**Washington State
Department of Transportation**

REPORT TO THE LEGISLATURE:

VIRTUAL COORDINATION CENTER (VCC) PROVISO REPORT

ESHB 1125, Section 217 (8)
December 1, 2023

INTRODUCTION

This report is in response to the requirements outlined in ESHB 1125, Section 217 (8). It directs the Washington State Department of Transportation (WSDOT) to furnish a progress report on its proposals for extending the operations of the Virtual Coordination Center (VCC). This expansion encompasses additional jurisdictions and corridors statewide. Furthermore, the report details the amounts received and the dates of receipt of any new financial contributions and in-kind support from VCC partners, which may include, but are not limited to, the city of Seattle, King County, other state and local jurisdictions, and private sector collaborators.

The VCC is a cloud-based environment that enables real-time data sharing and coordinated response to more quickly identify and clear roadway incidents to reduce congestion and improve safety. Initial deployment, which began during the last quarter of 2022, was focused on the central artery of a complex transportation roadway network that extends from Marysville to Federal Way through the heart of Seattle.

The primary goal of VCC is to support the multi-agency management of specific complex incident situations that put considerable stress on the transportation system and that require interagency collaboration beyond what is usually exercised daily. Agencies engaged in addressing these diverse and dynamic circumstances can use the VCC to enhance their existing modes of operation and communication.

BACKGROUND

The goal of the Beyond Incident Response: *Mitigating Impacts of Major Incidents in the Seattle I-5 Corridor* 2019 report was to develop a conceptual software program that could help facilitate real-time communication and collaboration between responding agencies during a major incident. This system is known as the Virtual Coordination Center (VCC).

In 2019, WSDOT applied for a $3.4 million grant from the United States Department of Transportation's (USDOT) Advanced Transportation and Congestion Management Technologies Deployment (ATCMTD) Program to fund design and construction of the VCC. Cash matches from WSDOT and Challenge Seattle, as well as in-kind matches from the City of Seattle, King County, Washington State Patrol, Sound Transit and 11 private sectors partners were needed to successfully design and build the VCC. WSDOT served as lead administrator of the project with University of Washington (UW) providing day-to-day project management.

In July 2020, WSDOT was awarded the full $3.4 million in grant funds. WSDOT and its partners officially started work to build the VCC in September of 2020. The grant funds supported the program through September of 2023.

King County Metro, Sound Transit, Seattle Department of Transportation, Seattle Fire Department, Seattle Police Department, Washington State Patrol and WSDOT are current partner agencies of the VCC and have been working together to manage various components of the Seattle I-5 corridor by actively utilizing the VCC. Incidents requiring interagency coordination happen frequently, so a sense of community and shared responsibility has developed over time. The VCC environment builds on these strong ties.

VCC FUNCTIONALITY

The VCC is a cloud-based coordination environment that allows agency users to access and share information about traffic incidents in real time.

- The infrastructure is cloud-based, assuring that VCC members have a mechanism for equal access to VCC data and capabilities.
- The VCC interface is a secure web application that integrates data from partner agencies in support of collaborative awareness and operations.

The VCC is composed of three elements:

1. **Incident Management:**

   - Automatically combine and display information from multiple computer-aided dispatch sources to provide information about incidents and events that affect traffic.
   - Enables agency staff to share updates as the situation evolves.
   - Built-in alert system that notifies key agencies of major incidents.

2. **Congestion Management:**

   - Shared system that allows agencies to deploy tools, such as ramp meters, signal adjustments and transit alternate routings, in concert and jointly monitor and manage congestion.
   - Improve safety by clearing roadway incidents quickly.
   - Guide first responders to incident sites more efficiently, and ensuring regional mobility continues during incidents.
   - Augmentation for regional response and management plans via predictive analysis methods to support the development and refinement of regional response and traffic/transit management plans.

3. **Population Movement:**

   - Support secure interagency communication and trusted information sharing to coordinate communication with the public, major employers, and private-sector mobility providers.
   - Enables agencies to craft timely, unified messages that can be shared with the public, major employers, and private-sector mobility providers.

The VCC was not created to replace existing public agency partners' systems; VCC members determine how the VCC fits into their existing systems and processes.

PROGRESS AS OF JULY 2023

WSDOT has effectively managed the smooth transition of the VCC, transferring its day-to-day project management from the University of Washington to a WSDOT Transportation Operations Division managed program.

For the 2023-2025 biennium, the legislature appropriated $1,279,000 for maintenance and operations of the VCC. To ensure the continued success of this program, the WSDOT Transportation Operations Division has taken the following steps:

Additional Staffing – Funding has been allocated to expand the VCC support team. WSDOT anticipates filing these positions by the end of the year. It should be noted that funding for the project positions is specifically allocated only for the 23-35 biennium:
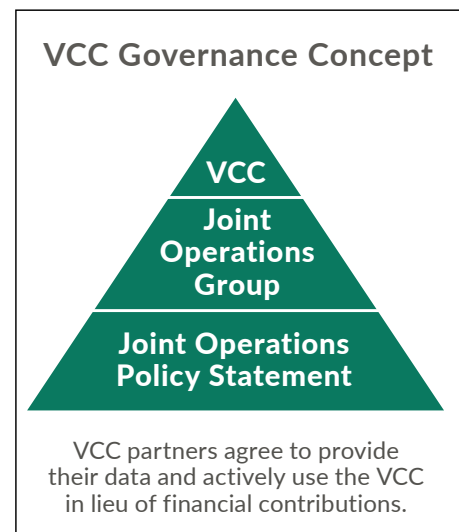
- Two full-time IT positions dedicated to support the VCC infrastructure.
- One project full-time IT position dedicated to support the VCC infrastructure and customer service-related issues of the VCC.
- One full-time VCC program administration position and one full-time project VCC support position within the Transportation Operations Division to effectively manage, administer, expand, and enhance the VCC.

Administration:

- Transfer of vendor agreements from the University of Washington to WSDOT.
- Data sharing and interlocal agreements have been extended by one year through an amendment.
- Continued engagement and collaboration with our current VCC members to ensure a seamless transition.
- Development of a permanent VCC governance structure underway.
- Expansion planning for statewide use of the VCC.

VCC GOVERNANCE

WSDOT recognizes with the expansion of the Virtual Coordination Center (VCC) statewide, it is important that it operates within a defined governance structure. By establishing a governance structure, it strengthens the effectiveness and ensures efficient coordination, participation, and communication across various agencies and stakeholders. Having a consistent framework provides for decision-making processes, Joint Operations Group establishment, program user agreement coordination, community engagement, resource allocation, and accountability. Furthermore, we will work to create and implement data sharing and interlocal agreements to foster transparency, collaboration, trust, and consistency in operations enabling seamless integration of the VCC into existing systems and processes. These agreements will memorialize governance and participation in the VCC.

VCC Governance Concept

VCC

Joint Operations Group

Joint Operations Policy Statement

VCC partners agree to provide their data and actively use the VCC in lieu of financial contributions.

Proposed framework:

Coordinated incident and congestion management requires joint regional framework for operations, information sharing, technical environment, and related policy development. The VCC expansion will rely on our regional partners to identify geographic locations where the VCC will be beneficial and then proceed to formalize, engage, and facilitate area Joint Operations Groups (JOG). The following will make up the framework for the VCC governance structure:

The Joint Operations Policy Statement (JOPS) will serve as the foundation for the VCC's governance structure. It outlines enhanced coordination for traffic incident management protocols, data sharing, disaster response, smarter highways, commercial vehicle operations, work zone safety, and public communication.

Joint Operations Groups (JOG) will be established where logical geographic need exists in our state. These JOGs are an extension of regional traffic incident management and congestion management community that is ready to enhance and increase coordination of its efforts during major incidents. To account for jurisdictional overlapping, some VCC members may participate in multiple JOGs. Regional JOGs will consist of representatives from WSDOT regional administrators, traffic engineers, traffic management centers, the Washington State Patrol, area law enforcement, fire, emergency services, local agencies, and other transportation agencies. The JOGs will serve as the area liaison responsible for coordinating VCC member participation, to include member collaboration and coordination related to data sharing agreements, interlocal agency agreement sharing, pre-planned detour adoption/coordination, resource allocation and accountability.

Currently, there are two active JOGs:

- The Seattle Area Joint Operations Group (SAJOG) members actively participate in using the VCC. The SAJOG was created to implement a regional strategy for enhancing mobility and incident related impacts along the Seattle I-5 corridor. WSDOT will work closely with SAJOG during expansion consideration.

- The I-5/Joint Base Lewis McChord area has a JOG located in the greater Pierce and Thurston County vicinity and they are looking forward to participation in the expansion of the VCC.

VCC Steering Committee meets quarterly. The committee provides strategic direction and oversight for the VCC and consists of high-level representatives from VCC member organizations in the Seattle area. The VCC Steering Committee, currently located in the Seattle area, will grow over the next year to incorporate adjacent agencies.

As the use of the VCC expands beyond the Seattle and King County area, the establishment of the VCC Association will serve to manage the platform as a statewide program. The VCC Association will be instrumental in the adoption of a statewide approach to decision-making, policy development, and resource allocation.

Working Groups will be formed within each of the JOGs. These groups are composed of VCC subject matter experts and stakeholders who will collaborate to work on VCC updates, project developments and provide recommendations to the Steering Committee. Working Groups will operate under the guidance and supervision of their perspective agencies and organizations.

VCC EXPANSION RECOMMENDATIONS

The WSDOT is actively collaborating with its current and future VCC members in the King County area. The first step was to understand our current member needs for expanding the VCC to bordering agencies and consortiums. By creating a framework to expand our user community and create a cohesive and collaborative approach to using the VCC, our partners can manage incident related congestion more efficiently.

The expansion within King County area will provide seamless coordination amongst the area partners and removes gaps in coverage. By leveraging partnerships with bordering agencies, we can identify adjacent incidents that may be influencing corridor congestion and make informed decisions on the next steps for traffic mitigation.

The successful deployment of the VCC in the Seattle area has generated significant statewide interest, showcasing its value in enhancing incident management and fostering collaboration among stakeholders. Geographically, by incorporating and connecting main highway arterials of significance we gain connected accessibility and coordination among multiple corridors. Initial expansion within King County (Figure 1) will include I-90, I-5, SR 167, SR 520, I-405 corridors as a first priority. Our first course of action is to connect with local jurisdictions to identify traffic management needs. Those jurisdictions include, but are not limited to, Shoreline, Burien, Tukwila, Renton, Bellevue, Kirkland, King County Roads, Des Moines, Kent, Bothell, and Redmond. In addition to these agencies, WSDOT has identified NORCOM (Northeast King County Regional Public Safety Communications) as a consortium agency that manages dispatch feeds.
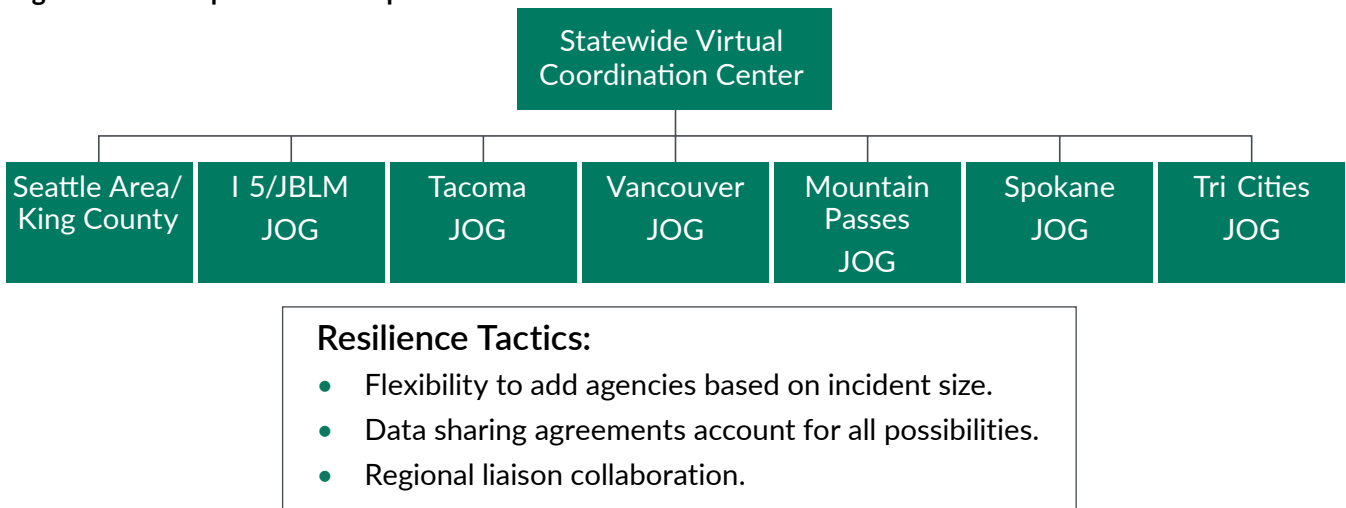
Figure 1: King County Expansion
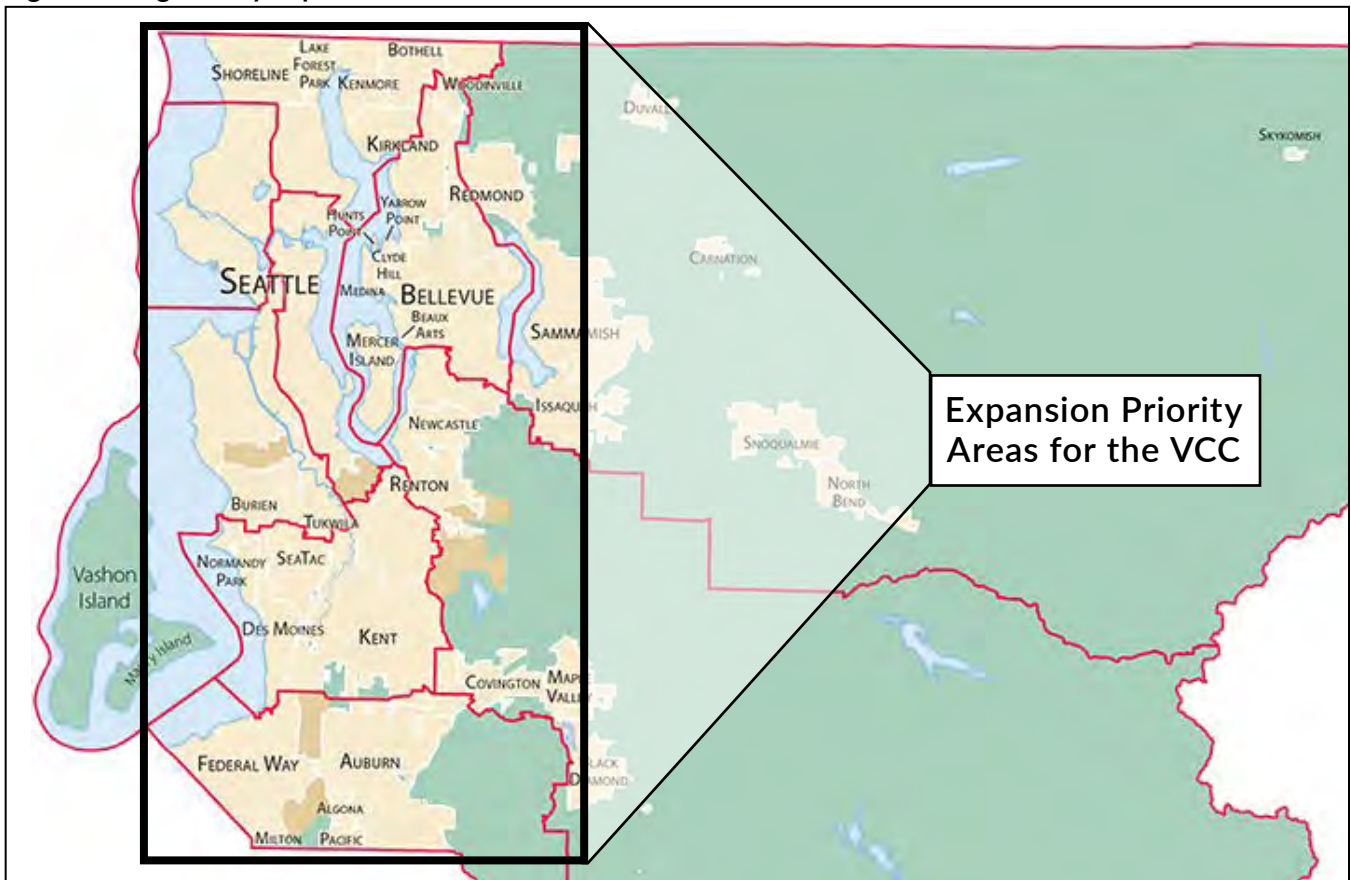
Expansion Framework:

The VCC was created to be scalable and flexible to accommodate future growth and adapt to changing needs. WSDOT will work closely with IT (Web Applications Support) to ensure system attributes provide seamless functionality to effectively display multiple layers of CAD feeds based on user preferences across diverse statewide boundaries and jurisdictions. The next step is to establish partnerships with parties interested in participating in the VCC and willing to enter into the VCC data sharing and interlocal agreements. These parties agree to share resources, expertise, regional information, and to foster a unified approach to incident management across the state and are integral to the growth and continued support of the VCC. WSDOT recognizes that agency jurisdictions and regional boundaries may overlap in certain areas and are working on strategies to address any potential conflicts or gaps in coverage to ensure comprehensive incident management.

Other corridor expansion considerations beyond the King County area include WSDOT's Southwest Region (Vancouver area), Olympic Region (Tacoma and I-5 JBLM) Eastern Region (Spokane area), and South Central Region (Tri-Cities area) (Figure 2).

Figure 2: VCC Expansion Concept

Statewide Virtual Coordination Center

| Seattle Area/ King County | I 5/JBLM JOG | Tacoma JOG | Vancouver JOG | Mountain Passes JOG | Spokane JOG | Tri Cities JOG |

Resilience Tactics:
- Flexibility to add agencies based on incident size.
- Data sharing agreements account for all possibilities.
- Regional liaison collaboration.

VCC FUNDING

The WSDOT Transportation Operations Division appreciates the significance of the Legislature's investment in the Virtual Coordination Center (VCC) through Move Ahead Washington. Although the federal grant funds ended in September, WSDOT and its partners will continue their ongoing participation in the operations of the VCC. The current 23-25 biennium legislative funding supports the VCC staffing needs and technical services for the VCC. At this time, the VCC program has not received any new funding. However, as we establish governance structures and increase partnerships, we are hopeful as we move to expand the VCC there will be opportunities for grants and other partnerships.

It is essential to emphasize the critical role of members providing their computer-aided dispatch (CAD) feeds to the success of the VCC program. The CAD feeds are an essential form of participation that directly impacts the functional effectiveness of the system. They represent an effective in-kind match in lieu of a financial contribution. These CAD feeds serve as the lifeline to our incident management system, supplying real-time data and enabling us to make informed decisions swiftly and accurately.

Recognizing the financial challenges faced by partner agencies, WSDOT advocates that each active member of the VCC have access to the system regardless of their ability to contribute financially. Without agency staff routinely utilizing the VCC to actively manage real-time incidents the system would be obsolete. Agency active participation in managing incidents through the VCC represent an in-kind match in lieu of a financial contribution. It is crucial that we remove financial barriers that could impede participation and hinder the effectiveness of this vital coordination mechanism. By making the VCC accessible to all without any financial burden, we can ensure equal opportunity and inclusivity for all agency partners.

The WSDOT Transportation Operations Divisions applied for a USDOT PROTECT Program Grant in August of 2023, the grant is for promoting resilient operations for transformative, efficient, and cost-saving transportation programs and is the Geographic Information System-based Pre-planned Detour System (GIS-PDS). The GIS-PDS will capture pre-developed detour route details identified through the JOGs and will be available through an interactive GIS platform. The GIS-PDS is intended to be integrated in communities where the VCC exists to provide a next level of detail on pre-planning efforts, current detour routing decisions, and required traffic control resources within the VCC. The GIS-PDS will capture statewide pre-planning efforts independent of the VCC environment but will be utilized as an additional layer in the VCC as it expands statewide.

WSDOT will continue to strategize with our partners and VCC members to seek opportunities to leverage networks, resources, and funding opportunities. However, WSDOT will need ongoing sustained funding beyond the 23-35 biennium to support the operations and maintenance of the VCC and its expansion.

CONCLUSION

WSDOT will continue to build and expand the VCC community, focusing on incident response and congestion management. The VCC cannot operate without its community. It is a collaboration tool to support the community in incident management, congestion management and public information. This shared system allows agencies to deploy congestion management tools in concert with partner agencies and jointly monitor and manage congestion. The VCC serves to identify incidents more quickly, improve safety by reducing roadway clearance times, effectively guide first responders to incident sites, and ensure regional mobility continues during major regional traffic impacts.

The benefits of managing and collaborating on an incident through the VCC allows for member agencies that have jurisdictional control over different resources to utilize those tools to mitigate traffic impacts. The virtual platform provides seamless communication on actions taken. For example, WSDOT controls ramp metering and on-highway variable message signs, King County Metro can adjust buses to alternate routes, agency Public Information Offices have real-time information to relay to the motoring public, and City of Seattle Traffic Operations Center can deploy Seattle resources to manage traffic within their jurisdictions. The VCC has the functionality to identify and highlight roadways that are either reduced or closed due to construction or major planned events, such as the FIFA World Cup in 2026. Moreover, it allows users to monitor pre-planned detour routes to optimize route efficiencies.

WSDOT is committed to build upon the VCC project successes, seeking both grant funding and future legislative financial support to further enhance this vital resource. Together, we can continue to improve our coordination efforts, ensuring the safety and well-being of our system users.