

TRAFFIC COUNTER LOAN PROGRAM FOR COUNTIES

The Wyoming Technology Transfer Center (WYT²) has established a traffic counting program for Wyoming counties. The Wyoming Department of Transportation (WYDOT) provided funding for this program. Under this program, the Center will provide interested counties with traffic counters and training on how to use these traffic counters. Currently, if a county wants to perform traffic studies or obtain traffic counts off of the state system, they are limited in their options for the collection of data. By providing the counters through the WYT² Center, the counties will have **free access** to good equipment that will allow them to gather the counts they need. By using the same types of counters throughout the state, the information gathered will be consistent and compatible with WYDOT's new traffic counting software. Counties utilizing the traffic counters will be required to submit the collected data electronically when they return the traffic counters to the Center. These traffic counts will be used to populate a statewide data base.



- Provide all materials and software necessary for traffic data collection
- Provide training on how to set up the traffic counter and how to download the data collected
- Consult with the agency and WYDOT to determine the optimum locations for data collection
- Maintain the traffic counters in good working condition

Responsibilities of Counties

- Consult with the Center and WYDOT to determine the optimum locations for data collection
- Fill out a "Request Form" indicating the locations and time frame for data collection
- Pick up the traffic counters from the Center in Laramie
- Download all data collected and share it with the Center
- Return the traffic counters and any extra materials to the Center in Laramie

Responsibilities of the Center

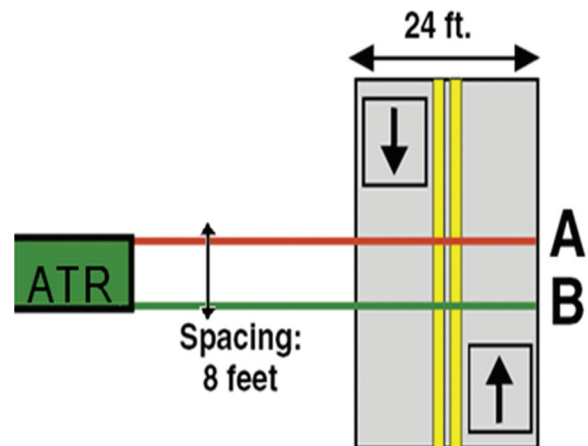
- Provide up to 12 traffic counters to a county for a maximum period of two months

The Center will take requests from agencies via phone (800-231-2815), fax (307-766-6784), mail or e-mail (mharman@uwyo.edu), and loan

the equipment on a first-come first-served basis. Agencies will be required to provide an estimated length of use (a maximum of two months) and schedule a return of the equipment. A waitlist will be maintained and the counters will be available to the next agency on the list once they have undergone any required maintenance.



A copy of the Center's Traffic Counter Loan Program Policies will be provided to all borrowing agencies. A signature will be required from the borrowing agency at the time the counters are picked up recognizing the Center's expectations for proper use and handling. If a traffic counter is reported lost or stolen, the agency will be required to reimburse the Center for the cost of a replacement.



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TEN ESSENTIALS OF A GOOD ROAD

Here are 10 basic tips to help maintain and keep your roads in good condition.

1. KEEP WATER AWAY FROM THE ROAD.

Drainage cannot be overemphasized in road construction and maintenance. Water affects the entire serviceability of a road. Too much water in the base material weakens the road. Water allowed to remain on top of a gravel or black topped road weakens the surface and, combined with traffic, causes potholes and cracking. If improperly channeled, water causes soil erosion and a breakdown of pavement edges. Whether it is mud in the spring or frost heaves in the winter, the presence of water in roads is nothing but trouble.



A good surface drainage system is the best way to lessen water damage on a road. Proper surface drainage prevents water from infiltrating the pavement surface and removes water from the driving lanes in a constant thin sheet to the side ditches, which carries the water away from the roadway. A surface drainage system has four main components: road crown, shoulders, ditches, and culverts.

The road crown, or superelevation of the road surface, drains water off the road surface. Shoulders are an extension of the road surface and allow for the continued flow of water to the ditches.

Ditches are used to carry water away from the roadway. They need to be kept clean and protected from erosion. Water left in the ditch can sometimes leak back into the base.

Water collected and carried in the ditch has to be directed away from the roadway at frequent intervals, sometimes using culvert pipe.

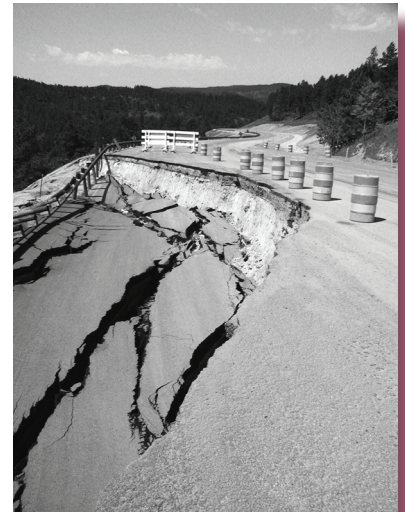
Culverts usually channel water from one side of the road to the other, helping to control the flow of water and slowing it down to reduce erosion.

Road managers are guided by the principles that water runs downhill, that water needs outlets at the bottom of all grades, and that puddles mean problems.

2. BUILD ON A FIRM FOUNDATION.

A highway wears out from the top, but it falls apart from the bottom. This is another way of saying that the road base determines the service-life of a road. The base supports everything above it, including traffic.

Without adequate support, the road will deteriorate rapidly. A good road requires a suitable foundation composed of stable material. A road material is stable if it has negligible soil settlement with a change in moisture content and does not deform excessively under repeated loads whether the material is wet or dry.



3. USE THE BEST SOILS AVAILABLE.

The supply of natural, good quality soils and aggregates is beginning to disappear. Blended or crushed gravel is a more expensive alternative. The quality of soils used by a road manager often depends on local availability and budget. In deciding what is available, consider the long-term consequences of using lower quality material. Using inferior base material may require excessive maintenance during the road's life and, perhaps, expensive rehabilitation. The adage "pay me now or pay me later" applies to road building.

4. COMPACT SOILS WELL.

The more dense the material is, the stronger it is. When soil is improperly compacted, future traffic loads or changes in moisture content can cause settling and failure of the roadway.

Compaction is achieved by pressing soil particles together, which expels some of the air from the mass, making the material more dense. Well-graded soils having a fairly even distribution of particle sizes will compact more easily than poorly graded soils that have mostly one particle size. Crushed or

angular particles will compact to a more stable condition than rounded particles of similar size. A certain amount of moisture is necessary for good compaction.

5. DESIGN FOR WINTER MAINTENANCE.

In areas that receive substantial snowfalls, roads that are designed for winter maintenance should be adequate for the rest of the year. Consider the following: if the traveled way is wide enough to allow a snowplow and a school bus to meet, it should be wide enough for the rest of the year.

If ditches and roadside areas are wide enough to store snow, chances are they will accommodate spring thaws and heavy water flows.

Grades should be a minimum of 1% for drainage purposes and should not be greater than 10% if at all possible. If the road is steeper, it is difficult for heavy equipment to maneuver, especially in the wintertime.

Sight distance should be considered in designing a road. For safety's sake, a driver should be able to see 75 to 100 ft. up the road for every 10 mile per hour driving speed.

6. BUILD FOR TRAFFIC LOADS AND TRAFFIC VOLUMES.

Thin ice on a pond may support a young skater, but it will crack and break apart under the weight of an automobile. Similarly, a road built to serve residential traffic will break down when it starts carrying a number of large trucks. Road managers know that roads, like bridges, should be designed with the expected traffic type and volume in mind.

A rule of thumb is to design a road to accommodate the largest vehicles that will use the road under normal operation. If in doubt, design the road for the largest piece of equipment that maintains it in all kinds of weather.

Road managers can get information and guidance from their State transportation agencies about the type and thickness of pavement mixes to apply to a gravel road. Generally speaking, a low volume road with some truck traffic may provide good services with a "chip seal" or "sand seal." As traffic volumes and weights increase, cold-mix asphalt and hot-mix asphalt pavement may be better alternatives.



7. PAVE ONLY ROADS THAT ARE READY.

Some agencies make the mistake of paving over a road that is not properly prepared in their haste to get rid of another dusty gravel road. The result may be a complete waste of money. Paving will not cure the other problems that the gravel road may have. It still must be built of well compacted layers of free draining soil, be able to carry expected traffic loads, and be able to drain well. The cost of rebuilding a mistake is much higher than not making the mistake and doing it right the first time.

8. BUILD FROM THE BOTTOM UP.

A road that has a poor base and poor drainage cannot be adequately improved with a top dressing of gravel or new pavement. It may be necessary, in some cases, to dig out the old road, put in new materials, and build up the road in layers.

Before doing anything to correct a road surface problem, road managers should take into consideration what is causing the problem underneath. Improper drainage, insufficient depth of base, or poor quality gravel may be the culprit. These should be corrected before spending money on the surface.



9. PROTECT YOUR INVESTMENT.

Roads and bridges need regular maintenance to keep them from deteriorating. The increased weight and frequency of traffic on roads, combined with adverse weather conditions, means an increased rate of road and street deterioration. Regular road and bridge maintenance preserves our road investment and prevents costly major rehabilitation later on.

Maintenance activities include:

Roadway surfaces: blading and shaping, patching, resurfacing; dust control; snow and ice removal.

Drainage: cleaning and repairing culverts and ditches.

Roadside: cutting bushes, trees, and grass; repair and prevention of roadside erosion.

Bridges: clearing channels; repair of rails, decks, and structure; cleaning and painting.

Traffic services: sign maintenance; cutting vegetation to maintain visibility.

Special projects: restoration or improvements; emergency work such as removing slides, repairing washouts, and repairing retaining walls.

10. KEEP GOOD RECORDS.

Road managers know their roads like the back of their hands. Most of them are walking history books when it comes to the roads they manage every day. This knowledge is of little use, however, when the road manager is ill, moves, or retires.

Good record keeping makes roadwork much easier for everybody. It is easier to formulate budgets and to show the citizens a plan for roadwork.

Recording which type of work was done on roads or bridges, when, and what materials were used can help a lot in making decisions later on.

Agencies can start by doing an inventory of all roads and bridges, listing length, width, surface types, culverts, problem areas, and other items. Placing these items on a map helps. Next comes listing and prioritizing needed improvements, putting a price tag on them, and taking care of a few problems each year.

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LOOK WHAT'S NEW AT THE T² LIBRARY

The following publications are some of the most recent additions to the T² Center's library. Please note that most of the new "videos" are in DVD format. Give us a call at 800-231-2815 if you would like to check out any of these materials.

Free Publications

- DC123 Concrete Construction Handbook
- M189 Pavement Preservation Checklist Series - Diamond Grinding of Portland Cement Concrete Pavements
- M190 Pavement Preservation Checklist Series- Dowel-Bar Retrofit for Portland Cement Concrete Pavements Checklist
- M191 Pavement Preservation Checklist Series- Partial Depth Repair of Portland Cement Concrete Pavements
- M192 Pavement Preservation Checklist Series- Full-depth Repair of Portland Cement Concrete Pavements
- M193 Pavement Preservation Checklist Series- Hot In-place Asphalt Recycling Application Checklist
- M194 Pavement Preservation Checklist Series- Cold In-place Asphalt Recycling Application Checklist
- M195 Pavement Preservation Checklist Series- Slurry Seal Application Checklist
- M196 Concrete Pavement Repair Manuals of Practice
- PA134 Successful Supervision for Local Road Supervisors
- ST110 Traffic Signing Handbook
- ST111 NCHRP Synthesis 321: Roadway Safety Tools for Local Agencies
- ST112 Read Your Road

Videos/DVDs

- PA7307 Achieving a Drug Free Workplace: An Employee's Perspective

- ST7358 Bike 'N Ped Driver Ed - For the Safe Sharing of Our Roadways
- ST7359 Working Safely with Snow Plows and Other Snow Removal Vehicles
- ST7360 Driving Safely in Winter Conditions
- ST7361 Flagger Safety and Traffic Control
- ST7362 The Safe Operation and Maintenance of Dump Trucks
- ST7363 Welding Safety: The Health Hazards
- ST7364 Backhoe Safety: Inspection and Walk Around
- ST7365 Back Safety: Proper Lifting Procedures
- ST7366 Confined Spaces: Risk and Responsibilities
- ST7367 New Employee Safety and Orientation
- ST7368 Chainsaw Safety
- ST7369 "Driving Hazards: Real Accidents, Real Stories"

Loan Publications

- DCR145 Concrete Construction Handbook
- DCR146 Application of Geophysical Methods to Highway Related Problems
- DCR147 Context Sensitive Roadway Surfacing Selection Guide
- DCR148 INSAR Applications for Highway Transportation Projects
- DCR149 Subsurface Imaging of Lava Tubes Roadway Applications
- DCR150 Shored Mechanically Stabilized Earth (SMSE) Wall Systems Design Guidelines
- DCR151 Concrete Construction Handbook
- DCR152 Compaction Data Handbook
- DCR153 Manual of Practice Materials and Procedures for Rapid Repair of Partial-Depth Spalls in Concrete Pavements
- DCR154 Concrete Pavement Repair Manual
- DCR209 Sign Installation Guide
- DCR345 Deep Patch Road Embankment Repair Application Guide

- DCR346 HMA Pavement Mix Type Selection Guide
- MR109 Distress Identification Guide
- MR110 "Bridge Management, Experiences of California, Florida, and South Dakota"
- MR111 Vehicle Cleaning Technology for Controlling the Spread of Noxious Weeds and Invasive Species
- MR219 Minnesota Snow and Ice Control - Field Handbook for Snowplow Operators
- MR220 Gravel Roads Maintenance: Meeting the Challenge
- MR221 Manual of Practice - Materials and Procedures for Sealing and Filling in Cracks in Asphalt Surfaced Pavements
- MR222 Concrete Pavement Field Reference Preservation and Repair
- MR223 Road Surfaces Management for Local Governments
- MR224 Concrete Pavement Repair Manuals of Practice
- MR309 Maintenance of Signs and Sign Supports for Local Roads and Streets
- MR402 Highway Maintenance Welding Techniques and Applications
- PAR403 The Fuel Tax and Alternatives for Transportation Funding
- PAR404 Tires and Passenger Vehicle Fuel Economy
- PAR405 First There - First Care
- STR111 Safety Manual for Operating and Maintenance Personnel - Wheel Tractor/Loader
- STR112 Safety Manual for Operating and Maintenance Personnel - Scraper
- STR113 Safety Manual for Operating and Maintenance Personnel - Crawler Tractor/Loader
- STR114 Safety Manual for Operating and Maintenance Personnel - Grader
- STR115 Safety Manual for Operating and Maintenance Personnel -Hydraulic Excavator
- STR116 Safety Manual for Operating and Maintenance Personnel - Hot Mix Asphalt Production Facilities
- STR117 Safety Manual for Operating and Maintenance Personnel - Crane
- STR118 Safety Manual for Operating and Maintenance Personnel - Hydraulic Mounted Breakers
- STR119 Safety Manual for Operating and Maintenance Personnel - Roller Compactor
- STR120 Safety Manual for Operating and Maintenance Personnel - Portable Pumps
- STR121 Safety Manual for Operating and Maintenance Personnel - Asphalt Paver
- STR122 Safety Manual for Operating and Maintenance Personnel - Dumper
- STR123 Safety Manual for Operating and Maintenance Personnel - Cold Planer and Soil Stabilizer
- STR124 Safety Manual for Operating and Maintenance Personnel - Surface Percussion Rock Drills
- STR125 Safety Manual for Operating and Maintenance Personnel - Portable Air Compressor
- STR126 Street Design Guidelines for Healthy Neighborhoods
- STR127 Workshop on Field Inspection and Rehabilitation on Traffic Control Devices
- STR128 Safety Management System Workshop Manage Mobility Safely
- STR310 Low Cost Local Road Safety Solutions
- STR311 2006 AASHTO Provisional Standards
- STR312 Standard Specifications for Transportation Materials and Methods of Sampling and Testing - Part 1A
- STR313 Standard Specifications for Transportation Materials and Methods of Sampling and Testing - Part 1B
- STR314 Standard Specifications for Transportation Materials and Methods of Sampling and Testing - Part 2A
- STR315 Standard Specifications for Transportation Materials and Methods of Sampling and Testing - Part 2B
- STR415 A Guidebook for Residential Traffic Management
- STR416 Design and Operation of Work Zone Traffic Control
- STR417 Low-Cost Methods for Improving Traffic Operations On Two-Lane Roads

Upcoming Workshops

All About Culverts

Laramie - February 9th
Buffalo - February 11th
Riverton - February 12th

14th Annual Transportation & Safety Congress

Casper
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The national Local Technical Assistance Program mission 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.



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