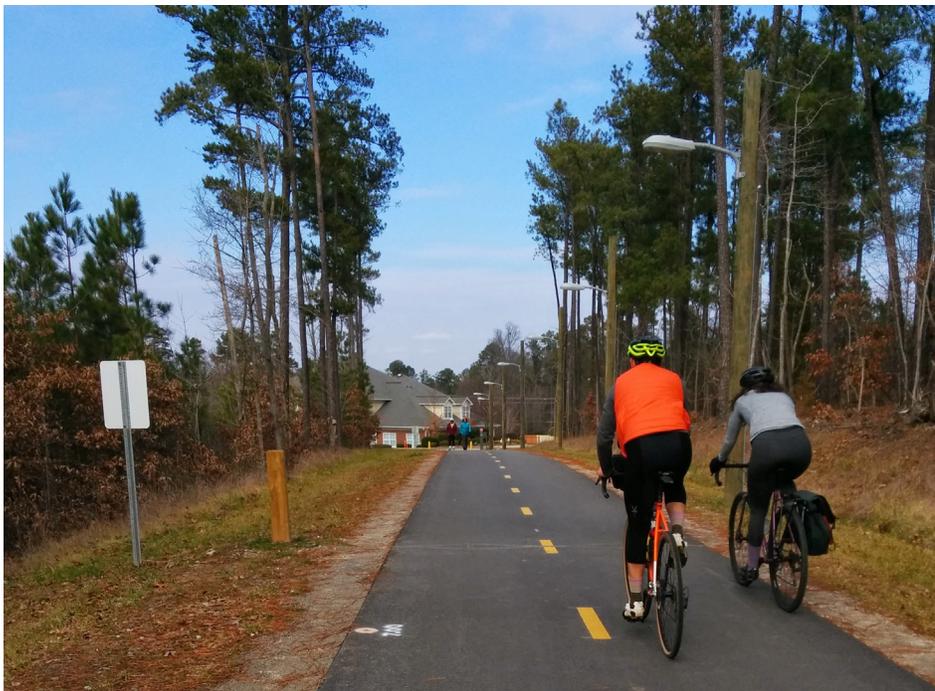


## The North Carolina Non-Motorized Volume Data Program

*Blythe Carter, Bicycle and Pedestrian Research Assistant*

The Institute for Transportation Research and Education (ITRE) continues its commitment to supporting bicyclists and pedestrians in North Carolina through its management of the North Carolina Non-Motorized Volume Data Program (NC NMVDP) on behalf of the North Carolina Department of Transportation (NCDOT). The NC NMVDP is one of the largest statewide bicycle and pedestrian data collection efforts in the United States. The purpose of the program is to establish a robust data collection framework to reliably calculate sidewalk, shared use path, bike lane, and shared lane volumes through the installation of permanent bicycle and pedestrian counters that continuously collect count data on representative facilities in North Carolina. ITRE partners with local agencies and the technology vendor, Eco-Counter, to install inductive loop bicycle detectors and passive infrared pedestrian sensors at counting locations in various municipalities across North Carolina.

A primary motivation of the NC NMVDP is to use a system of continuous counters to determine travel patterns by purpose and variability over time to inform the development of daily and seasonal factors. Continuous counting locations are assigned to a factor group based on similar pedestrian or bicycle activity patterns (e.g., commuter vs. recreational) and count data from each group is used to develop expansion factors. These factors are then applied to shorter duration counts collected with portable counters to generate annual volumes. Short duration counts provide geographic coverage, while continuous counts provide the temporal



*Continuous bicycle and pedestrian count station on the American Tobacco Trail in Durham, NC near the I-40 pedestrian bridge*

### In This Issue

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### Get the Picture!



Can you tell what's wrong with this picture?  
Turn to page 4 to see what the problem is.

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Technology Transfer Newsletter

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coverage needed to account for day of week and seasonal trends. The NC NMVDP is testing and establishing consistent and replicable data collection and analysis processes that will enable municipalities to count users on facilities at any time of the year and extrapolate reliable estimates of annual pedestrian or bicyclist volumes. The continuous counters further provide valuable and comprehensive user volume data to local agencies to use for various local applications, from justifying facility improvements or network expansion to monitoring visitation to central business districts.

In 2018, ITRE facilitated the installation of twenty-one additional counting sites in Wake and Durham counties. As a result of this expansion, a total of seventy-one counting sites comprised of 141 unique bicycle and pedestrian sensors are managed by the program. These sites produce up to 4.8 million data points every year. All high quality data collected through the NC NMVDP program is publically available online at the [ITRE Bicycle & Pedestrian Program](#) website. Local agencies, scientists, and citizens alike are encouraged to review and analyze the datasets. ITRE has also collected short-duration counts on many additional facilities in North Carolina and these data are available upon request.

An important potential application of data generated by the NC NMVDP is to establish crash rates along corridors, a task that is historically difficult given the dearth of reliable bicycle and pedestrian volume data. Establishing rates can lead to better prioritization of safety projects on roadways and facilities. Other applications could include project prioritization, health impact analyses, additional safety quantifications, estimates of economic impacts of various facilities, and development of economic indicators in central business districts. We look forward to seeing our data used to create safer multi-modal facilities in our state.



Continuous bicycle and pedestrian count station on MLK Jr Boulevard in Chapel Hill, NC

## Organizational Traffic Safety Culture

### Organizational Traffic Safety Culture: A necessary ingredient for Vision Zero

*Tracy Anderson, NC Vision Zero Program Coordinator*

Traffic crashes are a leading cause of death for all age groups and the number one cause of death for people ages 5-24 (CDC). In response to this growing public health crisis, over 40 cities in the United States have started a Vision Zero program - each with the goal of eliminating traffic deaths and serious injuries. This ambitious goal is based on the moral foundation that predictable human errors should not result in a fatal or serious injury crash. So, how can your organization help to support this goal of zero traffic deaths?

As the National Safety Council noted its recent report A Road To Zero: A vision for achieving zero roadway deaths by 2050, "getting to zero deaths will involve countless individual and collective decisions, and a strong safety culture is an essential prerequisite." Cultural has a profound impact on how we view societal problems, how empowered we feel to work toward solutions, and how we interact with others regarding important issues in our communities.

In particular, workplace culture can be a powerful tool in traffic safety efforts. On average, people now spend over 13 years (or more than

90,000 hours) in their lifetimes at work. Whether we like it or not, we spend so much time at work that we are shaped by our careers and workplace cultures. The good news is that company policies which prioritize safety can lead to needed behavior change which will make our roads safer.

#### What can your organization do?

1. **Establish a policy forbidding all phone use while driving.** The policy should clearly state that employees should never schedule a business phone call when anyone is driving. Explicitly note this policy when planning conference calls.
  - a. **Note:** Establish a protocol for your employees to handle situations of distracted driving. For example, if they call a client and it becomes clear that someone is driving while on the phone, give them a procedure to hang up. For example, encourage your team members

## Why shouldn't employees use a phone while driving? What about hands-free devices?

*Multi-tasking behind the wheel is a myth!*

*Your brain can miss up to half of your surroundings when you are engaged in a phone call while driving - even if your eyes are on the road and your hands are on the wheel. There is no safe way to use a phone while driving and allowing employees to use a phone (even hands-free) is a huge liability.*

More info available at: <https://www.nsc.org/road-safety/tools-resources/infographics/great-multitasking-lie>

to say something like, "We have a policy about not holding phone calls when anyone is driving. Can you give me a call back when you arrive?"

- 2. Formalize a "better safe than on time" policy for your team.** Make it clear that your company values a safe arrival over being on time (or speeding to get somewhere on time). Address this openly in meetings if someone arrives late ("Better to arrive safely than arrive on time!") so that it is clear that employees should not drive dangerously if they are running late.
- 3. Create an anonymous reporting system for dangerous behavior.** Allow your employees to report any concerns about unsafe driving through an anonymous system or process. Discuss reported concerns privately with individuals, framing the conversation around concern for their well-being and safety.

To affect the most change, your company's safety culture must be maintained in an ongoing process, with reminders at staff meetings, in emails, and in discussions about long-term goals. The more that we all talk about traffic safety in our organizations, the more we shape the culture of North Carolina to one which does not accept preventable traffic death. We can get to zero traffic deaths, it will just take all of us working together to get there.

## Update to TC3 links

A few newsletters ago we alerted you to the TC3 course offerings, along with a code to access some of these courses free of charge. Some of the links have changed since we initially sent this information out – you can find the updated procedure below.

To browse and access TC3 course offerings, go to <https://tc3.transportation.org/>. To learn more about CLAS, a part of FHWA's Office of Innovative Program Delivery, go to <https://www.fhwa.dot.gov/clas/>.

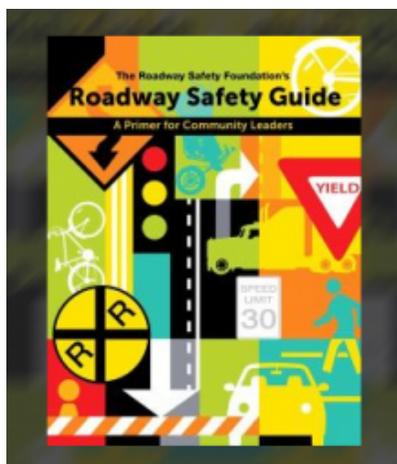
You will need an AASHTO account to access the FHWA sponsored online training courses. If you have not previously registered for an AASHTO account, please go to

To gain access to available training courses, please follow the steps below and use the provided promotion code to access sponsored training courses:

1. Go to <https://store.transportation.org/> and find "My Account" at the top right of the page. If visiting for the first time, select "Register" and provide the requested information; otherwise, select Sign In and enter your email address and password.
2. Select the "Technical Training" dropdown on the left under the AASHTO logo and search through the available training courses to select the course(s) that you would like to access and add them to the Shopping Cart.
3. When you are ready to checkout, click Shopping Cart on the top menu and enter the following promotion code and select Apply:
  - 4. Promotion Code: D5X3-B3D9-52CB-4XCX**
5. Click Checkout to proceed with placing the order.

To launch purchased training courses, select "My Training" from the "My Account" dropdown menu at the top of the page. This will display a list of purchased courses that you can complete.

If you have questions or need additional information, please use the Contact Us form at <https://store.transportation.org/ContactUs> to submit your support request or question.



## The Roadway Safety Guide

The Roadway Safety Foundation is offering the second edition of its Roadway Safety Guide: A Primer for Community Leaders. The Guide is available free online and is designed to provide community leaders and elected officials with basic information to improve roadway safety in their communities.

If you're interested in the Guide, or the Roadway Safety Foundation, check out <https://www.roadwaysafety.org/programs/roadway-safety-guide>



## Get the Picture!

by Timothy B. Baughman, PE, ITRE's Highway Operations and Safety Manager

You'll probably note the obvious – the homemade sign. But what about truck lighting devices?

There are no lighting devices activated on the pilot car. Which leads to something you may not be aware of. If the driver just turned on the four-way flashers, it would not be adequate.

The [Manual on Uniform Traffic Control Devices](#) states that "Although vehicle hazard warning lights are permitted to be used to supplement high-intensity rotating, flashing, oscillating, or strobe lights, they shall not be used instead of high-intensity rotating, flashing, oscillating, or

strobe lights". I do not see lighting devices on the roof of the truck, and I cannot tell if strobes are installed in the parking lights of the truck. So if the driver only turned the factory-installed flashers and an accident occurred, this could be a major issue for the company to defend.

If you have any questions about worker safety and work zone traffic control, give me a call at (919) 515-8654, or e-mail me at [tbb@ncsu.edu](mailto:tbb@ncsu.edu). TB

## What does 1273 mean to you?

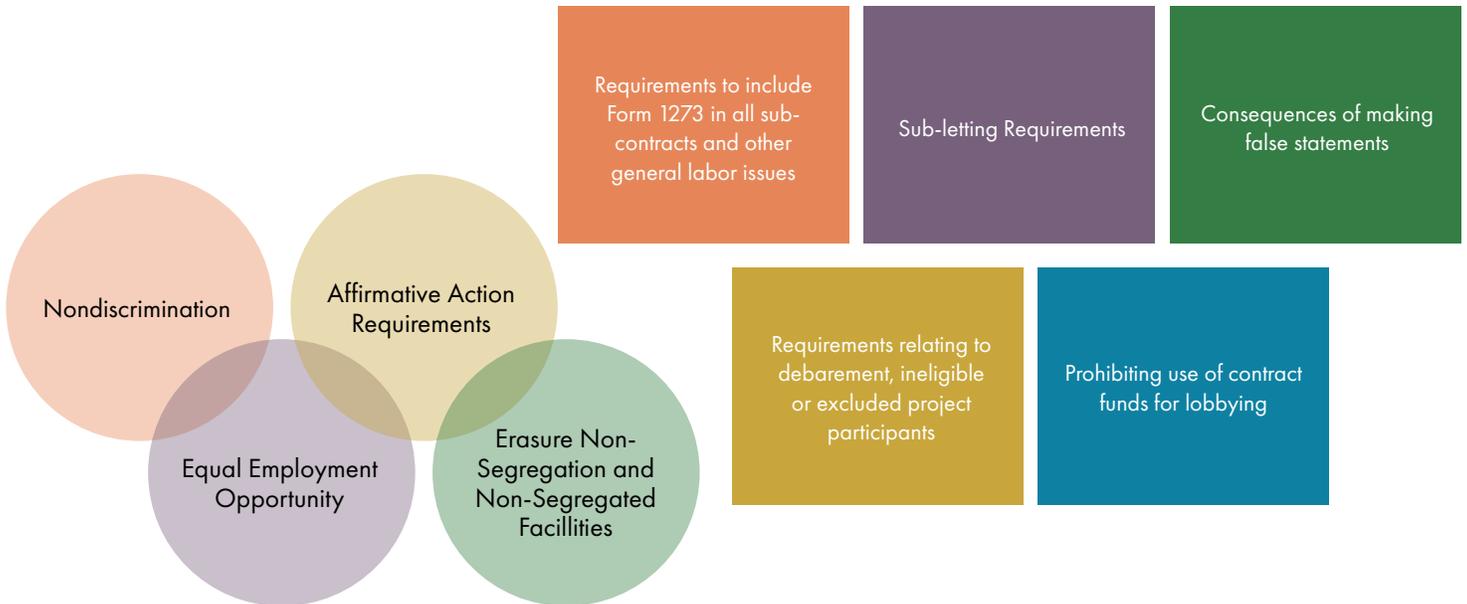
Victoria Beale | Reprinted from the Ohio LTAP Newsletter

Does the number 1273 sound familiar to you? Sometimes we remember bits and pieces of information, like a number, but can't quite put our finger on the complete information we need when we need it. Then when we do remember it later, we regret being forgetful because it has a severe impact on us...like forgetting to insert FHWA Form 1273 in your contracts with your contractors. Forgetting to include FHWA Form 1273 in an LPA local-let contract with a contractor could potentially impact reimbursement on your local-let projects. Yikes! Or your contractor forgetting to insert FHWA Form 1273 into their contracts with subcontractors on your local-let jobs. Same result. Double Yikes!

Don't let this happen to you and your agency! Of all the requirements an LPA needs to complete for a locally-let project, including FHWA Form 1273 in each contract is easy. Because the requirement seems so simple, it is at times not given a high priority and missed. Don't let this happen on your project!

Why is FHWA Form 1273 so important? The information provided in the form is critical for everyone participating in the federal-aid project, at all contract levels. It provides information from FHWA on:

The form includes Civil Rights requirements, such as shown in the circles on the next page. The Department of Labor and the Environmental



Protection Agency also have sections in the form which outline specific requirements under their agencies' responsibilities.

It is important to note, FHWA Form 1273 must be inserted into your contracts and related sub-contracts exactly as it is written. Absolutely NO changes can be made to the form. It also can NOT be incorporated by reference in your contracts or related sub-contracts. The whole thing must be in the agreements. You can find the entire FHWA Form 1273 at the following hyperlink: <https://www.fhwa.dot.gov/programadmin/contracts/1273/1273.pdf>

How can my agency simplify including FHWA Form 1273 in each contract or related subcontract to ensure it is rarely forgotten? Here is a list of recommendations for making this a reality:

- **Use a checklist.** Whether it is a checklist for your own contract review or for reviewing the related sub-contracts, a checklist will force you to confirm the FHWA Form 1273 is included in the contract/sub-contract.
- **Require the FHWA Form 1273 to be printed on special color paper.** This will enable you to quickly identify where the FHWA Form 1273 is included in the contract and check for completeness. However, if you are on a paperless system, this won't work because there is no special colored paper to look for in the packet.
- **Designate a person in your agency as the back-up to confirm FHWA Form 1273 was included in each contract.** Choose someone who isn't usually involved in the contract review process, but who is thorough with their work, and put them in charge of checking each contract/sub-contract as it comes through your agency. This does add another step to the process, but it is well worth it if the step keeps your agency from risking federal reimbursement denial.
- **Build the FHWA Form 1273 into your paperless system as an automatic part of the contract.** This works for the paperless system your agency may be using, but the subcontracts will probably still need to be checked manually.

Whether you choose one of the recommended ideas above or come up with your own, the key is to establish a process to ensure FHWA Form 1273 is always included in your contracts and related sub-contracts. The form itself is FHWA's way (process) to ensure required provisions are being included at all contract levels. Your agency is securing your place in the overall process by making sure the FHWA Form 1273 is included.

If you have additional questions concerning FHWA Form 1273, the Federal-aid Essentials Video series provides a video on this topic. The video is available for viewing at: <https://www.fhwa.dot.gov/federal-aidessentials/catmod.cfm?id=22>

**FHWA Form 1273:** <https://www.fhwa.dot.gov/programadmin/contracts/1273/1273.pdf>

**Federal-aid Essentials Video on FHWA Form 1273:** <https://www.fhwa.dot.gov/federal-aidessentials/catmod.cfm?id=22>



## Do you have an idea for a transportationTracks article?

We'd love to hear from you! If there's a topic you need information on or resources for, let us know! If there's transportation news your town, let us know! If any of your employees have recently received awards for their work, let us know! - Contact Kate Davison at 919 515 3983 or [kbdaviso@ncsu.edu](mailto:kbdaviso@ncsu.edu) to get your article in our newsletter

## NC LTAP News & Updates

To update your mail information, add a colleague to the database, or obtain information about Roads Scholar Program fax this sheet to 919-515-8897 or complete online at [go.ncsu.edu/NCLTAPcontact](http://go.ncsu.edu/NCLTAPcontact).



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**Email** \_\_\_\_\_

### Check Appropriate Items

Add/Update email information to NCLTAP listserv NCTROADS

Send information about Roads Scholar program

Send schedule of training opportunities

## NCTROADS Listserv

Subscribe to the NC LTAP listserv. It is free and easy. Send a message to [linda\\_collier@ncsu.edu](mailto:linda_collier@ncsu.edu) and ask to be added to NCTROADS.

This is an informal network for the exchange of news about current research, discussion of problems and solutions, request for advice and assistance, and announcements of upcoming conferences, events and training opportunities for transportation personnel. Once you are subscribed, you can send a message all the listserv members at [NCTROADS@lists.ncsu.edu](mailto:NCTROADS@lists.ncsu.edu)

## NC Local Technical Assistance Program 2018 Schedule

Questions or Email Registration: [kbdaviso@ncsu.edu](mailto:kbdaviso@ncsu.edu)

For Online Registration: [itre.ncsu.edu/training/ltap-training/](http://itre.ncsu.edu/training/ltap-training/)

Date	Class Title	Cost	RS/ARS/MRS	Location	Register
May 1, 2019	Designing Pedestrian Facilities for Accessibility	ARS	\$135.00	Raleigh	<a href="#">Click Here</a>
May 2, 2019	Roadway Safety Fundamentals	RS	\$125.00	Raleigh	<a href="#">Click Here</a>
May 3, 2019	ADA in Temporary Traffic Control	ARS	\$90.00	Raleigh	<a href="#">Click Here</a>
May 9, 2019	Concrete: What, When and How	RS	\$175.00	Charlotte	<a href="#">Click Here</a>
May 14, 2019	Productive Team Building	MRS	\$150.00	Raleigh	<a href="#">Click Here</a>
May 21, 2019	Guardrail Installation and Maintenance	ARS	\$125.00	Raleigh	<a href="#">Click Here</a>
May 22, 2019	Basic Roadway Drainage Maintenance	RS	\$125.00	Raleigh	<a href="#">Click Here</a>
May 23, 2019	Basic Work Zone Installer Safety	RS	\$125.00	Raleigh	<a href="#">Click Here</a>
May 30, 2019	Emergency Management for Public Works	MRS	\$150.00	Raleigh	<a href="#">Click Here</a>
May 31, 2019	Managing Conflict with the Public and Employees	RS	\$125.00	Raleigh	<a href="#">Click Here</a>
June 4, 2019	Effective Leadership Skills	MRS	\$150.00	Raleigh	<a href="#">Click Here</a>
June 5, 2019	Concrete: What, When and How	RS	\$175.00	Raleigh	<a href="#">Click Here</a>
June 11, 2019	Work Zone Supervisor Recertification	ARS	\$150.00	Raleigh	<a href="#">Click Here</a>
June 12, 2019	Basic Work Zone Installer Safety	RS	\$125.00	Raleigh	<a href="#">Click Here</a>
June 13, 2019	Communicating with the Public and Media	MRS	\$150.00	Raleigh	<a href="#">Click Here</a>
June 17, 2019	Flagging Instructor Recertification	ARS	\$150.00	Raleigh	<a href="#">Click Here</a>
June 18-19, 2019	Flagging Instructor Training	ARS	\$225.00	Raleigh	<a href="#">Click Here</a>
June 20, 2019	Flagger Training	RS	\$90.00	Raleigh	<a href="#">Click Here</a>

June 21, 2019	Flagger Training	RS	\$90.00	Raleigh	<a href="#">Click Here</a>
July 16, 2019	Introduction to Unmanned Aircraft Systems	MRS	\$125.00	Raleigh	<a href="#">Click Here</a>
July 17, 2019	Soil Fundamentals	RS	\$125.00	Raleigh	<a href="#">Click Here</a>
August 13-15, 2019	Work Zone Supervisor Safety Training	ARS	\$425.00	Charlotte	<a href="#">Click Here</a>
September 5, 2019	Productive Team Building	MRS	\$150.00	Charlotte	<a href="#">Click Here</a>
September 10, 2019	Basic Work Zone Installer Safety	RS	\$125.00	Raleigh	<a href="#">Click Here</a>
September 11, 2019	Basic Work Zone Installer Safety	RS	\$125.00	Raleigh	<a href="#">Click Here</a>
September 12, 2019	Intermediate Work Zone Safety	RS	\$150.00	Raleigh	<a href="#">Click Here</a>
September 13, 2019	Flagger Training	RS	\$90.00	Raleigh	<a href="#">Click Here</a>
September 16, 2019	Work Zone Supervisor Recertification	ARS	\$150.00	Raleigh	<a href="#">Click Here</a>
September 17-19, 2019	Work Zone Supervisor Safety Training	ARS	\$425.00	Raleigh	<a href="#">Click Here</a>
October 15, 2019	Construction Math for Transportation Personnel	RS	\$125.00	Kings Mountain	<a href="#">Click Here</a>
October 15, 2019	Plan Reading for Transportation Personnel	RS	\$90.00	Kings Mountain	<a href="#">Click Here</a>
October 29, 2019	Writing Skills for Transportation Personnel	ARS	\$125.00	Waynesville	<a href="#">Click Here</a>
November 5, 2019	Basic Work Zone Installer Safety	RS	\$125.00	Nags Head	<a href="#">Click Here</a>
November 6, 2019	Intermediate Work Zone Safety	RS	\$150.00	Nags Head	<a href="#">Click Here</a>
November 7, 2019	Work Zone Supervisor Recertification	ARS	\$150.00	Nags Head	<a href="#">Click Here</a>
November 13-14, 2019	OSHA 10-Hour Safety	ARS	\$175.00	Raleigh	<a href="#">Click Here</a>
November 19, 2019	Excavation Safety	RS	\$150.00	Mooresville	<a href="#">Click Here</a>

## LTAP Links on the Web

### NC LTAP

<https://itre.ncsu.edu/focus/ltap/>

### National LTAP/TTAP

<http://www.nltapa.org/>

### NC Department of Transportation (NCDOT)

<https://www.ncdot.gov/>

### Federal Highway Administration (FHWA)

<https://www.fhwa.dot.gov/>

### US Department of Transportation (USDOT)

<https://www.transportation.gov/>

### UNC School of Government

<https://www.sog.unc.edu/>

### Institute of Transportation Engineers

<http://www.ite.org/>

### NC Section of ITE (NCSITE)

<http://ncsite.org/>

### Road Weather Management Program

[https://ops.fhwa.dot.gov/weather/weather\\_events/snow\\_ice.htm](https://ops.fhwa.dot.gov/weather/weather_events/snow_ice.htm)

### OSHA FAQs about Silica

[https://www.osha.gov/dsg/topics/silicacrystalline/generalindustry\\_info\\_silica.html](https://www.osha.gov/dsg/topics/silicacrystalline/generalindustry_info_silica.html)

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