

ANALYSIS

Item 22: Oregon Department of Transportation Accelerated Innovation Deployment

Analyst: Michelle Deister

Request: Approve the submission of a federal grant application to the U.S. Department of Transportation, Federal Highway Administration, in the amount of \$1,000,000 to support the Interstate Bridge Replacement project.

Analysis: The federal Accelerated Innovation Deployment Development Grant program is available for projects which implement proven, innovative technologies and practices. If awarded, the grant will offset some costs associated with implementing a digital project design application known as “Digital Twin”, which will give the Oregon Department of Transportation (ODOT) and Washington’s Department of Transportation the ability to design various aspects of the Interstate Bridge Replacement project in three dimensions. Geospatial, survey, and GIS data will be directly incorporated from the beginning of design, rather than adding this information to later construction and deployment phases.

The majority of costs associated with utilizing the application are not associated with acquisition, but with development and implementation of requirements for system use, along with training engineers and program staff to use its capabilities to the fullest extent possible to input, retrieve and utilize the data. The Digital Twin is expected to increase overall efficiency in this very complex multi-year project involving multiple partners and stakeholders. The application also has utility for other complex transportation projects and may be operationalized on a broader scale.

A match of at least 20% is required; ODOT’s application leverages \$250,000 in Interstate Bridge Replacement project funding that is already programmed into the Statewide Transportation Improvement project. Applications are due September 28, 2021, and grant funding must be obligated within three years of a successful award.

Recommendation: The Legislative Fiscal Office recommends that the Joint Interim Committee on Ways and Means approve the request.

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Oregon Department of Transportation
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Request: Authorization to apply for a \$1,000,000 grant to assist in financing the Interstate 5 bridges replacement project that crosses the Columbia River. This is an Accelerated Innovation Deployment Demonstration Program grant from the Federal Highway Administration.

Recommendation: Approve the request.

Discussion: The Oregon Department of Transportation (ODOT) intends to replace the Interstate 5 bridge over the Columbia River, which is estimated to cost up to \$4.8 billion. ODOT is working with the Washington State Department of Transportation on this project. ODOT's current funding includes \$45 million in Federal Highway Administration (FHWA) formula funding, which includes a 20 percent match from Oregon State Highway Funds.

The Accelerated Innovation Deployment (AID) Demonstration Program grant provides \$1.0 million in incentive funding to accelerate the implementation of proven innovation and technologies practices. This particular grant requires a 20 percent state match of \$250,000, which will come from the Oregon State Highway Fund within ODOT's existing budget. The grant funding must be obligated within three years from the grant award date, which is unknown at this time. The notification was published on July 1, 2021, and the application is due by September 28, 2021.

ODOT has identified an existing project known as Digital Twin that is currently being implemented by the Interstate Bridge Replacement (IBR) program. The grant, if awarded, would replace dedicated state funds with Federal Funds. A Digital Twin is an innovative approach that utilizes technology information as a base concept allowing for other phases of a project to be seamlessly integrated in the future. Use of this technology is being developed and will be utilized on the IBR program and other complex ODOT projects.



Oregon

Kate Brown, Governor

Department of Transportation

Office of the Director

355 Capitol St NE

Salem, OR 97301

August 12, 2021

The Honorable Senator Peter Courtney, Co-Chair
The Honorable Representative Tina Kotek, Co-Chair
Interim Joint Committee on Ways & Means
900 Court Street NE
H-178 State Capitol
Salem, OR 97301-4048

Dear Co-Chairpersons:

NATURE OF THE REQUEST

The Oregon Department of Transportation (ODOT) Delivery and Operations Division, Interstate Bridge Replacement (IBR) Program, will be requesting permission to apply for an Accelerated Innovation Deployment (AID) Demonstration Program grant for \$1.0 million (\$1.0 million from the Federal Highway Administration (FHWA) and \$250,000 in matching state funds) during the September 2021 Legislative Days.

This grant would support the IBR Program, which intends to replace the Interstate 5 bridges that cross the Columbia River, as well as improve miles of adjacent approaches and interchanges. The IBR Program is currently estimated to cost between \$3.2 and \$4.8 billion. Washington State Department of Transportation (WSDOT), and the Oregon Department of Transportation (ODOT) have jointly agreed to develop and implement the IBR Program. Current ODOT funding for the IBR Program amounts to \$45 million in FHWA formula funds and State Highway Fund dollars. These State Highway Funds, and any obligated in the future, can be used to fulfill the required 20 percent matching share.

BACKGROUND

The FHWA AID grant program provides incentive funding of up to \$1 million to accelerate the implementation of proven innovative practices and technologies, and encourage widespread adoption of transportation innovations through technology transfer. The program requires at least 20 percent in matching funds, and grant funds must be obligated within three years of the effective date of the grant award. The Notice of Funding Opportunity for this AID grant was published on July 1, 2021, and applications are due no later than September 28, 2021. The award date has not been announced, but it is anticipated to be near the end of calendar year 2021.

ODOT has identified a project that meets program criteria. Efforts are underway on the IBR Program to begin implementation of a Digital Twin, which is an advanced Building Information Model (BIM). It will provide the framework for connecting various design inputs and geographic information systems. In addition, the Digital Twin will be used for public outreach, planning, design collaboration and production, cost estimating, and eventually for procurement, construction oversight, operations (assisted by sensors), and asset management. Used for years by NASA, such fulsome use of a Digital Twin has been limited to non-existent in the U.S. transportation industry. The Digital Twin will be used up to the beginning of procurement, a period that will be approximately three years in duration.

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The funds from this grant, if awarded, would support by the IBR Program by offsetting some of the costs of the Digital Twin.

Grant Request:	\$1,000,000
Matching Funds:	\$ 250,000
Total:	\$1,250,000

The \$250,000 in matching funds are already programmed in the Statewide Transportation Improvement Program (STIP) for the IBR Program.

AGENCY ACTION

ODOT is preparing an application for \$1.25 million in Accelerated Innovation Deployment Demonstration Program grant funds and state matching funds.

ACTION REQUESTED

ODOT will be requesting permission to apply for \$1.25 million in Accelerated Innovation Deployment Demonstration Program grant funds and state matching funds during the September 2021 Legislative Days.

LEGISLATION AFFECTED

None.

Sincerely,



Kristopher W. Strickler
Director, Oregon Department of Transportation