



## **Agenda**

### **Greenville City Council Workshop**

**February 6, 2023**

**4:00 PM**

**City Hall Conference Room 337, 200 West Fifth Street**

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Assistive listening devices are available upon request for meetings held in the Council Chambers. If an interpreter is needed for deaf or hearing impaired citizens, please call 252-329-4422 (voice) or 252-329-4060 (TDD) no later than two business days prior to the meeting.

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**I. Call Meeting To Order**

**II. Roll Call**

**III. Approval of Agenda**

**IV. New Business**

1. Greenville Police Department's 2022 Crime Report, Crime Trends, and GPD Responses
2. Potential swap projects being considered for the 2024-2033 State Transportation Improvement Program (STIP)
3. Update on National Science Foundation (NSF) Phase I Grant and Intent of Support for NSF Phase II Grant for Innovative Intersection Planning

**V. Adjournment**



City of Greenville,  
North Carolina

Meeting Date: 02/06/2023

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- Title of Item:** Greenville Police Department's 2022 Crime Report, Crime Trends, and GPD Responses
- Explanation:** Chief Ted Sauls will present 2022 figures regarding Part 1 Crimes and trends, to include shots fired calls throughout the city. He will also review GPD's responses such as traffic stops, firearm recoveries, and gang suppression acts.
- Fiscal Note:** N/A
- Recommendation:** Hear report from Chief Sauls regarding GPD's crime trends and responses.
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# City of Greenville, North Carolina

Meeting Date: 02/06/2023

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**Title of Item:** Potential swap projects being considered for the 2024-2033 State Transportation Improvement Program (STIP)

**Explanation:** The North Carolina Department of Transportation (NCDOT) is allowing flexibility in programming with the release of the Draft 2024-2033 State Transportation Improvement Program (STIP). The STIP identifies the construction funding and schedule for projects over a 10-year period. NCDOT is allowing project schedules to be adjusted (if funding availability and delivery schedules allow) and projects can be swapped (if they meet NCDOT parameters) for projects funded in the reprogrammed 2020-2029 STIP selected through P3.0, P4.0, or P5.0 regardless of committed or non-committed status.

In accordance with these parameters, the MPO team has put together a table and map (Attachments A and B) for projects within Greenville's jurisdiction. Staff has utilized the data to recommend projects that could be swapped out or funded. The data considered highlights road capacity vs. volume of vehicles, accidents along the project corridor for the last 5 years, and shows both the anticipated development and future development that has zoning already in place.

The City has transportation projects funded at the Regional and the Division category. Projects funded with the Regional funds compete with a larger area than the Division. Among the projects funded regionally, we have the 5th Street & Memorial intersection improvements and the Signal System upgrade. The City does not have Regional funded projects that meet the parameters set by NCDOT for project swapping.

Projects funded at the Division level share the same funding source as other projects within the Division. Among the funded projects within this category are several that would be eligible for a potential swap. Eligible funded projects include Allen Road, Firetower Road, Firetower/Portertown Road, and 14th Street. The MPO team has identified other unfunded projects that meet the NCDOT parameters for swapping. These projects are provided the attached table (Attachment A).

Based on the data collected and provided in Attachment A, the MPO intends to begin discussions with Division 2 about removing 14th Street Widening from the funded projects and replacing it with Stantonsburg Road Access Management. We have determined this is the best project to accelerate due to capacity, safety and future development and will reprioritize 14th Street in the next cycle, which

opens summer of 2023.

**Fiscal Note:** No impact to current funding levels.

**Recommendation:** Receive information and provide feedback on staff's approach.

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#### ATTACHMENTS

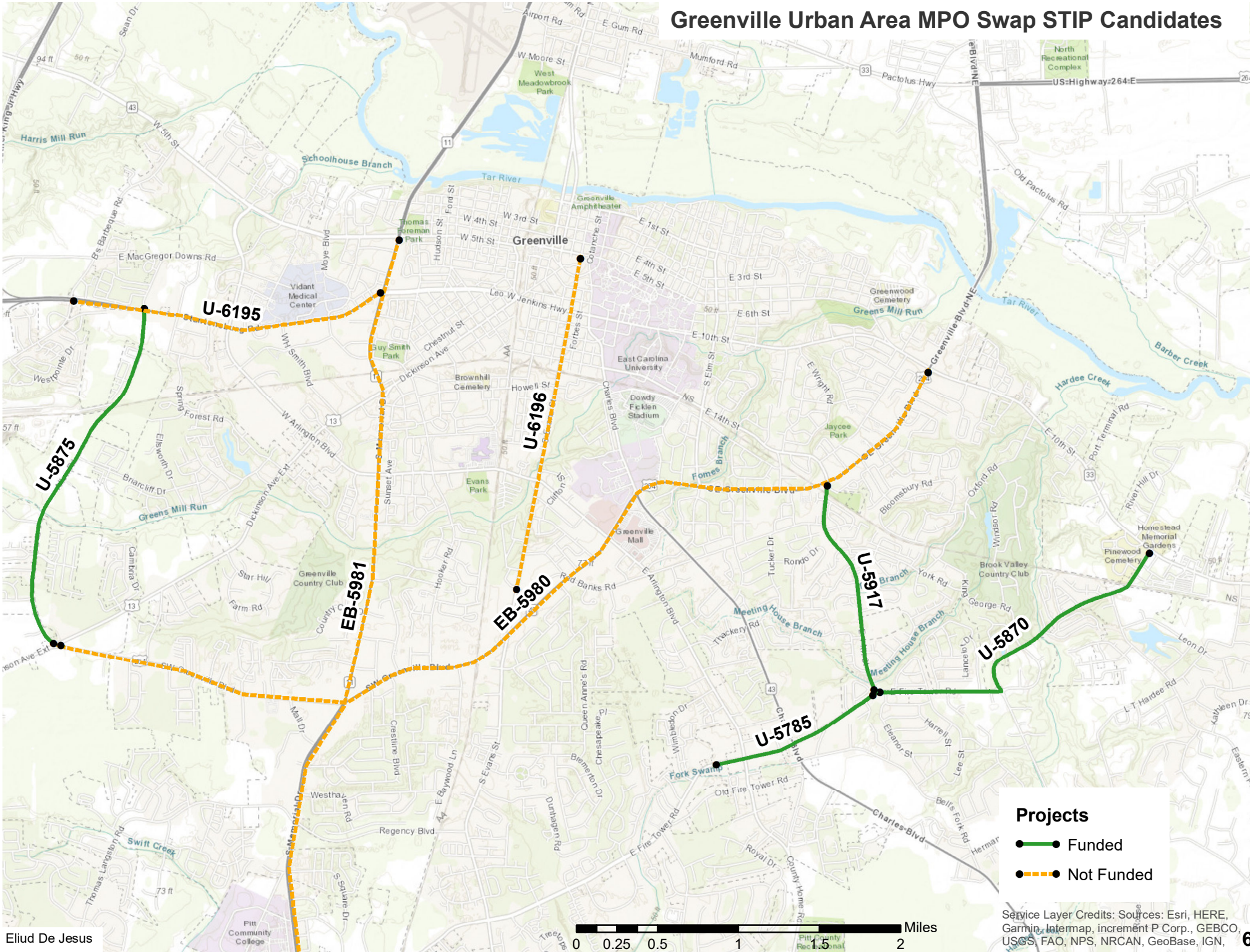
 [Attachment A STIP Swap Table.pdf](#)

 [Attachment B\\_STIP\\_Map.pdf](#)

**DIVISION PROJECTS**

ID	Route Name	Description	Schedule	Available Funds	Volume/Capacity Ratio (Over Capacity >1)			Safety	Development
					Existing	Future (No Build)	Future (Build)		
U-5875	Allen Road (SR 1203)	From Stantonsburg Road to Dickinson Avenue Extension (US 13). Widen existing 2-lane roadway to multi-lanes with sidewalk, bicycle, and landscaping improvements. Designed in compliance with the 2008 Complete Streets policy.	Construction: 2024	\$27,800,000	1.06	1.25	0.62	191	<b>Anticipated Development:</b> -536 Multi-Family units -152 Duplex units <b>Future Development:</b> -998 Multi-Family units
U-5785	Firetower Road (SR 1708)	From West of East Arlington Boulevard to Fourteenth Street. Widen existing 2-lane roadway to a multi-lane urban section facility. 23' raised median with curb & gutter, wide outside lanes, bike lanes, and sidewalks.	ROW: 2024 Construction: 2026	\$39,120,000	1.61	1.89	1.03	540	<b>Anticipated Development:</b> -126 Multi-Family Units -83k sq. ft. Commercial <b>Future Development:</b> N/A
U-5870	Firetower Road (SR 1708)/ Portertown Road	From Fourteenth Street to East 10th Street (NC 33). Widen existing 2-lane roadways to multi-lanes. 23' raised median with curb & gutter, wide outside lanes, bike lanes, and sidewalks. Designed in compliance with the 2008 Complete Streets policy. Includes intersection improvements at Firetower Road and Portertown Road.	ROW: 2025 Construction: 2027	\$42,416,000	1.48	1.88	0.56	229	<b>Anticipated Development:</b> -115 Multi-Family Units -49K sq. ft. Commercial <b>Future Development:</b> N/A
U-5917	Fourteenth Street (SR 1704)	From Red Banks Road to Firetower Road. Widen existing 2-lane roadways to multi-lanes with sidewalk, and bicycle lanes. Designed in compliance with the 2008 Complete Streets policy.	Construction: 2026	\$20,365,000	0.69	0.81	0.54	67	<b>Anticipated Development:</b> N/A <b>Future Development:</b> N/A
U-6195	Stantonsburg Road (SR 1467)	Access Management from B's Barbeque Road to Memorial Drive (NC 11). Construct medians with specified turn lanes, sidewalks on each side, and protected bike lanes. To be designed in compliance with the 2019 Complete Streets policy.	No Longer Funded	\$21,200,000	1.18	1.38	1.26	682	<b>Anticipated Development:</b> -200 Multi-Family units -5k sq. ft. Commercial <b>Future Development:</b> -700 Multi-Family units
U-6196	Evans Street (SR 1702)	Access Management from Red Banks Road to West 5th Street. Construct medians, sidewalks, protected bike lanes, intersection capacity improvements/turn lane additions.	No Longer Funded	\$21,700,000	0.88	1.03	0.94	482	<b>Anticipated Development:</b> -126 Multi-Family units -50k sq. ft. Commercial <b>Future Development:</b> -N/A
EB-5980	Greenville Boulevard (US 264-A)	US 264-A to Dickinson Avenue (US 13). Construct sidewalk and curb and gutter on both sides of the roadway.	No Longer Funded	\$871,000				2,576	<b>Anticipated Development:</b> N/A <b>Future Development:</b> N/A
EB-5981	Memorial Drive (NC 11)	West Fifth Street (NC 43) to Davenport Farm Road. Construct sidewalk on both sides of roadway.	No Longer Funded	\$2,167,000				2,080	<b>Anticipated Development:</b> N/A <b>Future Development:</b> N/A
Funded	Unfunded								<i>*Future Development is the zoning capacity for the area.</i>

# Greenville Urban Area MPO Swap STIP Candidates



**Projects**

- Funded
- - -● Not Funded

Service Layer Credits: Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN,



# City of Greenville, North Carolina

Meeting Date: 02/06/2023

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**Title of Item:** Update on National Science Foundation (NSF) Phase I Grant and Intent of Support for NSF Phase II Grant for Innovative Intersection Planning

**Explanation:** NC State University (NCSU) has been conducting a research project on behalf of NCDOT to demonstrate innovative strategies for managing high volumes of traffic, while at the same time catalyzing walkable economic development along auto-oriented suburban commercial highways. The project team selected sites in the City of Greenville and the Town of Smithfield due to ideal conditions for their research. It amounts to “free planning” or “free ideas” for improving these areas and has required no monetary commitment from the cities. The City of Greenville project focuses on the Greenville Blvd. corridor from Evans Street to Charles Blvd.

NCDOT has no near-term intent to implement the concepts at these sites. Instead, their goal was simply to generate graphics and data using these sites as real-world “guinea pigs.” The graphics and data would then be used across the state for communities to consider if the concepts demonstrated might have relevance to their situation. However, to the extent that Greenville and Smithfield like the ideas, they are invited to work with NCDOT to create a formal planning study to see if stakeholders will accept the ideas.

In the meantime, NCSU recently applied for a two-phase grant from the National Science Foundation to advance this research through a public vetting process. The proposal is to see if stakeholders in these communities will embrace these ideas enough to modify their transportation and land use plans to include at least some of these “first-in-the-nation” ideas. This project was one of fifty winners in Phase 1 and received a \$50,000 grant as a stipend to help plan how to compete to be one of twenty winners of a Phase 2 grant of \$1 million. The team’s final proposal to NSF is due March 1 and are seeking to continue our partnership with the City of Greenville.

The attached document explains the background to this effort along with many excellent graphics showing the potential for transforming the area around the Greenville Mall into a walkable, livable, mixed-use area. You can also see excellent before/after “sliders” of sites in Greenville at: <https://www.urbaninnovators.com/pr-ncdot-ai-research>.

**Fiscal Note:** No fiscal impact to City budgets. If awarded, the project team will give some of the money to Greenville to compensate for staff time as they help prepare for and

attend public/stakeholder meetings.

**Recommendation:** Receive update on Phase I grant and express continued support for the Phase II application.

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#### ATTACHMENTS

 [NCDOT-NSF\\_Overview\\_Greenville\\_City.pdf](#)



## TECHNICAL MEMORANDUM

TO: Greenville City Officials

DATE: January 18, 2023



Celen Pasalar, PhD  
Chris Cunningham, PE



Michael R. Brown, PE, AICP  
Transportation Engineer, Planner  
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SUBJECT: Background and Status of NCDOT/NSF Research Project

### What is the problem we're trying to solve?

The North Carolina Department of Transportation frequently hears from communities across the state expressing a desire to catalyze walkable mixed-use development along large, auto-oriented, decaying suburban commercial highways. Such highways are increasingly referred to as “Stroads” – a street/road hybrid. Stroads have the economic activity of a historic “Norman Rockwell Main Street.” They also have fast speed limits like rural roads (45 mph+). Sadly, Stroads have neither the charm of great streets, nor the speed of great roads, due to congestion and frequent stop lights.

However, even with plenty of funding, it is almost impossible to create “Complete Streets” that have impressive street trees, bike paths, transit, on-street parking, and other pedestrian-oriented features. What makes it so hard?

1. Many Stroads do and always will carry huge amounts of traffic – a challenging fact for creating a walkable environment.
2. Engineers worry that efforts to slow traffic to speeds safe enough for pedestrians may also exacerbate delay and congestion.
3. Even when engineers are on-board with traffic calming, they don't know what to do. With so many cars, driveways, business signs, etc., finding room for street trees, on-street parking, and improving alternative modes may be extremely difficult.



Aerial of Lancaster BLVD. Source: Moule & Polyzoides, Architects and Urbanists

A typical "Stroad" vs a "Complete Street"

Thus, the problem to be solved is to discover innovative ways to manage high volumes of traffic, and at the same time catalyze walkable development.

### What are the “Big Ideas” for solving this problem?

NCDOT hired NC State University and Urban Innovators to research new strategies for making progress toward managing the high traffic volumes found on Stroads in more pedestrian-friendly ways. The research team believes that redesigning how major intersections operate is key to accomplishing this goal. There are three innovative “Alternative Intersection” types that the team believes have strong potential for managing high volumes of traffic, and at the same time catalyzing walkable development: “Quadrant Intersections, U-Turn

Intersections, and One-Way Split Intersections.” Each of these is described briefly here, followed by examples of how these could be implemented in the Greenville study area.



## Why did we choose Greenville and Smithfield?

For research, NCDOT wanted examples of how these three innovative design types could be used to create walkable environments. To accomplish this, we did not need a real-world location – hypothetical would have been fine. However, it seemed more useful to find real world locations if we could. We searched all over the state – in the Raleigh and Charlotte areas, as well as many smaller urban areas. We found ideal locations in both Greenville and Smithfield. [What makes these locations ideal for our purposes is that all three design types are possible to demonstrate within a single small area.](#)

## What is expected of Greenville and Smithfield for our NCDOT research?

Our research is not a formal “planning process.” There is no statement of need. We don’t have a formal public involvement process – only a focus group of developers and other development related / market analysis professionals. There is no intent by NCDOT nor the cities to modify their plans as a result of this research – at least not anytime soon. For this we simply needed “guinea pig” locations for our ideas, so we reached out to city staff said, “We like a few sites in your city – they are ideal for demonstrating never-before-seen ideas. Would you be ok if we give you some free ideas? All we need in return is your agreement that we can share the results (concept drawings and analysis) across NCDOT and others in the state so they can see how the ideas might apply to other locations.”

We explained that many concepts would likely represent a major change, and big changes can be hard to achieve. If/when the public discovers the concepts, we recommend telling stakeholders that it’s just a brainstorming effort. There is no money nor a formal intent to advance the ideas – especially without a formal public process. However, if anything looks promising, maybe it can be explored later a more formal public setting. Your staff checked with a few other key people and the group response was, “Sure! Let’s see what you come up with!”

[Thus, the only commitment we have so far is that your communities have said they would allow us to use graphics and research from this “What if?” exercise as generalized examples that can be used in presentations across the state. This way others can get excited about the potential for their situation, by seeing what might be possible in your situation.](#)

## \$1-Million opportunity to advance these ideas in Greenville and Smithfield

Recently, we discovered a contest sponsored by the National Science Foundation (NSF) where they will award twenty different teams \$1-million each for those teams to implement ground-breaking research that promises to reduce Climate Change or improve multimodal accessibility and equity. NSF calls this their “CIVIC Program,” and the goal is for researchers like us to work with cities, state DOTs, or any other government or non-profit organization toward those goals. We talked to key staff at NCDOT, Greenville, and Smithfield about competing for this award, and each of these gave us a “letter of cooperation,” which we submitted along with our proposal for a “Phase 1” planning grant of \$50,000.

[Our Phase 1 proposal was one of fifty that was selected! Now the competition narrows from 50 contestants to 20 winners. Now we are using that \\$50,000 to plan how the 12-month effort will unfold – how we will make our case that we should be selected for one of the twenty \\$1-million awards.](#)

## Planning our Phase 2, 12-month “research implementation” effort

In our Phase 1 proposal, we convinced NSF that our concepts are nationally cutting-edge. They believe that if at least a few of our ideas can be built somewhere in the country, the result will serve as a national demonstration project of what is possible to achieve. However, at least one community must first volunteer as a guinea pig. Before any community will be comfortable “going first,” the ideas must be vetted with key stakeholders (city councils and staff, business leaders and neighborhood groups in the affected areas, NCDOT, and the general public more broadly).

Thus, our 12-month project will be to vet these ideas more fully with stakeholders, to build comfort levels that these truly are good ideas. Our plan is to use this NSF funding to discover how important it is to these communities to create walkable mixed-use environments. We will look at the pros and cons of different types of development and different right-of-way features, then present them to key stakeholders. We will encourage key groups and the public in general to tell us what they like and don’t like about our ideas. We will compare traditional alternatives against our innovative alternatives, so they can understand trade-offs. We want open debate about pros and cons, costs and benefits. [If our research is solid, there should be at least a few aspects where most stakeholders will agree that the positives are likely to outweigh the negatives.](#)

## What will Greenville, Smithfield, and NCDOT be “implementing?”

To win the NSF grant, we must convince NSF that our civic partners are likely to “implement something” at the end of the effort. In the case of city planning and roadway redesign, this does not mean a project needs to be constructed. Instead, we argued that adoption into plans should count as a “12-month implementation,” because it represents an intent to implement. An “official intent” (meaning inclusion in a plan) is about all that you can achieve in such a short time frame. Inclusion in a master plan sets things in motion for further planning studies and for eventual funding. We know that NSF agrees with this definition of a 12-month implementation.

NSF recognizes that once we present our ideas to stakeholders, there is a good chance that some aspects of our work will be rejected – concluded to be a bad idea in light of other options, or as an idea “whose time has not yet come” either due to misunderstanding or some other set of factors. However, we have multiple ground-breaking ideas in both Greenville and Smithfield, and it is not necessary that 100% of them survive scrutiny. Winning the grant does not require a promise that any ideas will survive. All that is necessary is for the city to provide a letter of cooperation, showing commitment to a good faith effort to try, along with optimism that at least some of the ideas have a good chance of making it into your plans.

### What does a “Stroad Intersection” Look Like?

Before talking about “Placemaking Alternative Intersections,” it helps to know what a “Stroad Intersection” is like. Stroads tend to have 2-3 lanes in each direction. When two Stroads cross, they always have left-turn lanes with left-turn arrows, and often “double left” lanes.

Notice that this intersection has double-left lanes on all approaches, three lanes each direction, and a separate right-turn lane – nine total! It is about 150 feet for a pedestrian to cross – a touchdown if you start at the 50-yard line.



### What are Four Phase Signals? How do they create problems?

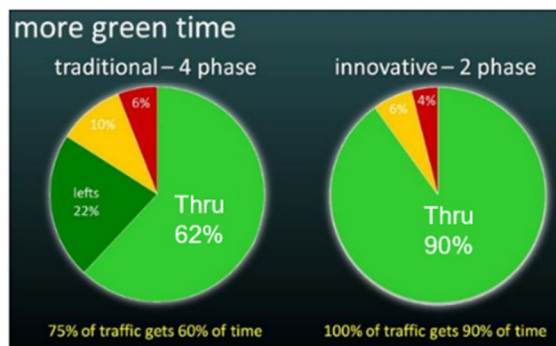
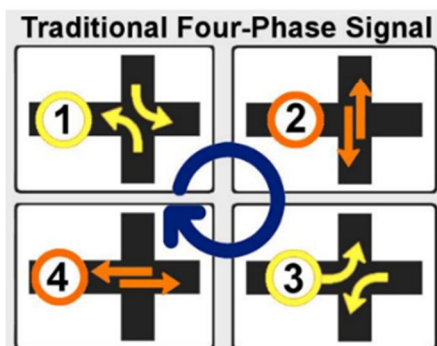
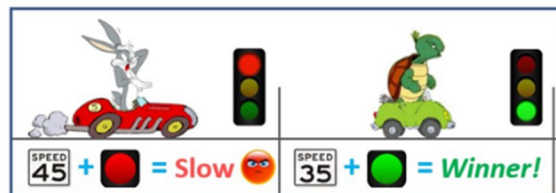
Signals at Stroad intersections are called “four-phase signals”. The diagram below shows Phase 1, followed by yellow + all red. Phase 2 comes next, with its own yellow + all red. Then three, and then four. It’s a lot of complexity – a lot of stop and start – a lot of people who are stuck waiting while the left turns take their turn. So even if the speed limit is technically quite fast, you end up stuck at these intersections for a long time.

When there is an occasional pedestrian, there are so many potential ways to get hit and so much length to cross, it is very intimidating. Alternative intersections are brand new designs that manage left turns in some other way, allowing the main intersection to have just 3-phases or even 2-phases. As the pie chart shows, fewer phases you have, the more green time there is for major movements.

By increasing green time, even the tortoise gets through faster. We call this “Drive slower, travel faster” – and it is key to managing high volumes of traffic at safe, pedestrian-oriented speeds.

### What Causes “Slow”?

- Four-phase signals are inefficient due to:
  - extra yellow and red time,
  - green time for minor movements



- To compensate for inefficiency, engineers “super-size” with lanes, lanes, lanes

## What is a Quadrant Intersection?



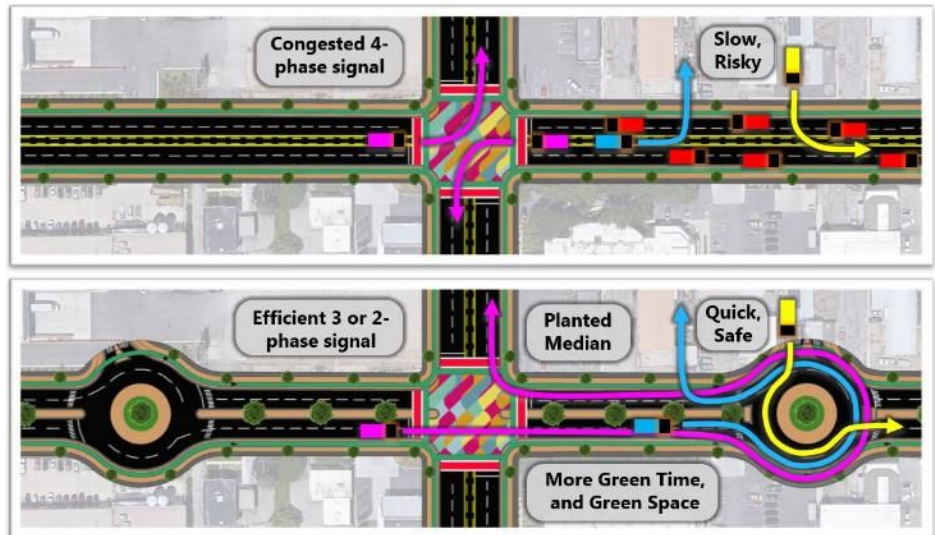
Instead of managing lefts directly at the main intersection, a Quadrant redirects those movements along a back-way path as shown here. Notice that vehicles on the red path have no out-of-direction travel. Those following the blue path have some out-of-direction, but even they are likely to get to where they're going quicker due to less congestion. Former left-turn lanes can now be converted into planted medians with trees and pedestrian refuge areas in the middle of crosswalks. The Quadrant backway improves access and visibility for parcels along that backway, adding value to that land and making it attractive for mixed-use development. There are many variations of this idea, but this diagram is a good start.



## What is a U-Turn Intersection



There is a huge amount of variation in this family of designs, but the basic idea is to convert lefts into “Thru + U + Right.” In the top diagram, the purple cars require a left-turn arrow – a four-phase signal that creates congestion and requires extra lanes for storing left-turning cars. In the bottom, lefts are now “Thru+U+Right.” The blue and yellow cars are also in a predicament in the top diagram. Blue needs a safe gap in one direction before it can leave the arterial. Yellow needs a safe gap in BOTH directions (very hard to get), before it can enter. The roundabouts make this easy. Notice that like the Quadrant, the old left turn lanes can now be planted with trees and you can have pedestrian refuge areas in the crosswalk.



## What is a One-Way Split Intersection?



This can be a little harder to explain quickly, but the basic idea is that rather than having a single huge intersection, it is better to split into four one-way streets, creating four small intersections, then come back together on the other side. Below is such a situation near San Diego, and you can see how small and easily crossable these are for pedestrians. This idea is sometimes called a “Square-about” because it works a little like a roundabout, but in a larger “square” pattern. One-ways come in pairs and are often called “One-way Couplets.”

**Note:** The reason this is highly efficient (meaning lots of green time for the tortoise) is because left turns on one-way streets do not need a left turn arrow, since there is no oncoming traffic. Our research shows that even though this environment has small, pedestrian-friendly intersections, the overall system can handle up to 80% more traffic than had it been a single huge 4-phase intersection.

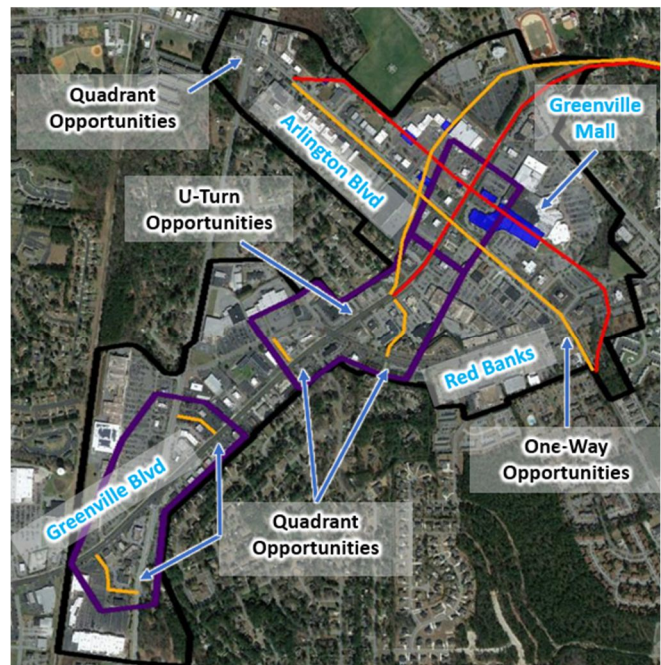
The fact that it can handle more traffic means it is easier to support more development. For example, say you have today’s auto-oriented environment where 90% of traffic comes by car. If you triple the density and improve transit, walking, and biking, maybe you’ll get to 75% traffic by car. That’s pretty good! But 75% x triple the density = 2.25, or more than twice as many cars as before. That is a PROBLEM if the road can’t handle more cars. Luckily, this design CAN handle more.



Completed Town Center Intersection: Elfin Forest Hwy & San Elijo Rd., San Marcos, CA

## What are our ideas for Greenville?

The next pages show how we applied some of these ideas near Greenville Mall on Greenville Blvd, Arlington Blvd, and Red Banks Road. At the right is the study area we selected, along with the Quadrant, U-Turn, and One-Way Couplet opportunities we have been exploring.



## One-Way Couplets: Mall Area

Our Quadrant and U-Turn concepts could be considered localized projects, small and relatively easy compared to the one-way concept near the mall. The one-way couplets, while expensive and challenging to implement, could also be powerfully transformative and a win-win for most stakeholders.

There are two one-way couplets that are possible – NE to SW (1), and NW to SE (2). Buildings in blue would probably be impacted by the design. The first would require a new NE to SW alignment and most likely would go just north of the “Publix” grocery store (impacting the first and/or second small retail pad just north of the Publix, but not the Publix building itself). The second couplet would require knocking down the western half of the mall and would require a vision of how to revamp the overall space. It is labeled “Harder” because the western half of the mall is a very large building. To be practical, it would need to be coordinated with mall owners and implemented at a time when the owners themselves intend to replace the building.



Many malls across the nation are experiencing such “extreme makeovers.” A message to the mall owners and the general public during and after the 12-month NSF effort might be, “This one-way system could activate a powerful rejuvenation of the overall area and add value to most businesses and land holdings. But it wouldn’t make sense to do this unless the mall is struggling for survival and comes to us of their own accord to coordinate a major renovation. After discussing this potential couplet with the mall through the NSF project, they are intrigued and may want to study this further if their need to do something increases. We hope to add this to our long-range plan as a “holding spot” for further study, recognizing it may or may not be activated depending on the outcome of future studies.

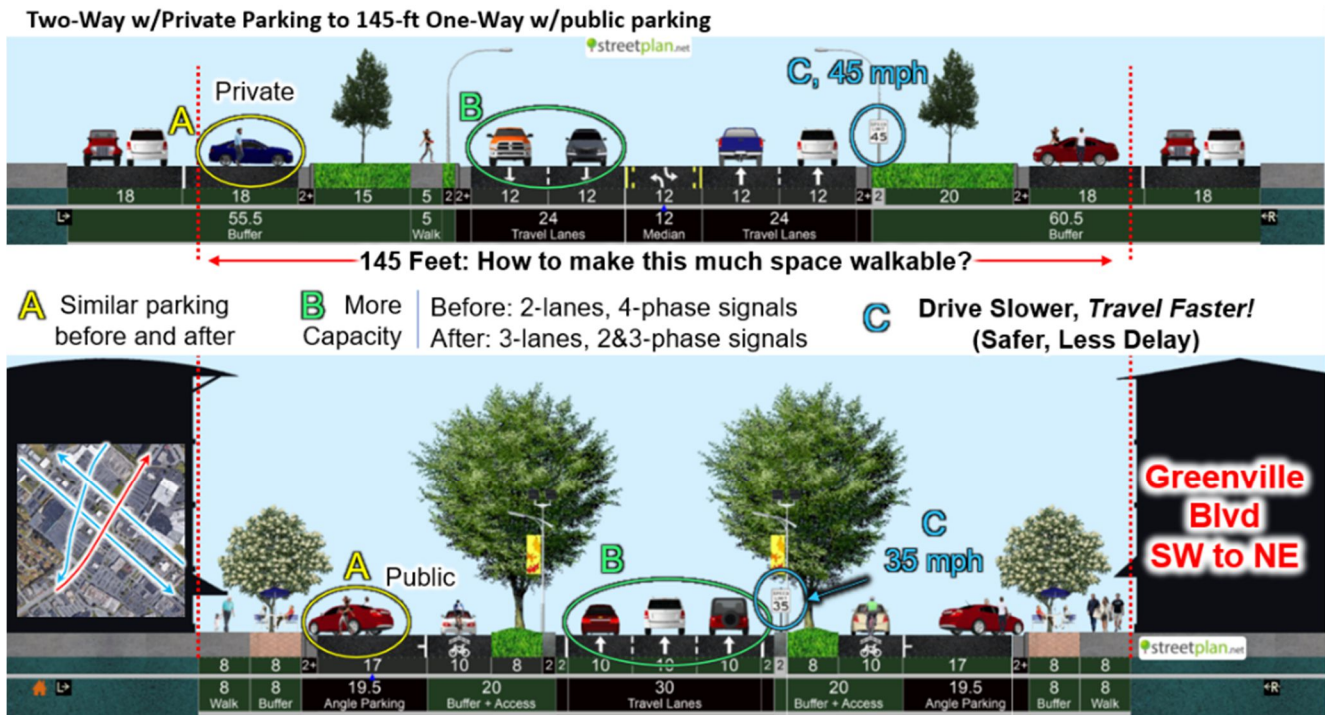
More on this later, but for now just know that you can get much of the benefit from implementing only the easier couplet.

### Greenville Boulevard

Below is a before/after cross-section diagram of our concept for Greenville Avenue as it passes in front of the mall. Before is a two-way street with two lanes each direction and a center turn lane. After it would only carry SW to NE traffic on three lanes (while the NE to SW flow north of the Publix would also have three lanes). The two one-ways together would solve all existing congestion and would have plenty of room for growth. This is because together they have one more through lane, and also because the intersections are small and more efficient.

Notice that our idea is that even though one-way streets require less land, we would consider expanding the right-of-way, up to 145 feet, in order to convert the first row of private parking into on-street public parking accessed by a frontage road where speeds would be in the 10 to 15 mph range. Bringing this row of parking into the public domain helps in moving the sidewalks far away from higher speed traffic, and sets the stage for impressive walkability. As we've studied the corridor, it looks like there is generally up to 145 feet available before any significant impacts (other than to parking) would be incurred. We anticipate that businesses in the area may ultimately be indifferent to the idea, if not supporters, because they have roughly the same amount of parking either way, and the result would add value to their remaining land.

Speeds on the main corridor would be reduced from today's 45 mph to 35 mph.

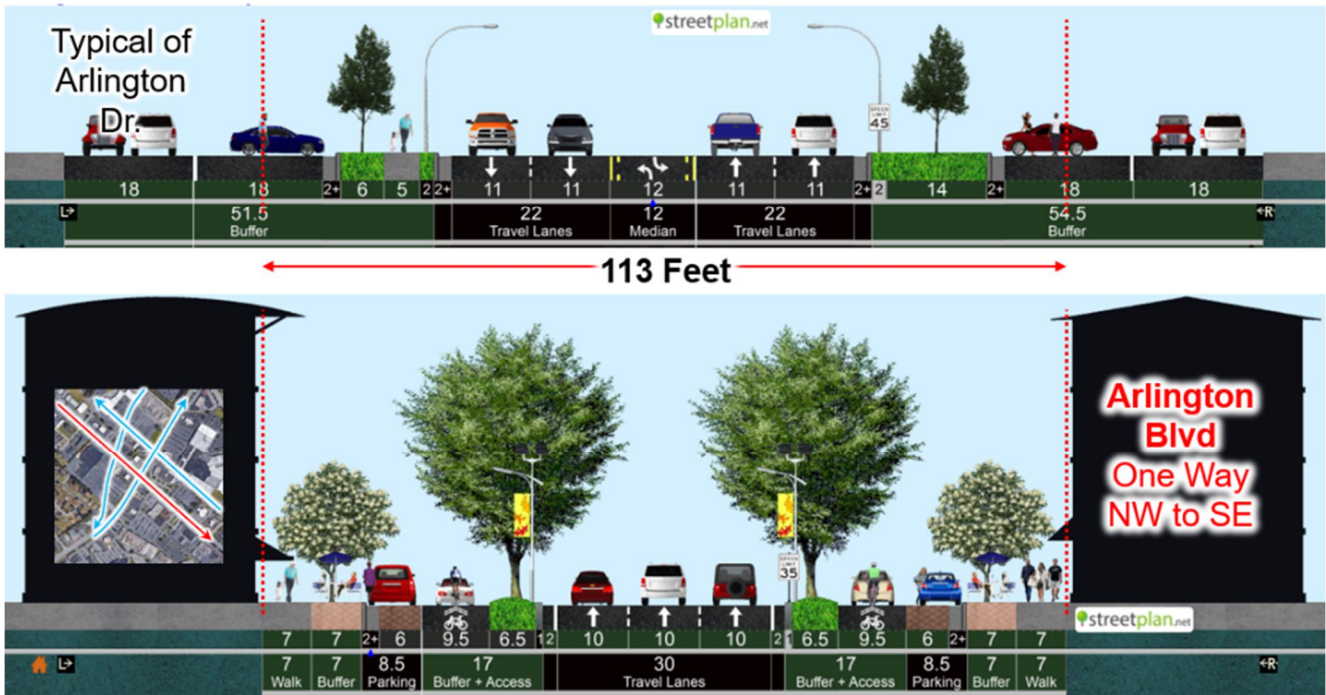


### Arlington Drive

The next page is a similar cross-section for Arlington Drive. It has only about 113 feet of space available before there would be more significant impacts. In this case, perpendicular private parking would be converted to parallel public parking. If for some reason this results in not enough overall parking for some businesses, a plan would be devised for how to create more parking or otherwise compensate for their loss.



Two-Way w/Private Parking to 113-ft One-Way w/parallel parking

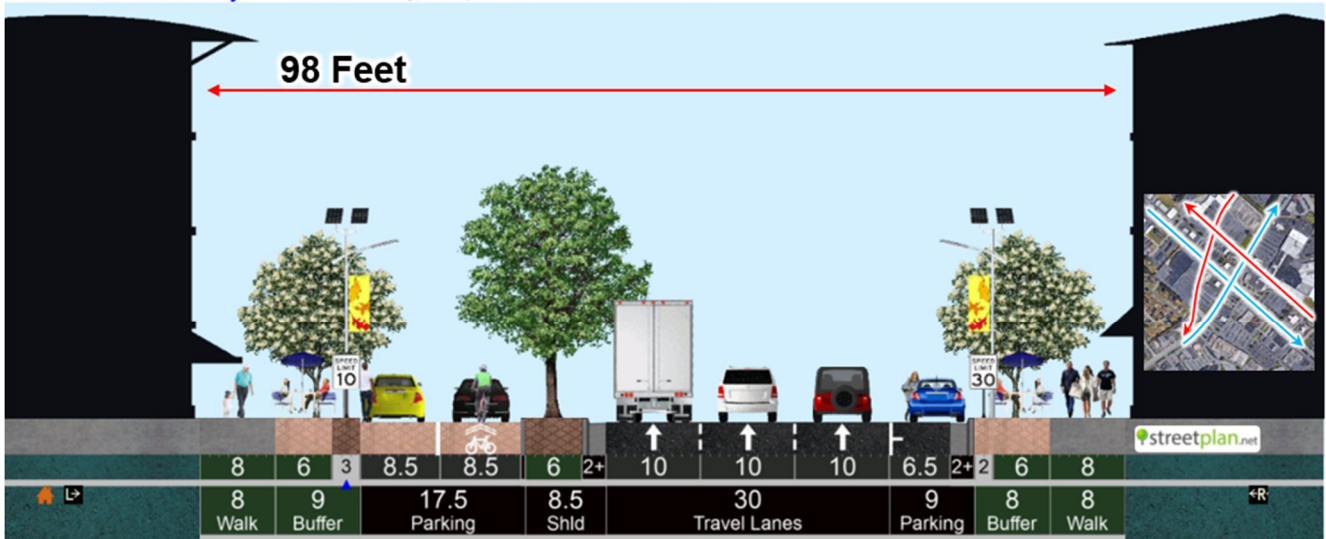


Other One-Ways

145 feet on Greenville and 113 on Arlington represent converting the first row of private parking into public – a good way to establish a walkable environment. For the new alignments through parking lots and the mall, these do not need to be as wide. Below shows a concept for how these new streets might be arranged within 98 feet.

Concept for Two New 98-ft One-Ways (NE to SW and SE to NW in red)  
Requires new pathways via parking lots, a few small buildings, and the western half of mall

New Arterial One-Ways New One-Way, 98-ft, Park Right-of-Way 98' of 98'



### 3D Renderings of One-Way Concept Near Mall

This series of Before / After renderings can also be seen online with a left/right slider at: <https://www.urbaninnovators.com/pr-ncdot-ai-research>









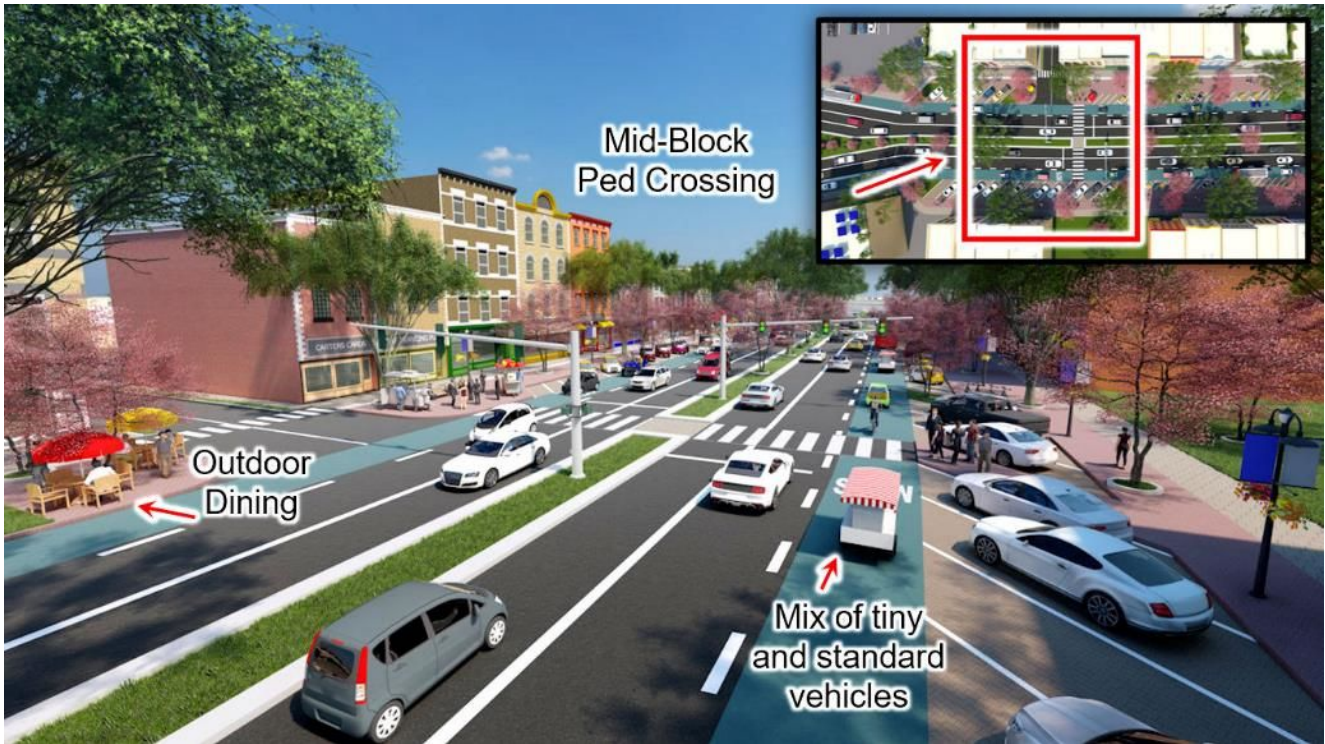
Joint U-Turn + Quadrant Concept, Greenville Blvd and Red Banks Road

















### Quadrant Concept, Arlington Blvd and Evans Street

The next pages show Before / After concepts at this location. During the 12-month NSF grant, we hope all locations shown in this doc could see some kind of innovative concepts adopted, but it is only important that one site be adopted, either as shown or in some kind of modified version.

These are also available as Before / After sliders at:

<https://www.urbaninnovators.com/pr-ncdot-ai-research>





