolitan Transportation Authority (Metro)
One Gateway Plaza
Los Angeles, CA 90012

Dear Mr. Gota:

The City of Manhattan Beach (City) is pleased to provide this letter of commitment for implementation of the Manhattan Beach Traffic Control System (TCS) SMART-Net Integration project. The City has worked with Metro staff to identify how the South Bay SMART-Net project can be used to compliment future transportation projects in Manhattan Beach. Currently, the City is proposing the Manhattan Beach Advanced Traffic Signal (MBATS) System project, in conjunction with Los Angeles County Department of Public Works (LACDPW), that can leverage the SMART-Net project. Upon implementation, the Manhattan Beach Traffic Control System SMART-Net Integration project will integrate with the SMART-Net project to provide a secondary high-speed connection back to LACDPW. This project will allow LACDPW to more consistently leverage the capabilities of the County's central TCS used in the Manhattan Beach, providing a benefit to traffic operations.

The Manhattan Beach TCS SMART-Net Integration project provides the transportation mobility nexus needed to support the use of South Bay Measure M Multi-year Subregional Program (MSP) Transportation System Mobility Improvement Program (TSMIP) funds. The City is committed to working with South Bay Cities Council of Governments (SBCCOG), Metro, and LACDPW to establish a connection to the South Bay SMART-Net and integrating the MBATS project to the SMART-Net for a redundant and reliable connection to LACDPW.

Sincerely,

Bruce Moe
City Manager



CITY OF
TORRANCE

PUBLIC WORKS DEPARTMENT

Craig Bilezerian
Interim Public Works Director

June 6, 2019

Mr. Steven Gota
Deputy Executive Officer
Los Angeles County Metropolitan Transportation Authority (Metro)
One Gateway Plaza
Los Angeles, CA 90012

Dear Mr. Gota:

The City of Torrance (City) is pleased to provide this letter of commitment for implementation of the Signal Phase and Timing (SPaT) Data Sharing and SMART-Net Integration project. The City is currently working on upgrading its traffic control field elements through the request of Measure M Transportation System and Mobility Improvement Program (TSMIP) funding. The City's Measure M project would improve and optimize traffic signal communications in the City and provide the ability to effectively monitor and operate the traffic signal network. In addition, the City's Measure M project would enable the City to receive and share SPaT data through our central traffic control system.

The City is also working with a third-party data provider, Traffic Technology Services (TTS) that pushes SPaT information to passenger vehicles. This information provides traffic signal countdown and/or speed advisories to drivers as they approach an intersection. The SPaT Data Sharing and SMART-Net Integration Project will utilize the South Bay SMART-Net to establish a high-speed and reliable connection to TTS. This connection is necessary to transmit SPaT data on a second-by-second basis to ensure accuracy at each intersection, and provide benefits to traffic operations and driver behavior in the City.

This project provides the transportation mobility nexus needed to support the use of South Bay Measure M Multi-year Subregional Program (MSP) Transportation System Mobility Improvement Program (TSMIP) funds. The City is committed to working with South Bay Cities Council of Governments (SBCCOG) and Metro to establish a South Bay SMART-Net node and using the SMART-Net for a fast and reliable connection to TTS or any other third-party data providers.

Sincerely,



Craig Bilezerian
Interim Public Works Director



June 13, 2019

Steven Gota
Deputy Executive Officer
Los Angeles County Metropolitan Transportation Authority (Metro)
One Gateway Plaza
Los Angeles, CA 90012

Dear Mr. Gota:

Traffic Technology Services, Inc. (TTS) is pleased to provide this letter of commitment for implementation of the Signal Phase and Timing (SPaT) Data Sharing and SMART-Net Integration project. TTS is currently working with the City of Torrance (City) to establish a connection to its central traffic control system to obtain traffic signal status data and information. In order to receive this information, a secured connection between the City and TTS will be established.

It is to our understanding that the South Bay Cities Council of Governments (SBCCOG) is constructing a fiber-optic broadband infrastructure to connect City Halls in the South Bay subregion. This high-speed broadband connection would be beneficial to TTS' connections with the City and other prospective SBCCOG constituents to exchange traffic signal status and SPaT data, as this information needs to be pushed out on a second-by-second basis with minimal latency. With a faster connection, the data that is transmitted to the TTS system will be more accurate and reliable, improving our product and services for connected vehicle applications. TTS is the information provider supporting the first automotive OEM system utilizing SPaT information, Audi connect® Traffic Light Information.

TTS is committed to working with the City to further explore the establishment of this secured connection through the South Bay SMART-Net.

Sincerely,

A handwritten signature in black ink, appearing to read 'Kiel R. Ova', is written over a light grey horizontal line.

Kiel Ova, P.E., PTOE
CMO

Traffic Technology Services, Inc.

17933 NW Evergreen Place, Suite 240 | Beaverton, OR 97006, USA | T +1 (503) 530-8487 | F +1 (503) 214-8611

www.traffictechservices.com