REQUEST FOR PROPOSALS

Travel Time and Origin-Destination Probe Data Pilot

RFP Published: September 8, 2022

Proposals Due: September 30, 2022

Issued by:

Southwest Washington Regional Transportation Council
1300 Franklin Street, Suite 185
Vancouver, WA 98660
(564) 397-6067

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1. GENERAL INFORMATION

1.1 DOCUMENT PURPOSE

This Request for Proposals (RFP) is for a subscription-based service to provide travel time/speed and/or origin-destination data. Proposals may include solutions for travel time/speed data only, origin-destination data only, or both. The contract period would be for up to three years, with potential for the bidder to extend services to other public agencies wishing to participate in this RFP.

One contractor will be selected to provide travel time/speed data for the duration of the contract period. One contractor will be selected to provide origin-destination data on an on-call basis during the contract period.

This RFP outlines a description of the contract services sought and the required documents to be submitted by interested firms. All responses shall be submitted by 3**:00 p.m., Friday, September 30, 2022**. *Any responses received after the deadline will not be considered.*

The proposals received by the due date will be used to determine which firm, in the Evaluation Team's sole opinion, best meets the services requested. An evaluation team will review proposals, recommend a final ranking order of firms, and select the firm. Best and final offers may be requested, and a recommendation of final rank order shall then be determined. Any contract award will be made by the RTC Board of Directors in an open public meeting.

The successful consultant will be required to comply with Equal Employment Opportunity laws, as well as other applicable federal, state, and local laws and requirements.

1.2 AGENCY BACKGROUND

The Southwest Washington Regional Transportation Council (RTC) is designated by the Governor of the State of Washington to be the Metropolitan Planning Organization (MPO) for Clark County, Washington. As the MPO, RTC conducts numerous regional transportation planning activities for the region.

RTC is responsible for the development of the Regional Transportation Plan for Clark County (RTP), the Transportation Improvement Program (TIP), the Unified Planning Work Program (UPWP), ITS planning and management, transportation operations planning, the Congestion Management Process, air quality planning, transportation demand management, development of the regional travel forecasting model, and other regional transportation studies.

RTC is responsible for the administration and management of the consultant contract.

1.3 FUNDING

Funding for this project will be provided by federal Surface Transportation Block Grant Program.

1.4 CONTRACT DURATION

The contract awarded as a result of this RFP will be for up to a 3-year period from the beginning of the contract period. RTC reserves the right to terminate the contract based on unsatisfactory provision of services or lack of funding.

2 GENERAL REQUIREMENTS

2.1 INDEPENDENT PRICE DETERMINATION

The prospective contractor guarantees that in connection with this proposal, the prices and/or cost data have been arrived at independently, without consultation, communication, or agreement for the purpose of restricting competition. This does not preclude or impede the formation of a consortium of companies and/or agencies for purposes of engaging in jointly sponsored programs.

2.2 AUTHORSHIP

Applicants must identify any assistance in preparing the proposal provided by agencies or individuals outside the proposer's own organization. No contingent fees for such assistance will be allowed to be paid under any contract resulting from this RFP. All proposals submitted become the property of RTC. It is understood and agreed that the prospective contractor claims no proprietary rights to the ideas and written materials contained in or attached to the proposal submitted. RTC has the right to reject or accept proprietary information.

2.3 PRICE WARRANT

The proposal shall warrant that the unit costs quoted for services in response to the RFP are not in excess of those that would be charged any other individual or entity for the same services performed by the prospective contractor.

2.4 CONFLICT OF INTEREST

All proposals submitted must contain a statement disclosing or denying any interest, financial or otherwise, that any employee or official of RTC or the appropriate Advisory Board may have in the proposing agency or proposed project. Furthermore, the contractor must deliver services without conflict of interest regarding the provision of other services, such as employment.

2.5 SUBCONTRACTING

No activities or services included as a part of this proposal may be subcontracted to another organization, firm, or individual without the approval of RTC. Such intent to subcontract should be clearly identified in the proposal. It is understood that the contractor is held responsible for the satisfactory accomplishment of the services or activities included in a subcontract.

2.6 CONSORTIUM OF AGENCIES

Any consortium of companies or agencies submitting a proposal must certify that each company or agency of the consortium can meet the requirements set forth in the RFP.

2.7 EQUAL OPPORTUNITY

It is the policy of RTC to require equal opportunity in employment and services subject to eligibility standards that may be required for a specific program. RTC is an equal opportunity employer and is committed to providing equal opportunity in employment and in access to the provision of all RTC services.

This commitment applies regardless of race, color, religion, creed, sex, marital status, national origin, disability, age, veteran status, on-the-job injury, or sexual orientation. Employment decisions are made without consideration of these or any other factors that are prohibited by law. In compliance with Department of Labor regulations implementing Section 504 of the Rehabilitation Act of 1973, as amended, no qualified handicapped individual shall be discriminated against in admission or access to any program or activity.

The prospective contractor must agree to provide equal opportunity in the administration of the contract and its subcontracts or other agreements.

2.8 AWARD OF CONTRACT

The successful Consultant must enter into an Agreement with RTC. The work shall be executed under the direction and supervision of the RTC Executive Director and his/her properly authorized agents, on whose inspection all work shall be accepted or condemned. The RTC Executive Director shall have the full power to reject or condemn any materials furnished or work performed under the Contract that does not conform to the terms and conditions set forth.

RTC is not responsible for any costs incurred prior to the effective date of the contract. RTC reserves the right to make an award without further negotiation of the proposal submitted. Therefore, the proposal should be submitted in final form from a budgetary, technical, and programmatic standpoint.

2.9 DEBARMENT AND SUSPENSION

The contractor must certify that they are not debarred or suspended or otherwise excluded from or are ineligible for participation in Federal Assistance programs under Executive Order 12549, "Debarment and Suspension." The contractor must also certify that it will not contract with a subcontractor that is debarred or suspended.

2.10 LIMITATION

This RFP does not commit RTC to award a contract, to pay any costs incurred in the preparation of a response to this RFP, or to procure or contract for services or supplies.

2.11 CANCELLATION OF AWARD

RTC reserves the right to immediately cancel an award if the contractual agreement has not been entered into by both parties or if new state regulations or policy make it necessary to change the program purpose or content, discontinue such programs, or impose funding reductions. In those cases where negotiation of contract activities are necessary, RTC reserves the right to limit the period of negotiation to sixty (60) days, after which time funds may be unencumbered.

2.12 REIMBURSEMENT

RTC will not reimburse suppliers for any costs involved in the preparation and submission of responses to the RFP or in the preparation for and attendance at subsequent interviews. Furthermore, this RFP does not obligate RTC to accept or contract for any expressed or implied services. RTC reserves the right to request any respondent to clarify its proposal or to supply any additional material deemed necessary to assist in the evaluation of the response.

2.13 PROPOSALS BECOME PUBLIC RECORDS

During the evaluation process, RTC treats all proposals with the highest level of confidentiality; however, once the evaluation process has been completed and a contract is awarded, the entire procurement becomes public information and subject to the Washington State Public Disclosure Act (RCW 42.17). Any proprietary information revealed in the proposal should, therefore, be clearly identified as such. RTC will notify any Proposer before releasing the proprietary information to any request for public records.

2.14 CONFIDENTIALITY

Proposer shall comply with all applicable state and federal laws governing the confidentiality of information.

2.15 INTERLOCAL AGREEMENT

RTC has made this RFP subject to Washington State Statute RCW 39.34. Therefore, the bidder may, at the bidder's option, extend identical prices and services to other public agencies wishing to participate in this RFP. Each public agency wishing to utilize this RFP will issue a purchase order (or contract) binding only their agency. Each contract is between the Proposer and the individual agency, with no liability to Southwest Washington Regional Transportation Council.

3 ADMINISTRATIVE REQUIREMENTS

Contractors shall comply with all management and administrative requirements established by Washington Administrative Code (WAC), the Revised Code of the State of Washington (RCW), and any subsequent amendments or modifications, as applicable to providers licensed in the State of Washington.

3.1 SINGLE AUDIT REQUIREMENTS

Any contract awarded as a result of this RFP will include provisions regarding fiscal management and accountability that meet the financial management systems requirements of an agreement with RTC.

3.2 OTHER AUDIT/MONITORING REQUIREMENTS

In addition, auditing or monitoring for the following purposes will be conducted at the discretion of RTC: Fund Accountability, Contract Compliance, and Program Performance.

3.3 INSURANCE

Prior to the signing of a contract, the contractor(s) selected must show evidence of a certificate of commercial liability for a minimum of $1,000,000 per occurrence and commercial automobile insurance (if applicable).

If the Proposer or its employees use motor vehicles in conducting activities under the Contract, liability insurance covering bodily injury and property damage shall be provided by the Proposer through a commercial automobile insurance policy. The policy shall cover all owned and non-owned vehicles. Such insurance shall have minimum limits of $500,000 per occurrence, combined single limit for bodily injury liability and property damage liability, with a $1,000,000 annual aggregate limit. If the Proposer does not use motor vehicles in conducting activities under this Contract, then written confirmation to that effect on Proposer letterhead shall be submitted by the Proposer.

It is the Proposer's responsibility to provide evidence of continuing coverage during the overlap periods of the policy and the contract.

4 WORK REQUIREMENTS

4.1 REQUIRED SERVICES

The Southwest Washington Regional Transportation Council (RTC) is seeking responses to this Request for Proposals from contractors interested in providing a subscription-based, probe data system for providing: 1) travel time/speed data and/or 2) origin-destination data.

The proposed system will collect transportation data within Clark County from a sample of road users, primarily passenger vehicles, which will then be used to calculate travel time/speed or origin-destination data. The probe data system will perform several primary functions:

- Calculate travel time/speed and/or origin-destination results based on probe data
- Report and visualize the travel time/speed and/or origin-destination data
- Archive historical data

The data will be provided via a vendor-supplied cloud service. The system will not require the RTC to install or maintain any network server, virtual machine, or sensors. Users will primarily access the system through a web-browser interface. Users will include RTC member agencies and contractors working on RTC member agency projects.

4.2 TRAVEL TIME AND SPEED DATA REQUIREMENTS

RTC desires travel time and speed data for all roadways federally classified as minor arterials or above within Clark County. The following are minimum requirements for the travel time/speed probe data system:

1. The system should measure and report travel time/speed on roadway segments.
2. The system should measure and report travel time/speed primarily for automobile users.
3. The system should report travel time results with an accompanying timestamp that corresponds to data collection time.
4. The system should retain all reported data at a minimum, from the start through the end of the contract.
5. The systems should provide travel time/speed data by direction of travel.
6. The system should allow user-defined start and end date and time for an analysis period.
7. The system should summarize results in hourly, or smaller, increments.
8. The system should provide travel/speed data primarily within Clark County, Washington
9. The system should report travel time/speed results at least 2-weeks from the current date.
10. The system should provide visualizations of collected travel time/speed data.
11. The system should be able to provide travel time/speed data, at minimum, for all roadways summarized below:
    - Interstate 5 between Interstate 84 (in Portland, OR) and Northern County Line
    - Highway 99 between 139th St. and Ross St.
    - Hazel Dell Rd. between Highway 99 and 63rd St.
    - Main St. between Ross St. and Mill Plain Blvd.
    - Interstate 205 between Interstate 84 (in Portland, OR) and Interstate 5
    - NE 112th Ave. / Chkalov Dr. / Gher Rd. between SR 500 and Mill Plain
    - St. Johns Rd. / St. James Rd. between NE 72nd Ave. and SR 500
    - Fort Vancouver Way between St. Johns Rd. and Mill Plain Blvd.
    - NE 72nd Ave. / Andresen Rd. between 119th St. and Mill Plain Blvd.
    - SR 503 between SR 500 and SR 502
    - 136th Ave. / 137th Ave. / 138th Ave. between Padden Parkway and Mill Plain Blvd.
    - 162nd Ave. / 164th Ave. between Ward Rd. and Mill Plain Blvd.
    - 164th Ave. between Mill Plain Blvd. and SR 14
    - 192nd Ave. between SE 1st St. and SR 14
    - SR 14 between Interstate 5 and Evergreen Highway
    - SR 501 / Mill Plain Blvd. / Fourth Plain Blvd. between Interstate 5 and NW 26th St.
    - Mill Plain Blvd. between Interstate 5 and 192nd Ave.
    - Fourth Plain Blvd. between Interstate 5 and 162nd Ave.
    - SR 500 between Interstate 5 and SR 503
    - 78th St. / 76th St. between Lake Shore Ave. and SR 503
    - Padden Parkway between 78th St. and 162nd Ave.
    - 99th St. between Lake Shore Ave. and St. Johns Rd.
    - 28th St. between Andresen Rd. and 164th Ave.
    - 18th St. between 112th Ave. and 164th Ave.
    - 134th St. / Tenney Rd. / Salmon Creek Ave. between NE 139th St. and 50th Ave.
    - 139th St. between NW 36th Ave. and NE 29th Ave.
    - SR 501 between Interstate 5 and 9th St.
    - La Center Rd. between Interstate 5 and E Fork Lewis Rd.
    - NE 179th St. / Cramer Rd. between 11th Ave. and SR 503
    - Fruit Valley Rd. / Lake Shore Ave. between Fourth Plain Blvd. and 119th St.
12. The system should be accessible using a vendor-provided, secure data portal.

13. The system should be accessible through commonly available computer software, such as a web browser.
14. The system should not require RTC to maintain servers, networking equipment, or field equipment.
15. The system should allow RTC and it's assigned users (which may include entities outside of RTC such as Clark County, C-TRAN, Washington State Department of Transportation, and cities within Clark County, and others) access to the data portal. RTC may assign up to ten (10) users to the data portal. Users may be reassigned during the contract period.
16. The system should be accessible by multiple users simultaneously.
17. The system should provide only non-personally identifiable data to the users.
18. The system should allow for reporting and archiving of data to other systems through an Application Programming Interface (API).

For additional details on the desired use cases and operational scenarios, refer to the Systems Engineering documents provided in Attachment 3.

4.3 ORIGIN-DESTINATION DATA REQUIREMENTS

The following are minimum requirements for the origin-destination probe data system:

1. The system should measure and report origin-destination data primarily for automobile users.
2. The system should allow users to define an analysis zone or routes for reporting.
3. The system should be able to provide origin-destination data for analysis zones defined within the Clark County area.
4. The system should be accessible using a vendor-provided, secure data portal.
5. The system should be accessible through commonly available computer software, such as a web browser.
6. The system should not require RTC to maintain servers, networking equipment, or field equipment.
7. The system should allow RTC and it's assigned users (which may include entities outside of RTC such as Clark County, C-TRAN, Washington State Department of Transportation, and cities within Clark County) access to the data portal. RTC may assign up to ten (10) users to the data portal. Users may be reassigned during the contract period.
8. The system should be accessible by multiple users simultaneously.
9. The system should provide only non-personally identifiable data to the users.

RTC intends to use the origin-destination data for the following use cases:

- Travel Demand Model Updates
- Interchange Studies
- Corridor Studies (both freeway and arterials)
- Incident Management

5 PROPOSAL DEVELOPMENT

5.1 RESPONSE DOCUMENTS

Responses should be prepared simply and economically, providing straightforward, concise descriptions of proposal to satisfy the requirements of the RFP. RTC shall not be liable for any expense incurred in the preparation of responses. All responses and submissions will become the property of RTC and will not be returned to the respondent.

5.2 ADDENDA TO RFP

RTC reserves the right to make any changes in the RFP as deemed appropriate. Any and all changes shall be made by written Addendum, which shall be issued by RTC to all interested firms that have been issued copies of the RFP from RTC.

5.3 INQUIRIES ON RFP

Questions on this RFP should be addressed in writing to the Procurement Coordinator via e-mail to procurement@rtc.wa.gov. The RTC Procurement Coordinator shall be the single point of contact during the entire response period.

All questions must be submitted by 12:00 noon, September 21, 2022. Any questions and concerns after this time will be addressed at the discretion of RTC unless it is determined that by doing so, the procurement process may be compromised.

5.4 PROPOSAL SUBMISSION

Proposals will be received by RTC until 3:00 p.m. (local time), Friday, September 30, 2022. Any response received after the prescribed deadline will not be considered.

Proposals may be mailed or hand delivered and shall be addressed as follows:

> Mail/Hand Delivery:
> Southwest Washington Regional Transportation Council
> ATTN: Dale Robins
> 1300 Franklin St., Suite 185
> P.O. Box 1366
> Vancouver, Washington 98666-1366

The Proposals shall be sealed in an envelope, box, or other suitable package. To ensure proper identification and handling, mark in the lower left-hand corner of the envelope: "Probe Data Pilot."

One (1) copy and **one (1)** electronic file (PDF format on a USB drive) of the Proposal must be furnished to RTC at the time and place specified above.

RTC will send a confirmation e-mail once the file has been received by RTC in an acceptable format. RTC makes no provision for receipt of documents. Proposal submittals should, therefore, be sent in ample time to arrive at RTC before the actual due date. RTC shall not be liable for documents that do not arrive by the deadline.

5.5 PROPOSAL CONTENT

Response documents shall include the following:

- Proposal Summary
- Ability to Meet Minimum Requirements
- Product Description
- Price Structure

- Contractor Qualifications
- Certification Regarding Ineligible Contractors
- Affidavit Concerning Conflicts of Interest

Part I: The "Proposal Summary" form is designed to serve as the cover sheet. Do not attach cover letters, title pages, or blank sheets ahead of this form nor substitute letterhead paper for it. If additional space is needed, a plain page may be attached behind this form. This form must be signed by a person authorized to make proposals and enter into contract negotiations on behalf of your agency.

Part II: The "Ability to Meet Minimum Requirements" should describe if the system provided by the vendor meets all the requirements included in Section 4.2 and/or Section 4.3. Clearly state if the Proposer is submitting to provide a solution for travel time/speed data only, origin-destination data only, or both. Provide comments if requirements are not applicable to the proposed system. Please label the document Part II: Ability to Meet Minimum Requirements.

Part III: The "Product Description" should describe the proposed system. This section should also describe how the proposed system can be used in typical analytical scenarios. Please also include any value-added or optional features that may be helpful to RTC and the regional partners. Please label the document Part III: Product Description. The information presented will provide a basis for contract negotiation and may be contained within the contract document.

For travel time/speed data, additional details on the desired use cases and operational scenarios can be found in the Systems Engineering documents provided in Attachment 3.

Part IV: The "Price Structure" section includes your product's unit cost line item budget for the probe data services. Unit cost estimates shall be included for all the transportation data collection elements you provide. Provide estimates for 3-years of access to data portal from execution date. For travel time/speed data, provide estimates for 1-year of procured data starting from contract execution date. For origin-destination data, provide 1-year of historical data. Include and label any optional or value-added services. Please label the document Part IV: Price Structure.

Part V: The "Contractor Qualifications" section includes a description of the contractor's relevant experience, skills, and ability to meet the required services and timeline. This statement should include qualifications for collecting the data listed and may include experience in the collection of other transportation data. This statement should also describe the ability to meet project scope and timeline. Misrepresentation of the information submitted in response to this section may result in the immediate termination of further business relationships with the Proposer. Each Proposer must also submit three references, including contact information. Please label the document Part V: Statement of Contractor Qualifications.

Part VI: Include signed Certification Regarding Ineligible Contractors and Affidavit Concerning Conflicts of Interest as Appendices.

6   PROPOSAL EVALUATION AND SELECTION

6.1   EVALUATION AND SELECTION PROCESS

Proposals received in response to this RFP will be evaluated by an Evaluation Team for completeness, organizational capacity, risk, and minimum qualifications. The Evaluation Team will include five (5) individuals from RTC, WSDOT, Clark County, City of Vancouver and C-TRAN. The Evaluation Team will select up to two (2) Proposers for a production demonstration session for both travel time/speed and Origin and Destination (Up to four Proposers).

Committee review results and recommendations may be presented to an appropriate advisory board prior to the consent process with the RTC Board of Directors.
The following timeline will be observed in selecting a Contractor:

Release Request for Proposals	September 8, 2022
Submittals Due to RTC	September 30, 2022
Demonstration	Week of October 17, 2022
Selection	November 1, 2022

6.2   EVALUATION AND SELECTION CRITERIA

The scoring from the Evaluation Committee will be averaged for each Proposer. The highest average scores from both the proposal and interview will be used to rank Proposers for consideration for contract award by the RTC Board. A maximum of one hundred (100) points are possible for proposals and thirty (30) points for product demonstration for a total of 130 points. The evaluation committee shall use the following criteria to evaluate qualified and eligible proposals to determine which firms will be invited for product demonstration. The five scores will be averaged to the tenth to determine rankings. Ties, as described below, will be broken by removing the high and low individual scores with the new averages compared. Proposed solutions for travel time/speed data and origin-destination data will be evaluated separately.

Proposals: A maximum of one hundred (100) points are possible for proposals per each evaluator. Individual scores will be averaged to determine ranking. The following Proposers that meet the following criteria will be invited for product demonstration:

- Proposers within 10 pts. of the highest average score within each category
- For travel time/speed data, Proposers that are within the top two (2) highest average scores
- For origin-destination data, Proposers that are within the top two (2) highest average scores

Ties for second place in each category will be broken by removing the high and low individual scores with the new averages compared. If there is still a tie, both firms will be invited to the product demonstration.

Criteria	Points
Project Understanding The proposer's understanding of the project goals and requirements Identify the pertinent issues and potential problems related to the project	20
Qualifications of The Proposer and Proposed Solution Ability of the proposed product to meet or exceed requirements as detailed in this RFP Demonstrated knowledge, expertise, and availability of the key staff (including sub-contractors) Identify and describe any additional services not identified in the Scope of Work section of this RFP. Provide examples where appropriate and useful.	30
Related Experience Team experience in performing work of a closely similar nature Experience working with public agencies and multiple stakeholders. Demonstrated success of the proposed product in past or current similar projects	30
Cost Effectiveness Realistic cost and value for services to be performed (not necessarily lowest)	15
References	5
Total	

Product Demonstration: A maximum of thirty (30) points are possible during the interview round. After receiving invitation to the product demonstration, Proposers are encouraged, but not required, to provide sample data or a guest access to a data portal to RTC to supplement the product demonstration session.

Proposers may provide sample data based on the following on-going projects in the region to highlight the capabilities of the proposed solution in real world conditions:

- NE 134th Street Adaptive Traffic Signals
- NE 179th Street Corridor Improvements
- I-5 – 179th Street Interchange Improvements
- SR 503 Corridor Plan: Vancouver to Battle Ground

The evaluation committee shall use the following criteria to evaluate invited Proposers.

- Presentation/Demonstration (30 Points)
    - o Strength and Fit of the Proposed Solution.
    - o Clarity of Demonstration.
    - o Demonstrative Understanding of the Project.

After the product demonstration and post-product demonstration discussions, the RTC Board of Directors will make the final decision.

6.3 CONTRACT AWARD

RTC will award a contract to the highest scoring Proposer in the travel time/speed category, and up to the two highest scoring Proposers in the origin-destination category. Should RTC not reach a favorable agreement with the highest scoring Proposers, RTC shall suspend or terminate negotiations and commence negotiations with the second highest scoring Proposer and so on until a favorable agreement is reached.

6.4 DISPUTES

RTC encourages the use of informal resolution to address complaints or disputes arising over any actions in implementing the provisions of this RFP. Written complaints should be addressed to RTC, P.O. Box 1366, Vancouver, Washington 98666-1366.

RFP TITLE: Travel Time and Origin-Destination Probe Data Pilot

PART I: PROPOSAL SUMMARY

1.   **GENERAL INFORMATION:**

a.   Legal Name of Applicant/Company_____

b.   Street Address_____

c.   City_____ State _____ Zip _____

d.   Phone _____

e.   E-mail address _____

f.   Contact Person _____ Title _____

g.   Washington State Tax Registration Number: _____

h.   Employer Identification Number: _____

i.   Program Location (if different than above) _____

_____

Does the proposal comply with the requirements contained within the RFP?
☐ Yes   ☐ No

Did outside individuals or agencies assist with preparation of this proposal?
☐ Yes   ☐ No   If yes, describe.

I certify that to the best of my knowledge the information contained in this proposal is accurate and complete and that I have the legal authority to commit this agency to a contractual agreement. I realize the final funding for any service is based upon funding levels and the approval of the RTC Board of Directors.

_____   _____

Signature, Administrator of Applicant Agency   Date

_____

Print Name and Title

PART II: ABILITY TO MEET MINIMUM REQUIREMENTS

(Describe data collection methodology and attach examples of data summary reports)

PART III: PRODUCT DESCRIPTION

(Describe data collection methodology and attach examples of data summary reports)

PART IV: PRICE STRUCTURE

Provide a unit cost for each of the data collection elements that your firm provides: Cost should include all wages, expenses, supplies, and administrative costs. In addition, provide unit cost for any additional transportation data collection services that your firm provides.

Transportation Data Elements:	*Cost*

PART V: CONTRACTOR QUALIFICATIONS

A.   *Previous Experience*

Briefly describe your firm and the type of services offered in the past year, including relevant experience and skills for the transportation services described in this RFP. Emphasize the direct and related experience of your team's project personnel. Describe ability of your firm to meet the scope and timeline of the project.

B.   *References*

Include a minimum of three client references. References shall include customer name, person to contact, telephone number, and e-mail. References should include a written description of the work performed.

Project 1: _____

Contact Person 1: _____   Phone 1: _____

E-mail 1: _____   Company 1: _____

Project Description 1:

Project 2: _____

Contact Person 2: _____   Phone 2: _____

E-mail 2: _____   Company 2: _____

Project Description 2:

Project 3: _____

Contact Person 3: _____   Phone 3: _____

E-mail 3: _____   Company 3: _____

Project Description 3:

APPENDICES

CERTIFICATION REGARDING INELIGIBLE CONTRACTORS

The _____ (Name of Proposer) certifies, by submission of this proposal, that neither it nor its principals is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in this transaction by any Federal department or agency.

Where the Proposer is unable to certify to any of the statements in this certification, such Proposer shall attach an explanation to this proposal.

The Proposer certifies or affirms the truthfulness and accuracy of the contents of the statement submitted on or with this certification and understands that the provisions of 31 U.S.C. Section 3801 Et Seq. are applicable thereto.

_____   _____
Authorized Official   Attorney's Signature

_____   _____
Printed Name   Printed Name

_____   _____
Title of Authorized Official   Date

SOUTHWEST WASHINGTON REGIONAL TRANSPORTATION COUNCIL
(RTC)

AFFIDAVIT CONCERNING CONFLICTS OF INTEREST
AND NONCOMPETITIVE PRACTICES

STATE OF _____)

COUNTY OF _____)

The undersigned, being first duly sworn, on oath states on behalf of the contractor:

A.   Conflict of Interest

        That the contractor by entering into this contract with RTC to perform or provide work, services, or materials to RTC has thereby covenanted, and by this affidavit does again covenant and assure, that it has no direct or indirect pecuniary or proprietary interest, and that it shall not acquire any such interest, which conflicts in any manner or degree with the services required to be performed under this contract and that it shall not employ any person or agent having any such interest. In the event that the contractor or its agents, employees, or representatives hereafter acquire such a conflict of interest, it shall immediately disclose such interest to RTC and take action immediately to eliminate the conflict or to withdraw from this contract, as RTC may require.

B.   Contingent Fees and Gratuities

        That the contractor, by entering into this contract with RTC to perform or provide services or materials for RTC has thereby covenanted, and by this affidavit does again covenant and assure:

   1. That no person or selling agency bona fide employees or designated agents or representatives of the contractor has been employed or retained to solicit or secure this contract with an agreement or understanding that a commission, percentage, brokerage, or contingent fee would be paid; and

2. That no gratuities, in the form of entertainment, gifts, or otherwise, were offered or given by the contractor or any of its agents, employees, or representatives, to any official member or employee of RTC or other governmental agency with a view toward securing this contract or securing favorable treatment with respect to the awarding or amending, or the making of any determination with respect to the performance of this contract.

Company Name _____

By _____

Title _____

Subscribed and Sworn to Before Me

this _____ day of _____, 20____.

_____

Notary Public in and for the State of _____

residing at _____

_____

Attachment 3

Travel Time Monitoring Concept of Operations

TRAVEL TIME MONITORING CONCEPT OF OPERATIONS

CLARK COUNTY, WA

April 27, 2022

Inside front cover

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Travel Time Monitoring Concept of Operations Clark County, WA

Prepared for:

Clark County Signals/ITS Section
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Vancouver, WA 98660

Prepared by:

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503.243.3500

Project Manager:
Yi-Min Ha
Engineer

Project Number 25553

April 27, 2022

CONTENTS

EXECUTIVE SUMMARY

BACKGROUND

From 2014–2020, Bluemac Analytics provided Clark County with a Bluetooth media access control (MAC) address reader system, called Bluemac, for collecting travel time and origin-destination data. In mid-2020, Bluemac Analytics informed Clark County that the company was ending their business, and support for the system would not extend beyond December 31, 2020. Understanding that technology for travel time and origin-destination data collection has evolved significantly since 2014, Clark County conducted a systems engineering study to evaluate technology options for collecting roadway operational performance data.

ALTERNATIVE CONCEPTS

While there are many distinct technologies capable of collecting travel time data, this project's alternatives analysis focused on two broad categories of technologies: field-deployed systems and probe-based, subscription data (also called "probe data"). Both field-deployed sensors and probe data can meet Clark County's data needs. Clark County decided to move forward with the probe data concept because probe data offered several key advantages:

- Eliminates risk associated to hardware ownership
- Increased flexibility to change data providers
- Wider range of capabilities
- Sufficient sample size
- Greater scalability

SYSTEM OVERVIEW

The probe data system will provide travel time and speed data for all arterials in Clark County. The system will collect travel data from a sample of road users, primarily passenger vehicles, which will then be used to calculate travel time and speed data. The probe data system will perform several primary functions:

- Calculate travel time and speed statistics based on vehicle probes
- Report and visualize the travel time and speed data
- Archive historical data
- Integrate with other County systems through an application programming interface (API)

Since the probe data system will be a vendor-supplied cloud service, the system does not require the County to install or maintain any network server, virtual machine, or sensors. Users primarily access the system through a web-browser interface. Some users

may directly interact with the API to run scripted analysis or to facilitate integration with other systems.

OPERATIONAL SCENARIOS

Based on Clark County and regional stakeholder input, the typical operating scenario for the probe data system has three main use cases:

1. Performing corridor-specific before and after studies
2. Scanning and monitoring data for regular/proactive signal timing adjustments
3. Generating results for annual regional-performance reporting

SUMMARY OF IMPACTS

Key considerations for adopting the probe data system include:

- Reallocating funds planned for Bluemac sensor installations
- Decommissioning the existing Bluemac system
- Integrating the probe data system with the Portland State University (PSU) PORTAL and Clark County's planned Data Lake system.

PURPOSE OF DOCUMENT

A concept of operations (CONOPS) is a non-technical document that describes how a proposed system will be used by various stakeholders. This CONOPS bridges the vision and abstract project needs to the specific technical specifications needed to implement the system. Technology-independent, this document focuses on the system's desired functions.

SCOPE OF THE PROJECT

This project replaces Clark County's existing Bluemac MAC address reader system, which is primarily used for travel time data collection. The project reexamines Clark County's and regional stakeholders' needs for the Bluemac MAC address reader system based on user experience and the current operating environment. The project also explores technology solutions to replace the system, including a similar MAC address reader system, a different field-deployed system, or a probe-based, subscription data (also called "probe data") system.

BACKGROUND

From 2014 through 2020, Bluemac Analytics provided Clark County with a Bluetooth MAC address reader system, called Bluemac, for collecting travel time and origin-destination data. Clark County relies on Bluemac to measure operating effectiveness on signalized arterial corridors. Results from the Bluemac system is used to perform various project-level studies and regional reporting. The County has installed Bluemac sensors at 75 signalized intersections; other agencies in the region—the City of Vancouver, the Southwest Washington Regional Transportation Council (RTC), and the Washington State Department of Transportation (WSDOT)—also have Bluemac sensors.

In mid-2020, Bluemac Analytics informed Clark County that the company was ending its business, and that system support would not extend beyond December 31, 2020. Because several performance measures identified in the Signal Timing Evaluation, Verification and Enhancement (STEVE) CONOPS currently rely on the Bluemac sensors, Clark County must identify a replacement system to provide the desired travel time and travel time reliability performance metrics.

Because technology for travel time and origin-destination data collection has evolved significantly since 2014, Clark County conducted a systems engineering study to evaluate its technology options for collecting arterial operational performance data.

CONCEPT FOR THE PROPOSED SYSTEM

This section describes alternative concepts and provides justification for the selected approach.

ALTERNATIVE CONCEPTS

Many distinct technologies are capable of collecting travel time data, but this study focused on two broad categories:

1. **Field-Deployed Sensors**, which measure and collect travel time data at locations where they are deployed. These technologies require an agency to deploy (and usually maintain) sensors or hardware in the field. Field-deployed sensors include technologies like MAC address readers, automated license plate readers, and microwave radar technology.

2. **Probe-Based, Subscription Data ("probe data")**, which generate traffic-related data from one, or a combination of, data sources, including connected vehicles, cell tower triangulation, and smartphone location-based services. These technologies do not require an agency to deploy sensors in the field.

Table 1 compares the typical characteristics of field-deployed sensors and probe data according to five key considerations.

Table 1: Comparison of Field-Deployed Sensors and Probe-Based, Subscription Data

Consideration	Field-Deployed Sensors	Probe Data
Maintenance	• Must maintain field equipment	• No field equipment required
Pricing Model	• Capital cost required for each sensor, including the routing of conduit for power and communications • May require an annual cellular data plan, depending on installation • Capital cost and maintenance of servers.	• Annual subscription model—no capital cost for installation (although some services may require a one-time setup cost)
Available Metrics	• Generally only provides travel time and speed data • Does not include side street movements without additional infrastructure investment	• Greater opportunity to develop additional performance measures, such as movement-level delay
Sample Size	• Could range from 10%–95% of overall traffic, depending on technology	• Could range from 1%–5% of overall traffic, depending on technology
Regional Availability	• Limited to locations where sensors are installed	• Not limited by geography, but lower volume roadways may not have sufficient probes for analysis

JUSTIFICATION FOR SELECTED APPROACH

While both field-deployed sensors and probe data can meet Clark County's data needs, the County decided to decommission the existing Bluemac system and replace it with an off-the-shelf probe data system. Four key factors drove this decision:

1. **Risk and Flexibility**—Without the need to procure and maintain physical sensors, probe data technologies reduce the complexity of managing this system from an IT and maintenance perspective. Since there are no proprietary sensors or hardware required, probe data also reduces the "sunk cost" for the County to switch or change data providers.

2. **Capabilities**—Because they compute travel time and speed from vehicle trajectories, probe data technologies offer greater opportunities to develop additional performance measures—such as delay by movement or by quality of progression—that may be impossible with most field-deployed sensor technologies.

3. **Sample Size**—Compared to probe data technologies, field-deployed sensors typically capture far larger sample sizes. However, Clark County's primary use case did not require larger sample sizes. In a typical scenario, Clark County would use the data to perform before and after studies that compare one week of data at a time. Probe data provide sufficient samples for these studies. For specific studies that require larger sample sizes, Clark County could still contract a data collection firm to collect data using temporarily deployed sensors.

4. **Scalability**—Since there is no need to design, procure and implement field-deployed sensors, probe data solutions generally provide greater scalability for data collection to the County.

STAKEHOLDER DESCRIPTION

This section summarizes key stakeholders according to who they are, what information they need, and what goals they have set. Table 2 describes the system's key stakeholders.

Table 2: Stakeholder Summary

Stakeholder	Description
Clark County Traffic Engineers	• Primarily interested in assessing effectiveness of signal modifications with minimal user effort • Will primarily interact with the system through a graphical user interface, such as a web browser • Prefer the system to deliver standard reports on study corridors or intersections that are easily interpreted
Clark County Intelligent Transportation Systems (ITS) Engineer	• Primarily responsible for identifying specific signal timing issues in the system and conducting detailed data analysis • May need to extract data from the system to develop custom performance measures or to develop reports that answer one-off questions or investigate distinct issues • Wants ability to manipulate the data at a granular level to generate results for unique or specific needs • Will be responsible for integrating data with other County systems
Clark County Decision Makers	• Represent a variety of positions at the County, including the Transportation Division Manager and the County Engineer. • Generally responsible for allocating funding, assigning organizational priorities, and maintaining a functioning system • Focused on overall system performance to understand the biggest problems or needs, rather than on specific intersection metrics • Primarily want data to be interpreted and delivered to them
Clark County Technicians	• Perform maintenance on traffic signals as directed by County engineers
Clark County Planners	• Primarily interested in system- or corridor-level performance • Use data that is typically summarized over a long time period (quarterly or annually) • Interested in origin-destination data to understand travel patterns • Need data for larger geographies and longer time periods • May use data to set guidelines for performance measure targets

Stakeholder	Description
Southwest Washington Regional Transportation Council (RTC)	• Requires corridor performance data for the annual Congestion Management Process Report • Primarily interested in system- or corridor-level performance • Uses data that is typically summarized over a long time period (quarterly or annually) • Interested in origin-destination data to understand travel patterns and refine travel demand models. • Needs data for larger geographies and longer time periods • May use data to set guidelines for performance measure targets • Provides funding for regional projects
Portland State University (PSU)	• Archives corridor and signal performance data. • Manages web interface to access and visualize performance data
C-TRAN	• Assesses transit operations performance with respect to traffic signal interactions along transit corridors
External Stakeholders	• Use corridor and traffic signal performance measures, such as travel time, to inform mobility decisions
Federal Highway Administration (FHWA)	• Provides federal oversight of corridor and traffic signal performance measure implementation and funding when available
Other stakeholders (cities, counties, and state)	• Partner with Clark County to implement similar performance measures in their respective jurisdictions

OPERATIONAL NEEDS

This section describes the user needs of the probe data system. Stakeholder needs were developed over the course of four work sessions and three product demonstration sessions held between June 2021 and February 2022.

DATA TYPE

Needs related to the collected data. The largest impacts to these needs will be the data collection technology and the data storage technology.

1. **Obtain segment travel time/speed**—Users need to measure travel time/speed along analysis segments. An analysis segment is a section of roadway between two points; these terminal points are typically intersections. The intersections can be non-consecutive.
2. **Other performance measures**—Users need to holistically assess the operational performance of signalized corridors. Often this will require more than travel time/speed data. Other data that may be useful for users include:
   o Origin-destination data for an area or along a corridor
   o Delay by turning movement at an intersection
   o Number of stops along a corridor
   o Queue lengths by intersection approach and/or turning movement
3. **Evaluate operational changes**—Users need data to be sufficiently accurate to identify changes in travel time/speed related to traffic signal operational conditions.
4. **Able to obtain raw and granular data**—Users need the collected data to be useful for the development of performance measures other than segment travel time/speed, such as travel time index and intersection delay.
5. **Access to data**—Users need to have access to near real time an historical data. The historical data should at least date back to when the user first had system access.

DATA PROCESSING

Needs related to the collected data's presentation platform or data processing during decision-making.

6. **Timely availability of data**—Users need access to collected data in a timely manner. For example, to respond to a public complaint, a user may need to investigate traffic conditions within 24-hours of their occurrence.
7. **Minimal user processing**—Users need to extract meaningful information from the system for decision-making. This procedure should require minimal input from the user and no significant processing or analysis by County staff.

8. **User-definable study corridors**—Users need the ability to define a study corridor (one or more consecutive roadway segments) for analysis results.

9. **User-definable input parameters**—Users need to define analysis period, such as date range, day of week, and times of days. The system should be responsive to changing user needs or changing defined parameters. The user needs to define analysis periods that may be comprised of specific weeks, specific days of the week, or specific hours.

10. **Save study parameters**—Users need to minimize redundant manual work or user input. The system should allow the duplication of previous analyses and provide options to change each parameter individually.

11. **Summarize trending statistics**—Users need to summarize trending statistics for travel time over a seasonal or user-defined period. Example statistics could include the top 10 congested segments or intersections.

12. **Summarize comparisons**—Users need the system to compare statistics for two or more user-defined analysis periods. For example, comparing weekday morning peak period performance between 1-week of before and 1-week of after conditions.

13. **Automated alerts**—Users need to define alert thresholds based on system-generated statistics or user-defined parameters. User needs the ability to adjust the thresholds for individual corridors or intersections. User needs the system to deliver automated alerts to conditions that meet the defined thresholds. Alerts could be delivered via email or text.

14. **Automated reports**—Users need to receive automated reports at defined frequencies, such as daily, weekly, and/or monthly. Automated reports from the platform should return statistics or performance measures with minimal user input.

COVERAGE

Needs related to where data is available.

15. **Data on County roads**—Users need to collect travel time data on all arterial roadways in Clark County.

ACCESS

Needs related to how the user accesses the data.

16. **Shared access with partners**—Users need to provide data access to other regional partner agencies and consultants.

17. **Simultaneous access with multiple users**—Multiple users need to be able to access the data simultaneously.

18. **Accessible without specialized software**—Users need to access data from existing or readily-available software tools (such as a web browser); data access cannot require specialized software tools and licenses.

19. **Compliant with digital accessibility standards**—Users need content on the platform to be accessible to people with disabilities; content should conform to the Web Content Accessibility Guidelines (WCAG).

🔒 PRIVACY & CYBERSECURITY

Needs related to privacy and protection of electronic data.

20. **Non-personally identifiable data**—Users need all data reported to the County to be non-personally identifiable information.
21. **Compliant with County cyber security policies**—Users need a system that meets all County cybersecurity policies defined by the County's Information Technology Department.

🔧 MAINTENANCE

Needs related to the prerequisite equipment for data collection and preservation.

22. **No field equipment needed**—Users need to not maintain specialized travel-time monitoring equipment in the field.
23. **Minimal capital investment**—Users needs a system that does not require capital investments, such as investments in dedicated servers and other networking equipment.
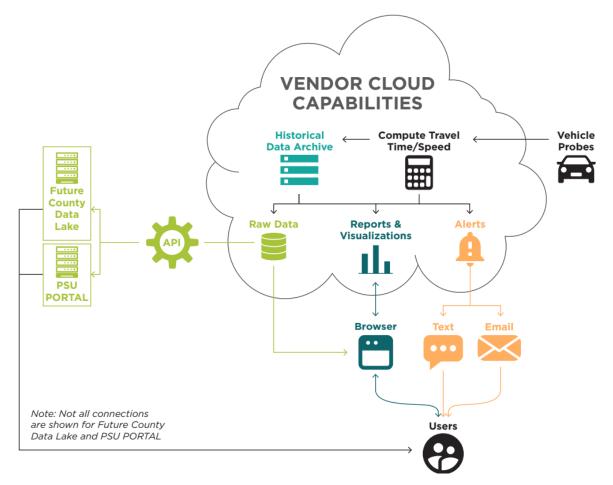
••• OTHER NEEDS

24. **Integration tools**—User needs the data to be integrated with the PSU PORTAL and the future Clark County Data Lake for regular reporting and archiving of data.
25. **Sharable data**—User needs the tools and licensing to permit and facilitate distribution of data to partner agencies, consultants, and the public.

SYSTEM OVERVIEW

This section outlines the proposed probe data system as well as its users, interfaces, and desired capabilities.

Clark County intends to procure a probe data system that will report travel-time and speed-based performance measures along corridors in Clark County. Figure 1 illustrates the proposed probe data system's desired capabilities and operating environment.

Figure 1: Probe Data System Overview

VEHICLE PROBE DATA SOURCE

The primary data source for the probe data system are vehicle probes. For the purposes of this concept, vehicle probes could refer to one or a combination of any of the following example data sources:

- **Connected Vehicles**—Data generated by connected vehicles, including location, engine status, and other vehicle-specific attributes.
- **Location-based Service (LBS)**—Some smartphone applications (such as navigation or geofencing applications) use software services that provide geographic data and information. User data collected from these services may be used for traffic monitoring.
- **Cellular Tower**—Cellular data providers can triangulate the location of their cellphone users, typically with an error radius within 0.5 miles. Some data collection technologies can accurately process cellular tower data within 100 feet.
- **Commercial Vehicles**—Many freight and commercial vehicles have GPS monitoring devices. Data from these devices can be used to understand travel conditions on facilities where users expect similar traveling speeds between passenger cars and freight vehicles (such as on freeways and multi-lane highways).

The probe data system will provide travel time and speed data for all arterial roadways in Clark County (both signalized and unsignalized).

All user-accessible data is non-personally identifiable. This means that the system will remove any information that could identify a person prior to sharing the data with the system user.

Vehicle probe data collected from this system will be shared for analysis with other partner agencies, consultants, and data repositories. Data will also be shared in response to public requests for information. For more detail, see Stakeholder Description on Page 7 for more details on stakeholders.

CLOUD-HOSTED SERVICE

The probe data system will be a vendor-supplied cloud service that will not require the County to install or maintain any network server, virtual machine, or sensors. The probe data system will perform the following primary functions:

- **Calculate Travel Time and Speed Results**—The probe data system will automatically process the vehicle probe data to calculate relevant travel time and speed results.

- **Reporting and Visualization**—The probe data system will provide a web browser interface that presents travel time and speed results as reports and visualizations for the user.
- **Historical Data Archive**—The probe data system will archive historical travel time and speed results on the cloud without requiring the user to backup historical data on separate storage devices offline.
- **Alerts**—Based on user-defined travel time, speed, or other thresholds, the probe data system will alert users through short message service (SMS), multimedia messaging service (MMS) or email.
- **Application Programming Interface (API)**—Other systems (including PSU's PORTAL system or Clark County's future Data Lake system) may need to use an API to programmatically access the travel time and speed data from the probe data system.
- **Technical Support**—If the probe data system is not functioning as expected, users should be able to contact technical support staff for general help or system troubleshooting. A notification to County staff will be provided for any planned system downtime, such as for maintenance or software updates. For unplanned system downtimes, technical support staff are expected to return service to the system as soon as possible, since other web services—such as the PSU PORTAL or the County's future Data Lake system—may rely on data from the probe data system.

USERS

Clark County will be the primary user of the probe data system. The County will provide full or limited access to the travel time and speed data collected on the probe data system to other partner agencies and consultants. For more detail, see the Stakeholder Description on page 7.

Users will primarily access the system through a web browser interface. Some users may directly interface with the API to conduct scripted analysis or to integrate other systems.

OPERATIONAL SCENARIOS

This section describes the typical sequence of activities carried out by the user, the system, and the environment. Sample scenarios illustrate and explain how these activities could be carried out. Information related these scenarios does not prescribe specific interface or technical requirements of the system.

BEFORE AND AFTER STUDIES

Description

Clark County will use the data probe system to conduct before and after studies for projects, including signal retiming, adaptive traffic signal control, and other operational enhancement projects. Before and after studies compare the typical operating conditions of a corridor at two different time periods. Before and after studies may consider numerous performance measures, including median travel time and 85th percentile travel time. Which performance measures are used typically depends on the data collection system's capabilities.

Desired Workflow

Example scenario: Clark County implements a new adaptive signal control system to improve traffic flow. The project includes 8 signalized intersections. The County needs to understand how the system changed the operational performance of the facility.

1. **Define Roadway Analysis Segment or Corridor**—User defines the roadway segments and direction of travel for analysis.

   In the example, the user understands that the land use context of the corridor changes and decides to divide the corridor up into three consecutive segments.

2. **Define Analysis Periods**—User defines the time-of-day and date range for analysis. User also defines specific days and holidays to exclude for the analysis.

   In the example, the user understands that the corridor typically experiences a late AM peak period. The user is interested in analyzing a specific three-hour period: 8:00 AM–11:00 AM. The user also decides to analyze two distinct date ranges: all Mondays–Thursdays in April (for the "before" period) and all Mondays–Thursdays in May (for the "after" period).

3. **Review and Compare Data**—User reviews the reported system data and visualizations according to the user-defined parameters above. Comparing the reported data for the user-defined before and after analysis periods, user concludes whether the new modification improved traffic conditions in the corridor.

> In the example, the user reviews visualizations of the median speed by time of day, the 85th percentile speed by time-of-day, and the travel time index by time of day. The user also reviews a table that summaries of this data.

4. **Downloading Data**—User downloads system-generated reports for further review. User also downloads the data for all analysis segments, corridors, and periods for further analysis.

> In the example, the user downloads the generated report to include in a before and after study report. The user also further analyzes this data in Microsoft Excel and calculates custom performance measures for this project. A metadata file or help page that explains all the variables included in the data files helps the user understand how to use the downloaded data.

5. **Sharing Results**—User shares access to the system and downloaded data with someone outside the organization.

> In the example, the user hires a consultant to analyze the results. The user provides the consultant with access to the system and the ability to redefine study parameters. The user does not give the consultant administrative privileges in the system.

REGULAR AND PROACTIVE SIGNAL TIMING OPERATIONS

Description

Clark County will use the system to conduct regular and proactive signal timing operations. The system will identify and alert staff to reoccurring or newly developed operational issues.

Sample size is especially important in the use case of identifying unusual conditions. Datasets with lower sample sizes will require a longer period of unusual condition to recognize a change from the normal condition. Clark County is primarily interested in observing trends over time, for example identifying an intersection with higher than usual intersection delay for a full week, rather than identifying a particular hour of unusual condition.

Desired Workflow

> Example scenario: Clark County receives several citizen complaints about long delays on a corridor where an adaptive traffic signal control system was recently implemented. The complaints did not clarify a specific intersection, day, or time of day. The County needs to use the system to identify and understand the problem and monitor the corridor after addressing the issue.

1. **Scanning**—User analyzes the data for traffic condition changes and anomalies by roadway segments, direction, time of day, and days of week.

   > In the example, the user verifies the traffic issue using data to understand where and when the issue occurs. The probe data system provides a visualization that summarizes the median or 95th percentile travel time over time and space. Using this visualization, the user identifies the traffic issue's location and timing.

2. **Monitoring**—After deploying changes to signal timings, the user will monitor the operational performance of the roadway segment by reviewing operational data daily. The user defines the specific roadway segments and direction to monitor.

   > In the example, the user monitors roadway performance by receiving a daily report by email or setting up a dashboard to display the specific roadway segment's performance measures.

3. **Alerts**—User decides to set up a speed-based alert for all roadway segments in the County. When user-set parameters are triggered, the system sends an alert to the user's email. The probe data system also sends a statistical report summarizing the number of alert triggers to the user for analysis.

   > In the example, the user requires sufficient options to configure an alert so that alert notifications do not overwhelm the user's inbox. To mitigate false positives and overwhelming the user's inbox, the alert would not be a static threshold, but dynamic based on the historical performance of the roadway segment.

REGIONAL DATA REPORTING

Description

Clark County will use the system to report operational conditions at the regional level. Typically, operational condition reports are completed quarterly or annually. Each year, Clark County provides RTC travel time data for key corridors throughout the county as part of the annual congestion management process (CMP) reporting.

Desired Workflow

Example scenario: Clark County annually provides data to RTC for the publication of the CMP monitoring report. RTC has 43 corridors as part of the CMP network, and RTC needs to report the average travelled speed during the AM peak period, the PM peak period, and the full day. For each of these time periods, RTC also needs to report the average travelled speed as a percentage of the posted speed. Additionally, RTC needs to report the intersection delay for vehicles travelling through signals along the RMP network. RTC needs these statistics to consider a complete calendar year of data.

1. **Define Analysis Corridors**—User defines a list of roadway segments to be grouped into an analysis corridor. Reported analysis results are summarized for the entire corridor and represent vehicles travelling from the start of the corridor to the end of the corridor.

   In the example, RTC defines 43 corridors for analysis.

2. **Downloading Data**—User downloads analysis results for all analysis corridors. Downloaded results include statistics from 3–12 months of data as well as statistics for the AM and PM peak periods.

   In the example, RTC downloads one year of data for all 43 corridors (organized as 18 grouped corridors in the CMP monitoring report) formatted as a computer-readable table or database.

3. **Reporting Data**—User performs additional analysis of the data and reports the results in the CMP monitoring report.

   In the example, RTC publishes the results in the CMP monitoring report, along with supporting data. For example CMP monitoring reports, visit RTC's webpage on the CMP process: *https://www.rtc.wa.gov/programs/cmp/*.

SUMMARY OF IMPACTS

This section summarizes how the proposed system will impact the operations of project stakeholders. The proposed system will have the following impacts:

- **Reallocate Funds for Planned Bluemac Installations**—Clark County has several upcoming projects with funds allocated for the procurement of Bluemac sensors. Clark County will need to coordinate its programming and procurement sections to reallocate the Bluemac construction funds and to identify the appropriate mechanism for procuring the probe data.

- **Decommission the Existing Bluemac System**—Although Clark County's licensing for the Bluemac system technically allows the agency to operate the existing sensors in perpetuity, many existing sensors went offline when Bluemac Analytics ended maintenance support in December 2020. Many of the Bluemac sensors are beyond their five-year life span and rely on an aging 3G cellular network. Clark County should work toward decommissioning the Bluemac system and archive data collected from the system.

  o If the County wants to reactivate the existing sensors, it will need specialty consultant resources, specifically former Bluemac Analytics staff, to reconfigure the Bluemac server virtual machine and reflash offline Bluemac sensors. Depending on sensor condition and whether sensors can be reached remotely, reactivation may require additional resources to physically reconfigure the sensors in the field.

- **Require Integration with PSU PORTAL**—Coordination with PSU staff will be required to provide the necessary APIs required for the PORTAL system to interface with the probe data system and display relevant corridor travel time data. The County and PSU will need to agree on what data can be shared and how it can be displayed on the PORTAL system.

- **Require Integration with Clark County's Planned Data Lake system**—Clark County's future Data Lake system will archive transportation data from its various field sensor and purchased probe data systems. As with the PSU PORTAL system, the County will need to reach an agreement on what data can be shared.

- **Staff Training**—Agency stakeholders will need to receive training on the new probe data system. The training should cover how new and existing processes (such as regional data reporting) will be conducted using the probe data system.