

## EXHIBIT A

### Vancouver Area Smart Trek Portal Data Archive

#### 2018 Scope of Work

Background: Portal is an online transportation data archive that was launched in 2004 as the Archived Data User Service (ADUS) designated in the Portland and Vancouver ITS Architectures. It provides a centralized, electronic database that facilitates the collection, archiving, and sharing of data and information for public agencies within the region. Over the last 10 years, it has collected data provided by agencies such as the Washington and Oregon departments of transportation. The existence of a data archive ensures that data collected for operational use (such as incident detection and travel time forecasting) are warehoused for additional uses, such as travel model calibration, transportation planning, performance measurement and academic research. The archive is a publicly accessible, free resource that supports analysis of transportation performance in the Portland/Vancouver region through various online visualizations of data plus the ability for the user to download data for offline analysis. Vancouver region transportation agencies, through RTC, will enhance the availability data and the functionality of the regional transportation data archive, by partnering with Portland State University, to maintain and expand Portal.

In the Vancouver region, the data stored in Portal includes 20-second granularity loop detector data from freeways and arterial counts, speeds, and vehicle length data from Clark County Wavetronix devices and CTRAN data. Key 2017 additions included: addition of milepost constraints to the Highways page in the Portal UI; fixing the display of the contour plot on the Highways Page (fixed “stretching”); adding display of Clark County travel time in the Portal UI; begun archiving of fine-grained traffic signal data (“Purdue” data); begun archiving of Clark County “raw” BlueMAC data.

Scope: This task will extend throughout the life of the project. The project manager will provide monthly documentation of activities as a supplement to quarterly meetings of the Technical Advisory Committee.

#### **Task 1: PORTAL Maintenance and Sustainability**

Ongoing handling of all software, hardware, and system upgrades (WSDOT, Clark County Wavetronix, ITS Network) that impact Portal. Ongoing maintenance of code amidst enhancements and upgrades (see below) including but not limited to: interface, data retrieval API, documentation, test suite and data automation. Additional maintenance activities will include usability upgrades and development of a Portal user guide including a glossary of terms.

##### 1A. Usability

In conjunction with Task 3 – User Engagement, this task will identify and fix usability issues in the Portal web site. The goal of this task is to improve ease of use of the Portal web site for Portal users including agency and consulting staff. The outcome of this task will be user interface modifications.

## **Task 2: Portal Enhancements**

To support its function as an active data archive, Portal will be enhanced with additional functionality. Priorities within the subtasks will be developed in coordination with the RTC project manager and the VAST partner agencies in consultation with the Portal TAC and monitor progress via quarterly meetings with the PORTAL team.

The following actions are proposed for 2018 funding of PORTAL by RTC:

### 2A. Highway Data

This task will focus first on a mostly-automatic update of the inventory for the WSDOT stations. When WSDOT updates a detection station, this update needs to propagate to Portal. This task will investigate update propagation mechanisms, make a plan for a mostly-automatic update and implement that plan. Ideally, updates propagate automatically, but manual updates may be needed periodically.

This task includes improvements to the drop down menu to make it easier for users to find Vancouver stations in the drop down menu. The current drop down menu is in alphabetical order; the updated drop down menu will need additions of items such as corridor names and corridor headings sorted by milepost.

The Portal UI contains a Travel Time and Travel Time Reliability page. In 2017, the Clark County BlueMAC travel time data was incorporated into that UI. This task will result in the addition of the WSDOT data to that interface; that is, after this task is complete WSDOT Travel Time data will display on the Portal Travel Time page. Key technical issues include obtaining WSDOT travel time data and configuring that data to be consistent with the Portal Travel Time UI. WSDOT travel time data may be obtained from a feed from WSDOT or may be calculated using vehicle speeds from WSDOT. Once the source of the data is determined, the data will be transformed to be consistent with the Portal Travel Time UI so that the data can be displayed in the Travel Time UI.

An additional task under this item is to determine the availability of the National Performance Monitoring Research Data Set for use by Portal and, if feasible, decide whether it should be archived.

### 2B. Transit Data

The focus of this task will be to publish additional ridership and on-time performance data in the Portal UI. Ridership and on-time data from limited time periods is currently published in the Portal UI. This task will include a review of the Portal UI C-TRAN page with C-TRAN and making updates to that page to ensure the page accommodates C-TRAN's needs. In addition, segment data will be added to this page. This task will also include final completion of automated data feed from C-TRAN. Finally, this task will investigate adding the C-TRAN data to the contour plot currently in the Portal UI and continue research on archiving of the C-TRAN 6-second bus position data in Portal.

### 2C. Arterial Data

In 2017, Portal began archiving an arterial data feed containing Signal Phase and Timing (SPAT) data from the ATMS.now system, also informally called the "Purdue" data. This task will be to continue archiving SPAT data and Wavetronix data from Clark County and to coordinate with VAST to determine how this data may be useful to Portal and to VAST. In addition, minor enhancements and fixes to the Wavetronix data display in the Portal UI will be implemented as requested.

## 2D. Travel Time Data & Travel Time Reliability

In 2017, Portal began archiving BlueMAC data from Clark County, in addition, work was done to display BlueMAC travel time data in the Portal UI, thus leveraging the travel time reliability interface developed by the Portal Metro project. In 2016 and 2017 work was done to archive BlueMAC travel time data and anonymized MAC addresses into Portal and to incorporate the BlueMAC travel time data into the Regional Travel Time interface in Portal. This task will evaluate the work done on the Travel Time and Travel Time Reliability page for the PORTAL-Metro project with VAST to understand its usefulness to VAST. Minor enhancements and fixes to the Travel Time and Travel Time Reliability page will be implemented as requested.

## 2E. Vehicle Length Data

Portal archives the Vehicle Length feed from WSDOT. In 2017, work was done to create a plan for publishing the WSDOT Vehicle Length data in the Portal user interface. This task will complete that enhancement and will implement minor enhancements and fixes as requested.

## 2F. WSDOT Incident Data

This task will investigate archiving of WSDOT incident data in Portal. The outcome of this task will be a plan for archiving WSDOT incident data in Portal.

### **Task 3: User Engagement**

The goal of this task is to ensure active engagement between the Portal team and Portal users in the Vancouver region. The outcomes of this task will be increased engagement and communication mechanisms between the Portal team and Portal users.

#### 3A. User Meetings & Communications

This task includes quarterly meetings with an identified group of Portal users in Vancouver. In addition, communication mechanisms such as Google Drive folders or Google Groups will be established to support effective communication between the Portal team and the Portal users.

#### 3B. Training and Support

The project manager will provide training and support to individual users on an ongoing, on-demand basis.

### **Task 4: Project Management**

#### 4A. Technical Advisory Committee & Project Management

The Technical Advisory Committee is scheduled to meet quarterly to review progress and determine when new features are ready to be released on the Portal website (after testing on the demo site). The TAC is a joint committee from Vancouver and Portland, as each MPO (RTC and Metro) has contributed funding to Portal's maintenance and sustainability efforts.

#### 4B. Produce Reports

Regular updates will be provided to members of VAST and other RTC stakeholders. Portal staff, in coordination with RTC, will prepare a short (1 to 4 pages) "State of Portal" report for the Vancouver region that could be used by staff for policy or decision-makers.

#### 4C. Annual Scoping

Prior to the end of the contract, PSU and RTC staff will review Task 2 progress and will update Portal enhancement activities to occur the following year.

#### Task Allocation

<i>Task</i>	<i>Name</i>	<i>Percent</i>
1	Maintenance and Sustainability	10%
2a	Highway Data	25%
2b	Transit Data	30%
2c	Arterial Data	7%
2d	Travel Time Data & Travel Time Reliability	7%
2e	Vehicle Length Data	10%
2f	Incident Data	3%
3	User Engagement	4%
4	Project Management	4%
TOTAL		100%