

## Here's how a diverging diamond interchange works

The News and Observer Traffic October 4, 2017

The N.C. Department of Transportation made this video to explain the "diverging diamond" interchange or DDI. The department is planning to build two of them in the Triangle, at the Beltline and Western Boulevard in Raleigh and at Interstate 40 and N.C. 42 in Johnston County.

View video at: <http://www.newsobserver.com/news/traffic/article177011061.html>

NCDOT

## Clearing an accident scene could soon be a lot faster for state troopers. Here's why.

The News and Observer By Richard Stradling September 29, 2017

RALEIGH – When a big accident closes the highway, it can take state troopers hours to make the measurements and take the pictures they'll need to determine what happened. Meanwhile, the crashed vehicles sit in the roadway in front of a line of exasperated drivers.

Now the State Highway Patrol says it can use drones to document and reconstruct serious accidents. The drones can make 3-D images of crash scenes, just like the laser systems that troopers use now on tripods. But drones can take aerial images the troopers can't. Plus, the drones do all of it much faster.

"What used to take hours can now be done in minutes," said Trooper Dan Souther, a member of the Highway Patrol's Collision Reconstruction Unit.

Souther and other members of the reconstruction unit demonstrated the drone's capabilities at the Highway Patrol's test track off Tryon Road in Raleigh on Friday morning. Trooper John Collins used GPS to map out an area over a Highway Patrol cruiser that had been hit from behind, then launched the drone.

It rose to about 40 feet in the air over the crumpled cruiser, then flew back and forth over it in neat rows, making images as it went. The system's software quickly knitted those images together into a 3-D image that can be viewed from all different angles on a computer screen.

The drone was finished in a few minutes. Collins said it would take troopers on the ground about an hour to do the same work, as they move their tripods every time they make a new image.

The 21 troopers in the crash reconstruction unit investigate about 200 high-profile crashes in the state a year, working out of five offices across the state. The unit has only two drones now, but at \$1,300 per drone, 1st Sgt. Alex Justice, the unit's leader, hopes to have one for each of the 21 troopers within a year.

"It's incredible technology, and we're really fortunate to have it," Justice said.

The Highway Patrol has been working on its drone program for several years, with the help of the state Department of Transportation's Division of Aviation. The division regulates the use of drones in the state, but also uses them, primarily to gauge the progress at road construction sites, said Basil Yap, who manages NCDOT's Unmanned Aerial Systems program.

The potential use for the drones in accident reconstruction became clear in Buncombe County in May, when a head-on collision was staged at a state training facility. A team from Yap's program used drones to map the accident scene, while the Highway Patrol used a traditional laser scanner. (CONTINUED...)

The troopers took an hour and 51 minutes to gather the information they needed. The drones did the same in 25 minutes.

## **New stoplights installed at I-540 ramps will be 'tweaked' for Wednesday**

WRAL.com Reporters Sarah Krueger, Kathryn Brown September 26, 2017

RALEIGH, N.C. – Major changes to several on-ramps went into effect Tuesday on Interstate 540 in Raleigh, but officials say the new technology was turned off and needs some "tweaking" before it will be reactivated for the Wednesday morning commute.

Officials with the North Carolina Department of Transportation activated the new "on-ramp signals" at 6:45 a.m. The technology is brand new to the state, and I-540 in northern Wake County is the first highway to employ it.

The four signals are installed on Falls of Neuse Road, Six Forks Road, Creedmoor Road and Leesville Road on-ramps to I-540.

The signals are essentially stoplights installed on heavily used highway on-ramps that aim to space out the flow of cars getting on the highway. Officials with the NCDOT said the technology was successfully tested across the country, including in cities like Atlanta and Houston, where the signals have decreased travel time by as much as 22 percent. Sensors monitor traffic to activate the signals during peak congestion times.

Despite the signals' promised results, officials with the NCDOT said the stoplights were turned off mid-morning when syncing problems confused some drivers.

According to Steve Abbott, Assistant Director of Communications with the DOT, the system appeared to work correctly until officials noticed the stoplights were having syncing problems.

"They weren't working the way we wanted, and that could have confused some drivers, so we decided to turn the system off," said Abbott. "Our software vendor and wiring contractor are checking the system out to make adjustments and corrections."

Abbott also encourages drivers to use both lanes leading up to the stoplights.

## **Be prepared to stop: Traffic lights on I-540 ramps go live on Tuesday, Sept. 26**

The News and Observer By Richard Stradling September 22, 2017

RALEIGH – Commuters getting on westbound Interstate 540 in North Raleigh on Tuesday morning will find new traffic lights on the on-ramp that are meant to moderate the flow of cars entering the highway.

The ramp meters have been used around the country for decades, but these are the first in North Carolina. If the experiment on I-540 goes well, the N.C. Department of Transportation will look to use them elsewhere.

The signals have been installed on four westbound on-ramps: Falls of Neuse, Six Forks, Creedmoor and Leesville roads. The lights will let one or two cars onto the freeway at a time during morning rush hour and other times of heavy traffic.

The idea is that putting some space between the vehicles leaving the ramp should make it easier for them to merge into traffic on the highway, improving the flow and reducing the number of accidents. (CONTINUED...)

NCDOT engineers don't know when exactly the lights will come on; sensors in the pavement of the on-ramps will detect if traffic has gotten to the point where the lights are needed, said John Sandor, deputy division traffic engineer. When traffic thins out, the lights will automatically go off, Sandor said.

Those sensors in the pavement will also determine if traffic from the on-ramp is backing up onto the road and will turn the light green long enough to clear the backup. NCDOT's traffic operations center will monitor the ramps via cameras and can manually adjust the signals if necessary as well.

The light systems cost \$2.5 million to install on the four on-ramps, which includes some widening of the ramps and the software that can be used as other ramp meters are installed in the state.

Sandor said studies in other cities show that ramp meters can cut travel time in half on congested stretches of highway simply by making it easier for entering traffic to merge. The lights will help make the most of three-lane I-540 before it becomes necessary to add another lane, at the cost of tens or hundreds of millions of dollars.

"Ramp meters are kind of a tried and true method to maintain interstate flow," Sandor said.

State Highway Patrol troopers will be parked alongside the ramps the first week or so and may issue warnings or tickets to drivers who fail to stop at a red ramp lights. Sandor said NCDOT knows many drivers are skeptical about the lights, but he said the experience in other cities is that they work.

"It will become a normal function of life," he said. "It's just a traffic signal."

Researchers at N.C. State University will compare traffic movement and accidents on the ramps before and after the signals to help NCDOT determine how well they are working. If they're deemed a success, DOT has a list of other on-ramps in the Triangle where it will consider installing them, Sandor said.

## **Think there's no such thing as a free ride? In Durham, it's time to think again**

The Herald-Sun By Go Triangle September 18, 2017

RESEARCH TRIANGLE PARK – Margaret McNab has a love-hate relationship with traveling the Triangle's increasingly congested roads. She hates, hates, hates driving, but she loves taking GoTriangle's Durham to Raleigh Express route or DRX.

"Love isn't even a strong enough word," says McNab, a freelance marketing specialist in Durham who calls herself a superfan of transit. "I love that rule where buses can drive on the shoulder. I love sitting there with my headphones in and whizzing pass all those cars. It's so nice to not have to dedicate any brain space to navigating traffic."

If your brain needs a rest from the stress, this coming week is the perfect time to hand over the driving to a transit operator. Try Transit Week begins Monday, Sept. 18 and runs through Friday, Sept. 22, with Thursday the 21st being Fare Free Day at GoTriangle, GoRaleigh, GoCary and GoDurham.

"For some people, transit provides an alternative to the aggravation of driving in traffic or maintaining the expense of a car," GoTriangle General Manager Jeff Mann says. "For others, transit is their only access to get to work, school or their doctor's office. A strong regional transit system means better access and opportunities for everyone, and we hope more people will take advantage of it."

McNab found that to be true of transit in Portland, Oregon, where she lived before she moved to Durham about eight years ago. Because of Portland's extensive transit system, she had never needed a car. She chose her second Durham home based on its proximity to transit and to her workspace at Gridworks so she could scrap the old Saab she had been forced to buy. (CONTINUED...)

"I sold my car on Craig's list for 300 bucks, which I used to buy a bike and some candy," says McNab, who now walks, bikes or buses to the office. When she needs to meet clients in Raleigh, she takes the DRX, and getting to Chapel Hill also is easy for her on GoTriangle Route 400, which runs every 30 minutes on weekdays.

"It's just so nice to have that time to sit and prepare for meetings, for whatever it is I'm going out to do," McNab says. "Sometimes I listen to a podcast. It's fun on the bus to try it on for size. The Wi-Fi enablement is awesome."

Thanks to voter-approved investments in transit, GoTriangle, GoDurham, GoRaleigh and GoCary all expanded service last month, making it even more convenient for riders and other residents to get out of their cars and enjoy the benefits of buses.

"I'm always surprised when people haven't tried transit," McNab says. "Just because, if you're a curious person, why not? There are so many smart and curious people in the Triangle. They should get curious about transit."

GoTriangle has numerous park-and-ride lots to help those who don't live near a transit stop connect with jobs, schools or doctors, with six lots in Raleigh, two in Apex, three in Cary, two in Fuquay-Varina, two in Garner and one each in Knightdale, Wake Forest, Wendell and Zebulon. Find maps at [gotriangle.org](http://gotriangle.org).

Never ridden the bus? Get all you need to know at [bit.ly/ridegotriangle](http://bit.ly/ridegotriangle) then start by plugging in your address and the address of your destination at [gotriangle.org](http://gotriangle.org). Need help planning a route? Call GoTriangle at 919-485-7433.

Use the free TransLoc app to see buses moving in real time and get arrival predictions and proximity alerts. No one need waste time waiting at bus stops. Learn about TransLoc at [gotriangle.org/transloc](http://gotriangle.org/transloc).

"As this area becomes more metropolitan, the eco-friendliness of the choices we make around commuting will become increasingly more important," McNab says. "And transit does keep people off the roads. Whether on a bus, on a bike, or ridesharing, they are all small ways people can make a big difference."

#### **'TRY TRANSIT' EVENTS/SCHEDULE**

First, get a Transit Bingo card online at [gotriangle.org/trytransit](http://gotriangle.org/trytransit) or at the Regional Transit Center or Durham station so that you can win prizes for doing simple things like signing up for rider alerts, giving us a shoutout on social media, using our free Wi-Fi on the bus or watching our "Ride the Bus" video at [bit.ly/ridethebusvideo](http://bit.ly/ridethebusvideo).

Tuesday, Sept. 19 – Follow us on Twitter @GoTriangle to find out more about popular destinations in your city.

Thursday, Sept. 21 – All GoTriangle, GoDurham, GoRaleigh and GoCary routes will be free to encourage first-time riders to try the bus. It's also Rider Appreciation Day at GoTriangle and GoDurham. Spot our team out and about at the Regional Transit Center and Durham Station and grab a thank you gift! This is also the last day to turn in your Transit Bingo card, which you can find online at [gotriangle.org/trytransit](http://gotriangle.org/trytransit) or at the RTC or Durham Station.

Try Transit Week begins Sept. 18 and runs through Sept. 22, with Thursday the 21st being Fare Free Day at GoTriangle, GoRaleigh, GoCary and GoDurham.

## **Hillsborough businesses hold out hope that rough summer will pay off in the end**

The Herald-Sun By Tammy Grubb September 18, 2017

HILLSBOROUGH – Matthew Shepherd was forced to watch as his chocolate shop lost several thousand dollars in sales and three part-time employees this summer during sidewalk construction on South Churton Street.

While the summer months are typically slow for Matthew's Chocolates, Shepherd said this year was especially tough and most of the trouble could have been avoided with more cooperation between town officials and downtown business owners. (CONTINUED...)

"My main beef with this is they had a grant to do it, they could have done it at night, and they chose not to," he said. "Now, it will be nice once we've got our little fences up. Families stayed out there three or four hours the other day. It was nice to see that."

The nearly yearlong [project](#) started in April and is replacing old sidewalks with wider ones that allow for outdoor seating, tables and street trees, while leaving pedestrians a clear, four- to six-foot path. The Town Board approved new [rules](#) Monday for permitting outdoor seating and displaying merchandise on sidewalks.

Crews also have been constructing bus stops, installing audible pedestrian crossing signals, replacing street gutters and curbs, and making corner ramps accessible for people with disabilities. While they lost a dozen on-street parking spaces to the projects, leaving three spaces on each block, Stephanie Trueblood, the town's public space manager, said the losses were offset by 13 new off-street spaces the town got when a Bank of America branch closed.

The town used more than \$500,000 in state and federal funding to pay for the joint project with the N.C. Department of Transportation. Crews worked from 9 a.m. to 4 p.m. six days a week, construction officials said; working at night would have cost the town extra money.

But even with a six-week delay due to rain, Trueblood said the work is ahead of schedule and could be finished by November. The town has one more project scheduled for next year – installing brick pavers in the crosswalks around the same time that the N.C. Department of Transportation will repave the streets.

The work was needed, Shepherd said, but he doesn't think anyone cared whether businesses survived. The town's monthly Last Friday events usually bring in a lot of people, for instance, but the street corners remained closed and construction signs made it hard for pedestrians to navigate the orange fencing and barrels, he said.

He asked about hanging temporary signs and balloons to attract shoppers, but was rebuffed, Shepherd said. They should have respected the businesses enough to do that, he said.

The town did post a highway sign at the Churton Street and U.S. 70 intersection encouraging citizens to patronize downtown businesses. Smaller posters staked downtown were difficult to read because they folded over time.

Several business owners, concerned about "small-town politics," hesitated to talk publicly about their financial hit and what they said was limited town help.

Jane Vacchiano, co-owner of 108 Churton boutique, said the town appeared to learn from mistakes during the first phase of work on Shepherd's block. She also credited Trueblood for her weekly updates. The store held a buy one-get one free event in August to boost their sales as construction started outside, she said.

"I think it worked for us, and we've tried to stay really optimistic, because when it's done, it'll look really nice," Vacchiano said. "I do know that I've heard other people comment, especially when that walk was being done, that a lot of people felt like their businesses were greatly impacted by it."

Panciuto owner Aaron Vandemark also credited Trueblood for managing the project. The restaurant's loyal locals and out-of-town customers largely shielded them from the effects that retail stores experienced, he said.

They haven't committed to using the new sidewalk space yet, he said, but they're thinking about it.

"Whatever we do out here will be an asset, hopefully for the restaurant, but also for the community. For all I know, it could just be public seating to sit down and eat your ice cream and hang out," Vandemark said.

Everyone agreed it was a relief to see the work nearing an end and customers returning. The town knows it's been tough on downtown businesses, and they're trying to wrap up in time for the holidays, Trueblood said. "You could just feel the anxiety," Hillsborough Mayor Tom Stevens added, while noting that feeling is being replaced with excitement about the results. (CONTINUED...)

"When the street gets repaved and everything looks really, really sweet, it's going to be really beautiful," Stevens said. "But I think this fall and during the Christmas season, it's going to be just lovely because the construction will be done."

## **Solution to traffic puzzle stands between Chapel Hill and future Wegmans Food Market**

The Herald-Sun By Tammy Grubb September 15, 2017

CHAPEL HILL – Traffic may be the biggest speed bump that a developer could face in bringing a Wegmans Food Market to the U.S. 15-501 corridor.

The \$30 million Wegmans project, if approved, would replace the 14.7-acre Performance AutoMall, which will be moved to the Southpoint Auto Mall near The Streets at Southpoint mall. The store is one of four Wegmans Food Markets proposed for Chapel Hill, Cary and Raleigh.

The public hearing held this week will continue Oct. 25, when the Chapel Hill Town Council could make a decision.

Chapel Hill and Orange County have offered to use new tax revenues to pay Wegmans a \$4 million incentive if the company creates 185 full-time jobs and 413 part-time jobs over five years and meets annual property and sales tax revenue goals. The project could bring in over \$366,000 in property taxes and up to \$1.5 million in sales taxes each year.

A traffic study estimates the 130,000-square-foot grocery store could add 3,200 more cars to surrounding streets. About two-thirds would come from Chapel Hill, passers-by or the surrounding area, development officials said Wednesday. The rest would be westbound from Interstate 40 or Durham, they said.

The existing plan would route all traffic through two driveways on Old Durham Road, one located on a future roundabout. More turn lanes would be added at Old Durham Road and U.S. 15-501, and a longer median would block cross-traffic at Old Durham Road and Scarlett Drive.

The plan calls for directing westbound traffic on U.S. 15-501 left onto Lakeview Road, past the Red Roof Inn, and then right on Old Durham Road.

That intersection could be tricky, since drivers now wait several minutes to turn left when Old Durham Road is busy. However, the N.C. Department of Transportation won't add a traffic light until the intersection meets specific standards, NCDOT engineer Chuck Edwards said. Another traffic study could be done after Wegmans opens to show that a traffic light is justified, he said. Wegmans would pay the town \$150,000 toward any future traffic upgrades.

Council member Ed Harrison advised keeping a closer eye on Lakeview Road, too, since that road was not designed for heavy traffic.

The hope remains that Wegmans' main entrance could be on a service road that intersects with Eastowne Drive and U.S. 15-501, but efforts to reach a deal on that with the State Employees Credit Union have failed, officials said.

The road would remain open to SECU and Hardees traffic, however, forcing Wegmans shoppers to circle back to the highway and find another way to the store or cut through the Hardees parking lot and try to turn left.

Visible signs will be important to drivers who may be unfamiliar with the area, Council member Michael Parker said, noting confusion can cause accidents.

"I really think there needs to be some thought given to working in cooperation with NCDOT and anyone else to develop a really good, comprehensive signage plan for this area to make sure that people can really figure out where (CONTINUED...)

they need to go and where they shouldn't be going at a broader array of intersections than you're currently thinking about," he said.

Residents who spoke didn't have issues with Wegmans but about the potential for worse traffic. They've had disruptions from construction – at Ephesus Church Road and Fordham Boulevard, Old Durham Road and U.S. 15-501, and now for bike lanes – for a long time, Doris Smith said.

"There are a lot of people who live in that neighborhood. It's not a big, high-class neighborhood; it's little pockets of ordinary people," she said. "I would like to know who on the council is going to be thinking about us and the impact on us with all the decision that have to be made between now and October."

Town staff and the developer are "very sensitive" to the potential effects on neighborhood traffic, said Judy Johnson, the town's interim operations manager. Drivers already use small, narrow neighborhood streets to avoid Old Durham Road, sometimes exceeding the posted speed limit and ignoring stop signs.

Other Wegmans project issues considered by the Town Council Wednesday included:

- Landscaping: Smaller green buffers than required – although more than exists now along U.S. 15-501 – so that passers-by can see the store. Council member Sally Greene said a landscaping buffer similar to what's along Fordham Boulevard at University Place "is the right way to go." Council member Donna Bell asked for larger trees than planned.
- Sustainability: Council members want Wegmans to add solar rooftops – they might, project manager Steve Leaty said – and more details about stormwater plans. The site – now about 78 percent impervious surfaces, such as roofs and pavement – could be closer to 80 percent.
- Parking: The developer is seeking 750 parking spaces – 87 more than town rules allow.

## What do Duke students hate more than UNC?

The News and Observer By Camila Molina September 12, 2017

RALEIGH – College rivals the Wolfpack, Blue Devils and Tar Heels can probably agree on at least three things.

Campus parking is steep, inconvenient and prices go up every year.

Parking on campus is such a nuisance at Duke University that students might hate it more than the University of North Carolina at Chapel Hill, [The Chronicle](#), Duke's student newspaper, reported.

The paper surveyed students about campus parking on Facebook and found that 45 of the 69 comments were negative.

Undergraduate students at Duke can pay up to \$402 for an annual campus parking pass and students at UNC-Chapel Hill up to \$444, [The Chronicle](#) reported.

At N.C. State University, parking can cost as much as \$395 for some students, [according to the university's transportation page](#). The Wolfline Transit System, N.C. State's bus system, is free for everyone.

This fall, [the University of North Carolina at Chapel Hill rolled out a five-year transportation and parking system plan](#). It balances the cost of transportation and parking across students, employees and visitors. (CONTINUED...)

The plan will ensure there's enough funding through 2022 to keep Chapel Hill Transit free, but will add an extra \$5.74 to students' fees in 2017 and increase the cost of daytime parking permits by 1 percent each of the first three years of the plan. It also increased visitor parking by 25 cents an hour on North Campus, bringing it to \$2 an hour.

Campus parking after 5 p.m. is free until 2019, after that employees will be charged between \$234 to \$402 to park on campus at night. Some employees may not be able to afford it, [the Daily Tar Heel reported](#).

Parking on campus is free on the weekends, but can be limited on game days.

## **Do you use NC 98? Come hear some ideas for making it better**

The Herald-Sun By Richard Stradling September 11, 2017

RALEIGH – People who use N.C. 98 in Durham and northern Wake counties were asked last spring how they thought the road could be made safer and traffic run more smoothly.

Now traffic engineers have taken what they heard and combined it with data on traffic and crashes to come up with a series of ideas for improving N.C. 98 from Durham across Wake to the Franklin County line. They will present the ideas at two workshops next week, one in Wake Forest and the other in Durham, in hopes of getting more feedback to guide their final recommendations.

The study was commissioned by the Durham and Wake transportation planning groups – the Capital Area Metropolitan Planning Organization and the Durham-Chapel Hill-Carrboro Metropolitan Planning Organization – and the state Department of Transportation. The three organizations and local governments will refer to the study as they plan future changes to the road.

N.C. 98 is a two-lane road for most of its 27-mile route between U.S. 70 in Durham and U.S. 401 in Franklin, and traffic engineers say it is approaching or has exceeded its capacity. At the same time, the western section in Durham has seen a relatively high number of crashes, many involving pedestrians or cyclists.

There have been 857 accidents along the corridor between 2012 and 2016, more than half of them at the Durham end of the road. Eight of those accidents resulted in deaths, including two pedestrians and a cyclist.

The study began with two public meetings in March.

"We wanted to understand what was important to people and what problems they saw out there," said Will Letchworth, an engineer with WSP, the firm conducting the study.

The study will support the widening of N.C. 98 to four lanes, particularly between Sherron Road in Durham and the bypass on the west side of Wake Forest. But that's a long-term project that is not among the ones the NCDOT expects to undertake in the next decade.

But there are a number of potential smaller improvements to address problems people identified along N.C. 98. These include new turn lanes at Camp Kanata Road, new and longer turn lanes at Six Forks/New Light roads and a new traffic light at Nicholas Farm Road/Oak Grove Parkway.

"Those are things that could be implemented quickly, within the next couple of years," Letchworth said.

All of the ideas will be presented at the two meetings and on the study's website, [www.nc98corridor.com](http://www.nc98corridor.com). The meetings will take place Tuesday, Sept. 19, at Wake Forest Town Hall, 301 Brooks St., and Thursday, Sept. 21, in the Durham County Library, 211 Lick Creek Lane. Both meetings will run from 5 to 7 p.m.

There will be two more public meetings next spring to review the study's final recommendations.