

Pacific Northwest

# BRIDGE MAINTENANCE CONFERENCE

The Art of Rapid Response



October 6-8, 2008

Seaside Civic and Convention Center  
Seaside, Oregon



CONFERENCE MANAGED BY

WASHINGTON STATE UNIVERSITY

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# *Pacific Northwest Bridge Maintenance Conference*

## *Agenda—At a Glance*

### Monday, October 6th

- 11—1:00 p.m.**  
Registration  
*Lobby*
- 1:00 p.m.**  
Welcome & Introductions  
*Necanicum Room*
- 2:00 p.m.**  
Session 1: National  
Experience in Bridge  
Maintenance  
*Necanicum Room*
- 3:00 p.m.**  
Break—Visit Exhibits  
*Pacific Room*
- 3:30 p.m.**  
Session 2: Emergency  
Concrete Bridge Repairs  
*Necanicum Room*
- 5:00 p.m.**  
Ice Breaker Gathering—  
Visit Exhibits  
*Pacific Room*



### Tuesday, October 7th

- 8:00 a.m.**  
Session 3: Steel Bridge  
Repairs  
*Necanicum Room*
- 10:00 a.m.**  
Break—Visit Exhibits  
*Pacific Room*
- 10:30 a.m.**  
Session 4: Temporary  
Bridges  
*Necanicum Room*
- 12:00 p.m.**  
Lunch: Provided  
*Pacific Room*
- 1:30 p.m.**  
Session 5: Emergency  
Repairs  
*Necanicum Room*
- 3:00 p.m.**  
Break—Visit Exhibits  
*Pacific Room*
- 3:30 p.m.**  
Session 6: Special  
Challenges  
*Necanicum Room*
- 5:00 p.m.**  
Adjourn for the Day

### Wednesday, October 8th

- 8:00 a.m.**  
Session 7: Water Works  
*Necanicum Room*
- 10:00 a.m.**  
Break—Visit Exhibits  
*Pacific Room*
- 10:30 a.m.**  
Session 8: Deck Joints  
(Things that go bump)  
*Necanicum Room*
- 11:30 a.m.**  
Conference Closing  
Session  
*Necanicum Room*
- 12:30 p.m.**  
Conference Adjourned



# Presenter Biographies

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## **Steve Banse**

Steve started working for Alaska DOT in 1989 and has been doing bridge maintenance since 1997. He is currently the bridge foreman for the Central Region of Alaska. Prior to working for DOT he has 19 years of experience in construction work in the private sector.

## **Dale Blanken**

Dale is a Maintenance Lead Tech for the South Central Region Trades Crew for the last 1.5 years, 20 years with WSDOT, 11 years on the South Central Region Trades Crew. He leads crews maintaining, repairing, and reconstructing bridges, moveable span bridges, and structures to include deck repair, expansion joints, replacement / repair of caps, stringers, pilings, bents, and bracing. His duties include facility remodel and improvements along with radio sites installation including tower.

## **Denny Bowden**

Denny is a Maintenance Mechanic 3 for the South Central Region Trades Crew. Denny has been with WSDOT on the South Central Region Trades Crew for a 1.5 years. Prior to coming to WSDOT Denny was self-employed in the construction field. As a Maintenance Mechanic 3 he maintains, repairs, and reconstructs bridges, moveable span bridges, and structures to include deck repair, expansion joints, replacement / repair of caps, stringers, pilings, bents, and bracing. His duties include facility remodel and improvements along with radio sites installation including tower.

## **Pat Donberger**

Pat is a college graduate with a teaching certificate. After graduation for college he went to work in the construction industry. He has worked for the Washington DOT Olympic Region Bridge crew for 15 years. He has been a lead tech for three years.

## **Mike Gehring**

Mike has been with ODOT for 6 years. All of his time has been on bridge crews, (Salem, and District 2A Milwaukie). He started as a crew member and has been the supervisor for 8 months.

## **Jason Goetz**

Jason is a Maintenance Mechanic 3 for the South Central Region Trades Crew. Jason has 2.5 years with WSDOT on the South Central Region Trades Crew. Prior to coming to WSDOT Jason was employed by Kiewit Construction working on the new Narrows Bridge. As a Maintenance Mechanic 3 he maintains, repairs, and reconstructs bridges, moveable span bridges, and structures to include deck repair, expansion joints, replacement / repair of caps, stringers, pilings, bents, and bracing. His duties include facility remodel and improvements along with radio sites installation including tower.

## **Anthony Gugino**

Anthony is currently an Office Chief in Structure Maintenance and Investigations for the California Department of Transportation. His current responsibilities include managing an office of 40 engineering staff, which includes two design branches that work on bridge preservation projects, a load rating and analysis branch and a hydraulics branch that performs scour evaluation of state and local agency bridges. He graduated from the University of California with a Bachelor of Science degree in Civil Engineering. He is a California registered civil engineer and during his employment with the Department, he has been a bridge designer, building designer, bridge construction engineer, and has extensive experience in bridge analysis and load rating,

## **Jim Henderson**

Jim is a Maintenance and Operations Superintendent for the South Central Region, Regional Crews for the past 9 years, 30 years with WSDOT. Jim oversees regional striping, signal, electrical, sign installation, and bridge repair operations for the South Central Region of WSDOT. He manages the Trades Crew maintaining, repairing, and reconstructing bridges, moveable span bridges, and structures to include deck repair, expansion joints, replacement / repair of caps, stringers, pilings, bents, and bracing. Additionally his duties include coordinating and managing crews in facility remodel and improvements along with radio sites installation including tower.

## **Carl Hendricks**

Carl has 21 year of experience in the field of Civil Engineering. Projects include Surveying, Road Design and Drainage design for private and public facilities. The past 9 Years he has been with Whatcom County as a Construction Inspector / Bridge Inspector for Public Works and Maintenance Operation project. In 1999 Carl was asked to become a bridge inspector for the County. Carl worked a Co-inspector until 2004 when he received his Washington State Bridge Inspector Certification. Carl continues to do routine bridge inspection and works closely with the Whatcom County Bridge Crew providing engineering and construction support.

# Presenter Biographies

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## **Kent Kalsch**

Kent started with ODOT in November of 1992 just after graduating from Oregon State. He was working as the winter/seasonal transportation maintenance specialist and in the summer for US Forest Service. In 1996 he was hired on full time as a TMS with ODOT where he currently works on the Dalles Bridge Crew.

## **Chuck Knoll**

Chuck is a professional engineer registered in the State of Oregon in Environmental Engineering and Civil Engineering. He graduated from the University of Washington with a Bachelors of Science in Civil Engineering and a Masters of Science in Civil Engineering focusing in Water Quality Management and Hydraulics. His experience includes over thirty years in environmental programs and transportation improvement projects. He was formerly employed with Benton County Public Works in Corvallis, Oregon where he worked on a county wide fish passage improvement program. Chuck is presently employed with Linn County Road Department in Albany Oregon as the County Engineer.

## **David Kosnik**

Dave is a research engineer at the Infrastructure Technology Institute at Northwestern University, a federally-funded University Transportation Center. His primary research interest is structural health monitoring for transportation infrastructure, especially development of technologies and methods for continuous remote monitoring and acoustic emission testing of large civil structures. Dave is a licensed professional engineer in Illinois and is active in the Midwest Bridge Working Group, a regional forum for discussion of bridge inspection, maintenance, and preservation issues.

## **Charles Maggio**

Chuck is a civil engineer with the Multnomah County Bridge Section. He has been a project manager for the County for 11 years, working on rehabilitation projects on the Hawthorne, Broadway and Burnside Bridges. Chuck is originally from Norristown, PA; has a Bachelors Degree in Civil Engineering from Drexel University and served 20 years as an officer in the US Army Corps of Engineers prior to working for Multnomah County.

## **Brian Mankle**

Brian began his career working for Whatcom County Public Works in May of 1977. Most of his career involved working on the bridge crew and most recently as the Bridge Crew Leader. Brian has 31 years of experience pounding spikes, operating equipment, acquiring permits, planning and designing bridge maintenance and bridge building along with leading a crew of 8 or more staff members.

Whatcom County has 155 bridges in the road system. Brian has taken the lead in the implementation of using steel pilings instead of treated timber on our bridge re-building program. This change has increased the life of the bridges from a 25 to 30 year structure to a 75 to 100 year structure. Brian has completed and passed the BCIT, and is a co-inspector for Whatcom County.

## **Jay Murphy**

Jay is the Lead Tech on the I-90 floating bridges. He came to bridge 13 years ago after working at Fircrest School in Seattle as an Adult Training Specialist. He has a Bachelor's degree in Exercise and Sports Science from University of Utah.

## **Barton Newton**

Barton is currently the State Bridge Maintenance Engineer for the California Department of Transportation. His current responsibilities include bridge management of over 12,000 state-owned bridges and the inspection of 12,000 local agency-owned bridges. He has a staff of 180 engineers and administrators with an annual support budget of \$19 million. He is also the program manager for the State's bridge preservation program with an annual budget of \$390 million.

Barton graduated from California State University, Sacramento with a Bachelor of Science degree in Civil Engineering. Prior to his employment with the Department in 1983 he worked for private industry involved in civil projects such as designing building and subdivisions and performing land surveys. He is a California registered civil engineer and during his employment with the Department, he has been a bridge designer, bridge construction engineer, structures specification engineer, and program manager.

# Presenter Biographies

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## **Terrence Paret**

Since joining Wiss, Janney, Elstner Associates in 1986, Mr. Paret has performed hundreds of engineering investigations in the U.S. and abroad, focusing on the evaluation of structures after earthquakes, on the prediction of the probable performance of new and existing buildings in future earthquakes, and in regards to the development of repairs to mitigate damage and/or improve earthquake resistance. In addition to investigating structures that have failed due to disasters such as earthquake, flood and fire, he has investigated a wide variety of failures resulting from defective or deteriorated structural elements, construction materials and installations. Recent projects to which Mr. Paret has contributed his expertise include the 35W bridge collapse in Minnesota, performance based seismic evaluation of the United Nations Secretariat in New York City, and seismic strengthening of 180 Howard Street in San Francisco, which project received the 2008 AISC Presidential Award of Excellence in Structural Engineering. Mr. Paret was the recipient of the 2001 Moisseiff Award from the American Society of Civil Engineers.

## **Sean Patrick**

Sean, P.E. has fourteen years of experience and is a professional engineer in numerous states who, specializes in structures management and operations services. He is a Vice President and regional office manager of Infrastructure Engineers, Inc.'s Pittsburgh, Pennsylvania office. His background includes NBIS safety and element level inspections and structural design. He also has experience in the development of bridge inspection training manuals and courses for various DOTs and the FHWA. Mr. Patrick is a certified FHWA/NHI Bridge Inspection Instructor, and has taught the comprehensive bridge inspection training program sponsored by the FHWA to over 2000 other inspectors in over 30 different states for government agencies all over the country. In addition, he is an active bridge inspector and has performed over 2500 bridge inspections in twelve states.

## **Kadee Porter**

Kadee graduated from Vanderbilt University in 1998 and began her engineering career with the Idaho Transportation Department. During her nine years with the Department, she completed her EIT rotation and obtained her professional engineering license. While at ITD, Kadee worked on several key projects in the Treasure Valley including the Wye Interchange. In July 2007, Kadee accepted a position with a local bridge contractor, Concrete Placing Company, as a project engineer and project manager.

## **Leonard Ruminski**

Leonard started his engineering career with Caltrans in September of 1988, performing bridge construction inspections in Los Angeles area. However after completing his EIT rotation in Caltrans' Bridge Design Office, he concluded that his true call and educational background were in the structural design. So in the year of 1990 he accepted a bridge design position with Willdan Associates and two years later became a Senior Bridge Design Engineer with Parsons Brinckerhoff in Orange and later San Bernardino offices.

## **Wayne Schumacher**

Wayne came to the Washington State Department of Transportation after having his own home construction business. He has worked as a member of the Bridge Crew for ten years. He has been a lead tech for three years.

## **Dwayne Stenlund**

Dwayne is a certified professional in erosion and sediment control and rangeland management, and holds an adjunct teaching position at the University of Minnesota in the Biosystems and Agricultural Engineering Department. He has worked in this capacity for the Minnesota Department of Transportation for more than 14 years and is involved with design, construction and maintenance using old and new ecologically and sustainable based technologies to solve difficult soil and storm water quality problems. He has presented extensively over the United States on storm water management techniques, and yearly at the International Erosion Control Association Conference on Mechanically Generated Wind Erosion Control. He has a masters degree from the University of Minnesota in plant biology and extensive work in bioremediation of poor soils and naturalizing plant community systems.

## **Devon Talley**

Devon is with the Oregon Department of Transportation Region 5 as a Bridge Maintenance Manager. He has 35 years of construction experience, Specialty Concrete, Trenchless Pipeline rehabilitation and 14 years with ODOT.



# Session Abstracts

Monday, October 6th

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—Monday, October 6th—

## 1:00 p.m. Welcome, Introductions, and Keynote

**Moderator:** Archie Allen, WSDOT

**Welcome:** Harvey Coffman, WSDOT & Barry Brecto, FHWA Washington

**Guest Speaker:** [Chris Christopher, Co-Director Maintenance and Operations, WSDOT](#)

**Keynote Speaker:** [Emergency Repair of Fire Damage—Barton Newton, CalTrans](#)

The keynote address will be given by Barton Newton, State Bridge Maintenance Engineer for the California Department of Transportation, who will talk about the devastating effect fire can have on the transportation system.

Hear the gripping details about the collapse and reconstruction of a major freeway connector in the San Francisco Bay Area and a tunnel blaze that severed I-5, the most important commercial corridor serving the West Coast and the steps taken to ensure safety and restore traffic service.

Learn about what to look for when inspecting a bridge that has been subjected to flames and intense heat and some of the ideas being examined to provide highway structures with additional protection from a raging inferno.

Like previous disasters such as the 1989 Loma Prieta and 1994 Northridge earthquakes, these events tested Caltrans' emergency readiness and ability to respond to a major disruption of the Golden State's transportation system.

This presentation will provide an overview of the Caltrans response and recovery efforts including identifying the amount and severity of the bridge damage, initiating repairs and restoring traffic service as quickly as possible.

## 2:00 p.m. Session 1: National Experience in Bridge Maintenance

**Moderator:** Dave Bruce, WSDOT

**[A Review of Bridge Maintenance Efforts Nationwide—Anthony Gugino, Office Chief, CalTrans](#)**

This presentation provides an overview of bridge maintenance research activities at the national level, such as the use and evaluation of bridge treatments and overlay to extend deck service life, and discusses the possibilities for more research and information sharing on bridge maintenance activities.

Typically, maintenance related issues are of interest to more than one state within a region. Recognizing this, more states are combining together to form regional groups to provide a forum for information sharing, and for promoting research that is of importance to that region. This development is being leveraged by a national systematic effort to exchange ideas and expertise, identify bridge maintenance research needs, and collaborate on bridge preservation research efforts. These developments will make valuable information available to bridge maintenance practitioners.

**[Bridge Deck Joint Evaluations—Sean Patrick, Infrastructure Engineers Inc.](#)**

Bridge deck joints are a necessary component of a properly designed and functioning structure as they allow a bridge to expand and contract due to a number of factors. While bridge deck joints provide a critical function in the overall performance of a structure, a poorly designed, installed or maintained deck joint can contribute to the premature replacement of the bridge or become a dangerous safety hazard to the public. The presentation will focus on the performance of existing and alternative bridge deck joints with respect to: designs, durability, cost effectiveness, ease of construction, inspection limitations and maintenance needs. It will identify the products currently available in the market place, latest bridge deck joint materials and recent trends. It will also review the results of a recent national survey of bridge owners and agencies that discusses relevant experience and best practices regarding the typical bridge deck joint installations.



# Session Abstracts

Monday, October 6th & Tuesday, October 7th

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## —Monday, October 6th Continued—

### 3:30 p.m. Session 2: Emergency Concrete Bridge Repairs

Moderator: Barry Brecto, FHWA Washington

#### *Repairing Impact Damage to Concrete Girders*—Steven Banse, Bridge Foreman, Alaska DOT

This presentation will cover steps to repairing concrete girders that have been damaged from the impact of oversized vehicles. We will discuss the retorquing of the pre-stressed cables and forming and pumping concrete in the damaged area.

#### *Emergency Repairs to the Broadway Bridge*—Leonard Ruminski, Bridge Design Engineer, Idaho TD & Kadee Porter, Engineer, Concrete Placing Co.

On September 17, 2007, the Broadway Avenue Bridge over I-84 in Boise was severely damaged during a traffic accident in which a semi-truck burst into flames. Due to fire and heat damage, the span carrying northbound traffic on Broadway Avenue over the eastbound lanes of I-84 had to be completely replaced. ITD Bridge Section designed the repair work in three days and contracted with Concrete Placing Co. through change order. This presentation will describe how work was successfully completed and the structure re-opened to unrestricted traffic six weeks later.

#### *Collision Damage Repairs to the I-82 Naches River Bridge*—Dale Blanken, Maintenance Manager, WSDOT

In August of 2006 an oversize load hit the westbound Naches River Bridge. This is a steel truss structure. The entry portal was damaged with the initial hit which then broke the boom loose on the oversize load allowing it to catch and remove the entire exit portal. A temporary emergency repair was made to the exit portal to reestablish structural stability. Permanent repairs were made under contract. There was some damage to the adjacent westbound Yakima River Bridge also a steel truss structure.

## —Tuesday, October 7th—

### 8:00 a.m. Session 3: Steel Bridge Repairs

Moderator: Chris Keegan, WSDOT

#### *Mashel River Bridge: Changing a Timber Cap to a Steel Cap*—Wayne Schumacher Lead Technician, WSDOT

The Mashel River Bridge was a filled arch bridge that washed out in 1949. It was partially replaced by a steel beam bridge on timber piles and caps. Because of the heavy weight of the bridge the timber caps were compressed and the grain opened causing premature failure. The solution was to replace the timber caps with steel. The bridge design staff designed the repair and the bridge crew executed the work. The road was closed during the replacement. The crew was to work straight through for two weeks twelve hours per day, because of some innovations the work was completed in half the time.

#### *Replacing Counterweight Trunnion Bearings on the Strauss Bascule Drawbridge*—Charles Maggio, Multnomah County, Oregon

This presentation will focus on the investigation and replacement of the failed bearing assembly of the NE counterweight trunnion and its SE counterpart, which was one aspect of a larger bridge project that included a full deck replacement and seismic upgrade. This will include the interesting and unique inspection techniques that were used to uncover the problems, and the planning, design and construction for replacing the counterweight trunnion bearing assemblies.

#### *Steel Bearing Realignment on the Columbia River (Hood River) Bridge*—Kent Kalsch, Bridge Crew, ODOT

The Hood River Bridge across the Columbia River is owned by the Port of Hood River. We were asked to help address some bearing problems on the structure. After inspecting it with their inspector, it was noted that all the rocker and caged bearings were tilted to maximum expansion at normal temperatures. The solution was to jack up the structure at each bearing and establish the correct center of the rocker bearings. The structure has extremely narrow lanes and a high volume of traffic. To mitigate any disturbance to traffic, a barge with a snorkel lift was deemed the best method to access the bearings. This presentation will show the process this crew went through to accomplish this task on the ten different piers of this structure.

# Session Abstracts

Tuesday, October 7th

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## —Tuesday, October 7th Continued—

### 8:00 a.m. Session 3: Steel Bridge Repairs—Continued

Moderator: Chris Keegan, WSDOT

#### *Cantilever Truss Bridge Uplift Bearing*—David Kosnik, Research Engineer, Northwestern University Infrastructure Technology Institute

An uplift bearing on a major bridge experienced failure of an anchor bolt that helped secure the bearing to its pier. Failure analysis was performed on the anchor bolt. The remaining three anchor bolts and bearing were instrumented and monitored as were those on the other three intact uplift bearings on the bridge. A repair was made on the embedded segment of the broken anchor bolt by insertion of a threaded rod. Instrumentation was used to assist in tensioning of the rod. Thereafter, strains in the anchor bolts were monitored to determine the effectiveness of the repair. This presentation will describe the testing, instrumentation and derived data and their utilization by the bridge owner to affect additional retrofitting of the uplift bearing.

### 10:30 a.m. Session 4: Temporary Bridges

Moderator: Ed Miltner, FHWA Idaho Division

#### *Installation of a Bailey Bridge in Yamhill County*—Mike Gehring, Bridge Maintenance Supervisor, ODOT

During the Dec. 06 storm Yamhill County had a bridge damaged by high water. It became important for them to open this road as the detour was long and on unimproved roads. ODOT owns Bailey Bridges, and this became a perfect opportunity for us to assist a local agency. This presentation will show the assembly of this temporary bridge.

#### *Emergency Installation of an 80-Foot Temporary Bridge*—Carl Hendricks, Engineer Technician, Whatcom County, Washington & Brian Mankle, Bridge Foreman, Whatcom County, Washington

This presentation will cover the history of Sulphur Creek Bridge located in the Mount Baker National Forest, owned by Whatcom County. During the 2006 November storm the bridge was damaged and restricted to one lane. During the December 2007 storm additional damage occurred and the bridge was closed. This presentation will cover the challenges of working with USFS, PSE, environmental permitting, design and installation of the 80' temporary bridge.

#### *Building a Bailey Bridge*—Pat Donberger, Bridge Supervisor, WSDOT

During the December flood of the Chehalis River, Lewis County lost three bridges. They requested DOT assistance with construction of a Bailey Bridge. They replaced just one of the bridges. The county crews laid out the area for us. The Bridge Preservation Office designed the Bailey. Crews from three regions and the county helped to build the bridge. The bridge is currently still being used. The county estimates another two years before they will have a replacement structure.

### 1:30 p.m. Session 5: Emergency Repairs

Moderator: Drew Sielbach, Alaska DOT

#### *Collision Damage to I-90 Easton Bridge*—Jim Henderson Maintenance Supervisor, WSDOT

In the fall of 2007, an eastbound oversize load struck the Easton Overpass on I-90. This is a pre-tensioned concrete beam structure. The damage to the girders was extensive requiring closure of the overpass, traffic detours, demolition, removal, and replacement. This presentation will walk through the process from initial hit to span replacement which all occurred with a very quick turn around.

#### *Damage Assessment after the MacArthur Maze and I-5 Tunnel Fire in California*—Terrence Paret, WJE Associates

In 2007, California experienced two large freeway fires that closed down vital portions of the freeway system. In April 2007, a gasoline tanker truck overturned and burst into flames, resulting in the collapse of the I-580 connector and damage to the I-880 connector. In October 2007, a chain-reaction accident involving 31 vehicles, mostly trucks, caused a massive fire in a tunnel below south-bound I-5, closing down both I-5 and the tunnel, which was the southbound truck route for I-5. The authors, in cooperation with Caltrans, performed the damage assessment of affected concrete and some steel elements so that repairs could be developed and implemented, and the freeways put back into service. Since each fire affected major freeway corridors, the damage assessments were performed on an emergency basis. A variety of field and laboratory evaluation methods, including both destructive and nondestructive testing, were employed to assess the damage. This presentation will provide details about the fires, the evaluation methods used, the results of the damage assessment, and the lessons learned from responding to these large-scale emergencies.

# Session Abstracts

Tuesday, October 7th & Wednesday, October 8th

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## —Tuesday, October 7th Continued—

### 1:30 p.m. Session 5: Emergency Repairs—Continued

**Moderator:** Drew Seilbach, Alaska DOT

#### ***Fire Damage to SR12 Cattle Crossing***—Jason Goetz, Maintenance Mechanic 3 , WSDOT

While burning weeds, a fire started by an adjacent land owner swept through an old wooden cattle crossing on SR 12 east of Dayton. This is a timber culvert built in 1941. All timber were scorched but the crossing had been extended at some point and the timbers at the ends where the extension occurred received the most damage requiring replacement. Until the fire, the structure had been overlooked and didn't exist on the books. Repairs entailed fitting new timbers at both ends.

### 3:30 p.m. Session 6: Special Challenges

**Moderator:** Domingo Galicinao, FHWA Hawaii

#### ***Evergreen Point Bridge Annual Bridge Maintenance Closure***—Tim Ditch, Maintenance Specialist, WSDOT

This presentation will be on all the different maintenance tasks that are performed during our annual weekend closure (roadway is closed to vehicle traffic). These tasks include preventative maintenance (that only can be done when vehicle traffic is not present), WSDOT Bridge Preservation Office inspections, structural, mechanical, electrical & deck repairs (some planned/some unplanned), cleaning & painting; which are all completed in a 54 hour closure period.

#### ***Emergency Response on the I-90 Floating Bridge***—Jay Murphy, Bridge Maintenance Lead, WSDOT

"Emergency Response on the I-90 Floating Bridge" shows the chain of events when a water alarm goes off inside the bridge. Some of the bridge infrastructure is also highlighted in our nine minute video.

#### ***Replacing Concrete Bearing and Wingwalls***—Steven Banse, Bridge Foreman, Alaska DOT

This presentation will cover the complete replacement of the foundational structure at both ends of a 56' long, steel girder bridge over Peters Creek in a remote area of Alaska. We will be covering the building of concrete footings, bearing walls, back walls, wing walls and new bearing plates.

## —Wednesday, October 8th—

### Session 7: Water Works

**Moderator:** Greg Kolle, FHWA California

#### ***Innovative Equipment Used to Clean Box Culverts***—Devon Talley, Bridge Supervisor, ODOT

We have converted a mini loader to wireless remote control for cleaning culverts. Past practices have been to use sleds and cables attached to winches, shoveling materials onto the sled and dragging it outside.

Using water to hydraulically mine them until they are clean is not very environmentally friendly.

The loader is 42" tall and has a 4-5 cubic foot bucket for removal of materials without entry, we have rented walk behind units and they work well however, we had safety issues cleaning 4' tall box culverts with employees bent over all day and the need to enter confined spaces. We had our machine converted locally in Portland using existing vendors.

There are machines being manufactured for the mining industry that now are commercially available, they are built in West Virginia and I'm not sure about the availability of parts and service on the west coast.

#### ***Fish Passage and Aquatic Habitat Restoration Project***—Chuck Knoll, Linn County Road Department, Oregon

Linn County Road Department has obtained funding for a number of projects by obtaining support from private landowners, watershed councils, and agencies by forming and using cooperative partnerships. This presentation will show how partnerships are formed and projects are developed and funded. This presentation will also show a number of project designs and photographs covering different steps taken in the construction of projects, including bridges, countersunk arch culverts, and bank stabilization projects. Information will also be provided on designing projects to meet current criteria to make a project exempt from permitting under Corps of Engineers and Division of State Lands.

# Session Abstracts

Wednesday, October 8th

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## —Wednesday, October 8th Continued—

### **Session 7: Water Works—Continued**

**Moderator:** Greg Kolle, FHWA California

#### ***Prioritization of Local Agency Scour Vulnerable Bridges—John Woodroof, Hydraulics Engineer, ODOT***

The Oregon Department of Transportation (ODOT) to prioritize the needs of its local agency bridges that are either scour-critical or have unknown foundations. There are approximate 700 scour-critical bridges (NBI Item 113 rating of 3 or less) and 1600 unknown foundation bridges (NBI Item 113 rating of U), for a total count of 2300 bridges. The prioritization study will follow very closely to the HYRISK methodology, developed for the Federal Highway Administration. The HYRISK methodology makes use of data from the NBI database, along with certain additional parameters provided as defaults and with some values provided by ODOT, to develop an economic risk value for each bridge being considered. The risk value for each bridge is the product of the cost associated with failure and the probability of failure.

The bridges in the population of interest are prioritized relative to each other on the basis of the computed economic risk value. The highest priority bridges are those with the highest economic risk value. Contractor shall develop a spreadsheet application that follows the method of HYRISK, rather than to use the HYRISK software itself. This approach will be taken to allow for slight refinements to the HYRISK method, in order to improve the prioritization logic. The final results of prioritization will be in a spreadsheet-based software application of the local agency bridges.

#### ***Emergency Storm Water Pollution Prevention Plan for a Bridge Removal Project—Dwayne Stenlund, CPESC Minnesota DOT***

This presentation will discuss how to form an emergency SWPPP when there is no plan, including developing BMPs and concepts for resource protection in the Mississippi River. The program will show methods for rapid SWPPP development, using photos for documentation and updates/addendums to the SWPPP, and implementation communication for compliance with the Federal clean water act. The process learned from this experience can be used to develop functional SWPPPs for routine and emergency construction and maintenance operations over and adjacent to waters of the state.

### **10:30 a.m. Session 8: Deck Joints (Things that go bump)**

**Moderator:** Gary Bowling, ODOT

#### ***I-82 Total Joint Replacement Using Ure-fast—Darin Wilkens, Maintenance Specialist, WSDOT***

Winter of 2007 experienced a complete joint failure on RR Bridge Overpass, westbound on I-82. The joint was a strip seal system with steel edge members cast in place. The failure was to the joint & header requiring extensive repairs. Since it was winter, the joint had to be plated until warmer weather arrived. Repairs included joint & header removal, rebar placement, forming, pouring, and sealant placement. Ure-fast was used to expedite curing and returning to traffic.

#### ***I-395 Blue Bridge Modular Joint Repairs—Denny Bowden, Maintenance Lead Technician, WSDOT***

Bolts on one of the bars on the 20 year old modular joint failed allowing the bar to come loose and eventually fall out into traffic. Failure occurred in the winter forcing plating the joint until weather was better. Repair required full closure of the northbound lanes. Closure was done late Sunday to minimize traffic issues. Repair included straightening the damaged bar & removing busted bolts, removing remaining bar & seals, adjusting support members, replacing repaired bar & seals.

### **11:30 a.m. Conference Closing Session**

**Moderator:** Gary Bowling, ODOT

**Guest Speaker:** Bruce Johnson, ODOT Bridge Engineer

**Guest Speaker:** Doug Tindall, ODOT Deputy Director

**Closing Remarks:** ODOT

**Door Prize Drawing:** Pacific Northwest Bridge Maintenance Conference Committee

# EXHIBITORS

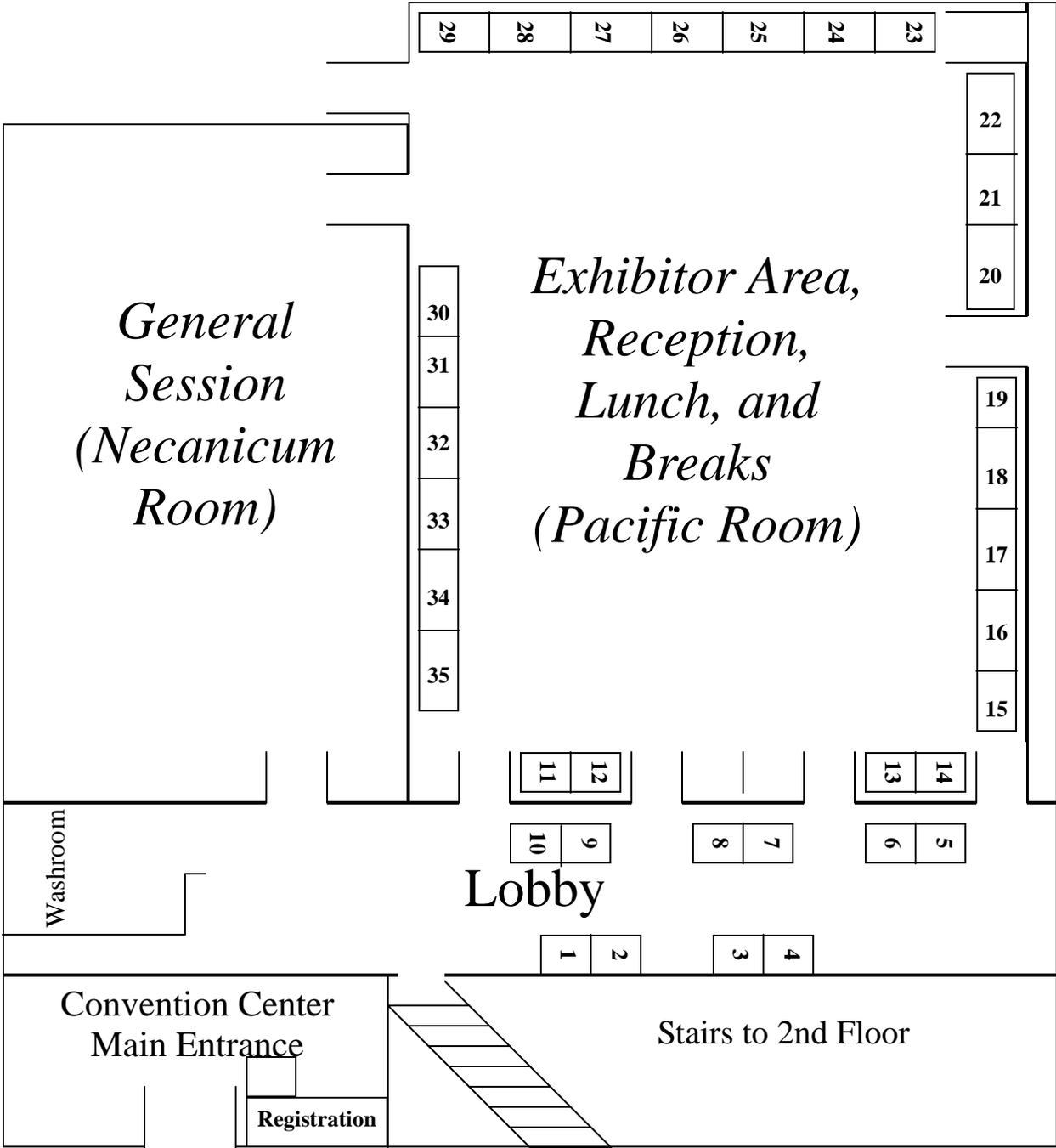
- 1) Liquid Concrete, Inc.
- 3) Unitex
- 4) Cargill SafeLane
- 10) USDA—Wildlife Services
- 11) Canadian Construction Products/  
Royston
- 12) Transportation System Preservation  
Technical Services Program
- 13) Oregon Department of  
Transportation—Local Program  
Office
- 16) GPR DATA LLC Ground Penetrating  
Radar
- 17) Power Team (SPX Hydraulic  
Technology)
- 18) Lifting Gear Hire Corporation
- 19) Williams Form Eng. Corp.  
Accessories Div.
- 20) Western Instruments
- 21) Debris Free
- 22) B & B Roadway
- 23) Crafcro Inc.
- 24) Euclid Chemical
- 25) American Concrete Cutting
- 26) BASF Building Systems
- 27) Coral Sales Company
- 28) Collins Engineers, Inc.
- 29) MaxCell
- 30) Galvanizers Company
- 31) Lakeside Industries
- 32) Hilfiker Retaining Walls
- 33) ThyssenKrupp Safway, Inc.
- 34) Transpo Industries, Inc.
- 35) Watson Bowman ACME



# Pacific Northwest Bridge Maintenance Conference

## Seaside Convention Center

### Exhibitor Area—Pacific Room





# *Save the Date*

## ***Pacific Northwest Bridge Inspectors' Conference***



Sheraton Portland Airport Hotel—Portland, OR  
March 31, 2009—April 2, 2009

[www.capps.wsu.edu/bridgeinspectors](http://www.capps.wsu.edu/bridgeinspectors)

*Currently accepting Call for Presentations. Presentation applications are due October 19, 2008. Contact Dana Schlenker at: 253-445-4575 or [dschlenker@wsu.edu](mailto:dschlenker@wsu.edu) for more information.*

## ***Western Bridge Engineers' Seminar***



Sacramento Convention Center—Sacramento, CA  
September 20 – 23, 2009

[www.capps.wsu.edu/conferences/WesternBridge](http://www.capps.wsu.edu/conferences/WesternBridge)

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