In 1986, five years after House Bill 4209 was passed and signed into law, the NH LTAP known as the UNH Technology Transfer Center was established. This came on the heels of the government’s decision to broaden the original program, instituting a 50/50 match of federal funds with local funds. The UNH Technology Transfer Center has been offering “pearls” of wisdom ever since!

For more on how LTAP began, please visit the National LTAP & TTAP Association website.
Letter from the LTAP Training Coordinator

As we prepare for New Hampshire Local Technical Assistance Program’s (NHLTAP) year ahead with conferences, meetings and workshops, our thoughts look back to 30 years ago when the United States Congress included New Hampshire in its plan for continuing growth. We are thirty years strong and our mission continues to hold value and significance to the transportation workforce.

The mission of the NHLTAP center (T2) is to foster a safe, efficient, and environmentally sound surface transportation system by improving skills and increasing knowledge of the transportation workforce and decision makers. Its vision is to improve the quality and safety of the surface transportation system through collaborative partnerships, training and information exchange.

It’s because of you that we do what we do. We, at the T2 Center, strive to bring you more of what you have grown to know and expect, while also to branch out into areas that you may need or feel are essential. Tell us what skills and further education topics are at the forefront of your surface transportation system’s team. Your input will help us to offer what is important and most pertinent to you.

Happy Anniversary, NHLTAP!

May the workforce be with you,

Stephanie Cottrell
LTAP Training Coordinator
Technology Transfer Center
The Importance of Weather to Public Works
Weather as Technical Subject Matter

Dennis Randolph, P.E., PTOE, PWLF
APWA Reporter, June 2015, Vol. 82, No. 6

Most of us in the public works profession understand all we do to make the world a better place for people to live. Without the infrastructure we build and take care of, much of the good that takes place in the world would not be possible. Because we don’t spend enough time telling people what we do, they do not know the nature of the problems we deal with every day.

For example, one element we don’t often bring to the attention of those outside the profession is our relationship with weather. For nearly every type and piece of infrastructure we build and maintain, we must deal with the challenges of climate and weather. For us in public works weather is every day.

For most folks, especially at their workplace, bad weather means staying inside. There is usually little impact. But for the public works professional, we simply cannot and do not “hunker-down” when the weather is other than ideal. There are times when it is simply too dangerous to be out in a blizzard or a storm. Most often any work we try to do in extreme conditions will simply be overwhelmed by heavy snowfall or hurricane winds. However, except for these extremes, the public works professional must be out battling with the elements, because it is our job to keep the infrastructure working for all those others who must and do take shelter.

There are no “snow days” in public works. Neither are

Butch Says (Pearl of Wisdom)
Your Plowing Keeps Life Moving!

With that said, caution needs to be exercised with the long hours that you sometimes have to work. Did you know that 17 hours without sleep has the same effect on your body as 0.05% blood alcohol content. And if your sleepless hours add up to 21 the effect rises to 0.08% blood alcohol content. Also, you need to be aware of what is called “micro-sleep”, which is when you fall asleep while driving. Needless to say this could prove to be very dangerous to you, as well as to the traveling public. So try to get as much rest as possible during long storm events. Even a little so-called cat nap is a big help. Eating healthy meals and snacks will also help.

What to Eat on Snow Plowing Nights
Some sleep deprivation studies support the idea that what people eat can either help or hurt. The body slows down during nighttime hours. Greasy protein foods cause the body to want to sleep! Operators can still enjoy eating with well balanced meals and snacks. Such meals are compatible with a slower, nighttime digestive system.

Meal Before Night Work:
• Light protein foods — chicken, turkey, fish, cooked beans and peas.
• Low-fat foods only.
• Vegetables, fruits, breads, pasta and/or potatoes.
• Low-fat or skim milk, cheeses, and yogurt.

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Meals During Breaks
• Soup and salad.
• Soup and a light sandwich.
• Light protein foods and vegetables.

Snacks Before and During Work
• Low-fat dairy products.
• Fruit, popcorn, cereal, plain cookies, and/or baked crackers.

Cut back on coffee, tea, smoking and chewing tobacco. These items contain caffeine or nicotine. Initially they are stimulants but soon become depressants, making the heart beat slower.

Reprinted from Road Business, Fall 2008
The T2 Center has available two Impulse RM Retroreflectometers and an Avery Dennison Minimum Retroreflectivity Compliance Kit to municipalities and public works departments through our lending program.

An item may be borrowed for up to three weeks. Fill out the Loan Request form online or call the T2 Center at 603-862-2826.

Impulse RM Retroreflectometer Applications:
- Road Sign Inventory and Management
- Safety Asset Management
- Traffic Engineering
- GPS Offset Mapping
- GIS Data Collection

Impulse RM Retroreflectometers come with:
- Impulse RM unit
- Instruction Manual
- 2 AA Batteries
- SOft Carrying Case

Avery Dennison Compliance Kit comes with:
- Comparison Panels
- SPotlight
- LED Flashlight
- Clamps (2)
- Cleaning Cloth
- MUTCD chart
- User Guide

For more information on Sign retroreflectivity, go to:

Federal Highway Administration
NH Department of Transportation
NH Department of Environmental Services
Cold Weather Injuries and Symptoms

By Mayo Clinic Staff and Stephanie Cottrell, T Center Staff
www.mayoclinic.org

December weather was a breeze with extremely mild temperatures and marginal snowfall. Hopefully, the recent taste of more seasonal temperatures and weather hasn’t left you unprepared and caught off guard. The grip that wind can have when the temperatures dip below freezing can be life threatening, especially to those who spend any substantial amount of time outside braving the elements by choice or by trade. Be alert to the signs and symptoms of frostbite.

Frostbite

- At first, cold skin and a prickling feeling
- Numbness
- Red, white, bluish-white or grayish-yellow skin
- Hard or waxy-looking skin
- Clumsiness due to joint and muscle stiffness
- Blistering after rewarming, in severe cases

Frostbite is most common on the fingers, toes, nose, ears, cheeks and chin. Because of skin numbness, you may not realize you have frostbite until someone else points it out.

Frostbite occurs in several stages:

- Frostnip. The first stage of frostbite is frostnip. With this mild form of frostbite, your skin pales or turns red and feels very cold. Continued exposure leads to prickling and numbness in the affected area. As your skin warms, you may feel pain and tingling. Frostnip doesn’t permanently damage the skin.

- Superficial frostbite. The second stage of frostbite appears as reddened skin that turns white or pale. The skin may remain soft, but some ice crystals may form in the tissue. Your skin may begin to feel warm — a sign of serious skin involvement. If you treat frostbite with rewarming at this stage, the surface of your skin may appear mottled, blue or purple. And you may notice stinging, burning and swelling. A fluid-filled blister may appear 24 to 36 hours after rewarming the skin.

- Severe (deep) frostbite. As frostbite progresses, it affects all layers of the skin, including the tissues that lie below. You may experience numbness, losing all sensation of cold, pain or discomfort in the affected area.

Joints or muscles may no longer work. Large blisters form 24 to 48 hours after rewarming. Afterward, the area turns black and hard as the tissue dies.

When to see a doctor
Seek medical attention for frostbite if you experience:
- Signs and symptoms of superficial or deep frostbite — such as white or pale skin, numbness, or blisters
- Increased pain, swelling, redness or discharge in the area that was frostbitten
- Fever
- New, unexplained symptoms

Get emergency medical help if you suspect hypothermia, a condition in which your body loses heat faster than it can be produced. Signs and symptoms of hypothermia include:
- Intense shivering
- Slurred speech
- Drowsiness and loss of coordination

Hypothermia

Shivering is likely the first thing you’ll notice as the temperature starts to drop because it’s your body’s automatic defense against cold temperature — an attempt to warm itself.

Mild Hypothermia

Signs and symptoms of mild hypothermia include:
- Shivering
- Dizziness
- Hunger
- Nausea
- Faster breathing
- Trouble speaking
- Slight confusion
- Lack of coordination
- Fatigue
- Increased heart rate

Moderate to Severe Hypothermia

As your body temperature drops, signs and symptoms of moderate to severe hypothermia include:
- Shivering, although as hypothermia worsens, shivering stops
- Clumsiness or lack of coordination
- Slurred speech or mumbling
- Confusion and poor decision-making, such as trying to remove warm clothes
Cold Weather

- Drowsiness or very low energy
- Lack of concern about one's condition
- Progressive loss of consciousness
- Weak pulse
- Slow, shallow breathing

Someone with hypothermia usually isn't aware of his or her condition because the symptoms often begin gradually. Also, the confused thinking associated with hypothermia prevents self-awareness. The confused thinking can also lead to risk-taking behavior.

One other element to consider when heading out into the cold is the wind. While there is a current debate about the wind chill factor's accuracy, there is good reason to take it into account as wind speeds increase because it can decrease your safe exposure time. The higher the wind speed, the faster your body will lose heat. Dressing appropriately can make all the difference in a good day or bad day at work.

Wind Chill Chart

<table>
<thead>
<tr>
<th>Temperature (°F)</th>
<th>Wind Chill Chart</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>36, 31, 25, 19, 13, 7, 1, -5, -11, -16, -22, -28, -34, -40, -46, -52, -57, -63</td>
</tr>
<tr>
<td>10</td>
<td>34, 27, 21, 15, 9, 3, -4, -10, -16, -22, -28, -35, -41, -47, -53, -59, -66, -72</td>
</tr>
<tr>
<td>15</td>
<td>32, 25, 19, 13, 6, 0, -7, -13, -19, -26, -32, -39, -45, -51, -58, -64, -71, -77</td>
</tr>
<tr>
<td>25</td>
<td>29, 23, 16, 9, 3, -4, -11, -17, -24, -31, -37, -44, -51, -58, -64, -71, -78, -84</td>
</tr>
<tr>
<td>30</td>
<td>28, 22, 15, 8, 1, -5, -12, -19, -26, -33, -39, -46, -53, -60, -67, -73, -80, -87</td>
</tr>
<tr>
<td>35</td>
<td>28, 21, 14, 7, 0, -7, -14, -21, -27, -34, -41, -48, -55, -62, -69, -76, -82, -89</td>
</tr>
<tr>
<td>40</td>
<td>27, 20, 13, 6, -1, -8, -15, -22, -29, -36, -43, -50, -57, -64, -71, -78, -84, -91</td>
</tr>
<tr>
<td>45</td>
<td>26, 19, 12, 5, -2, -9, -16, -23, -30, -37, -44, -51, -58, -65, -72, -79, -86, -93</td>
</tr>
<tr>
<td>50</td>
<td>26, 19, 12, 4, -3, -10, -17, -24, -31, -38, -45, -52, -60, -67, -74, -81, -88, -95</td>
</tr>
<tr>
<td>55</td>
<td>25, 18, 11, 4, -3, -11, -18, -25, -32, -39, -46, -54, -61, -68, -75, -82, -89, -97</td>
</tr>
<tr>
<td>60</td>
<td>25, 17, 10, 3, -4, -11, -19, -26, -33, -40, -48, -55, -62, -69, -76, -84, -91, -98</td>
</tr>
</tbody>
</table>

Frostbite Times
- 30 minutes
- 10 minutes
- 5 minutes

Wind Chill (°F) = 35.74 + 0.6215T - 35.75(V0.16) + 0.4275T(V0.16)

Where, T = Air Temperature (°F) V = Wind Speed (mph)

Effective 11/01/01

Build a Better Mousetrap Competition

Sponsored by: UNH’s Technology Transfer Center

Competition deadline April 30, 2016!

Have you or any of your fellow crew members recently built an innovative gadget or developed an improved way to do a job? If so, submit your workplace solutions today!

The Build a Better Mousetrap Competition highlights innovative solutions to everyday problems and issues that local and tribal transportation workers and other LTAP/TTAP clients encounter.

Competition Criteria:
- Cost Savings/Benefits to the Community
- Ingenuity
- Ease of Transference to Others
- Effectiveness
On Friday, December 4th, President Obama signed into law a five-year surface transportation bill, the Fixing America's Surface Transportation (FAST) Act, H.R. 22, which renews transportation funding programs. The FAST Act is the longest transportation bill Congress has passed since 2005, and authorizes $225 billion for highways, $61 billion for public transit, $10 billion for Amtrak, and $5 billion for highway safety programs.

“APWA commends the Senate and House leaders who guided the timely passage of the FAST Act, including House Transportation and Infrastructure Committee Chairman Bill Shuster (R-PA), Ranking Member Peter DeFazio (D-OR), Senate Environment and Public Works Committee Chairman James Inhofe (R-OK), and Ranking Member Barbara Boxer (D-CA),” said APWA President Brian Usher, PWLF, Public Works Director of Largo, FL. “This bill provides the streamlined project approval processes that state and local governments need to provide Americans with the transportation systems necessary for economic prosperity,” Usher said.

“A majority of APWA members have a direct interest and/or involvement in transportation issues, which are often affected by federal transportation funding in order to design, plan, build and maintain public infrastructure projects. The FAST Act provides financial security for the programs that sustain our roads, bridges, transit and passenger rail system, which will work to keep the U.S. economy globally competitive,” Usher said.

The FAST Act is an authorizing bill that will provide five years of federal funding through 2020 at an increase from current funding levels. It is paid for by surplus Federal Reserve dollars and a reduction in the dividend national banks receive from the Federal Reserve.

For more information on APWA Government Affairs latest positions and priorities, visit the APWA Legislative Action Center.

For more information on APWA or for APWA media queries, contact APWA Media Relations and Communications Manager, Laura Bynum at: lbynum@apwa.net, or by phone at 800-848-2792 extension 6736.

The Fixing America's Surface Transportation (FAST) Act was signed into law on 5th December 2015. As indicated by the name, this bill focuses on much needed funding for improving and revitalizing America’s surface transportation infrastructure. The bill provides steadily increasing a federal-aid highway funding of $42.36 trillion in 2016 to $46.37 trillion in 2020. This translates into roughly 5% increase for 2016, and thereafter a steady increase of 2 – 2.4% until 2020. The formula for distribution of funds to State Department of Transportation (DOTs) remains unchanged. For New Hampshire, this means a total of $875 million federal apportions over the next five years with an average of $175 million per year. This is up from $159.5 million apportioned to New Hampshire in 2015.

A major emphasis in the FAST Act is on investments for freight movement through the formation of a new National Highway Freight Program (NHFP) that will be funded at a rate of $1.2 billion per year. These funds must be spent on a National Highway Freight Network (NHFN) and only for projects that improve movement of freight, although States have the ability to use up to 10% of these funds for freight rail and intermodal projects.

Another new program established under the FAST Act is the National Significant Freight and Highway Projects Program. This $4.5 billion grant program is also designed primarily for highway projects to improve movement of freight. The eligible projects have to be on the NHFN or National Highway System.

Lastly, a core federal-aid highway program previously called the Surface Transportation Program (STP) has now been renamed as the Surface Transportation Block Grant Program (STBGP), which now includes the former Transportation Alternatives Program (TAP). The increased STBGP is very good news for the Metropolitan Planning Organization (MPO) as 50% of the funding is reserved for metropolitan areas with populations of 200,000 or higher. This percent increases to 55% over the course of the Act’s 5 year life which is equivalent to roughly $6 billion. The STBGP allocations to large municipalities is shifting the funds away from state control for appropriation.

In the context of pavements, which is my primary focus area, the bill will provide some boost in the extent of paving. This is partly due to the known funding status for state agencies to plan projects into the future, and partly
Public Works

there flood days, tornado days, or hurricane days. When such disasters come, public works must be out there first, clearing roads, building dikes, and helping other first responders get to where people need help. So to keep our infrastructure working and serving it is appropriate that we take a lead when it comes to planning and dealing with weather.

Recent emphasis on planning and building infrastructure to deal with sea level rising has brought some attention to the public works field. But again, these large-scale events overshadow the fact that nearly everything we do is in some way impacted by weather and weather events.

The Range of Weather Impacts

If we stop for a moment and think about the technical areas that APWA members are involved with (refer to Table 1), we can get a grasp of all the considerations that are given to weather events. Each of the Technical Committees has weather-related matters to deal with—whether it is specifying equipment that can function in below-freezing blizzards, developing stormwater handling systems that can protect neighborhoods from floods, or disposing of debris after a tornado or hurricane has come through our community.

Some of the weather impacts we deal with are obvious. We know it becomes problematic when it is raining, whether we can continue with many of our construction activities. We also know it is not possible to do excavation or mass grading, or place concrete, or asphalt unless weather is dry and temperatures are within specific ranges.

During some types of weather it is difficult to build, and sometimes, even after a condition stops, lingering effects make work difficult if not impossible for us. We must wait for ground to dry out before we can go ahead with excavation or mass grading. If the air and soil temperatures are too cold some work can be delayed because concrete does not cure fast enough, or we need to spend more money on additives or insulated blankets. Even when we can manage to get our paving and earthwork done, we often need special timing provisions for our projects to be able to establish ground cover and turf, or to plant trees and other materials that are an integral part of so many projects.

Knowing About Weather

Clearly because public works infrastructure and weather are so closely tied a successful public works professional needs a formal background in climate and weather. We need to have enough knowledge of climate and weather to make the best decisions possible, whether it is when to call out a winter maintenance crew, or when to call a seasonal halt to placing concrete for sidewalks, or if trees should be planted to complete a project.

That knowledge needs to transcend the “old wives tales” most of us have known about or have heard. We need as a profession to have a background in climate and weather that recognizes the science in the topic as well as the science in public works.

Sustainability

More and more, we work to plan, build, and preserve sustainable infrastructure. This means in its most basic form, to build in a way that acknowledges the earth, its climate and weather, as well as its soils and resources. It also means using them in a way that preserves the integrity of the entire system in which they reside.

Much like planting crops, we must build infrastructure by working in harmony with nature. To do otherwise means to fight climate and weather, and when we try to fight climate and weather it means increased costs. We must learn to nurture and maintain our infrastructure so that it can serve the community, not unlike how farmers nurture and renew the soil and the environment in which they work so that it can produce crops and goods for many years.

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During some types of weather it is difficult to build, and sometimes, even after a condition stops, lingering effects make work difficult if not impossible for us. We must wait

Table 1.

<table>
<thead>
<tr>
<th>Technical Area of Interest</th>
<th>Some Weather Related Considerations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emergency Management</td>
<td>Large scale storms, drought, floods</td>
</tr>
<tr>
<td>Engineering &amp; Technology</td>
<td>Salt use and contamination. Construction temperature considerations, material durability</td>
</tr>
<tr>
<td>Facility &amp; Grounds</td>
<td>Construction means and methods, scheduling</td>
</tr>
<tr>
<td>Fleet Services</td>
<td>Equipment specifications, availability</td>
</tr>
<tr>
<td>Leadership &amp; Management</td>
<td>Workforce training safety, staff availability, skills</td>
</tr>
<tr>
<td>Solid Waste Management</td>
<td>Clean-up and disposal of debris</td>
</tr>
<tr>
<td>Transportation</td>
<td>Traveler safety, system integrity, system repair</td>
</tr>
<tr>
<td>Water Resources Management</td>
<td>Flooding, water damage to infrastructure</td>
</tr>
<tr>
<td>Utility &amp; Public Right of Way</td>
<td>System repair and integrity, contamination, emergency water supply</td>
</tr>
</tbody>
</table>

Yet nearly every act of nurturing in public works is based on the rhythms established by climate and weather:

- We plow snow and salt streets from November to March
- We sweep streets from April to October
- We crack fill when pavement temperatures make cracks open to an optimal width

Continue to page 10
FHWA has established five new regional centers to help develop, recruit, and retain a highly effective transportation workforce, especially crucial given so many baby boomer retirements.

For the U.S. transportation community to deliver and manage an efficient, safe, and effective transportation system, it must have a highly capable workforce. Public and private transportation organizations are facing numerous workforce challenges, including an increasing number of workers preparing for retirement; new technology, procedures, and processes; competing demand for workers in other industries; aging transportation infrastructure in need of repair or modernization; increasing demand for transportation capacity; and constrained resources. To address critical issues in workforce recruitment, training, and retention, a number of key stakeholders must come together in a coordinated effort.

“The ability to modernize and improve the efficiency of the Nation’s surface transportation network in today’s global marketplace requires a skilled and innovative workforce,” says Pete Ruane, president and CEO of the American Road & Transportation Builders Association. “We will rely on this workforce to properly build and manage long-overdue repairs and projects that add transportation capacity.”

The solution in a nutshell? In 2014, the Federal Highway Administration established five new regional centers focused on workforce development.

**Workforce Challenges**

More than 50 percent of the transportation workforce will be eligible to retire in 10 years. This will create not only a significant loss of specialized knowledge and experience, but also a need to train a new generation of young workers and leaders. New professionals will have to enter transportation from other fields, and younger skilled workers already in the field will have to fill openings left by their experienced, retiring predecessors.

In addition to a high rate of retirement and vacancies in this field, emerging technologies are changing the knowledge base and skill requirements for future workers. More complex operating systems require skilled high-tech operators. New technological competencies are essential to foster the rapid increase in innovation in transportation planning, development, and system management.

Given these challenges, transportation, education, and labor organizations share common workforce concerns: Will the next generation of transportation workers be prepared to develop, design, construct, operate, and manage the Nation’s transportation system in the face of increasing transportation demand? Does the current transportation workforce have the skills, knowledge, and ability to be efficient in their work, including understanding changing..

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**CONNECTING THE EMPLOYMENT DOTS**

by Clark Martin

FHWA Public Roads, Nov/Dec 2015, Vol. 79, No. 3

These workers are using accelerated bridge construction techniques to install an innovative, post-tensioned, precast concrete panel on a concrete girder in Minnesota. Properly maintaining and improving the Nation’s transportation system requires a highly skilled workforce.

“We must ensure that they (workforce) are well equipped in using changing technology and have the knowledge and skills to compete in a global economy.”

~Johan Uvin, US. Dept. of Education

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Winter 2016
Public Works

- We plant trees and turf in the spring and fall
- We dig sewer trenches in the dry season, and
- Chip and seal in the warmest season

Everyone who wants to be successful in the public works profession needs to learn the rhythms of the seasons. The rhythms of our work are set to a great extent by nature and at many levels:

- Cosmic level rhythms bring cycles of hundreds, thousands, tens of thousands or even more years.
- Solar cycles, for example related to sunspots, bring cycles with multiyear lengths that build or dampen annual/seasonal events.
- Annual cycles, as the earth rotates around the sun, bring the seasons and set some of our major schedules for us, and
- Daily cycles, that bring temperatures up and down as the Earth turns, drive pressure patterns and make weather that we must deal with on a local basis every day.

Together, drivers at all these levels make weather different every day, and this is what makes public works so unique, because we must deal with this change every day.

As we work on our streets and sewers, parking lots, treatment operations, and other infrastructure we are responsible for, we need to keep in mind how important a relationship we have with climate and weather. More important we need to understand that our relationship with climate and weather is not restricted to growing seasons, but is a 24-hour, 365-day-a-year relationship.

Using Weather Knowledge

We need to know more about climate and weather than has been handed down to us through old wives tales and memories of the “big one in ’57.” We need to incorporate modern science of climate and weather into our planning and operations. By doing so we can take weather information that is given to us by forecasters and translate it into practices that make our work more efficient and timely.

We also need to make use of weather information as it becomes available to us, not only during severe conditions, but every day. How weather affects our workers and equipment makes a difference in their productivity and well-being. It also makes a difference to the quality of the work that we produce.

We need to be active users of weather data and information, so we can manage our infrastructure in the way that is most beneficial to our communities and the people in our communities.

Dennis Randolph, P.E., PTOE, PWLF
Director of Public Works, City of Grandview, Missouri
Chair, APWA Engineering and Technology Committee
Randolph was selected as one of APWA’s 2015 Top Ten Public Works Leaders of the Year. He can be reached at (816) 316-4855 or drand77201@att.net.

Reprinted with permission from the APWA Reporter, June 2015, Vol. 82, No. 6.

FAST Act

Continued from page 7

due to sustained spending levels for highway improvement projects. The performance standards established under MAP-21 have been retained. The $12 million per year funding for Accelerated Implementation and Deployment of Pavement Technologies (AID-PT) has been reauthorized. The FAST Act also provides examples of innovative pavement technologies that would be eligible for 100% federal cost share. These include alternative bidding and pavement technology that has a lifecycle of 75 years, manufactured in a low greenhouse gas producing manner, and cures rapidly.

In summary, the FAST Act will provide a much needed boost to the surface transportation infrastructure in New Hampshire and other states. While there is a moderate increase in funding compared to MAP-21 (primarily due to $70 billion in general fund transfers to the highway trust fund), the ability for agencies to plan for the future due to known funding amounts has greater benefits, and it is anticipated that this will increase construction activity.
Employment

policies and programs and using new technology? Is the current and future workforce equipped to provide for a transportation system that will help ensure that the Nation can compete in increasingly competitive international markets?

“To address the workforce needs of a wide range of employees in the 21st century,” says Acting Assistant Secretary Johan Uvin of the Office of Career, Technical, and Adult Education at the U.S. Department of Education, “we must ensure that they are well equipped in using changing technology and have the knowledge and skills to compete in a global economy.”

To do so, transportation, education, and labor organizations must coordinate and leverage their workforce development resources effectively.

Workforce Development

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Workforce Development

“Transportation is a high-demand industry that provides excellent opportunities for good jobs with good wages,” says Eric Seleznov, deputy assistant secretary, Employment and Training Administration, U.S. Department of Labor. Workforce development programs must ensure that the public is aware of those opportunities.

Education and industry need to work together to support career pathways for current and future transportation workers. Pathways into the field vary. Some start when exposure to transportation studies in school piques a student’s interest, or when an entry-level professional decides to take a transportation job, or when experienced workers realize that they can apply their current knowledge, skills, and abilities somewhat differently within the transportation sector and so transition into that branch of the field. Transportation workers—engineers, planners, traffic technicians, logistics professionals, commercial drivers, equipment operators, and others—who design, build, manage, and maintain the Nation’s highways, ports, and intermodal facilities have specific skills and therefore require specific training and education.

Thus far, public and private organizations have struggled to understand and address the needs of transportation workforce development in a structured manner that fits within existing programs. This issue is mostly due to the lack of an integrated, strategic plan and related tools among isolated transportation, education, and labor programs.

The first step in building a cohesive strategy is to consider the workforce development continuum, which starts with outreach to increase awareness of the transportation field and the development of skills during K−12 education. Next in the continuum is early career preparation and technical training at the college level, and then ongoing professional development maintained during employment. In addition, some workers retire from career positions and then are rehired in the transportation industry after retirement.

Building and raising career awareness. Building awareness and interest in transportation careers starts in school. Workforce programs can develop targeted outreach efforts in collaboration with K−12 schools, community colleges, and universities to encourage careers in transportation. Educational institutions can focus on building competencies to enable future workers to enter transportation careers better prepared, or to help current workers perform with greater effectiveness and efficiency.

For community college and university students transitioning from the classroom to the workforce, educators should collaborate with public and private stakeholders to match curricula with the needs of the transportation industry and to increase the portability of transportation degrees, skills, and experience. Educators and employers also should expand the transportation workforce’s access to post-secondary education.

Retention and continuing education. Once workers are recruited into the field, employers can take several steps to increase retention, such as offering incentives and benefits programs, recognizing good performance, encouraging a healthy work-life balance, and providing opportunities for advancement. Employers also can help their workforce adapt to technological advances in the industry by providing training and opportunities for professional development. They can plan for succession in the workforce through leadership development programs and performance management practices, such as annual performance appraisals, individual development plans, cross-training, and continuous communication between supervisors and employees.

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Regional Transportation Workforce Centers

Northeast Transportation Workforce Center
University of Vermont
Glenn McRae, Director
glenn.mcrae@uvm.edu
www.netwc.net
Focus areas: Disadvantaged youth, climate change, alternate fuels, and community colleges.

Southeast Transportation Workforce Center
University of Memphis
Stephanie Ivey, Director
ssalyers@memphis.edu
www.memphis.edu/setwc
Region: Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee, Virginia, West Virginia, and Puerto Rico.
Focus areas: Women in transportation, freight (including rail, truck, warehousing, and logistics), and military/veteran transition to the workforce.

Midwest Transportation Workforce Center
University of Wisconsin–Madison
Teresa Adams, Director
adams@engr.wisc.edu
http://mtwc.org
Region: Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Ohio, and Wisconsin.
Focus areas: Infrastructure, construction, planning, inland waterways, sustainability and environment, STEM (science, technology, engineering, and mathematics), and stackable credentials, which an individual accumulates over time to build his or her qualifications.

Southwest Transportation Workforce Center
California State University, Long Beach
Tom O’Brien, Director
thomas.obrien@csulb.edu
www.ccpe.csulb.edu/SWTWC
Region: Arizona, California, Colorado, Nevada, New Mexico, Oklahoma, Texas, and Utah.
Focus areas: Gateways and corridors, non-native English speakers, portability of skills, traffic management, and intelligent transportation systems.

West Transportation Workforce Center
Montana State University
Steve Albert, Director
stevea@coe.montana.edu
Focus areas: Rural transportation and safety, mobility and livability, tribes, and Federal lands.

In collaboration with the U.S. Departments of Labor and Education, FHWA has established five regional transportation workforce centers to enhance transportation workforce development more strategically and efficiently. These five regional centers collaborate to form a national network for sharing workforce strategies and promising practices.

The centers, which are managed at universities selected through a competitive award process, help connect jobs with transportation needs. They create, coordinate, and facilitate partnerships with State departments of transportation and education, industry, and other public and private stakeholders to enhance transportation workforce development throughout the education continuum. The centers facilitate activities in Grades 6 through 12, and training in technical schools and community colleges, universities, and post-graduate programs, as well as professional development services for incumbent transportation workers.

“FHWA has made strategic investments to advance transportation workforce development,” says Glenn McRae, director of the Northeast Transportation Workforce Center, one of the five centers. “Those investments are working, but in isolated ways. I think we have an opportunity to pool resources across sectors and industries to create a one-stop shop for workforce development.”

The centers serve employers in the transportation sector, as well as individuals who would like to either enter the field or advance an established career. They also serve supporting education and labor organizations that recruit and direct people to the right resources.
Employment

“If you’re in the transportation industry and want to be more involved in workforce development,” says Teresa Adams, director of the Midwest Transportation Workforce Center, “or an educator who needs materials to help introduce transportation in your courses, or a student who wants to learn more about transportation careers, contact us.”

The centers also will take inventory of existing transportation workforce development programs, stakeholders, educators, and employers in each region, and then form a supportive network of resources across the Nation. This inventory will involve identifying regional transportation job needs and priorities, cataloging existing workforce development and educational programs, and evaluating existing programs for scale and replication. The inventory also will involve pinpointing educational and training gaps, developing resources to bridge identified gaps, and fully engaging in the national network to showcase successful programs and practices, and to increase the impact in each region.

“The mission is really to act as a broker,” says Steve Albert, director of the West Transportation Workforce Center. “We want to bring organizations together to add value to their workforce development programs through greater coordination and collaboration across the transportation, education, and labor communities.”

Workforce Focus Areas

To understand and address the needs of a broad and varied transportation workforce, each center has chosen focus areas for which it will identify key organizations, issues, programs and activities, challenges, and best practices, and will serve as a resource for other centers and stakeholders. Each center selected its focus areas based on specific research concentrations at its host university, the particular interests and expertise of its director and staff, and priority workforce areas defined by FHWA.

For example, the Southeast Transportation Workforce Center is focusing on women in transportation, freight, and military veterans’ transitions to the workforce. These subject areas are well suited for the center’s director and staff. Director Stephanie Ivey is also director of the Center for Advancement of Female Transportation Professionals and program director for the University of Memphis, Herff College of Engineering’s targeted outreach programs—Girls Experiencing Engineering and Transportation Engineering Careers. The center’s research and data coordinator, Annie Wise Rapalo, also helps coordinate the Girls Experiencing Engineering program, and she is the organizational leader of the Society of Female Transportation Professionals in the Memphis, TN, area. The focus on freight is appropriate for both Private Sector Coordinator Dan Pallme and Public Sector Coordinator Sean Ellis, who serve as the current director and associate director, respectively, of the Intermodal Freight Transportation Institute at the University of Memphis.

The focus on veterans’ transition to the workforce is particularly important as soldiers conclude their military service and return to the civilian workforce. Some transportation jobs in the military, such as heavy vehicle operation, logistics, and distribution jobs, relate well to similar jobs in civilian transportation. The southeast center will provide resources to help facilitate these transitions.

Looking Ahead

The transportation workforce is as varied, diverse, and complex as the transportation system itself. Transportation workers include planners, engineers, environmental specialists, safety practitioners, traffic operations managers, heavy equipment operators, financial specialists, technicians, and others in hundreds of occupations, all with varied skills, abilities, and levels of training and education. These workers serve public and private organizations, large and small, at the national, State, and local levels. They abide by specific policies and regulations, using technology and processes that may vary from one organization to the next.

Each of the more than 12.5 million transportation workers entered the field due to a unique set of experiences. All contribute to the efficiency, effectiveness, and safety of the U.S. transportation system, which facilitates a strong economy through access to goods and services and builds healthy communities through access to jobs and recreation.

Developing and maintaining an effective transportation workforce requires a coordinated effort by the transportation, education, and labor communities. Members...
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The 2016 Snow Conference in Hartford will bring together more than 1,500 snowfighters from every corner of the winter maintenance community. Public, private, rural, metropolitan, domestic, international – they’re all sure to be there at the Show for Snow! The 2016 Conference features an exhibit floor packed with the newest equipment and products, quality education programs and technical tours, and opportunities to exchange ideas with manufacturers, distributors, consultants and other public works professionals. Its four days of winter training and networking you can’t afford to miss out on!

For attendees the 2016 Snow Conference has it all – from expert-led snow and ice education sessions to an exhibit floor full of excited vendors who can’t wait to show you the latest winter maintenance solutions your community’s been looking for. Make plans today to join your peers in Hartford for the Show for Snow in 2016.

Clark Martin is team leader of affiliate programs in FHWA’s Office of Technical Services and FHWA manager of the Regional Transportation Workforce Centers.

For more information, visit the Regional Transportation Workforce Center Web sites or contact Clark Martin at 703-235-0547 or clark.martin@dot.gov.

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of these communities are encouraged to contact their regional workforce center to engage in efforts to help build a strong workforce now and in the years to come.

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For more information, visit the Regional Transportation Workforce Center Web sites or contact Clark Martin at 703-235-0547 or clark.martin@dot.gov.
Need some support? We offer Technical Assistance and Safety Audits to New Hampshire’s Municipal Highway departments. Contact the T2 Center at 603-862-2826 or t2.center@unh.edu.

The T2 Center has available these most current FHWA manuals:

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