The Nature Conservancy (TNC) in New Hampshire is studying culverts, dams, bridges and other road-stream crossings in the Ashuelot River watershed in southwestern NH. Their goal is to learn how road-stream crossings influence wildlife movements along and in the river.

Wildlife need access to the watershed to reproduce, feed, and survive. Some culverts allow free flow of water, fish, mussels, salamanders and other species, while other culverts become obstructions. A brook trout, for instance, can’t always navigate a 12-inch drop at the outlet of culvert.

There are more than 1,000 road-stream crossings throughout the Ashuelot watershed. With help from the Ashuelot Valley Environmental Observatory, the Conservancy has closely examined most of them. TNC hopes to provide information about as many of these crossings as possible including those that fragment only small streams. They plan to make their study available to municipalities who wish to schedule their bridge and road maintenance to positively affect wildlife.

“When complete, the study will enable TNC, the state, and local communities to understand where the biggest impediments to fish passage and river continuity in the Ashuelot are and to prioritize structures for improvement and river restoration,” said Mark Zankel, director of conservation programs for TNC. “Planners and decision-makers crave this kind of detailed, site-specific information, presented in a watershed context, so they can better target limited environmental enhancement funds to have the biggest beneficial impact on the river and its biodiversity.”

The Nature Conservancy will provide municipalities in the Ashuelot watershed with a copy of the report. For more information, please contact Eric Aldrich or Doug Bechtel at TNC: 224-5853

by Chris Bourque, Project Assistant

References:

“Why did the fish cross the road?” Special Places Conference. Doug Bechtel. Director of Conservative Science. The Nature Conservancy. 4/14/07

Master Roads Scholar – Michael Chase

Michael Chase is the operations manager in the town of Hanover. He was hired 24 years ago to run line maintenance and construction with the town’s waste water program. From there, Michael along with other crew members were moved to the Hanover Public Works Department.

Michael hopes to continue to take classes. He says that the Roads Scholar Program offers many good courses.

Master Roads Scholar – David Cook

David Cook is a road agent in Mason. He was hired 10 years ago. Previously, he worked at the Brookline Highway Department for 16 years. He is also the Mason Fire Chief.

David will continue to take classes because of his love for learning and his commitment to his job. He says, “You are never too old to learn.”

David has been married for 25 years.

Master Roads Scholar – Gordon Ellis

Gordon Ellis is the road agent in Epsom. He has been the road agent for more than three years. He became involved with Public Works when working for contractors. When the road agents position became available, in Epsom, he jumped at the opportunity.

Even as a Master Roads Scholar, Gordon plans to continue to take classes. He feels there is something to learn from every class, not only from the instructors but also from other students. He values the different opinions of people and learning new ways to look at issues.

Gordon has lived in Epsom most of his life and has family in town. Although he spends a lot of time dedicated to his job, he enjoys getting involved with his children’s sports and education.
Master Roads Scholar – Robert Hebert

Robert Hebert is a foreman at the New Hampshire Department of Transportation (NHDOT). He has worked with the NHDOT for eight years. Robert expects to continue to take classes to gain knowledge. He said that the Roads Scholar program has taught him new and helpful ways to work.

Master Roads Scholar – Dan Lavoie

Dan Lavoie is the street repair and permits coordinator for the city of Nashua. He began working for the city 25 years ago in service and maintenance. Dan plans to continue to take classes because he values the training, experience, and knowledge that he acquires from the Roads Scholar program. Dan and his wife, Carol, have two children in college, Shawn and Allison. Dan is a motorcycle enthusiast and owns a couple Harley Davidsons.

Master Roads Scholar – Mike O’Neill

Mike O’Neill worked as a Highway Maintainer II for NHDOT Turnpikes for five years. He began taking UNH T² classes then. Mike says that he is very impressed with the program. He values the classes because they are interesting, new, and different. He says he will continue taking classes for as long as he can because he always learns something relevant. Mike is a musician and plays the drums for a local punk rock band.

Master Roads Scholar – Dennis Patnoe

Dennis Patnoe is a supervisor at the Lancaster Transfer Station. He was hired 10 years ago.

Dennis intends to further his education through the Roads Scholar program because of the good experiences he has had. He says he was particularly fond of the Ethics and Permits classes. Dennis has been married to Connie for 34 years and they have three children. They have one grandchild and are expecting another soon. Dennis enjoys the outdoors and often hunts and fishes.
Roadside mowing is necessary to keep the clear zone visible for drivers. However, roadside mowing puts crews in danger of moving traffic. This article will explore ways to improve the safety of crews performing roadside maintenance.

**Consider the Clear Zone**

Before starting, it is good public relations practice to leave a tidy workplace behind.

Control vegetation limiting sight distance to critical signs and at intersecting roadways. Trim branches, with the cooperation of landowners.

Mowing is vital, tall grass prevents drivers from gauging the potential for conflict at driveways and intersections and limits their estimation of curve severity. Here are some mowing tips:

- Mow consistently.
- Time roadside mowing to growth cycles and weather. In hot and dry weather, grass grows more slowly. Cutting it too short and/or too often exposes roots and soil to direct sun, causing them to dry out. Don't mow in wet conditions.
- On slopes that rise or fall one foot or less, in 2.5 feet of horizontal distance, consider mowing 15 feet beyond the pavement edge.
- Mow, to blend the maintained roadside with natural or planted vegetation.
- On slopes, use a side-mounted unit. Mow one swath beyond the point where the slope becomes steeper than one foot in two and a half feet. Mow two, four, five, or eight feet behind guardrail. These distances are based on how far the guard rail types deflect when hit by a car.

**Mowing Safely**

On slopes that rise or fall away less than one foot in two and a half feet of horizontal distance, use a side-mounted mower or a boom, keep the tractor unit. Operate side-mounted or boom mower units on the uphill side of the tractor, to reduce the possibility of overturning the tractor.

Before starting the mower, check the chain guard and mower. These prevent debris from being thrown. Immediately replace broken or missing debris guards. Cover all v-belts, drive chains, and power take-off shafts.

Raise mowers when crossing driveways and roadways.

Block the mower wheels before changing or sharpening a blade. Check blades for cracks or damage.

When mowing, face on-coming traffic whenever possible to watch for out-of-control vehicles.

Wear a hard hat and safety goggles to provide protection against branches and flying debris. Wear leather gloves and boots with steel toes and hard soles.

**Traffic Control**

Mowing is a moving operation that occurs on roadside. It does not always move steadily in one direction, sometimes the mower must double back to mow wide areas. Mowing requires different traffic control than other maintenance operations.

The most important traffic control (and safety) tool is to make the mower highly visible. Place a *Slow Moving Vehicle* sign (reflective triangle) on the rear of the tractor. Use rotating yellow beacons on tractors and yellow flashers on the roll bar or top of the tractor cab. Operate these at all times. Install an orange pennant on a whip to show the location of continued on page 11
Collecting Roadway Assets for Local Agencies
“A new approach”

Technology for bridge and pavement systems has advanced for both state and municipal governments, however, roadway asset inventories have not kept pace.

The Federal Highway Administration’s report “Roadway Safety Hardware Asset Management Systems Case Studies,” FHWA-HRT-05-073 identifies several reasons for delayed development and adoption of inventory systems. They include:

- **Time:** Geographical Positioning Systems (GPS) equipment is available to locate assets but is slow to acquire data. For small systems, this may not be an issue. For larger systems, an inventory with GPS may take more than a few days. (Some GPS systems can take up to 10 minutes to acquire an accurate reading).

- **Data:** The amount and accuracy of data necessary per asset can be overwhelming and unnecessary. A minimum data standard for each asset is critical. Overly accurate and/or too much data is tedious to collect, update and maintain, and may be overwhelming to analyze. (For example, 40-50 attributes can be collected for road management, while 12 may be all that is necessary to manage the asset).

- **Cost:** Labor to inventory a large system is expensive, as can be the hardware and software.

There are additional issues at the local level. For example: local based maps are not always accurate and not always up to date.

UNH T² Center conducted a drainage study sponsored by the National Oceanographic and Atmospheric Administration. One purpose was to create an easy to implement data collection system. It allows municipalities to collect drainage infrastructure data accurately and rapidly using a combination of aerial photographs and GIS base maps.

The software places an asset on screen by pointing and clicking (see Road Business, Summer 2006 for a complete description). GPS assists to center maps on screen but not to locate assets. The placement accuracy using this approach was +/- 3 ft.. Logging each asset took on average 45 seconds. Since then, the UNH T² Center has partnered with a software company to create GIS compatible municipal software. A data collection platform (PWS Tracker) is now available. A free 30 day trial demo may be downloaded www.pws-solutions.com.

It sells for $145, the yearly subscription fee is $70. The program may be installed on multiple municipal computers. User fees include software, access to an online user forum, and a data storage site. Free aerial NH maps are also available on this storage site. A suite of software modules are forthcoming. They include:

- **PWS Drains:** A drainage asset module.
- **RSMS:** Road Surface Management System, based on previous RSMS. It includes many new features.
- **Signs:** Based on the previous SIMS, with many new features.
- **Road Safety Audits:** a project level road safety audit program using FHWA’s guidelines.

Daylight readable tablets are recommended. Of the tablets tested, the Lenovo x60 was most favorable. They are available pre-configured and loaded with PWS at a discounted rate for municipal users. See www.pws-solutions.com for more information.
Advice for Leading Multiple Generations

For the first time in US history, four generations with distinctly different sets of values are in the workplace. What are the management and leadership implications for this?

For “veterans” now nearing retirement age, Tom DeCoste says, executive director of the American Association of State Highway and Transportation Officials (AASHTO) Leadership Institute, managers should reinforce organizational rules and provide a clear sense of direction.

- To lead baby boomers, managers need to make decisions through consensus and offer socialization opportunities.
- Generation Xers prefer to work independently and are skeptical of management and their motives.
- Those in Generation Y—today’s youngest workers—need supervision and structure. The most critical message for transportation managers dealing with Gen Y, is that this generation seeks a higher purpose in their work life.

Overall, DeCoster advises, managers should not expect generational values to change over time. No one has better values—they only have different values. And finally, he says, “no generation is genetically impeded from being productive.”

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<td></td>
<td>Value chain of command, structure, discipline.</td>
<td>Like fair and level playing field, seniority.</td>
<td>Self reliant and skeptical.</td>
<td>Positive expectations and work and life.</td>
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<td>Polite, respectful.</td>
<td>Geared toward securing promotions.</td>
<td>Lifestyle balance is critical.</td>
<td>Comfortable with diversity.</td>
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<td>Appreciate tradition, history.</td>
<td>Teamwork orientated.</td>
<td>Nontraditional orientation to time and work location.</td>
<td>Can do whatever you want to.</td>
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<td>Believe in logic, not magic.</td>
<td>See themselves as “stars.”</td>
<td>Prefer informality in work location.</td>
<td>Comfortable with team process.</td>
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<td></td>
<td>No news is good news.</td>
<td>Money, title, corner office.</td>
<td>Prefer to work independently.</td>
<td>Optimistic.</td>
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<td></td>
<td>Hardworking on all assignments.</td>
<td>Experienced with chain of command.</td>
<td>Suspicous of management.</td>
<td>Comfortable with multitasking.</td>
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<td></td>
<td>Reluctant to challenge management.</td>
<td>Very sensitive to performance feedback.</td>
<td>Attach little value to networking.</td>
<td>Need supervision and structure.</td>
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<td>Work first, pleasure later.</td>
<td>Ignore personal conflict.</td>
<td>Impatient with non-performers and lack of progress.</td>
<td>Avoid “difficult people” work environments.</td>
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<td>Like the personal touch and respect.</td>
<td>Believe in magic of leadership.</td>
<td>Prefer projects over recurring work.</td>
<td>Life a “you can be a hero” work environment.</td>
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Source: “Advice for Leading Multiple Generations” LTAP Exchange, Fall 2006, p. 4
Introduction

The Americans with Disabilities Act (ADA) was designed to stop discrimination on the basis of disability in four areas. These areas are:
1. Employment,
2. Public Services (and Public Transportation),
3. Public Accommodations (and Commercial Facilities), and
4. Telecommunications.

ADA aims to remove barriers that obstruct disabled people from their civil right of accessibility to public areas and facilities. This includes providing accessibility to sidewalks through the use of curb ramps and taking measures to provide the visually impaired with indicators of boundaries between the road and sidewalks with truncated domes.

The 1990 law, applies to programs, activities, and services provided by public entities. A public entity is defined as any state, local government, or any department, agency, special purpose district, or other instrumentality of a state or local government. The ADA requires public entities, with more than 50 employees, who are responsible or have authority over streets, roads, or walkways to create a transition plan to prioritize and provide for accessibility. The need to provide pedestrian facilities falls into one of three categories:
1. Agencies must establish pedestrian ways in all new construction or reconstruction projects.
2. Public agencies are not required to provide pedestrian facilities. However, if they exist, then they must be accessible.
3. Access is not required where pedestrians are prohibited (by law) to use the roadway, or the cost is infeasible, or no need exists for a sidewalk because few people will use it.

Local governments who have failed to comply with ADA regulations have been successfully sued. Providing accessibility is a personal, social, and professional responsibility.
Why Compliance is Important

Many believe that compliance with ADA is not necessary as only a small number of persons require access to their facilities. This is untrue as more than 70% of the U.S. population will experience a permanent or temporary disability. Today, 20% of Americans over the age of 15 are disabled. This is reflected by our aging population. They wish to maintain their mobility by utilizing wheelchairs, motorized scooters, walkers, and other means of assisted transportation.

Agencies may believe that they should not have to provide accessibility for the disabled at their own expense since the ADA is an unfunded mandate. The US Supreme Court has widely rejected any form of discrimination in the United States.

How to Comply

ADA provisions require compliance on any and all new public construction. Improvements that alter the roadway must include the installation of accessible curb ramps. Projects that change either
• structure,
• grade,
• function, and/or
• use of the roadway
are considered alterations. These include projects such as
• pavement resurfacing,
• pavement grinding, and
• micro-surface overlays.
They do not include maintenance (spot patching, re-striping existing markings, or thin coat sealing).

The federal government acknowledges that many public agencies have limited budgets. Agencies are expected to have a transition plan to accomplish and prioritize ADA requirements. The transition plan becomes a commitment to achieve accessibility to existing facilities when they require structural changes.

Don't install a new curb without truncated domes.

Transition plans for building access may be prioritized by the necessity of public entrance to high priority building such as: court houses, town/city halls, schools, and hospitals. These require adaptation to the guidelines immediately. Stores, malls, parks and other recreational facilities are considered medium to low priority and should adopt a transition plan to meet the ADA regulations within a few years.

Sidewalks

The American Disability Act Accessibility Guidelines (ADAAG) defines many design controls for accessibility standards in sidewalks. These include specifications of:
• Alignment,
• Width,
• Grade Changes,
• Profile Slope, and/or
• Cross Slope.

Sidewalks must be free of obstacles that may pose a tripping hazard or force pedestrians into the roadway such as utility poles, trees, lights, signs, signals, and mailboxes. Agencies must remove these from the sidewalk or create a path around them.

Sidewalk recommendations are 48 inches wide with a 60 inch passing zone every 200 feet. A sidewalk may not have a cross (side) slope greater than 2% (50:1), or a profile (longitudinal) slope greater than 5% (20:1). The profile grade may follow the slope of the adjacent roadway.
Sidewalks must be of a smooth, firm, stable, and slip resistant material such as concrete or asphalt and visually contrast the road. Sidewalks must be well maintained to prevent roughness.

Driveway entrances must not have a cross slope greater than 2%.

Where crosswalk signals exist, there must be a level pad at least 36 inches long and 48 inches wide (recommended 48 x 48) to accommodate wheelchair users. It allows them to turn and change direction on the pad.

- Drops from sidewalk to roadway of \( \frac{1}{4} \) inch are allowed to be vertical without treatment.
- Drops between \( \frac{1}{4} \) and \( \frac{1}{2} \) inch must be beveled with a maximum grade of 50%.
- Drops greater than \( \frac{1}{2} \) inch require a curb ramp for accessibility at all intersections and designated crossings.

**Curb Ramps**

Curb ramp grades are not to exceed 12:1 (8.33%). Curb ramps must include a warning detectable by the visually impaired. The ADA mandates that these detectable warnings must be truncated domes and span the entire curb ramp. The New Hampshire Department of Transportations (NHDOT) is currently using cast iron domes to reduce damage due to rust and plows.

**Public Buildings**

Entrances to public buildings must be part of an accessible route connected to:

- parking lots,
- public transportation stops, and
- public roads and sidewalks.

Regulations to provide accessible water fountains, restrooms/stalls, handrails, public showers, and light switches are online. [http://www.access-board.gov/adaag/html/adaag.htm#DETENTION](http://www.access-board.gov/adaag/html/adaag.htm#DETENTION).

Regulations are prioritized as follows:
1. Accessible entrance into the facility,
2. Access to goods and services,
3. Access to restrooms, and
4. Any other measures necessary.

Public buildings, particularly courthouses and town halls, with multiple floors and publicly accessed MUST have an elevator. This is an immediate mandate rather than a project to include a transition plan.

**Transition Plans**

Transition plans are a budget-conscious method to meet the ADA requirements. (See the Code of Federal Regulations (28 CFR Part 35)). They must involve the public and shall be available for public inspection.

When public entities have authority over streets, roads, or walkways, the plan must involve a schedule to install accessible curb ramps. Transition plans should:

1. Identify physical obstacles in the public entity’s facilities limiting the accessibility of its programs or activities to individuals with disabilities.
2. Describe in detail how the facility will be made accessible.
3. Specify a schedule to take the steps towards compliance. When the plan is longer than one year, it must identify the steps that will be taken during each year of the plan.
4. Indicate the official responsible for plan implementation.

It is the public agency’s responsibility to routinely maintain all accessibility measures. This includes maintaining the quality of the measures as well as day-to-day maintenance such as debris removals, maintenance of accessible pedestrian walkways in work zones, and clearing snow from walkways.

The FHWA is responsible to ensure that all public agencies comply with the ADAAG. They are also responsible to ensure compliance in projects receiving funding from FHWA. Even if they are not in the public right-of-way. This includes parking lots, information centers, buildings, shared use paths, and trails.

An on-line toolkit from the Department of Justice identifies barriers to accessibility and methods to remove barriers: http://www.usdoj.gov/crt/ada/pca toolkit/abouttoolkit.htm

Cost and Feasibility Restraints

The ADAAG states that features within a facility under alteration shall be made accessible as part of the project’s scope. When conformity is technically infeasible, the project need not comply. Technical infeasibility means that conforming might require moving or altering a load-bearing member. Such cases are still required to provide accessibility to the maximum extent possible and are subject to inspection.

Cost cannot be a factor to comply according to ADAAG standards. Public agencies must bear the full cost of improvements. Again, projects are exempt if technically infeasible or if the improvement is “unduly burdensome.” Consider whether stand-alone projects should be undertaken as part of a transition plan. A public agency may wait on a stand-alone accessibility improvement until it fits into their budget or there is an improvement project which would require an alteration.

Left: An inaccessible entrance to a public building. When rehabilitating this building compliance is necessary.

Unduly burdensome projects are determined by the proportion of the improvement’s cost compared to the agency’s budget.

Some federal funding sources may be used to comply with ADA depending on the project. A full list of sources of funding that may be used for compliance is available at http://www.fhwa.dot.gov/civilrights/ada_qa.htm

Reference:
According to a 2003 study, the National Highway Traffic Safety Administration identified about 539,000 lane change crashes in 1999. Of these, more than 200,000 were “typical lane changes.” The majority involve drivers who did not see the other vehicle.

Drivers can shrink the size of the blind zone by adjusting the rear and side view mirrors. This approach was devised by George Platzer, a specialist in rear-view mirror design.

Drawing A illustrates what a driver sees when outside mirrors are set so that the sides of the car are just visible. The blind zones are big enough to hide a vehicle so the driver must turn and look into the blind zones when changing lanes.

Rotate the two outside mirrors outward about 15 degrees to allow the driver to glance briefly into the mirror to look into the blind zones instead of turning their head (Drawing B). Even though there are four mini-blind zones, they all too small to hide a vehicle. This keeps the forward scene in the driver’s peripheral view. Turning one’s head completely eliminates the forward view, and at highway speeds, takes the eyes off the road for about 100 feet. At night, glare from the outside mirrors is virtually eliminated.

Adjust Mirrors to Eliminate Blind Spots

Setting Mirrors

To adjust the driver’s side mirror, place your head against the side window (Drawing C), and then set the mirror to just see the side of the car. Do the same with the passenger’s side mirror, position your head at the middle of the car.

To ensure that the blind zones are eliminated, from the normal driving position, watch a car as it passes. It should appear in the outside mirror before it leaves the inside mirror, and it should appear in the peripheral vision before leaving the outside mirror. This is proof that the blind zones have been eliminated and that the mirrors are correctly set.

It may take awhile to adjust to the new settings. Don’t give up. The inside mirror is the primary mirror. Use the outside mirrors only to check blind zones.

Source:
Vermont Local Roads News, September, 2006
Using Geotextiles on Unpaved Low Volume Roads

Excessive water in a roadbed is the most common cause of rutting on rural roads. A poor or insufficient base increases problems caused by water. Geotextiles can increase the stability of weak subgrades and the load bearing capacity.

Water in the roadbed is commonly caused by underground springs in or near the roadbed, a high water table, or low areas where surrounding fields are higher than the roadway and there is no place to divert the water.

The problem may be persistent, such as ground seepage or intermittent due to flooding. Improving drainage is ideal but not always achievable.

The Functions of Geotextiles

There are three primary functions of geotextiles on unpaved roads:

1. Geotextiles provide separation. Without them, the aggregate and weak subgrade materials mix and the loaded aggregate base materials are forced into the subgrade. Mixing causes a reduction of load bearing capacity and accelerated rutting. Geotextiles allow water to pass through the layers while preventing the materials from mixing.

2. A geotextile provides filtration and increased drainage capacity in wet or saturated soils. Under load, high pressure creates a slurry that “pumps” upwards against the fabric. The fabric acts as a filter, screening out fines. It prevents contamination of the aggregate layer and allows water to freely drain. Filtration allows water to pass through the fabric while preventing soil migration. Evaporation from the underlying soil can occur which prevents water pockets from developing and hydrostatic pressure due to rapid or repeated loads.

3. Drainage is critical to structural performance. Water must be able to pass through the fabric. Geotextiles allow rapid water drainage. Maintaining the drainage in the base and subgrade is important to prevent system failure.

Benefits of Using Geotextiles

- Reduced maintenance cost
- Reduction of the depth of the structural section required to carry the load.
- Reduced initial construction costs.
- Structural section life is prolonged and maintenance costs reduced due to the fact soils are not intermixing.

Woven vs Nonwoven Geotextiles

There are two types of fabrics: woven and nonwoven.

Woven can withstand higher stress and strain than nonwoven fabrics. However, woven fabrics have lower abrasion resistance, less permeability, and poorer surface structure friction than nonwoven fabrics.

Nonwoven fabrics allow water to pass through them and are recommended for most unpaved roads. They offer superior resistance to abrasion and provide good characteristics for separation and filtration/drainage. Under load, they develop a high tensile strength and have good friction properties. This makes them a good choice for reinforcement.

Site Preparation

Clear and grade the area. Remove sharp objects. Cut trees and shrubs flush with the subgrade. It is unnecessary to remove top soil and vegetation. Excavate soft spots, backfill, and compact, so filled sections provide equal stability with adjacent areas. Grade the surface and cross slope shape to provide good drainage. Tight blading provides a smooth sur-
face to support the fabric and a well-established crown.

Unroll the fabric in the direction of the construction traffic. Overlap in the direction of subbase placement. Overlap width is dependent upon the load bearing capacity of the subgrade, it varies from two to three feet.

Dump the aggregate on top of the fabric. Spread with a small loader. Avoid heavy traffic directly on the fabric. Spread the aggregate in the same direction as the geotextile. Overlap to avoid separation. Aggregate depth is determined by subgrade strength and anticipated wheel loading, usually four to six inches. Compact the aggregate using a roller. Vibratory compaction is not recommended.

**Geotextiles Installation**

Proper installation is essential for good roadway stabilization. The aggregate overlay must be placed to its full depth and applied carefully as to not cause damage to the fabric by moving equipment.

Wrinkled or fabrics damaged during placement will not perform well. Repair fabric damaged during installation. Clear the damaged area plus three additional feet of all file material. Cover area with a geotextile patch extending three feet beyond the damage. Replace the material and compact.

Source:
The Link, Kentucky Transportation Center, Vol 21, No 4, p. 2-4.
Photos: John Hopkins, PENN DOT

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**Test your Knowledge**

**Items in this Newsletter**

1. "Generation Y"ers need supervision and ____
2. A passing vehicle should appear in a driver’s ________ before leaving the outside mirror
3. "N” in TNC
4. A ________ plan is a budget-conscious method of meeting ADA requirements in a timely manner
5. ________ is a law designed to prevent discrimination based on physical handicaps.

**Across**

1. "Generation Y"ers need supervision and ____
6. A passing vehicle should appear in a driver’s ________ before leaving the outside mirror
7. "N” in TNC
8. This generation designation applies to people born between 1946-64
9. These spots are eliminated when side and rear-view mirrors are properly adjusted
10. There are 2 types of geotextiles, nonwoven and ________

**Down**

2. This zone must be considered when mowing for driver safety
3. Obstruction that fragments streams and rivers
4. A ________ plan is a budget-conscious method of meeting ADA requirements in a timely manner
5. ________ is a law designed to prevent discrimination based on physical handicaps.

See our website for solution.
Publications

UNH Technology Transfer Center

These publications are available from the UNH T³ Center. See www.t2.unh.edu/video_pub/publist.html for a complete list and to access some publications online. To request publications, complete form and mail or fax to 603-862-0620.


___Curb Cuts. State of NH legal document and the NHDOT document on governmental entities authority over driveways and other public access ways. NHDOT.

___Driveway Permits. Application procedures, issuance of permits, right-of-way, drainage, construction and costs, maintenance responsibility, permit renewal, and revocation of suspension of permit, that relate to driveways and access to the State Highway System. NHDOT.

___Flexibility in Highway Design. Highway engineers and project managers who want to learn more about the flexibility available to them when designing roads. USDOT & FHWA.


___Hiring New Personnel. This article provides the step by step process for employee selection by providing tips to do before, during, and after interviewing. UNH T³ Center.


___Roundabouts: An informational Guide. Definition roundabouts, identifying appropriate sites, application ideas, design detail, public acceptance, and legal issues. USDOT & FHWA.

___Rumble Strips in Work Zones. Pros and cons of using rumble strips and some recommendations for their use. UNH T³ Center, Road Business, Spring 2002.

___Series of Quick Guides for New Hampshire Towns. Culvert Installation and Maintenance, Ditch/Channel construction and Maintenance, Vegetative Erosion & Sediment Control, Non-Vegetative Erosion & Sediment Control, Cut and Fill Slopes, Beaver Pipe: Construction and Maintenance, Stormwater Inlets and Catch Basins, Mowing and Brush Control, Snow and Ice Control, and Obtaining Permits.

___Standard Specifications for Road and Bridge Construction-CD. Provides information on road and bridge construction, including general provisions, earthwork, pavements, and incidental construction. NHDOT.

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Material Request Form

Name: ____________________________
Affiliation: ____________________________
Town/City: ____________________________
Phone: ____________ Fax: ____________
Title: ____________________________
Mailing address: ____________________________
State: ____________ Zip: ____________
Email: ____________________________

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Listservs

A listserv is a free way to use email to exchange information. To subscribe send an email to ListProc@lists.unh.edu. Leave the subject line blank, in the body of your message type:

Subscribe listname your name

For instance:
Subscribe pw.net John Doe

PW.NET

Want to know what is happening in other towns? Or, learn the very latest in regulations? Need a place to ask questions of other public works officials? Want to be the first to receive notifications of UNH T² Center workshops? Sign up for pw.net

RunOff.Talk

Want to discuss NPDES II issues and concerns? This list enables a dialog to clarify federal permits, and determine the best technical management for compliance. Use it to announce meetings and conferences.

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Milestones:

Richard Cousins, Rochester, was deployed to Iraq. Perry Day, Amherst, was promoted to Building, Grounds and Solid Waste Foreman. Kathy DesRoches, UNH T² Center, married Stuart Thompson. Arthur Fernald, Road Agent, Jackson, passed away. Donald Hardy, is the new road agent in Lempster. Jeff Leblanc has retired from the town of Hollis. Butch Leel, NH DOT, is retiring in July 2007.

Websites:

Center for Dirt & Gravel Roads http://www.dirtandgravelroads.org/
Center for Rural Safety www.ruralsafety.umn.edu
LTAP Search Engine www.mnltap.umn.edu/search/

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the tractor over the edge of slopes. Use the tractor’s headlights at all times.

Use a flashing arrow panel on the back unless operated in the caution mode. When working in a median area, do not use an arrow as this may suggest to motorists that they are being signaled to pass the tractor. This is a dangerous maneuver that could result in a conflict with on-coming traffic.

On roadways, establish work zone traffic control according to the MUTCD. For operations that do not use the travel lane, use the WORK AREAS NEXT ___ MILES (G20-1-1) sign. As work progresses, move the sign so there are no more than 3 miles between the sign and the location of the work.

Remove signs when work is not in progress, but do not remove the sign if the mower is stopped for repairs or adjustments.

Source:

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Road Business is a quarterly publication of the University of New Hampshire Technology Transfer Center UNH T² Center Staff Charles Goodspeed, TRCG Director Kathy L. DesRoches, Director of Educational Programs & Road Business Editor Kathryn (Claytor) Myers, Program Assistant Robert Strobel, PWMS Project Manager Christopher Bourque, Project Assistant Julia Faller, Project Assistant

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Preliminary Fall Workshop Calendar

**Basics**

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<th>Date</th>
<th>Topic</th>
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<td>October 16</td>
<td>Basics of a Good Road</td>
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**Supervisory or Personal Development**

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<td>Manchester--Best Western</td>
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<td>Managing Highway Department</td>
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**Technical Aspect of Road Maintenance or Repair**

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<td>September 18</td>
<td>Hard Road to Travel</td>
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<tr>
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<td>Roadside Design</td>
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<td>November 14</td>
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**Tort Liability**

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