ANALYSIS

Department of Transportation
Connected Vehicle Ecosystem

Analyst: Ben Ruef

Request: Approve, retroactively, the submission of a federal grant application to the U.S. Department of Transportation, Advanced Transportation Technology and Innovation program, in the amount of $12,000,000, to design, build, test, operate and evaluate an information sharing system between vehicles and the highway system.

Analysis: The U.S. Department of Transportation, Advanced Transportation Technology and Innovation program aims to deploy, operate, and showcase advanced roadway deployments with applications enabled by wireless connectivity among vehicles, mobile devices, and smart infrastructure.

The Oregon Department of Transportation (ODOT) provided notice of intent to apply for a grant from this program on January 16, 2024, and the grant application was due on February 2, 2024. The grant requires a 20%, or $3 million, match, of which 50% will be satisfied by ODOT's primary contractor on the exiting project NextMove by Cintra. ODOT's $1.5 million share of the match will come from state flexible funds set aside by the Oregon Transportation Commission. If funding is awarded, ODOT will not need additional staff and will request an increase in expenditure limitation, as needed.

ODOT plans to utilize the grant to complete the proof-of-concept phase for a Connected Vehicle Ecosystem (CVE) exchange platform currently under development. Initiated in 2021 with funding from state highway funds, the project is presently in the planning phase, scheduled for completion by September 2024. The proof-of-concept phase includes design, building, testing, and operation of the CVE over a four-year period.

This platform facilitates communication between vehicles and highway systems to enhance road safety by sharing safety-related messages and information. The envisioned platform integrates sensors and cameras into a cloud-based software equipped with advanced artificial intelligence features. The approach involves leveraging in-vehicle systems, roadside technology, and cellular networks to transmit anonymized data related to traffic congestion, weather conditions, road closures, incidents, and safety warnings. The project aims to deploy these components of the CVE system along specific corridors in the Portland metro area as a proof of concept.

The CVE proof of concept targets several program goals: enhancing safety by providing real-time safety messages to commercial vehicle operators, improving freight movement efficiency, demonstrating the impact of advanced technologies on safety and efficiency, enhancing mobility and infrastructure durability, reducing costs, accelerating the deployment of advanced transportation technologies, and enabling technology transfer to other locations. If proof-of-concept is successful, ODOT plans to seek additional funding to expand its functionality and geographic footprint so that the system creates greater value for public and private sector partners.

Legislative Fiscal Office Recommendation: The Legislative Fiscal Office recommends approval of the request.

Request: Retroactive authorization to apply for a grant totaling $12,000,000 from the U.S. Department of Transportation for the Connected Vehicle Ecosystem project that would enable information sharing between vehicles and highway systems for a variety of transportation applications, including systems to improve road safety.

Recommendation: Approve the request.

Discussion: The Oregon Department of Transportation (ODOT), through their Delivery and Operations Division, is planning to apply for the FY 2024 Advanced Transportation Technology and Innovation (ATTAIN) grant program through the U.S. Department of Transportation (U.S. DOT). ODOT has identified their Connect Vehicle Ecosystem (CVE) project, which will meet the ATTAIN competitive grant submission requirements.

The CVE is designed to improve road safety through two-way communication between vehicles and the system's infrastructure. If funds are awarded, ATTAIN would allow ODOT to design, build, test, and operate a live deployment allowing messaging to be transmitted directly to vehicles, which could include traffic congestion warnings, hazardous weather warnings, hazardous road conditions, road closure information, upcoming traffic incidents and hazards, variable speed limits, various traffic signal safety warnings, and work zones.

ODOT is the lead applicant and will name NextMove by Cintra (a private sector firm), who is serving as the prime contractor on ODOT's existing CVE project, as the lead technology partner. Project costs are projected to be $15.0 million grant funds will provide $12.0 million of funding and the remaining $3.0 million in match funding is expected to be equally shared between ODOT and NextMove. ODOT plans to provide $1.5 million from their flexible funds set aside by the Oregon Transportation Commission for federal grant match and NextMove has committed to contributing $1.5 million in in-kind match between services provided and equipment to this project. Additionally, ODOT is working to secure letters of support from several automotive manufactures who have contributed to the existing CVE project through several planning workshops.

The public notice for the ATTAIN grant was posted on November 20, 2023, with an application due date of February 2, 2024. Initially ODOT was planning to apply for a different U.S. DOT grant to help support the CVE project, but discovered in December 2023 that some of those grant requirements were not viable options for ODOT. In its place, ODOT found the ATTAIN grant program was a better option for their CVE project. The grant awards are expected to be announced in the Spring 2024. The 10-day notice to apply was sent on January 19, 2024, to the Legislative Presiding Officers.

Oregon
Tina Kotek, Governor

Department of Transportation
Office of the Director
355 Capitol St. NE, MS 11
Salem, OR 97301

January 16, 2024

Senator Elizabeth Steiner, Co-Chair
Representative Tawna Sanchez, Co-Chair
Joint Committee on Ways and Means
900 Court Street NE
H-178 State Capitol
Salem, OR 97301-4048

Dear Co-Chairs:

NATURE OF THE REQUEST
The Oregon Department of Transportation (ODOT) Delivery and Operations Division, requests retroactive approval to apply for $12 million in funding from the Advanced Transportation Technology and Innovation (ATTAIN) Program from the U.S. Department of Transportation (USDOT).

AGENCY ACTION
On November 20, 2023, USDOT opened applications for the FY24 Advanced Transportation Technology and Innovation (ATTAIN) Program, a program established to deploy, install, and operate advanced transportation technologies to improve safety, mobility, efficiency, system performance, intermodal connectivity, and infrastructure return on investment. As part of the Bipartisan Infrastructure Law and National Roadway Safety Strategy (NRSS), USDOT aims to advance technology deployments to demonstrate how emerging transportation technologies, data, and their applications can be effectively deployed and integrated with existing systems to provide reduced traffic-related fatalities and injuries, reduced traffic congestion, improved travel time reliability, reduced transportation-related emissions, optimized multimodal system performance, and cost savings for transportation agencies, businesses, and the traveling public. USDOT is providing $120 million in funding to eligible applicants in federal FY24. Possible applicants include cities, local governments, state governments, transit agencies, and metropolitan planning organizations. Applications are due on February 2, 2024. Applicants are required to match at least 20 percent of the total project cost. USDOT has indicated that the expected award date will be in Spring 2024. The ATTAIN program's period of performance will be between two and four years.

ODOT has identified an excellent project for this grant opportunity. ODOT is currently developing a Connected Vehicle Ecosystem (CVE) to enable information sharing between vehicles and the

highway system using in-vehicle systems and roadside technology. The CVE is intended to support a wide range of transportation applications, including systems to improve road safety through two-way communications between vehicles and infrastructure.

With ATTAIN program funding, ODOT would design, build, test, and then operate a live deployment of the CVE exchange platform that provides safety-related messages and information via two-way communication with connected vehicles. Anonymized information from vehicles could provide specific real-time locations of traffic congestion, hard braking events, traction control issues, low-visibility conditions, and incidents. Safety messages transmitted directly to internet-connected vehicles could include (and not be limited to) traffic congestion warnings, hazardous weather warnings, hazardous road conditions, road closure information, upcoming traffic incidents and hazards, variable speed limits, various traffic signal safety warnings, and work zones.

ODOT intends to submit the application as the lead applicant while naming NextMove by Cintra, the prime contractor for ODOT's existing CVE project, as the private sector technology partner. In addition to their work on the CVE project, NextMove, through their parent company Cintra, may also contribute either hardware and/or software from their own intelligent connected road technology system, AIVIA Smart Roads. The AIVIA system is a network of sensors and cameras, an open cloud-based software system that leverages advanced artificial intelligence (AI) logic and application program interfaces (APIs) that can communicate with third party systems (e.g., mobile apps and connected vehicles) to detect, classify, and communicate a wide range of safety incidents that take place on Oregon's roadways.

Because of the existing CVE project, an application that includes NextMove as the private technology partner should be highly competitive. NextMove and Cintra are also willing to contribute a significant in-kind match to the proposal. This significant match contribution from a private partner should further strengthen the application while reducing the amount required from ODOT.

Additionally, ODOT expects to secure letters of support from several major automotive manufacturers who have contributed to the CVE project through several workshops. This significant cross-sector participation and support will also help strengthen the application. The proposed funding request and matches are as follows:

Grant Request:	$12,000,000	
Match Contribution:	$ 1,500,000	(ODOT)
Match Contribution:	$ 1,500,000	(NextMove by Cintra)
Total Project Cost:	$15,000,000	

The $1.5 million in matching funds from ODOT would come from the flexible funds set aside by the Oregon Transportation Commission for federal grant match. With ATTAIN program funding, ODOT would design, build, test, and then operate a live deployment of the CVE exchange platform that provides safety-related messages and information via two-way communication with connected vehicles. If the ATTAIN grant is not awarded, future grant opportunities would be pursued to achieve full project implementation.

ACTION REQUESTED
ODOT requests retroactive approval to submit a project proposal to USDOT for up to $12 million in funding under the Advanced Transportation Technology and Innovation (ATTAIN) Program.

LEGISLATION AFFECTED
None.

Sincerely,

Kristopher W. Strickler
Director