
THE OREGON TRANSPORTATION INVESTMENT ACTS

Innovative Solutions to Transportation Challenges

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Introduction

The Pacific Northwest is a trade-dependent region with an economy that relies on exports, particularly to Pacific Rim nations. Many of the firms that choose to locate in the region do so because of its access to these global markets and for the transportation system that allows them to move their goods to market cheaply and efficiently. While rail, marine, and air transportation all play a major role in the economy, highways are particularly important because most freight moves by highway at some point. Maintaining freight mobility on highways is absolutely crucial to the health of the businesses—from high-tech and manufacturing to farming and timber—that form the backbone of Oregon’s economy.

As we entered the 21st century, Oregon’s highway system was beginning to show its age. Highways built decades ago were beginning to strain under the increased traffic brought about by rapid population growth and increased freight movement, but resources for significant expansions of capacity simply weren’t available. What’s more, a larger share of resources was needed just to maintain the existing infrastructure that was rapidly aging, with bridges built in the mid-20th century during the Interstate construction era reaching the end of their natural lives.

In the last five years the Oregon Legislature has provided the state’s highway system a significant infusion of much-needed funding under the three Oregon Transportation Investment Acts, which have been largely focused on enhancing the state’s economic health by maintaining and enhancing freight mobility. These three funding packages have used revenue increases combined with bonding to invest nearly \$3 billion in the highway system. While most of this funding has gone to preserving and rebuilding aging infrastructure, the OTIA programs have also provided an infusion of \$750 million in modernization projects that expand capacity on the highway system.

The infusion of funding under the OTIA program doubled ODOT’s annual construction program and set in motion the largest public works program since the construction of the Interstate Highway System half a century ago. In order to deliver the OTIA projects under the relatively short timeline set by the Legislature—a timeline necessitated by the prospect of weight limits on failing bridges—ODOT has had to significantly change how we do business. Our experiments in program and project delivery have taught us lessons that have implications for national surface transportation policy.

Bridges In Crisis

The largest component of the OTIA packages, the OTIA III State Bridge Delivery Program, came about as a result of the necessity to protect and stimulate Oregon’s trade-dependent economy. OTIA III arose as a result of a crisis that focused the

attention of the Legislature and broke through typical barriers to raising revenues to meet the needs of the transportation system.

In 2003, ODOT produced the Economic and Bridge Options Report with the trucking industry and other stakeholders, describing aging concrete bridges and the effect on Oregon's economy and future productivity. During the interstate-construction era of the late 1950s, bridges were often built using a reinforced concrete deck girder design. The report revealed that these bridges were nearing or past their life expectancy, and many of the weakened bridges required limits on truck loads exceeding 80,000 pounds.

Because nearly one third of all freight that moves by truck in Oregon—by far the most prevalent method of moving goods—is shipped in loads ranging from 80,000 to 105,000 pounds, this would be a particularly dire problem. Load limits would significantly impede the flow of goods, people and services throughout the state. Heavy trucks would be forced to detour around load-limited bridges on major state highways—including Interstate 5—adding time and cost to their journeys, and routing large trucks through local communities. Higher transportation costs would increase the cost of consumer goods for every Oregonian and make Oregon firms—as well as firms across the country—less competitive in the global marketplace. The Economic and Bridge Options Report concluded that Oregon's deteriorating bridges, if left unaddressed, had the potential to cost the state more than *88,000 jobs* and *\$123 billion* in lost productivity over the next 20 years, and the effects on other states that rely on Interstate 5 and Interstate 84 to move freight through the state would be significant as well. In short, Oregon's failing bridges were truly a problem of national significance, and there was no choice but to act.

Faced with a problem of this magnitude, the Governor and Legislature sprung into action, passing OTIA III with strong bipartisan majorities. In order to pay for the nearly \$2.5 billion in highway funding approved under the legislation, the Legislature increased a number of DMV fees and bonded the money, turning a relatively modest revenue increase into immediate cash that has allowed projects to proceed quickly. Building on the state's commitment to addressing bridges, Congressman Peter DeFazio was also able to secure a megaproject earmark in SAFETEA-LU that provided an additional \$200 million for bridges across the state, which has allowed ODOT to address additional needs and stretch the OTIA III bridge program further.

Expanding the System

While OTIA III focused on repairing and replacing aging bridges, it also included a significant modernization component that allowed ODOT to invest in strategic capacity expansion. OTIA's modernization program, along with earmarks and increased federal

funding provided by SAFETEA-LU, will help us expand capacity to key parts of the Interstate and other National Highway System routes, build and improve interchanges to improve the flow of traffic and connectivity, and address safety and mobility problems. However, the half billion in modernization funding contained in OTIA III was not new money; instead, the Legislature bonded existing funds in ODOT's annual modernization program to pay for these improvements, which will reduce our budget for modernization projects in future years.

While the convergence of OTIA III and the increased federal funding in SAFETEA-LU allowed Oregon to proceed with the largest expansion of highway capacity in decades, these investments are really only a down-payment on meeting the needs of a highway system that is becoming increasingly clogged with congestion. The task of policymakers at both the state and national levels will be to find ways to finance these needs.

OTIA III Bridge Program

OTIA III provided \$1.6 billion to repair and replace bridges on state highways and local routes. To keep pace with the massive increase in workload without additional staff, ODOT has developed new ways of managing the program and delivering projects. In passing OTIA III, the Oregon Legislature directed the Department and the private sector to develop a strategy to complete the bridge repair and replacement program in a way that accomplished three goals: ease of traffic movement, expedient project delivery, and involvement of Oregon construction firms and employees. While meeting these goals has required climbing a very fast learning curve, ODOT has made significant changes to the way we do business, and these innovations are receiving national attention.

Turning to the Private Sector

Because of the need to fix failing bridges quickly in order to avoid weight limits, the Legislature required ODOT to move as quickly as possible in implementing the OTIA III State Bridge Program. To deliver the program in-house, ODOT would have had to fill approximately 500 new positions, which would have entailed a lengthy recruitment process. Instead, ODOT turned to the private sector to meet this challenge, and engaged Oregon Bridge Delivery Partners (OBDP), a private sector management firm, to develop and implement a strategy to deliver the program in a manner envisioned by the Legislature. OBDP functions as an extension of ODOT, with oversight from the agency's OTIA III Bridge Delivery Unit. Although ODOT has outsourced work on projects before, this is the first time the agency has turned a program of this magnitude over to the private sector to manage.

ODOT is also making use of private sector firms to design repairs and replacements for the OTIA III bridges, and we are working to use tools such as design-build contracting to engage the private sector in delivering these projects.

Turning to the private sector as extensively as we have for the bridge program has had both benefits and drawbacks, and we have learned many lessons that have implications for national debates about the role of the private sector in delivering transportation projects. Engaging the private sector to design bridges and manage the program has helped us get the program off the ground very quickly: just three years after the passage of the legislation we already have 35% of the bridges that require repair or replacement either under construction or complete, with another 29% of the total in the design phase.

However, initial reviews of the program's cost indicate that privatization of program management and design has not saved the state money, as is often assumed, and may end up costing somewhat more. In other words, there may be a trade off between getting transportation projects delivered quickly and doing them at the lowest cost, and policymakers will have to choose what balance to strike.

We are also learning how to best use design-build contracting to help deliver projects. We have learned that design-build can be a very valuable tool in some cases, but it is by no means the best approach for most projects.

Context Sensitive and Sustainable Solutions

An innovative and distinguishing feature of the state bridge program is a philosophy known as Context Sensitive and Sustainable Solutions, or CS³. The CS³ approach recognizes that the OTIA program is an opportunity to provide a comprehensive transportation solution that reflects Oregon's values and responds to issues that are important to Oregonians. To achieve this, a number of interrelated program objectives are merged under the CS³ umbrella: mobility, environmental stewardship, economic stimulus, diversity, and public involvement. The approaches we've used in each of these areas have helped to maximize the benefits the public will see from the projects and minimize the disruption the program will cause, particularly to those traveling the state's highways.

Mobility

ODOT was also directed by the Legislature to keep traffic—particularly truck freight—moving despite an unprecedented amount of construction, and we have used innovative approaches to meet this goal.

To keep traffic moving throughout the state, work on the OTIA III State Bridge Program has been divided into stages. Under this approach, ODOT first addressed needs on important non-Interstate routes that parallel the Interstate system in order to provide alternate routes for trucks when construction turned to Interstate 5 and Interstate 84, the most important freight routes in the state. As a result, trucks will always have a north-south and east-west route available to them, even during the heaviest periods of construction.

Innovative mobility planning and coordination have also helped reduce the impact of construction on the movement of people and goods. ODOT's mobility planning has focused on communicating and coordinating both between various parts of our agency and also with stakeholders in the private sector, particularly the trucking industry. This allows us to identify mobility issues and resolve them as they arise.

In order to reduce the amount of delay caused by construction, ODOT has created delay thresholds that set standards for how much additional time may be required to travel from one point to another as a result of work zone activities. Staging of all projects on a section of highway must be carried out so that the overall delay does not exceed that mobility threshold. If a project would cause a threshold to be exceeded, ODOT works to employ strategies to reduce delays, such as rescheduling projects to avoid overlap with other projects, revising construction staging, or using innovative construction strategies such as incentives to reduce the duration of delays.

Maintaining mobility of oversize loads by providing adequate vertical and horizontal clearance for trucks as we design projects and plan work zone activities is also key. We make every effort to ensure that projects do not restrict the ability of oversize loads to pass through, and we have developed means of communicating these restrictions to the trucking industry when they would be impacted. ODOT also collaborates with the trucking industry to minimize the impacts of weight restrictions when they are imposed and to select appropriate detour routes, as well as to notify the trucking industry when weight restrictions and detours are imposed. ODOT has also used innovative construction techniques, from doing much of the work at night to minimize disruption and using alternative design and construction practices that reduce construction time and minimize impacts to traffic.

Environmental Stewardship

With foresight and considerable effort, ODOT collaborated with numerous regulatory agencies to streamline the permitting process. Environmental performance standards have been set for the bridge program as a whole, instead of permitting each bridge individually. This early collaboration saved approximately 30 percent on initial design

costs and shaved one to two years off of the construction schedule. In addition, many of the replacement bridges enhance environmental conditions and wildlife habitat, and ODOT has already been recognized for its initiative in preserving and enhancing the environment.

Economic Stimulus

The bridge program is estimated to sustain an annual average of 5,000 jobs over the life of the program. OBDP is grouping bridge projects into "bundles" of varied sizes so that Oregon's design and construction firms can successfully bid on them. In addition to providing economic stimulus, bundling the projects speeds construction time, produces economies of scale and enhances mobility on freight and commerce routes.

Diversity

The bridge program offers a unique opportunity to strengthen Oregon's economy by building diversity in Oregon's workforce and contractor community. ODOT is promoting strategies that maximize the participation of women, minorities and emerging small businesses. The goal is to build a sustainable, diverse workforce that will continue beyond the bridge program. To achieve these goals, ODOT has partnered with other agencies and organizations to create Regional Workforce Alliances. The Alliances, located throughout the state, are recruiting and training employees for careers in highway construction-related fields. In addition, ODOT has launched a Small Business Initiative to work on reducing the barriers that women-, minority-owned and small businesses often face in doing business in the transportation industry.

Public Involvement

All stakeholders are actively engaged to ensure that the bridges meet community needs and are a good fit for the environment. Workshops and open houses gather ideas from groups and individuals, and these ideas are considered during project design and construction.

Conclusion

The OTIA programs are examples of effective programs that use innovative approaches to deliver projects and meet important goals, and OTIA demonstrates the importance of meeting the challenge of investing in aging infrastructure. OTIA has been crucial to Oregon's strong recovery from the significant job losses we suffered in the last recession. At its peak, OTIA will sustain 5000 jobs annually, but it is far more than just a construction jobs program. By maintaining freight mobility on the Interstate 5 corridor as well as other important state and regional routes, OTIA plays a vital role in preserving the competitiveness of Oregon's trade-dependent economy, and these investments will benefit the entire West Coast and the nation as a whole.