

MEMORANDUM

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To: Port of Kingston

From: Giancarlo De Simone, PE
Mike Hendrix, PE, PTOE
Patty Buchanan, PE

Date: June 17, 2021

Re: Active Traffic Management and SR104 Holding Lanes – Summary Memo

INTRODUCTION AND DESCRIPTION OF PROJECT NEED

The Kingston-Edmonds Ferry, while operated by Washington State Ferries (WSF), is part of a larger, regional transit and community system that includes WSF, Washington State Department of Transportation (WSDOT), Kitsap Transit, Kitsap County, Port of Kingston (“Project Partners”) and the Kingston community and businesses. As is the subject of this study, the ferry vehicle queue extends through Kingston’s downtown along State Route 104. The ferry traffic causes heavy congestion in the Kingston downtown area, blocking intersections, commercial driveways, and impeding local access to downtown Kingston.

Perteet has developed an Active Traffic Management System (ATMS) concept to manage eastbound WSF traffic through Kingston. The concept utilizes detection, signing, and signaling tools to create an efficient and safe operating system. This work includes development of an expanded shoulder along SR104, northwest of the intersection with Lindvog Road NE in conjunction with ATMS elements.

ANALYSIS METHODOLOGY

ACTIVE TRAFFIC MANAGEMENT SYSTEMS (ATMS)

In prior studies, Perteet modeled and evaluated traffic operations through Kingston with and without a remote holding lot. The traffic operations review included two main components. First, the active traffic management strategies for a remote holding lot, focusing on how the lot should operate to best achieve the primary goal for the project of managing queuing through Kingston, were reviewed and analyzed on a qualitative level. Second, the simulated traffic demands for the local roadway network and ferries were implemented to test the proposed ATMS. Traffic operations were modeled with the remote holding lot in 2040—consistent with the WSF Long-Range Planning horizon. Observations and analysis from the traffic simulations helped refine the ATMS recommendations.

This effort evaluates the first implementation phase of the ATMS and full holding lot. This first phase includes backbone ATMS components and a holding lane that utilizes the existing shoulder and WSDOT right-of-way. The recommendations for the first implementation phase can be found in the attached ATMS memo.

SITE IMPROVEMENTS

The WSDOT property at Lindvog Road NE and SR104 was evaluated as a location for a remote holding lot. Due to factors such as wetlands, steep grades, and other constraints, the remote lot required a large amount of funds.

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Perteet, in conjunction with the Project Partners, developed a scaled-down approach to evaluate the site with a focus on ATMS elements.

The conceptual site plan provided as Attachment B shows the cost constrained plan, which limits the development of the Lindvog site to a total cost of \$1.4 million for all site and ATMS improvements. The Lindvog site can efficiently support additional holding lanes beyond the cost constrained plan, should the funding become available. Perteet developed a site plan showing the approximate “easily developed” area in Attachment B. This area is defined as site area that could be developed without direct wetland impacts, site walls, or other major cost element constraints.

Design and operational priorities such as cost, project delivery risks, and operations were prioritized in design. Perteet analyzed several factors that affected on-site design. The developed concept plan causes no direct or buffer impacts to wetlands on the Lindvog site. In addition, the scaled-down approach reduces new development impacts to under Kitsap County Stormwater Design Manual flow control and runoff treatment trigger thresholds.

RECOMMENDED IMPROVEMENTS AND BENEFITS

ATMS elements recommended in the attached ATMS memo provide improvements to WSF passengers and improve the congestion in downtown Kingston. Stop line and departure detection should be utilized to trigger signals and count vehicles entering/exiting the holding lanes to reduce assistance needed by WSF staff and Washington State Patrol (WSP) on high volume days. The ATMS system recommended automates the tracking system to ensure “first-in, first-out” operations at the holding lanes by use of License Plate Reader (LPR) cameras. The ATMS and holding lane should be in operation at all times to provide clarity to Kingston residents and other frequent users. Directional guide signing is to be installed at key decision points to direct motorists to the holding lane. The construction of ATMS elements and site improvements at the Lindvog site would relieve ferry traffic congestion in the Kingston downtown area. Should additional funding become available, expansion of the holding lane(s) at the Lindvog site would increase capacity, reducing the number of vehicles in the SR104 shoulder on high volume days.

OUTSTANDING ITEMS TO BE RESOLVED

Additional elements to be resolved include:

- Community outreach and feedback.
- Coordination with the cycling community. As identified by WSDOT during the workshop process, SR104 is a prominent route for cyclists. Specific outreach to this community is needed to gather input from roadway users of multiple modes, improve user experience, and increase safety.
- Coordination with franchise utilities for utility work/relocations related to the construction of the holding lane.
- Final determination of available funds for the project. Sizing of the holding lane(s) to be refined to match cost-constraints as applicable.
- Acquiring applicable permits and agency approval.
- Determination of additional ATMS elements to be added, including installation of CCTV cameras, system integration with Traffic Management Center, travel time information, additional detection at infiltration points, signal processing time, and more. The attached ATMS memo includes further discussion of future enhancements.

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ATTACHMENT A – ATMS MEMO

ATTACHMENT B – CONCEPTUAL SITE PLAN

ATTACHMENT C – PRELIMINARY OPINION OF COST