M A S S

INTERCHANGE

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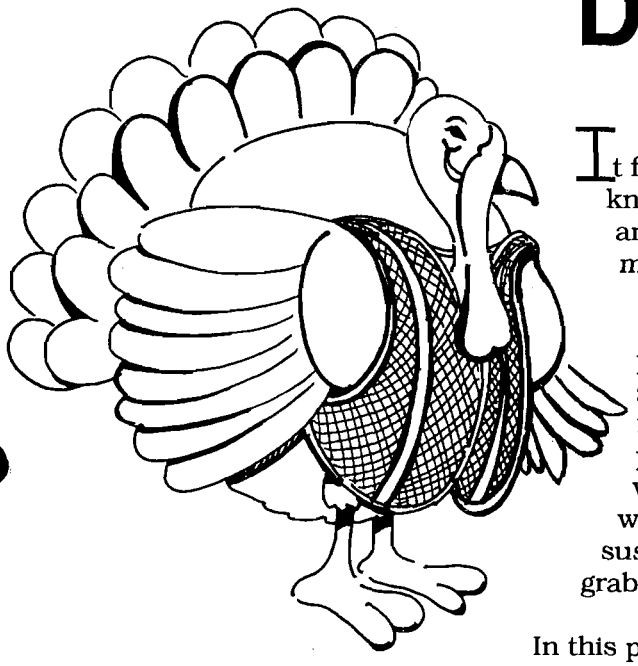

Don't Be A Turkey!

by Chris Ahmadjian

It finally happened. I snapped at a roadway worker. I didn't know it was going to happen, I didn't plan it, but when I came around the curve and saw him standing in the middle of the 50 mile per hour road with no signs or cones I got upset.

Keep in mind that what I did goes contrary to my personal rule. I never stop to criticize someone else's work zone. The few times I did stop I found I didn't understand fully what the crew was trying to do and the problems the site presented. I also found that I always ended up talking to the wrong person. It was always someone who had no control and was told not to talk to people who stopped to complain. I am suspicious that a few times the superintendent at the site grabbed a shovel so he or she wouldn't have to speak with me.

In this particular instance I was driving to my office in Amherst. I came around a corner with limited site distance and there in the middle of

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Controlling Nonpoint Source Runoff Pollution from Roads, Highways, and Bridges

Roads, highways, and bridges are a source of significant contributions of pollutants to our nation's waters. Contaminants from vehicles and activities associated with road and highway construction and maintenance are washed from roads and roadsides when it rains or snow melts. A large amount of this runoff pollution is carried directly to water bodies.

Contaminants in Runoff Pollution

Runoff pollution is that associated with rainwater or melting snow that washes off roads, bridges, parking lots, rooftops, and other impermeable surfaces. As it flows over these surfaces, the water picks up dirt and dust, rubber and metal deposits from tire wear, antifreeze and engine oil that has dripped onto the pavement, pesticides and fertilizers, and

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key. . .*continued from Page 1*

road was a worker. No
is, so cones, nothing, but
n so he gave me an angry
k as if to say why aren't you
ng slower.

He waved me by, but seeing
it there was no one behind me
topped and told him that
gns and cones were crucial to
work zone and that they were
e only way I know in advance
at he is in the road. I was
ad that he put me in a position
here I could have hurt
omeone.

As I spoke I saw the anger
relt from his face and he said
hat they were just starting to
et up a work zone. About
hat time I remembered my
ersonal rule and left.

Later, I remembered a similar incident which occurred on another of my trips to the office. Traveling down one of the road's few straight sections something caught my eye. As I got closer I realized it was one of the many wild turkeys that graze at the roadside; however, this one had found something to eat in the middle of my lane. I slowed and blasted the horn. That got his attention just long enough for him to flash me a classic "go away -- I'm busy look." Because traffic was coming from the other direction, I was forced to a complete stop.

After about a minute the horn blasting started to bother this turkey and he slowly left my lane and stood in the middle of the other lane. I left as soon as he was out of my way, but in my rear view mirror I saw a car from the opposite direction waiting for that turkey to move. Now there is a turkey that needs an orange vest.

Please, "Don't be a turkey when you're out on the road."

Runoff. . .*continued from Page 1*

discarded cups, plastic bags, cigarette butts, pet waste, and other litter. These contaminants are carried into our lakes, rivers, streams, and oceans.

Contaminants in runoff pollution from roads, highways, and bridges include:

❑ Sediment: Sediment is produced when soil particles are eroded from the land and transported to surface waters. Natural erosion usually occurs gradually because vegetation protects the ground. When land is cleared or disturbed to build a road or bridge, however, the rate of erosion increases. The vegetation is removed and the soil is left exposed, to be quickly washed away in the next rain. Erosion around bridge structures, road pavements, and drainage ditches can damage and weaken these structures.

Soil particles settle out of the water in a lake, stream, or bay onto aquatic plants, rocks, and the bottom. This sediment prevents sunlight from reaching aquatic plants, clogs fish gills, chokes other organisms, and can smother fish spawning and nursery areas.

Other pollutants such as heavy metals and pesticides adhere to sediment and are transported with it by wind and water. These pollutants degrade water quality and can harm aquatic life by interfering with photosynthesis, respiration, growth, and reproduction.

❑ Oils and Grease: Oils and grease are leaked onto road surfaces from car and truck engines, spilled at fueling stations, and discarded directly onto pavement or into storm sewers instead of being taken to recycling stations. Rain and snowmelt transport these pollutants directly to surface waters.

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in this issue

Deer-free Zones

Michigan's Wildlife Reflectors Lead to Safer Roadways

Finding ways to decrease the number of highway deer kills is becoming a major issue for many areas in the U.S. Deer populations are on the rise, and with it the number of deer/vehicle collisions.

The problem has reached alarming conditions in Michigan. In 1993, there were 45,945 deer/vehicle collisions; in 1994, that number increased to 56,666. According to the Michigan DNR, each year, an average of five people are killed and 1,500 injured.

Deer/vehicle collisions are expensive. Rising insurance premiums and the costs of vehicle repair, carcass removal, and accident investigations all add up. The average vehicle damage from hitting a deer is $2000 — an $113 million cost for vehicle repair alone in Michigan last year. And, of course, the deer themselves are a valuable natural resource. Estimates based on deer hunting expenditures figure the economic cost of the loss of a deer to be between $700 and $1000.

Fond du Lac's Choice

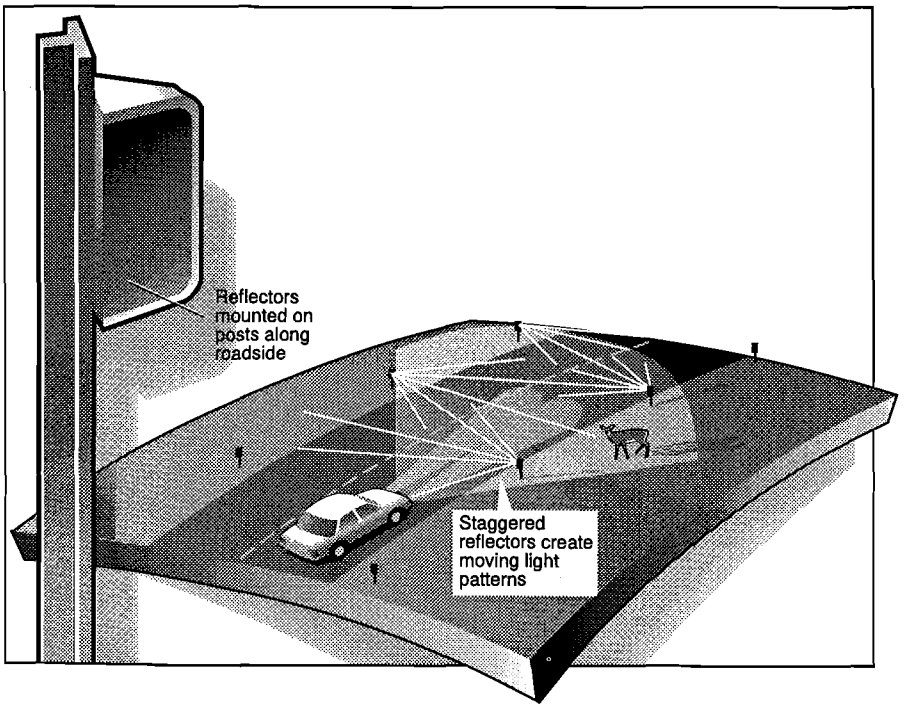
In an effort to decrease roadside deer kill, the Fond du Lac County Highway Department in Wisconsin joined together with the local Whitetails Unlimited group and put up a wildlife warning reflector system along a one kilometer stretch of State Trunk 26. Wooded up to the highway on one side and bordering a corn field on the other, many deer crossed this stretch in the evening as they moved from the cover of the woods to feed in the corn field. Vehicles passing through the area usually hit and killed one or two deer a week.

According to Steve Chicka, Fond du Lac County Engineer, "after the reflector system was installed, there was a drastic reduction in deer kills." Now, instead of colliding with one or two deer a week, passing vehicles hit only five or six during the entire year.

Wildlife Reflector Systems

Reflectors are a viable option for reducing deer kill because 90% of deer/vehicle collisions occur between dusk and dawn and tend to occur in specific, concentrated deer crossing areas.

Reflector systems consist of a series of red reflectors mounted along a roadway. Light from the headlights of an approaching vehicle hits the prism-like devices and is reflected at right angles to the roadway creating a series of red beams that crisscross the road and roadside. The unnatural and apparently moving reflected light creates an optical fence that deters deer from crossing the road until the vehicle has passed and the fence collapsed. Because the light is reflected at right angles to the roadway, it is not seen by motorists.



Courtesy of Allen Dise, Democrat and Chronicle/Times-Union, Rochester, NY

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Runoff. . .continued from Page 2

❑ Heavy Metals: Heavy metals come from some "natural" sources such as minerals in rocks, vegetation, sand, and salt. But they also come from car and truck exhaust, worn tires and engine parts, brake linings, weathered paint, and rust. Heavy metals are toxic to aquatic life and can potentially contaminate ground water.

❑ Debris: Grass and shrub clippings, pet waste, food containers, and other household wastes and litter can lead to unsightly and polluted waters. Pet waste from urban areas can add enough nutrients to estuaries to cause premature aging, or "eutrophication."

❑ Road Salts: In the snowbelt, road salts can be a major pollutant in both urban and rural areas. Snow runoff containing salt can produce high sodium and chloride concentrations in ponds, lakes, and bays. This can cause unnecessary fish kills and changes to water chemistry.

❑ Fertilizers, Pesticides, and Herbicides: If these are applied excessively or improperly, fertilizers, pesticides, and herbicides can be carried by rain waters from the green parts of public rights-of-way. In rivers, streams, lakes, and bays, fertilizers contribute to algal blooms and excessive plant growth, and can lead to eutrophication. Pesticides and herbicides can be harmful to human and aquatic life.

Recognizing and Controlling Runoff Pollution

Erosion gullies on land cleared of vegetation at a road construction site are a sign of sediment runoff. Iridescence (rainbow colors) in runoff water is a sign of spilled petroleum products washing off roads. Other signs of runoff pollution during road construction include obvious changes in streams or rivers downstream from the construction, such as bank erosion and sloughing, muddy or oily water, and sandbar relocation. Clumps of mud on roads leaving a construction site can lead to sediment flows heading for drainage ditches and storm inlets that empty into nearby streams.

Road projects should incorporate pollution prevention, preferably by reducing the amount of pollutants released, into an effective runoff pollution control plan.

Best management practices such as permanent storm water retention/detention ponds, slope protection, or grass strips, and temporary sediment traps, silt fences, diversion trenches and provisions for washing vehicles before they leave the construction site are all means to reduce runoff pollution.
For more information, call:

- U.S. EPA Region I NPS
  (617) 565-3513
- NPDES Storm Water
  (617) 565-3580
- Pete Coughlin
  (UMass Extension Service, Worcester)
  (508) 831-1223
- Baystate Roads Program
  (413) 545-2604

videos

MO-193
Frost Action In Soils
Source: USACRREL Hanover, NH
Length: 10:40 minutes

MO-196
Road Repair: Do The Right Thing At The Right Time
Source: Minnesota Local Roads Research Board & Minnesota DOT
Length: 21:30 minutes

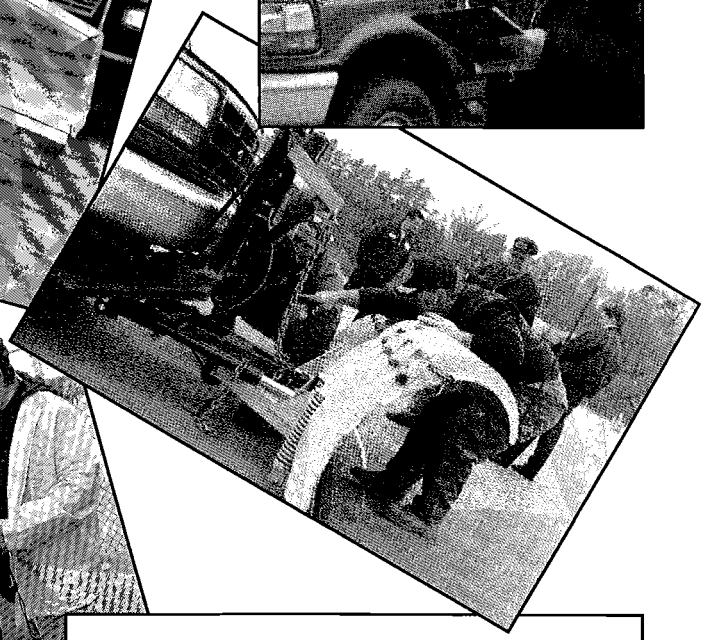
D&C-153
Soil Erosion & Sediment Control
Source: American Society of Civil Engineers & International Erosion Control Association
Length: 15 minutes

Snow Plow Rallies ---------- *Take-off*

It rained, rained and rained some more, but the second annual Plymouth Snow Plow Rally went off as scheduled on November 2nd. Twenty teams participated in 5 events, including: a written test, slalom course, vehicle pre-trip inspection, backing with a compressor, and front plow mounting. Sponsored by the Plymouth Highway Association, Baystate Roads Program, All States Asphalt Co., Inc., and the Massachusetts Interlocal Insurance Association (MIIA), plaques were awarded for 1st and 2nd place winners in each event, and for the overall best team competing. Congratulations to the Town of Easton, which produced this year's Overall Champions Buddy Pucillo and Alan Viall.

Congratulations to Overall Champions John Black and Ken Gibbons from Middleton.

Plymouth and Essex County Rally organizers would like to thank all participants and give special acknowledgment to event judges, who were able to maintain their enthusiasm through numerous downpours and/or wind gusts.



The First Annual Essex County Snow Plow Rally also rolled along to a smooth finish with six teams competing on November 28th. Organized with the Essex County Highway Association, the event was fortuitously scheduled on a windy but balmy 62-degree day. The rally allowed plenty of practice for the next morning's snowfall; the first of the year for eastern Massachusetts.

Photos by Karen Dodge

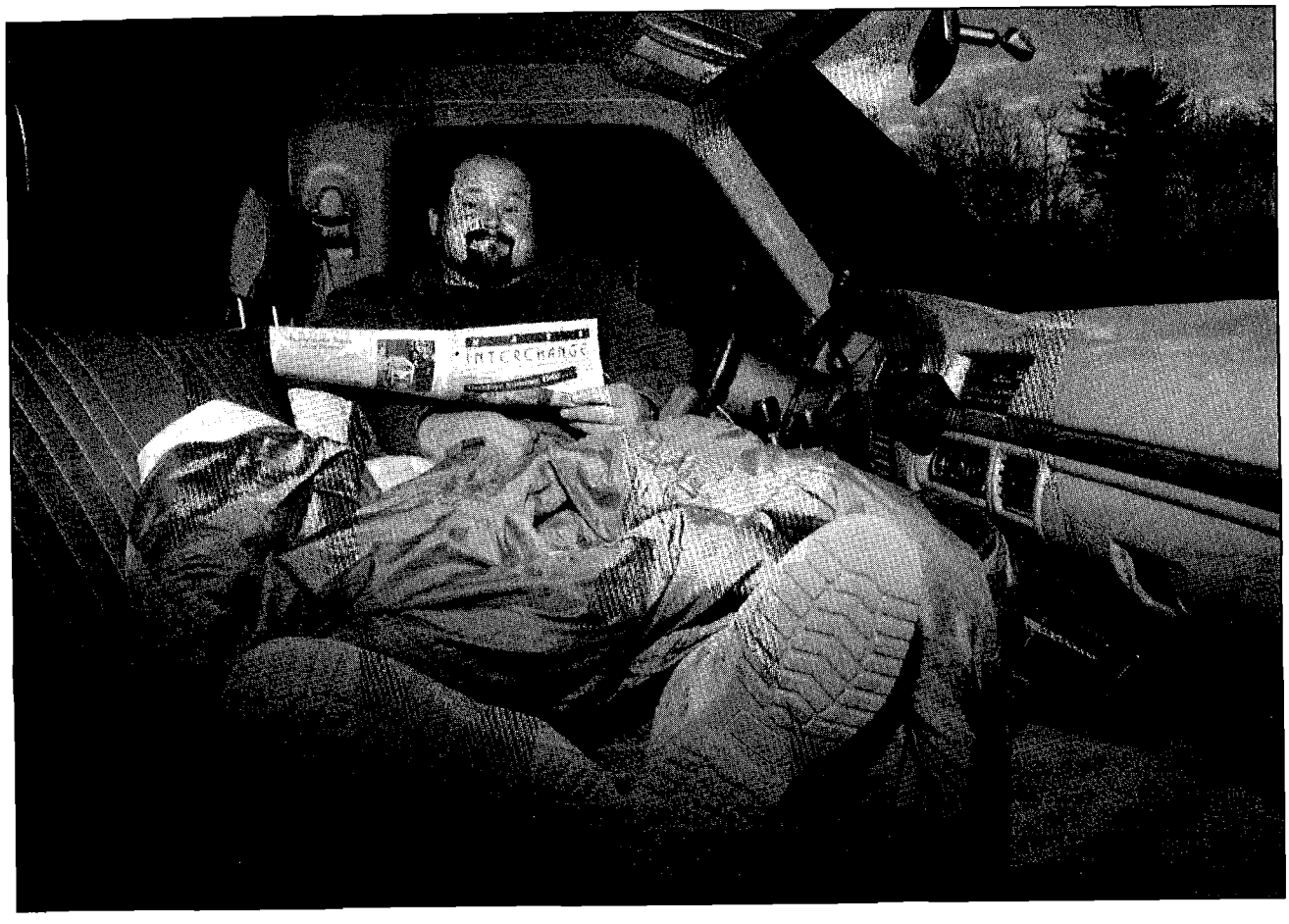


Photo by Karen Dodge

Winter JOB

by Thomas Brezinski

Earlier this year I received a call from Yankee Magazine regarding a story that was first published by the Hampshire Gazette and was later picked up by the Associated Press and went nationwide.

The story was about a commitment I made to the Board of Selectmen in the town of Pelham. Since I did not live in Pelham when I was hired as the Superintendent of Public Works, I told the Board that if we had an impending winter storm I would bunk down at the town garage overnight to monitor the weather.

Pelham's highway garage is located at the top of Amherst Road about 1000 feet above the Connecticut River valley and is one of those hilltowns that can share two distinct weather situations with a wide temperature variation.

Well! Wouldn't you know, the year I started was the 93-94 nightmare season. I spent half my life up here and almost lost track of my family in Hatfield. Now to most people, this was quite a commitment, admirable, almost nonexistent by today's standard. Comments I heard were "Wow!" from one person, "How dedicated" exclaimed another, and then of course, "What? Are you nuts!" Needless to say, I received a lot of praise and attention.

The only problem that I have now is that I feel a bit guilty. I feel this way because I know that you directors, superintendents, foremen, and drivers have to do the same job as mine: work terribly long hours and under extreme conditions so that the motoring public can get to work safely.

So, if you see my smiling face and read about my long winter in an upcoming issue of Yankee Magazine, try and imagine your face where mine is and think about the unappreciated and unnoticed labor and dedication that you folks put into your work.

Tom Brezinski is the Superintendent of Public Works for the Town of Pelham.

Deer-free . . .continued from Page 3

Reflectors Proved Effective

Wildlife reflectors are not new. Swareflex Wildlife reflectors, developed in Austria, have been used in Europe for 20 years with an average 80% reduction in animal/vehicle collisions. Studies of the Swareflex reflectors in Minnesota, Wisconsin, and Iowa show 60-100% reduction of deer/vehicle collisions. A four-year research project conducted by the Washington State DOT showed that deer/vehicle collisions can be reduced substantially by using roadside reflectors. In this study, the researchers alternately covered and uncovered the reflectors at regular intervals during the late fall to early spring from February 1981 to March 1984. During these periods, when the reflectors were covered and inoperative, 52 deer were killed at night; when the reflectors were uncovered and operational, only six were killed.

Swareflex's newest model reflector, the Strieter-Lite Wild Animal Highway Warning Reflector System, is easy to install and provides more complete coverage, reflecting light from headlights both at ground level and up and down slopes. Maintenance of the system requires cleaning the reflectors twice a year and replacing damaged or missing reflectors.

Satisfied Customers? Ask Mike

If you ask Mike Pintar of the Fond du Lac County Highway Department and a member of Whitetails Unlimited whether the reflectors are effective and worth the money, he'll tell you, "very much so." "In fact," he adds, "the sheriff's department is trying to put some up, the state's got some on the interstate, and [Whitetails Unlimited] would like to put up another mile. We're getting more all the time."

For more information on Wildlife Reflectors, call the Baystate Roads Program at (413) 545-2604 or (800) 374-ROAD.

Reprinted with permission from the July/September 1995 issue of ***The Bridge****, a publication of the Michigan LTAP.*

Upcoming Baystate Roads Workshops...

Hoisting Exam Mini-Workshop

January 16, 1996	Greenfield
January 23, 1996	Dalton
January 30, 1996	Worcester
February 6, 1996	Lynnfield
February 13, 1996	Falmouth

Pavement Foundations: Soils

January 24, 1996	Northampton
February 7, 1996	Westord
March 6, 1996	Taunton

Pavement Rehabilitation Choices

January 31, 1996	Northampton
February 14, 1996	Westford
March 13, 1996	Tauton

Coaching & Leadership

January 18, 1996	Southborough
April 11, 1996	Taunton

Drainage

March 21, 1996	Northampton
April 4, 1996	Southborough
April 18, 1996	Taunton

publications

ASP-50	Hot and Cold Mix Paving: Principles and Practices Cornell Local Roads Program, March 1995
MAN-32	A Guide for Local Agency Pavement Managers Washington State DOT, December 1994
TRA-43	A Guide for Residential Traffic Management Washington State DOT, December 1994
TRA-44	Roadway Delineation Practices Handbook **(LOAN ONLY)** USDOT/FHWA, August 1994
SAF-10	Improving Operational Safety on Local Roads and Streets USDOT/FHWA, 1988

For mutual convenience, please order publications by the identification number.
For example: ASP-50 for Hot and Cold Mix Paving: Principles and Practices.

The Baystate Roads Program, which publishes *Mass Interchange* each quarter, is a Technology Transfer (T2) Center created under the Federal Highway Administration's (FHWA) Local Technical Assistance Program (LTAP). FHWA is joined by the Massachusetts Highway Department, the Department of Civil and Environmental Engineering at the University of Massachusetts/ Amherst, and local public works departments in an effort to share and apply the best in transportation technologies.

In addition to publishing *Mass Interchange*, the Baystate Roads Program facilitates information exchange by conducting workshops, providing reports and publications and videotapes on request, and offering one-to-one technical assistance on specific roadway issues. Because the program relies on input from many sources, inquiries, articles, and ideas are encouraged.

Local Technical Assistance/Technology Transfer Center

To contact the Baystate Roads Program, call (800) 374-ROAD (in state) or (413) 545-2604.

BAYSTATE ROADS PROGRAM
Department of Civil & Environmental Engineering
University of Massachusetts
214 Marston Hall
Amherst, MA 01003-5205

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