

"Improving Alaska's quality of transportation through technology application, training, and information exchange."

2014, No. 89

In this issue . . .

- Succession Planning: The Alaska Maintenance Leadership Academy
- Workforce Development
- New faces at T2
- * Aviation Land & Water Survival
- Systemic Safety Project Selection Tool
- Seismic Bridge Design
- Pavement Preservation
- Training Calendar
- Videos Available from T2

Succession Planning: The Alaska Maintenance Leadership Academy

By Michael J. Coffey, Chief, Statewide Maintenance and Operations

The next generation of successful department leaders will be those who know how to embrace and implement positive transformation and build cross-functional, interdepartmental relationships. These relationships will be the key building blocks for our future leaders.

As part of its commitment to developing leaders for the agency, the Alaska Department of Transportation and Public Facilities (DOT&PF) created the Alaska Maintenance Leadership Academy (AMLA). The academy is a five-day, intensive, interactive series designed to enable DOT&PF managers, superintendents, foremen, and leadmen to become more effective and efficient leaders.



Alaska DOT&PF Commissioner Pat Kemp speaks to academy participants.

(continued on page 2)

Workforce Development

by Rob Harper

Workforce development is a high priority for Alaska DOT&PF, and in recent months the challenge of knowledge transfer has been a more frequent topic of discussion. As many are aware, the department faces a somewhat daunting scenario:

- twenty-five percent of Alaska DOT&PF's workforce is eligible to retire in the next five years,
- forty percent of its workforce has served less than seven years with the department, and
- a large portion of the Alaska DOT&PF workforce is in the 25 to 45 year old range.

Beyond navigating the challenge of resupplying a skilled and knowledgeable workforce, the department also faces the larger need to cultivate future leaders. Management and technical trainings are available within the department, but what about leadership training?

Michael Coffey, chief of Statewide Maintenance and Operations (M&O), developed a program within M&O to address this challenge. The Alaska Maintenance Leadership Academy started in 2012 and has since graduated 120 students from within Alaska DOT&PF, with 25 new students slated for the fall 2014 academy. This is one of many milestones among the department's ongoing workforce development efforts, and Coffey has offered to share some insights and reflections in this edition of *Technology for Alaskan Transportation*.

(see also *Workforce Development Resources* on page 4)

*Alaska Maintenance Leadership Academy (continued)***Why the Alaska Maintenance Leadership Academy?**

Historically, DOT&PF has struggled to adequately prepare new and existing leaders for the challenges they face in the workplace. The department and the State of Alaska offer many opportunities to improve management, supervisory, and technical skills, but there has been a void in pure leadership training. AMLA is designed to fill that void for future generations of department leaders.

Another reason for the necessity of AMLA is that maintenance and operations (M&O) and the state equipment fleet (SEF) are large organizations with staff spread out over a huge state who face a set of unique challenges that are dissimilar from managing engineers, planners, and administrative staff.

M&O and SEF staff members are truly the face of the department. This is particularly true in smaller communities, where maintenance staff members are better known than the regional directors or the commissioner. Everyone's mission at DOT&PF is the same (regardless of their place in the organization): to provide for the safe and efficient movement of people and goods. The decisions made every day by employees contribute to fulfilling the department's mission.

DOT&PF is also operating in changing and challenging times:

- The department has lost a significant percentage of its seasoned workforce to retirement and it is expected to see a similar pattern over the next few years.
- Forty percent of the workforce has been with the department for less than seven years; this is particularly true in M&O and SEF.
- Funding is decreasing.
- Population is growing.
- New technologies are available.
- Environmental conditions and considerations are new and ever changing.
- Infrastructure is aging.
- We have five generations in the workforce, a great disparity.

The last point is a new challenge for department leaders. For the first time in history, there are five generations in the workforce. Although this is an exciting and interesting time, it is not without obstacles. Every generation has unique traits and in order to get along, be productive, and avoid conflict, leaders need to respect and understand each of the generations that they spend time with and lead at work. The most recent AMLA added a module entitled *Generations on the Move* to specifically address the challenges of leading a multigenerational workforce.

Management Versus Leadership

Leadership and management are two terms that are often confused.

Managers oversee projects (widgets, budgets, things) and expect results, while leaders focus on people and are more concerned with the process than the outcome. The following quote illustrates an excellent description of this difference:

“Managers are people who do things right, while leaders are people who do the right thing.” (*On Becoming a Leader*, Bennis, 1994).

AMLA emphasizes a 100% focus on leadership. A key element of leadership is understanding the importance of the decisions we make. A primary component of the academy is explaining why decisions matter and how decisions impact the department beyond the maintenance station or shop. The decisions our leaders make affect not only their immediate work unit but their community, their region, the department, the state of Alaska, and their employees' families.

How many of us have actually considered the range and impact of our decisions? Stopping to think about the consequences a decision will have on an employee's family should give us cause to be thoughtful and deliberative in our decision-making process. This is a key element of the academy and a point that is very seldom considered in current practice. The decisions we make as supervisors can have wide-ranging impacts.



What is the Alaska Maintenance Leadership Academy?

The program draws on the experience of DOT&PF subject matter experts and training experts from the Alaska Department of Administration. AMLA emphasizes idea sharing among participants, communication using common language, and support of the department's mission to *Keep Alaska Moving*. Through the development of key leadership skills and the integration of theory and practice, this series equips leaders to address the critical issues impacting their organization and the state of Alaska.

Practice and theory of leadership are woven throughout the curriculum for students attending AMLA. The academy focuses on building skills, ethics, and communication, which fosters the leadership learning experience. It's designed to cultivate collaborative skills and demonstrate leadership in the kind of horizontal teamwork environment found in most high-performance work teams and executive committees. Key curriculum topics include self-awareness, team building, and leading others. A voluntary group lunch and dinner are also held during the week because some of the best networking often occurs outside of the classroom.

Another one of the key principles of AMLA curriculum is **servant leadership**. Servant leadership is both a leadership philosophy and set of leadership practices. The servant leader deviates from the traditional leadership style of dominating subordinates and empowers and inspires them to perform.

The servant leader leads by example and acts proactively to inspire his or her subordinates to follow. Such inspiration leads to collective efforts, the result of which is more than the sum of the individual efforts. The servant-leader shares power, puts the needs of others first, and helps his or her team develop and operate as a high-performance unit. The servant leader recognizes that the department's most valuable resource is its people and takes on the responsibility of developing the initiative and creativity of his or her entire team. AMLA teaches the servant leader that serving their employees is more beneficial than dictating or trying to control them.

Final Thoughts

Since the first leadership academy was held in October 2012, four classes totaling approximately 120 DOT&PF leaders have graduated the academy. An additional 25 to 30 leaders are expected to attend the next academy in fall 2014.

(continued)

Good leaders provide motivation and inspiration for an organization. Motivation can improve morale and productivity, as well as encourage employees to think outside the box and come up with creative proposals. Effective leadership can also help guide the direction of an organization or work group.

DOT&PF believes that the graduates of the academy are well prepared to lead and exhibit the core values of the department: integrity, excellence, and respect.

“Leadership and learning are indispensable to each other.”

John F. Kennedy



Workforce Development Resources

Holland, Amanda. “Workforce Excellence Program: Comprehensive Workforce Planning Model for Transportation Agencies.” Paper presented to the Transportation Research Board 2013 annual meeting, Washington, D.C, Jan. 13–17, 2013. (Available at <http://docs.trb.org/prp/13-1088.pdf>.)

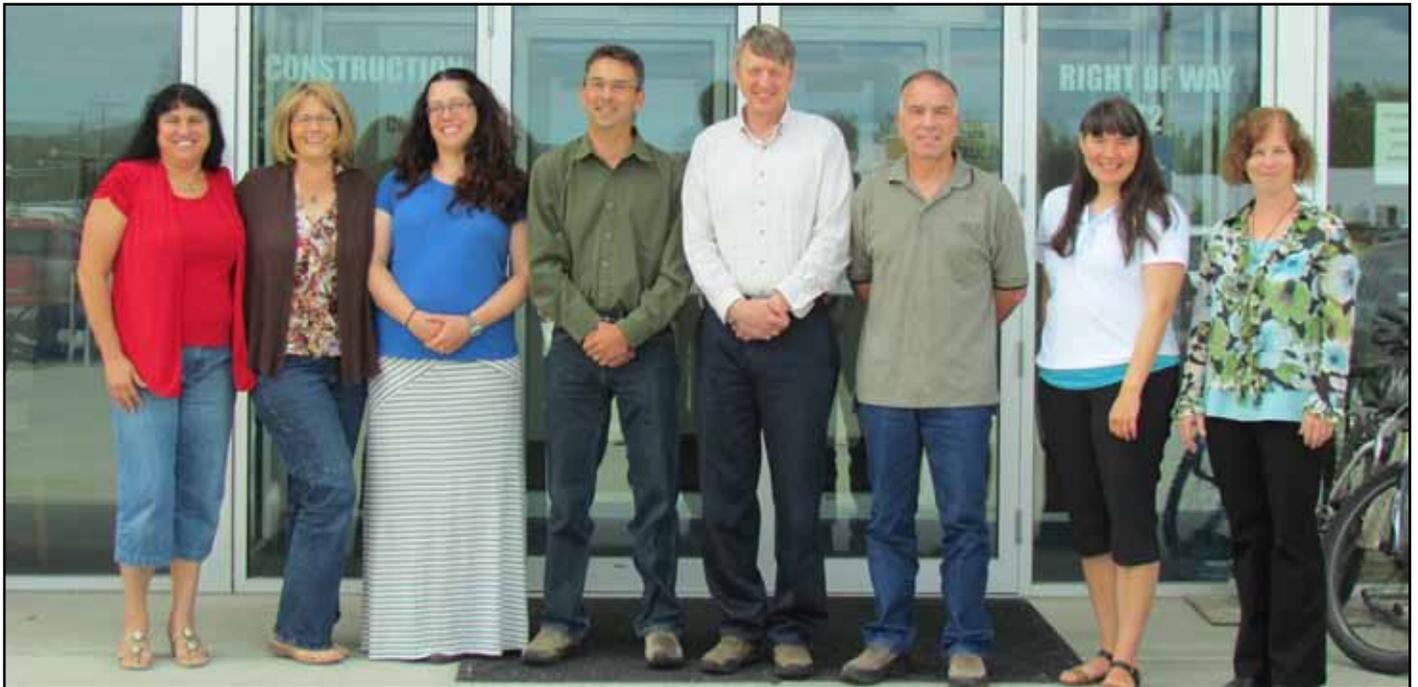
Perkins, Robert, and Lawrence Bennett. “Knowledge Transfer Needs and Methods.” Report no. T2-11-09 prepared for the Alaska Department of Transportation and Public Facilities, 2012. (Available at <http://trid.trb.org/view.aspx?id=1256236>.)

Perkins, Robert, and Lawrence Bennett. “Preliminary Design of a Leadership Academy for the Alaska Department of Transportation and Public Facilities, Report to Management, Reviews, and Discussions,” report no. T2-12-22, 2014. (Available at http://ntl.bts.gov/lib/51000/51800/51894/T2-12-22_Report_Distribution_Documentation.pdf.)

Perkins, Robert. “Digital Dissemination Platform of Transportation Engineering Education Materials Founded in Adoption Research.” UAF contribution to final report, Task 5A: Offer several courses using nontraditional academic models and methods, and monitor results. Report T2-12-20 prepared for the Alaska Department of Transportation and Public Facilities, 2014. (Available at <http://depts.washington.edu/pactrans/research/projects/digital-dissemination-platform-of-transportation-engineering-educational-materials-founded-in-adoption-research/>.)

Perkins, Robert, and Keith Whitaker. “Innovations in Arctic Construction Management Education.” *The Alaska Contractor*, Associated General Contractors of Alaska, Spring 2012, pp. 59–61. (Available at http://ebooks.aqppublishing.com/archive/business/archived/AGC/201204-AGC_Spring.pdf.)

New faces at T2



Research, Development, & T2 staff from left: Rosemary Bierfreund, Angela Parsons, Anna Bosin, Dave Waldo, Roger Healy, Simon Howell, Janelle White, Carolyn Morehouse

Carolyn Morehouse is the new head of Research and Technology Transfer for Alaska DOT&PF. She has worked for DOT&PF for nine years, first as the traffic and safety engineer for Southeast Region and then as their Preliminary Design and Environmental Group chief. She came to headquarters in fall of 2012 to head up the new Quality Improvement Section. This section expanded to include Transportation Asset Management in December 2012 and added Research and Technology Transfer to the group in March 2014.

Carolyn says, "Research and Technology Transfer has been fun to manage so far with great staff that care about DOT&PF. It is nice to work with people that have pride and give an enormous amount of energy in what they do."

Before ADOT&PF, she worked at the Alaska Department of Environmental Conservation where she helped create and manage the State of Alaska's Cruise Ship Environmental Compliance program from its inception until 2005. Before state service, she worked as a consultant and for industry. She graduated from Clarkson University with a BS in civil and environmental engineering, and she has an MBA from University of Alaska Southeast. She is a registered professional engineer in the state of Alaska.

She is married with two teenage sons and a black Labrador. She enjoys all the activities that living in

Alaska provides but likes to travel occasionally to "America" and other exotic places.

Janelle White is a new research engineering assistant in the Research and Technology Transfer section in Juneau. She has worked for DOT&PF for eight years, first as the project control chief for Southeast Region then as a designer in the Highways Section. She came to headquarters in fall of 2013 to work on the Naturally Occurring Asbestos program.

Before ADOT&PF, Janelle worked with the Bureau of Indian Affairs in the roads section in Construction and Design. She graduated from the University of Alaska Fairbanks with a civil engineering degree and has an MBA from the University of Alaska Southeast.

Anna Bosin is a new research engineer in the Research and Technology Transfer section in Anchorage. Anna has been working at Central Region as the Highway Safety Improvement Program coordinator. She has worked for ADOT&PF for almost six years. Before that, she worked as a consultant and as an engineer for the City of Santa Barbara. She graduated from UC Santa Barbara with an MS in mechanical engineering.



Aviation Land and Water Survival

By Dave Waldo

Bitter cold, freezing rain, severe winds, murky darkness, and vast expanses make flying in Alaska exceptionally challenging and dangerous. Some areas Alaskans fly are vast with no navigation aids, no radar, no reliable weather reports, and sometimes no communication. When something goes wrong you may be hundreds of miles from civilization, have severe injuries, limited supplies, and be several days from rescue.

The sobering statistics show aircraft accidents are the leading cause of occupational fatalities in Alaska. Many of these fatalities occur after impact and could have been prevented by proper planning, preparation, and training.

How can you increase your chances of survival?

You increase your chances of survival by reducing disorientation, incapacitating injuries, and the accompanying panic of an aircraft crash landing or ditching. This is accomplished through a training program called Learn to Return, which familiarizes students with escape and post-crash survival tactics.

Alaska DOT&PF employees attended this aviation survival course to help increase their chances in the event of an aviation accident. These courses were facilitated by LTR Training Systems, an aviation land and water survival school based in Anchorage, Alaska. LTR delivers survival training worldwide to private firms and government agencies, including the military.



Photo 1: Cristina Demattio prepares to be launched forward into the pool. The egress module will land inverted and submerge in about a second.



Photo 2: Egress module hits the water.



Photo 3: ADOT&PF student practices egress after the module hits the pool bottom.

What did we learn?

The LTR Training Systems program is conducted in both the classroom and in the field. Employees learned survival tactics through case studies, visual aids, and hands-on instruction in land and water escape simulators. These simulators are designed to familiarize students with the seven basic tactics of egress from land or water impacts:

- Practice precrash positioning to minimize incapacitating injuries.
- Locate and operate emergency exits.
- Adapt to unplanned occurrences such as locked seat belts, jammed exits, and injured passengers.
- Remove essential equipment during egress.
- Perform escape within limited time span of one air breath.
- Render medical care until help arrives.
- Create shelter for oneself and fellow passengers until help arrives.



ADOT&PF participants practice underwater egress from two different egress modules. These modules are designed to simulate airframes and the challenges related to underwater escapes.

During simulations of water crashes, the participants learned that disorientation and confusion occur when an airframe is submerged. The most frequently reported problem occurs as in-rushing water creates a significant escape obstacle. It can force cabin occupants into rear corners where they get trapped, sometimes disorienting them so they cannot locate exits.

To minimize this problem and promote escape, LTR instructs occupants to

- remain securely strapped in your seat and establish/grasp a reference point,
- stay in your seat and maintain your reference point until all violent aircraft movement ceases, gain orientation,
- open existing exits or escape hatches,
- unstrap and exit following the hand used to maintain your reference point.

(continued on back page)



LTR instructor Brian Horner demonstrates starting a warming fire using a variety of methods.

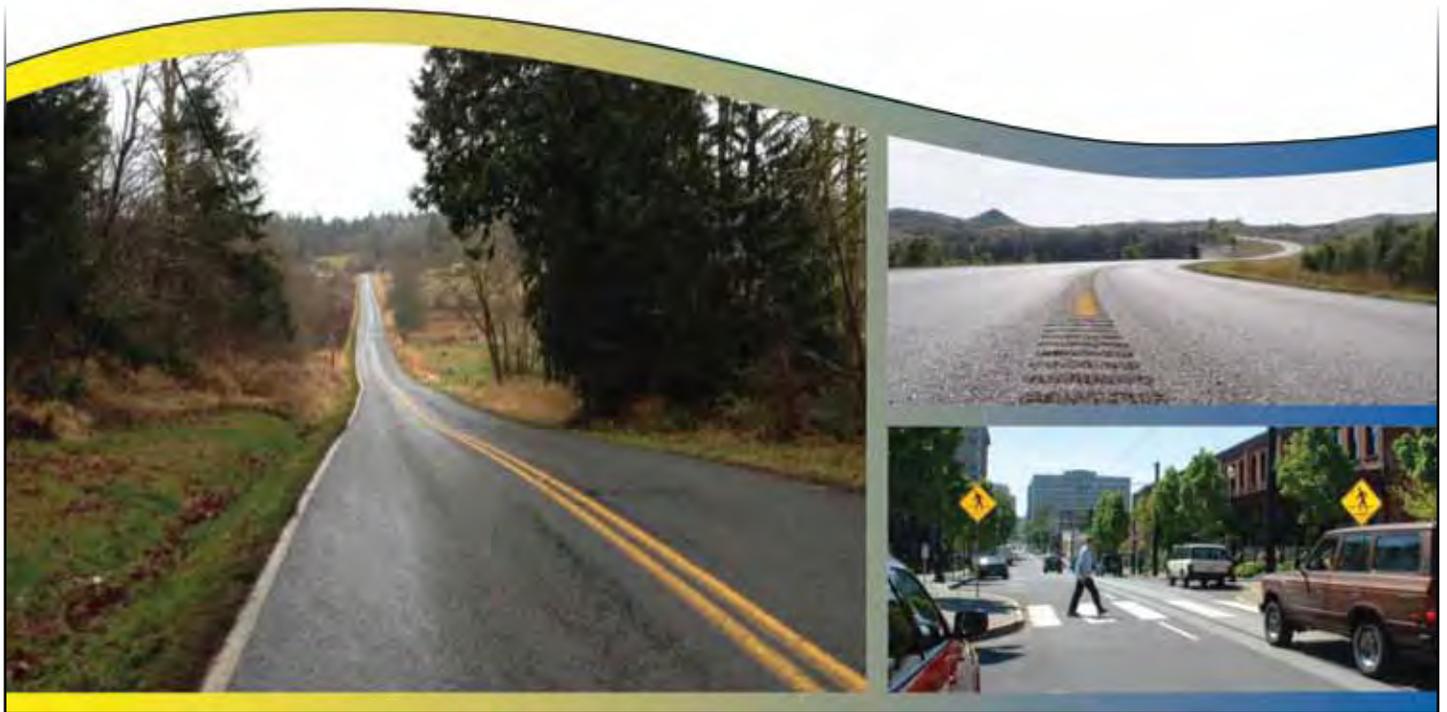


LTR instructor Brian Horner demonstrates building an emergency insulated boot from airplane seat cushions.



Students practice igniting and using emergency signal flares.

Systemic Safety Project Selection Tool



Why the Systemic Approach?

According to the National Highway Traffic Safety Administration (NHTSA), in 2010, rural areas accounted for 54 percent of the fatal crashes, as compared to urban areas, which accounted for 45 percent. Crashes on rural and local roads are typically spread over hundreds or thousands of miles and are not as densely clustered as crashes in urban areas. Systemic improvements can address these rural crashes because the focus is high-risk roadway features, not specific locations.

The Rationale

The systemic approach does not replace the site analysis approach. There is a clear need to continue to focus on individual locations with large numbers of severe crashes. The systemic approach is a complementary technique that supplements the site analysis approach and provides an expanded comprehensive and proactive approach to road safety efforts. By using the systemic approach, agencies can also address the requirements for the Highway Safety Improvement Program, which focuses on fatal and serious injury crashes on all public roads.

How it Works

The Systemic Safety Project Selection Tool involves three basic elements:

1. selecting locations and countermeasures,
2. achieving the correct balance between systemic and traditional safety investments, and
3. evaluating the effectiveness of the systemic approach.

Together, the traditional site analysis approach and the systemic approach form a comprehensive approach to safety management. Both approaches include the same basic planning elements of traditional roadway safety management processes, such as the Highway Safety Improvement Program (HSIP). An important distinction in the systemic approach is the decision-making process does not just identify the most appropriate countermeasure for each individual location, as is done when addressing hot spots. The systemic approach considers multiple locations with similar risk characteristics, selecting a preferred countermeasure(s) appropriate and affordable for widespread implementation. That is why it is necessary to identify low-cost solutions. For more information go to:

<http://safety.fhwa.dot.gov/systemic/>





Seismic Bridge Design

Structural Capacity and Seismic Demand

Tech Brief #002

April 2014

Research Program Title:

Seismic Bridge Design

Principal Investigators

Zhaohui (Joey) Yang, PhD, PE
Associate Professor of Engineering
University of Alaska Anchorage
Office: (907) 786-6431
Email: zyang2@uaa.alaska.edu

Leroy Hulsey, PhD, PE, SE
Professor of Engineering
University of Alaska Fairbanks
Office: (907) 474-7816
Email: jlhulsey@alaska.edu

Mervyn Kowalsky, PhD, PE
Professor of Structural Engineering
North Carolina State University
Office: (919) 515-7261
Email: kowalsky@ncsu.edu

Alaska DOT&PF Contacts

Carolyn Morehouse
Chief, Research, Development, and
Technology Transfer
Office: (907) 465-8140
Email: carolyn.morehouse@alaska.gov

Larry Owen, PE
Bridge Management Engineer
Office: (907) 465-8897
Email: larry.owen@alaska.gov

Elmer Marx, PE
Senior Bridge Engineer
Office: (907) 465-6941
Email: elmer.marx@alaska.gov

AUTC Contact

Billy Connor, PE
Director, Alaska University Transportation
Center
Office: (907) 474-5552
Email: bgconnor@alaska.edu

Study Timeline

Multiple projects, 2007–2013

Report References

AUTC #: 107041; 107014; S18140; 510001;
107013; 410001; 410002; 510021; 510022;
410015; 410014; 309010; 107017

Funding Sources

Alaska DOT&PF
U.S. Dept. of Transportation
Alaska University Transportation Center

Project Partners

Iowa State University
North Carolina State University
Oregon State University
Harbin University of Science and Technology

Summary

Alaska DOT&PF's research on seismic bridge design resolved multiple design issues previously unaddressed by national and state design codes. RDT2's research into structural capacity and seismic demand in frozen soils led to revisions of Alaska and AASHTO design standards.

Problem/Objective

Alaska is America's most seismically active state, yet national bridge design codes do not address specific cold-region factors that impact the strength and ductility of bridge pilings and foundations.

- How do arctic climates influence the strength of bridge pilings and foundations?
- How do steel-reinforced concrete tubes and all-steel pilings respond to seismic loading in -40 temperatures?
- How does liquefied frozen soil increase the force acting upon bridge foundations during a seismic event?
- How should designers assess the top five to eight feet of frozen soil when designing or assessing bridges?

Previously, no design codes existed to address these issues.



Outcomes and Products

Improved Pile Assessment: The first quantified evaluation of loads imposed on bridge foundations by a frozen crust with liquefaction and lateral spreading showed a 50% variation in pile performance.

Design Certainty: Cyclic cold-weather testing of steel-reinforced concrete performance realized a 30% to 40% strength increase in concrete and a 10% increase in steel.

Finding: Pile performance is very sensitive to crust conditions, and the pile's internal forces like bending moment and shear force vary by roughly 50% when the crust freezes.

Finding: Because frozen soils, especially on permafrost, significantly change ground motion characteristics, it is generally safe for designers to disregard the effects of seasonally frozen ground on site response.

Finding: It is imprudent to classify permafrost soil sites using only the seismic motion of the upper 30 meters of frozen or unfrozen soil or to utilize code-defined site coefficients for seismic design.

Implementation

AASHTO's seismic bridge design guide (2011 AASHTO Guide Specifications for LRFD Seismic Bridge Design, 2nd edition) governs aspects of seismic bridge design. Findings from this research have been integrated into sections 7 and 8, addressing structural steel and reinforced concrete components. They include language on several specific components, such as the mechanism for calculating the strength capacity of concrete-filled steel pipes and the design of column-to-beam joints. At the state level, Alaska's seismic bridge design protocol has been rewritten to include these advances through Alaska DOT&PF.



Pavement Preservation

Reducing Costs—Extending Lifecycles

Tech Brief #003
May 2014

Research Program Title:

Pavement Design and Preservation

Principal Investigators

Jenny Liu, PhD, PE

Director, Center for Environmentally Sustainable Transportation in Cold Climates (CESTiCC)

*Associate Professor of Civil and Environmental Engineering
University of Alaska Fairbanks*

Office: (907) 474-5764

Email: jliu6@alaska.edu

Gary Hicks, PhD

Program Manager

*California Pavement Preservation Center
California State University, Chico*

Office: (530) 898-3685

Email: rg Hicks@csuchico.edu

Alaska DOT&PF Contacts

Carolyn Morehouse

Chief, Research, Development and Technology Transfer

Office: (907) 465-8140

Email: carolyn.morehouse@alaska.gov

AUTC Contact

Billy Connor, PE

Director, Alaska University Transportation Center

Office: (907) 474-5552

Email: bgconnor@alaska.edu

Study Timeline

Multiple projects, 2007–2013

Report References

AUTC #: 12069; 510012; 510005; 510022; 410020; 410038; 309023; MISC5; 309024; 207086; 107049, 107045

Funding Sources

Alaska DOT&PF

Alaska University Transportation Center

TenCate Geosynthetics

UAF College of Engineering and Mines

U.S. DOT—RITA

Project Partners

Alaska DOT&PF

California Pavement Preservation Center

California State University, Chico

TenCate Geosynthetics

Summary

This research provides Alaska DOT&PF with tools to extend pavement lifecycle and reduce maintenance costs.

Problem/Objective

Alaska's pavement faces challenges to its lifecycle unlike those found in any other state. Permafrost and frozen ground cause costly pavement damage, leaving Alaska DOT&PF with annual surface maintenance costs up to \$140 million. Alaska's limited construction season, extreme climates, and remote locations add to existing pavement preservation challenges by driving up costs, energy and material use, and labor needs.



Outcomes and Products

- Tested and deployed composite wicking fabric to reinforce asphalt pavements in Alaska.
- Identified cost-savings measure to improve current crack-sealing methods.
- Provided more accurate characterizations of hot mix asphalt properties.
- Provided safe, cost-effective aggregate testing.
- Enabled more cost-effective designs by including a lifecycle cost analysis in the Alaska Flexible Pavement Design software.
- Developed and tested protocols to determine concrete curing strength during construction.
- Enabled safe and quick warm mix asphalt performance under very cold conditions.
- Developed pavement preservation guidelines to save costs and decrease energy emissions.
- Identified the three most cost-effective pavement preservation treatments for Alaska surfaces.
- Field tested a locally manufactured fast-set magnesium phosphate cement overlay with 8,000 to 12,000 psi compressive strength.

Implementation

Studies show that implementing a statewide pavement preservation program can save more than 50% in costs over a pavement system's 20-year lifecycle. Toward this goal, our research has seen multiple implemented benefits:

- Improved usage of asphalt-treated base course material.
- Improved pavement designs and lowered costs by using locally available materials.
- Improved hot mix asphalt quality assurance specifications.
- Improved flexible pavement design methods.
- Reduced energy costs by spreading hot mix asphalt at lower temperatures.



Meetings and Training Around Alaska

Training Calendar

130091: FHWA-NHI-130091B: Underwater Bridge Repair, Rehabilitation, and Countermeasures

Sep. 25–26 in Anchorage

130091: FHWA-NHI-130091: Underwater Bridge Inspection

Sep. 22–25 in Anchorage

NHI 151043: Transportation and Land Use

Sep. 22–24 in Wasilla

NHI 380032A: Roadside Safety Design

Sep. 3–5 in Anchorage

Sep. 8–10 in Fairbanks

Connected Vehicle 101

Oct. 1 in Anchorage

NHI 135027: Urban Drainage Design

Oct. 7–9 in Anchorage

Oct. 7–9 in Fairbanks

FHWA-NHI-142042: Fundamentals of Environmental Justice

Nov. 19–20 in Anchorage

NHI 142051: Highway Traffic Noise

Nov. 4–6 in Anchorage

For information about T2-sponsored training, contact:

Dave Waldo at 907-451-5323,
david.waldo@alaska.gov

or

Simon Howell at 907-451-5482,
simon.howell@alaska.gov

or

go to: www.dot.state.ak.us

The signup for the **research** notification list-serve can be found at:
<http://list.state.ak.us/soalists/DOT-Research-Notification/jl.htm>

Join/Leave Request

This mailing list is for Alaska DOT&PF research. Sign-up if you want to be notified about research events or newly published reports.

If you would like to join or leave the DOT-Research-Notification list please enter your email address, select the desired action, and click the Submit button. You will receive an email message confirming the request. If you are joining a list you will also need to reply to the confirmation message in order to complete the action.

Email Address:

Action:

The signup for the **training** notification list serve can be found at:
<http://list.state.ak.us/soalists/DOT-Training-Notification/jl.htm>

Join/Leave Request

This mailing list is for Alaska DOT&PF training. Sign-up if you want to be notified of upcoming training events.

If you would like to join or leave the DOT-Training-Notification list please enter your email address, select the desired action, and click the Submit button. You will receive an email message confirming the request. If you are joining a list you will also need to reply to the confirmation message in order to complete the action.

Email Address:

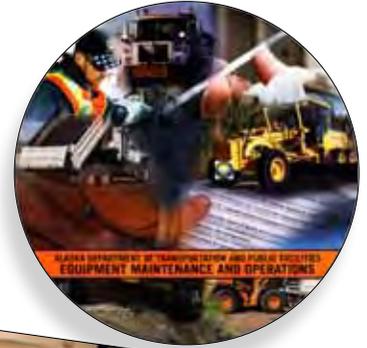
Action:

[return to list of lists](#)

Videos Available from T2

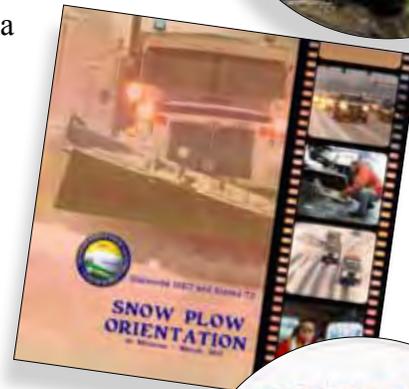
Equipment Maintenance and Operations: Loader, Grader, Truck

Developed by Statewide M&O and T2 as a training tool for Alaska maintenance personnel. Includes a comprehensive overview of truck, grader, and loader operations, inspections, and safety protocols.



Plow Orientation

Developed by Statewide M&O and T2 as training tool for Alaska winter Snow maintenance personnel. Includes a comprehensive overview of truck attachments for plowing/sanding and best practices for snow removal in rural and urban environments.



Frost Damage: Causes and Cures

Why are Alaska's highways and pavement so difficult and expensive to maintain? AUTC, Alaska DOT&PF, and the Institute of Northern Engineering are excited to announce the release of two short films on one of the most troublesome and costly cold-region civil engineering problems: frost heave.

When subsurface moisture freezes, it creates complex and persistent damage to pavement. This video illustrates how frost heave occurs and offers insight into several time-tested methods for preventing this destructive phenomenon.



Aviation Construction Safety: Approach to Communications

Developed in cooperation with FAA, Northern Region Construction, and T2, this video provides information on Alaska's airport construction practices for contractors, inspectors, and pilots. The focus is on best practices for communication and safety during construction.



Airport Maintenance: Contractor's Orientation DVD

Developed by Statewide M&O and T2 specifically for rural airport maintenance personnel. Includes best practices for proper clearing of runways, taxiways, ramps, and around NAV aids. Also includes an overview of when and how NOTAMS are initiated by maintenance personnel.



Contact T2 to request a free copy:

rosemary.bierfreund@alaska.gov

simon.howell@alaska.gov

david.waldo@alaska.gov

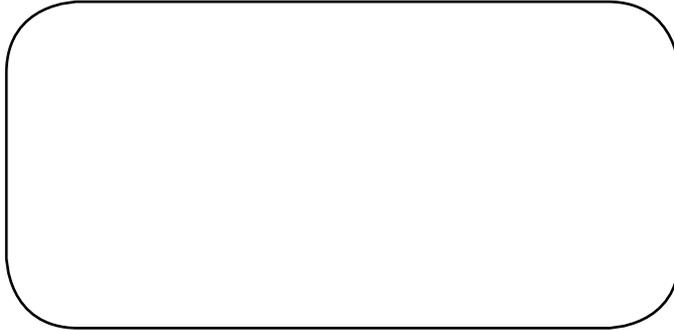
Or call (907) 451-5320



*Local Technical Assistance Program
 Department of Transportation and Public Facilities
 2301 Peger Road M/S 2550
 Fairbanks, AK 99709-5399*

PRESORTED STANDARD
 U.S. Postage PAID
 Fairbanks, AK
 Permit No. 87

Return Service Requested



Aviation Land & Water Survival (continued from page 8)



These escape tactics were practiced repeatedly by DOT&PF students in both land and water scenarios. The participants took this training seriously. Several students commented on the intensity and realistic feel of the course and the engaging and informative instructors.



T² Center Staff

Dave Waldo, Manager & Editor,
 907/451-5323, david.waldo@alaska.gov
 Simon Howell, Training Specialist,
 907/451-5482, simon.howell@alaska.gov
 Rosemary Bierfreund, Administrative Assistant I,
 907/451-5320, rosemary.bierfreund@alaska.gov

Research & Development Staff

Carolyn Morehouse, P.E., Chief of Research & T2
 907-465-8140 carolyn.morehouse@alaska.gov
 Angela Parsons, P.E. Research Engineer
 907/ 269-6208 angela.parsons@alaska.gov
 Anna Bosin, P.E., Research Engineer
 907-269-0643 anna.bosin@alaska.gov
 Janelle White, Research Engineer
 907-465-8250 janelle.white@alaska.gov
 Rob Harper, Communication Specialist,
 907/451-2990 james.harper@alaska.gov
 Rosemary Bierfreund, Administrative Assistant I,
 907/451-5320, rosemary.bierfreund@alaska.gov
<http://www.dot.state.ak.us>
 • select "Inside DOT&PF"
 • select "Research & Technology"



This newsletter is funded by the Federal Highway Administration and the Alaska Department of Transportation and Public Facilities. The material contained herein does not necessarily reflect the views of the Alaska Department of Transportation, Federal Highway Administration, or the T² staff. Any reference to a commercial product or organization in this newsletter is only for informational purposes and is not intended as an endorsement.