



CITY OF KIRKLAND
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MEMORANDUM

To: David Ramsay, City Manager

From: Iris Cabrera P.E., P.T.O.E. Transportation Engineer
Daryl Grigsby, Public Works Director

Date: November 18, 2008

Subject: Kirkland Intelligent Transportation System (KITS) Strategic Plan

RECOMMENDATION:

It is recommended that the City Council adopt **Kirkland Intelligent Transportation System Strategic Plan**.

BACKGROUND DISCUSSION:

Kirkland Intelligent Transportation System (KITS) Strategic Plan

In 2006 Council approved funding for the development of the City's ITS Strategic Plan. Work on this plan is complete. The Transportation Commission has reviewed it and recommended it be forwarded to the City Council for adoption. Transportation Commission members originally recommended to the City Council that the City undertake an ITS Plan, and they have been advocates for increased ITS implementation. In addition, ITS is consistent with Kirkland goals to improve traffic flow without expanding facilities or by enhancing use of existing infrastructure. The plan is available at:

http://www.ci.kirkland.wa.us/shared/assets/ITS_Strategic_Plan10478.pdf

The KITS Strategic Plan has two main elements: the *ITS Master Plan* and the *Implementation Plan*. The KITS Master Plan establishes the ITS vision for the City, identifies needs, documents the ITS architecture and details the communication plans. The KITS Implementation Plan identifies and prioritizes recommended projects, provides preliminary cost estimates and identifies policies and procedures that need to be in place in the short and long term.

A total of 13 projects were identified at an estimated cost of \$6.78 million. Eleven of the proposed projects are corridor projects and two are ITS infrastructure projects including a *Traffic Management Video Wall* and *Expansion of the Fiber Optic Communication Network* to link traffic control devices located in the southeast part of the City.

The main policy recommendations of the KITS Strategic Plan are:

- Take Advantage of Short-term opportunities such as implementation of proposed ITS projects as part of projects already in the 6-year Capital Improvement Program (CIP).
- Develop ITS Standards as part of the NE 85th Street Improvement project or as separate project allow ITS Standards are needed to ensure that all new signal equipment and communication devices comply with ITS requirements, provide for future compatibility, as well as integrate into existing ITS projects operated by other agencies.
- Develop written procedures to define roles and responsibilities relating to the implementation, maintenance and operation of the City's ITS Plan.
- Develop an internal communication protocol to manage access to the City's ITS system by Police and EMS personnel.
- Continue to work with other agencies to coordinate on issues regarding operation and maintenance of ITS devices and evaluation of corridor performance. This includes the development of Inter-agency agreements.

What is ITS?

ITS stands for "Intelligent Transportation System" and encompasses a wide range of tools and technologies that aim at maximizing the efficiency of the existing roadway infrastructure without adding capacity. Examples of ITS include *Closed Circuit Television, Dynamic Message Signs, Transit Signal Priority, Traffic Management Centers, advanced traffic signal controllers, traffic signal interconnection and fiber optic communication.*

ITS technologies have been implemented in Washington State since the mid-80s. The Cities of Bellevue and Lynnwood have been operating centralized traffic control systems since the late 80s, whereas other jurisdictions such as Issaquah and Redmond have recently deployed ITS. Washington State Department of Transportation(WSDOT) uses an extensive fiber optic network along the freeways to connect devices such as *Closed Circuit Television Cameras, Dynamic Message Signs and System Loop Detectors (in the highway pavement)* to manage traffic flow during peak traffic periods.

The benefits of ITS include reduction in vehicle delay and travel time and enhanced safety, all of which contribute to improved mobility, decreased emission levels and energy consumption. Also, because many ITS projects extend across jurisdictional boundaries, they provide opportunities for better coordination among neighboring jurisdictions and for more efficient traffic management.

Existing ITS in Kirkland

The City, King County and WSDOT jointly operate and maintain several ITS applications along the NE 124th Street corridor which include all of the examples mentioned above except *Dynamic Message Signs*. The County remotely manages the corridor and the City monitors it through a recently installed workstation that is connected to the County's Traffic Management Center via a high speed Internet connection.

Presently, there are three City CIP projects and one King County project, undergoing design, that contain ITS elements. These are:

- The NE 85th Street Corridor Improvement Project which includes new signal equipment, fiber optic interconnection, Closed Circuit Television Cameras, Video Detection, and a direct communication link to City Hall and the Maintenance Shop
- The new traffic signal at 3rd / Kirkland Avenue, which is being designed to comply with ITS standards.
- The NE 68th Street/108th Ave NE intersection improvement which includes signal equipment upgrades, Closed Circuit Television Cameras and fiber optic link connecting to City Hall via Fire Station 22
- The 100th Ave NE/NE 132nd Street signal upgrades. This improvement is part of King County's Juanita/Woodinville Way NE ITS Project, which includes signal interconnection on Juanita Woodinville Way NE from NE 160th to NE 132nd Street

In addition the City expects to participate in Traffic Busters, a WSDOT Program that allows jurisdictions in the region to have access to traffic and video data. WSDOT will provide funding for the installation of communication equipment, software and a fiber optic link between their signal at the intersection of NE 124th Street and 116th Ave NE and the City's fiber optic network.

Funding Considerations

An ITS Strategic Plan without a realistic funding mechanism is destined to languish on a shelf without ever being implemented; therefore, after its adoption the next step toward implementation of KITS, is to secure funding.

ITS projects in the region have been funded with grants programs available through regional or countywide competitions. These have included Federal TEA 21, State TIB Grants and PSRC's Surface Transportation Program (STP)/Congestion Mitigation and Air Quality Improvement Program (CMAQ). Some jurisdictions such as Issaquah passed a bond measure to fund its ITS. The City of Redmond used a combination of funding sources that included TEA 21 and TIB Grants as well as their Capital Improvement Program.

Kirkland is likely to apply in 2009 for a PSRC's STP/CMAQ grant to implement some of KITS recommended projects. In order to be eligible for this type of funding a project must be included in Destination 2030, the region's Metropolitan Transportation Plan.