CITY OF SAN JOSE
CAPITAL OF SILICON VALLEY

Memorandum

TO: HONORABLE MAYOR AND CITY COUNCIL

FROM: John Ristow
Jim Shannon

SUBJECT: SEE BELOW

DATE: November 7, 2019

Approved [signature] Date 11-7-19

COUNCIL DISTRICT: 3

SUBJECT: TRANSPORTATION FUND FOR CLEAN AIR 2019-2020 GRANT FUNDING AGREEMENT FOR DOWNTOWN SIGNAL RETIMING AND APPROPRIATION ACTIONS

RECOMMENDATIONS

(a) Adopt a resolution authorizing the City Manager or designee to negotiate and execute a Transportation Fund for Clean Air (TFCA) grant agreement with the Santa Clara Valley Transportation Authority (VTA) in an amount not to exceed $679,800 for reimbursement of work that occurs on or after July 1, 2019.

(b) Adopt the following 2019-2020 Appropriation Ordinance and Funding Sources Resolution amendments in the Building and Structure Construction Tax Fund:

(1) Increase the estimate for Revenue from Local Agencies by $679,800;
(2) Establish the TFCA 2019-2020 Downtown Signal Retiming appropriation to the Transportation Department in the amount of $1,500,000;
(3) Decrease Transportation Grants Reserve by $320,200; and
(4) Decrease Unrestricted Ending Fund Balance by $500,000.

OUTCOME

This project will retime and synchronize 140 signalized intersections along 13 corridor segments in San José's greater downtown area to better reflect changes in travel modes and increased pedestrian, bike, and scooter activity. This project will also include retiming during off-peak hours and weekends and evaluating Leading Pedestrian Intervals (LPIs) for 183 intersections in the greater downtown area. The signal retiming locations, including 140 TFCA grant intersections and 43 additional intersections, are shown in Attachment 1.

BACKGROUND

The Department of Transportation (DOT) reviews and retimes traffic signals citywide on a regular basis to reduce traffic congestion and to optimize safe and efficient travel for all modes, including walking, biking, driving, and transit. Staff use factors such as citizen requests, surrounding land use changes, and travel demand or roadway characteristic changes to identify signals to be retimed each year. Signal retiming generally occurs on a cycle of three to five years through grant funds and typically focuses on retiming for commute periods, as non-commute periods are not eligible for grant reimbursement. The average cost of retiming is $4,500 per intersection, covering three commute periods. Per the Federal Highway Administration (FHWA), signal synchronization is one of the most cost-effective ways to reduce traffic congestion, with a typical cost to benefit ratio of 1:40.

The downtown roadway network has been redesigned to create dedicated bicycle and scooter travel lanes, and greater pedestrian protected spaces to improve safety and mobility. Many signalized intersections in the greater downtown area have been previously enhanced to better serve pedestrians, including longer WALK indications and pedestrian countdowns, and pedestrian scrambles (exclusive walk phase). These enhancements are shown in Attachment 2.

Retiming traffic signals to improve the level of service for walking and biking complements the physical work and is a strategy to support San José's Access and Mobility efforts and Vision Zero goals. Portions of Santa Clara Street and 1st Street/Market Street have been designated as Priority Safety Corridors, streets that experience a higher incidence of fatalities and severe injuries due to traffic collisions. Additionally, in the broader greater downtown area, there were 438 collisions involving pedestrians and bicyclists between 2014 and 2018; 13 of which resulted in a traffic fatality.

ANALYSIS

DOT actively pursues grant fund opportunities for projects that support the City's transportation mode shift and transportation safety goals. In March 2019, DOT submitted an application for funding consideration under the TFCA Program Manager 40% fund administered by VTA. TFCA is a Bay Area Air Quality Management District (BAAQMD) program funded by a surcharge of $4.00 on motor vehicle registration fees collected within its jurisdiction. The surcharge revenues are to be used to implement specified transportation control measures that are included in BAAQMD's Clean Air Plan, developed and adopted pursuant to the requirements of the 1988 California Clean Air Act.

TFCA provides grants to local governments for projects that will reduce air pollution. Sixty percent of the annually available funds are administered by BAAQMD and the remaining 40% are returned to Bay Area counties. In Santa Clara County, the 40% of funds are administered by VTA and awarded on a competitive basis.

On October 3, 2019, the BAAQMD board approved VTA's recommendation to award a total of $679,800 TFCA funds to the City, requiring a local match of $320,200. This brings the total TFCA grant funding to $1,000,000. The grant will provide for retiming of 140 signals in the greater downtown area during peak weekday hours and some peak weekend hours.

The additional local funding of $500,000 will provide for signal retiming for these intersections during off-peak hours and on weekends where possible, to improve transit operations, and for evaluating LPIs on 183 intersections in the greater downtown area. LPI is a pedestrian safety feature that allows pedestrians to get a head start entering the intersection ahead of vehicular traffic, which comes with increased delays for vehicular traffic. Total project funding would be $1,500,000, estimated to be comprised of consultant services ($975,000), staff time ($345,000), and a data collection vendor ($180,000).

Project components include traffic volume and turning movement counts, retiming and synchronization of signals for weekday peak periods, and where warranted, weekends, based on current and anticipated traffic patterns and volumes. Pedestrian clearance intervals, yellow change intervals, and red clearance intervals will be evaluated for safety and accessibility, particularly around major pedestrian generators, such as schools, community centers, and libraries. The project area includes Diridon Transit Station, San José State University, SAP Center, among other pedestrian generators, and will follow applicable pedestrian and bicycle guidelines in accordance with State standards. The project will also evaluate transit operations, as the project area includes a majority of the VTA's core bus routes and Light Rail Transit and Bus Rapid Transit routes.

Many benefits of this project are intended to indirectly reduce overall travel congestion and vehicle emissions by promoting a mode shift to non-motorized modes of transportation. Improving traffic signal operations to minimize pedestrian, bicycle, scooter, and transit delay is a key strategy in this shift. It is important to note that with the multimodal operational improvements along these corridors, it is expected that automobile wait times would increase.

Unlike traditional retiming, which focuses on vehicle throughput and progression to minimize intersection delay, a key focus of this retiming project is to achieve more balanced signal operations that reduce pedestrian, bicycle, scooter, and transit delay by shortening the length of each traffic signal cycle. With shorter cycle lengths, all roadway users benefit as their wait times are reduced by receiving green lights more quickly. This will also allow for more frequent pedestrian crossings per hour when compared to current conditions. Overall, each intersection would have 3 to 5 additional signal cycles per hour, which aligns with how many times pedestrians will receive a WALK signal per hour.

The retiming portion of the TFCA project will play a critical role in delivering the following project lifetime benefits to the region:

- Reduce vehicle emissions harmful to air quality by up to 3.3 tons and greenhouse gas emissions (CO2) by up to 2,000 tons.
- Reduce traffic signal cycle lengths to shorten pedestrian delay, promote pedestrian mobility, and improve pedestrian safety.
- Update bicycle minimum green times to provide adequate time for bicyclists to traverse each intersection before the light changes along roadways with bike facilities.
- Maintain or improve the level of service of Transit Signal Priority for Light Rail Transit and Bus Rapid Transit vehicles.
- Enhance pedestrian safety and traffic safety by evaluating pedestrian clearance intervals, yellow change intervals, and red clearance intervals based on current State standards.

CONCLUSION

This project will retime traffic signals in the greater downtown area to improve the level of service for walking and biking, in support of San José's Access and Mobility efforts and Vision Zero goals.

EVALUATION AND FOLLOW-UP

This memorandum will not require further follow-up.

CLIMATE SMART SAN JOSE

The recommendation in this memo aligns with one or more Climate Smart San Jose energy, water, or mobility goals.

PUBLIC OUTREACH

This memorandum will be posted on the City's website for the November 19, 2019 City Council meeting.

COORDINATION

This memorandum has been coordinated with the City Attorney's Office and the Planning, Building, and Code Enforcement Department.

COMMISSION RECOMMENDATION/INPUT

This item does not require input from a board or commission.

COST SUMMARY/IMPLICATIONS

The work required in the TFCA grant agreement has $320,200 in local match and $679,800 in TFCA grant reimbursable funds. An additional $500,000 in local funds are being allocated to include retiming during off-peak hours and weekends for the 140 signals in the grant, improve transit operations, and evaluate LPIs on 183 intersections in the greater downtown area. The local funding contributions are provided by the Building and Structure Construction Tax Fund from the Transportation Grants Reserve ($320,200) and the Unrestricted Ending Fund Balance ($500,000). The total cost for the project is $1.5 million.

BUDGET REFERENCE

The table below identifies the fund and appropriations to support this funding.

Fund #	Appn #	Appn Name	Current Total Appn	Budget Action	2019-2020 Adopted Capital Budget Page	Last Budget Action (Date, Ord. No.)
429	R090	Revenue from Local Agencies	$709,000	$679,800	V-786	10/22/2019, 79270
429	TBD	TFCA 2019-2020 Downtown Signal Retiming	$0	$1,500,000	N/A	N/A
429	8308	Transportation Grants Reserve	$1,299,000	($320,200)	V-916	10/22/2019, 30325
429	8999	Unrestricted Ending Fund Balance	$10,633,239	($500,000)	V-798	10/22/2019, 30325

CEQA

Categorically Exempt, File No. PP18-029, CEQA Guideline Section 15301(c) Existing Facilities.

/s/
JOHN RISTOW
Director of Transportation

JIM SHANNON
Budget Director

I hereby certify that there will be available funding for appropriation in the Building and Structure Construction Tax Fund in 2019-2020, monies in excess of those heretofore appropriated therefrom, said excess being at least $679,800.

JIM SHANNON
Budget Director

For questions, please contact Lily Lim-Tsao, DOT Deputy Director, at (408) 975-3269.

Attachment 1: Downtown Area Signal Retiming Locations
Attachment 2: Existing Downtown Area Pedestrian Signal Enhancements


TFCA Grant Intersections
Additional Intersections
Retiming Corridors
Weekday
Weekday & Weekend
Light Rail Routes
City Bikeways
Downtown Core
Downtown Frame
Coleman Ave
Airport Blvd
Old Bayshore Hwy
N 1st St
N 10th St
E Hedding St
W Hedding St
87
N San Pedro St
N 4th St
E Taylor St
W Taylor St
Naglee Ave
The Alameda
N 13th St
N 17th St
N 1st St
N 2nd St
N 3rd St
Hanchett Ave
W Julian St
E Julian St
SAP center
E St James St
N Market St
N 10th St
N 11th St
Caltrain
W Santa Clara St
E Santa Clara St
Meridian Ave
Park Ave
Race St
W San Carlos St
S Autumn St
W San Fernando St
E San Fernando St
Delmas Ave
Almaden Blvd
S Market St
SJSU
SAN JOSÉ STATE UNIVERSITY
S 4th St
Auzerais Ave
S 1st St
S 11th St
E William St
Vine St
W Reed St
S 2nd St
S 3rd St
E Reed St
Pedro St
Bird Ave
W Virginia St
87
Coe Ave
280
S 10th St
McLaughlin Ave
Lincoln Ave
Willow St
Vine St
Almaden Ave
Graham Ave
Keyes St
Keyes St
Story Rd
S 7th St
E Humboldt St
Lucretia Ave
S 1st St
Minnesota Ave
W Alma Ave
E Alma Ave
Senter Rd
Almaden Expy
Monterey Rd
Phelan Ave
0
0.25
0.5 Miles

Attachment 2
Existing Downtown Area Pedestrian Signal Enhancements