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TO: House Committee on Transportation

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SUBJECT: OTIA III State Bridge Delivery Program and Context Sensitive and Sustainable Solutions (CS^3)

Introduction and Background
Thank you for the opportunity to appear before you today to provide an overview of the OTIA III State Bridge Delivery Program.

In 2003, the Oregon Legislature enacted the third Oregon Transportation Investment Act, or OTIA III. The package includes $1.3 billion for bridges on the state highway system.

The bridge program is part of the 10-year, $3 billion Oregon Transportation Investment Act. OTIA funds will repair or replace hundreds of bridges, pave and maintain city and county roads, improve and expand interchanges, add new capacity to Oregon's highway system, and remove freight bottlenecks statewide. Oregonians have not seen an investment of this magnitude in highway and bridge construction in 50 years, since the state's interstate freeway system was built in the 1950s and '60s.

By 2013, the bridge program will have repaired or replaced hundreds of the state's bridges. Of the 365 bridges in the program, by the end of December 2007, 73 are already complete and open to traffic, with another 83 under construction and the remaining in design. The program is on schedule for all bridges to be complete and open to traffic by the end of 2013.

I am proud to be here today to provide you with information on ODOT's innovative decision-making framework on the bridge program known as Context Sensitive and Sustainable Solutions (CS^3, pronounced *C-S-cubed*).

More than a guiding philosophy, CS^3 is driving ODOT's success on its five bridge program goals: stimulate Oregon's economy; employ efficient and cost-effective delivery practices; maintain freight mobility and keep traffic moving; build projects sensitive to their communities and landscapes; and capitalize on funding opportunities.

CS^3 is the framework for assessing a project so the agency can determine the solution that best satisfies multiple goals and the maximum number of stakeholders. It encompasses the processes, tools and knowledge that keep the agency, architects, engineers and contractors aligned with the

five goals and using the same approach. And, it is the set of criteria against which the agency measures compliance and success.

An element of CS³, Context Sensitive Solutions (CSS), grew out of early work by the Federal Highway Administration, American Association of State Highway and Transportation Officials, and government agencies in several states. These organizations established guiding principles for National Highway System routes that integrated safety with environmental, scenic, historic, community and preservation concerns.

In 2000, then-Oregon Gov. John Kitzhaber issued an Executive Order on Sustainability that directed all state agencies to take into account the needs of future generations in planning and use of resources. The bridge program presented an excellent opportunity for ODOT to integrate sustainability into CSS to create solutions that benefit the environment, communities and project delivery.

This initiative has led to creative solutions steeped in CS³ principles. We staged construction to maintain mobility for travelers and truckers and to benefit the small communities along the alternate routes. In collaboration with resource agencies, ODOT consolidated multiple environmental permits into a single set of performance standards that saved time and money for all parties while ensuring that natural areas are protected.

CS³ is practiced in thousands of activities, large and small. This approach helps the bridge program sustain more than 2,500 jobs annually and also ensures minority and women workers are recruited into the construction workforce. It led us to collaborate with the Oregon Manufactured Housing Association and the Oregon Trucking Associations to keep freight moving, and with the American Automobile Association to link its members to TripCheck.com, ODOT's award-winning travel Web site.

CS³ helps members of the bridge program work thoughtfully, economically and collaboratively in a progressive new way of delivering projects.

I'd like to take a few minutes to report on how our CS³ approach stimulates Oregon's economy, benefits workers and businesses, provides stewardship of our treasured scenic landscapes, and responds to input from citizens and communities.

Goal 1: Stimulate Oregon's economy

A primary legislative mandate and agency goal for the bridge program is to stimulate Oregon's economic recovery by sustaining job and contracting opportunities, from project development through final bridge construction. I am happy to report that the legislative intent of the bridge program is being realized.

Without bridge program funding, weight limits on Oregon's aging bridges would become common. At the time OTIA III funding was passed, the potential cost to Oregon's economy was estimated at $123 billion in lost production and 88,000 lost jobs in the next 25 years.

Many of the bridges slated for repair or replacement are on Interstate 5 and Interstate 84, which are the state's economic lifelines. These interstate highways carry most of Oregon's commercial truck traffic. If the hundreds of aging bridges on these routes and others were not repaired or

replaced, ODOT would soon be forced to place weight limits on highway bridges, impairing Oregon's economy.

Between 2007 and 2010, the bridge program is expected to sustain an average of more than 3,700 jobs per year. Overall, the 10-year bridge program will sustain an annual average of approximately 2,500 jobs.

The sheer scope of the bridge program means that ODOT had to change how it does business. The agency hired Oregon Bridge Delivery Partners, a private joint venture between engineering companies HDR and Fluor Corp., to help it manage the program. ODOT is making a historic shift from designing and building projects to managing the transportation system.

The economic benefits are reaching beyond the construction industry to local businesses in communities across Oregon. Related businesses such as materials and equipment suppliers are experiencing an increase in trade.

ODOT is giving Oregon contractors—including emerging small businesses and those owned by women and minorities—opportunities to compete more effectively with national firms. The goal is to increase the number of small businesses that are awarded work on all ODOT contracts, including those on the bridge program.

With Oregon facing record levels of construction and a projected workforce shortage, the agency created its Workforce Development Program in July 2005. The program aims to increase apprenticeship and training opportunities and develop a qualified construction workforce pool to meet the needs of ODOT projects and the Oregon heavy-highway construction industry.

In September 2007, the American Public Works Association honored ODOT's Workforce Development Program with its Diversity Exemplary Practices Award, recognizing it as a valuable contribution to the promotion of diversity through a public works project.

Goal 2: Employ efficient and cost-effective delivery practices
The agency is meeting its goal of employing efficient and cost-effective delivery practices on the bridge program through a multitude of management tools and innovative contracting methods to speed completion and control costs.

The bridge program is taking a corridor-based approach to repairing or replacing the structures. Bridge construction projects are grouped in ways that maximize the participation of Oregon contractors. Grouping, or "bundling," projects expedites construction time and produces economies of scale so that local contractors can bid on scale-appropriate projects, while allowing us to manage mobility on freight and commerce routes.

The agency has routinely used the design-bid-build method to deliver projects and, on occasion, the design-build delivery method. Design-bid-build is the more traditional of the two: ODOT designs the bridge, and then a contractor bids for the job and builds the bridge. Design-build changes it up a bit. Right from the outset, a bridge designer and a bridge builder pair up to bid on the project. They then design and build the bridge together, with ODOT acting project manager.

The bridge program will use alternative contracting methods designed to accelerate delivery while controlling costs. With design-build contracts, design and construction work can overlap under a single, seamless contract. Design-build contractors have the latitude to propose creative solutions that may address current needs, future needs or both. For example, ODOT contractors reused an entire detour bridge at multiple sites instead of building additional temporary structures, an innovative solution made possible by the flexibility of a design-build contract.

We will be applying another delivery method—Construction Manager/General Contractor, or CM/GC—on the Willamette River Bridge outside Eugene. It's the bridge program's largest project, and it will be the first time ODOT has used the highly effective CM/GC construction technique.

CM/GC combines aspects of design-build and the more traditional design-bid-build delivery method. As in design-bid-build, there is a bridge designer and a bridge builder, both of whom have to bid on the project individually. However, similar to design-build, once ODOT chooses the bridge designer and bridge builder, they partner together and with the agency to create the bridge. The early involvement of the agency, the designer and the builder saves time and money since construction can begin before design is complete. ODOT also maintains direct control over design and construction.

ODOT has also realized efficiencies and offset increased costs by streamlining the environmental permitting process. To comply with 14 separate environmental statutes and permits, ODOT and 11 federal and state regulatory agencies developed program-wide performance standards and streamlined the time-consuming environmental permitting process. As of Dec. 31, 2007, 124 structures have been permitted through the streamlined programmatic permitting process, and another 100 structures are in some stage of the process. Through this process, we have been able to maintain our environmental stewardship while improving the program delivery process and outcomes.

The streamlined environmental permitting process earned the bridge program three national awards. We received AASHTO's Best Program award for Environmental Excellence in 2005 and, in 2004, the Federal Highway Administration's Environmental Excellence Award and the U.S. Fish and Wildlife Service's Environmental Stewardship Excellence Award.

Goal 3: Maintain freight mobility and keep traffic moving

Under our third program goal, we are working to minimize traffic hassles, to help drivers plan their trips using alternate routes and to keep travelers informed about bridge construction delays where they exist.

Good planning ensures that traffic keeps moving relatively smoothly during construction work. The bridge repairs are grouped into logical units along each highway corridor. This strategy allows contractors to achieve economies of scale in performing design work, ordering materials, and mobilizing equipment and labor. It also helps traffic engineers keep traffic moving during construction.

ODOT coordinates with the Oregon Trucking Associations, American Automobile Association, Oregon Manufactured Housing Association, state police and local municipalities to keep traffic moving in the most efficient ways possible.

To make alternative routes available for freight and motorists, the bridge repair and replacement work is happening in five overlapping stages:

> Stage 1, which was completed in October 2006, included repairs to bridges along the U.S. 97 and U.S. 26 corridor from Klamath Falls to Portland, and on U.S. 20 from Bend to Ontario. This route serves as an alternate for commercial vehicles and motorists as repairs are under way on Interstate 5 and Interstate 84.
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> Stage 2 is the largest stage, both in funding and in the number of bridges. It includes bridges on I-84 and the northern portion of I-5 from the Washington border to the Eugene-Springfield area.
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> Stage 3 includes bridges on southern I-5, from Eugene to the California border.
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> Stage 4 will repair or replace bridges on vital freight corridors connecting coastal communities to I-5 and I-84 as well as key north-south routes in eastern Oregon.
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> Stage 5 addresses routes and connections for rural and remote areas within eastern and central Oregon and the coastal corridor south of Coos Bay.

Careful mobility planning, ongoing monitoring and innovative thinking on the bridge program is earning national attention. The bridge program mobility team developed an application to assess work zone traffic scenarios, reducing the time required for this process from hours to minutes, which earned the team AASHTO's 2007 Team Excellence Award.

Goal 4: Build projects sensitive to their communities and landscapes

One of the keys to the success of the bridge program is an unprecedented amount of public involvement at the community level. At every phase of bridge repair or replacement, ODOT is proactively engaging Oregonians, asking them to weigh in on topics ranging from how a bridge will look to how traffic restrictions should be structured. Stakeholders—businesses, communities and special-interest groups—are an integral part of the process, and their needs, concerns and input are carefully considered in the development of projects.

So far, hundreds of community members and other stakeholders have provided feedback at dozens of public meetings and events throughout Oregon.

Long before any heavy equipment or construction crews arrive on site, ODOT and its public involvement teams research how the project will affect the local community. The initial result of this research is a list of community members, government representatives and other key stakeholders that ODOT continually updates throughout the life of the project.

After creating the stakeholder list, ODOT develops a plan to directly engage and involve members of the affected community. Public involvement teams use a variety of techniques, from mailings and news releases to one-on-one meetings and public events, to notify the affected community that a bridge project is under way.

As the first plans are drawn, ODOT sends out engineers, project managers and public involvement teams to garner further input from community members. At open houses, town hall meetings and school events, ODOT teams display preliminary drawings and answer questions attendees have about their local bridge project. Personal conversations and comment forms have proven to be effective ways for attendees to provide feedback.

On all bridge program projects, the agency provides information to the public throughout the bridge design process through news releases, news letters and small public gatherings, and solicits input via these channels as well.

After bridge designs are finalized, ODOT broadcasts announcements that construction is about to begin. News letters, news releases, flyers, door-hangers and ads in local publications continue to inform area residents about the project, along with a weekly update distributed to local media.

This method of proactive public outreach and involvement helps garner the public's support and defray opposition, thus helping to keep projects on time and on budget.

Intensive public involvement in the design phase was perhaps most critical in the historic Columbia River Gorge National Scenic area along I-84. Twenty-six bridges are slated for repair or replacement along the I-84 corridor. Each offers a vantage point from which to observe the beauty of the Gorge and also provides a critical economic link for local communities.

Before design began in the Gorge, ODOT worked closely with community members, stakeholders and representatives of state and federal agencies to gather input and secure buy-in on design elements ranging from abutments and railings to landscaping and wildlife crossings. The resulting I-84 Corridor Strategy provides a framework of design guidelines to help ODOT manage and improve the interstate in ways that meet public safety and transportation needs while also meeting National Scenic Area provisions. The American Council of Engineering Companies recently recognized ODOT and our partners with the 2007 Engineering Excellence National Recognition Award for the design guidelines.

Other success stories span the state.

After project leaders and public involvement teams met with local business owners in Cottage Grove, ODOT reduced a bridge replacement schedule from 12 months to nine to limit impacts to local restaurants and hotels, as well as a nearby convenience store that depends on through-traffic for business.

Near the Oregon coast on U.S. 20, public involvement teams determined that the access road to a family's home would need to close intermittently during the construction of a nearby bridge. Typically, construction teams assume that nighttime work is less disruptive. But after meeting with the family, ODOT learned that the residence housed an emergency medical responder who was often on-call at night. Based on this feedback, the ODOT construction team is planning only daytime work near the family's home, benefiting not only the homeowner, but public safety.

ODOT is also conducting specialized public outreach events for students across Oregon. At a public involvement event at Ashland Middle School last winter, students used gumdrops, toothpicks and crackers in a bridge-building activity, complete with detailed plan sheets and

three expert bridge engineers on hand to guide the way. Parents were invited to view the student's work at a subsequent public open house held at the school, where public involvement teams explained to attendees the construction plans and requested input on closure times and preferred communication methods on an upcoming bridge project. The result was increased community awareness and involvement, and a memorable learning opportunity for more than 100 students.

Success on the bridge program ties directly to our management and delivery of a comprehensive public involvement program. The end goal is fully informed and meaningful participation from internal and external stakeholders, including citizens, truckers, business owners, advocacy groups and local government.

In addition to extensive public involvement, we also developed a set of performance standards to encourage environmental stewardship and sensitivity. These performance standards give consultants and contractors guidance in how to best choose materials, manage construction waste and minimize the effects of accidental contamination. These guidelines help to preserve our state's abundant environmental resources.

Recycling is one of the most visible aspects of the bridge program's efforts to lessen environmental impacts. Recently, in the course of replacing two bridges on I-5 near Wilsonville and repaving 22 miles of six-lane highway, more than 130,000 tons of pavement were reused, keeping it out of landfills and potentially adversely affecting the ecosystem.

On another project to replace the Coast Fork Willamette River bridges, 88 beams that make up a detour bridge were no longer needed. Instead of hauling the beams away as scrap, we reused 80 of them to form other detour bridges. On that project, we also recycled approximately 30,000 cubic yards of demolition rubble by using it as embankment material on a nearby bridge project and in the widening of the Springfield-Creswell Highway and I-5 interchange.

Goal 5: Capitalize on funding opportunities

A key ODOT goal is to leverage bridge program funds. For example, the bridge program secured $1.8 million in federal allocations over two years to fund implementation of the Workforce Development Plan, and obtained a grant through the Lane County Regional Air Pollution Authority to provide subsidies for clean-burning fuel.

To date, the bridge program has obtained $4.1 million in additional funding and continues to apply whenever grants are available. ODOT will use the grant money to implement innovations such as prefabricated bridge components, high-performance steel girders and rapid-reconstruction techniques that minimize impacts on mobility. Such innovations will speed construction on both replacement and repair of existing bridges.

Summary: Building bridges and public support

ODOT is leaving a lasting legacy and enhancing the quality of life for all Oregonians through the OTIA III State Bridge Delivery Program. Delivering the program through CS³ involves more than repairing and replacing bridges; it is a transportation solution that reflects Oregon's values.

CS³ helps to preserve Oregon's scenic, aesthetic, historical, cultural, economic and environmental values while building safe and enduring projects. Through CS³ initiatives, the

bridge program will help produce a sustainable, qualified workforce; a stronger state economy; and bridges designed to limit impacts on the natural environment.

Above all, CS³ means achieving results now while preparing for the future: That's the sustainable part of the CS³ formula. Through CS³, ODOT is applying community values to build a new generation of bridges in Oregon.