



*City of Arts & Innovation*

# City Council Memorandum

**TO: HONORABLE MAYOR AND CITY COUNCIL      DATE: APRIL 17, 2018**

**FROM: PUBLIC WORKS DEPARTMENT      WARDS: ALL**

**SUBJECT: FEDERAL HIGHWAY ADMINISTRATION HIGHWAY SAFETY IMPROVEMENT PROGRAM CYCLE VIII GRANT FOR ACQUISITION AND INSTALLATION OF NEW MODEL 2070 TRAFFIC SIGNAL CONTROLLERS, UPGRADED CONTROLLER SOFTWARE, AND CENTRAL SYSTEM - ACCEPTANCE OF GRANT IN THE AMOUNT OF \$559,900 - SUPPLEMENTAL APPROPRIATION**

## **ISSUE:**

Accept the Highway Safety Improvement Program Cycle VIII grant award, contingent upon receipt of funds, in the amount of \$559,900 awarded to the Public Works Department for the acquisition and installation of new Model 2070 traffic signal controllers at currently interconnected traffic signals citywide, upgraded controller software, and central system.

## **RECOMMENDATIONS:**

That the City Council:

1. Accept the Highway Safety Improvement Program Cycle VIII grant award, contingent upon receipt of funds, in the amount of \$559,900 awarded to the Public Works Department for the acquisition and installation of new Model 2070 traffic signal controllers at currently interconnected traffic signals citywide, upgraded controller software, and central system; and
2. Authorize an increase in estimated revenues in the amount of \$559,900 in account 9902428-331310 and appropriate expenditures in the same amount to the HSIP Cycle VIII project account 9902428-440125 as assigned by the Finance Department.

## **BACKGROUND:**

The Federal Highway Administration's Highway Safety Improvement Program (HSIP) is a Federal-aid program which provides grant funding for select projects aimed at achieving significant reductions in traffic fatalities and serious injuries on public roadways. The HSIP application focused on the upgrading current interconnected traffic signals citywide to new, more reliable Model 2070 traffic signal controllers, controller software, and central system to improve signal timing, coordination, and operations allowing the ability to programmatically alleviate key safety concerns that are either not addressable using older software or are now automatically addressed with new software without the need for special logic. The Public Works Department requested \$559,900 in HSIP grant funds and committed a local match of \$559,900 CIP 2018/19 to construct the project.

## **DISCUSSION:**

On November 23, 2016, the Federal Highway Administration awarded the City \$559,900 in HSIP Cycle VIII funds to complete the Traffic Signal Controller, Software, and Central System Upgrade Project. The grant awarded funds will be utilized in conjunction with City matching funds to purchase and install new Model 2070 traffic signal controllers, controller software, and central system replacing aging existing equipment, software, and hardware to provide a more advanced, efficient, and dependable system which will aid in optimizing traffic flow and reducing collisions. The new system will provide inherent safety features, programmability, enhanced feedback provided to the engineer and technicians, and a reduction in motorist delays.

Some of the significant features of the new system include:

1. Allowing coordination timing to run in the background while experiencing emergency vehicle pre-emptions rather than resting in transition when pre-emption is dropped, reducing queues and safety risks associated with a disruptive pre-emption;
2. Enabling the system to distinguish between high priority (emergency vehicle) and low priority (city bus) pre-emption calls to prevent buses from initiating a pre-emption call that could delay the call of an emergency vehicle traveling on a different path through an intersection ensuring no related delays to emergency vehicle response times;
3. Offering the ability to omit permissive left-turn phases during pedestrian actuations including at traditional; protected / permissive locations) reducing potential vehicular / pedestrian conflicts;
4. Furnishing speed, queue clearing, and limited service commands to adjacent signals based on network demand and configuration to operate using peer-to-peer logic which would allow Ethernet LED safety lighting within the City to be configured to serve as midblock speed sensors which could send a message to the new traffic controller to have a green “recall” phase on the main street changing the signal to red when a speeding motorist is detected;
5. Delivering built-in support for connected vehicles with capabilities of sending immediate safety feedback information to participating motorists including queue warnings, pedestrian crossing activity, and more;
6. Eliminating the need for controllers to be placed in “flashing red” when configuring IP communications and allowing for the loading of a database from a USB device providing reducing signal down time when recovering from hardware failure; and
7. Providing visual queuing data to engineers and safety messages to signal technicians enhancing information and improving response times.

The new equipment, software, and central system will provide numerous benefits to the City's traffic signal system including greater functionality and longevity which will result in improved traffic operations and safety citywide.

The Public Works Department will return to City Council to award, request a supplemental appropriation, and provide updated project costs after the project is advertised and bids are received.

**FISCAL IMPACT:**

The estimated total project cost including equipment, software, and central system acquisition and installation is \$1,119,800 and costs associated with the local match of \$559,900 are available in the CIP 2018/19 Interconnected Signals Controller Replacement account 9902433-440313 (Measure A). Grant revenues in the amount of \$559,900 will be appropriated to project account 9902428-331310 used to offset expenses to the project described in the report. Request for authority to spend on individual projects will be made upon City Council's award of the project.

Prepared by: Kris Martinez, Public Works Director  
Certified as to  
availability of funds: Adam Raymond, Chief Financial Officer/City Treasurer  
Approved by: Al Zelinka, FAICP, Assistant City Manager  
Approved as to form: Gary G. Geuss, City Attorney

Attachments:

1. HSIP Cycle VIII – Award Letter
2. Vicinity Map
3. Presentation