



MEMORANDUM

TO: Southwest Washington Regional Transportation Council Board of Directors
FROM: Matt Ransom, Executive Director 
DATE: August 25, 2015
SUBJECT: **Vancouver Area Smart Trek (VAST) Annual Report**

AT A GLANCE - INFORMATION

This informational item is the annual report on the VAST Program, its recent accomplishments and ongoing activities. The VAST Program has been one of RTC's ongoing programs since 2001. It links ITS technology and infrastructure projects with agency collaboration to improve the operation of the transportation system.

INTRODUCTION

The purpose of this memo is to provide the annual program update to the RTC Board including the accomplishments of the VAST Program in the last year and an outline of future program activities.

The Vancouver Area Smart Trek (VAST) program is a partnership of transportation agencies in the Clark County region established to improve transportation system performance by collaborating on signal systems, freeway and arterial management, and traveler information projects through the use of smart technology and the system infrastructure needed to support it. RTC has managed the program since 2001 assisting partner agencies in identifying and developing operational projects to benefit the region. The VAST agencies are WSDOT, Clark County, City of Vancouver, C-TRAN, City of Camas, and RTC.

VAST promoted strategies and the supporting technology focus on operational and multimodal approaches to make better use of existing transportation facilities by improving system efficiency and performance. VAST represents the non-capital component of the regional transportation program and focuses on improvements that leverage technology to manage the system without adding new roadway capacity. VAST strategies can include a wide range of projects such as: traveler information, freeway management, arterial management, coordinated incident management, and transit signal priority. These strategies were prepared as part of the region's adopted Transportation System Management and Operations (TSMO) plan which supports regional transportation goals by improving travel time reliability, reducing crashes, improving transit on-time performance, and by reducing travel delay, fuel use, and air pollution. The VAST Program recognizes the need for greater coordination between transportation operations and the underlying ITS technology to present an integrated transportation operations program.

FEDERAL REQUIREMENTS

The ITS element of the VAST program meets federal requirements for planning, development, and implementation of ITS projects. Federal regulation 23 CFR 940 requires that regions develop and maintain a regional ITS architecture to ensure that ITS technology projects are interoperable and that it must include participation from transportation stakeholders so that projects are coordinated and integrated. The TSMO element directly supports the federal Congestion Management Process (CMP) by providing regional services to agency partners to improve transportation performance by collaborating on operational strategies. Federal regulation 23 CFR 450.320(c) for the CMP requires that agencies collaborate to utilize operational management, demand management, transit, and ITS technology to address travel demand before adding roadway capacity.

REGIONAL COLLABORATION

The successful implementation of operational strategies requires cooperation between transportation agencies and interoperability between intelligent transportation system (ITS) technologies.

The VAST Steering Committee, made up of the partner agencies, is the forum for discussing transportation operations and technology and has been both a successful collaboration and an effective way for the agencies to coordinate on project delivery, joint project funding, monitoring project development, and project integration. RTC also manages the VAST Communications Infrastructure Committee (CIC). The CIC, which addresses sharing, maintenance, and standards for communications infrastructure and equipment, is made up of both transportation and communications technical staff from the VAST agencies. The VAST program is funded primarily through federal grants and has resulted in projects that benefit individual transportation agencies and the Clark County region. This agency cooperation has resulted in a valuable pathway for developing and securing funding for ITS/operations projects totaling more than \$24.1 million in federal funding since 2001.

A wide range of projects to improve transportation operations and modernize the supporting communications and technology have been funded since the initiation of the program. They include central signal system upgrades, new signal controllers, signal optimization projects, freeway and arterial detection, cameras, variable message signs, and transit signal priority as well as the fiber communications needed for connecting ITS devices and infrastructure.

RECENT VAST PROGRAM ACCOMPLISHMENTS

Successful Partnerships

VAST agency collaboration and federal funding through RTC has led to successful partnerships and the implementation of projects to benefit safety, improve operations, and provide information to the traveling public. The following examples demonstrate some of the more visible partnerships.

- *Bi-State Travel Time Project:* RTC programmed funds for the Washington portion of the Bi-State Travel Time project, a joint collaboration between the Washington and Oregon

Departments of Transportation and will provide real-time travel information to the public along the I-5, I-205, and SR-14 corridors in the Vancouver/Portland region. It consists of a combination of white on green guide signs showing travel times via alternate routes to specific destinations as well as the utilization of the existing variable message signs. The project is in final testing and is scheduled to be activated by the end of September. Four guide signs are located in Vancouver at route decision points while five variable message signs will display travel times for specific destinations along a route. RTC, through its responsibilities under the VAST program, assisted the two states on project development, resolving technical issues on data sharing and route and destination information and has planned and facilitated meetings between the two transportation departments.

- *Regional Transportation Data Archive:* RTC and the VAST agencies have an ongoing partnership with Portland State University in the regional transportation data archive known as Portal. The Portal archive contains, in a single location, historical and real-time transportation data from agencies in the Vancouver-Portland region. This one-stop information warehouse can be used by researchers, planners, traffic engineers, and the public to look at multimodal transportation performance throughout the region. In 2015, RTC has worked with Portal staff and VAST agencies to implement several enhancements to the archive site.
 - Current freeway data was reviewed with WSDOT staff to identify improvements and refinements to the data. There were issues with metadata that included cleaning up data station names and station location information. Other improvements consist of adding lane type information (through, auxiliary) and a “total and average volume” information as a display option.
 - 2015 has also seen ongoing additions of Wavetronix radar data stations (44) to Portal. Wavetronix station data has been reconfigured in Portal to show volumes by direction not just total volumes at each location. RTC has also had initial discussion with County staff to send signal phasing and timing data from the ATMS.now central system to Portal.
 - RTC has been collaborating with PSU to research how to publish vehicle length data from existing radar and loop detectors which are capable of collecting vehicle length by group which could be used as an indicator of freight/truck volumes. Preliminary meetings have been held with Clark County, WSDOT and ODOT on vehicle length data and agreed to discuss how many bins should be used, a common definition on bin lengths, and a method to identify a test location to collect and validate the data with the goal of adding vehicle length information to Portal.
 - PSU has reviewed a set of two week sample data prepared by C-TRAN and is working to display on-time performance and on/off stop activity by location into Portal in preparation for ongoing daily transit data feeds from C-TRAN by the end of this year.

- *Regional Communications Plan:* RTC, in coordination with the VAST regional partner agencies, is finalizing the update to the regional ITS Communications Plan, now over 10 years old. The updated plan describes the existing communications networks of Clark County, the City of Vancouver, and WSDOT, identifies gaps in the network and other system needs, and develops a cohesive set of regional strategies to maintain, improve the network, and identify future needs. After the completion RTC will work to deploy an editable version on the RTC website to provide for an easily updateable and more accessible version of the communications plan.
- *Shared Communications Fiber and Asset Management:* VAST agencies have had a Communications and Interoperability Agreement in place since July 2006 that authorizes agencies to enter into fiber asset sharing permits. The agreement has led to better use of existing fiber and communication equipment by sharing available capacity among agencies. Twenty nine sharing permits affecting 101 miles of fiber have saved from \$15.2 to \$18.8 million compared to the VAST agencies building these projects separately.
 - In 2015, VAST CIC members have worked collaboratively with C-TRAN for sharing City and State fiber assets for BRT communications along Fourth Plain Boulevard. This sharing agreement alone has saved an additional \$6 to \$10.5 million.
 - The VAST agencies also utilize shared mapping software that displays communications fiber and equipment as well as their detailed attributes. This asset management tool facilitates and supports fiber sharing among partner agencies and also allows them to manage their own assets more effectively. The agencies can easily review the fiber and communication network, fiber ownership, capacity, and availability. Currently underway is a major update to the OSPInSight software to refine the existing database and to add newly constructed agency fiber projects to the asset database.

Agency Projects Programmed in 2014

RTC worked closely with the VAST agency partners to identify projects and develop funding applications for the partner agencies. The TSMO Plan contains an implementation strategy that connects the planning process with project implementation. RTC's role in regional collaboration on operations planning is intended to identify the best operational projects, while the partner agencies are responsible for project delivery. Operational projects programmed last year include the following:

- *Urban Freeway Infill Project (WSDOT):* Finalizes the infill traffic surveillance cameras and traffic detection devices within the greater Vancouver urban area for traffic management usage and travel information dissemination via traffic flow mapping and travel time postings. The infill locations are located generally within the I-5, I-205, and SR-14 Urban Limited Access Triangle. *\$717,500 CMAQ; \$157,500 local*
- *SR-503 Incident Management and Traveler Information (WSDOT):* Completes WSDOT's Southwest Region ITS Plan for communications and ATIS device infill for the SR-503 corridor up to Main St. in Battle Ground. The project will add remaining traffic surveillance

cameras and traffic detection for the collection of traffic congestion and traffic flow data and the implement SR-503 corridor signalized intersection traffic flow improvements between SR-500 and 119th Street. *\$307,500 CMAQ; \$67,500 local*

- *32nd Street Active Traveler Information Signing (Washougal):* This project is evaluating the feasibility of and if confirmed, will design traveler information signing with a variable message sign located on SR-14 that would be linked to the NE 32nd Street Railroad crossing south of E Street. The build project would implement an active sign system west of Washougal River Road to recommend an alternate travel route to drivers to avoid the south approach of the E Street/NE 32nd Street intersection when closed by trains. *\$46,000 CMAQ; \$7,000 local*
- *Open Trip Planner and Alerts System (C-TRAN):* This project will plan and implement new traveler information system functionality for C-TRAN. It will allow users access to traveler information applications using a variety of technologies that let them make more informed decisions on pre-trip and en-route travel information regarding trip departures, alternative routes, routes, mode of travel, and expected arrival times. Ongoing implementation will improve access to traveler information across the region. *\$128,000 CMAQ; \$32,000 local*
- *Signal Timing, Evaluation, Verification, and Enhancement (STEVE) Project (Clark County and WSDOT):* Will install Bluetooth travel time receivers on five regional corridors and add significantly to the existing network of count stations and travel-time detectors, improving the breadth and depth of data available for ongoing analysis and refinement of signal timings. The project will create a standard method to evaluate the effectiveness of changes made to the County traffic signal network enabling traffic engineers to further optimize corridor capacity and relieve congestion. *\$920,000 CMAQ; \$230,000 local*

FUTURE PROGRAM

The VAST Program will continue the coordination and management of ITS and operations related activities which includes providing support to partner agencies on:

- Transportation operations and planning
- ITS projects, communications, and integration
- Managing the TSMO/ITS committees
- Assisting in the development of funding applications for operational and ITS projects
- Coordinating on performance measurement of operational projects
- Ensuring that projects are interoperable

In addition, RTC will continue to manage the VAST Steering Committee and Communications Infrastructure Committee and in the next year will include:

- Continue the expansion of communications infrastructure sharing between VAST agencies
- Maintain and update the shared fiber asset database management system
- Identify additional funding opportunities
- Continue development of and agreements on fiber, equipment, and infrastructure standards

The VAST program will continue to utilize technical assistance and support the PSU data archive in carrying out the activities described above.

Regional Signals Workshop

RTC is hosting a Regional Signals Workshop on October 1 at the Vancouver Public Library. The first half of the workshop will include a round-table discussion on the state of traffic signals and signal systems in the region. WSDOT, Clark County, and Vancouver currently have central management systems to operate their respective traffic signals. It will discuss the pros, cons, and opportunities of a shared traffic management system for both larger and smaller agencies and a vision for the region.

The second half of the workshop will be about connected vehicles, their future growth, and applications. Connected vehicles are more than self-driving cars and are an emerging part of traffic management. They can include transit and emergency vehicles and newer passenger cars that communicate between the traffic signal and the vehicle. The workshop will include information on what the potential benefits are to public agencies and how they might be affected.