



GEORGIA ROADS

A Newsletter of Georgia's Technical Assistance Program

Vol. 19, No.12 Winter/Spring 2009



"BETTER ROADS THROUGH COOPERATION"

Road Safety Audits

The Local Technical Assistance Program Office and the Georgia Department of Transportation Office of Traffic Safety and Design can coordinate a Road Safety Audit in your area. Please read the article on Safety Countermeasures for more information on Road Safety Audits. Contact the LTAP office for more information.



**Multi-Lane Roundabout on St. Simon's Island
Demere Road at Fredericka Road**

Nine Countermeasures for Safer Roads

Improving safety is a top priority for the Federal Highway Administration, Georgia Department of Transportation and local governments. They are committed to reducing fatalities and serious injuries on our nation's roads. The FHWA Office of Safety has developed a list of nine safety countermeasures. It is believed that widespread implementation of these safety countermeasures can serve to accelerate the achievement of local, State and national safety goals. The nine countermeasures are:

- 1. Road Safety Audits (p4)**
- 2. Rumble Strips and Rumble Stripes**
- 3. Median Barriers**
- 4. Safety Edge**
- 5. Roundabouts**
- 6. Left and Right Turn Lanes at Stop-Controlled Intersections**
- 7. Yellow Change Intervals**
- 8. Medians and Pedestrian Refuge Areas**
- 9. Walkways**

Countermeasures continued p. 4)

Inside this issue:

Nine Safety Countermeasures	1
LTAP Information and Lending Library	2
Training Calendar	3
Countermeasures (continued)	4
Georgia Sign Details	7
GDOT Sign Details	8
Work Zone Safety Awareness Week	9-10
Beaver Deciever	11



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**Federal Highway
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The Local Technical Assistance Program (LTAP) is a nationwide effort financed jointly by the Federal Highway Administration and individual state departments of transportation and/or universities. Its purpose is to disseminate the latest state-of-the-art technologies in the areas of roads, highways and bridges to municipal and county highway and transportation personnel.

The Georgia LTAP is supported by FHWA and the Georgia Department of Transportation. The Georgia Roads Newsletter is one of the LTAP activities. The opinions, findings or recommendations expressed in this newsletter are those of the Georgia LTAP Center and do not necessarily reflect the views of the FHWA or the Georgia Department of Transportation.

The Georgia Roads Newsletter is distributed free of charge to counties, cities, towns and others with transportation responsibilities.

LTAP Lending Library

With the weather changes, here are some training aids that could be useful.

Videos

Straight Line Mowing-
A Video Based Training Course

Paving Safety

DVDs

Bucket Truck extending your safety –
A video base training course

Fundamentals of Short Term Traffic Control

Improving Sight Distance on Local Roads

Flagging Operations and Procedures

CD

Work Zone Safety –
Roadway Maintenance

Benefits of Installing Medians

Publications

Access management Manual

SYNTHESIS NCHRP 321 –
Roadway Safety Tools for Local Agencies

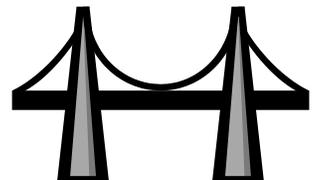
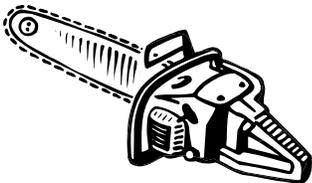
ASK US ABOUT OTHER TOPICS



Cover Photo: Courtesy Scott Zehngraff, GDOT Traffic Safety and Design Office. Glynn County constructed this project. It is a multi-lane roundabout. It works well and Glynn County is currently constructing their third roundabout on St. Simons island.

TRAINING CALENDAR

DATE	EVENT	LOCATION
April 21-22	Developing a Pedestrian Safety Action Plan	Macon GDOT Area Office
May 26-28	Planning and Designing for Pedestrian Safety	Forest Park, GA
May 5 June 23	Retro Reflectivity	Augusta, GA Macon State
June 1-5	Tractor Mower Safety Training (TMOST) 3 classes	Locations TBD
June 10-11 Aug 4-5	Chain Saw Hands-On Workshop	Savannah, GA Athens, GA
June 16-17 August 5-6	Traffic Impact Analysis	Atlanta, GA Macon GDOT Area Office
July 7 September 3	Chain Saw Safety Demo Workshop	Thomasville, GA Bibb County
September 8	Basic Surveying	Macon GDOT Area Office
September 9	Advanced Surveying	Macon GDOT Area Office



Countermeasures (continued p. 1)

1. Road Safety Audit.

A Road Safety Audit (RSA) is a very effective tool to reduce injuries and fatalities on our nation's roadways. A road safety audit (RSA) is a formal safety performance examination of an existing or future road or intersection by an independent and multi-disciplinary team. It estimates and reports on potential road safety issues and identifies opportunities for improvements in safety for all road users. The use of Road Safety Audits for this purpose can result in significant reductions in the numbers of fatalities and injuries.

The use of RSAs is increasing across the United States, in part due to crash reductions of up to 60 percent in locations where they have been applied. The relative low-cost nature of RSAs and implementation is another factor. RSAs may be conducted at every stage in the lifecycle of a transportation facility including pre-construction, construction, and post-construction as discussed in the FHWA Road Safety Audit Guidelines, FHWA-SA-06-06. Highway agencies should consider conducting a Road Safety Audit at the earliest stage possible (planning or preliminary design) when all roadway design options and alternatives are being explored.

2. Rumble Strips / Rumble Stripes

Rumble strips are raised or grooved patterns on the roadway that provide both an audible warning (rumbling sound) and a physical vibration to alert drivers that they are leaving the driving lane. They may be installed on the roadway shoulder or on the centerline of undivided highways. If the placement of rumble strips coincides with centerline or edge line striping, the devices are referred to as rumble stripes.

Centerline Rumble Strips and Rumble Stripes: The 2005 NCHRP Synthesis 339 (data from the Insurance Institute for Highway Safety study on centerline rumble strips in September 2003) found that head-on and opposite direction sideswipe injury crashes were reduced by an estimated 25 percent at sites treated with centerline rumble strips or stripes. Centerline rumble strips/stripes have been shown to provide a crash reduction factor of 14 percent of all crashes and 15 percent of injury crashes on rural two-lane roads.

Shoulder Rumble Strips and Rumble Stripes: Continuous shoulder rumble strips (CSRS) can be applied on many miles of rural roads in a cost-effective manner. Studies have documented the following crash reduction benefits:

- Overall crash reduction of 13 percent and injury reduction of 18 percent on rural two-lane highways.
- Overall crash reduction of 16 percent and injury reduction of 17 percent on rural multi-lane divided highways.
- Reduction in run-off-road crashes of 38 percent on freeways.

Shoulder rumble stripes have not been studied to the same extent; however, they show great potential for reducing run-off-the-road crashes in addition to improving night-time visibility.

3. Median Barriers

Median barriers are longitudinal barriers used to separate opposing traffic on a divided highway. They are designed to redirect vehicles striking either side of the barrier. Median barriers can significantly reduce the occurrence of cross-median crashes and the overall severity of median-related crashes. Crashes resulting from errant vehicles crossing the median and colliding with traffic on the opposing roadway often result in severe injuries and fatalities. The fact that these crashes involve innocent motorists is another compelling reason for highway agencies to take action.

In the past, median barriers were not typically used with medians that were more than 30 feet wide. In the 1980's and 1990's, however, a number of states experienced a large number of cross median fatal crashes. This led them to review their design policies and begin installing barriers in medians wider than the 30 feet originally called for in the AASHTO Roadside Design Guide (RDG). The 2006 RDG revision encourages consideration of barriers in medians up to 50 feet wide.

A recent review of cross median fatality data shows many states experiencing crashes involving vehicles traversing medians well in excess of 30 feet. Although W-beam guardrail has typically been used to prevent medians crossovers, more recently many States have demonstrated that cable median barriers are a very cost-effective means of reducing the severity of median encroachments. Although a small number of high-profile crashes involving vehicles going over or under cable barrier systems has caught the public's attention, the failure rate of cable systems is comparable to, or may even be lower than, that for W-beam median barriers. Cable systems are a highly cost-effective way to impact cross-median crashes by reducing the number and severity of such crashes, and the FHWA has been actively urging each State to install cable median barrier, where feasible, on highway segments. GDOT has installed cable guardrail on several interstate routes and is

evaluating additional locations for use.

4. Safety Edge

The Safety Edge is a specific asphalt paving technique where the interface between the roadway and graded shoulder is paved at an optimal angle to minimize vertical drop-off and provide a safer roadway edge. A Safety Edge shape can be readily attained by fitting resurfacing equipment with a device that extrudes and compacts the shape of the pavement edge as the paver passes. This mitigates shoulder pavement edge drop-offs immediately during the construction process and over the life of the pavement. This technique is not an extra procedure but merely a slight change in the paving equipment that has a minimal impact on the project cost. In addition, the Safety Edge improves the compaction of the pavement near the edge. Shoulders should still be pulled up flush with the pavement.

New and resurfaced pavements improve ride quality but can be a detriment to safety if the edges are left near vertical. Drivers trying to regain control after inadvertently dropping a tire over the edge frequently have difficulty with a steep vertical edge and may lose control of the vehicle, possibly resulting in severe crashes. Making the adjacent non-paved surface flush with the paved surface alleviates this problem, but a vertical edge may appear due to erosion or wheel encroachment, especially along curves. Installing the Safety Edge during a paving project provides a surface that can be more safely traversed.

Recent studies have shown that crashes involving pavement edge drop-offs greater than 2.5 inches are more severe and twice as likely to be fatal than other roadway departure crashes. An effective countermeasure is to implement a pavement wedge as referenced in the AASHTO Roadside Design Guide, Chapter 9. Research in the early 1980's found a 45 degree pavement wedge effective in mitigating the severity of crashes involving pavement edge drop-offs. During the Georgia DOT Demonstration Project, evaluation of wedge paving techniques found it beneficial to flatten the wedge to a 30 to 35 degree angle that resulted in a pavement edge referred to as the Safety Edge. Subsequent research has shown this design to be 50 percent more effective than the original 45 degree wedge.

5. Roundabouts

The modern roundabout is a type of circular intersection defined by the basic operational principle of entering traffic yielding to vehicles on the circulatory roadway and certain key design principles to achieve deflection of entering traffic by channelization at the entrance and deflection around a center island. Modern roundabouts have geometric features providing a reduced speed environment that offers substantial safety advan-

tages and excellent operational performance.

Roundabouts have demonstrated substantial safety and operational benefits compared to other forms of intersection control, with reductions in fatal and injury crashes of from 60–87 percent. The benefits apply to roundabouts in urban and rural areas and freeway interchange ramp terminals under a wide range of traffic conditions. Although the safety of all-way stop control is comparable to roundabouts, roundabouts provide much greater capacity and operational benefits. Roundabouts can be an effective tool for managing speed and transitioning traffic from a high speed to a low speed environment. Proper site selection and channelization for motorists, bicyclists, and pedestrians are essential to making roundabouts accessible to all users. In particular, it is important to ensure safe accommodation of bicyclists at higher speed roundabouts and for pedestrians with visual or cognitive impairments.

Roundabouts are the preferred safety alternative for a wide range of intersections. Although they may not be appropriate in all circumstances, they should be considered as an alternative. Roundabouts should also be considered for all existing intersections that have been identified as needing major safety or operational improvements. This would include freeway interchange ramp terminals and rural intersections.

6. Left and Right-Turn Lanes at Stop-Controlled Intersections

Left-turn lanes are auxiliary lanes for storage or speed change of left-turning vehicles. Installation of left-turn lanes reduces crash potential and motorist inconvenience, and improves operational efficiency. Right-turn lanes provide a separation between right-turning traffic and adjacent through traffic at intersection approaches, reducing conflicts and improving intersection safety.

The AASHTO Green Book recommends that left-turning traffic be removed from the through lanes whenever practical, and that left-turn lanes should be provided at street intersections along major arterials and collector roads wherever left turns are permitted. Consideration of left turn lanes has traditionally been based on such factors as the number of through lanes, speeds, left turn volumes, opposing through volumes, and/or left-turning crashes. Providing left-turn lanes on the major road approaches has proven safety benefits at rural and urban 3 and 4-leg, two-way stop-controlled intersections. Studies have shown total crash reductions ranging from 28-44 percent and fatal/injury crash reductions of 35-55 percent for providing a left-turn lane on one major road approach, and 48 percent for providing left-turn lanes on both major road approaches, at rural intersections with traffic volumes ranging from 1,600-32,400 vehicles per day (vpd) on the major road and 50-11,800 on the minor road.

For urban intersections, total crash reductions of 27-33 percent and fatal/injury crash reduction of 29 percent have been experienced after providing a left-turn lane on one major road approach, and 47 percent for providing left-turn lanes on two major road approaches, intersections with traffic volumes from 1,520-40,600 vpd on the major road and 200-8,000 vpd on the minor road.

Providing right-turn lanes on major road approaches has been shown to reduce total crashes at two-way stop-controlled intersections by 14 percent and fatal/injury crashes by 23 percent when providing a right-turn lane on one major road approach, and a total crash reduction of 26 percent for right-turn lanes on both approaches, at 3 and 4-leg urban and rural intersections with traffic volumes ranging from 1,520-40,600 vpd on the major road and from 25-26,000 vpd on the minor road.

Installing left-turn lanes and right-turn lanes should be considered for the major road approaches for improving safety at 3 and 4-leg intersections with two-way stop control on the minor road, where significant turning volumes exist or where there is a history of turn-related crashes. Safe accommodation of pedestrians and bicyclists at these intersections should be considered as well.

7. Yellow Change Intervals

Red-light running is one of the most common causes of intersection crashes. Research shows that yellow interval duration is a significant factor affecting the frequency of red-light running and that increasing yellow time to meet the needs of traffic can dramatically reduce red light running. Bonneson and Son (2003) and Zador et al.(1985) found that longer yellow interval durations consistent with the ITE Proposed Recommended Practice(1985) using 85th percentile approach speeds are associated with fewer red-light violations, all other factors being equal. Bonneson and Zimmerman (2004) found that increasing yellow time in accordance with the ITE guideline or longer reduced red light violations more than 50 percent. Van Der Host found that red light violations were reduced by 50 percent one year after yellow intervals were increased by 1 second. Retting et al (2007) found increasing yellow time in accordance with the guideline reduced red-light violations on average 36 percent. Retting, Chapline & Williams (2002) found that adjusting the yellow change interval in accordance with the ITE guidelines reduced total crashes by 8 percent, reduced right angle crashes by 4 percent, and pedestrian and bicycle crashes by 37 percent. Both Kentucky and Missouri report a 15 percent reduction in all crashes and a 30 percent reduction in right-angle crashes after increasing the yellow interval.

The length of the yellow change interval should be increased at any intersection where the existing yellow change interval time is less than the time needed for a motorist traveling at the prevailing speed of traffic to reach the intersection and stop comfortably before the signal turns red. The minimum length of yellow should be determined using the kinematics formula in the 1985 ITE proposed practice assuming an average deceleration of 10 ft/sec or less, a reaction time of 1 sec or more, and an 85th percentile approach speed. If approach speed is not known, the posted speed limit plus 10 mph may be used. An additional 0.5 sec of yellow time should be considered for locations with significant truck traffic, significant population of older drivers, or more than 3 percent of the traffic is entering on red.

8. Medians and Pedestrian Refuge Areas

The Median is the area between opposing lanes of traffic, excluding turn lanes. Medians can either be open (pavement markings only) or they can be channelized (raised medians or islands) to separate various road users.

Pedestrian Refuge Areas (or crossing islands)—also known as center islands, refuge islands, pedestrian islands, or median slow points—are raised islands placed in the street at intersection or midblock locations to separate crossing pedestrians from motor vehicles.

Providing raised medians or pedestrian refuge areas at pedestrian crossings at marked crosswalks has demonstrated a 46 percent reduction in pedestrian crashes. Installing such raised channelization on approaches to multi-lane intersections has been shown to be particularly effective. At unmarked crosswalk locations, medians have demonstrated a 39 percent reduction in pedestrian crashes. Medians are especially important in areas where pedestrians access a transit stop or other clear origin/destinations across from each other.

Raised medians (or refuge areas) should be considered in curbed sections of multi-lane roadways in urban and suburban areas, particularly in areas where there are mixtures of a significant number of pedestrians, high volumes of traffic (more than 12,000 ADT) and intermediate or high travel speeds. Medians/refuge islands should be at least 4 feet wide (preferably 8 feet wide for accommodation of pedestrian comfort and safety) and of adequate length to allow the anticipated number of pedestrians to stand and wait for gaps in traffic before crossing the second half of the street.

9. Walkways

Several types of *pedestrian** walkways have been defined:

- Pedestrian Walkway (Walkway): A continuous way designated for pedestrians and separated from motor vehicle traffic by a space or barrier.

- Shared Use Path: A bikeway or pedestrian walkway physically separated from motorized vehicular traffic by an open space or barrier—either within a highway right-of-way or within an independent right-of-way. Shared use paths may also be used by pedestrians, skaters, wheelchair users, joggers, and other non motorized users. Shared use paths also may be referred to as “trails” or “multiple-use trails.”

- Sidewalks: Walkways that are paved and separated from the street, generally by curb and gutter.

- Roadway Shoulder: In rural or suburban areas where sidewalks and pathways are not feasible, gravel or paved highway shoulders provide an area for pedestrians to walk next to the roadway.

**Pedestrian: Any person traveling by foot, and any mobility impaired person using a wheelchair.*

USDOT policy calls for bicycling and walking facilities to be incorporated into all transportation projects unless exceptional circumstances exist (<http://www.fhwa.dot.gov/environment/bikeped/design.htm#d4>)

The presence of a sidewalk or pathway on both sides of the street corresponds to approximately an 88 percent reduction in “walking along road” pedestrian crashes. Providing paved, widened shoulders (minimum of 4 feet) on roadways that do not have sidewalks corresponds to approximately a 71 percent reduction in “walking along the road” pedestrian crashes. “Walking along road” pedestrian crashes typically are around 7.5 percent of all pedestrian crashes (with about 37 percent of the 7.5 percent being fatal and serious injury crashes).

A number of studies have also shown that widening shoulders reduces all types and all severity of crashes in rural areas. Reductions of 29 percent for paved and 25 percent for unpaved shoulders have been found on 2-lane rural roads where the shoulder was widened by 4 feet. In addition, shoulder widening and paving provides space for rumble strips.

Accessible sidewalks or pathways should be provided and maintained along both sides of streets and highways in urban areas, particularly near school zones and transit locations, and where there is frequent pedestrian activity. Walk able shoulders (minimum of 4 feet stabilized or paved surface) should be provided along both sides of rural highways routinely used by pedestrians.

Truck Mounted Attenuator Safety Tips

ALWAYS

- Have supervisor/lead-worker verify that operators are capable and qualified on each type of equipment before allowing the equipment to be operated unsupervised. All drivers shall be properly licensed (CDL Haz/Mat Class B).
- Review Safe Operating Guides for applicable equipment and perform pre-operational checks. Complete Pre trip/Post trip report properly.
- Determine the traffic control needs from the Work Zone Safety Handbook and Manual on Uniform Traffic Control Devices.
- Keep hands, arms and fingers clear of pinch points when raising, lowering or removing attenuator. Verify locking pins are locked properly.
- Leave enough space between the attenuator and the work area or vehicle being protected for acceleration from the rear in case of potential collision (mobile operation).
- Leave enough room between the attenuator and the work area or vehicle being protected (stationary operation). While the attenuator protects personnel and the public, it will not lessen its own roll-ahead if it is struck from behind.
- Use amber warning lights.
- Wear seat belts and shoulder harness when operating truck.
- Keep windshield, windshield wipers, side window and mirrors clean.
- Be aware of overhang, especially when adjacent to guardrails or fixed objects. Move out gradually.
- Be aware of excessive overhang while backing and attenuator swing out when turning.

NEVER

- Get out of the attenuator while in the travel lane, all repairs and adjustments should be made away from the traveled way.
- Change work location with attenuator in the down position.

POTENTIAL HAZARDS

Backing
Hooking/unhooking
Moving traffic
Pinch points



Georgia DOT Sign Details

By John R McCarthy
Traffic Engineer, Columbus Consolidated Government

When designing a roundabout or a traffic control plan for an area that features significant pedestrian volume, where do you go to find the details and size of the sign that is commonly used in Georgia that looks like this?



GDOT R 560-5

The sign is not in the National MUTCD. The R1-5 and the R1-6 signs have been recently added to the Manual, but they are not the sign commonly used in Georgia. The sign in use here is shown above. Georgia DOT has given it the designation as the R 560-5 sign. It is to have a standard size of 18 inches by 24 inches. The letters for the word STOP are to be in red and all other text and the border are black. The white background is to be reflectorized.

These details are important for the specifications on any local construction project. They are also essential to public works departments for the proper maintenance of the system of traffic control devices that they inherit from a construction project.

The details for this sign are found on a Georgia DOT standard drawing that can be located by going to the webpage:

http://tomcat2.dot.state.ga.us/stds_dtls/index.jsp

On this webpage is a link to the Standard Drawings of Georgia DOT. Under the selection of the option for English Details are the tif files, t01 through t09b. The specific sign in the picture is found in the file t05a.

Another one of the signs that can be found in this file is the Georgia seat belt sign that reads “BUCKLE UP / IT’S THE LAW”. A detail for the logo to use on the Buckle Up sign is also provided. The Buckle Up sign has been given the designation R 560-1. The legend and belt are to be in black. The state shield and border are to be in red. The white background is to be reflectorized.

These details also cover signs supports and several Georgia Specific Signs. These sign blanks and sign support drawings supplement the Standard Highway Signs book of FHWA. Below is a table listing the filenames of the standard drawing sign details available on the webpage.

File Name	Drawing Number	Description	Revision Date
t01.tif	T01	SIGN PLATES	01/2000
t02.tif	T02	DETAILS FOR TYPICAL FRAMING	03/2000
t03a.tif	T03a	Type 7,8 and 9 SQUARE TUBE POST INSTALLATION DETAIL	07/2002
t03b.tif	T03b	DETAILS OF SQUARE TUBE POST (BREAKAWAY SUPPORT)	07/2002
t03c.tif	T03c	DETAILS OF STRAIN POLE ERECTION FOR OVERHEAD SIGNS	01/2000
t03d.tif	T03d	DETAILS OF TIMBER POLE ERECTION FOR OVERHEAD SIGNS	01/2000
t04.tif	T04	DETAILS OF CARDINAL DIRECTION SIGNS	01/2000
t05a.tif	T05a	DETAILS OF REGULATORY SIGNS (SHEET 1 OF 2)	01/2003
t05b.tif	T05b	DETAILS OF REGULATORY SIGNS (SHEET 2 OF 2)	01/2000
t05c.tif	T05c	DETAILS OF WARNING SIGNS	01/2000
t06.tif	T06	DETAILS OF OVERHEAD SIGNS	01/2000
t07.tif	T07	DETAILS OF BRIDGE ATTACHMENT	09/2001
t09a.tif	T09a	DETAILS OF RIDESHARE SIGNS	11/1999
t09b.tif	T09b	DETAILS OF TRUCK RESTRICTION SIGNS	02/2000

National Work Zone Awareness Week - April 6-10, 2009

“Drive To Survive – Our Future Is Riding On It.”

It seems that everywhere you drive around Georgia there is some type of road construction. Drivers become impatient especially when they see those dreaded orange barrels. “There’s nobody even out here working” or “Why did they put them up so far back?,” they ask. Well, yes it’s for the workers safety, but more so for yours. Three out of four work zone fatalities are not part of the work crew – they are your family members, your co-workers, your friends – motorists and passengers. Over the last 10 years, the number of persons killed each year in the U.S. in motor vehicle crashes in work zones has increased 45 percent. Eighty-five percent of those killed in work zones are drivers or passengers in a vehicle.

As the busy construction season gets underway, we’ll soon be seeing a lot more of the orange barrels and workers on our streets and highways. The Georgia Department of Transportation (GDOT) is calling on all motorists to be aware of and help reduce the hazards highway construction workers face every day.

April 6-10 marks the 10th anniversary of National Work Zone Awareness Week. The national campaign is conducted every year at the start of the construction season to encourage motorists to drive carefully through highway construction and repair sites. Each year, approximately 1,000 people are killed in roadway work zones and, with the recent enactment of the President’s economic recovery package which supports a good deal of highway repair and construction funding, 2009 could be one of the most active highway repair seasons in recent memory. The slogan for the 2009 event is **“Drive To Survive – Our Future Is Riding On It.”**

Work zone safety on your projects is important. Here are a few work zone safety tips to follow on your temporary traffic control projects:

- Wear retro-reflective personal protective equipment, which includes:
 - ⇒ ANSI Class II vest (for daytime work) or ANSI Class III vest (for nighttime work)
 - ⇒ Hard hat
 - ⇒ Safety glasses
 - ⇒ Steel-toed boots
- Train your staff in federal and state-approved traffic control procedures.
- Ensure that a Traffic Control Plan has been developed and implemented for the project.
- Work with federal, state, and local agencies to implement traffic control regulations and guidelines.
- Identify and implement appropriate speed limits for work zones.
- Ensure adequate separation between workers and traffic.
- Provide nighttime illumination wherever workers are present.
- Use appropriate safety devices such as cones, drums, and a truck-mounted attenuator when working in a closed travel lane.
- Clearly identify and mark routes for workers and vehicles to safely enter and exit work zone.
- Work with law enforcement to enforce speed limit and appropriate work zone boundaries.
- Face traffic whenever possible rather than turning your back to traffic. If you must work with your back to traffic, designate a spotter.

Work Zone Awareness Week *(continued)*

- Have a plan for escaping your work area to a safe location.
- Avoid using cell phones, radios, MP3 players, or iPods while in a work zone. These devices can draw your attention away from equipment and traffic.

**Source: U.S. Department of Transportation, Federal Highway Administration*

The Georgia Local Technical Assistance Program (LTAP) offers an excellent Temporary Work Zone Traffic Control class. We have two tail-gate trainers who are more than willing to come to your site to conduct the training, just give us a call.

More than 40,000* people are injured each year as a result of motor vehicle crashes in work zones. Keep our work zones safe by following these important safety guidelines when driving through work zones:

- Stay alert. Keep an eye out for workers and equipment, and expect the unexpected.
- Pay close attention to what is happening around you—in front, behind, and to the sides.
- Turn on your car's headlights so construction zone workers can more easily see your vehicle.
- Keep a safe distance between your automobile and the automobile in front of you. Do not tailgate.
- Follow posted speed limits in and around work zones; do not speed. And remember, fines for speeding in construction zones are doubled.
- If traffic is being directed by a flagger, follow the flagger's instructions and signs.
- Don't change lanes unnecessarily.
- Minimize distractions. Avoid changing radio stations, eating, or talking on your cell phone or texting while driving in a work zone.
- Be patient. Remember crews working in the work zone are there working to improve the infrastructure and arriving safely at your planned destination is the goal.

**Source: U.S. Department of Transportation, Federal Highway Administration*

GDOT encourages motorists to **ALWAYS** drive with extreme caution through construction work zones. Remember, everyone is responsible for the safety of crews working in construction work zones. Slowing down and paying close attention when approaching a work zone will save lives—and that life may be yours.

Additional Resource: The National Work Zone Safety Information Clearinghouse website, www.workzonesafety.org has an extensive data base of materials, a video and audio library to provide you with easy access to archived webinar and conference sessions, a listserv, news and events section and more. Best of all this information is free and easily accessible.



Share your successes (and your challenges) with the LTAP community. If you have tried something new that is working well send in the details and it may be included in the LTAP newsletter. If you have a challenge maybe LTAP can help you address it and include the story in the newsletter. Photos of interesting transportation features in your community can also be submitted to the newsletter.

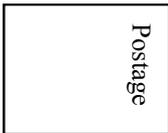
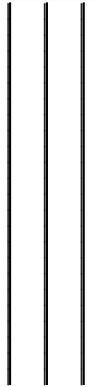


Photo: FHWA and Virginia DOT

Working with Georgia Cities and Counties to Improve Transportation



GEORGIA DEPARTMENT OF TRANSPORTATION
 LOCAL TECHNICAL ASSISTANCE PROGRAM
 276 Memorial Drive SW
 Atlanta, GA 30303-3743



Beaver Deceiver

“Beaver Deceivers” are devices used to keep animals from damming up culverts and pipes. Beavers have become a major headache for roadway maintenance forces in the state of Georgia. A beaver sees a roadbed with a drainage culvert in it as a perfect dam with a leak. If the beavers are not removed, they will continue to dam up the structure regardless of how often it is cleared. The Beaver Deceiver is a more humane option than the current control method of trapping these large rodents and is less labor intensive than continually removing the beaver dams.

The Beaver Deceiver consists of building a fence around the inlet of the structure and out into the lake or stream. This fence is usually built of heavy gauge livestock panels. This fenced area should also be floored with wire to keep the rodents from burrowing under the fence. The beavers seem to have problems understanding that they must dam the sides of the fence that parallel the structure and the flow of water. A grate must be placed on the outlet of the pipe to guard against flank attack by the beavers.

The fenced area alone is seldom enough to deter them. The second part of the Deceiver is a large poly pipe running from the fenced area out into the body of water. The end of the pipe is enclosed in a round cage approximately 6’ in diameter. The pipe is also perforated along its length to allow additional drainage. If the beavers do manage to build a dam along the fence the pipe continues to allow the water to flow. The sound of flowing water seems to trigger the dam building reflex. The water flowing into the poly pipe does not make the noise that triggers the beavers. Instead, they keep trying to dam the drainage structure that they cannot get to because of the fence.

The beavers will often give up on damming the drainage structure and construct their dams elsewhere. Even if the dam is constructed, the poly pipe keeps the water flowing and prevents the beaver pond from flooding as large an area. By careful placement of the inlet and outlet of the poly pipe, these structures can be used to regulate the beaver pond water level at a depth both humans and beavers can accept. This would be appropriate in an environmentally sensitive area where the beavers may be desirable but the size of their pond must be controlled.

A search of the internet will show many versions of this device modified to fit a variety of site specific conditions.

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