City of Bellevue

MEMORANDUM

DATE: March 17, 2011

TO: Transportation Commission

FROM: Mark Poch, Traffic Engineering Manager
Transportation Dept.
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SUBJECT: Traffic Computer System Upgrade

Purpose

Staff will give an informational presentation on the Traffic Computer System Upgrade.

Background

In May 2010, Transportation Dept. staff presented information on the Traffic Computer System Upgrade to the Bellevue City Council, including concerns with the existing traffic signal computer system, and progress on preparing for and selecting a new system. The recommendation was made to implement a new "traffic adaptive" signal system city-wide, starting with a project to address key corridors in the Downtown and Factoria areas.

In June 2010, Council approved a contract with TransCore ITS to implement the SCATS traffic adaptive signal system on three corridors in the Downtown and Factoria Boulevard, totaling 31 intersections. This contract and work program is known as SCATS Phase 1.

Staff will provide an update to the Transportation Commission on the milestones of the SCATS Phase 1 project. This update will include information on when the project was substantially completed, how the installation and transition process went, and the status of a contract amendment to expand SCATS Phase 1 to an additional seven intersections.

Staff will then provide a briefing on the operational characteristics and features of the new SCATS traffic adaptive system. This briefing will include examples of the system's ability to respond to changing traffic conditions, and initial modeling and travel time study results at selected locations.

In addition, information on some of the new SCATS system features will be presented, including the popular and effective "flashing yellow arrow" left turn phase.

An additional five phases (SCATS Phases 2 – 6) have been planned to complete the Traffic Computer Upgrade project and implement traffic adaptive signal technology city-

wide. Information on these planned phases, including which corridors are included, schedule, cost estimates, and funding will be presented.

Phase	Year	Sub Area	Cost Estimate
2	2011	Finish Downtown, Hospital District, 116th Avenue	$479,000
3	2012	148th Avenue NE/SE, Eastgate, SE 36th	475,000
4	2013	Bel-Red Rodd, NE 20th/Northup, 156th Avenue, 140th Avenue NE	475,000
5	2014	Bellevue Way NE/SE, SE 8th/I-405, 140th Avenue SE	450,000
6	2015	Isolated Intersections	400,000

FINANCIAL INFORMATION

The capital costs associated with the substantially completed first phase (SCATS Phase 1) of the city's traffic computer system replacement, as well as funding for proposed SCATS Phases 2-4, are fully funded under the Transportation Department's Traffic Computer System Upgrade project (CIP No. PW-R-155), and the Electronic Equipment Rental Fund (EERF). The table below indicates the breakdown of cost.

Funding Source	Description	Amount ($000)
PW-R-155	Communication System, Studies, Rapid Ride	$2,188
EERF	SCATS Phase 1	545
PW-R-155	SCATS Phase 1	115
PW-R-155	SCATS Phase 2	479
PW-R-155	SCATS Phase 3	475
PW-R-155	SCATS Phase 4	475
	Total (PW-R-155)	$3,732
	Total (EERF)	545
	Grand Total	$4,277

SCATS Phases 5 and 6 are currently unfunded.

Attachment:
CIP Project Description Page

PW-R-155 Traffic Computer System Upgrade

Category: **Roadways**
Department: **Transportation**
Status: **Approved and Begun**
Location: **Citywide**

Programmed Funding

Programmed Funding	Appropriated To Date	FY 2011 Budget	FY 2012 Budget	FY 2013 Budget	FY 2014 Budget	FY 2015 Budget	FY 2016 Budget	FY 2017 Budget
3,732,000	2,843,000	435,000	454,000	-	-	-	-	-

Description and Scope

This project will replace the existing traffic computer system software and hardware, and upgrade the existing field communication system connecting the new signal system hardware located at the Traffic Management Center with individual traffic signals located citywide.
Intersections and corridors will be placed onto the new SCATS traffic adaptive signal system in phases. Some intersections planned for later phases will be placed on a "bridge" system until they can ultimately be placed onto the new traffic adaptive system. The current project funding will implement the first four phases of SCATS traffic adaptive system. Full implementation of the SCATS system at all city intersections will be completed in future phases, depending upon future funding allocations.

Rationale

Arterial street congestion and delay occur mostly at traffic signals, thus the more efficiently traffic signals work, the less delay and congestion experienced along the arterial. Replacement of the existing signal system with new "traffic adaptive" technology will allow signalized intersections to adjust their timing cycle by cycle instead of just a few times per day, increasing efficiency and incrementally reducing delays to motorists and pedestrians. This in turn will help derive more capacity out of the existing roadway network. The new signal system will allow engineers to better manage traffic during commute and off peak times, emergencies, special events, construction, and the holidays. The new system will also allow for transit signal priority at key locations. The new SCATS traffic adaptive signal system is a key piece in the city's Intelligent Transportation Systems (ITS) plan.

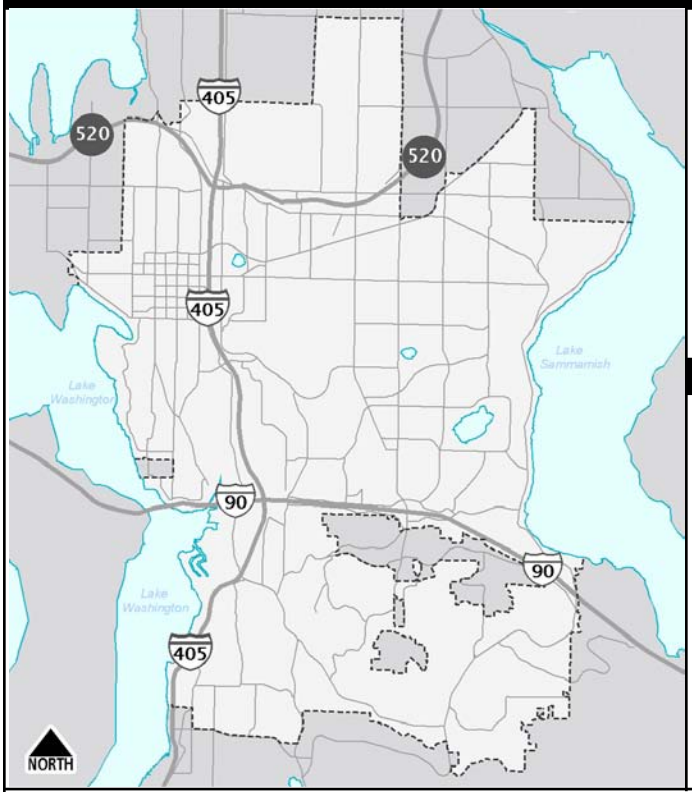
Environmental Impacts

Not applicable

Operating Budget Impacts

Operating budget cost impacts include annual maintenance contracts for the new signal system and annual Electronic Equipment Replacement Fund contribution for the addition or replacement of certain equipment such as Ethernet switches, traffic cameras, and signal controllers. $29,369 per year, plus inflation, was identified and approved in the 2009-2010 budget process. Future operating and maintenance costs will be determined associated with the identification, funding and implementation of future project phases.

Project Map



Schedule of Activities

Project Activities	From - To	Amount
Project Costs	2009 - 2012	3,732,000
Total Budgetary Cost Estimate:		3,732,000

Means of Financing

Funding Source	Amount
Federal Grants	360,000
General Taxes	3,183,000
Interlocal Contributions	189,000
Total Programmed Funding:	3,732,000
Future Funding Requirements:	0

This project is in multiple or non-specific locations throughout the City.

Description and Scope: The project description was updated to reflect the specific type of traffic computer system software being implemented (SCATS) and the funding status of implementation phasing.

Capital Costs/Revenue: Capital costs and revenue increased by $424,000, primarily reflecting acceptance of a federal TCSP grant ($360,000).