



Photo courtesy of the Texas Department of Transportation Vegetation Management Section

A roadside wildflower program

by Paul Northcutt, ASLA

Spring is the time when many of us hit the state's roads to enjoy the beautiful display of wildflowers. Texas is blessed with hundreds of species of wildflowers, many of which bloom during the spring. As wildflowers have gained in popularity in recent years, more and more requests are being made of state, county and city transportation agencies to establish a wildflower program on their rights-of-way.

A good wildflower program doesn't just happen by itself. It requires long-term commitment, consistent effort and thoughtful management.

Here are some tips to guide you in developing, implementing and maintaining a roadside wildflower program.

Tip 1: Ensure management support

Wildflowers can be a valuable asset to your roadsides, but they are not without problems. Your top-level agency management must buy into the program and remain consistent in their support in order to achieve a good program. Even though you will always be faced with stretching your budget to cover as many items as possible, you must devote a portion of your budget to this activity in order to succeed.

The Texas Department of Transportation recognized the value of wildflowers to the state transportation system early on. Memos to field personnel from the agency CEO instructing them to preserve and take steps to propagate wildflowers were issued from Austin as early as the 1930's. TxDOT has remained true to that commitment to this day. TxDOT estimates that it planted over 30,000 pounds of wildflower seeds in 2002.

Tip 2: Recognize the difficulties presented by roadside scale

Many of us have had the opportunity to plant wildflowers in our own yards. Establishing

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Lone Star Roads:

The Local Technical Assistance Program (LTAP) is a nationwide effort financed by the Federal Highway Administration and individual state departments of transportation. Its purpose is to translate into understandable terms the best available technologies in the areas of roads, bridges and public transportation for city and county highway and transportation personnel.

The Engineering, Utilities and Public Works Training Institute's *LTAP* is sponsored by the Federal Highway Administration and the Texas Department of Transportation. This newsletter is designed to keep you informed about new publications, techniques and training opportunities that may be helpful to you and your community.

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Drunk driving equals dangerous roads with tragic consequences

by *Wendy J. Hamilton, National President, Mothers Against Drunk Driving (MADD)*

With summer fast approaching, travelers will hit the roads and head to fun and relaxing destinations. However, the mix of alcohol, cars and roadways can have a deadly impact on those plans – and spell tragedy and disaster.

Each year thousands of people are injured and killed in alcohol-related traffic crashes. The answer to this problem rests with all of us – legislators, judges, prosecutors, community leaders and the public. Drunk driving is a 100-percent-preventable crime.

As president of MADD, and a victim of drunk driving, I have spent nearly 20 years of my life trying to stop drunk driving because it is deadly and causes devastating ripple effects in communities. The soul of my efforts is made up of the memories of my best friend and sister, Becky, and my nephew, Timmy. I now remember them, as well as my uncle Robert and cousin John, only in my dreams. Their lives were taken by drunk drivers.

According to the National Highway Traffic Safety Administration (NHTSA), a long-time MADD partner, alcohol is a factor in 26 percent of the United States' crash costs. It also cost the public an estimated \$114.3 billion in 2000. This included \$51.1 billion in monetary costs and an estimated \$63.2 billion in quality of life losses. People other than the drinking driver paid \$71.6 billion of the alcohol-related crash bill. In 2001, the annual cost to Texas for these crashes was \$10.1 billion.

It has never been truer that alcohol-related crashes are deadlier and more serious than other crashes. With more than 17,000 alcohol-related traffic fatalities nationally (more than 1,700 of those in Texas) it is time for everyone to pitch in on the solution. The percentage of total alcohol-related traffic fatalities (48 percent) in Texas is substantially higher than the national average (41 percent).

There is no single solution to the drunk driving problem, but for more than 22 years MADD has charted a path that has helped to save more than 250,000 lives. MADD will accept nothing less than continued success, even as the number of tragedies appears to be rising once again.

By working together, we ensure that everyone's friends and loved ones don't

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SFST: Effective tool for detecting **impaired** drivers

by Rodney Merkley, TEEEX

Each year, thousands of Texans are needlessly injured or killed by alcohol and/or drug impaired drivers. These injuries and deaths impact communities through approximately 10 billion dollars in lost productivity, property damage and medical bills. While this may be staggering, Texas law enforcement officers are receiving training in sobriety testing techniques that have a direct influence on their ability to detect impaired drivers and reduce the tragic consequences of impaired driving.



ability to divide their attention among several tasks diminishes and the likelihood of a collision increases dramatically.

combination of two or more of those substances, or any other substance into the body.”

Driving tasks

In order to operate motor vehicles safely, drivers must be able to divide their attention among several different, simultaneous tasks. These tasks include steering, speed control, braking, awareness of surrounding traffic and reacting to the changing environment. When drivers becomes impaired from alcohol and/or other drugs, their

Laws governing impaired driving

Law enforcement officers in Texas rely on the statutes in the Texas Penal Code to provide a clearly defined set of guidelines by which to perform their job. This code (49.04) stipulates that a Driving While Intoxicated (DWI) offense has occurred if, “a person is intoxicated while operating a motor vehicle in a public place.” One of the most important components of this statute is the definition of intoxication.

A vast majority of the driving public is familiar with the “legal limit of 0.08”, but many are not well acquainted with the second portion of the law relating to not having the normal use of mental or physical faculties. Mental and physical faculties are required for people to adequately divide their attention among several different tasks. This section is used for drivers that are impaired and have a blood alcohol concentration (BAC) of less than 0.08, that are impaired by drugs other than (or in combination with) alcohol, or that refuse to provide a breath sample.



Intoxication (49.01) is defined as (1)(B) “having an alcohol concentration of 0.08 or more,” or (2)(A) “not having the normal use of mental or physical faculties by reason of the introduction of alcohol, a controlled substance, a drug, a dangerous drug, a

In addition to the above statutes, much stricter laws are in place for minors (those under 21 years of age) and commercial motor vehicle drivers.

The law enforcement response

Among their various duties, law enforcement officers are



tasked with ensuring the safe and continual movement of vehicular traffic. When an officer observes a traffic violation, such as speeding, disregarding a red light or failure to wear a safety belt, the officer may stop the vehicle and initiate an investigation of the violation.

Subsequent to stopping a vehicle, one of the officer's many responsibilities includes determining if the driver is impaired. If the officer, through a series of structured questions and other general observations, determines the driver to be impaired, he/she will ask the driver to exit the vehicle to continue the investigation.

Sobriety testing

One of the many tools available for officers to use in making the determination of impairment is the Standardized Field Sobriety Tests (SFST) designed by the National Highway Traffic Safety Administration (NHTSA). The SFST consists of three individual tests:

- Horizontal Gaze Nystagmus (HGN) test.
- Walk and turn test
- One-leg stand test.

The HGN test is the first test administered to impaired drivers. The HGN test consists of the officer moving an object in a series of different horizontal movements, during which the officer is carefully observing to see if the eyes distinctly jerk (nystagmus) as they follow the object. The amount of jerking in the eyes is proportional to the amount of alcohol ingested. This is an involuntary response and, therefore, cannot be controlled by the individual.

The walk and turn test requires the individual to assume a heel-to-toe position and to remain in this position until the officer has explained how to perform the test. The individual will be required to take nine heel-to-toe steps down the line, turn in a prescribed manner and take nine heel-to-toe steps back down the line. While walking, the individual must watch his/her feet, keep his/her hands to their sides, count each step out loud, touch heel-to-toe and not stop while walking.

The last test is the one-leg stand test. This test requires the person to stand on one leg for 30 seconds. While performing this test, the person must keep both legs straight, keep the arms at the



sides and count out loud.

Each SFST has several standardized "clues", which the officer will use in the investigation. While not the only indicators of impairment, these clues provide a structured and standardized method of documenting the level of impairment in drivers. The criterion used for each test is: four or more for HGN, two or more for the walk and turn and two or more for the one leg stand. Research has shown these measures have enabled officers to accurately discriminate drivers with a Blood Alcohol Concentration (BAC) of 0.08 or more (88 percent for HGN, 79

SFST Clues

Horizontal Gaze Nystagmus

1. Lack of Smooth Pursuit
2. Distinct Nystagmus at Maximum Deviation
3. Onset of Nystagmus Prior to 45 Degrees

Walk and Turn

1. Failure to maintain balance during the instructions
2. Starts too soon
3. Misses heel to toe
4. Incorrect number of steps
5. Uses arms for balance
6. Steps off the line
7. Stops while walking
8. Incorrect Turn

One Leg Stand

1. Sways while balancing
2. Uses arms for balance
3. Hops
4. Puts foot down

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SFST (continued from page 4)

percent for the walk and turn and 83 percent for the one leg stand).

Prior to the development of a set of structured questioning techniques and sobriety tests, officers relied on a myriad of unreliable sobriety tests. Since these early tests were unreliable, officers inadvertently released three out of four impaired drivers they had contacted during investigations.

SFST test validation

The SFSTs have been heavily scrutinized as to their validity and reliability in accurately discriminating impairment. NHTSA has conducted a considerable amount of research and has shown when the tests are used by experienced officers, they could accurately discriminate

drivers with a BAC of 0.08 in 95 percent of the cases.

In addition to being a valid and reliable method of detecting impaired drivers, independent research has shown the SFST training program to increase DWI arrest rates and to build officer confidence in detecting impaired drivers, writing DWI reports and testifying during DWI trials.



SFST training in Texas

Texas has one of the strongest SFST training programs in the nation. In cooperation with the Texas Department of Transportation (TxDOT), the Texas Engineering Extension

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become a distant dream. MADD has outlined a few key priorities that will help us lower those fatality and injury statistics, each of which represents a human life.

These key initiatives, if implemented on a national, state and local level, will show dramatic progress in the fight against drunk driving:

1. Conducting frequent, high-visibility law enforcement efforts
2. Implementing higher-risk driver system improvements. MADD defines the higher-risk driver as: those convicted of a first driving-while-intoxicated (DWI) offense with a blood alcohol concentration (BAC) of .15 percent or higher; those convicted of a second DWI offense ("repeat

offenders") and those convicted of a driving-while-suspended offense when the suspension was the result of a DWI. A common-sense, highly effective penalty is to separate these offenders from their vehicles. While courts have been issuing these sanctions, studies show that for those convicted of a driving-while-suspended offense, up to 75 percent of them continue to drive without their license.

3. Enforcing primary seat belt laws

Here is what you can do.

- Help ensure that funding, training and needed equipment is available for your local law enforcement.
- Ask your law enforcement leaders to expand impaired driving deterrence from special impaired driving enforcement units to include all officers.
- Work on public education campaigns designed to encourage people to use seat belts. Seat belts are the best defense against a drunk driver. Of those killed in drunk driving crashes, 80 percent were not wearing their seat belt.
- Visit www.madd.org for more information on all of our programs and services, as well how to order resources. MADD is the largest crime victim service organization in the world and is available to victims 24 hours, seven days a week. MADD also has numerous education and prevention programs for elementary, middle, high school and college-age students. MADD also offers trained victim advocates (available nationwide) to serve victims of drunk driving free of charge.

TEEX TRAINING

Agencies needing to train their officers in Standardized Field Sobriety Testing should call TEEX's **Albert Reeder** at **800-423-8433** or email him at **Albert.Reeder@teexmail.tamu.edu**
The SFST course is **FREE** to Texas peace officers



Wildflowers (continued from page 1)

wildflowers on a county roadside, however, is a far more difficult task. On roadsides, we're talking about a vastly increased scale and we're dealing with hundreds of acres, not just a few square feet. We must also remember that our wildflowers are going to be viewed at highway speed, not at a leisurely walking pace. Additionally, roadsides are often hostile environments for growing plants. These factors will dictate the overall design of our program.



Photo courtesy of the Texas Department of Transportation Vegetation Management Section

Tip 3: Select your sites

It is impractical to expect a continuous blanket of wildflowers covering each square foot of our roadsides. In times of diminishing budgets, it is also difficult, if not impossible, to justify that type of expenditure. So you should select your sites carefully, and choose those which have the best chance of being seen by the greatest number of your roadway users, and start there! You may also want to consider those sites which already have a decent stand of wildflowers, and begin to improve on the stand at that site.

Tip 4: Select the right species

This is easier said than done. There's a bewildering number of wildflower species which grow well in Texas, but not every species grows well in every condition, or in every region of our great state!

Try to use a mixture of wildflowers and not just a single species in your planting design. That way species will colonize that portion of the right-of-way which is most suited to their growing needs. For example, Bluebonnets are rarely seen growing in the bottom of a drainage ditch; they just can't stand having their feet wet and require a well-drained area. Many of the yellow flowers, however, grow well in the moister conditions found within a drainage ditch.

A good solution is to find a mixture that works well in your area and start there.

Tip 5: Native versus Introduced; Annual versus Perennial?

Native plants have the advantage of being well adapted to local climate, rainfall and soil type conditions and generally require little care once they are established. There are many outstanding Texas native wildflowers which are available. However, there are excellent introduced and adapted species which might have a good fit in your program as well. Many of these introduced species provide

a showy bloom and a relatively quick visual impact to your roadside viewers and are not so competitive that they crowd out other species. Perhaps the best solution is to begin with a mixture of both native and introduced species.

An annual is a plant which completes its entire life cycle (from seed to bloom to seed) within one growing season. Annuals start all over from seed each year. Perennials, on the other hand, generally form permanent root stock and re-sprout and bloom from that rootstock each year. Annuals often provide quick displays of bright blooms, but you must generally reseed these species each year or so to help insure their continued display. Perennials are generally harder and slower to establish, but once you do, they can provide many years of display and enjoyment.

Again, probably a good suggestion would be to use a mixture of both annuals and perennials in your roadside program.

Tip 6: Plant at the right time

In order to achieve the best success, you need to plant your wildflower seed at the right time. Some species should be planted in the fall, while other species may be planted during the spring. Bluebonnets, for example, are generally planted in the fall because their seed must germinate in the fall and be permitted to "over-winter" in order to produce a bloom the following spring.

Tip 7: Limit soil disturbance

Once you've selected your site, picked your seed mixture, and made plans on the right time to plant the seed, you must remember that your roadsides contain millions of dormant weed seeds and weed rootstock. Deep soil disturbance releases those weeds and encourages them to grow which they generally do with abandon! These weeds will compete for the available moisture and nutrients in the soil and will often prevent your wildflowers from flourishing or may even shade and crowd them out completely.

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SFST (continued from page 5)

Service (TEEX) has been providing SFST training to Texas peace officers free of charge for the past 13 years.

The SFST training course is three-days long and involves classroom instruction and the practical application of the SFSTs on alcohol impaired individuals. In addition to the SFSTs, officers are taught a variety of questioning techniques, legal aspects of DWI enforcement and how to testify in court during a DWI trial. This

training provides the officer with a general background of the SFSTs and begins to develop the officer's confidence in relying on the SFSTs to aid in field investigations.

City/county agencies with a need to train their officers in SFST should call Albert Reeder at 800-423-8433 or email Albert.Reeder@teexmail.tamu.edu for additional information and requirements. The SFST class is conducted free of charge for Texas peace officers.

ATTENTION!

The newly updated TEEX "Reference Guide to Work Zone Traffic Control" is available for sale. It costs \$5.50 each and may be ordered by faxing your order form to 979-458-6771. If you do not have a copy of the Transportation Publications Order Form, contact Guy Benson at 979-845-6568 or Guy.Benson@teexmail.tamu.edu. He will fax or email you a copy of the form. The updated Reference Guide is based information in the January 2003 edition of the Texas Manual on Uniform Traffic Control Devices.

Order your copies today !!!

Wildflowers (continued from page 6)

The key to good germination is to ensure good seed-to-soil contact, so before you plant, try to remove as much of the existing vegetative competition as possible, but make sure that any soil disturbance is as shallow as possible. The deeper you disk or till, the more weeds you release.

Tip 8: Adjust your maintenance procedures

Many of our spring blooming wildflowers are growing at the same time that some of the taller, weedy species are growing, so often the public will place pressure on you to mow what they consider to be "weedy patches." An area which is routinely

and regularly mowed simply cannot support a good wildflower program.

Plan on mowing your right-of-way in the late fall to help remove some of the competition for the spring-blooming species such as Bluebonnet. Try to delay your mowing in the spring until at least half of the last blooming species have dropped their seed to help ensure that you'll have a good showing the next year.

Tip 9: Be patient!

A good wildflower program doesn't happen overnight. It takes many years and consistent effort to achieve the results you want. Some wildflowers are notoriously fickle! Even when you think the conditions are perfect, you may not get the results you want. However, keep trying and your program will succeed.

Tip 10: Involve the public!

The traveling public and the local citizens of your area are often an outstanding source of support. Many civic groups are often interested in working with the local transportation agency to help foster a better wildflower program. Consider innovative public-private partnerships with the public to help you fund, plant and maintain a good program.

There are many excellent sources

of information about wildflowers and several excellent commercial wildflower seed suppliers in Texas. Most of these folks have web sites that will help you in developing your program. Although certainly not an exhaustive list, we've outlined several sources of information and web sites you may wish to view for help on your roadside program.

Informational Sources:

1. Aggie Horticulture / Texas Agricultural Extension Service: <http://aggie-horticulture.tamu.edu/wildseed/tamuhort.html>
2. Lady Bird Johnson Wildflower Center: <http://www.wildflower.org/>
3. Texas Department of Transportation Wildflower Hotline: 800-452-9292
4. National Roadside Vegetation Management Association: www.nrvma.org
5. Texas Vegetation Management Association: www.tvma.net

Commercial Wildflower Seed Suppliers:

1. Native American Seed: <http://www.seedsource.com/>
2. Wildseed Farms: <http://www.wildseedfarms.com/>

ELECTRONIC "LSR"

"Lone Star Roads" is now available via e-mail. If you'd like to receive "Lone Star Roads" electronically, just email Laura.Wilson@teexmail.tamu.edu



NACE 2003 annual convention held

by Richard E. Macchi, P.E., NACE Vice President

The National Association of County Engineers (NACE) conducted its 2003 Annual Meeting and Management and Technical Conference in Biloxi, MS., March 23-27. The conference attracted approximately 300 delegates, 110 spouses and 98 vendor and equipment displays staffed by more than 200 representatives.

The following were elected as new officers: Mr. Royce Fichtner, President, Marshall County, Iowa; Mr. Ron Young, President-Elect, Alcona County, Michigan; and Mr. Randy Cole, Secretary-Treasurer, Shelby County, Alabama. The Vice President position for the South Central Region continues to be filled by Mr. Richard Macchi, Bell County, Texas. Mr. Don Brandon, Chambers County, Texas, represented Texas on the board of directors. Texas was well represented at the conference, with 10 members of the Texas Association of County Engineers and Road Administrators (TACERA), one county commissioner and one spouse attending.

I will address a couple of issues that were discussed at the meetings of the board of directors. The first topic is finances. Like Texas cities and counties, NACE is experiencing some financial problems. The organization's bottom line is still in good shape, but we are becoming somewhat concerned regarding our dependence on the annual conference as our primary source of funding. In 1992, the last time that an increase in dues was approved, dues accounted for approximately 55 percent of NACE's income. Only 40-45

percent came from the conference. Today, the conference garners about 55 percent of the income. Dues and other income accounts for only 45 percent. The fear is that a bad conference, due to any number of reasons, could spell serious problems for NACE. We are looking at a small dues increase as well as looking at other methods of increasing funds (increasing attendance at the conference, increasing

NACE membership, increasing the number of vendors at the conference, etc.) . The board has appointed a committee to study the issue and report back at the next board meeting in July. Another committee has also been designated to study expenditures and to look into all possible cost-cutting measures.

The second topic is an invitation. I want to invite the members of TACERA to attend the next NACE conference in Orlando, Florida, April 4-8, 2004. Come to just one of these conferences and you will want to come back. The conference offers you the opportunity to visit with other county road professionals from 30 states across the country. Find out how they are encountering and solving many of the same problems that you face. By the way, Missouri became our 30th affiliate state organization, being accepted by the board during its first meeting of the conference. Future meetings will be held in Bismarck, ND (2005) and Grand Rapids, MI (2006). You will also be able to hear about what is happening in D.C.

Note: *If you would like to join NACE, or if you want to talk to someone about NACE, please call Richard Macchi at 254-933-5275. His e-mail address is rmacchi@vvm.com.*



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