



# LYNX SYSTEM UPDATE

Davidson Town Board  
October 9, 2018



- **Southeast Corridor (Silver Line)**

- MTC adopted Light rail to Matthews as the LYNX Silver Line LPA in November 2016
- Need to determine Center City access

- **North Corridor (Red Line)**

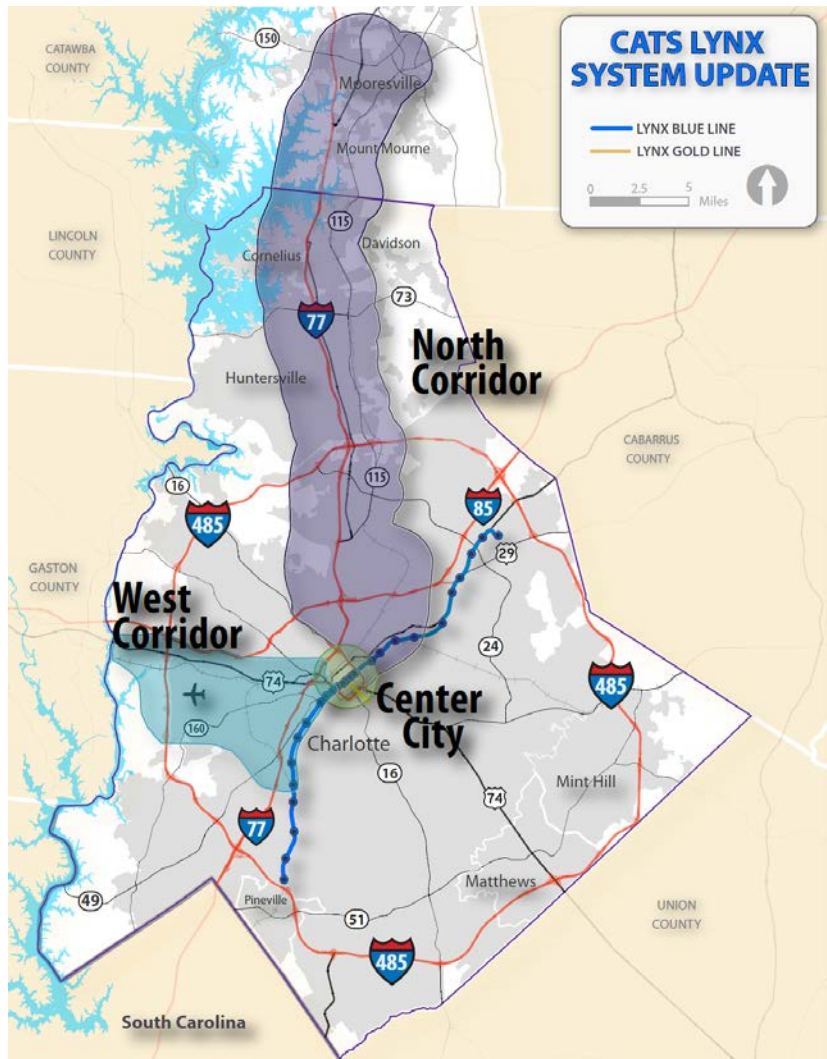
- LYNX Red Line LPA is commuter rail on Norfolk Southern (NS) O-Line
- Use of NS O-Line corridor problematic
- In addition to O-Line, the study will consider rapid transit on other alignments

- **West Corridor**

- Extends approximately 9.5 miles from Uptown Charlotte to the Gaston County border
- Current LPA is Streetcar
- Plan to study Light Rail and potential alignments

- **Center City Integration Study**

- Determine how best to integrate three corridors into downtown with LYNX Blue Line, CityLYNX Gold Line, and Charlotte Gateway



## BUS RAPID TRANSIT



- Intended for a variety of trips from regional to local
- Operates in a variety of ROW scenarios
- Service throughout the day and on weekends

## STREETCAR



- Intended for short-distance trips in urban areas
- Typically operates in mixed traffic
- Service throughout the day and on weekends

## LIGHT RAIL






- Intended for a variety of trips from regional to local
- Typically operates in dedicated ROW
- Service throughout the day and on weekends

## COMMUTER RAIL



- Intended for longer-distance commute trips from suburbs into a central city
- Operates in dedicated ROW
- Service during peak hours of travel M-F

## Priorities

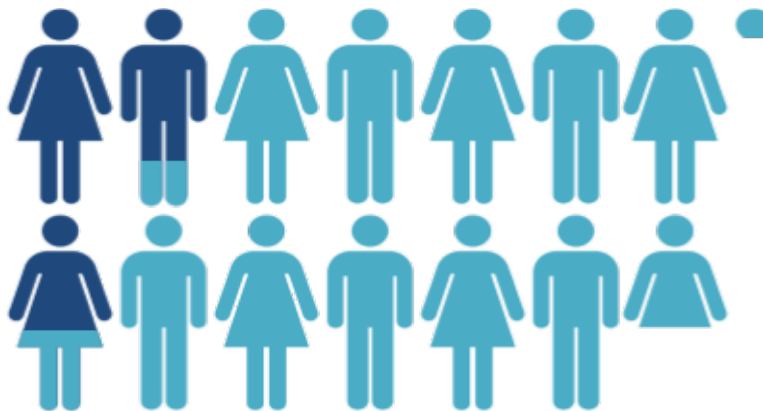
1.  Events / Entertainment
2.  Connect to Airport
3.  All-day Travel

## Most Important

1. Travel Time
2. Service Frequency
3. Service Reliability
4. Cost Savings
5. Transit Vehicle

**North Participation**  
173 Paper  
536 Online

**West Participation**  
44 Paper  
607 Online





- Red Line commuter rail remains difficult to implement.
- There are not many viable options to the Red Line, but they do exist.
- Community input indicates a desire for more frequent service, like light rail or BRT.
- Advancing an option other than the LYNX Red Line commuter rail requires a new direction on transit and land use planning.

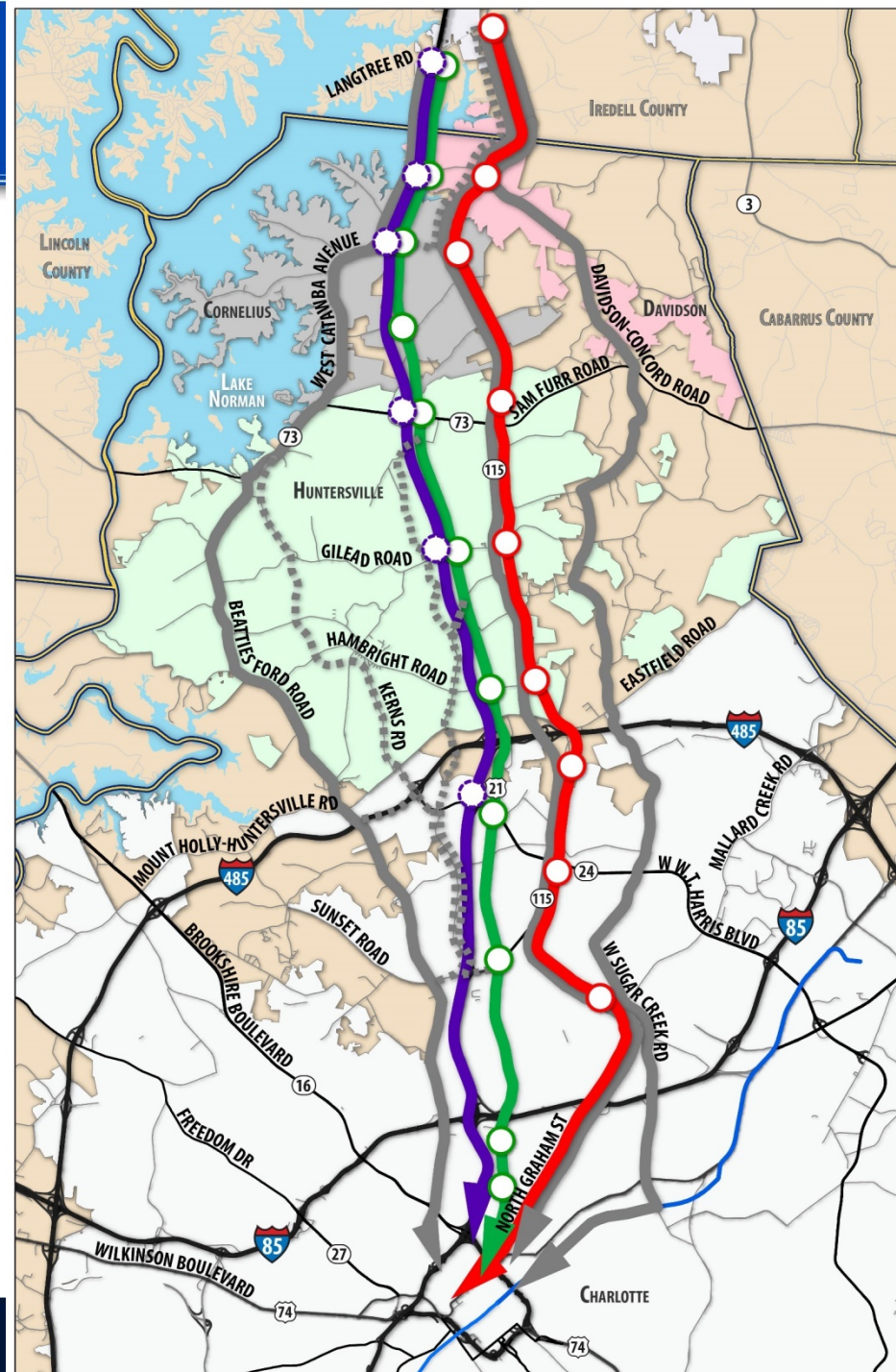


Red Line  
Commuter  
Rail

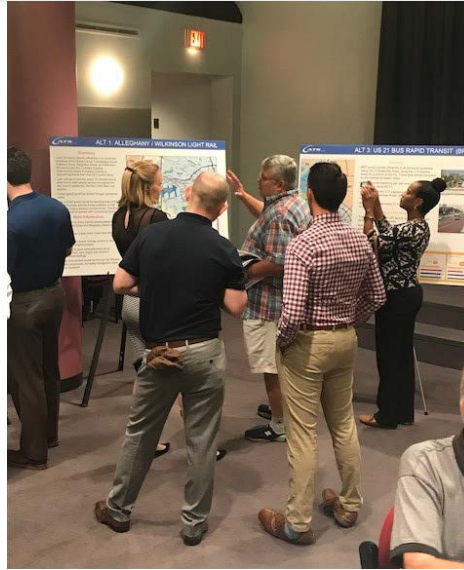
Interstate 77  
BRT

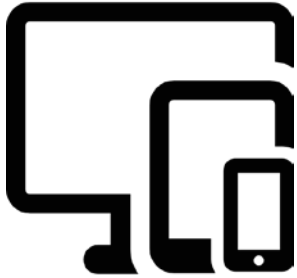
US 21 Light  
Rail

US 21 BRT









*3,000+*  
Survey Participants



*375+*  
Attendees



*2,400+*  
Attendees



*9*  
Public Workshops

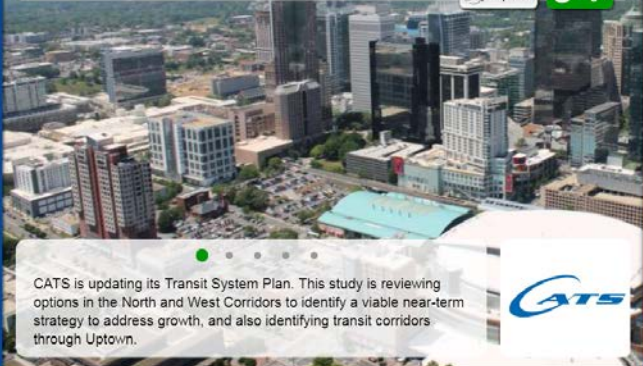




THANK YOU 5

Please consider: Which alternative in the North and the West Corridors best provides reliable transit to connect the region, enhances quality of life, increases mobility, and strengthens access to opportunities?

 Español
  Begin



CATS is updating its Transit System Plan. This study is reviewing options in the North and West Corridors to identify a viable near-term strategy to address growth, and also identifying transit corridors through Uptown.

CENTER CITY

What to do Next Task

Red Line Commuter  
Rail

## I-77 BRT Enhancements

US 21 Light Rail

US 21 BRT

Please rate this scenario:

★★★★★

 Optional Comment

Red Line  
Commuter Rail

The current plan is a 25-mile commuter rail using the "O" Line, a freight track owned by Norfolk Southern. Commuter rail service is typically less frequent than light rail or Bus Rapid Transit service.

More about this

### Alternative Highlights

- Requires Q Line agreement with Norfolk Southern and permission to cross their main line to access Gateway Station.
- Travel time of 56 minutes is higher than options using the I-77 express lanes.
- Frequent service desired, increasing operating costs and need for more passing tracks.
- Only option directly serving downtowns of Huntersville, Cornelius, and Davidson.
- Local service within towns is possible but is limited by service frequency.



CENTER CITY

What to do Next Task

Allegheny / Wilkins

Wilkinson Boulevard

Please rate this scenario:

★★★★★

Allegheny /  
Wilkinson

Light rail would operate efficiently in exclusive guideway from Uptown along Tuckaseegee Rd., Freedom Dr., Alleghany St., and alongside Wilkinson Blvd. past the airport to Belmont in Gaston County.



### Alternative Highlights

- Integration into more narrow streets along Tuckaseegee and Allegheny required.
- Travel time of 28 minutes is slightly higher than Wisconsin Blvd. option due to less direct routing.
- Implementation would change access to several schools and neighborhoods.
- Opportunity to spur redevelopment along Freedom Drive; also aligns with Airport's development strategy.
- Center City access would be through the Wesley Heights community, but steep topography limits station locations.

CENTER CITY

[? What to do](#) [→ Next Task](#)

Blue Line Connection

### Gold Line Connection

### East-West Tunnel

North End Connection

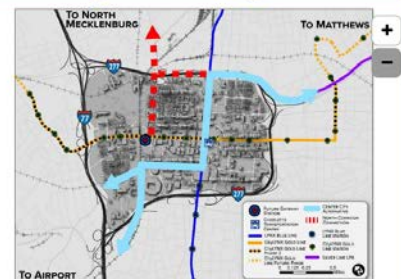
Please rate this scenario

★★★★★

Blue Line  
Connection

Light rail could use Carson Blvd. or MLK Jr. Blvd. to connect to the Blue Line, then share Blue Line tracks through Center City. The MLK option would be close to Gateway Station.

More about this



### Alternative Highlights

- Auto access on M.I. Jr. Blvd., and Blue Line upgrading may be required.
- Use of existing Blue Line infrastructure minimizes the new construction required.
- Light rail in streets connecting to the Blue Line is subject to conflicts with autos and pedestrians, slowing transit service.
- Key destinations near Trade & Tyron would be directly served; Gateway Station is two blocks away.
- Accommodating additional future lines beyond the Silver Line is unlikely due to Blue Line capacity constraints.



Charlotte *1007*

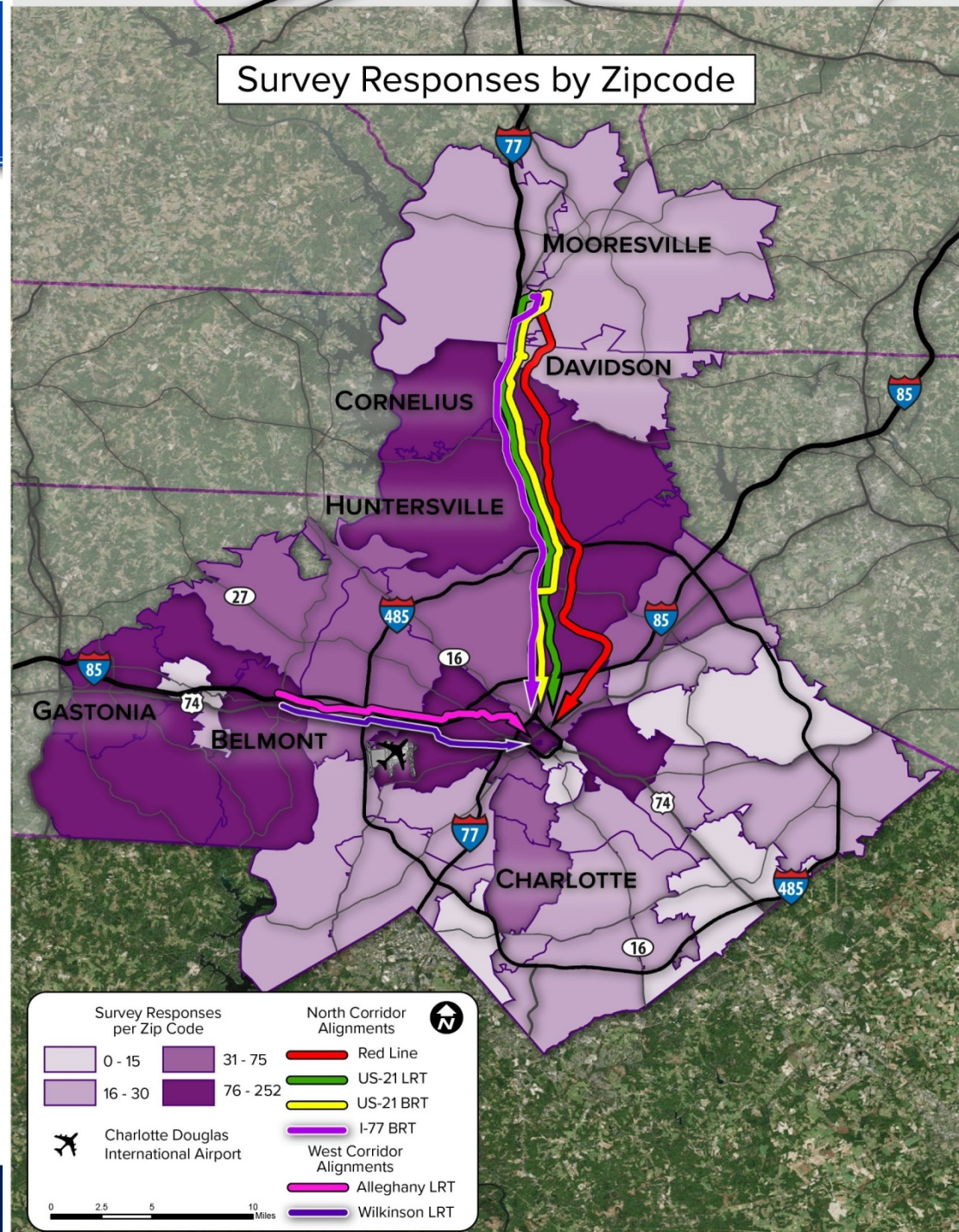
Gaston County *705*

Cornelius *183*

Huntersville *126*

Mooresville *43*

Davidson *29*





## September 18

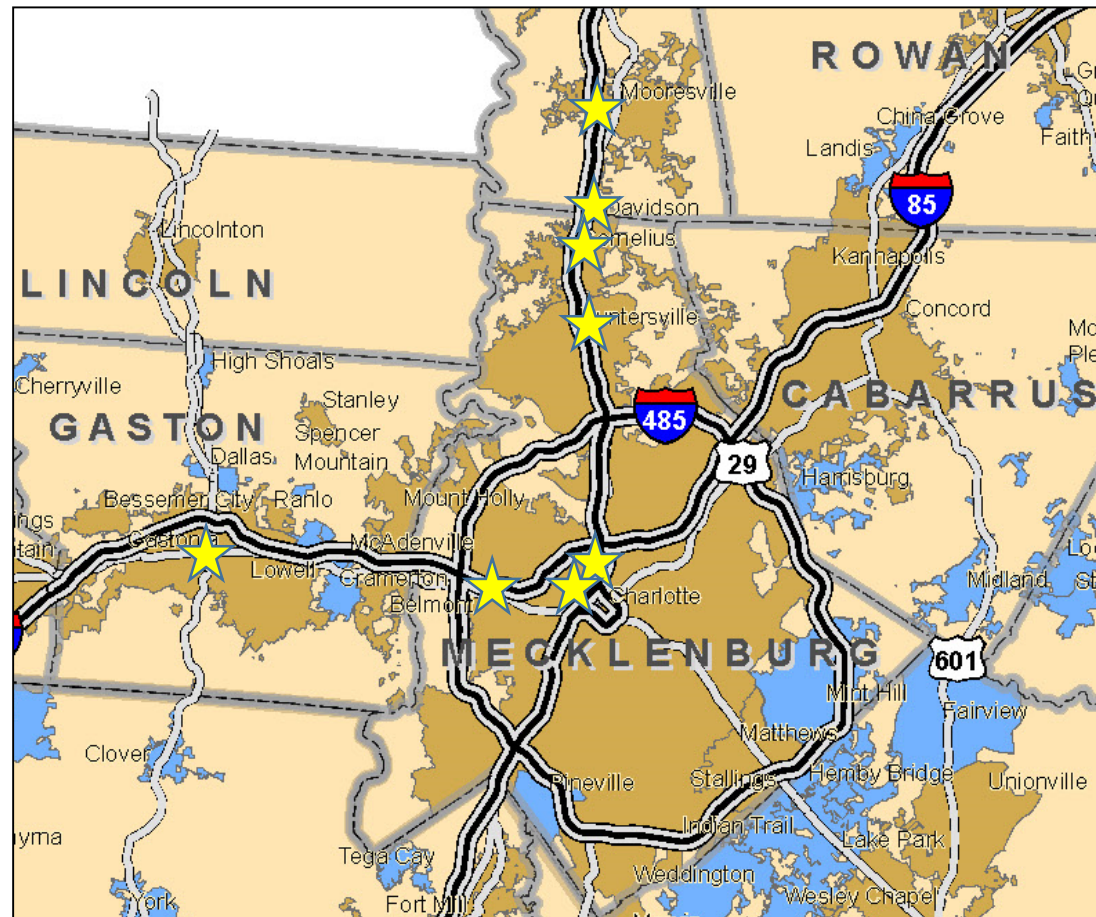
- Cornelius Station Workshop
- Davidson Station Workshop
- Gastonia City Council
- Westerly Hills Neighborhood
- Seversville Neighborhood

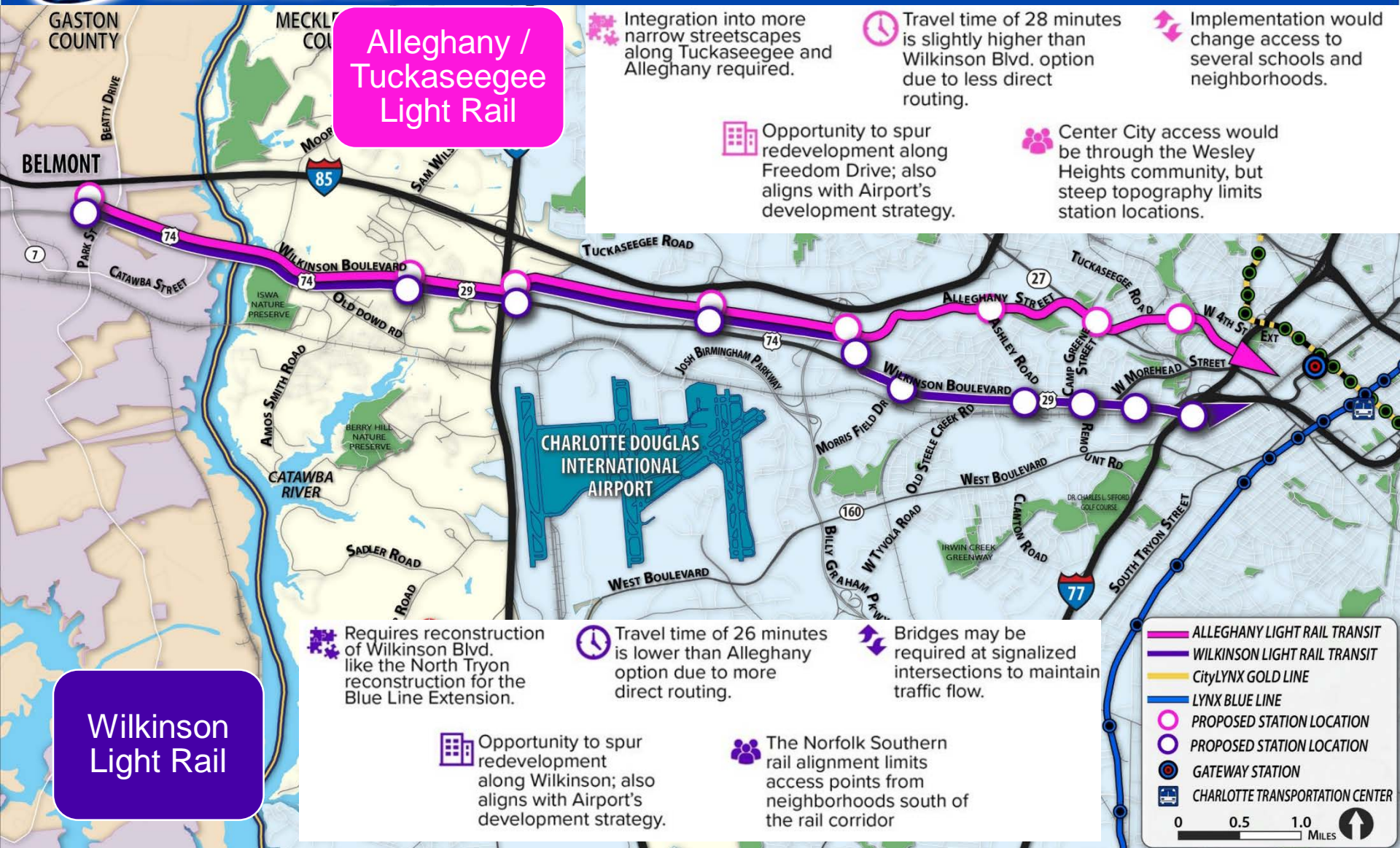
## September 19

- Huntersville Station Workshop

## September 20

- West Blvd Economic Corridor Study
- Mooresville Station Workshop
- Smallwood/Biddleville Neighborhood



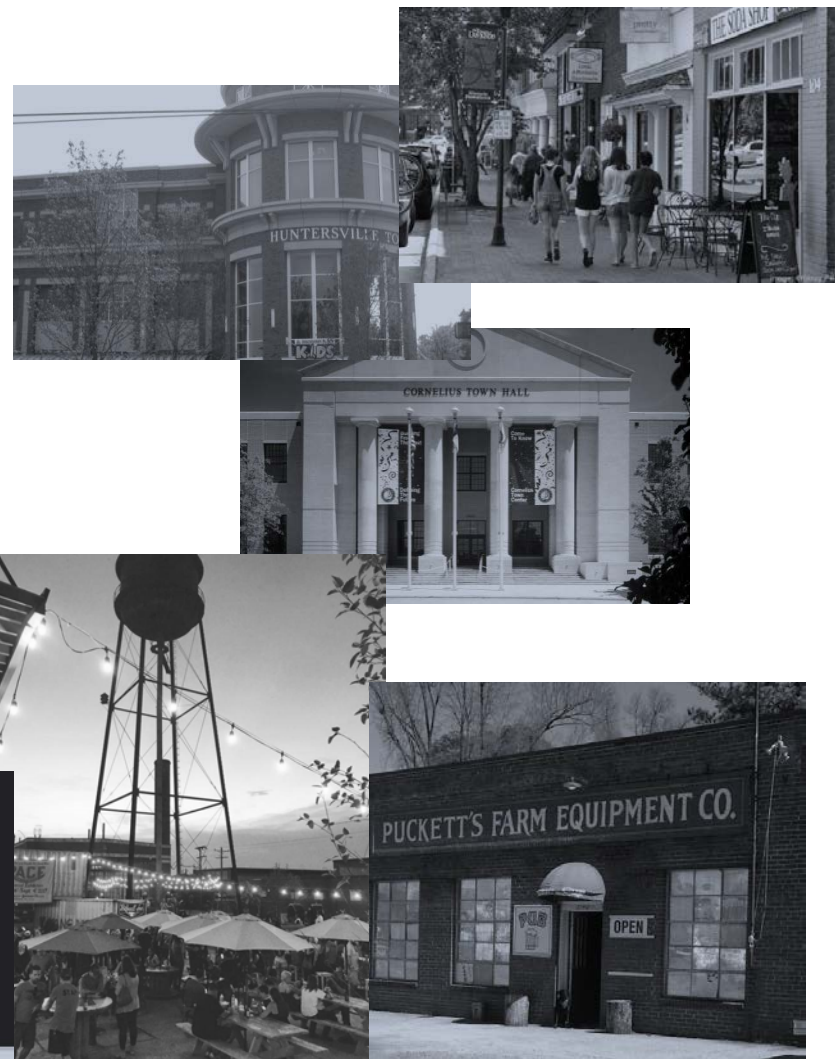




- Survey results indicate a preference for the Wilkinson Blvd light rail option.
- Corridor based bus recommendations will be included for Freedom Dr, West Blvd, and the River District.
- NCDOT structures division is coordinating a meeting with Gaston County officials and CATS to discuss light rail design criteria for the US 74 Catawba River and South Fork Bridges.
- CATS is planning a station workshop with Charlotte Douglas International Airport.
- The City of Gastonia passed a Resolution of Support for Light Rail extending to Downtown Gastonia



- Summer 2018 survey results indicate a preference for the rail options with a slightly higher preference for the LYNX Red Line commuter rail while the Fall 2017 survey indicated a preference for more frequent service
- Advancing options along US-21 would require significant coordination with NCDOT planned road projects.
- The project team held four BRT station workshops with town staff September 18-20.
- Path forward for each alternative are being developed



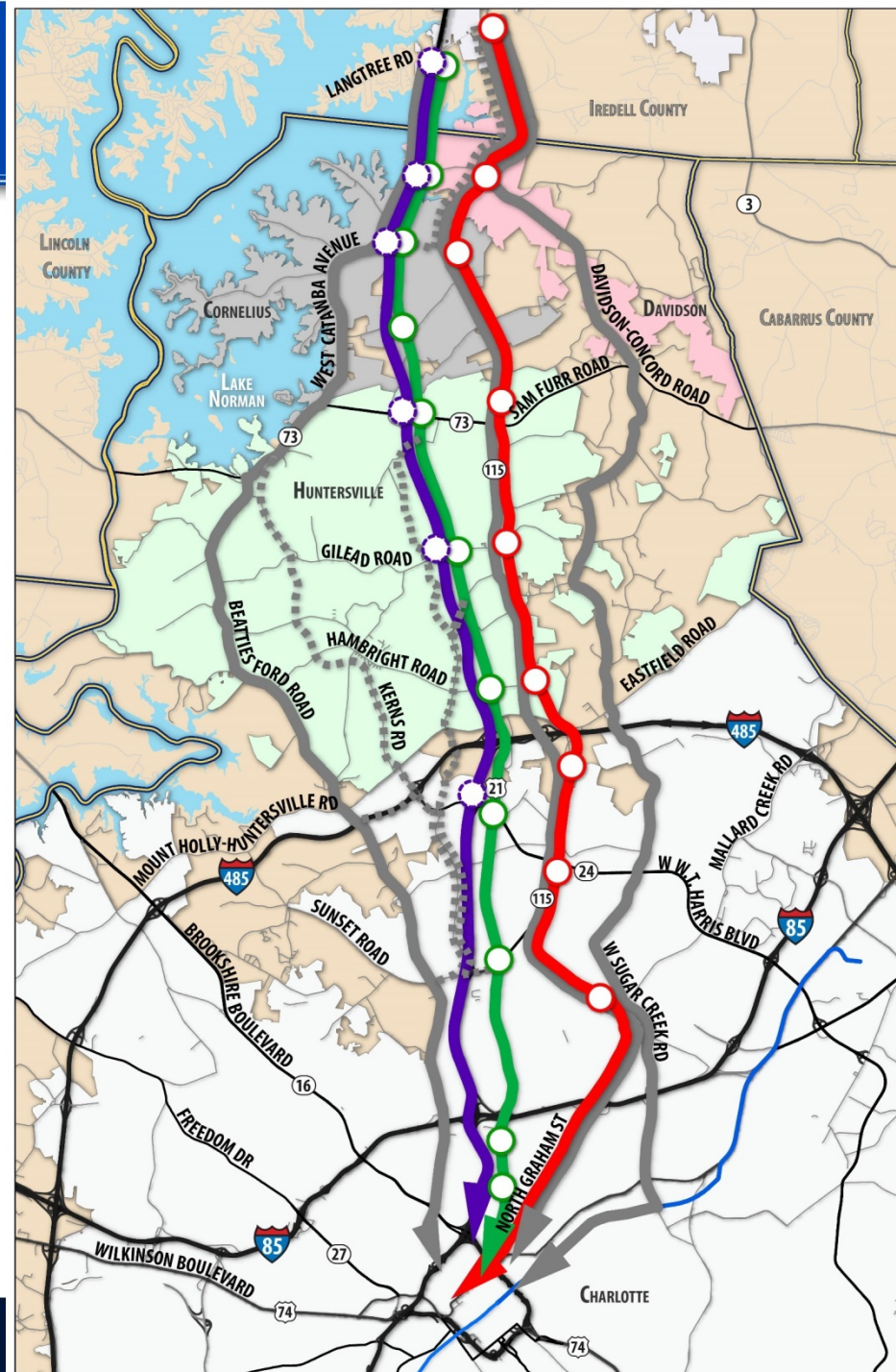


Red Line  
Commuter  
Rail

Interstate 77  
BRT

US 21 Light  
Rail

US 21 BRT



# Red Line Commuter Rail

## Coordination requirements

### NC 115 widening – uncommitted

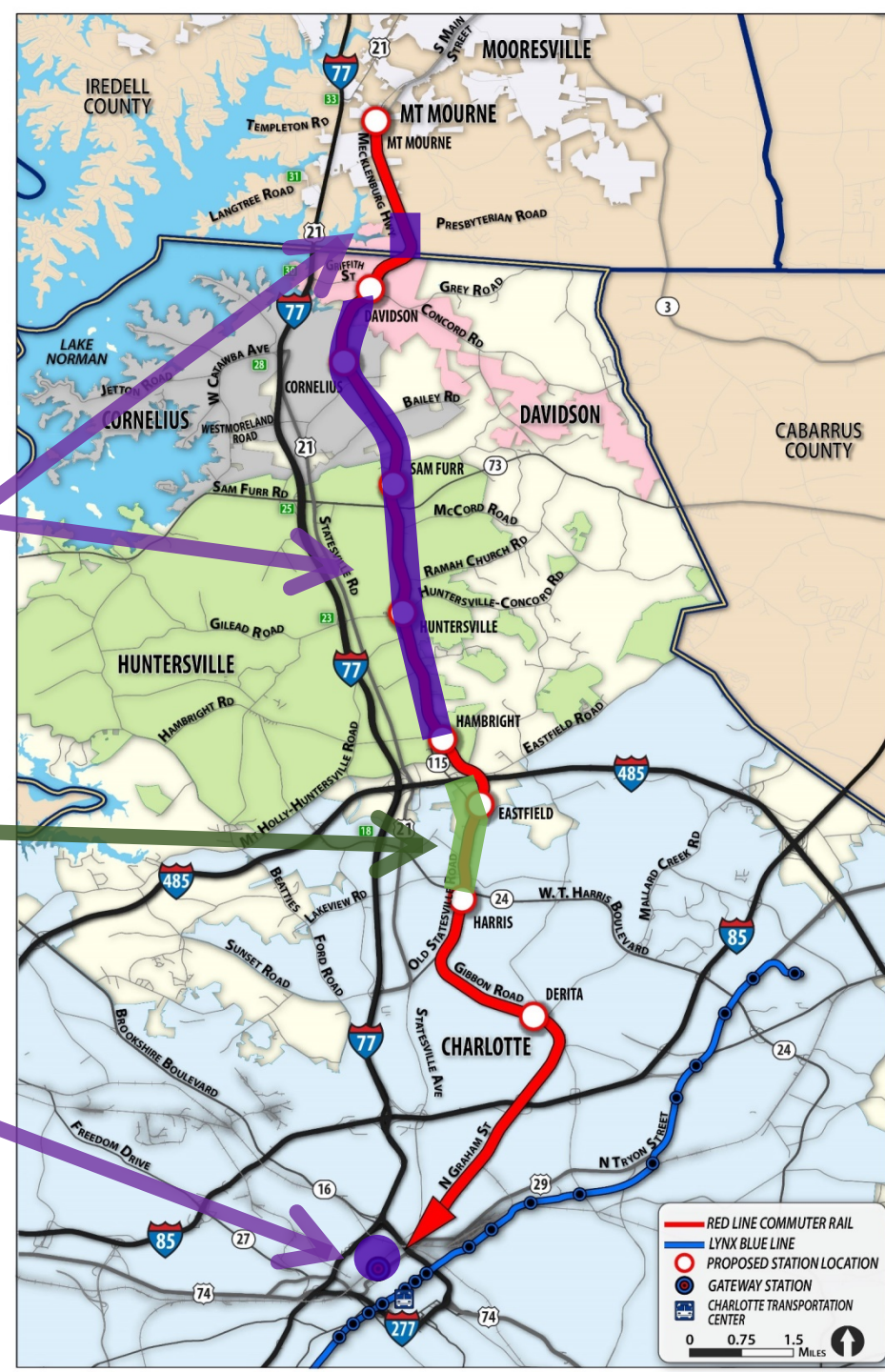
Ensure that planned widening does not negatively impact access to adjacent rail corridor

### NC 115 widening – committed (ROW 2021)

Ensure that planned widening does not negatively impact access to adjacent rail corridor

### Charlotte Gateway Station

Ensure that site development does not preclude construction of future rail platform

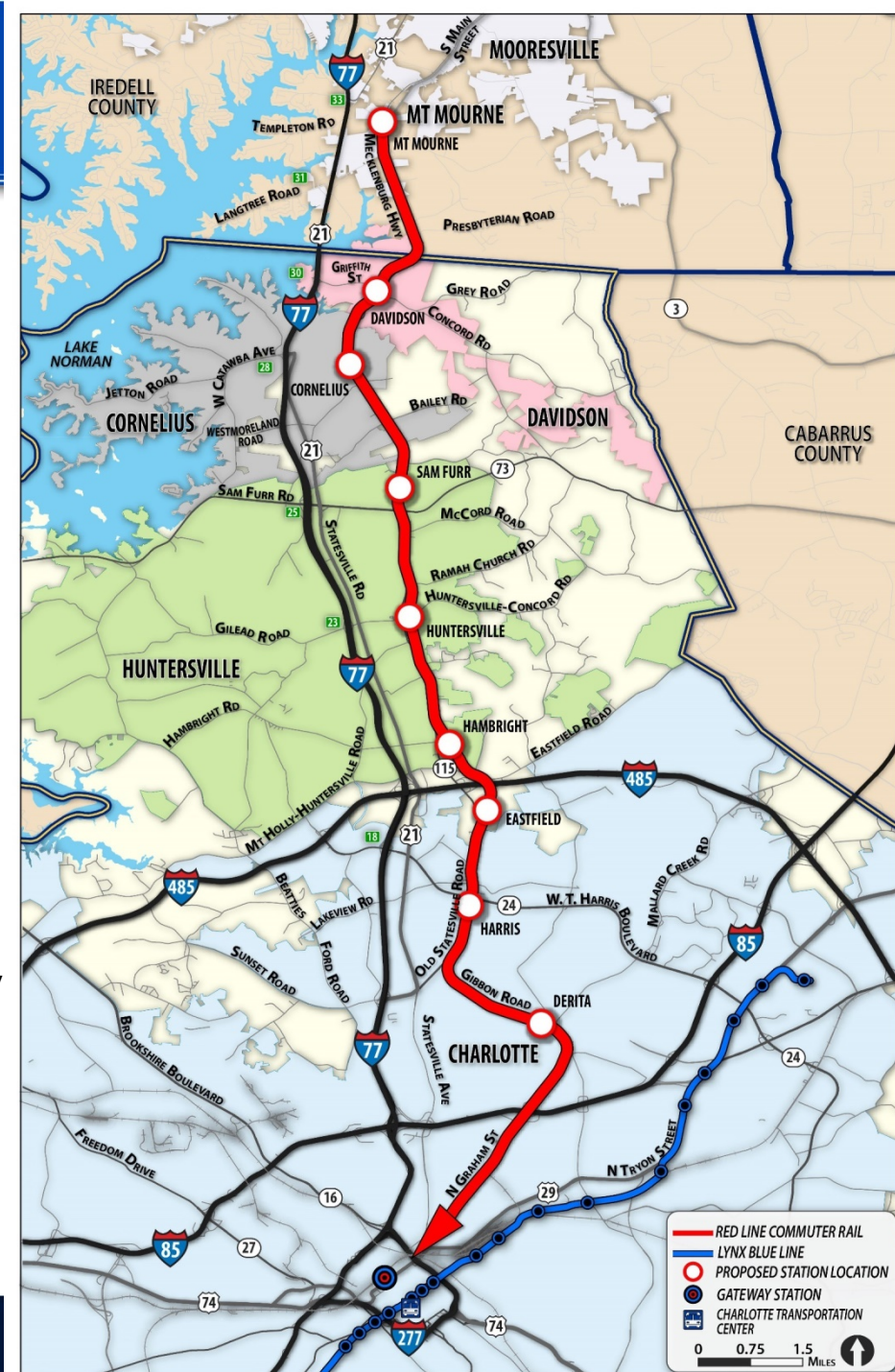




# Red Line Commuter Rail

## Path forward if option is advanced:

1. Protect identified station sites from development
2. Confirm and maintain transit-supportive zoning around station areas
3. Continue coordination with NCDOT in regards to roadway design.
4. Protect rail alignment entering Center City
5. Continue to engage Norfolk Southern



# US 21 LRT / BRT

## Coordination requirements

### New bridges - unplanned

New bridges over Lake Cornelius and Lake Davidson required for LRT

### US 21/Catawba roundabout – committed (ROW 2018)

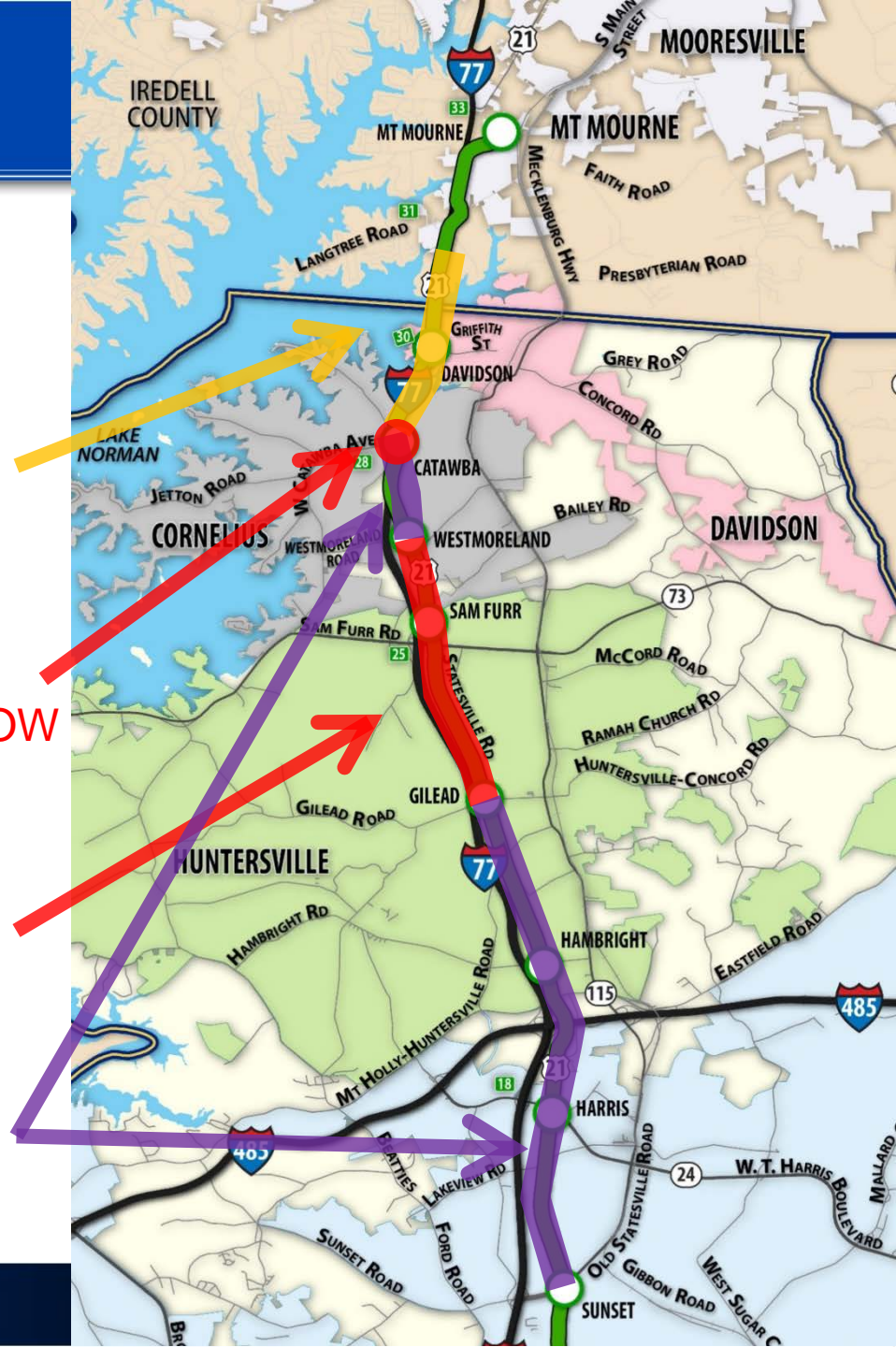
Design would require transit to be outside ROW

### US 21 widening – committed (ROW 2019)

Rapid Transit cross-section would require road reconstruction.

### US 21 planned widening – uncommitted

Future widening would need to preserve space for a transit guideway

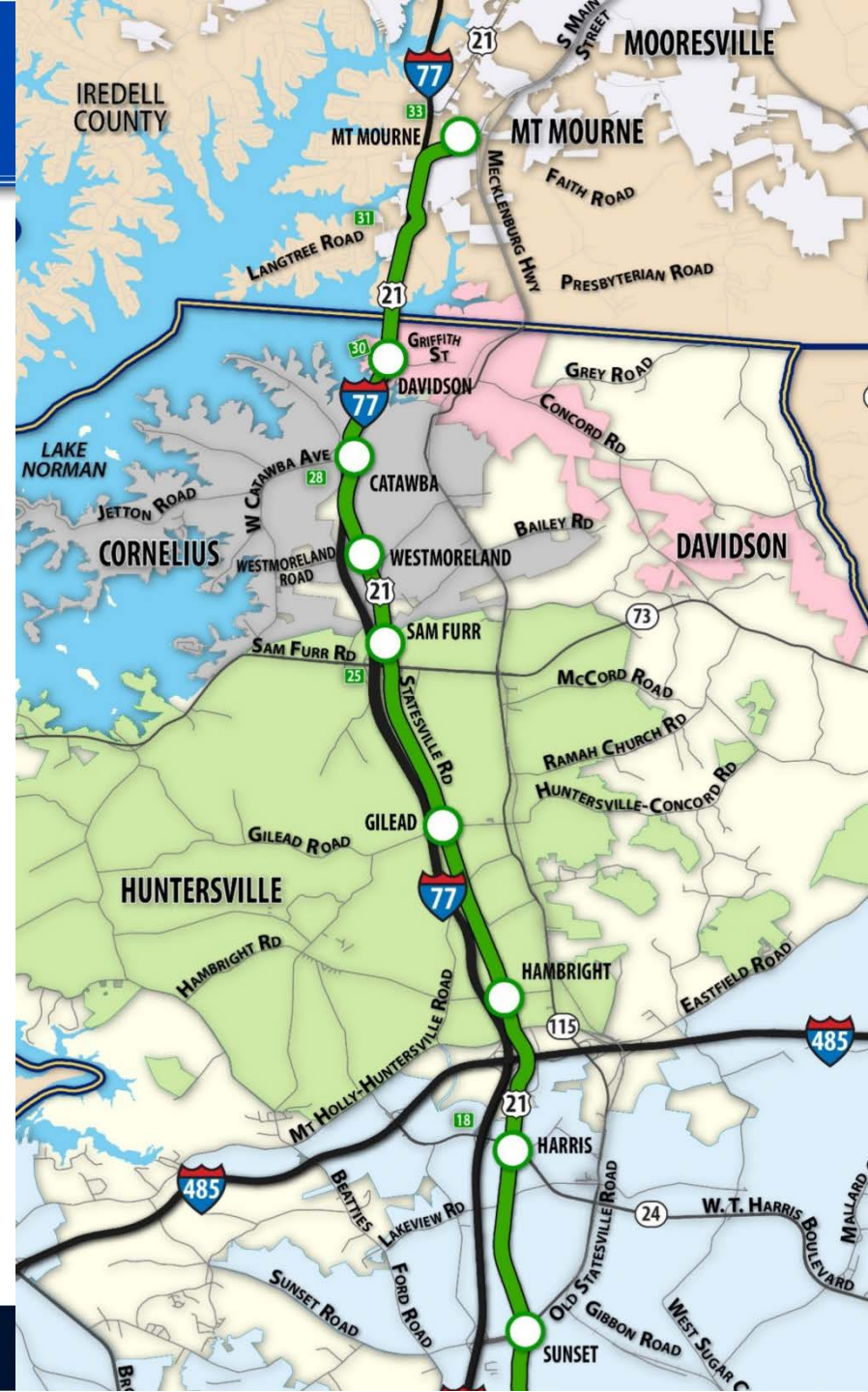




# US 21 LRT / BRT

## Path forward if option is advanced:

1. Refine alignment to better understand property impacts along segment to be widened soon.
2. Work with NCDOT to preserve viable alignment locations as part of uncommitted widening projects.
3. For LRT, initiate planning process for additional bridges over the lake (anticipated long process).
4. Municipalities initiate local land use planning process for transit-supportive station areas.
5. LRT along Statesville Ave/Rd in Charlotte may require change to road character and a new dialogue with Norfolk Southern at crossing.





2008







# I-77 Enhanced BRT

## Coordination requirements

**Fairview Rd overpass – committed  
(ROW 2019)**

Direct access opportunity for transit vehicles?

**Westmoreland Rd interchange –  
uncommitted**

Direct access opportunity for transit vehicles?

**Bailey Rd flyover – uncommitted**

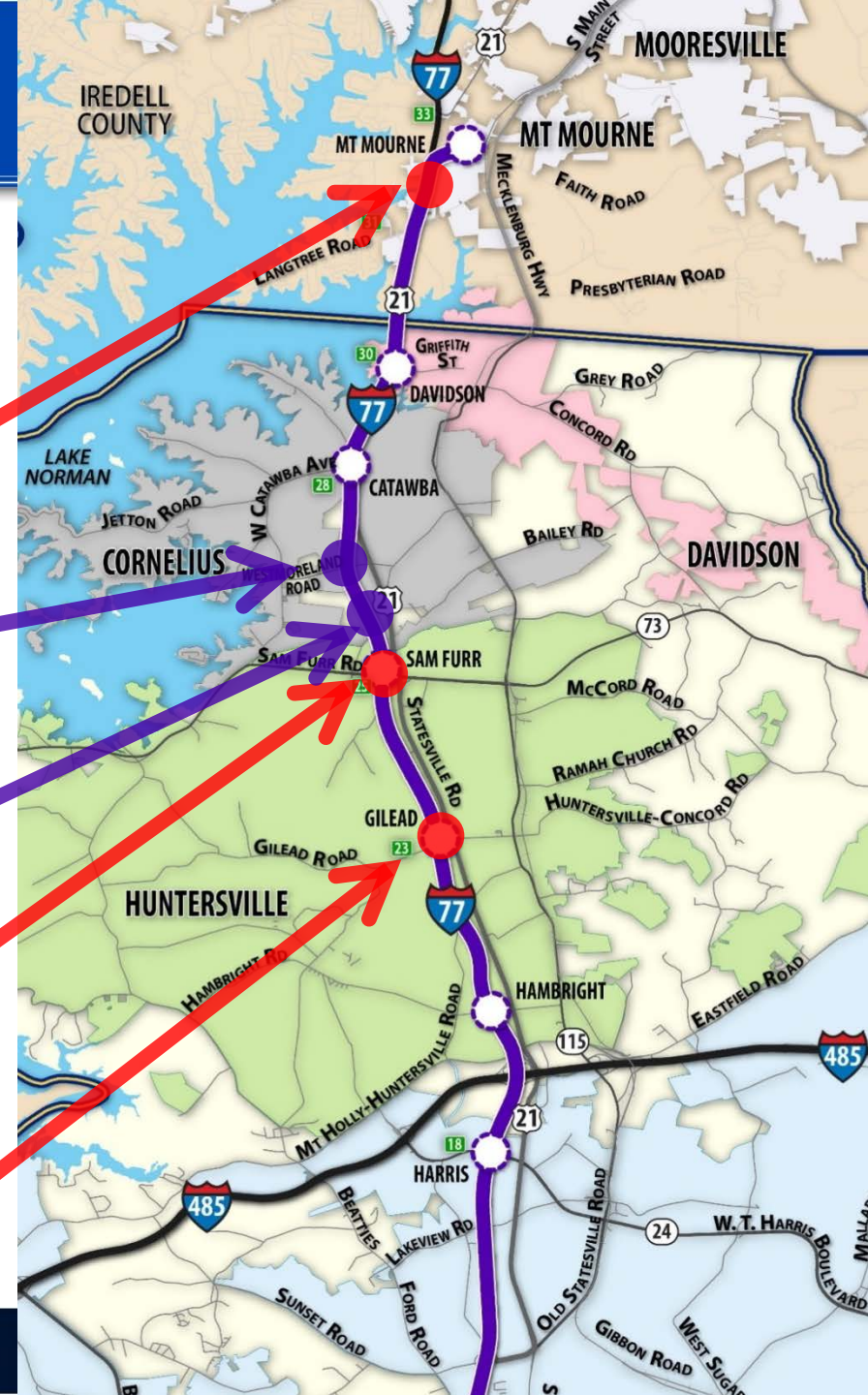
Direct access opportunity for transit vehicles?

**Exit 25 reconfiguration – committed  
(ROW 2019)**

Potential to coordinate design to improve  
transit access

**Exit 23 reconfiguration – committed  
(ROW in progress)**

Potential to coordinate design to improve  
transit access

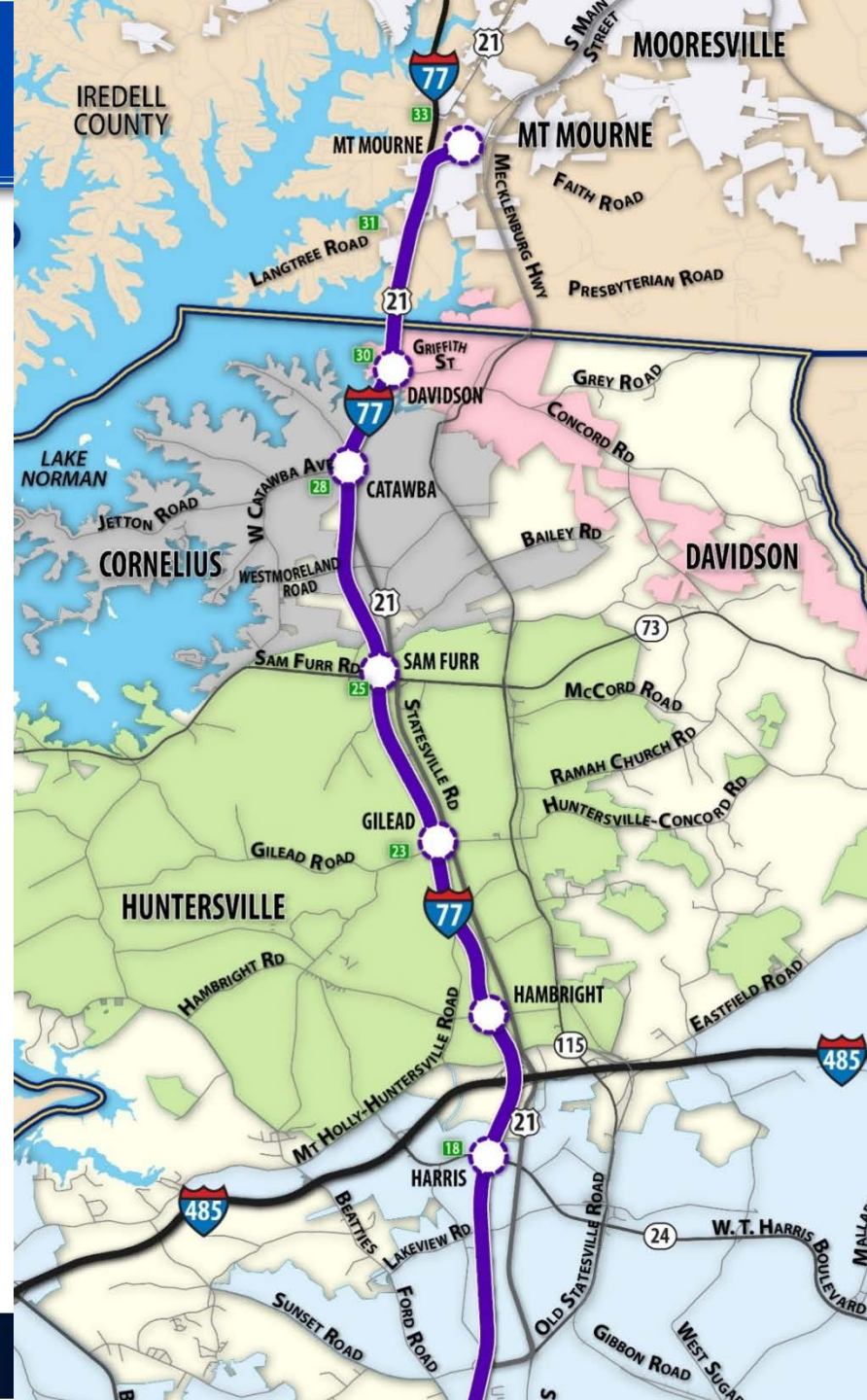




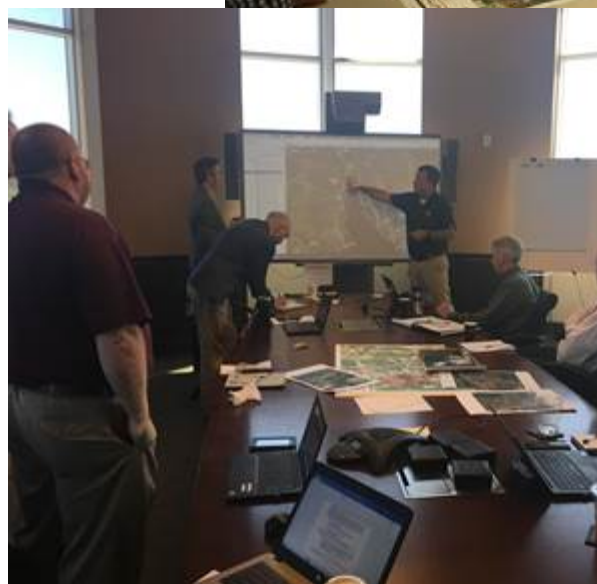
# I-77 Enhanced BRT

## Path forward if option is advanced:

1. Work with NCDOT to determine acceptance of new bus-only slip ramps or new direct connect ramps
2. Advance local station area planning and design processes
3. Progress concepts for transit priority streets in Center City Charlotte
4. Advance design of individual bus access improvement projects
5. Develop plans for local mobility connections at each station



- Establish desired project design elements
- Potential direct connections to I-77 express lanes
- Potential station locations and types
- Mobility Hub concepts
- Land use opportunities







Use of express lanes



New ramps to provide direct access to stations



Stations functioning as local mobility and development hubs



Robust service plan

# Flatiron Flyer BRT on US 36

## Denver to Boulder

### • Transit Service

- 6 stations
- 6 routes
  - Some express
  - Some serve all stations
  - Some stop on-street in Boulder and downtown Denver

- 4 to 15 min. peak frequency
- 15 min. off-peak frequency (3AM – 1AM)
- Branded coach buses

### • Ridership

- 45% increase over prior service





DENVER, CO



Platform on  
shared ramp

P

© 2018 Google

Google Earth

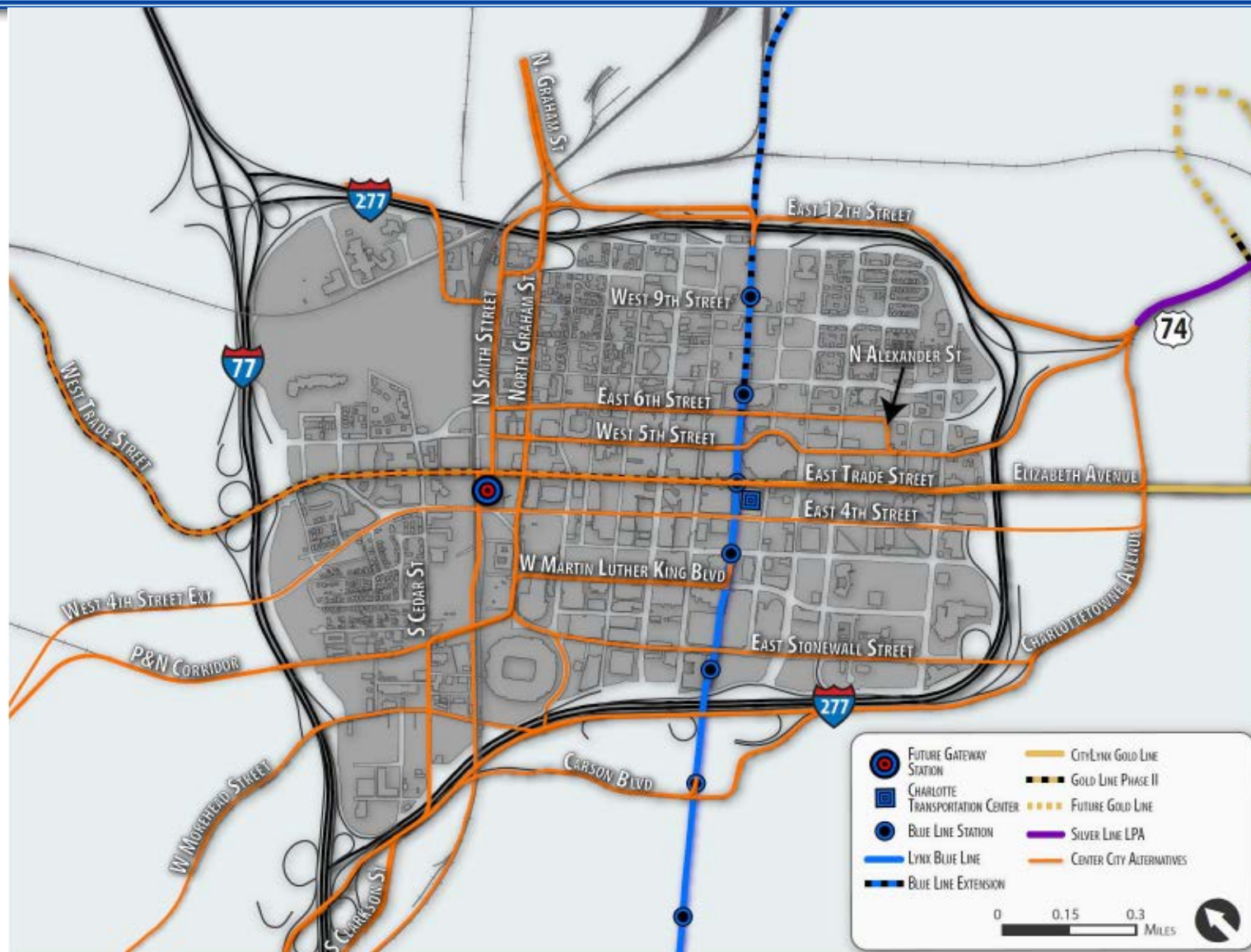


SAN DIEGO, CA

- Use of direct access ramps into express lanes streamlines access in and out of express lanes (time savings)
- Direct access ramps serve a local road, but not as congested as a full interchange







1

November 2017 – April 2018

**Identification of  
Universe of  
Alternatives**

**50+** corridor  
options

2

April - July 2018

**Initial Screening of  
Alternatives**

**4** concept  
options

3

August - September 2018

**Detailed  
Comparison of  
Tradeoffs**

**2-3** leading  
corridors

4

September - October 2018

**Refinement of  
Leading Concepts**

**2-3** leading  
corridors

5

November 2018 –  
January 2019

**Selection of  
Preferred  
Concept**

**1** preferred  
concept





**LYNX Blue Line Connection**

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**CityLYNX Gold Line Connection**

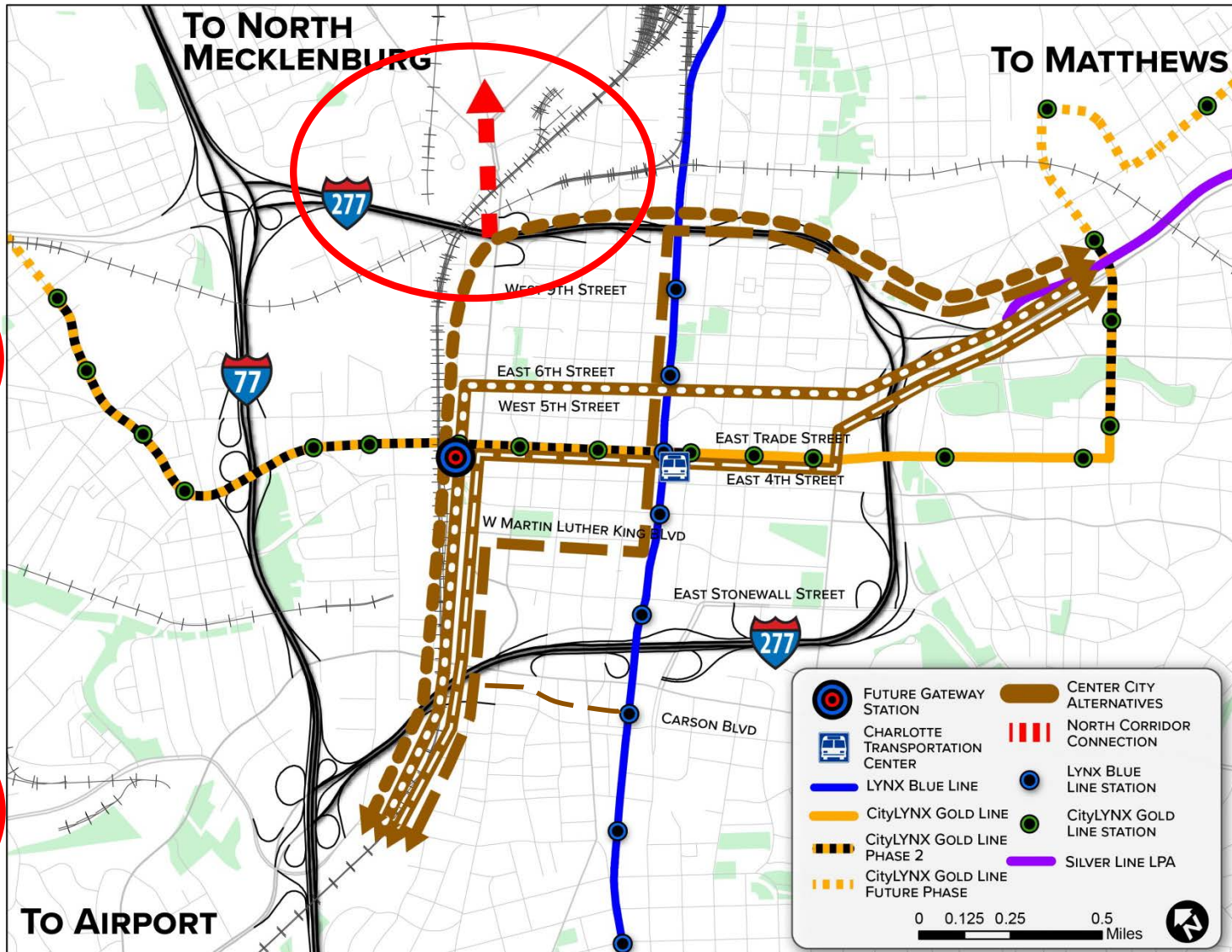
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**East-West Tunnel**

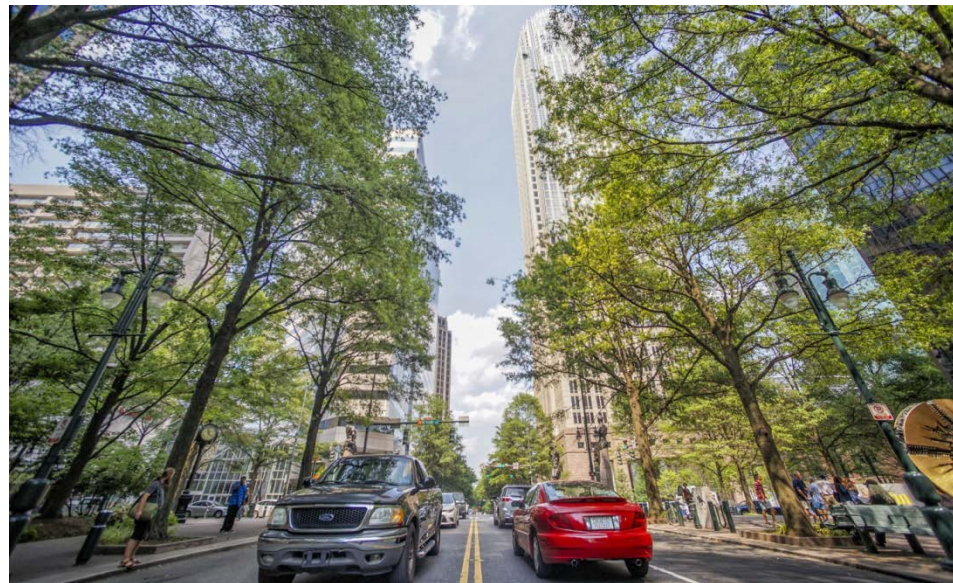
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**North End Connection**

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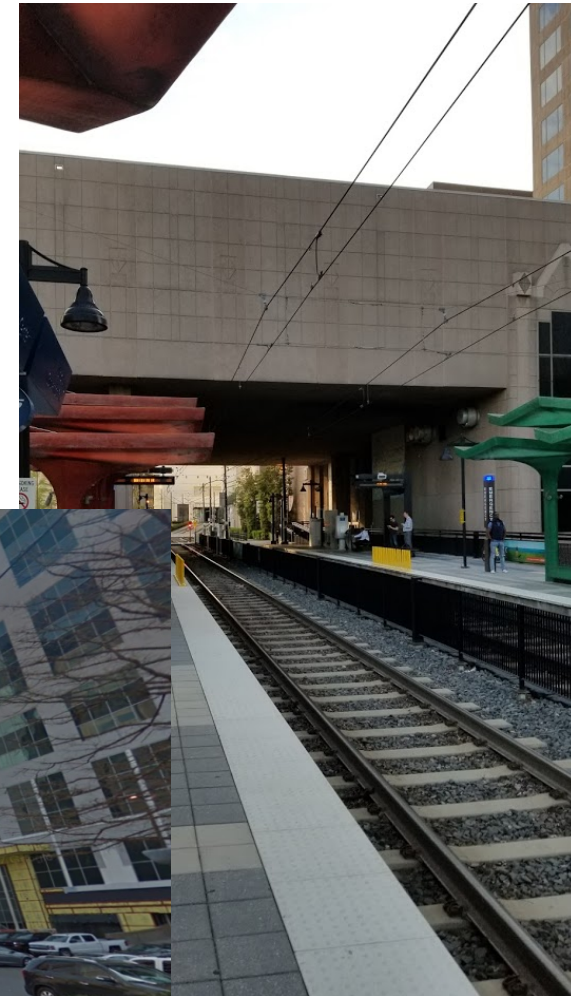
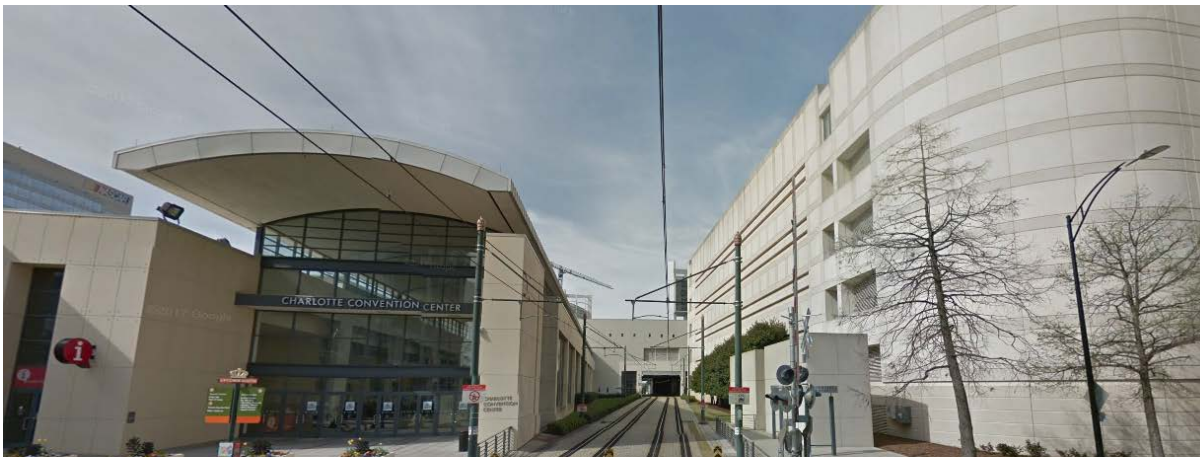


- Charrette to be held October 8<sup>th</sup> – 12<sup>th</sup> to further develop Trade Street, North End (Brookshire/Graham), and North Corridor options
- Technical presentations on Tuesday, October 9<sup>th</sup>
- Presentation on Friday, October 12<sup>th</sup> with concepts and visualizations





## LYNX Blue Line in Uptown Charlotte



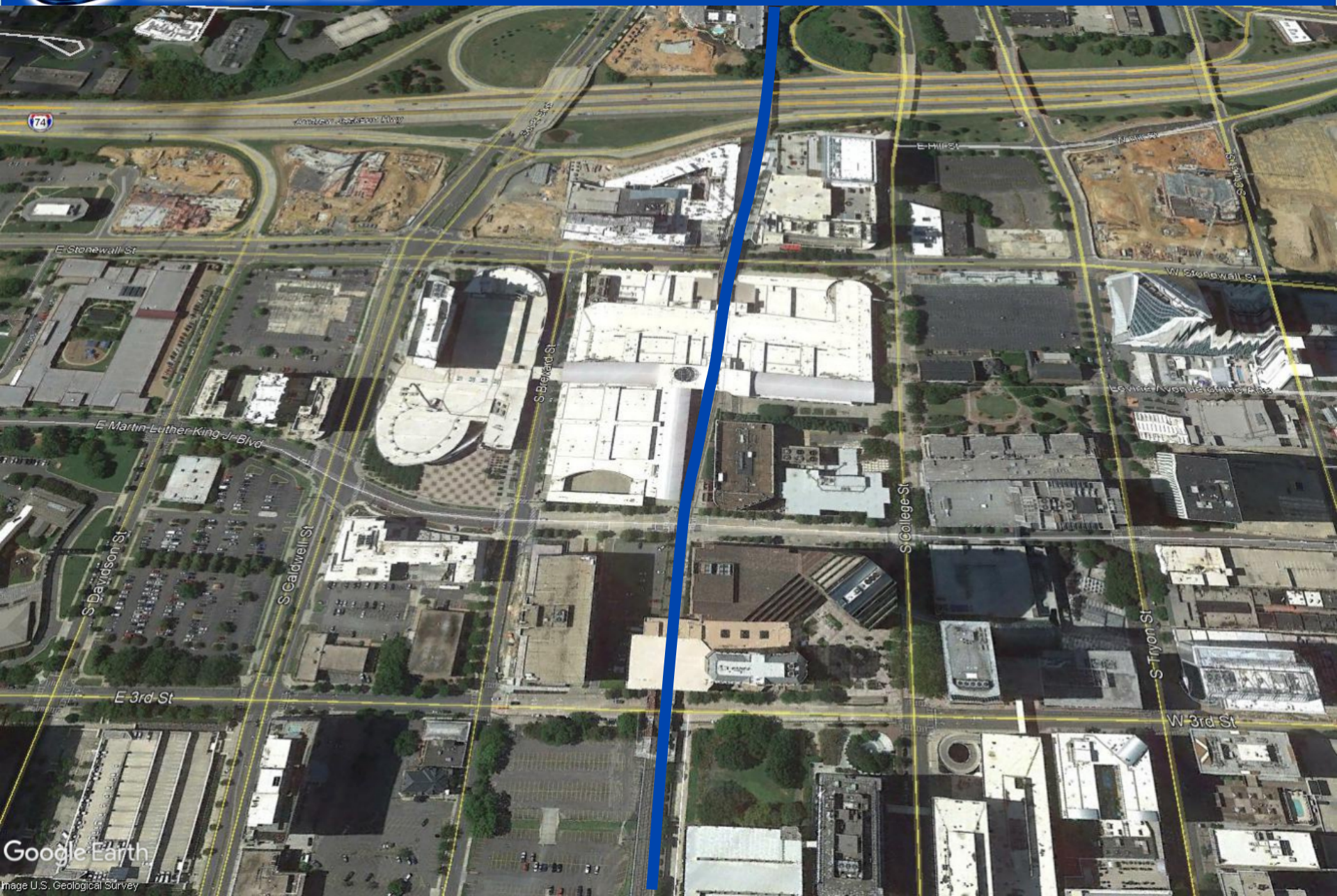














## Refine Alternatives

- Ridership
- Traffic analysis
- Interlining simulation

## Continue Discussions

- Affordable housing
- Community health

## Workshops with the Northern Towns

## Center City Charrette

## Airport Station Workshop