



# **CONNECT Beyond**

A Regional Mobility Initiative

## **Building a Better Bus Network**

November 24, 2021



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## Introduction

The greater Charlotte metropolitan region continues to grow at a fast pace. Currently there are approximately 2.6 million people who live in the region and by 2045 it is projected to grow to roughly 4.1 million. This growth raises important questions about the future of mobility, accessibility, and connectivity for the 12 counties in and around the Charlotte metropolitan area.

Transportation is a critical component in keeping a region and its residents connected and thriving. Data show that areas seamlessly interconnected by a variety of transportation options are far more likely to attract and retain people, businesses, investments, and new opportunities. Providing a variety of transportation options helps enhance the quality of life for residents and visitors by providing greater access to education, healthcare, recreational activities, and more. Transportation options, in particular public transit, impact economic development as well, by creating more and better access to jobs and businesses within the greater Charlotte region.

To help address the issue of creating seamless and integrated transit connections, the region embarked on a project called CONNECT Beyond—a two-state, 12-county regional mobility initiative coordinated by the Centralina Regional Council (CRC) and the Metropolitan Transportation Commission (MTC). The goal of CONNECT Beyond is to create a unified regional transit vision and plan.

## Purpose

The intent of the Integrated Bus Service Strategies effort was to better understand the existing operations and conditions of each of the fixed-route providers in the CONNECT Beyond 12-county study area to develop recommendations that create an integrated bus network for our region. To complete this task, the project team embarked on a series of activities including:

1. **Working Sessions** – three separate working sessions were facilitated with the fixed-route providers. This included Interviews, a Strengths, Weaknesses, Opportunities, Threats Analysis (S.W.O.T.) Analysis, and a Long-Range Interactive Workshop.
2. **Field Observations and Ride Arounds** – to better understand the existing conditions of the infrastructure throughout each system, windshield surveys were completed.

- 3. Identification and Documentation of Transit Needs and Service Gaps** – based on the Working Sessions and the Field Observations and Ride-Arounds, the project team identified transit needs and service gaps within the service area for each transit agency.

A summary of each approach is provided in more detail below.

## Summary of Working Sessions

Three separate working sessions were facilitated with the fixed route providers. This included Interviews, a S.W.O.T. analysis, and a Long-Range Interactive Workshop. The participant make-up of each working session, the make-up of staff supporting the meetings, and quick summary of the meetings is noted below:

### CONNECT Beyond Project Management Team

The CONNECT Beyond PMT was led by members representing the Centralina Regional Council, Charlotte Area Transit System (CATS), and Charlotte Regional Transportation Planning Organization (CRTPO).

### Fixed Route Provider Participants

Representatives from Fixed-Route (Urban) Service Providers were invited to attend and participate in a series of workshops, providers included:

- Iredell County Area Transportation System (ICATS)
- Salisbury Transit System (STS)
- Concord Kannapolis Rider Transit (Rider Transit)
- Charlotte Area Transit System (CATS)
- My Ride, Rock Hill SC
- Gastonia Transit, Gastonia NC

### Meeting Support

Given the total number of touchpoints with the region's fixed route providers additional staff support was sought. Team members from CATS, CRTPO and the consultant team supported the various meetings at one point or another.

### Meetings

The Integrated Bus Service Strategies meeting series was held in three successive workshops to solicit input from and foster engagement among the fixed route service providers. Table 1 provides an overview of when each meeting occurred.

**TABLE 1: SUMMARY OF WORKING SESSIONS**

Topic	Date	Time	Virtual Platform(s)
<b>Interviews</b>	Wednesday, Feb. 10, 2021	1:00 – 3:00 p.m.	Zoom
<b>S.W.O.T. Analysis</b>	Friday, Feb. 26, 2021	1:00 – 3:00 p.m.	Zoom, Mural
<b>Long-Range Interactive Planning Workshop</b>	Friday, March 12, 2021	1:00 – 3:00 p.m.	Zoom, Mural, Remix

- **Meeting 1:** Each transit provider was interviewed in a breakout room and follow-up meetings were scheduled. Five major themes emerged from the interviews, these are summarized in the next section of this report.
- **Meeting 2:** A collaborative S.W.O.T. analysis was facilitated, followed by brainstorming ideas for a Strategic Action Plan and prioritizing those actions/ideas on an Importance / Difficulty Matrix. A recap of the S.W.O.T. analysis summary is provided in the next section of this report.
- **Meeting 3:** Participants voted on three actions/ideas to prioritize for implementation as a follow-up to the S.W.O.T analysis. Each transit provider then reviewed their local and regional transit systems in Remix to identify solutions to build a better bus network for the region. Key insight from the session included elements such as more service, the need for extending hours of operation, providing bidirectional service, and improving frequency. A recap of the input received is summarized in the next section of this report.

The full input provided by participants during these meetings, including screenshots from participation platforms, is available in Appendix A: Meeting Summary Reports.

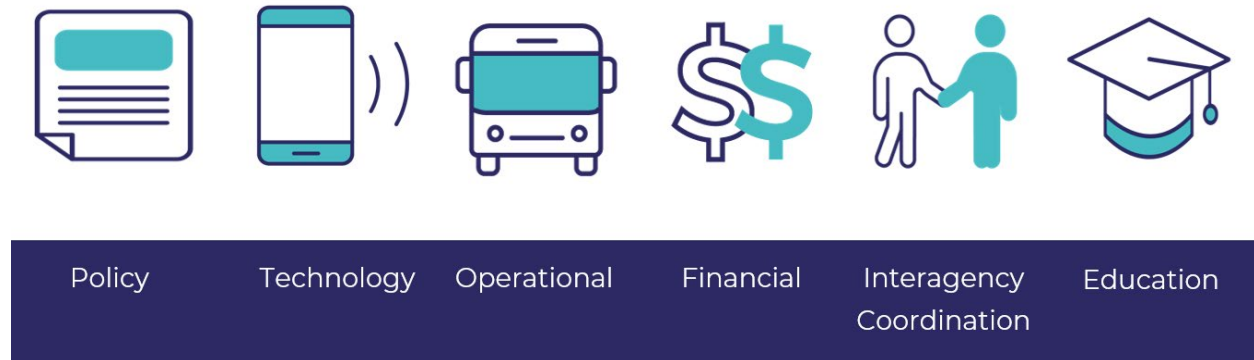
## Key Takeaways

The following are key takeaways from each of the meetings. These takeaways were distilled from the collective input received from participants during the discussions and workshops into a few concise concepts that reflect the overall consensus. The key takeaways from each meeting were presented to the participants at the beginning of the following meeting to obtain buy-in and build upon previous work for the next session.

### Meeting 1 (Interviews) – Major Themes

One-on-one interviews were conducted with each transit provider. Following the transit provider interviews, the PMT reviewed the collective responses and identified six major themes that emerged as priorities for improvement (see Figure 1): Policy, Technology, Operational, Financial, Education, and Interagency Coordination.

**FIGURE 1 MAJOR THEMES FROM MEETING #1**



### Meeting 2 (S.W.O.T.) – Strategic Action Plan

The goal of Meeting #2 was to discuss potential strengths, weaknesses, opportunities, and threats to creating a seamless regional transit network. The following provides an overview of what was discussed during the session.

- Regional coordination, cooperation, and engagement between agencies is critical.
  - Establish a permanent Regional Transit Commission that meets regularly and coordinates with other planning bodies and agencies.
  - Improve interagency communication on planning, proof of concept projects, lessons learned, technology, and standardizing regionally (e.g., working groups).
  - Leverage relationships across organizations.
- Long-term funding and transit planning are the biggest challenges.
- Marketing and education campaigns are needed to communicate opportunities and impacts to elected and appointed officials, agency staff, the community, and the general public.
- Create a unified regional fare system and service standards.
- Enhance connections and improve travel times to attract choice riders.
- Develop tools to enhance the user experience.

### Meeting 3 (Remix Session) – Long-Range Interactive Planning Workshop

The goal of Meeting #3 was to identify service gaps and opportunities for new routes to help create more robust local networks as well as a seamless regional transit network. The following provides an overview of what was discussed during the session.

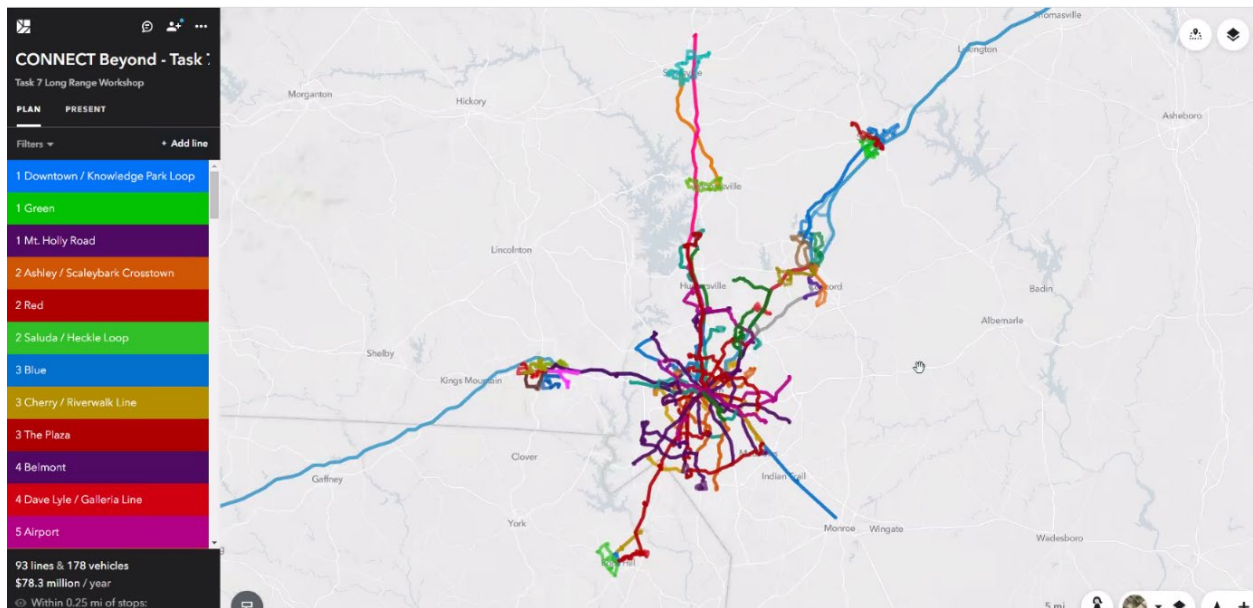
#### Remix Map-based Solutions

- Need coordination



- Improve connectivity and support:
  - To existing high-capacity transit (HCT) and CONNECT Beyond HCT
  - Key transfer hubs
  - New routes, services, and connections
  - Connections to special events/venues
  - Connection to and in between rural areas
  - Future growth and demand

**FIGURE 2 SCREEN SHOT FROM REMIX SESSION**



### Non-Map based Solutions

- Standardization of service: delivery, fleet, technology, and fare mechanism
- Maximize value for the customer and return on investment for public dollars
- Improve user experience
- Expand transit service and demand response

## Field Observations and Ride Arouds

Transit service quality is not measured solely with data and must be complemented with direct field observations of bus system infrastructure. HDR, through the coordination and feedback of fixed route service providers, performed transit ride-arounds and documented field observations to support the CONNECT Beyond study. Observing fixed-route bus operations

firsthand led to an enhanced understanding of issues and concerns that were identified from the various technical analyses. The purpose of this report is to provide a summary of the field observations for the fixed route transit providers in the CONNECT Beyond study area and document existing conditions. Due to the COVID-19 pandemic, the project team adjusted their observations approach to be in line with proper safety. Observations were made by shadowing routes from each provider in individual vehicles instead of riding the bus. Pictures of existing conditions and general notes from staff conversations about the conditions at bus stops, transit centers, and maintenance facilities were taken to support the observations.

## Methodology

During the Integrated Bus Service Strategies task working sessions, the Project Team asked for input from each fixed route transit provider in the CONNECT Beyond region. A series of interview questions were asked during the first working session conducted the week of February 8, 2021. These questions provided insight into the performance of each system as well as concerns and opportunities related to route performance, infrastructure, funding, interagency coordination, and long-range planning. The answers to these questions guided the field observations.

A windshield survey and facility tours, along with a short survey of operations and maintenance (O&M) facility conditions, were conducted in the Spring of 2021. The windshield survey was conducted for the region's urban fixed-route providers, including ICATS, STS, Rider Transit, CATS, My Ride, and Gastonia Transit. Based on the feedback from the working sessions described above, a sampling of bus routes was selected and general observations via images and notes were made for bus stop signage, sidewalk conditions and connectivity, bus shelters, and O&M conditions. A thorough description of the field observations and ride-arounds is provided in Appendix B: Making a Better Bus Network - Field Observations and Ride Arouns.

## Key Takeaways

The quality of signage, sidewalk connectivity, and stops/shelters varied by (and sometimes within) each agency. The following observations about the conditions of those elements were made for the CONNECT Beyond fixed route transit providers.

### Signage

Of the signage surveyed:

- Signage was not consistent in placement and/or content

- Outside of the main routes, many bus stop signs lacked indication of which routes the stop served
- Several fixed route providers had an unidentified phone number on the bus stop sign
- Many agencies provided a long URL that would not be easy for users to enter into a phone or digital device

### **Sidewalk Connectivity**

Of the routes surveyed:

- Areas outside of transit hubs and downtown locations had no sidewalks or contained sidewalks in poor condition
- Many stops located near sidewalks were missing a bus pad
- Many bus pads were connected to a sidewalk that did not go anywhere and provided no connectivity for the surrounding community

### **Bus Shelters**

Of the shelters surveyed:

- Shelters at transit hubs have the most amenities to make a bus transfer comfortable
- All provided a bench, and most provided a trash receptacle
- Most had little to no pedestrian-level lighting

### **Operations and Maintenance Facilities**

Of the O&M facilities surveyed:

- Half of all agencies reported aging facilities in need of repairs, including new roofs, heating ventilation, and air conditioning (HVAC) replacement, and general upgrades
- Half of all facilities are at over 90 percent vehicle capacity (i.e., have very little room to add more transit vehicles to improve service)
- Two-thirds of all agencies reported inadequate accommodations for operators and staff

The following section provides details on the conditions of transit infrastructure by agency.

### **Recommendations**

Based on the field observations and ride-arounds the following recommendations to enhance the transit infrastructure throughout the CONNECT Beyond study area and enhance the user experience have been made.

## **Bus Stop Signage**

It is recommended CONNECT Beyond agencies develop signage that, at a minimum, contains a stop number, names and numbers of the routes served, an agency URL/QR code, and a customer service number. The URL should be concise and easy for users to enter on a mobile device. Alternatively, a QR code would serve the same purposes and be a simple way for users to navigate the information by removing the need to enter a URL. A route or system map, as well as a schedule, should be provided if there is space, and especially at key transfer points.

Beyond bus stop signage, agencies should work to implement real time bus tracking and provide a transit-friendly mobile app or website for users to get schedule information and track the next bus. Electronic sources of information, such as those just noted, help reduce the need of field staff maintenance costs if a route schedule or alignment is modified necessitating a change in signage.

## **Sidewalk Conditions and Connectivity**

Land use and transportation planning evolve in tandem with one another. Where density exists, many transportation options are necessary to get everyone where they want and need to go. In more rural areas, while mobility options are still essential, the infrastructure to support multiple transportation options is often limited. Many routes in the CONNECT Beyond study area provide service to rural communities where sidewalks don't exist because rural, low-density, single-family residential lots often don't necessitate, support, or include investment in pedestrian infrastructure. There are two potential strategies to overcome this obstacle. The first is for agencies to reevaluate the transit network for opportunities to use corridors where sidewalks do exist. Of course, this should be done in conjunction with a ridership analysis to ensure ridership is maintained or improved by any changes to network design. The second approach to improving sidewalk connectivity is for the transit agency to work with the city's Public Works Department and the State Department of Transportation to identify and prioritize sidewalk improvement needs. Working with these local and state agencies can help with strategically implementing and maintaining infrastructure.

Additionally, each transit agency should review their bus stops and develop a prioritization list to get all stops up to ADA standards. As funding is limited, conducting a systematic evaluation of stops provides a prioritized list of ongoing improvements to address.

## **Bus Shelters**

It is recommended that CONNECT Beyond agencies conduct an analysis of ridership by stop and prioritize placing (or relocating) shelters to high ridership stops. Thresholds can be set to

determine which stops get which amenities, thereby ensuring investments in infrastructure benefit the most users. Investing in shelters and amenities will improve the user experience and customer comfort. The stop analysis should be conducted regularly to monitor growth or change in rider patterns. Having regularly updated stop ridership data will also make it easy to site new amenities should funding become available.

As noted above, shelters should at a minimum include an ADA compliant bus pad, signage, and a bench. Shelter signage should also ideally include a route or system map, trash receptacle, bike racks, and pedestrian lighting (or be placed near existing lighting).

### **Operations and Maintenance (O&M) Facilities**

The O&M facilities for CONNECT Beyond agencies are relatively split; half of the agencies have a dedicated facility for transit vehicles, the other half are operated and maintained out of a town, city, or county public works department facility. O&M facilities for agencies in both scenarios were at or close to capacity; therefore, a primary recommendation for CONNECT Beyond fixed-route providers is to develop short-, mid-, and long-term expansion plans to accommodate transit growth appropriate to their system. Any expansion or development of new facilities should focus on effective circulation and safety, meet all federal, state, and local codes, and have maintenance capabilities on site. Fixed-route providers should explore sharing of regional operational resources and also develop plans to maintain a state of good repair at their facilities.

### **Transit Amenity Guidelines**

It is recommended the CONNECT Beyond agencies work together to develop regional amenity guidelines for transit facilities. The guidelines would identify shared features and content for signage, pad width, placement of trash receptacles, etc. throughout the region. The guidelines could also include warrants for when to place or upgrade certain amenities such as shelters, bike racks, and real time travel information. Finally, the guidelines could contain a mechanism for a shared purchasing agreement for agencies to use to acquire those amenities.

## **Transit Needs, Service Gaps, and Network Adjustments**

Following the transit provider interviews, workshops, and field observations, specific operational and technological needs of each agency as it pertains to the physical delivery of services were documented. This section summarizes the transit needs and service gaps

identified by the agency representatives and CONNECT Beyond team. Full details of the workshops and field observations can be found in the meeting summary reports and the final report will with all Building a Better Bus Network, Strengthening Rural to Urban Connections, HCT and Mobility Corridors, and Mobility Hub recommendations will be made available at <https://www.connect-beyond.com/>.

## CATS

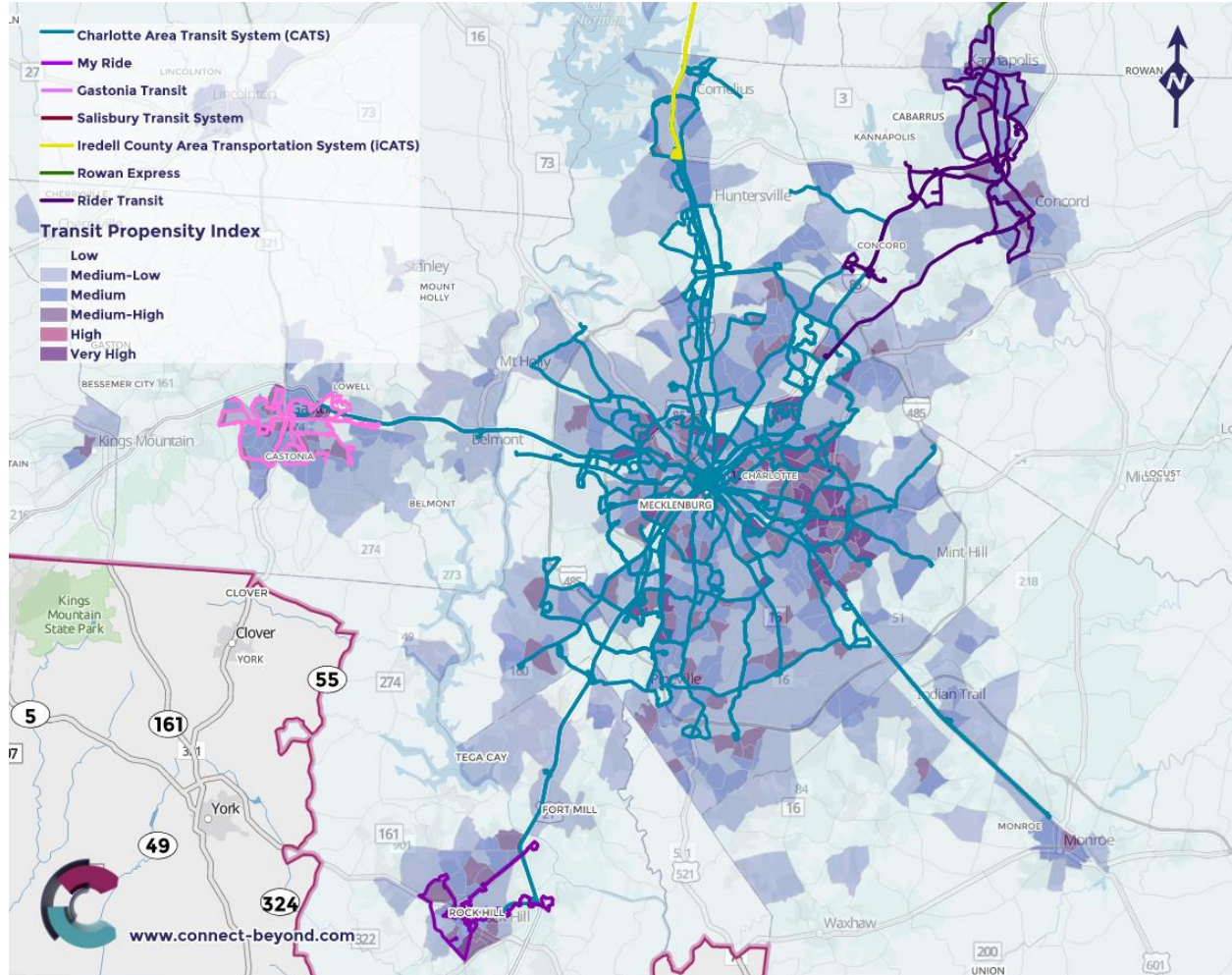
### Transit Needs and Service Gaps

CATS provides fixed route transit service in the greater Charlotte area. It provides an array of services from local bus to express routes, as well as light rail service. In lieu of redoing recently completed and ongoing analyses and work conducted by CATS, CONNECT Beyond drew on their work, as well as the stakeholder interviews, to identify CATS' transit needs and service gaps. The two guiding documents used in this effort were *CATS Transit Vision: 2030 Transit Corridor System Plan* and *CATS' Envision My Ride* planning initiative. Key needs and gaps identified by these documents include:

- Need for more frequent bus service
- Need for more direct bus service
- Need for more crosstown and suburb to suburb connections
- Need for greater connectivity between different routes to improve transfer opportunities
- Need to make bus trips faster, more reliable, and more enjoyable
- Need for ADA bus stop compliance upgrades
- Need for better connectivity to other transit lines, bikeshare, park & rides, and other mobility options

A transit propensity analysis was also conducted to determine how well transit services align with existing need. The transit propensity measure combines density values for several demographic variables known to contribute to transit dependency (e.g., low-income populations, zero auto households, etc.). As illustrated in Figure 4, CATS generally focuses service where transit need is highest (the darker the color, the higher the need).

**FIGURE 3: TPI FOR CATS SERVICE AREA (NEARBY AGENCIES INCLUDED FOR REFERENCE)**



## Network Adjustments

With input from the workshops and technical analyses, the CONNECT Beyond team developed a series of recommendations for CATS which builds off their identified improvements and addresses their service gaps and needs. Recommendations were also developed to help build ridership demand for the HCT and mobility corridors designed to improve regional connectivity. Key recommendations include:

- Recognizing that CATS has proposed a peak frequency of 15 minutes for 22 routes, CATS should explore peak frequency on the remaining local routes to 15 minutes or better.
- Increase service hours on all local routes to a minimum of 15 hours on weekdays, 14 hours on Saturday, and 12 hours on Sunday.

- Increase trips on all express routes to a minimum of four inbound AM peak trips and four outbound PM peak trips
- Extend five local routes and one express route
- Implement ten new local routes, five new express routes, and six new circulator routes
- Develop two new satellite Operations and Maintenance facilities

The detailed recommendations for CATS are summarized in Table C-1 in Appendix C: Service Recommendations by Agency.

## City of Gastonia

### Transit Needs and Service Gaps

The City of Gastonia provides both fixed route and paratransit services. All six Gastonia Transit fixed route services begin and end at the City's downtown bus terminal, Bradley Station. The Gastonia Transit ADA van service operates curb-to-curb van service for passengers who cannot utilize the fixed route bus system due to a physical or mental disability. While the lower density environment and geographic features of the area present general challenges to providing efficient and effective service, specific needs and gaps identified include:

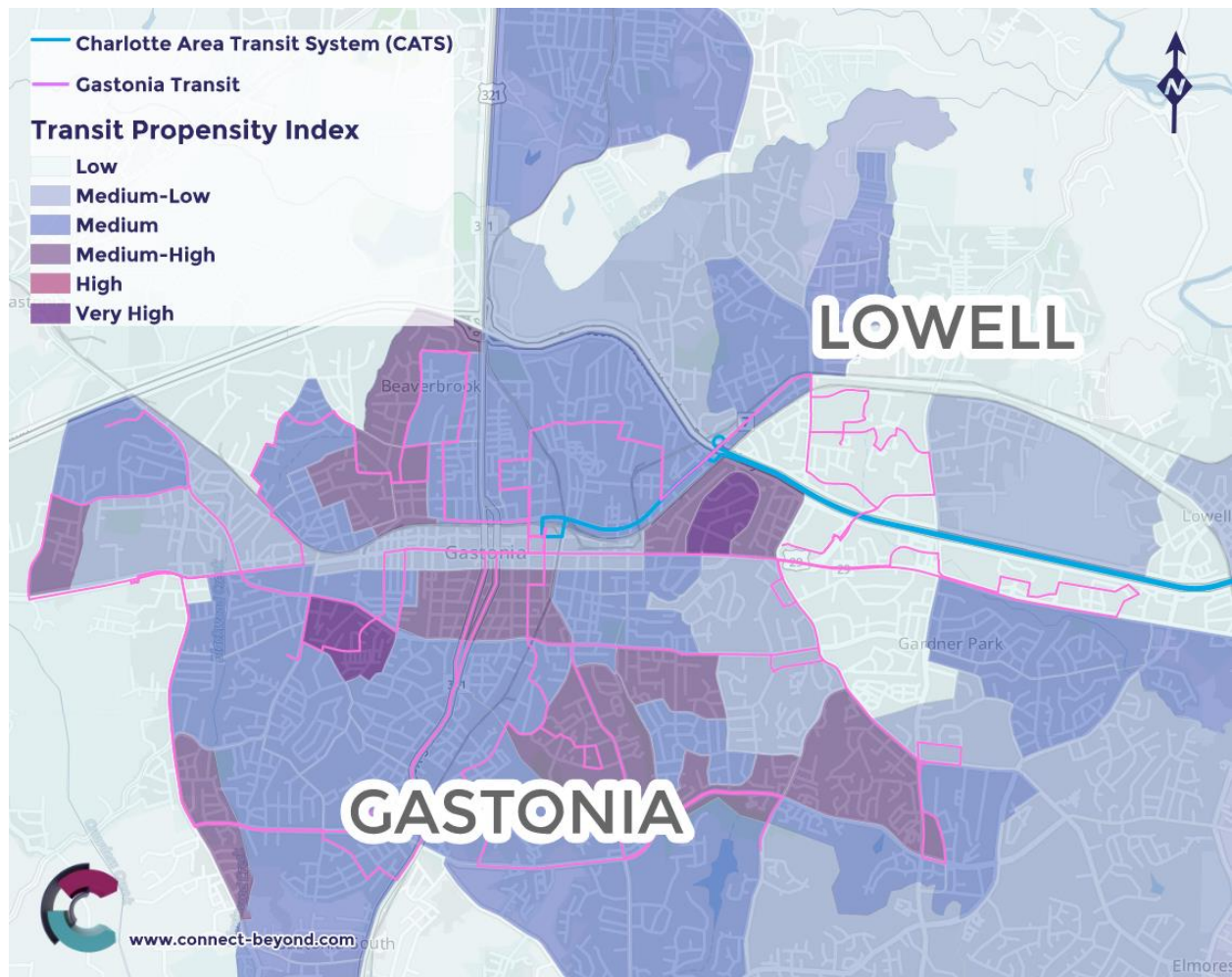
- Need for increased service span and frequency with a focus on high capacity and emerging mobility corridors. The hourly service the City operates is not convenient for transit-dependent or choice riders.
- Expanding service beyond City limits. There are passengers from other municipalities that would utilize the service.
- Out-dated fare collection technology; a shared regional platform is desired.
- Need for ADA bus stop compliance upgrades
- Specific operational needs including:
  - Additional staff and vehicles for improved frequency during the holiday season (not meeting current demand)
  - Bike racks on buses (currently do not have). Bikes are an important mode to accommodate to aid in first/last mile connections
  - Additional bus and bus facility (including stops) maintenance staff
  - Maintenance and operational staff training to properly handle the transition to electric fleet
- Need for service connections to/between:
  - Loray Mills and Downtown Gastonia
  - East-west connections



- Belmont, Lowell, and other neighboring municipalities
- Bessemer City and Dallas (along US 321)
- Gaston Community College
- Technology Park
- Farmers' Market

In addition to the interviews and field observations, a transit propensity analysis was also conducted to determine how well transit services align with existing need. The transit propensity measure combines density values for several demographic variables known to contribute to transit dependency (e.g., low-income populations, zero auto households, etc.). As illustrated in Figure 5, Gastonia provides good coverage in areas where existing need is highest.

**FIGURE 4: TPI FOR GASTONIA SERVICE AREA**



## Network Adjustments

With input from the workshops and technical analyses, the CONNECT Beyond team developed a series of recommendations for the City of Gastonia which address their service gaps and needs, as well as builds ridership demand for the HCT and mobility corridors designed to improve regional connectivity. Key recommendations include:

- Extend weekday operating span to 15 hours for six routes
- Increase Saturday frequencies and service span to 60-minutes for 12 hours for six routes
- Implement Sunday service at 60-minute frequencies for 12 hours for six routes
- Explore through a pilot program on demand opportunities and consider re-routing fixed route resources to high capacity and emerging mobility corridors.
- Ensure all stop locations are ADA accessible at expand amenities at high boarding locations
- Develop new transit center at Entertainment District

The detailed recommendations for the City of Gastonia are summarized in Table C-2 in Appendix C: Service Recommendations by Agency.

## City of Salisbury

### Transit Needs and Service Gaps

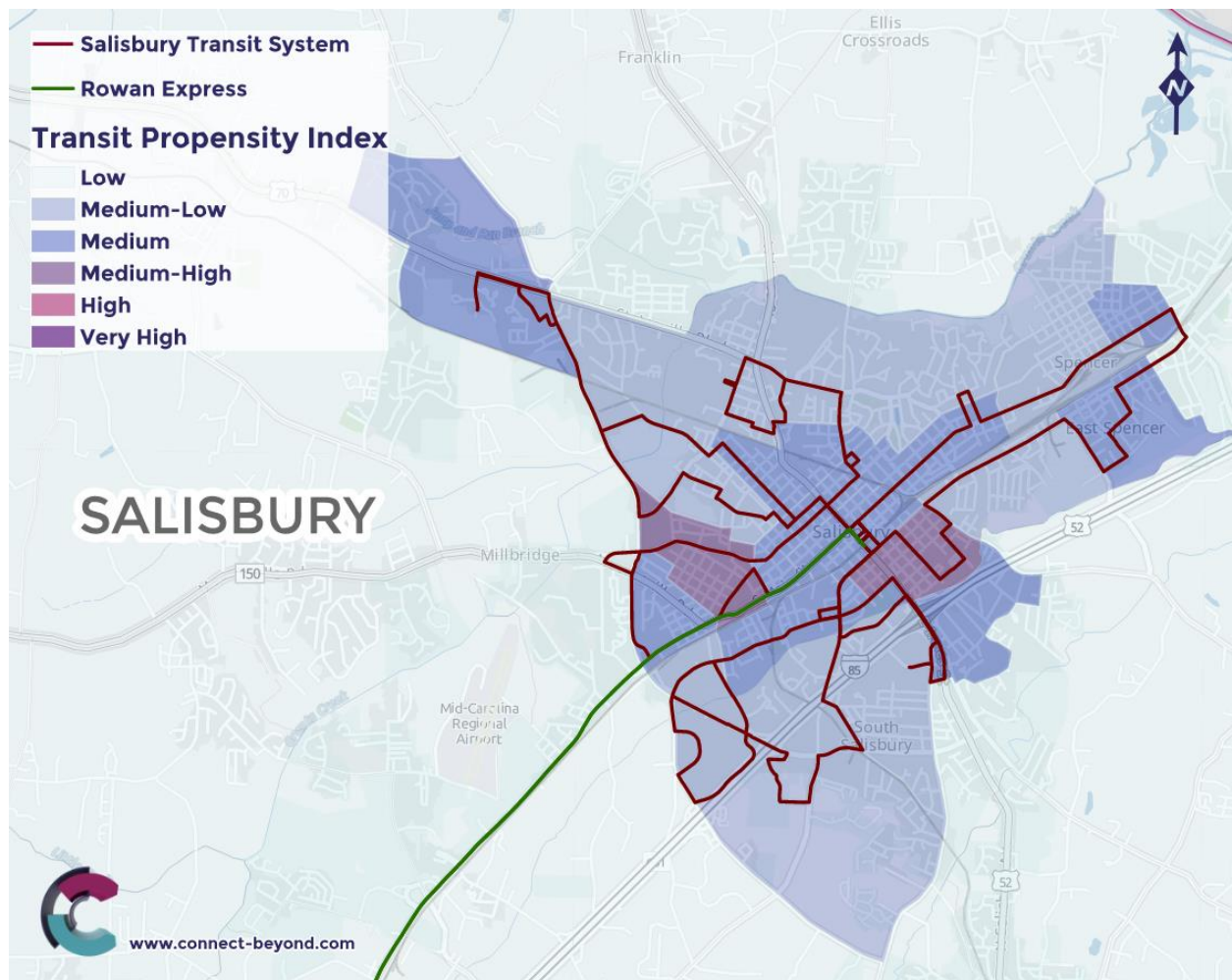
The City of Salisbury Transit operates fixed route services in the City and adjacent communities of Spencer and East Spencer. Salisbury Transit System operates three bus routes and contracts with Rowan Transit System for demand response services for paratransit trips within the required areas of the system. Service connections are available to Mid-Carolina Regional Airport, Greyhound bus, Amtrak, and Concord Kannapolis Rider. Through June 2021, City of Salisbury Transit connected to the Rowan Express; however, the service was discontinued by Rowan County. Specific needs and gaps identified for Salisbury Transit include:

- Work with area transit agencies to reinstate Rowan Express Need for microtransit service to connect to other transit hubs
- Need for more frequent service and faster travel times
- Need for weekend service (run reduced schedule on weekends)
- Need for ADA bus stop compliance upgrades
- Need for connections to:
  - Statesville

- Lexington going north
- Kannapolis train station and bus routes
- Catawba College

In addition to the interviews and field observations, a transit propensity analysis was also conducted to determine how well transit services align with existing need. The transit propensity measure combines density values for several demographic variables known to contribute to transit dependency (e.g., low-income populations, zero auto households, etc.). As illustrated in Figure 6, the transit network in Salisbury provides good coverage in areas where need is highest.

**FIGURE 5: TPI FOR SALISBURY SERVICE AREA**



## Network Adjustments

With input from the workshops and technical analyses, the CONNECT Beyond team developed a series of recommendations for the City of Salisbury which address their service gaps and needs, as well as build ridership demand for the HCT and mobility corridors designed to improve regional connectivity. Key recommendations include:

- Increase weekday frequencies to 30-minute peak/60-minute off-peak and expand service to 15 hours
- Extend Saturday operating span to 12 hours
- Implement service on Sundays at 60-minute frequencies for 12 hours
- Implement new fixed-route or microtransit college service on Friday and Saturday evenings
- Implement several new commuter services to destinations including Lexington, Kannapolis, and Statesville
- Ensure all stop locations are ADA accessible at expand amenities at high boarding locations

The detailed recommendations for the City of Salisbury are summarized in Table C-3 in Appendix C: Service Recommendations by Agency.

## My Ride

### Transit Needs and Service Gaps

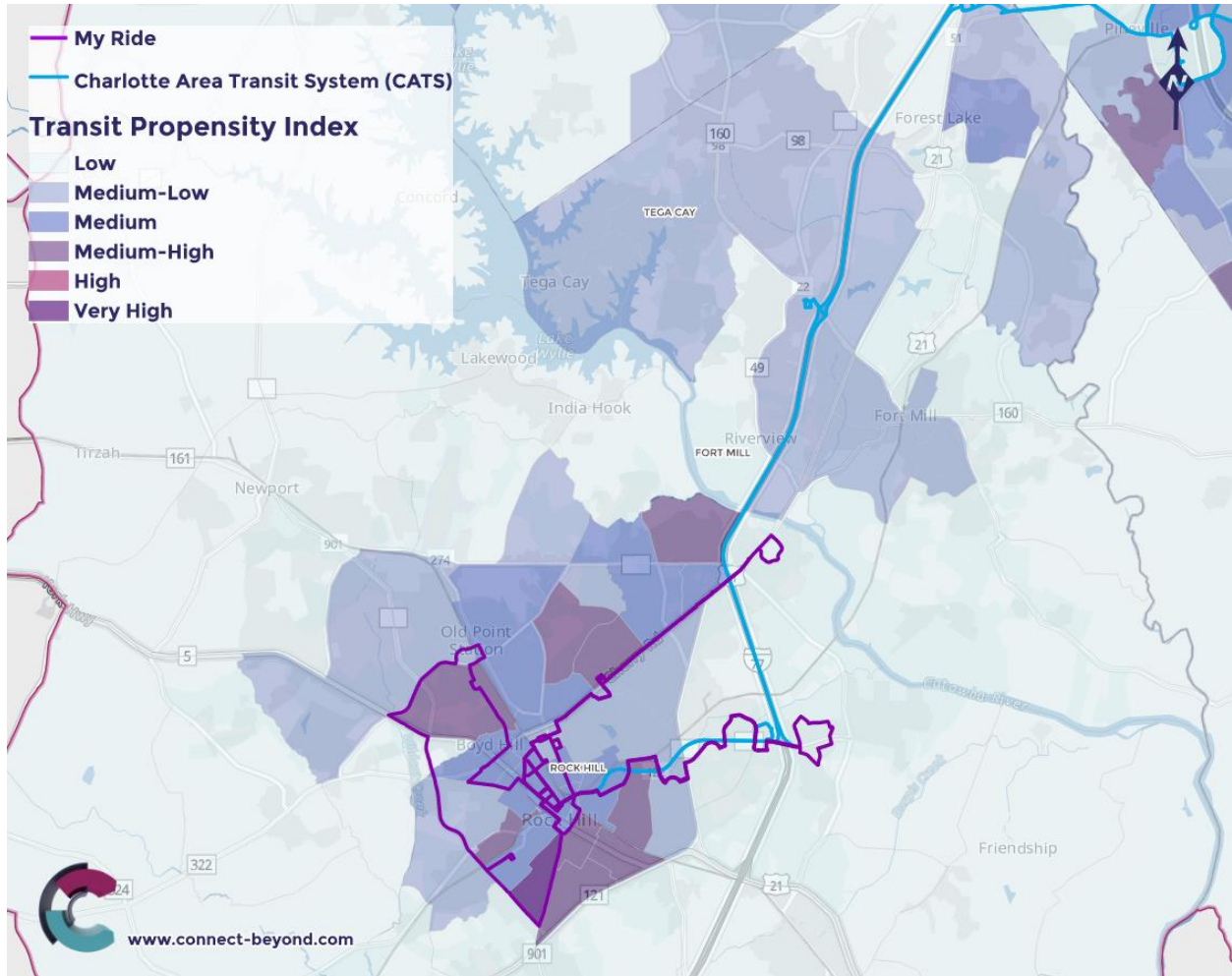
The City of Rock Hill in York County, South Carolina partnered with Winthrop University, Piedmont Medical Center, and Family Trust Federal Credit Union, to debut a new fixed route transit system branded as My Ride Rock Hill, on July 1, 2019. The fare-free service operates four fixed routes. Based on the transit provider interviews, workshops, and field observations, the following operational and technological needs for My Ride were documented:

- Need for better connected bicycle and pedestrian infrastructure to help with first/last mile mobility options
- Managing uncertainties in demand, both from perspective as a young system and due to COVID-19
- Need for improved connections to CATS network. To do so requires expanded hours of operation.
- Need to expand system coverage to areas not served by transit. More geographic coverage is a priority at this time.

- Need for increased service frequency.
- Need for new service or connections to:
  - College Downs area
  - Willowbrook
  - Shadowbrook
  - Legacy Park, Ross Distribution Center, and other employment centers
  - Along India Hook Road
  - Along South Crawford Road
  - New Panthers football facility

In addition to the interviews and field observations, a transit propensity analysis was also conducted to determine how well transit services align with existing need. The transit propensity measure combines density values for several demographic variables known to contribute to transit dependency (e.g., low-income populations, zero auto households, etc.). As illustrated in Figure 7, My Ride services cover most of the areas where need is highest, though the areas north of Cherry Road could benefit from additional service options.

**FIGURE 6: TPI FOR ROCK HILL SERVICE AREA**



### Network Adjustments

With input from the workshops and technical analyses, the CONNECT Beyond team developed a series of recommendations for the City of Rock Hill which address their service gaps and needs, as well as build ridership demand for the HCT and mobility corridors designed to improve regional connectivity. Key recommendations include:

- Add bi-directional service on two existing one-way loop routes
- Extend weekday operating span to 15 hours
- Increase frequency on weekdays/Saturdays to 30-minutes on three routes
- Implement service on Sundays at 30-minute frequencies for 12 hours for four routes
- Add trips to CATS express route 82x – Rock Hill Express

- Implement several new local, express, and microtransit services
- Ensure all stop locations are ADA accessible at expand amenities at high boarding locations

The detailed recommendations for the City of Rock Hill are summarized in Table C-4 in Appendix C: Service Recommendations by Agency.

## Rider

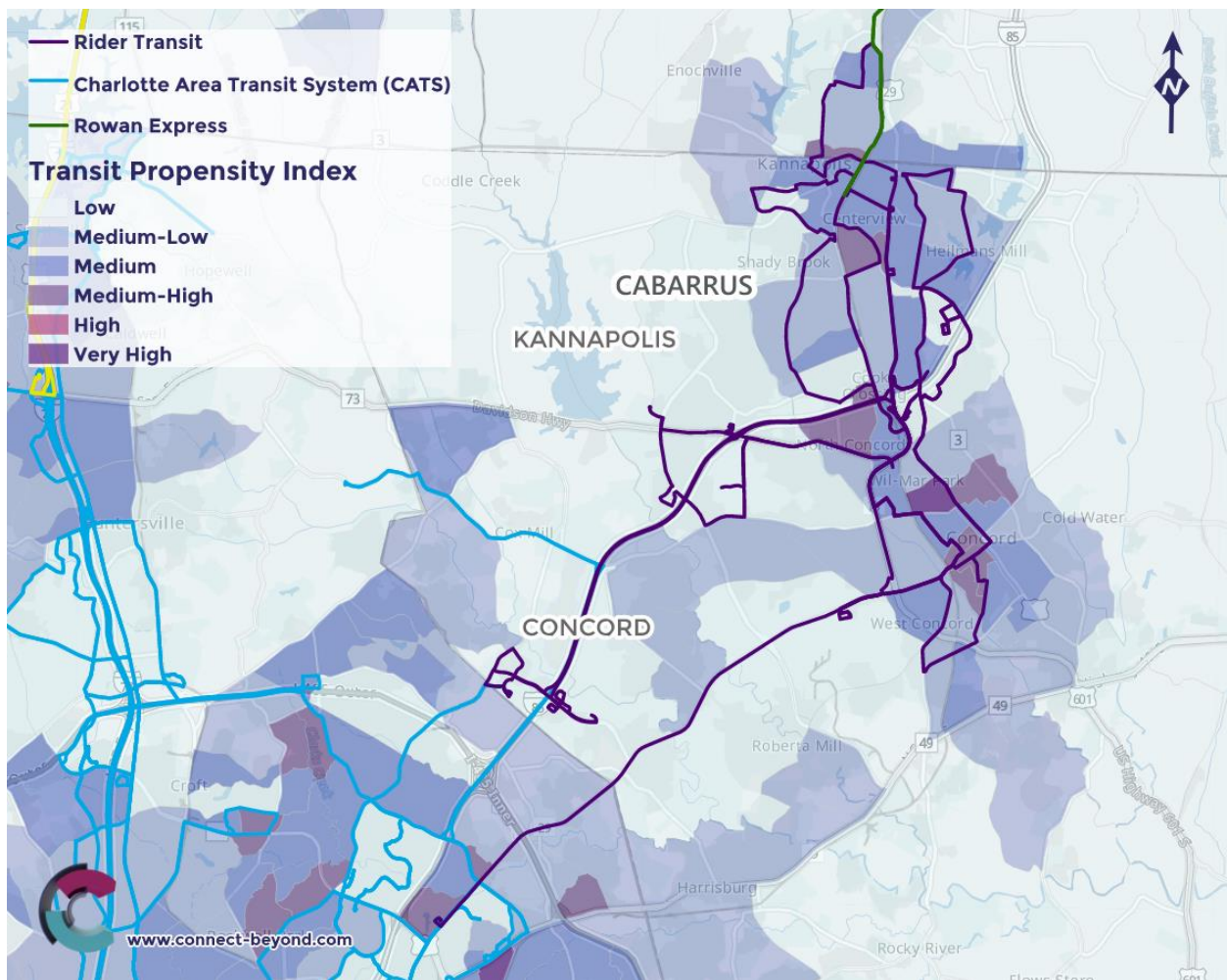
### Transit Needs and Service Gaps

Rider's fixed route bus service includes seven local routes and the Concord Charlotte Express (CCX), a regional express route that connects passengers traveling from Cabarrus County to the greater Charlotte metropolitan area. Based on the transit provider interviews, workshops, and field observations, the following operational and technological needs for Rider were documented:

- Need to optimize network design
  - Red and CCX route operate 29 miles and are trying to circulate in 60 minutes
  - Red operates for 18 miles on the highway just to get to service corridor
- Need for coordination between Concord land use plan and transportation plan
- Need for ADA bus stop compliance upgrades
- Need for improved bicycle and sidewalk infrastructure connectivity to transit stops. Roughly 2/3 of roadways in Concord do not have sidewalks.
- Need for a shared regional fare platform
- Need to closely evaluate merging with CCTS to improve coordination and avoid redundancies.
- New services and connections to:
  - Coddle Creek area north of Highway 73
  - Along Kannapolis Parkway
  - Highway 29
  - Derita Road near the airport
  - Research Park
  - University City Mall
- Need for a new maintenance facility; large footprint is required (approximately 200 vehicles and over 500 staff). Existing facility is at 100% capacity.

In addition to the interviews and field observations, a transit propensity analysis was also conducted to determine how well transit services align with existing need. The transit propensity measure combines density values for several demographic variables known to contribute to transit dependency (e.g., low-income populations, zero auto households, etc.). As illustrated in Figure 8, Rider services generally operate in areas where need is greatest, though some areas in southeast Concord could potentially benefit from additional service options.

**FIGURE 7: TPI FOR RIDER SERVICE AREA**



### Network Adjustments

With input from the workshops and technical analyses, the CONNECT Beyond team developed a series of recommendations for Cabarrus County which address their service gaps and needs,



as well as build ridership demand for the HCT and mobility corridors designed to improve regional connectivity. Key recommendations include:

- Expand weekday service span to 19 hours and increase frequencies to 30-minutes during peak hours and 60-minutes during off-peak hours in the near term, with the long-term goal of 15-minute peak/30 minute off-peak.
- Increase weekend frequency to 30-minutes
- Redesign/consolidate Routes 3 and 4.
- Implement several new local, express, and microtransit services
- Implement county-wide demand response service
- Establish Downtown Concord hub and Kannapolis train station hub
- Ensure all stop locations are ADA accessible at expand amenities at high boarding locations

The detailed recommendations for Cabarrus County are summarized in Table C-5 in Appendix C: Service Recommendations by Agency.

## ICATS

### Transit Needs and Service Gaps

Iredell County Area Transportation System (ICATS) is a community transportation program serving both community service agencies and the general public. ICATS operates as a ride-sharing system that enables routes and schedules to be structured to transport multiple passengers to multiple destinations. Services are provided through five deviated fixed routes, subscription routes, and demand response service trips. The fixed loops or shuttle services have designated stops but can deviate to accommodate the needs of their passengers.<sup>1</sup> Express bus route service began in 2017 and provides connection to CATS routes. Though not quite a full fixed route service provider at the moment, the agency is poised to become one and was treated as one in this portion of the CONNECT Beyond analysis. Identified needs and gaps for ICATS include:

- Financial support from the County and Mooresville
- Regional uniform fare platform
- Coordinated service changes across agencies

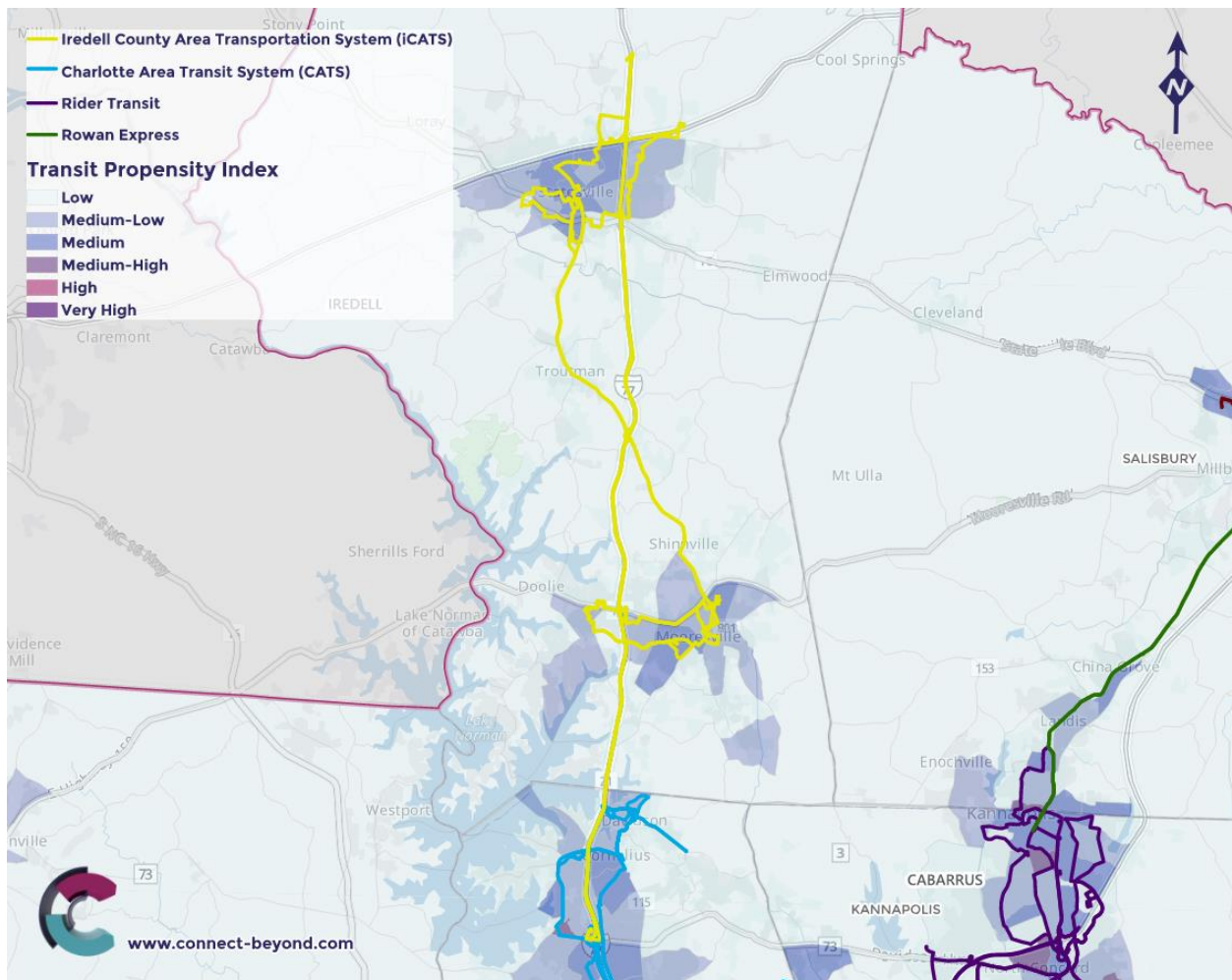
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<sup>1</sup> <https://www.co.iredell.nc.us/DocumentCenter/View/486/Iredell-County-Comprehensive-Transportation-Plans-PDF?bidId=>

- Need for pedestrian and bicycle infrastructure to support transit
- Need for ADA bus stop compliance upgrades
- Coordination with MPO to incorporate transit into long range plans
- Keeping up with growing paratransit demand resulting from aging population

In addition to the interviews and field observations, a transit propensity analysis was also conducted to determine how well transit services align with existing need. The transit propensity measure combines density values for several demographic variables known to contribute to transit dependency (e.g., low-income populations, zero auto households, etc.). As illustrated in Figure 9, ICATS services generally operate where transit need is greatest, though much of the service area has low demand.

**FIGURE 8: TPI FOR ICATS SERVICE AREA**



## Network Adjustments

With input from the workshops and technical analyses, the CONNECT Beyond team developed a series of recommendations for Iredell County Area Transportation Systems which address their service gaps and needs, as well as build ridership demand for the HCT and mobility corridors designed to improve regional connectivity. Key recommendations include:

- Add bi-directional service on existing one-way loop routes
- Add more trips on the ICATS express with the long-term goal of implementing all-day service on weekdays
- Increase weekday frequencies to 60-minutes and expand service span to 15 hours. In the long-term, implement 30-minute peak frequencies on weekdays.
- Implement weekend service at 60-minute frequencies for 12 hours
- Implement several new routes to serve areas including Statesville, Harmony, and Love Valley
- Develop a new operations and maintenance facility with onsite administration building
- Ensure all stop locations are ADA accessible at expand amenities at high boarding locations

The detailed recommendations for Iredell County are summarized in Table C-6 in Appendix C: Service Recommendations by Agency.

## Regional Service Gaps

Though each agency has priority service needs of their own to address, the services outlined below have been identified based on the region's overall greatest connectivity needs. A great deal of interagency coordination, especially in terms of funding sources, will be necessary to properly implement these recommendations. The service recommendations are primarily new mobility hub links, or connectors, that would start operations as weekday deviated fixed-route service with a base frequency of 60 minutes. The regional recommendations are summarized in Table 2.

**TABLE 2: REGIONAL RECOMMENDATIONS**

<b>Recommendation</b>
<b>Near-Term (0-5 Years)</b>
<ul style="list-style-type: none"> <li>Reinstate Rowan County Express and strengthen the connection between Salisbury, Concord, and Kannapolis.</li> <li>Develop mobility hub link along US 74 Wadesboro (Anson Co.)/Monroe (Union Co.)</li> </ul>
<b>Mid-Term (5-10 Years)</b>
<ul style="list-style-type: none"> <li>Develop a connector/link along Old Beatty Ford Rd/I-85</li> </ul>
<b>Long-Term (10-20 Years)</b>
<ul style="list-style-type: none"> <li>Extend US 74 Wadesboro (Anson Co.)/Monroe (Union Co.)</li> <li>Develop mobility hub link (or connectors) along Waxhaw Hwy from Waxhaw (Union Co.) to Lancaster on US 521 (Lancaster Co.) connecting to the LYNX - Extension to Pineville/Ballantyne (Mecklenburg Co.)</li> <li>Develop Mobility Hub Links (or connectors) as deviated fixed routes between the following:               <ul style="list-style-type: none"> <li>US 52 Richfield (Stanly Co.)/Albemarle (Stanly Co.)</li> <li>US 52 Albemarle (Stanly Co.)/Norwood (Stanly Co.)</li> <li>HWY 24/27 (Albemarle Rd) HWY 27/I-485 (Mecklenburg)/ US 52/HWY 27 (Stanly Co.)</li> </ul> </li> <li>Develop Mobility Hub Links (or connectors) as deviated fixed routes between the following:               <ul style="list-style-type: none"> <li>US 74 Wadesboro (Anson Co.)/Marshville (Union Co.)</li> <li>US 52 Norwood (Stanly Co.)/Wadesboro (Anson Co.)</li> </ul> </li> <li>Develop links (connectors) to:               <ul style="list-style-type: none"> <li>Harrisburg (Cabarrus Co.) / Richfield (Stanly Co.) along Hwy 49</li> <li>Charlotte from HWY 27/I-485 on Albemarle Rd. (Mecklenburg Co.) /US 52/HWY 27 to Albemarle (Stanley Co.)</li> </ul> </li> <li>Develop links (connectors) to Silver Line end of line from:               <ul style="list-style-type: none"> <li>Shelby / Kings Mountain / Gastonia</li> <li>Cherryville / Gastonia</li> <li>Lincolnton / Gastonia</li> </ul> </li> <li>Develop mobility hub link (or connector) along NC 16 (Brookshire Blvd) from the existing route 88X, 1 and 18 Park-and-Ride / proposed CATS mobility hub to the Connect Beyond Mobility Hub at NC 16 / NC 73. Coordination required between GCLMPO, CRTPO, CATS, and Gastonia Transit</li> <li>Develop mobility hub link (or connector) along NC 73 from the CONNECT Beyond mobility hub at I-77 / NC 73 and the downtown CONNECT Beyond Lincolnton mobility hub. Coordination required between GCLMPO, CRMPO, CRTPO, Rider, ICATS, CATS, and Gastonia Transit</li> <li>Develop mobility hub link (or connector) along HWY 160 (York Co.) connecting to US 521 (Lancaster Co.) connecting to the LYNX - Extension to Pineville/Ballantyne (Mecklenburg Co.)</li> <li>Develop mobility hub link (or connector) from Downtown Rock Hill to the west along York Hwy (York Co.) connecting to US 321 (York Co.)</li> <li>Develop links (connectors):               <ul style="list-style-type: none"> <li>Connect Salisbury to Richfield via US 52 with deviated fixed route</li> <li>Connect Mooresville and Salisbury with deviated fixed route on NC 150</li> </ul> </li> </ul>

## Regional Transit Needs

To meet the demand anticipated for the region, there are several essential needs to be addressed by each fixed route provider and the region. For all fixed route transit provider, existing transit needs include service quality, fleet inventory, facility upgrades or expansions, and staffing-related necessities to expand operations. Based on the transit provider interviews, workshops, and field observations, operational and technological needs for all CONNECT Beyond fixed route providers are outlined in Table 3.

**TABLE 3: NEEDS FOR ALL CONNECT BEYOND FIXED ROUTE PROVIDERS**

Need Type	Need / Condition Status	Near-Term (0-5 years) Recommendations	Mid-Term (5-10 years) Recommendations	Long-Term (10-20 years) Recommendations
<b>Service Frequency</b>	Current service is infrequent and inconsistent across agencies, making connections more difficult to schedule.	- Implement consistent minimum span of service for weekdays and weekends across all routes to adhere to newly recommended Regional Transit Standards and Performance Measures	-Implement consistent minimum frequencies across all routes. Weekday service should be at least 30-minute all-day frequency. Service frequencies should match what is recommended in Regional Transit Standards and Performance Measures	
<b>Service Expansion</b>	The existing network does not span all areas where demand for transit exists.		-Strategically begin expanding the network of high-frequency routes along identified CONNECT Beyond HCT and mobility corridors. Start with weekday service.	
<b>Service Operations</b>	The span of service for many fixed-route providers does not meet the needs of transit users, particularly those who work non-traditional		-Increase span of service standards per recommended Regional Transit Standards and Performance Measures.	

Need Type	Need / Condition Status	Near-Term (0-5 years) Recommendations	Mid-Term (5-10 years) Recommendations	Long-Term (10-20 years) Recommendations
	(9 am – 5 pm) shifts.			
<b>Transit Facilities</b>	- Current facilities in need of repair		- Upgrade and expand to meet future service levels	
<b>Fleet</b>	- Current fleet will not accommodate increase of frequency or expansion of services	- Initiate capital planning for fleet purchases	- Purchase additional fleet to support service expansion	- Purchase additional fleet to support service expansion
<b>Staff / Operators</b>	- Current shortage of operators as well as staff levels will not accommodate increase of frequency or expansion of services.	- Work with neighboring transit providers, secure additional funding, and develop hiring strategies to augment staffing levels.	- Hire additional staff	- Hire additional staff
<b>Green Fleet</b>	- Trends federally and locally encouraging fleets to address issues of resiliency and cleaner fuels	- Coordinated evaluation of cleaner propulsion technologies available that meet the needs of fleets, including exploring the many federal opportunities to electrify fleets	- Pursue opportunities to convert fleets to cleaner propulsion technologies, identifying what technologies work best for individual fleets	- Installation of necessary support infrastructure and integration of cleaner propulsion technologies into fleet operations

## Visions for Building A Better Bus Network

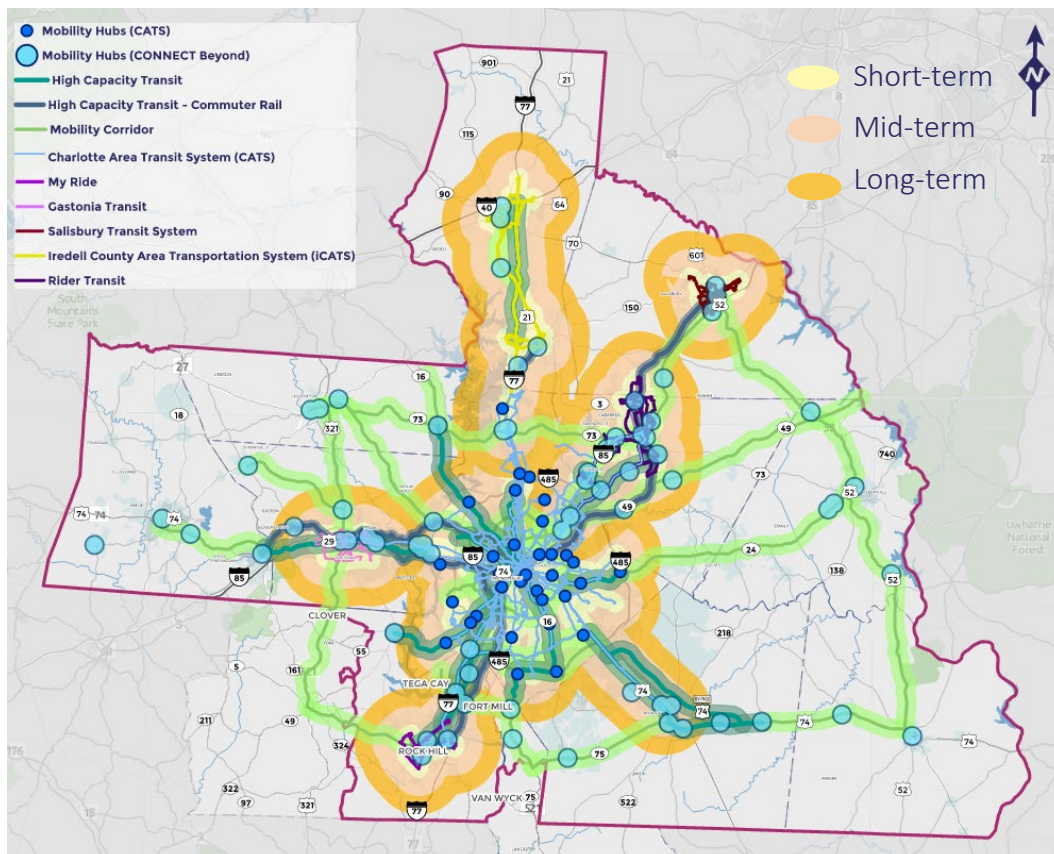
The recommendations made for each agency are aimed at increasing the robustness of their local services as well as better connecting the region overall. It is understood that, due to existing funding opportunities, flawlessly coordinated timelines between service improvements at each agency which provide fixed-route services will not be likely. Ultimately, however, CONNECT Beyond envisions the implementation of the service recommendations for each

agency, as well as service improvements born from regional partnerships, to create a seamless regional network, depicted in Figure 10.

Priority recommendations outlined above and in the final report include the standardization of service hours and frequencies as well as the implementation of HCT and mobility corridors. Additionally, O&M facilities must not only maintain a State of Good Repair rating and have the proper accommodations to operate efficiently for the existing system, but they must also plan and prepare for expansion or relocation to increase capacity needed to implement the system growth outlined in CONNECT Beyond. Execution of these recommendations is critical to be able to increase ridership and position the region to transition into a fully seamless transit network.

While operational recommendations are central to CONNECT Beyond, key technological, funding and partnership, mobility hub locations, and outreach-centered recommendations to help advance service improvements are also being developed and will be included in the final report.

**FIGURE 9: CONNECT BEYOND TOTAL MOBILITY NETWORK**



## Appendix A: Meeting Summary Reports





# **CONNECT Beyond**

A Regional Mobility Initiative

## **Integrated Bus Strategies**

Stakeholder Meeting Series Summary Report

March 26, 2021



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## Purpose

The CONNECT Beyond Project Management Team (PMT) held a series of virtual meetings for the Fixed-Route (Urban) Service Providers to further engage them regarding creating a single unified transit vision for the CONNECT Beyond study area with a focus on Integrated Bus Service Strategies. Fixed-Route (Urban) service providers in the CONNECT Beyond study area are:

- Charlotte Area Transit System (CATS)
- City of Gastonia Transit
- City of Salisbury Transit
- Rider Transit (Rider)
- City of Rock Hill Transit (My Ride)
- Iredell County Area Transportation System (ICATS)

## Project Management Team

The CONNECT Beyond PMT is led by members representing the Centralina Regional Council (CRC), Charlotte Area Transit System (CATS), and Charlotte Regional Transportation Planning Organization (CRTPO). The project team is supported by a consultant team led by HDR. The following PMT and HDR team project management staff participated in at least one meeting:

- Jason Wager, Centralina
- Michelle Nance, Centralina
- Jason Lawrence, CATS
- Bob Cook, CRTPO
- Jorge Luna, HDR
- Sabrina Colon, HDR
- Kevin Walsh, HDR

## Integrated Bus Strategies Meeting Participants

Representatives from Fixed-Route (Urban) Service Providers were invited to attend this series of workshops. The following agency employees participated in at least one meeting:

- Vincent Wong, Gastonia Transit
- Bradley Johnson, ICATS
- Jeff Crouchley, ICATS
- Ron Shoultz, ICATS
- L.J. Weslowski, Rider Transit
- Jamie Tippet Poe, Rider Transit
- Andy Christy, Rider Transit
- Cliff Goolsby, Rock Hill My Ride
- Rodney Harrison, Salisbury Transit

Specific meeting attendance can be found in Appendix A – Participant Input.

## Meeting Support

Given the total number of touchpoints with the region's fixed route providers additional staff support was sought. The following is a list of CATS, CRTPO and HDR team members that supported the various meetings at one point or another.



- Bruce Jones, CATS
- Molly Carter, CATS
- Pamela White, CATS
- Zach Szczepaniak, CATS
- Jerrel Leonard, CRTPO
- Katie Kutcher, Centralina
- Emily Parker, Centralina
- Rebecca Santiago, HDR
- Krystal Harwick, HDR
- Rebecca Cherry, Cherry Consulting, NC

## Meetings

The Integrated Bus Strategies meeting series was held in three successive workshops to solicit input from and foster engagement among the Fixed-Route (Urban) Service Providers.

Topic	Date	Time	Virtual Platform(s)
<b>Interviews</b>	Wednesday, Feb. 10, 2021	1:00 – 3:00 p.m.	Zoom
<b>S.W.O.T. Analysis</b>	Friday, Feb. 26, 2021	1:00 – 3:00 p.m.	Zoom, Mural
<b>Long-Range Interactive Planning Workshop</b>	Friday, March 12, 2021	1:00 – 3:00 p.m.	Zoom, Mural, Remix

**Meeting 1:** Each transit provider was interviewed in a breakout room and follow-up meetings were scheduled. Five major themes emerged from the interviews.

**Meeting 2:** A collaborative S.W.O.T. (Strengths, Weaknesses, Opportunities, Threats) analysis was facilitated, followed by brainstorming ideas for a Strategic Action Plan and prioritizing those actions/ideas on an Importance/Difficulty Matrix.

**Meeting 3:** Participants voted on three actions/ideas to prioritize for implementation. Each transit provider then reviewed their local and regional transit systems in Remix to identify solutions to build a better bus network for the region.

The input provided by participants during these meetings, including screenshots from participation platforms, is available in Appendix A – Participant Input and the PowerPoint presentations from these meetings are available in Appendix B – Meeting Presentations.

## Key Takeaways

The following are key takeaways from each of the meetings. These takeaways were distilled from the collective input received from participants during the discussions and workshops into a few concise concepts that reflect the overall consensus. The key takeaways from each meeting were presented to

the participants at the beginning of the following meeting to obtain buy-in and build upon for the next discussion.

### Meeting 1 – Major Themes

Following the transit provider interviews, the PMT reviewed the collective responses and identified five major themes that emerged as priorities for improvement: Policy, Technology, Operational, Financial, Education, and Interagency Coordination.



Policy

Technology

Operational

Financial

Interagency  
Coordination

Education

### Meeting 2 – Strategic Action Plan

- Regional coordination, cooperation, and engagement between agencies is critical.
  - Need to establish a permanent Regional Transit Commission that meets regularly and coordinates with other planning bodies and agencies.
  - Improve interagency communication on planning, proof of concept projects, lessons learned, technology, and standardizing regionally (e.g., working groups).
  - Leverage relationships across organizations.
- Long-term funding and transit planning are the biggest challenges.
- Marketing and education campaigns are needed to communicate opportunities and impacts to elected and appointed officials, agency staff, the community, and the general public.
- Create a unified regional fare system and service standards.
- Enhance connections and improve travel times to attract choice riders.
- Develop tools to enhance the user experience.

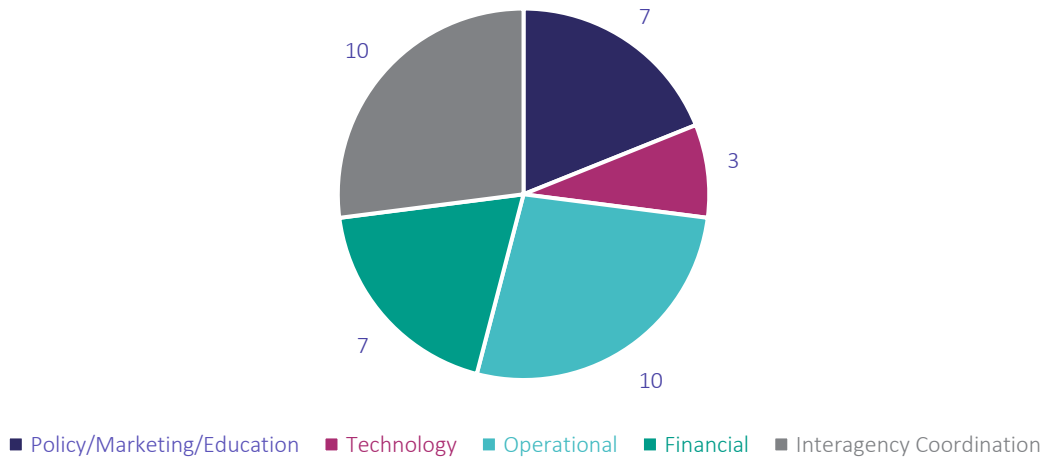
### Meeting 3 – Long-Range Interactive Planning Workshop

Top Priorities for Investment:

- Regional Transit Planning Group/Commission
- Regional Funding Mechanism
- Regional systems for fares, schedules, routes, service, etc.
- Marketing & Education

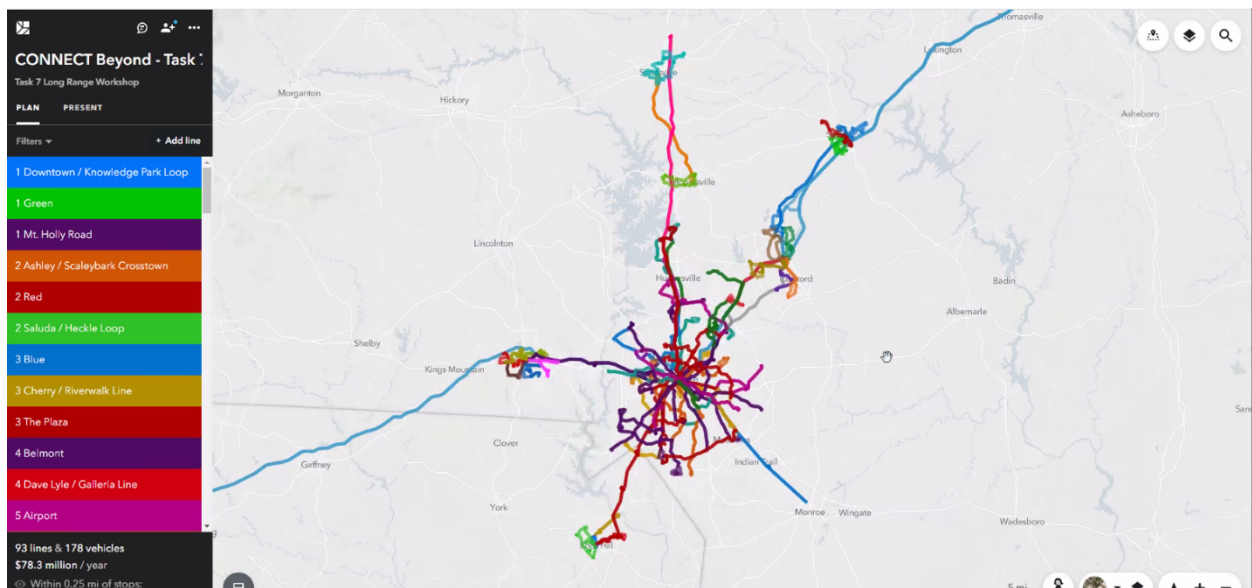


### Voting Summary of Priorities by Theme



### Remix Map-based Solutions

- Need coordination
- Improve connectivity and support:
  - To existing HCT and CONNECT Beyond HCT
  - Key transfer hubs
  - New routes, services, and connections
  - Connections to special events/venues
  - Connection to and in between rural areas
  - Future growth and demand





## **CONNECT Beyond**

A Regional Mobility Initiative

### Non-Map based Solutions

- Standardization of service: delivery, fleet, technology, fare mechanism
- Maximize value for the customer and return on investment for public dollars
- Improve user experience
- Expand transit service and demand response

## Next Steps

The Project Team will take what was learned during these meetings and begin developing preliminary recommendations that will be shared with project advisory committees. Feedback from the committees will then be used to develop a final set of service integration and delivery recommendations for the region.



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## Meeting Report Appendix A – Participant Input





# CONNECT Beyond

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## Meeting 1 – Interviews

### Attendees

- Jason Wager, Centralina
- Katie Kutcher, Centralina
- Michelle Nance, Centralina
- Sarah Niess, Centralina
- Bruce Jones, CATS
- Jason Lawrence, CATS
- Molly Carter, CATS
- Pamela White, CATS
- Zach Szczepaniak, CATS
- Bob Cook, CRTPO
- Jerrel Leonard, CRTPO
- Vincent Wong, City of Gastonia Transit
- Bradley Johnson, ICATS
- Jeff Crouchley, ICATS
- Ronald Shoultz, ICATS
- Andy Christy, Rider Transit
- Jamie Tippet Poe, Rider Transit
- L.J. Weslowski, Rider Transit
- Rebecca Cherry, Cherry Consulting NC
- Jorge Luna, HDR
- Kevin Walsh, HDR
- Rebecca Santiago, HDR
- Sabrina Colón, HDR

### Breakout Rooms

#### **Breakout Room 1 - ICATS**

**Facilitator:** Jason Wager

**Notetaker:** Kevin Walsh

**Participants:** Brad Johnson, Ron Shoultz, Jeff Crouchley

#### **Breakout Room 2 – Rider Transit**

**Facilitator:** Bob Cook

**Notetaker:** Molly Carter

**Participants:** L.J. Weslowski, Andy Christy, Jamie Tippet Poe

#### **Breakout Room 3 – My Ride**

**Facilitator:** Jorge Luna

**Notetaker:** Becky Santiago

**Participants:** Jeremy Winkler, Clifton Goolsby, Laurie Therrien

#### **Breakout Room 4 – City of Gastonia**

**Facilitator:** Jason Lawrence

**Notetaker:** Zach Szczepaniak

**Participants:** Vincent Wong

#### **Breakout Room 5 – City of Salisbury**

**Facilitator:** Pamela White

**Notetaker:** Bruce Jones

**Participants:** None



My Ride staff was unable to attend the virtual meeting. However, My Ride staff provided written responses to the questions that were discussed during the meeting. Their responses have been captured in the overall summary below.

**Breakout Room Notes:**

Non-Map Related Questions	Responses/Notes
<p>1. Which routes are your top and bottom performers (pre-COVID)?</p> <ul style="list-style-type: none"> <li>a. Top 25% in terms of annual ridership</li> <li>b. Bottom 25% in terms of annual ridership</li> <li>c. Break out by service type (if applicable)</li> </ul>	<p>ICATS</p> <ul style="list-style-type: none"> <li>• High performing – Mooresville Main (Walmart), 5 day a week service, Mooresville</li> <li>• Uptown Charlotte Route – the transfer that was happening in Cornelius is no longer happening because CATS reduced service</li> <li>• Low performing – COVID-19 has hurt the Uptown route</li> <li>• Trying to cover 560 square miles with little funding from municipalities in the area</li> <li>• Routes aren't necessarily high or low performing because there may only be one route per area</li> <li>• Mooresville main - Loop pattern hitting low income areas and employment locations. Walmart is biggest stop. Long headways and one-direction. 5 day a week service. 60k from Mooresville. 12 hours a day. 60K doesn't cover service, difference covered by iCATS</li> <li>• Statesville – 2 day a week service historically but bumped to 5 days a week without financial support from Statesville.</li> <li>• Used to make connection to CATS but due to Covid – CATS cut that service and connection isn't available right now. Now iCATS runs service all the way downtown to serve those commuters</li> </ul> <p>Rider</p> <ul style="list-style-type: none"> <li>• Orange Route (#1) – 100,000 riders, Blue Route (#2), Red (lowest),</li> <li>• Yellow (lower end). The CCX Route, that interacts with CATS (low performer) needs to mature.</li> <li>• Red and CCX are about 28-29 miles they are trying to circulate in 60 minutes.</li> <li>• Orange serves Concord, Blue serves Kannapolis. Orange and Blue make up 25% of ridership.</li> <li>• Red route – lowest performing – 18 miles of hwy just to get to corridor. Only one bus.</li> </ul>



Non-Map Related Questions	Responses/Notes
	<p>Geographic and low level of service challenges</p> <ul style="list-style-type: none"> <li>• Serve historic portions of the 2 cities (also zero auto and low income HH) – routes with best ridership</li> <li>• Purple route is most versatile with residential and local destinations</li> <li>• Purple and green lines – require transfer and hard to merge them b/c of geography</li> <li>• New development plans aren't as transit supportive so far</li> <li>• Concord land use plan and transportation plan is not coordinated/strategized</li> <li>• Just added to Development Review Committee – pre-development opportunity to work with developers and coordinate transit</li> <li>• Working on list of 51 locations to place bus shelters but ROW will be required because that was never set aside for transit</li> <li>• There needs to be more coordination for recommendations for development and transit</li> <li>• Transit amenities as part of the development approval process</li> <li>• Pre-COVID – road supervisors spending a lot of time</li> </ul> <p>My Ride</p> <ul style="list-style-type: none"> <li>• See most recent Weekly Ridership Report</li> </ul> <p>Gastonia</p> <ul style="list-style-type: none"> <li>• Highest Route – pink (serves mostly the eastern) and brown (serves Health Department and Dixie Village)</li> <li>• Lowest Route – yellow</li> <li>• Serve a very transit dependent population</li> <li>• Yellow route is least used because there isn't a lot of development in the area. Most riders are trying to connect to rest of system</li> <li>• Pink and brown line are highest performing routes and there is higher density there (pink – shopping centers, brown – health department, civic services)</li> </ul>



Non-Map Related Questions	Responses/Notes
	<ul style="list-style-type: none"> <li>Ridership is very transit dependent population</li> <li>Currently routes all arrive at hub at the same time to improve efficiency</li> <li>Don't have a lot of riders that don't need transit</li> <li>Routes are every hour so not convenient for non-dependent rider</li> <li>Run LTVs behind regular fixed route because they can't stick to schedule during shopping season</li> </ul>
<p>2. The project team will be going out into the field to observe the operations of your bus routes. What are good candidate routes for the windshield survey? What routes would be good to shadow?</p>	<p>ICATS</p> <ul style="list-style-type: none"> <li>Mooresville main and Statesville – broadest variety of people. Also offering \$1 DR rides to address social distancing on buses</li> </ul> <p>Rider</p> <ul style="list-style-type: none"> <li>Pre-covid they faced similar challenges with road supervisors, especially during holiday season, piecing together routes to keep service together</li> <li>Orange and blue – show downtown and residential areas.</li> <li>Seeing inefficient red route would show opportunity</li> </ul> <p>My Ride</p> <ul style="list-style-type: none"> <li>Route 2 and 4 have capacity challenges resulting from COVID. Depending on the time of day, doing windshield surveys on these 2 routes would be preferable.</li> </ul> <p>Gastonia</p> <ul style="list-style-type: none"> <li>Pink, red, brown – go east to west and see the difference and see the whole corridor</li> </ul>
<p>3. Who does your transit vehicle maintenance (private contractor, public works/county, etc.)?</p>	<p>ICATS</p> <ul style="list-style-type: none"> <li>Enterprise fund of the county. Employees that are funded through ICATS. Facility is from the 60s. Feasibility study – bring maintenance in-house. Have run out of space in the current facility. In the process of identifying property for a new facility or an existing facility that they can move into so everything is one location. Admin, operating and maintenance.</li> </ul>



Non-Map Related Questions	Responses/Notes
	<ul style="list-style-type: none"> <li>ICATS funded employees work in county garage. Facility itself has been there since 60s (much needed repair). New facility will bring all repairs in house in one location. Feasibility study was to bring everything in house. Not able to expand on current building because next to landfill. In terms of finding new site location. Site will house admin, ops, and maintenance. Have funds available, but need good geographical location.</li> </ul> <p>My Ride</p> <ul style="list-style-type: none"> <li>City of Rock Hill – Fleet Maintenance</li> </ul>
<p>4. Has your long-range plan been updated in the last two years? If so, can you please provide a copy.</p>	<p>ICATS</p> <ul style="list-style-type: none"> <li>no updates to long range plan. Working on feasibility study for new facility which may impact LRP but not being updated right now</li> </ul> <p>My Ride</p> <ul style="list-style-type: none"> <li>Long-range planning is underway but not yet complete as this service started in July of 2019.</li> </ul> <p>Gastonia</p> <ul style="list-style-type: none"> <li>long range transit plan NOT updated in last 2 years</li> </ul>
<p>5. Has your long-range plan been impacted by COVID or funding shortfalls?</p>	<p>ICATS</p> <ul style="list-style-type: none"> <li>No long-range plans have been impacted. Started some thought process about future commuter going into Charlotte. Also started to think about nicer, larger vehicles for the Charlotte trip, but that’s on hold.</li> <li>State did not distribute funding ROAP</li> <li>Also the impact to the urbanized area</li> </ul> <p>My Ride</p> <ul style="list-style-type: none"> <li>Undetermined at this time.</li> </ul>
<p>6. On a regional basis, what needs to be done better or differently to support mobility in your jurisdiction?</p>	<p>ICATS</p> <ul style="list-style-type: none"> <li>County perspective – they have to contribute. ICATS is not supposed to ask the County for funds for transit. County Commissioners. Management seems to be a roadblock. Mooresville seems to be somewhat supportive. Some education may need to happen.</li> </ul>



Non-Map Related Questions	Responses/Notes
	<ul style="list-style-type: none"><li>• From County – need to buy-in to idea that they have to contribute funds. Won't be able to meet demands of the area on their own. ICATS not supposed to ask for money from County for transit. Two new members on the County Board (County Commissioners) that may have different perspectives. Management is roadblock too, they see they are doing well comparatively so don't want to ask CC for money.</li><li>• Municipal elected official – Mooresville is split. Their asks are huge compared to what they're willing to contribute. They got a BUILD grant for EW connector. They were going to build 500 space for CATS to come into Mooresville but CATS won't go up there unless Mooresville helps pay for that.</li><li>• Uniform fare platform would be great.</li><li>• If another system is going to have a service change, let other agencies know so connections stay timely and coordinated.</li><li>• CATS has GenFare fareboxes. ICATS doesn't. ICATS approached CATS about read/writing to each other's media. CATS was taking 100% of funds and ICATS didn't get any revenue for passes that were sold.</li><li>• Let's add "shared fare platform" and "coordinated service changes across agencies well in advance of changes"</li></ul> <p>My Ride</p> <ul style="list-style-type: none"><li>• Mobility needs will correspond with the completion of our long-range transit planning efforts. First/Last mile concept is expected to be identified as one way that we could improve mobility and use of our My Ride service.</li></ul> <p>Gastonia</p> <ul style="list-style-type: none"><li>• Need a better understanding of what is happening in the region.</li><li>• Gastonia needs to catch up in terms of technology.</li><li>• Also need to be a bigger proponent of transit.</li></ul>



Non-Map Related Questions	Responses/Notes
	<ul style="list-style-type: none"> <li>• Need connections to other parts of the county (and beyond). Will require coordination with the other municipalities and the county in Gaston.</li> <li>• People better understanding why transit is important.</li> <li>• Need a transit proponent staff person in Gastonia.</li> </ul>
<p>7. What are you not getting now that would help to support and improve your system?</p>	<p>ICATS</p> <ul style="list-style-type: none"> <li>• Local commitment and local funds</li> <li>• Better communication with the other agencies that they interact with (CATS, City of Salisbury.)</li> <li>• Rowan County pays \$1 million in service and don't want to pay for Iredell services in they are contributing too. Other counties have approached them to join forces but there is no financial commitment</li> </ul> <p>My Ride</p> <ul style="list-style-type: none"> <li>• As we are early in the life of our system, we have service demand that we are not capable of satisfying at this point.</li> </ul> <p>Gastonia</p> <ul style="list-style-type: none"> <li>• Technology – Scheduling for paratransit is antiquated. Just now getting information on google maps.</li> <li>• Branding and messaging is an issue as well.</li> <li>• Potential passengers from other municipalities (for 85X) are out there but Gastonia does not interact/engage outside of Gastonia.</li> <li>• Mindset for transit in Gastonia is that general fund is supporting transit, when FTA is supporting. Can't get full allocation of match to use full FTA allocation.</li> </ul>
<p>8. Are there challenges in terms of providing bus stop amenities? If so, what are they?</p>	<p>ICATS</p> <ul style="list-style-type: none"> <li>• Development approval – could have been better coordinated with the including amenities. Private roads leading into large developments (Costco, Walmart, etc.) the private developers don't want the liability</li> </ul>



Non-Map Related Questions	Responses/Notes
	<ul style="list-style-type: none"> <li>No role in development process. So any ROW for stops or services is never set aside. Developer's not asked to put in stops or anything. Private roads servicing different big box stores – then they can't get permission to get bus stop there because whoever owns it, they don't liability of buses on property.</li> <li>Mooresville in process of 50 year master plan and these are items being brought forward in 50 year master plan.</li> </ul> <p>My Ride</p> <ul style="list-style-type: none"> <li>We have 80-90 stops included in our 4 routes and are in the initial stages of upfitting these stops as needed based on stop utilization.</li> </ul> <p>Rider</p> <ul style="list-style-type: none"> <li>Bus Stop and ADA</li> </ul> <p>Gastonia</p> <ul style="list-style-type: none"> <li>Need technology.</li> <li>Having trouble keeping bus stops litter free and presentable.</li> <li>Want to have shelters more consistent throughout the community.</li> <li>NO information at the shelter about schedule or what route you are on.</li> </ul>
<p>9. What challenges and opportunities exist in linking transit to the local bike and pedestrian networks? If so, what are they, what needs to change?</p>	<p><u>ICATS</u></p> <p>Challenges:</p> <ul style="list-style-type: none"> <li>lack of network, Statesville has a Pedestrian plan (2030), Mooresville also has a plan but it's on a as needed basis. County outside the urban areas really don't have a network.</li> <li>In the County – no networks for pedestrian</li> <li>Bike development in the area: Some officials only see biking as a recreation and not as a necessity. Potential more education needed. They don't look at that network connectivity when thinking mobility</li> </ul> <p>Opportunities:</p> <ul style="list-style-type: none"> <li>Make sure the plans that are in place support transit</li> <li>Draw on the assets in the area</li> </ul> <p><u>Rider</u></p>





Non-Map Related Questions	Responses/Notes
	<ul style="list-style-type: none"> <li>Rider has a close relationship with the Park and Rec. Lack of adequate sidewalk infrastructure in general and around the stops. There are some sidewalk connectivity to parks and greenways. City of Concord has a Connectivity Committee (for about 1 year). The awareness is there but it's early in the process. First/Last mile connections. The transit center is in a more suburban environment which makes first/mile connection. Bike racks currently on buses. Short range they intend on bringing in a communications/marketing person. Roughly 2/3 of roadways in Concord don't have sidewalks on them. Paratransit – if there were more sidewalks around this service it would be safer – Little Texas Rd example. It's unclear how multimodal infrastructure is prioritized. Would be good if transit was factored into that.</li> </ul> <p><u>My Ride</u></p> <ul style="list-style-type: none"> <li>Our Bike and Pedestrian networks exist but is somewhat fragmented due to us being a somewhat typical suburban bedroom community for a larger city. See RFATS and CRH Bike/Ped planning efforts.</li> <li><a href="#">CRH Planning Website</a></li> <li><a href="http://www.rfats.org/">http://www.rfats.org/</a></li> </ul> <p><u>Gastonia</u></p> <ul style="list-style-type: none"> <li>Gastonia is bike and ped friendly, but no bike racks on busses. If add bike racks, can't stage busses correctly in the garage; some push back from drivers about bike racks on busses. (Bikes extend service area, because where someone would not walk that far, they would ride a bike.)</li> </ul>
<p>10. If you provide ADA paratransit service, what challenges exist (pre-COVID)?</p>	<p>ICATS</p> <ul style="list-style-type: none"> <li>Keeping up with demand</li> <li>Growing at a very aggressive rate</li> <li>Potentially need to expand fleet which goes back to funding/finance</li> </ul>



Non-Map Related Questions	Responses/Notes
	<ul style="list-style-type: none"> <li>• Why the growth? – baby boomers and people moving to the region. The senior population is the highest growing pop mainly because of retirement</li> <li>• Lack of sidewalk network places a larger toll on the demand response. More door to door service.</li> <li>• Seniors are encouraged to reside in their own home versus living centers</li> <li>• They do provide ADA paratransit services. Challenge is keeping up with demand (pre-COVID-19). PT drawing double digit rate for last 5 years and that is going to mean expanding fleet and ultimately finance.</li> <li>• A lot of this is the Baby Boomers but also the area is flooded with people moving into the area. Senior population is fast growing group which is bringing more DR demand.</li> <li>• Lack of sidewalk network puts larger burden on DR because they can't just go out down to the sidewalk to get to the network.</li> <li>• Seniors are encouraged to live alone as long as possible because of cost of long-term care.</li> </ul> <p>Rider</p> <ul style="list-style-type: none"> <li>• Scheduling issues b/c of software</li> <li>• Scheduling between systems (transfers) – customer have to call both locations</li> <li>• Most of their riders ride between 10-2 – staffing has to be higher (M-TH)</li> <li>• Paratransit is their only option</li> <li>• It's not easy for customers when going between systems.</li> <li>• Politics and operational challenges</li> <li>• ADA certification - there is a significant challenge for multi-agency coordination for ADA certification - a standardized process would be a benefit for the passenger and agencies - consider - reciprocal certification</li> <li>• Seamless integrated fare collection/electronic payment</li> <li>• Operational – pick up and drop off location coordination. Needs more discussion</li> <li>• Buckets - policy   technology   operational   financial   Interagency Coord.</li> <li>• fluid connectivity between paratransit trips</li> </ul>



Non-Map Related Questions	Responses/Notes
	<p>My Ride</p> <ul style="list-style-type: none"> <li>The newness of both My Ride and My Ride Direct service created challenges when estimating potential demand.</li> </ul> <p>Gastonia</p> <ul style="list-style-type: none"> <li>Gastonia transit provides ADA service and uses Excel for scheduling.</li> <li>Have not had an issue meeting services.</li> <li>No coordination with Gaston Access.</li> </ul>
<p>11. If you do provide ADA paratransit service, how do you handle trip requests that cross county lines?</p>	<p>ICATS</p> <ul style="list-style-type: none"> <li>If it's places like Davidson they will run them to their destination, but if it's like South Park they won't</li> <li>Anything longer than 7-10 miles then they transfer to MTS (time and miles).</li> <li>If it's within 7-10 miles of border, they will take them to final destination. If it's longer, they will make connection to other provider. Time, distance, and coordination are all considered.</li> <li>Availability of MTS</li> </ul> <p>Rider</p> <ul style="list-style-type: none"> <li>Route Match – seems difficult for agencies to work together.</li> <li>seems that everyone is using route match and it sounds like ICATS is going to another system</li> </ul> <p>My Ride</p> <ul style="list-style-type: none"> <li>Our service area does not cross county lines.</li> </ul> <p>Gastonia</p> <ul style="list-style-type: none"> <li>Gastonia only does transit within city limits (can't get to the technology park or Gaston College).</li> <li>Gastonia transit has two ADA vans.</li> <li>Very strict on application for paratransit (tough application/burden of proof)</li> </ul>
<p>12. What changes to the system network are anticipated post-COVID based on new demands, lessons learned, new opportunities, etc.?</p>	<p>ICATS</p> <ul style="list-style-type: none"> <li>Express route may not go back to the way it was</li> <li>It will be hard to go back to asking people to make transfers.</li> </ul> <p>Rider</p>



Non-Map Related Questions	Responses/Notes
	<ul style="list-style-type: none"> <li>• Best to merge with CCTS</li> <li>• Not being coordinated is complex and sometimes redundant</li> </ul> <p>My Ride</p> <ul style="list-style-type: none"> <li>• Similar growth pressures compared to pre-COVID.</li> </ul> <p>Gastonia</p> <ul style="list-style-type: none"> <li>• Wanted a transit app and transit payment kiosks throughout the city, but have been free fare during COVID, so on hold. Will likely be free through fiscal year.</li> <li>• Fare collection and payment through an app would be great.</li> <li>• City pushing fully electric with fleet.</li> </ul>
<p><b>13. Thinking in terms of mobility as a service (MAAS), what are your top technology barriers to meeting current expectations that leverage connected devices in support of transportation options?</b></p>	<p>Rider</p> <ul style="list-style-type: none"> <li>• Just implemented Mobile app – this has been a top request in the past</li> <li>• Barrier? – fully transitioning to mobile fare payment</li> <li>• A unified fare collection system</li> </ul> <p>My Ride</p> <ul style="list-style-type: none"> <li>• We do offer “plan a trip” (<a href="https://go.myriderochill.com/TripPlanner">https://go.myriderochill.com/TripPlanner</a>) and are linked to Google to help potential users plan trips that way. A Bike share program does exist, on a small scale, in Rock Hill. Connecting My Ride and Comporium’s bike share in the future will help. Additionally, Rock Hill is working on parking planning to ultimately work with ParkMobile. Collaboration between these technologies, and other future technologies, would help develop our system.</li> </ul>



Map Related Questions	Responses/Notes
<p>1. What are the major transfer points/centers in your system?</p>	<p>ICATS</p> <ul style="list-style-type: none"> <li>Mitchell Community College ( Mooresville and Statesville)</li> </ul> <p>Rider</p> <ul style="list-style-type: none"> <li>Main Rider Transfer Center (hub and spoke), Concord Mills, Conaquas train station</li> <li>Look at their Long-range plan</li> </ul> <p>My Ride</p> <ul style="list-style-type: none"> <li>Transit Hub on Laurel St</li> </ul> <p>Gastonia</p> <ul style="list-style-type: none"> <li>Dixie Village and Transfer Station. Are in process of working on entertainment district and adding transfer point there</li> </ul>
<p>2. Where do you anticipate transfer points/centers/maintenance facility needs in the future?</p>	<p>Rider</p> <ul style="list-style-type: none"> <li>Future University City Mall, Clay station, and somewhere along US 73 to be determined; currently at Concord Mills Mall for paratransit transfer</li> <li>Huntersville/Birkdale near Hwy73</li> <li>A new maintenance facility will need to be placed, 192 vehicles, 565 employees. Something similar to CATS south Tryon facility. Very large footprint in needs</li> </ul> <p>My Ride</p> <ul style="list-style-type: none"> <li>We are planning on shifting the Transit Hub from Laurel St to a coming parking garage on White St north of Laurel St.</li> </ul>
<p>3. Do your routes interact (allow for a transfer) with other service providers, if so, who and where?</p>	<p>Rider</p> <ul style="list-style-type: none"> <li>CATS</li> <li>Rowan Express in Kannapolis</li> <li>CCTS</li> </ul> <p>My Ride</p> <ul style="list-style-type: none"> <li>We attempt to connect with the CATS 82x route but due to our hours of operations, this could be improved.</li> </ul>
<p>4. What routes do you see as good candidates to help support and/or potentially graduate into a HCT corridors?</p>	<p>Rider</p> <ul style="list-style-type: none"> <li>Hwy 73</li> <li>Kannapolis Pkwy</li> <li>Hwy 29 – Kannapolis to Rider proposed LRT</li> <li>Hwy 49 (longer term)</li> </ul>



	<p>My Ride</p> <ul style="list-style-type: none"> <li>• Previous planning by our MPO (RFATS) identified US 21 (Cherry Rd) as a potential candidate for BRT.</li> </ul>
<p>5. What are known service or coverage gaps in your system? (Pre-COVID)</p> <p>a. Is there a plan to address the gaps (short- and long-term)?</p>	<p>Rider</p> <ul style="list-style-type: none"> <li>• Coddle Creek area north of Hwy 73 to the county line on the west</li> </ul> <p>My Ride</p> <ul style="list-style-type: none"> <li>• Due to the age of this system, we have multiple areas of the City that are not served at this time.</li> </ul> <p>Gastonia</p> <ul style="list-style-type: none"> <li>• No long term plan/vision for transit in Gastonia. Not incorporated into the MPO plans in a meaningful way.</li> <li>• No policy for how to work with developments on getting shelters as part of development (only look at development as a future route amendment).</li> </ul>
<p>6. If funding was not a factor and you could expand your service, what would that look like?</p>	<p>My Ride</p> <ul style="list-style-type: none"> <li>• The 3 methods of growth as I see it for My Ride:             <ul style="list-style-type: none"> <li>○ 1-More hours of operations (\$)</li> <li>○ 2-More geographic coverage (\$\$)</li> <li>○ 3-Increase headways (\$\$\$)</li> </ul> </li> <li>• It is expected that more geographic coverage is our priority at this time.</li> </ul>
<p>7. Are there destinations frequently requested by riders that you currently do not serve? Are any of these frequently requested destinations in another transit agency's service area?</p>	<p>Rider</p> <ul style="list-style-type: none"> <li>• Derita Road near the airport – Employers and customers</li> <li>• Hwy 29 ad Carpenter Ct (north of the speedway)</li> </ul> <p>My Ride</p> <ol style="list-style-type: none"> <li>1. Yes</li> <li>2. No</li> </ol> <p>Gastonia</p> <ul style="list-style-type: none"> <li>• Gaston College</li> <li>• Tech park north of city limits</li> <li>• Farmers market</li> </ul>



## Meeting 2 – S.W.O.T.

### Attendees:

- Jason Wager, Centralina
- Emily Parker, Centralina
- Katie Kutcher, Centralina
- Michelle Nance, Centralina
- Jason Lawrence, CATS
- Pamela White, CATS
- Jerrel Leonard, CRTPO
- Vincent Wong, City of Gastonia Transit
- Bradley Johnson, ICATS
- Jeff Crouchley, ICATS
- Ron Shoultz, ICATS
- L.J. Weslowski, Rider Transit
- Rodney Harrison, City of Salisbury Transit
- Jorge Luna, HDR
- Kevin Walsh, HDR
- Krystal Harwick, HDR
- Rebecca Santiago, HDR
- Sabrina Colón, HDR
- 

### S.W.O.T. Exercise

#### *Strengths:*

- Agencies want to improve their systems
- The fact that we are working together on this plan!!
- First/last mile concept could improve mobility and transit use
- Free fare has steadied or increased our ridership
- Great team of drivers and staff
- Multimodal services in several places in the CB area, but need more over the entire CB region
- Communication between Transit teams, sharing information, concord – Kannapolis express
- Successful adoption of a long-range plan by local elected officials
- Strong support for alternative fuels and/or service delivery
- COVID-19 created the opportunity for agencies to concentrate on the needs of the travels not just ridership numbers
- Our community is bike and pedestrian-friendly – but no bike racks exist on the buses
- Development Review Committee
- Ridership base
- Above-average ridership utilization despite the small size of service
- Strong utilization of technology platforms to improve service internally and for the public
- ICATS offers both demand response and fixed route services.
- Strong travel patterns between counties in the region
- Existing TDM programs within the region mainly coordinated by CATS at the moment to emulate and build upon regionally with other providers
- There are proof of concept services and projects in our region



## **CONNECT Beyond**

A Regional Mobility Initiative

- Strong routes that can support or become future HCT corridors

### *Weaknesses:*

- We lack local champions/ advocates/ proponents of transit
- Frequency of routes not convenient to attract non-dependent riders
- Currently, as a region, we really don't coordinate between systems in terms of scheduling, service changes, fare systems/ software/payment
- Transfers between transit providers is a challenge.
- Unable to coordinate changes
- Lack of TDM Awareness in region
- Lack of coordination between land use planning and transportation planning
- Need a better understanding of what's happening throughout the region.
- Transit amenities are not coordinated with the development community (R.O.W.)
- Rural bike and pedestrian networks lacking for mobility
- Lack of county and municipal funding
- No structure in place to accept cross-county funds.
- Communication between agencies.
- Bus operators push back about bike racks on buses - they can't stage correctly
- Cross-county travel - ICATS ADA, Gastonia
- Fixed routes cannot maintain schedules during peak use/shopping season
- Tribalism (politically), versus practical community needs.
- Limitation of admin and operational space.
- Not sharing the value of transit to public and stakeholders
- Technology that can be shared from agency to agency
- Technology
- Local belief we cannot sell dedicated to funding to our communities at this time.
- Equitable grant funding policies.
- Lack of grant funding and local share dollars, trying innovative technology and service deliver, i.e. electric vehicles, microtransit
- Regional road network work can be challenging to timeliness/efficiency
- Service well undersized for current needs, never mind the future.
- Staff capacity

### *Threats:*

- Funding & Finance
- State funding issues - urbanized area is growing (ROAP vs. SMAP)





## CONNECT Beyond

A Regional Mobility Initiative

- Not getting local commitment for funding
- Funding is not sufficient to provide adequate service. Not enough local/county support
- Continued grant funding policy inequities.
- Equitable grant funding policies.
- Lack of county and municipal funding
- State and federal funding support (of lack thereof).
- Seeming to be an uncoordinated region
- No long-term transit plan
- Lack of vision for what the future will be locally (few can "see" or "dream" 30 years from now.
- Public perception of transit investment
- Post-COVID transit use and expectations
- Potential roadblock - management and county commissioners
- Elected officials understanding and perception of multimodal needs, like biking
- It's unclear how multimodal infrastructure is prioritized
- Focusing on rail and losing sight of other modes
- Inter-agency pushback or lack of response
- Local community infighting over who gets priority in what order
- No coordination
- Turnover at DOT YES
- Some trust issues between organizations
- Lack of regional data reporting consistency (land use, urban transit statistics, etc.)
- Inability to successfully achieve a local/region dedicated funding source(s).
- Lack of implementation = ATL
- NC/SC lose ability to bring in jobs (congestion; seen as backwards)
- Belief TNCs will entirely render public transit moot.
- Development approval and liability concerns
- City of Gastonia pushing fully electric fleet
- Difference in agency rules and regulations that allow the operation of services inconsistent.
- Failure to execute effectively early will greatly hinder later phase/continued support
- Lack of local champions to be able to get the level of funding this region needs to be economically competitive and improve upward mobility
- if momentum fizzles due to lack of support or funding
- Not coordinating after the completion of this plan
- Not investing in local underlying bus service (frequency / new services)
- Lack of inclusion at the ordinance level to support transit development needs.
- Staff and services are spread thin



*Opportunities:*

- Improve east-west connectivity
- Fare integration
- Fare box compatibility
- Customers are wanting to travel across county lines
- There is demand that we can't meet.
- Create a support of system of knowledge where transit expertise can be shared throughout the region
- Regional training programs focused on accurate urbanized area transit data reporting by all transit and human services transportation operators
- Possibly using NC State Institute of Transportation Research and Education (ITRE) as the regional transit data repository; however, requiring them to verify their accurate urbanized data reporting methods with the FTA Sect. 5307 designated recipients within the respective urbanized area (UZA)
- Funding available for new operational and admin facility.
- Coordinated amenities to improve the user experience
- Technology can be leveraged across the reason to improve service delivery.
- Would like bus shelters to be consistent across the community
- Growing local political belief we HAVE to do something to improve transit, and SOON.
- create services that can truly move passengers throughout the region
- Collaborating with CATS on the FTA Sect. 5307 transit reporting methods on urbanized area data and creating a possible reporting manual
- MPOs, DOTs, transit agencies learn from one another.
- Opportunity to educate on transit/equity
- We need to develop a regional service planning group
- Transit Cooperation Committee
- ADA certification process standardization and reciprocity
- Include transit amenities as part of the development approval process
- Covid has forced us to re-think and improvise
- Clear messaging on why transit important to a community (people become educated)
- Great opportunity to explain to the region how better public transit can improve the WHOLE community.
- Regional GTFS data to create a regional transit website and trip making
- Technical team to assist communities with developments near HCT
- Setting up transit supportive LU
- Collective transit expertise and can regionally leverage capital purchases



# CONNECT Beyond

A Regional Mobility Initiative

- Regional transit data repository for all operators regardless of MPO/TPO/RPO
- Chance to become a national model for regional success!
- Creation of a united marketing strategy among transit agencies.
- Improve communication between transit agencies
- Regional short-term transit plan to collectively purchase transit capital (better buying power)
- Review and remove operating barriers to allow for regional services
- Post COVID - new partnerships with medical facilities (transit connections)
- Creation of a regional transit agency coordination committee.
- Champions /advocates to market transit



## Discussion:

- political borders



# CONNECT Beyond

A Regional Mobility Initiative

- Traveler experience is different than jurisdictional boundaries
- Covid – opportunity and threat
  - Rethinking and innovation
  - Problem if don't get riders back
- Regional partnerships without an authority is a strength.
- Not knowing what neighbors are doing; little cross-discussions about efforts and plans
- Proof of concept services and projects in our region - blue line, funding source, things that have been done to be built upon
- Mobility Managers Group (Katie)
  - Born out of 2013 Mobility Manager Study
  - Bringing in transit providers on regular basis for more open communication
- Lack of local champions –
  - Resources are not there to have champions to push transit on a need and non-traditional riders too
  - Opportunity – how land use or ED are marketed; overarching goals of the city and how transit supports it
  - Riders – don't have riders who are advocates of the system
    - Leadership – don't have a citizen who is leading the charge to advocate for the plan
- Improved connections
  - More direct connections
  - Less travel time
  - If it's not convenient for riders, not convenient for the region
  - Way too many legs/transfers for places with connections
  - Opportunity for freeway based projects
- Lack of understanding of Federal funding process
- Lack of dedicated funding source
- Lack of operating reporting
- No long-term transit plan
  - Needs adoption and acceptance
- Local concern about the stratification of the region
  - Charlotte is on top of hill so get theirs first
  - Then MTC
  - Then non-official members of MTC and roadblocking and tiering of that
  - No regional prioritization effort
  - → Charlotte advancing projects independent of the region
- Leveraging lessons learned from the industry and other areas with similar issues
- Agencies in the area with experience transitioning their fleets
  - Regional thinking and direction to learn from one another
  - Building trust and knowledge base in the region



## CONNECT Beyond

A Regional Mobility Initiative

- Fares is a problem – different structures and media
  - 5% of the budget for fares for smaller agencies
  - Compared to other providers, CATS collects more fare revenue
  - We need a strategy for universal fare
- Transit systems are educated on what federal funding can do
  - Perspective of small vs. large city that the systems aren't educated

### Strategic Action Plan

*How do you use your strengths to take advantage of opportunities?*

- Going fare-free across the region would solve several coordination issues
- Leverage positive tech experiences and utilize regionally
- Using the strengths of each agency to assist in the development of weak areas that agencies may have individually
- Creating joint coordination amongst Centralina and Catawba COG with the MPOS like CRTPO, CRMPO, GLCMPO, and RFATS on transit
- Develop a model plan and code language for land use near HCT – VARIETY of densities – local choice
- Pilot project for demand response coordination – across 2+ systems
- Purchases or policy being considered, involve everyone so the region can benefit
- Agreements/MOU models for fare sharing
- Develop data collection; land use standards
- Annual funding set aside for regionally coordinated topics
- Pamela - using the strengths of each agency - experience with Natural Gas vehicles and other emergent technologies in the smaller agencies - coaches and lessons learned from each other - lean into knowledge and experience to follow that path - CATS the largest system but have a lot more planners than others so is there something they can help other agencies do to keep us in a more regional through direction
- Jorge - Exchange of knowledge and best practices in region-building trust while reaching across agencies to build a knowledge base
- LJ - fare-free across the region - takes the burden off rider to figure out 5 rate structures, eases rate share agreements, recognize the revenue impacts to CATS
- Pamela recommended a universal fare system throughout the region, it happens among systems across the US between different authorities and agencies and funding sources that when they come together to get unique funding strategies to allow that cross-system travel, do need a strategy to make it a universal fare to make it easier for the rider



*How do you overcome weaknesses preventing you from taking advantage of opportunities?*

- Develop a regional service planning group dedicated to coordinating service changes, fare integration, etc.
- Develop a strategy to overcome dependence on state and federal funding. Increase the local share
- Coordinated marketing plan across the region
- Working to develop strategies, SOP, performance measures that encompass the transit agencies corporately
- Develop a universal fare system that will allow travel throughout the region
- Establish a service planning working group (coordinate local and regional hurdles)
- Achieve buy-in and implementation of regionwide funding mechanism
- Develop true, region-wide Transit Commission
- Purchase technology that can be adopted in other agencies for minimal cost
- Dedicated, long-term local/regional funding
- Educate elected and appointed officials about transit funding opportunities and the economic impacts of transit. Most transit agencies are well versed in funding processes and impacts
- Development of a regional transit coordination group, meeting frequently
- Recommend small transit representation on the CRTPO TCC
- Develop regional data collection systems that can be easily shared and allow the access as regional partners

*What can you do about your weakness to make the threats less likely?*

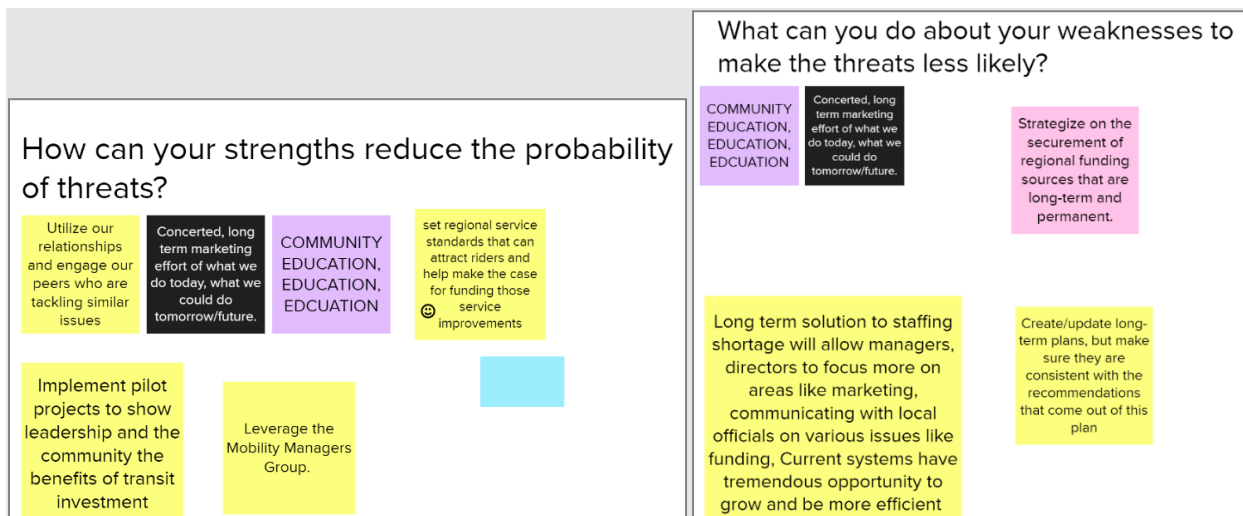
- COMMUNITY EDUCATION, EDUCATION, EDUCATION
- Concerted long-term marketing effort of what we do today, what we could do tomorrow/future
- Strategize on the securement of regional funding sources that are long-term and permanent
- A long-term solution to staffing shortage will allow managers, directors to focus more on areas like marketing, communicating with local officials on various issues like funding. Current systems have tremendous opportunities to grow and be more efficient.
- Create/update long-term plans, but make sure they are consistent with the recommendations that come out of this plan

*How can your strengths reduce the probability of threats?*

- Utilize our relationships and engage our peers who are tackling similar issues



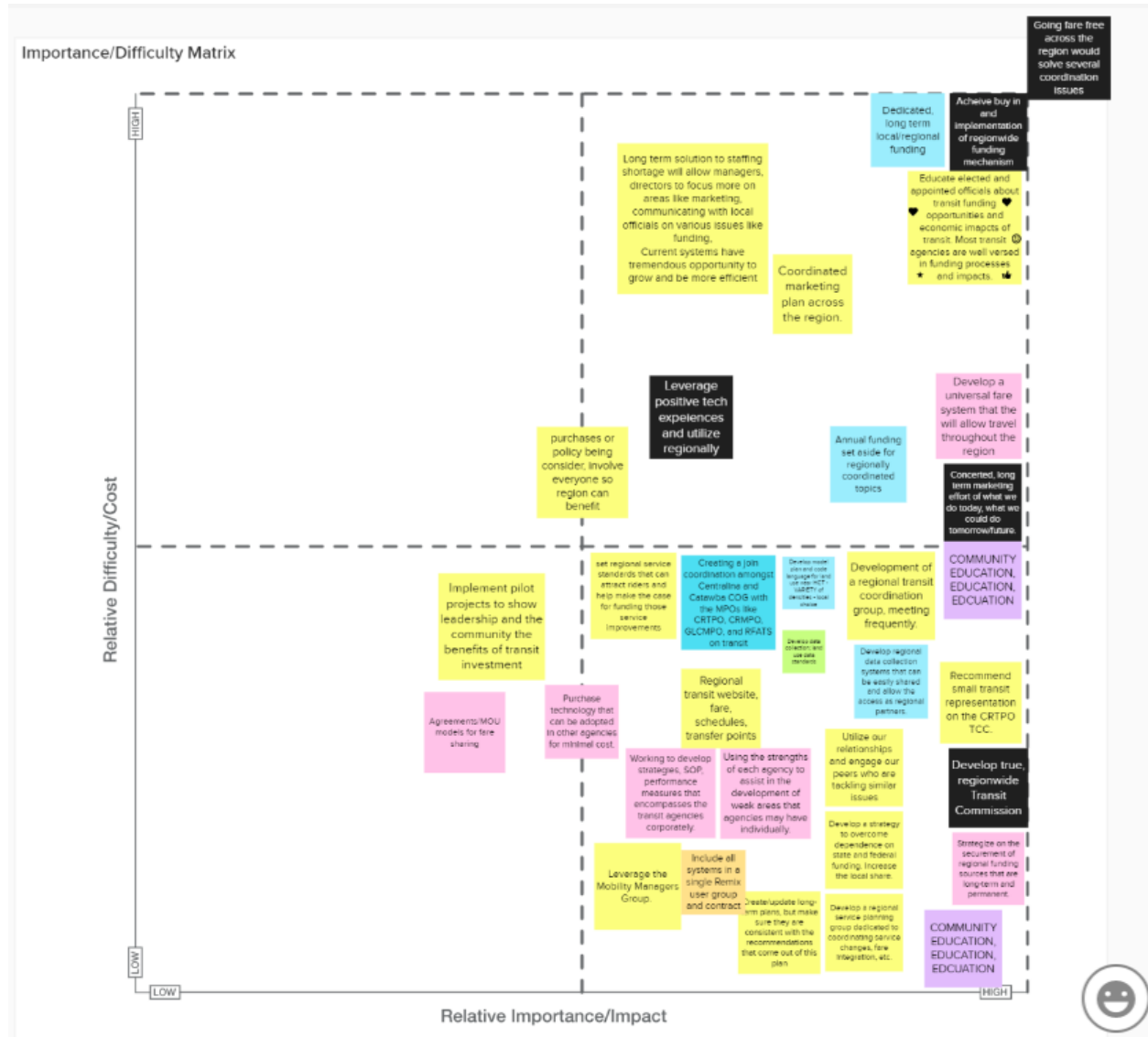
- Concerted, long-term marketing efforts of what we do today, what we could do tomorrow/future
- COMMUNITY, EDUCATION, EDUCATION, EDUCATION
- Set regional service standards that can attract riders and help make the case for funding those service improvements
- Implement pilot projects to show leadership and the community the benefits of transit investments
- Leverage the Mobility Managers Group





### Importance/Difficulty Matrix

Participants were asked to take their sticky notes from the Strategic Action Plan and plot them on the Importance/Difficulty Matrix where they think their item would fall in terms of relative difficulty to implement and its importance to achieving mobility for the region.







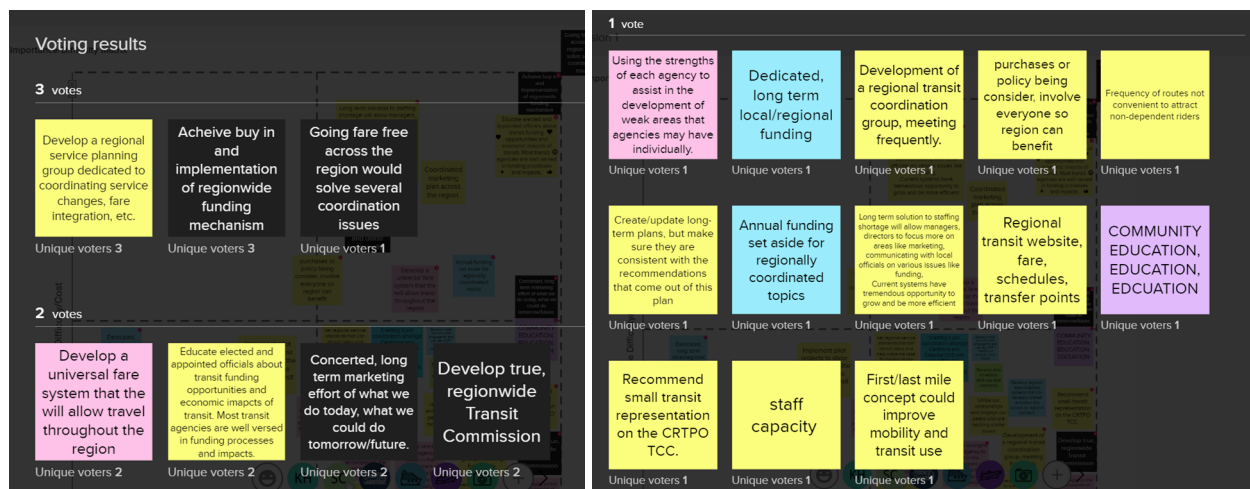
## Meeting 3 – Long-Range Interactive Planning Workshop

### Attendees

- Jason Wager, Centralina
- Katie Kutcher, Centralina
- Bruce Jones, CATS
- Jason Lawrence, CATS
- Molly Carter, CATS
- Pamela White, CATS
- Jerrel Leonard, CRTPO
- Vincent Wong, City of Gastonia Transit
- Jeff Crouchley, ICATS
- Ron Shoultz, ICATS
- L.J. Weslowski, Rider Transit
- Andy Christy, Rider Transit
- Cliff Goolsby, Rock Hill My Ride
- Rodney Harrison, City of Salisbury Transit
- Jorge Luna, HDR
- Kevin Walsh, HDR
- Krystal Harwick, HDR
- Rebecca Santiago, HDR
- Sabrina Colón, HDR
- Adam Socki, HDR
- Cavan Noone, HDR

### Priority Voting

The interactive session began with a Mural exercise that was a follow up from Meeting #2. [Voting Exercise in Mural](#): Participants cast three votes for the ideas plotted on the Importance/Difficulty Matrix to identify the initiatives they would like to start, which will help build recommendations for the short-term, mid-term, and long-term plans. Voting was anonymous and participants could change their votes during the voting window. Below are the ideas that received the most votes.



### Top Ideas – 3 votes

- Develop a regional service planning group dedicated to coordinating service changes, fare integration, etc. (3 unique voters)
- Achieve buy-in and implementation of regionwide funding mechanism (3 unique voters)



- Going fare-free across the region would solve several coordination issues. (1 unique voter)

Ideas with 2 votes (each at 2 unique voters)

- Develop a universal fare system that will allow travel throughout the region.
- Educate elected and appointed officials about transit funding opportunities and the economic impacts of transit. Most transit agencies are well versed in funding processes and impacts
- Concerted long-term marketing effort of what we do today, what we could do tomorrow/future
- Develop true, region-wide Transit Commission

Ideas with 1 vote

- Using the strengths of each agency to assist in the development of weak areas that agencies may have individually
- Dedicated, long-term local/regional funding
- Development of a regional transit coordination group, meeting frequently
- Purchases or policy being considered, involve everyone so the region can benefit
- Frequency of routes not convenient to attract non-dependent riders
- Create/update long-term plans, but make sure they are consistent with the recommendations that come out of this plan
- Annual funding set aside for regionally coordinated topics
- A long-term solution to staffing shortage will allow managers, directors to focus more on areas like marketing, communicating with local officials on various issues like funding. Current systems have tremendous opportunities to grow and be more efficient.
- Regional transit website, fare, schedules, transfer points
- COMMUNITY EDUCATION, EDUCATION, EDUCATION
- Recommend small transit representation on the CRTPO TCC
- Staff capacity
- First/last mile concept could improve mobility and transit use

Top Ideas when grouped:

- Regional Transit Planning Group/Commission
- Regional Funding Mechanism
- Regional systems for fares, schedules, routes, etc.
- Marketing & Education



## Remix Breakout Rooms

### **Topics for Remix Session** (*map and non-map based*)

- Route extensions (Remix)
- Improve existing service
  - Level of service (hours of service, frequency, etc.)
- Adding new service
  - Service types, modes, etc.
- Address service gaps (existing and future)
- Adding additional service
- System redesign?
- How can we improve connectivity to our rural transit providers?

### **ICATS**

- Attendees: Kevin Walsh (Facilitator), Katie Kutcher (Notetaker), Adam Socki (Remix), Ron Shultz, Jeff Crouchley
- ICATS has been working on developing some mid-and-long-range ideas in Remix. Ron mentioned that he could send us the files.
- Broad Plans:
  - ICATS has plans for major expansion to Charlotte, Hickory, Salisbury, and Concord.
  - Improve existing routes
  - ICATS received a BUILD grant. Within the next 5 years ICATS will have a new multimodal transit facility. The location for this facility is unknown at this time. They would operate larger vehicles for the commuter route to Charlotte, however, they don't have a way to store or maintain a larger vehicle.
  - Census data will impact overall funding. Prediction is south of 1-40 will be urban and north of 1-40 will continue to be rural.
  - Demand Response services also expected to grow with senior population
- 5-10 Year Forecast:
  - Develop a triangle route to serve Statesville, Harmony, and Love Valley
  - This triangle route will serve the rural community in Iredell and connect them to Statesville
- 10 Year Forecast:
  - Goal to develop route service to Concord that would interconnect with Rider Transit
  - Goal to develop route service to Hickory that would interconnect with Greenway
- Charlotte Express (Hot Pink Line in Remix)
  - Current Status:
    - 2 trips in AM & 2 trips in PM



## CONNECT Beyond

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- Return trip at 5:30 PM
  - Current bus is an LTV
  - Express runs to center Charlotte. This changed for a variety of reasons including CATS & ICATS were not able to share ride data/fares. CATS also changed the frequency of trips. As a result, ICATS moved stop to Center City Charlotte and provides service to the Charlotte Transit Center.
  - They do go to the CATS LRT maintenance facility once in AM and once in PM
- Future Goals:
  - Run service to Charlotte all day and later in the evening.
  - Would like return trip to be at 9:30 PM
  - Would like to offer limited weekend service for personal needs
  - Grant to use larger buses/over the road coaches- however they are not able to store them or service them at this time.
- Mooresville on Main (Lime Green Line in Remix)
  - Current:
    - 1 bus, headway of 1 hour and 45 minutes
  - Next 24 Months
    - Add a second bus on route running in the opposite direction
  - Next 5 Years
    - Eliminate Mooresville on Main
    - Replace with 3 interconnected routes (connect at Walmart on Talbert Road)
      - Mooresville West Route
      - Mooresville East Route
      - Mooresville South Route
    - All three routes will connect and have fare transfer
    - Walmart is the #1 stop and is a major destination
    - Create stops at previously unserved areas
- Statesville Bloom Route (Teal Line in Remix)
  - Current:
    - 1 bus
  - Next 24 Months
    - Add a second bus on route running in the opposite direction
  - Next 5 Years
    - Eliminate Bloom Route
    - Replace with 2 interconnected routes
- East/West Connector: Green route, ICATS to Greenway



## CONNECT Beyond

A Regional Mobility Initiative

- Future project in the works (did not catch the timeframe): Erika Martin has details
- The East/West Connector will be a park & ride location connecting to CATS (Red line commuter rail). The lot will include several hundred parking spaces.
- It is possible this could replace the need for the Express Lane into center city Charlotte
- Salisbury VA Shuttle
  - Current:
    - This shuttle runs 1 day a week to the VA Hospital in Salisbury (Tuesdays).
    - No plans to expand at this time unless there is an increase in demand

### **Rider Transit**

- Attendees: Jason Lawrence (Facilitator), Pam White (Notetaker), Becky Santiago (Remix), L.J. Weslowski, Andy Christy
- Drew this with the 20-year Concord vision plan in mind:  
<https://platform.remix.com/map/5eec7976/line/280c71de?dir=1&latlng=35.42212,-80.74029,12.974>
- Future vision – all the lines are 15 min service
- East of orange line is a hard line for population – goes rural after that
  - No good roads to serve rural area either
- 73 will be expanded and provide higher service
- Demand along 85 from hotels to connect to the airport
- Service to the research park
  - 20-year plan gets close but doesn't serve it
  - Extend red line?
    - Putting in a circulator between Concord Mills and airport
    - Will be first route to receive frequency increases

### **City of Salisbury**

- Attendees: Bruce Jones (Facilitator, Remix), Molly Carter (Notetaker), Rodney Harrison
- Notes taken within Remix: <https://platform.remix.com/map/2b697fa2?latlng=35.65273,-80.63375,10.431>
  - Blue route - Modifying existing service to cover areas currently not served by transit. Examples include Statesville Blvd and Catawba College
  - Long Range Public Transportation Plan is identifying opportunities for expansion, new service types (micro-transit), current gaps in service, etc.
  - Rowan Exp. - Extend route to connect directly to the transit hub and community colleges in Concord and Salisbury
- Salisbury serves two municipalities (Spencer (Blue route))



## CONNECT Beyond

A Regional Mobility Initiative

- Blue route generates a lot of trips but there is a funding issue because two municipalities are not financial partners.
- Just went through public transportation service plan – proposed six or seven different public transportation options including microtransit.
- Other areas and other routes – goal is to use microtransit to connect to other hubs?
- Everyone is watching Wilson project – their whole system has transferred to microtransit
- Goals – more frequent service, quicker trips, potentially look to expand to weekends (run reduced schedule on weekends)
- Connection to Lexington going north, connection to Kannapolis train station and connect to Kannapolis buses
- Long Range Public Transportation Community Plan
- How to better connect to rural locations?
- Salisbury to Statesville connect – what would you like to see? In the morning, peak time probably every 20 min to get people to work and same in the evening.
- Most important thing – making connections to north and to Statesville and improving express routes and improving mobility in the region. Connections that improve travel time not only just for need riders but for choice riders as well.

### ***My Ride***

- Attendees: Jorge Luna (Facilitator, Remix), Jason Wager (Notetaker), Cliff Goolsby
- Cliff interested in sharing of Remix tool license and potentially contributing to cost once more details are clear
- Future Expansion/Vision
  - 15 points of interest (local area knowledge) in the City and they are not necessarily being served
  - Panthers facility coming
  - College Downs (low income) area (2-3 points of interest) with folks need to access jobs, shopping, etc.
  - Expand Downtown loop and go from 30-min to 1-hour headway(?)
  - Other opportunities to extend from Dave Lyle route to high density/low income areas (Willowbrook? and Confederate Point Park)
  - Just East of 77 Legacy Park, Ross Distribution, and others are significant employment centers
  - Shadowbrook area also low income that could benefit from transit, near new Walmart Neighborhood market
  - India Hook and Celanese roads intersection important



## CONNECT Beyond

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- 77 and Celanese (Heather Square and others) several POIs
  - Newport area has lots of commercial (20k to 38k ADT in last 5 years)
  - Are in their infancy. Aren't set up with staffing, funding, transit facility, etc.
  - Budgeting for this facility in next 5 years
- Making connections to Kingsley and other areas are of interest, but City will require City to cover their own residents first
- US21 BRT route identified by RFATS
  - Better connectivity than the 82X
- Notes taken within Remix (<https://platform.remix.com/map/fa2544e5?latlng=35.2271,-80.8431,13>)
  - Ross Distribution Center. Employment area.
  - Potential ridership, this service works effective (served together) with the Willowbrook / Princeton extension.
  - Black, White and Main St. - Good potential for ridership.
  - New Panthers practice complex. Discussed proposed bus stop in their site.
  - College Town Neighborhood.
  - South Crowford Rd. is an area in need. Transit dependent area.
  - Interest and potential to connect this community here. Council interest in support.
  - Pocket in need of service along Jones Ave. and Redeeming Life Center.
  - Consideration of extending Downtown loop to connect to Willowbrooke Ave.
  - There is a need of service extension in this area (Willowbrook / Princeton), either serve by Dtw. or Dave Lyle rts.
  - Overall area has employment opportunities; "Legacy Park."
  - Transit-dependent area, need connectivity. There are plans to modify the Cherry Rd. route and connect this area and the Walmart Neighborhood market.
  - Multifamily housing. Good ridership demand area, connect to Indian Hook / Celenase connection
  - Area with good transit potential.
  - Celanese corridor is a good area for productive transit ridership.
  - Multifamily and older residential (north to the west), good ridership demand.
  - Major commercial destination for good ridership. Future growth will attract riders in the future. Key focus now and will grow from 20ADT to 38+ADT. A 1 mi. stretch is high in traffic.
  - Area of eventual future need in the long-term.
  - US - 21 still of interest to connect Rock Hill to the Charlotte area.



### **City of Gastonia**

- Attendees: Jerrel Leonard (Facilitator, Notetaker), Cavan Noone (Remix), Vincent Wong
- Modifications of the existing routes:
  - Level of service
    - 5:30AM- 5:30PM hours of service, frequency
    - Pink Line needs to be increased in frequency to every 30 minutes on Weekdays and increase Saturday service to every 60 minutes
    - Red Line increase in frequency to every 30 minutes on Weekdays and increase to every 60 minutes on Saturday
    - Possibly extending the hours during the weekdays and possible 7 days/week service increase (Sunday service)
- Adding new service:
  - Franklin Irving Sports & Entertainment District needs to be connected to Downtown Gastonia (connecting Loray Mills to Downtown Gastonia)
  - Possible special events service route
- Service Gaps (Existing and New)
  - Connecting Loray Mills to Downtown Gastonia
  - Possible more east-west service and higher frequency
  - Connections to Belmont, Lowell, and other neighboring municipalities within Gaston County
  - Service gap between Bessemer City and Dallas (US 321)
- Adding additional service (overall higher frequency of service);
  - Connecting Dixie Village to Franklin Square (east to west) (new service)
  - New service going from Gaston Community College to Tech Park along US 321 (North to South)
- System redesign (further data need before recommending)
  - Improvements to rural service providers to better connect to rural area (beyond the Gastonia city limits; coordination with the adjacent municipalities)
  - More between the Pink and Green Lines with direct connectivity to the rural providers (east side of the city)

### **Remix Session Links**

- Entire Region: <https://platform.remix.com/map/1e517a73?latlng=35.39256,-80.82889,9.317>
- CATS: <https://platform.remix.com/map/864c5975?latlng=35.18219,-81.21022,9.164>
- ICATS: <https://platform.remix.com/map/5c10e890?latlng=35.51027,-80.86157,10.26>
- Salisbury/Rowan: <https://platform.remix.com/map/2b697fa2?latlng=35.65273,-80.63375,10.431>
- Rider: <https://platform.remix.com/map/17f94a94?latlng=35.35729,-80.98423,9.991>
- My Ride: <https://platform.remix.com/map/fa2544e5?latlng=35.2271,-80.8431,13>
- Gastonia: <https://platform.remix.com/map/300b3534?latlng=35.2271,-80.8431,13>
- Amtrak: <https://platform.remix.com/map/6b67eff4?latlng=35.31578,-80.98278,10.157>





# CONNECT Beyond

A Regional Mobility Initiative

- Interactive Map:  
<https://hdr.maps.arcgis.com/apps/webappviewer/index.html?id=9696554648e74189bd9fc406cd4b983a>



**CONNECT  
Beyond**  
A Regional Mobility Initiative

## Meeting Report Appendix B – Meeting Presentations

# Technical Overview

- To help this meeting run as smoothly as possible, please consider the following tips:
  - Use headphones with a microphone; make sure you are muted when not speaking.
  - Send all questions and comments through the chat feature.
  - You may choose to disconnect from any VPN or third-party connection sources during the meeting to maintain connectivity and bandwidth.
- This meeting will be recorded and shared with committee members who were unable to attend



# CONNECT Beyond

A Regional Mobility Initiative



February 10, 2021

## Integrated Bus Strategies

# Welcome

Jason Wager, Project Manager  
Centralina Regional Council

# Agenda

- Project Overview
- The Next Layers of Mobility
- High Capacity Transit Corridors
- Integrated Bus Service Strategies
- Group Discussions
- Upcoming Engagement





**CONNECT  
Beyond**

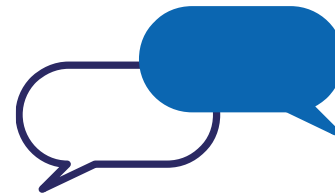
# Meeting Objectives



Update you on the status of the CONNECT Beyond Project



Present the high capacity transit corridors and kick-off the Integrated Bus Service Strategies



Facilitate breakout sessions with each fixed-route provider



Introduce upcoming project tasks: Transportation Demand Management, Emerging Mobility Trends & Mobility Hubs



# Where We Are Where We're Going

Jason Wager, CONNECT Beyond Project Manager,  
Centralina Regional Council



# Planning Process

1

## Evaluate existing transit systems

SUMMER - FALL 2020

- > What are we doing well?
- > Where are the gaps and barriers to mobility?

2

## Identify high capacity transit corridors

FALL - WINTER 2020

- > Which corridors would be good candidates for regional transit connections to best connect people to jobs, housing, medical services, education and other key destinations?

3

## Envision a total mobility network

WINTER - SUMMER 2021

- > How can we best expand local services to increase transportation options and increase access to high capacity transit corridors?













4

## Develop implementation strategies

SUMMER - FALL 2021

- > How can local transit providers and planning agencies use the results of the initiative?

# 2020-2021 Advisory Committee Meeting Calendar

Evaluate Existing System	Identify High Capacity Transit Corridors	Envision a Total Mobility Network			Develop Implementation Strategies	Final Plan	
Purpose, Goals & Vision	Candidate High Capacity Transit Corridors	Recommended High Capacity Transit Corridors	Integrated Bus Service Strategies	Transportation Demand Management & Mobility Hubs	Rural-Urban Connections & Transit Supportive Strategies	Draft Recommendations	Final Recommendations
MAY 2020	SEPTEMBER 2020	JAN 13, 2021	MAR 24, 2021	APR 28, 2021	MAY 26, 2021	JUL 22, 2021	SEP 29, 2021
<p>Based on your understanding of your community's unique character and needs, help us shape the necessary components of the purpose, goals and vision for CONNECT Beyond.</p>	<p>After careful review of data from across the region we've developed candidate high capacity transit corridors.</p>	<p>Based on all the feedback we received and an initial evaluation of the candidate corridors we have identified the recommended high capacity transit corridors</p>	<p> <b>TRANSIT ACADEMY</b></p> <p>Identifying potential service connections, new service in support of high capacity transit, and strategies to benefit the user experience.</p>	<p> <b>TRANSIT ACADEMY</b></p> <p>Discussion of emerging mobility trends and connecting beyond a fixed route system.</p>	<p> <b>TRANSIT ACADEMY</b></p> <p>Identifying gaps and bridges for the rural to urban mobility divide and strategies to support transit throughout the region.</p>	<p> <b>TRANSIT ACADEMY</b></p> <p>Review preliminary and consolidated results and present draft plan.</p>	<p>The final draft plan will outline the vision for the region. It will include action-oriented strategies.</p>
<p> Feedback on purpose, goals &amp; vision</p>	<p> Feedback on candidate corridors</p>	<p> Acceptance of high capacity transit corridors</p>	<p> Feedback on strategic direction</p>	<p> Feedback on strategic direction</p>	<p> Feedback on strategic direction</p>	<p> Feedback draft recommendations</p>	<p> Endorsement of final recommendations</p>

# Touchpoints to Date

- 45+ Individual meetings since the project began - **HCT Input Sessions**

- 9/3 CRTPO | High Capacity Transit Input
- 9/3 RFATS | High Capacity Transit Input
- 9/16 CRMPO | High Capacity Transit Input
- 9/16 GCLMPO | High Capacity Transit Input
- 9/18 RRRPO | High Capacity Transit Input
- 9/30 PAC | High Capacity Transit Input
- 11/05 CATS | Long Range Plans
- 11/23 Centralina | Commuter Rail
- 1/13 Joint Advisory Committee Meeting  
[www.connect-beyond.com/resources/blog7.html](http://www.connect-beyond.com/resources/blog7.html)

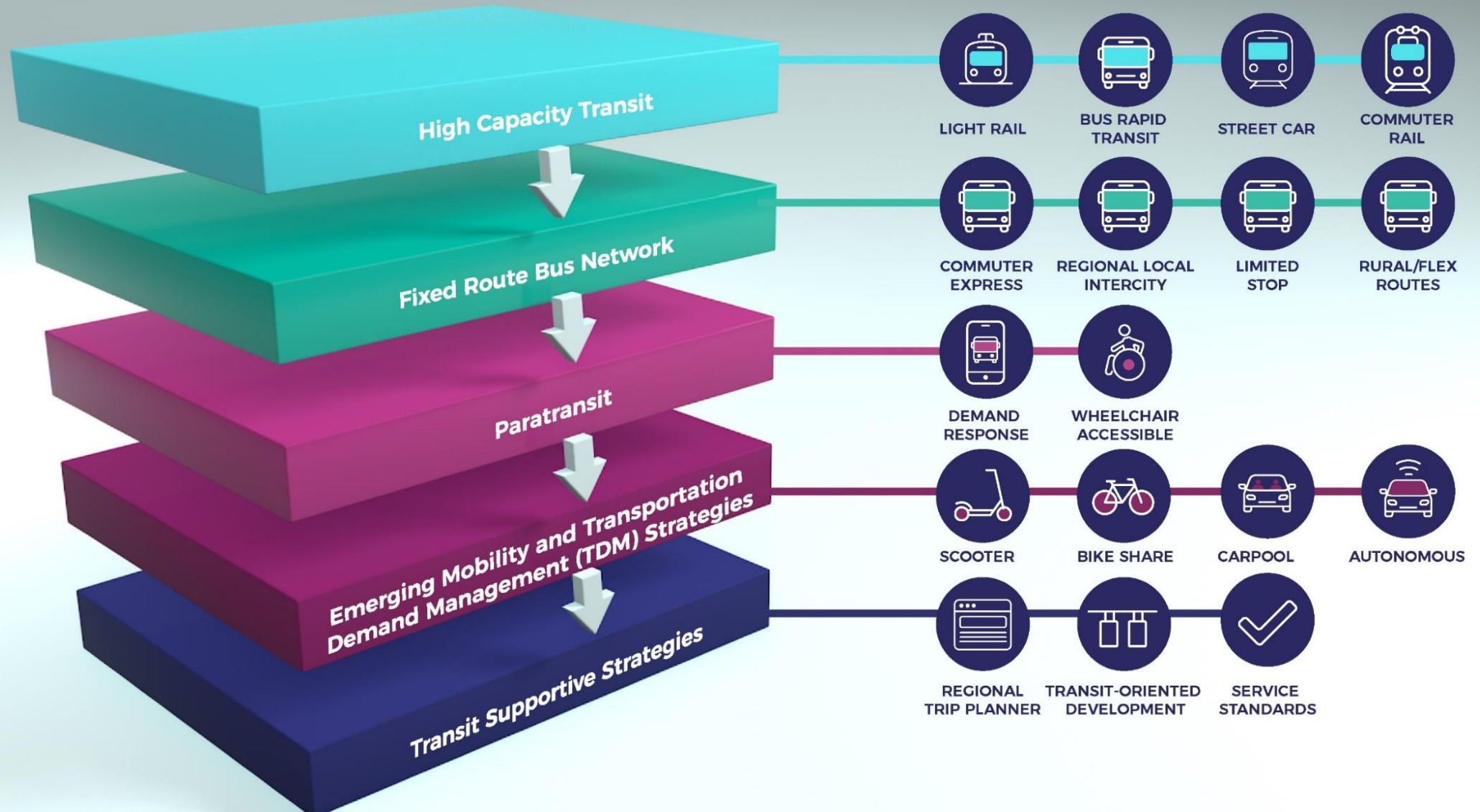




# Layers of Mobility

Jorge Luna, HDR

# Mobility Layers



The background is a solid teal color. On the left side, there are several overlapping, semi-transparent geometric shapes in various shades of teal, including circles and polygons, creating a layered, abstract effect.

# High Capacity Corridors

Jorge Luna, HDR



# What is High Capacity Transit?

High capacity transit refers to transit modes that have more capacity than traditional bus, such as light rail, bus rapid transit, express bus, and commuter rail.



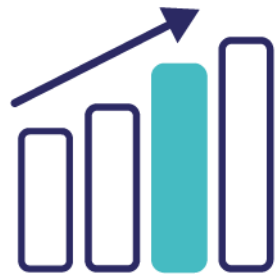


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Beyond**

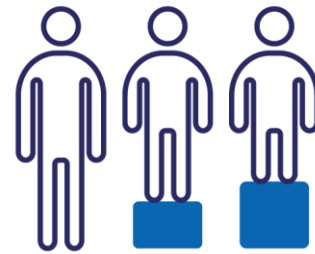
# Guiding Principles for High Capacity Transit Evaluation



**Creating  
Mobility Choice**



**Preparing for  
Future Growth**



**Advancing  
Equity**



**Aligning Plans  
and Local Visions**



**Planning for  
Implementation**

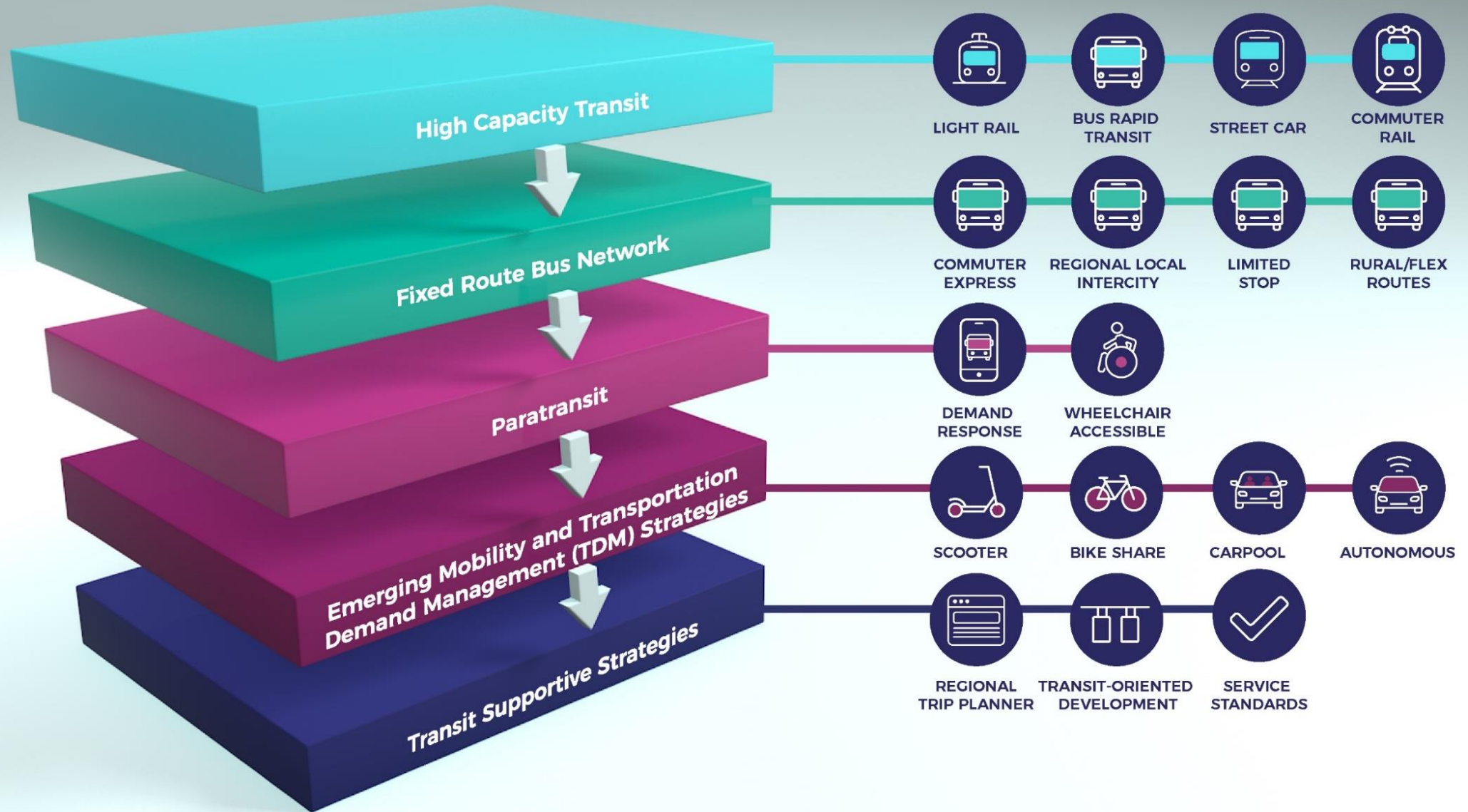




# Integrated Bus Service Strategies

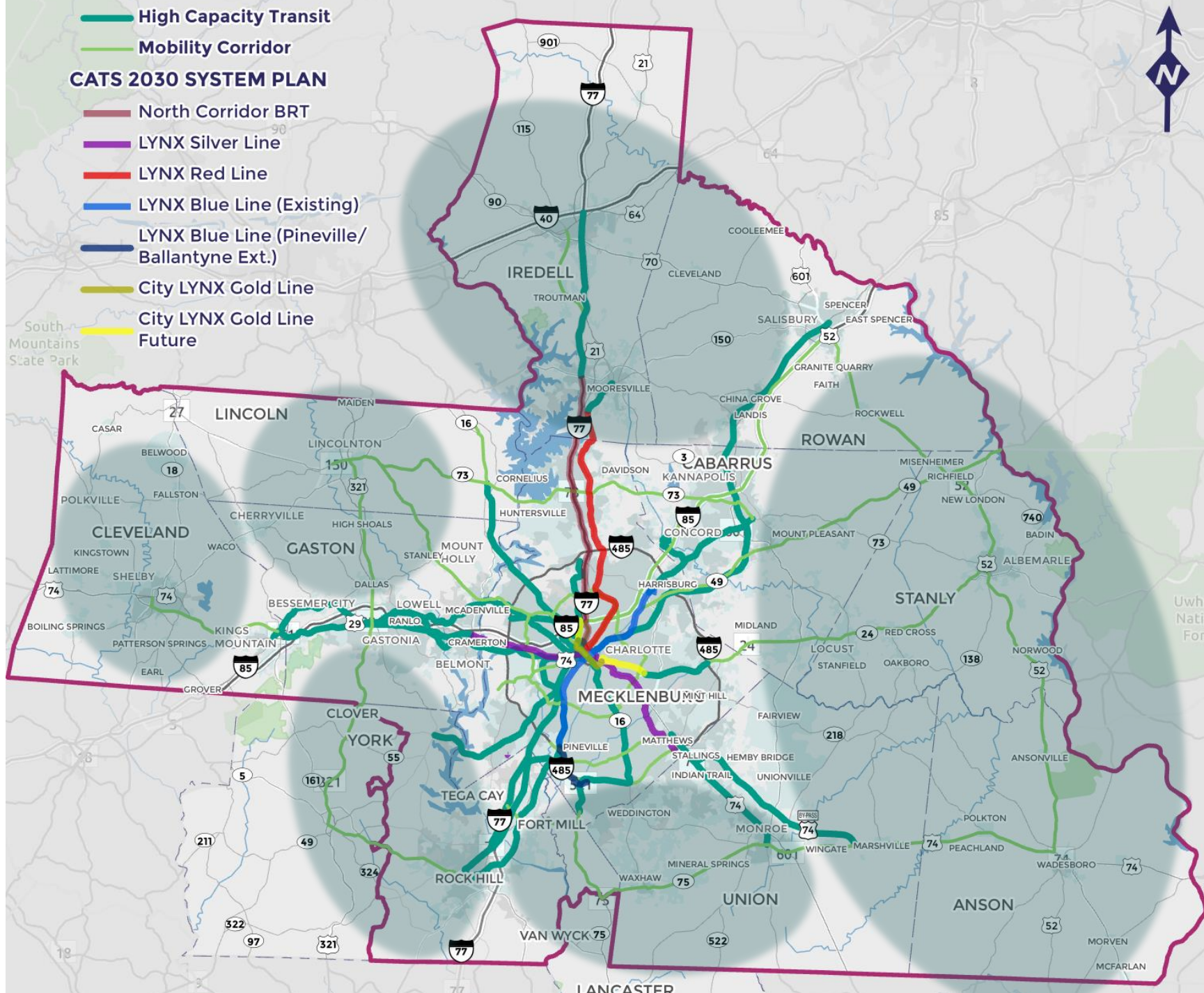
Kevin Walsh, HDR

# Mobility Layers



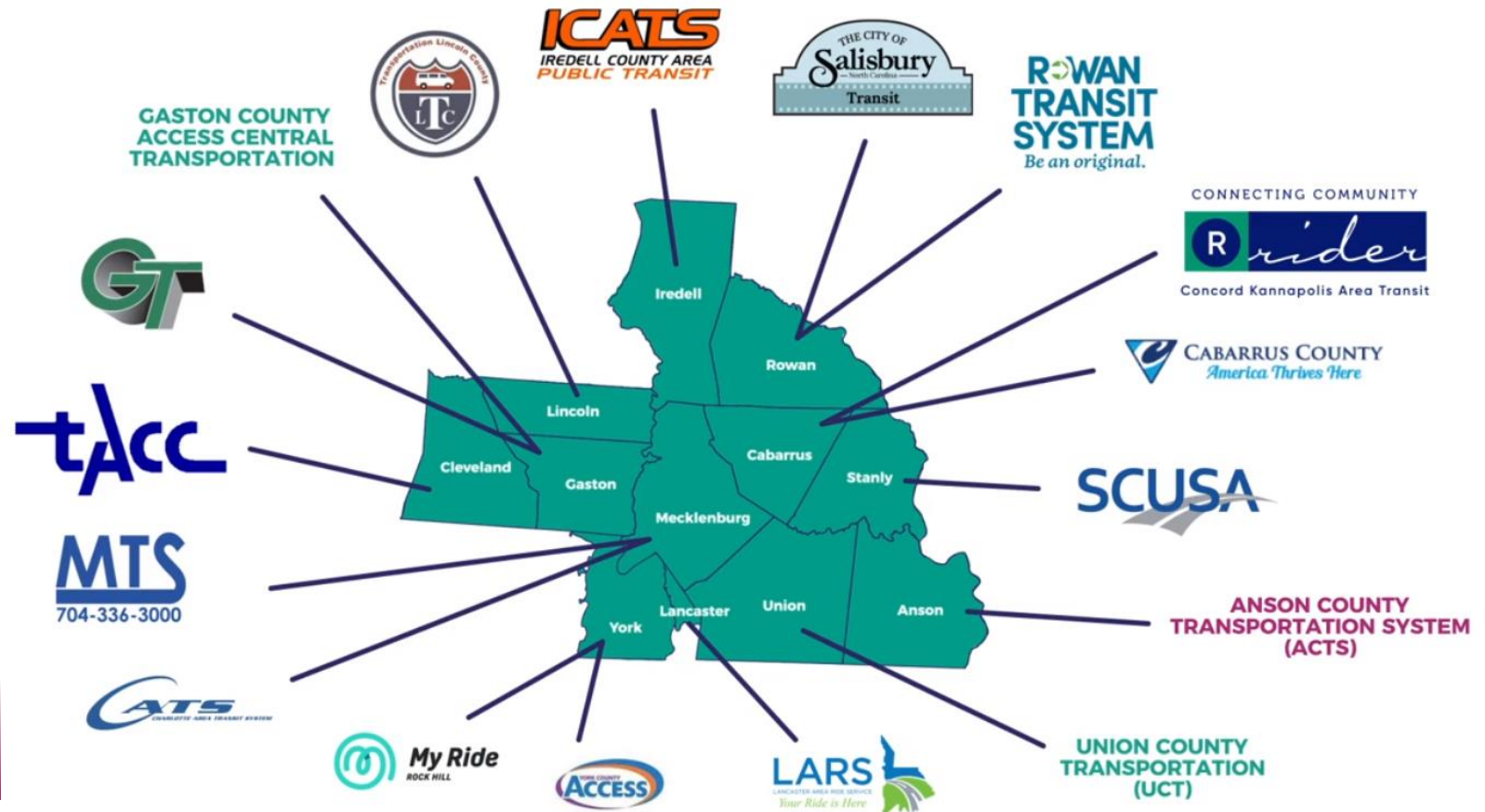
# Additional Layers of Mobility

- CONNECT Beyond study area
- Transit improvements or mobility solutions:
  - Enhanced bus
  - Freeway-based express
  - Local bus connection
  - TDM strategies
  - Urban-rural connection
  - Freeway-based express
  - Transit supportive development strategies
  - Other



# Transit Services in Our Region

- 12 Counties
- 17 Agencies
- 24.4M+ Total Transit Trips  
– All Agencies (2018)\*
- \$200M+ in Total  
Operating Costs – All  
Agencies (2018)\*



\*Note: Does not include Rock Hill My Ride. In FY2020 My Ride had about 200k riders and \$1.75M operating budget



# Group Discussion

# Please Enter Your Breakout Room

ICATS

Gastonia  
Transit

Rider  
Transit

Salisbury  
Transit

My Ride

# Report Out

Kevin Walsh, HDR



# Upcoming Integrated Bus Strategies Meetings

## Meeting #2

### **S.W.O.T. Analysis Workshop**

February 26, 2021 (1:00-3:00 p.m.)

Working session to identify and document the strengths, weaknesses, opportunities and threats (near, medium, and long-term). What needs to be done to advance a unified regional vision?

## Meeting #3

### **Long-Range Planning Interactive Workshop**

March 12, 2021 (1:00-3:00 p.m.)

Working session to begin developing a long-range vision for transit service in the future. How do we want to serve our communities in the future?



**Thank You**

# Breakout Room Facilitator Slide Deck

# Breakout Session Group Discussion

## Questions

1. What routes do they see as good candidates to help support/develop HCT corridors?
2. Has your long-range plan been impacted by COVID or funding shortfalls?
3. What are your thoughts on local route system supporting HCT corridors identified as part of CONNECT Beyond?
4. What are known service or coverage gaps in your system? (Pre-COVID)
  - a. Is there a plan to address the gaps (short- and long-term)?
5. If funding was not a factor and you could expand your service, what would that look like?
6. Thinking in terms of mobility as a service (MAAS), what are your top technology barriers to meeting current expectations that leverage connected devices in support of transportation options?
7. Are there challenges in terms of providing bus stop amenities? If so, what are they?



# Breakout Session Group Discussion

## Questions (continued)

8. What challenges and opportunities exist in linking transit to the local bike and pedestrian networks? If so, what are they, what needs to change?
9. What changes to the system network are anticipated post-COVID based on new demands, lessons learned, new opportunities, etc.?
10. On a regional basis, what needs to be done better or differently to support mobility in your jurisdiction?
11. What are you not getting now that would help to support and improve your system?
12. If you provide ADA paratransit service, what challenges exist (pre-COVID)?
13. If you do provide ADA paratransit service, how do you handle trip requests that cross county lines?
14. Are there destinations frequently requested by riders that you currently do not serve? Are any of these frequently requested destinations in another transit agency's service area?



# Breakout Session Group Discussion

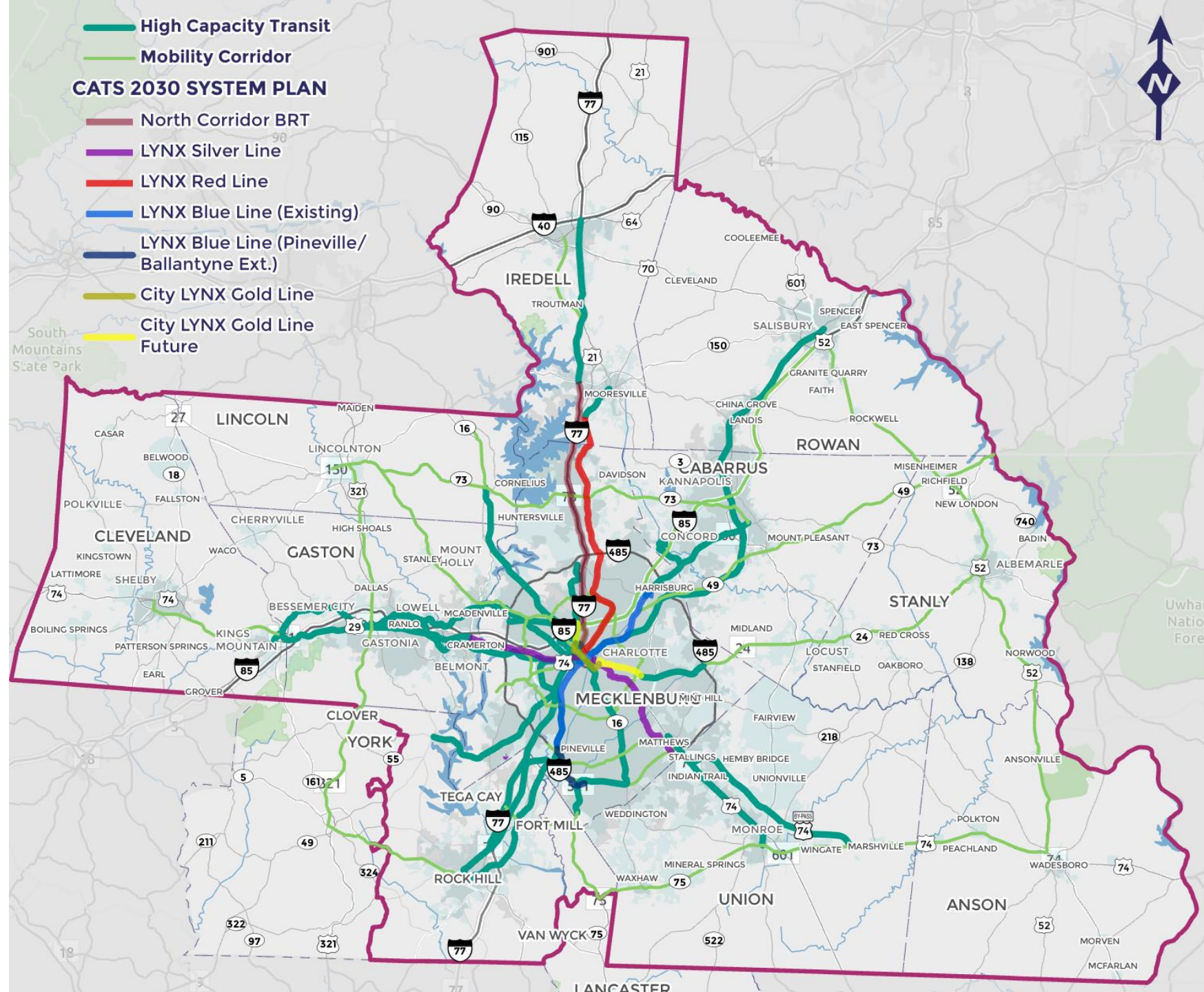
## Questions (continued)

15. Which routes are your top and bottom performers (pre-COVID)?
  - a. Top 25% in terms of annual ridership
  - b. Bottom 25% in terms of annual ridership
  - c. Break out by service type (if applicable)
16. The project team will be going out into the field to observe the operations of your bus routes. What are good candidate routes for the windshield survey? What routes would be good to shadow?
17. What are the major transfer points/centers in your system?
18. Where do you anticipate transfer points/centers/maintenance facility needs in the future?
19. Do your routes interact (allow for a transfer) with other service providers, if so, who and where?
20. Has your long-range plan been updated in the last two years? If so, can you please provide a copy.



# HCT and Mobility Corridors

- HCT network
- Mobility corridors
  - Other types of transit improvements or mobility solutions:
    - Enhanced bus
    - Freeway-based express
    - Local bus connection
    - TDM strategies
    - Urban-rural connection
    - Freeway-based express
    - Transit supportive development strategies
    - Other
  - Corridors that may be good HCT corridors in the long-term



# Technical Overview

- To help this meeting run as smoothly as possible, please consider the following tips:
  - Use headphones with a microphone; make sure you are muted when not speaking.
  - Send all questions and comments through the chat feature.
  - You may choose to disconnect from any VPN or third-party connection sources during the meeting to maintain connectivity and bandwidth.





# CONNECT Beyond

A Regional Mobility Initiative

February 26, 2021

## Integrated Bus Strategies Meeting 2: S.W.O.T. Workshop



# Welcome

Jason Wager, Project Manager  
Centralina Regional Council

# Agenda

- Welcome and Introductions
- Recap of Meeting 1
- SWOT Exercise
  - Mural Instructions
  - Purpose
- Wrap Up & Next Steps





**CONNECT  
Beyond**

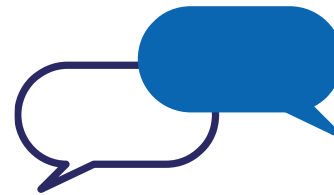
# Meeting Objectives



Update you on the status of the CONNECT Beyond Project



Present summary of integrated bus services strategy themes from Meeting 1 and complete an Integrated Bus Service Strategies SWOT analysis



Facilitate group-wide strengths, weaknesses, opportunities and threats that impact transit services and agencies in the CONNECT Beyond region



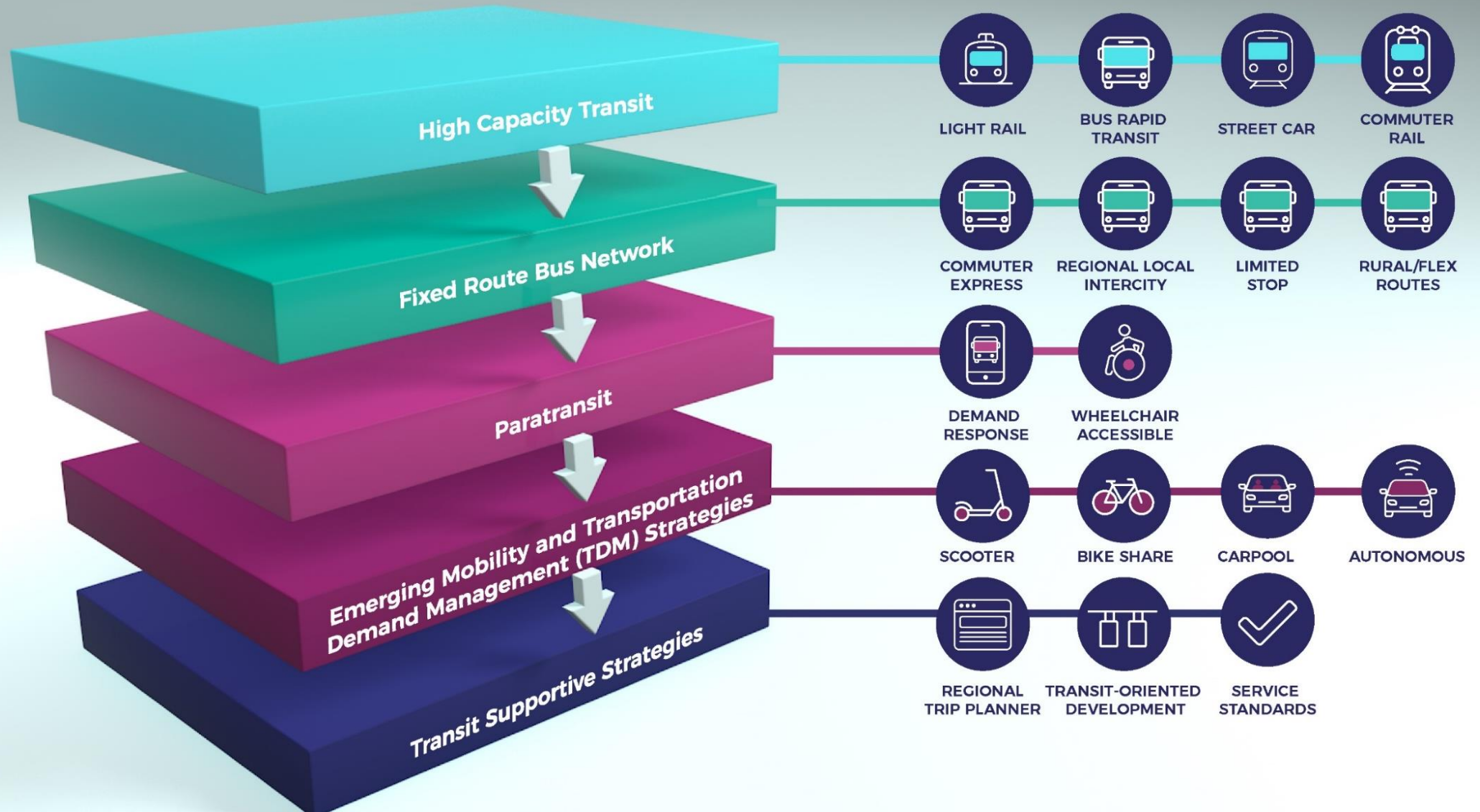
Introduce upcoming project tasks:  
Meeting 3 Long-Range Interactive Planning Workshop

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# Meeting 1 Recap

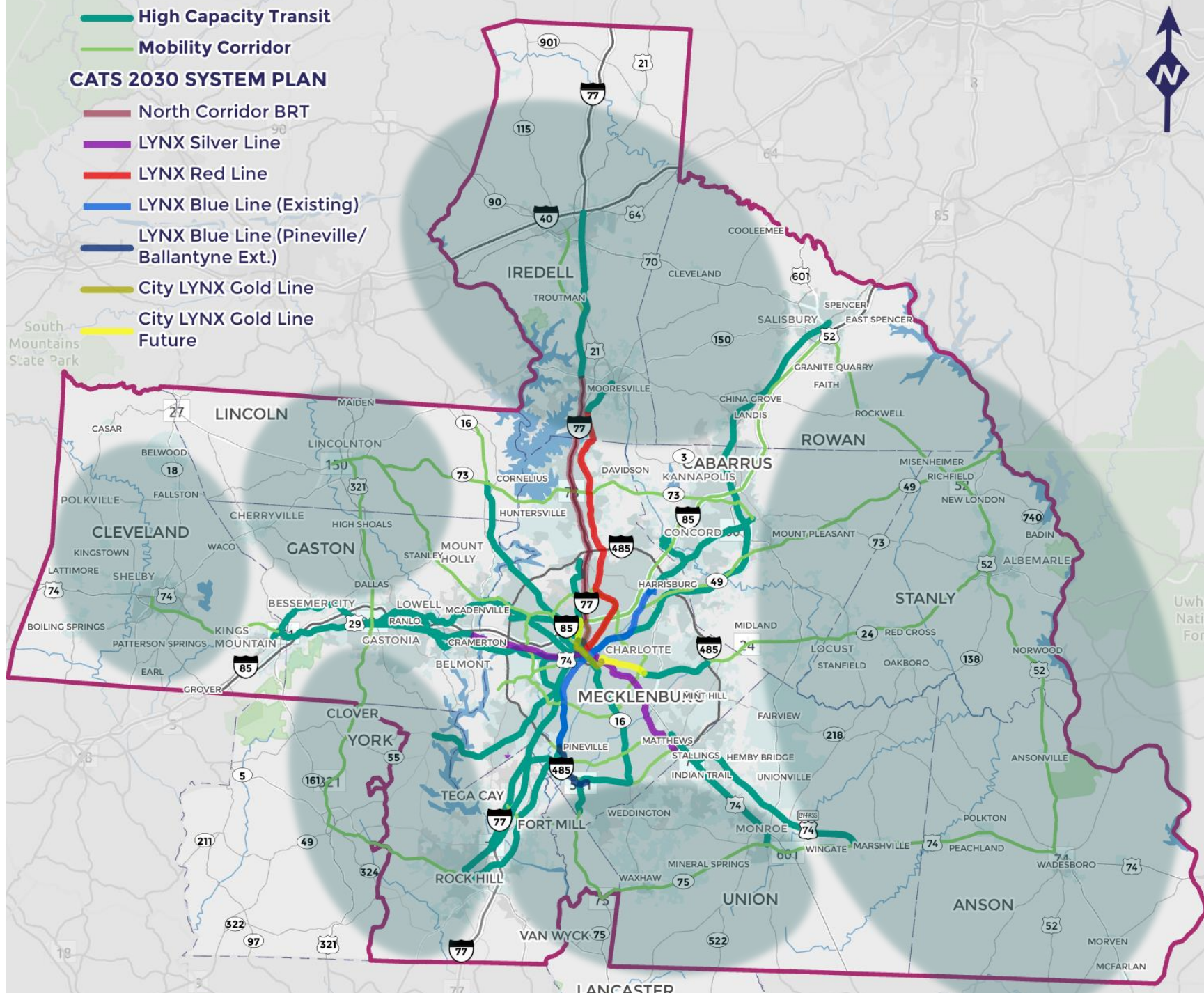
Kevin Walsh, HDR

# Mobility Layers



# Additional Layers of Mobility

- CONNECT Beyond study area
- Transit improvements or mobility solutions:
  - Enhanced bus
  - Freeway-based express
  - Local bus connection
  - TDM strategies
  - Urban-rural connection
  - Freeway-based express
  - Transit supportive development strategies
  - Other



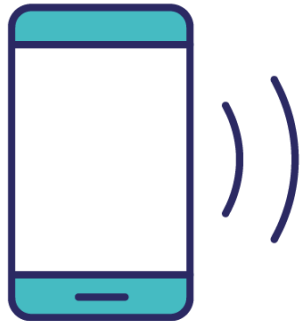
# Touchpoints to Date

- 50+ Individual meetings since the project began
- 10 committee meetings
- 8 meetings focused on High Capacity Transit
- Ongoing ad-hoc meetings
- Multiple presentations to area boards and committees





# Major Themes



Policy

Technology

Operational

Financial

Interagency  
Coordination

# S.W.O.T. Exercise

Sabrina Colón, HDR

# Wrap Up & Next Steps

Jorge Luna, HDR

# Upcoming Integrated Bus Strategies Meetings

## Meeting #3

### **Long-Range Planning Interactive Workshop**

March 12, 2021 (1:00-3:00 p.m.)

Working session to begin developing a long-range vision for transit service in the future. How do we want to serve our communities in the future?

## Joint Advisory Committee Meeting

### **Integrated Bus Services Strategies**

March 24, 2021 (10:00 a.m.-12:00 noon)

Identify potential service connections, new service in support of high capacity transit and strategies to benefit the user experience.



# CONNECT Beyond 2021 Schedule



Committee Action



Transit Academy Topic



Community Touch Points



Wednesday, January 13, 2021

ADVISORY COMM. MEETING  
High Capacity Transit Corridors

Present High Capacity Transit Corridors Intro to TDM, Mobility Hubs & Integrated Bus Strategies



Acceptance of Corridors

Wednesday, March 24, 2021

ADVISORY COMM. MEETING  
Integrated Bus Strategies

Identifying potential service connections, new service in support of HCT, and strategies to benefit the user experience.

March – April 2021: Community Listening Sessions

Wednesday, April 28, 2021

ADVISORY COMM. MEETING  
Transportation Demand Management & Mobility Hubs

Discussion of emerging mobility trends and connecting beyond a fixed route system.

Wednesday, May 26, 2021

ADVISORY COMM. MEETING  
Rural to Urban Connections & Transit Supportive Development

Identifying gaps and bridges for the urban to rural mobility divide and strategies to support transit throughout the region.

May 2021: Community Survey

Wednesday, June 9, 2021

ADVISORY COMM. MEETING  
Implementation & Partnerships

Thursday, July 22, 2021

ADVISORY COMM. MEETING  
Draft Recommendations

Feedback on Draft Recommendations



Feedback on Draft Recommendations

Wednesday, September 29, 2021

ADVISORY COMM. MEETING  
Final Recommendations

Wednesday, October 13, 2021

CENTRALINA BOARD OF DELEGATES  
Plan Adoption

Wednesday, October 27, 2021

METROPOLITAN TRANSIT COMMISSION  
Plan Adoption

# Technical Overview

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  - Send all questions and comments through the chat feature.
  - You may choose to disconnect from any VPN or third-party connection sources during the meeting to maintain connectivity and bandwidth.
- This meeting will be recorded and shared with committee members who were unable to attend



# CONNECT Beyond

A Regional Mobility Initiative



March 12, 2021

## Integrated Bus Strategies Meeting #3: Long-Range Interactive Planning Workshop

# Welcome

Jason Wager, Project Manager  
Centralina Regional Council



# Agenda

- Welcome and Introductions
- Upcoming JAC Meeting Overview
- Recap of Meetings 1 & 2
- Mural Voting Follow up from Meeting #2
- Remix Breakout Session (individual)
- Remix Breakout Session (group)
- Report Out
- Wrap Up & Next Steps





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Beyond**

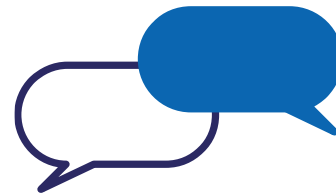
# Meeting Objectives



Update you on the status of the CONNECT Beyond Project



Present overview of upcoming JAC meeting and provide a summary of Integrated Bus Services Strategies Meetings #1 and #2



Facilitate individual fixed route providers Remix session and group Remix session



Review panelist questions for March 24th JAC meeting  
Wrap up and Next steps

# Touchpoints to Date

- 50+ Individual meetings since the project began
- 10 committee meetings
- 8 meetings focused on High Capacity Transit
- Ongoing ad-hoc meetings
- Multiple presentations to area boards and committees





# JAC Meeting Overview

March 24, 2021

Sabrina Colón, HDR

# Integrated Bus Services Strategies

## Joint Advisory Committee Meeting

March 24, 2021

10:00 a.m. - Noon

CONNECT Beyond  
Joint Advisory Committee Meeting:

## Building a Better Bus Network

Wednesday, March 24  
10 a.m. - Noon

**LIVE** on Facebook



**Sam Sargent**  
Deputy Chief of Staff  
Capital Metro (Austin, TX)



**Sandra Freeman**  
Chief Financial Officer  
GoTriangle (Raleigh-Durham, NC)



**Wulf Grote**  
Former Director,  
Capital & Service Development  
Valley Metro (Phoenix, AZ)

# JAC Meeting Topics

- Involvement to date
- Major themes that emerged
- Strengths and Weaknesses
- Preliminary recommendations
- Getting feedback on the preliminary recommendations



# Potential Committee Questions

- From what you've heard, what could apply to this region?
- How would you prioritize 5 themes? (Operational, Technical, Funding, Policy and Interagency Coordination) - poll
- What would you like to see in your community?
- What would work best to meet your community's needs?
- What are your biggest concerns in integrating the bus system?
- What are the benefits of integrated bus systems?



# We need your help

- Actively involved as a technical expert during the breakout groups for the JAC meeting
- Be prepared to share local area knowledge and the CONNECT Beyond engagement to date
- Assist in the development of recommendations for the regional transit vision





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# Meetings #1 and #2 Recap

Kevin Walsh, HDR

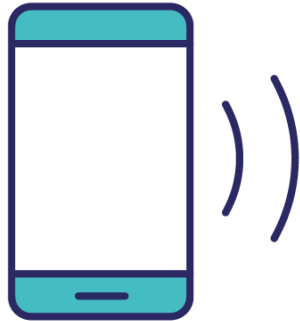


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# Meeting 1

- Interviewed each transit provider and scheduled follow up meetings
- Major themes emerged from the interviews

# Major Themes



Policy

Technology

Operational

Financial

Interagency  
Coordination



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# Meeting 2

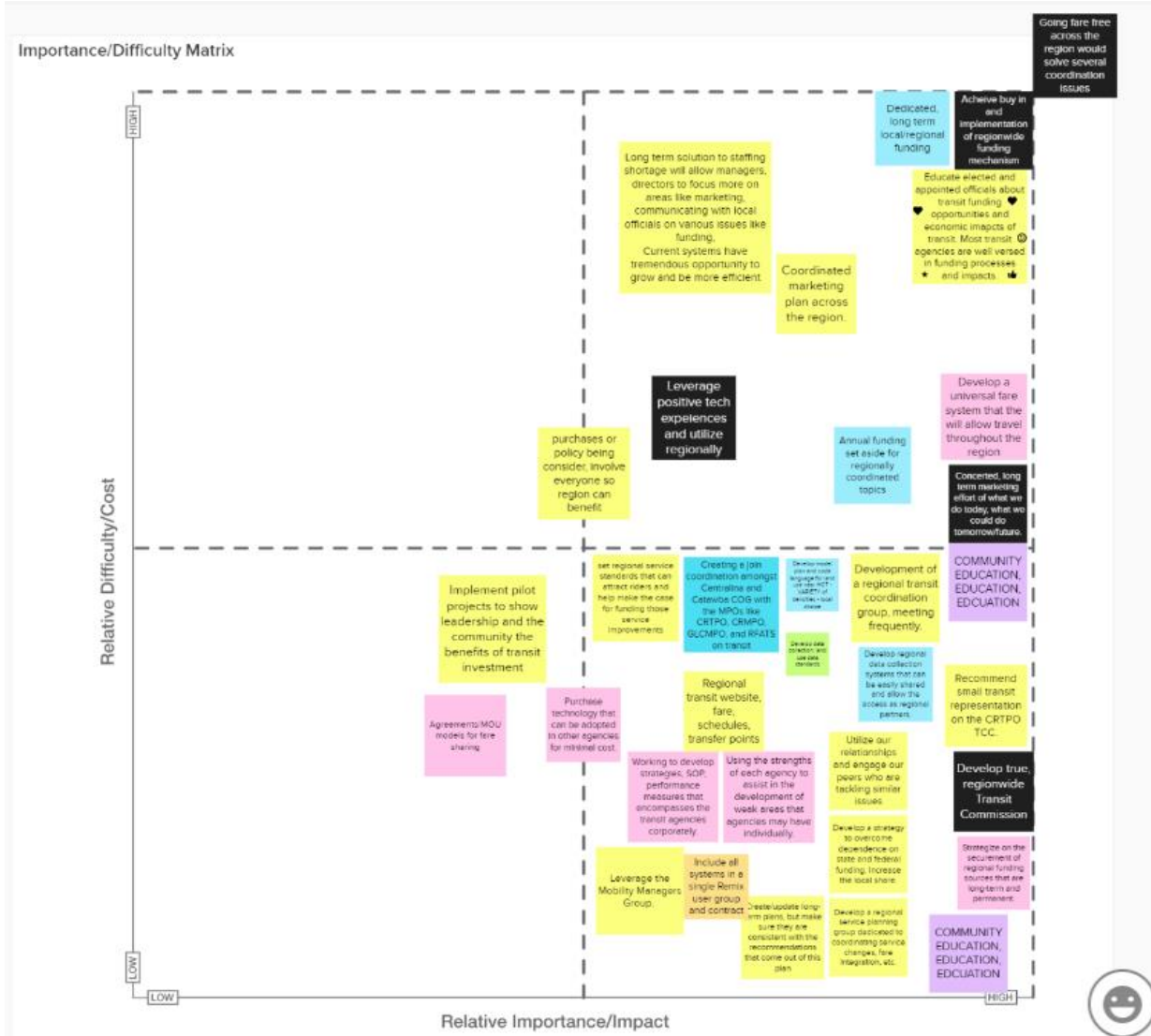
- Facilitated a Mural S.W.O.T. exercise with the entire group
- Focused primarily on the 5 major themes that emerged from the interviews
- Free flow discussion

# Mural Results

## S.W.O.T. Analysis



## Importance/Difficulty Matrix



# Key Takeaways

- Regional coordination, cooperation, and engagement between agencies critical (e.g., Regional Transit Commission)
- Long-term funding and transit planning is one of the biggest challenges
- Education campaigns will be needed to communicate opportunities and impacts (community, elected officials, etc.)
- Create a unified regional fare system and service standards
- Enhance connections and improve travel times to attract choice riders
- Develop tools to enhance the user experience



# Mural Voting

Sabrina Colón, HDR



# Remix Session

Jorge Luna, HDR



# Key Remix Topic Areas

- Route extensions
- Improvements to existing service
  - Level of service (hours of service, frequency, etc.)
- Adding new service
  - Service types, modes, etc.
- Address service gaps (existing and future)
- Adding additional service
- Future system redesigns
- Connecting to our rural providers



# Wrap Up & Next Steps

Jason Wager, Centralina



**CONNECT**  
**Beyond**

# Next Steps














- Develop summary report of findings from all three meetings
- Share report with this group
- Begin the development of recommendations



# CONNECT Beyond

A Regional Mobility Initiative

## 2020-2021 Advisory Committee Meeting Calendar

Evaluate Existing System	Identify High Capacity Transit Corridors		Envision a Total Mobility Network			Develop Implementation Strategies		Final Plan
Purpose, Goals & Vision	Candidate High Capacity Transit Corridors	Recommended High Capacity Transit Corridors	Integrated Bus Service Strategies	Transportation Demand Management & Mobility Hubs	Rural-Urban Connections & Transit Supportive Strategies	Implementation & Partnerships	Draft Recommendations	Final Recommendations
MAY 2020	SEP 2020	JAN 13, 2021	MAR 24, 2021	APR 28, 2021	MAY 26, 2021	JUN 9, 2021	JUL 22, 2021	SEP 29, 2021
<p>Based on your understanding of your community's unique character and needs, help us shape the necessary components of the purpose, goals and vision for CONNECT Beyond.</p>	<p>After careful review of data from across the region we've developed candidate high capacity transit corridors.</p>	<p>Based on all the feedback we received and an initial evaluation of the candidate corridors we have identified the recommended high capacity transit corridors.</p>	 Transit Academy <p>Identifying potential service connections, new service in support of high capacity transit, and strategies to benefit the user experience.</p>	 Transit Academy <p>Discussion of emerging mobility trends and connecting beyond a fixed route system.</p>	 Transit Academy <p>Identifying gaps and bridges for the rural to urban mobility divide and strategies to support transit throughout the region.</p>	 Transit Academy <p>Discussion on implementation strategies, funding opportunities and partnerships to support the strategic vision.</p>	<p>Review preliminary and consolidated results and present draft plan.</p>	<p>The final draft plan will outline the vision for the region. It will include action-oriented strategies.</p>
 <p>Feedback on purpose, goals &amp; vision</p>	 <p>Feedback on candidate corridors</p>	 <p>Acceptance of high capacity transit corridors</p>	 <p>Feedback on strategic direction</p>	 <p>Feedback on strategic direction</p>	 <p>Feedback on strategic direction</p>	 <p>Feedback on strategic direction</p>	 <p>Feedback draft recommendations</p>	 <p>Endorsement of final recommendations</p>



**Thank You**



# Report Out

Kevin Walsh, HDR

## Appendix B: Making a Better Bus Network - Field Observations and Ride Arounds



# **CONNECT Beyond**

A Regional Mobility Initiative

## **Making a Better Bus Network – Field Observations and Ride Arounds**

September 2021





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## Purpose

Transit service quality is not measured solely with data and must be complemented with direct field observations of bus system infrastructure. HDR, through coordination and feedback of fixed route service providers, performed transit ride-arounds and documented field observations to support the CONNECT Beyond study. Observing fixed-route bus operations firsthand led to an enhanced understanding of issues and concerns that were identified from the various technical analyses. The purpose of this report is to provide a summary of the field observations for the fixed route transit providers in the CONNECT Beyond study area and document existing conditions. Due to the COVID-19 pandemic, the project team adjusted their observations approach to be in line with proper safety protocols. Observations were made by shadowing routes from each provider in individual vehicles instead of riding the bus. Pictures of existing conditions and general notes from staff conversations about the conditions at bus stops, transit centers, and maintenance facilities were taken to support the observations.

## Methodology

During the Integrated Bus Service Strategies task working sessions, the Project Team asked for input from each fixed route transit provider in the CONNECT Beyond region. A series of interview questions were asked during the first working session conducted the week of February 8, 2021. These questions provided insight into the performance of each system as well as concerns and opportunities related to route performance, infrastructure, funding, interagency coordination, and long-range planning. The answers to these questions guided the field observations.

A windshield survey and facility tours, along with a short survey of operations and maintenance (O&M) facility conditions, were conducted in the spring of 2021. General observations via images and notes were made for bus stop signage, sidewalk conditions and connectivity, bus shelters, and O&M conditions. Observations are documented below, with additional images from each agency provided in Appendix A.

## Qualitative Review

### Standard Practice

The quality of bus stop signage, adjacent sidewalks, and bus stops and shelters are an important component for the accessibility, safety, and convenience of a transit system.

For systems to be easily navigable, bus stop signs should, at a minimum, include the stop number, routes served, agency website, and a customer service number for people to get



schedule or other information if needed. Ideally, to better serve the rider, bus stop signs should also include schedule information, a route map, and agency website information. A system map should be provided at shelters and key transfer points as well.

Sidewalk conditions and connectivity are another essential component needed to make a system easily navigable, especially for patrons with a disability or who require a mobility device. Bus stops should be placed at locations where the pad can connect to an adjacent sidewalk; this is beneficial to all users from a safety and convenience standpoint but is particularly important for accessibility and meeting Americans with Disabilities Act (ADA) requirements. Sidewalks should also connect to nearby destinations, neighborhoods, or facilities. Notably; however, sidewalk installation and maintenance are not the responsibility of transit agencies. Transit agencies should work closely with public works and planning departments to identify and prioritize sidewalk needs to support transit and through land redevelopment processes to ensure proper infrastructure is constructed.

As the gateway to the transit system, bus stops and shelters are the first experience transit users have with the network. In addition to informative signage, bus stops and shelters should have an ADA compliant pad for bus ramp deployment. Stop-level ridership data should be used to identify high ridership locations where a shelter, bench, bike rack, or trash receptacle may be warranted. A bus shelter is a great amenity for transit riders because it provides protection from the elements and allows the agency to share information with the user. Bus shelters should include a bench and detailed signage such a system map. Ideally, stops and shelters are also placed near streetlights. Where streetlighting is not available, bus shelters should be equipped with lighting to increase visibility and safety.

Finally, bus O&M facilities vary drastically based on the fleet size of an agency. Many small to mid-size agencies operate out of a town, city, or county public works facility, while larger agencies typically have one or more dedicated transit facilities. Often a public works department facility can support maintenance of transit vehicles in some capacity, though outsourcing transit vehicle maintenance staff to a third-party contractor is common practice. When possible, the operations and maintenance of vehicles should be handled at the same site to save on miles traveled and time to relocate a bus specifically for maintenance. Ideal conditions for O&M facilities is to have the administration facility integrated into the site as well. Facilities should be meet all federal, state, and local codes and retain a State of Good Repair.

**Table 1** provides a summary of the minimum and ideal conditions for bus stop signs, sidewalk connectivity, and stops/shelters.



**TABLE 1: MINIMUM AND IDEAL CONDITIONS FOR TRANSIT RELATED INFRASTRUCTURE**

	<b>Baseline Condition</b>	<b>Ideal Conditions</b>
<b>Bus stop signs</b>	-Stop number -Routes served -Customer service number -Agency URL or QR code	-Route schedule -Route map -System map (at shelters)
<b>Sidewalk Connectivity</b>	-Bus stop located in a spot where the sidewalk is connected to the bus pad	-Sidewalk is connected to adjacent facilities -Safety elements present for pedestrian roadway crossing
<b>Shelters</b>	-ADA compliant bus pad -Bus stop signage -Bench	-System map -Lighting -Trash receptacle -Bike rack
<b>Operations and Maintenance Facility</b>	-Maintenance facilities on-site -Effective facility layout (circulation, storage, maintenance) -Proper bay sizing -Fuel islands -Safe ingress and egress for vehicles -Compliant with Federal/State/Local codes -State of Good Repair	-Operator breakroom -Joint operations and maintenance facility with administration offices -Expansion capabilities -Strategic location based on network design

Note: “Baseline Conditions” are needed to achieve “Ideal Conditions.”

## CONNECT Beyond Agencies Overview

The quality of signage, sidewalk connectivity, and stops/shelters varied by (and sometimes within) each agency. The following observations about the conditions of those elements were made for the CONNECT Beyond fixed route transit providers.

### Signage

Of the signage surveyed:

- Signage was not consistent in placement or content
- Outside of the main routes, many bus stop signs lacked indication of which routes the stop served
- Several fixed route providers had an unidentified phone number on the bus stop sign
- Many agencies provided a long URL that would not be easy for users to enter into a phone or digital device





## Sidewalk Connectivity

Of the routes surveyed:

- Stops in areas outside of transit hubs and downtown locations had no sidewalks or sidewalks in poor condition
- Many stops located near sidewalks were missing a bus pad
- Many bus pads were not connected to a sidewalk or were connected to a sidewalk that did not provide connectivity for the surrounding community

## Bus Shelters

Of the shelters surveyed:

- Shelters at transit hubs have the most amenities to make a bus transfer comfortable
- Most shelters appear to meet ADA standards
- All provided a bench, and most provided a trash receptacle
- Most had little to no pedestrian-level lighting
- Many bus pads were not connected to a sidewalk or were connected to a sidewalk that did not provide connectivity for the surrounding community

## Operations and Maintenance Facilities

Of the O&M facilities surveyed:

- Half of all agencies reported aging facilities in need of repairs, including new roofs, heating ventilation, and air conditioning (HVAC) replacement, and general upgrades
- Half of all facilities are at over 90 percent vehicle capacity (i.e., have very little room to add more transit vehicles to improve service)
- Two-thirds of all agencies reported inadequate accommodations for operators and staff

The following section provides details on the conditions of transit infrastructure by agency.

## Recommendations

### Bus Stop Signage

It is recommended CONNECT Beyond agencies develop signage that, at a minimum, contains a stop number, names and numbers of the routes served, an agency URL/QR code, and a customer service number. The URL should be concise and easy for users to enter on a mobile device. Alternatively, a QR code would serve the same purposes and be a simple way for users to navigate the information by removing the need to enter a URL. A route or system map, as well as a schedule, should be provided if there is space, and especially at key transfer points.

Beyond bus stop signage, agencies should work to implement real time bus tracking and provide a transit-friendly mobile app or website for users to get schedule information and track the next bus. Electronic sources of information, such as those just noted, help reduce the need



of field staff maintenance costs if a route schedule or alignment is modified necessitating a change in signage.

### **Sidewalk Conditions and Connectivity**

Land use and transportation planning evolve in tandem with one another. Where density exists, many transportation options are necessary to get everyone where they want and need to go. In more rural areas, while mobility options are still essential, the infrastructure to support multiple transportation options is often limited. Many routes in the CONNECT Beyond study area provide service to rural communities where sidewalks don't exist because rural, low-density, single-family residential lots often don't necessitate, support, or include investment in pedestrian infrastructure. There are two potential strategies to overcome this obstacle. The first is for agencies to reevaluate the transit network for opportunities to use corridors where sidewalks do exist. Of course, this should be done in conjunction with a ridership analysis to ensure ridership is maintained or improved by any changes to network design. The second approach to improving sidewalk connectivity is for the transit agency to work with the city's Public Works Department and the State Department of Transportation to identify and prioritize sidewalk improvement needs. Working with these local and state agencies can help with strategically implementing and maintaining infrastructure.

Additionally, each transit agency should review their bus stops and develop a prioritization list to get all stops up to ADA standards. As funding is limited, conducting a systematic evaluation of stops will help identify and prioritize an ongoing list of improvements to address.

### **Bus Shelters**

It is recommended that CONNECT Beyond agencies conduct an analysis of ridership by stop and prioritize placing (or relocating) shelters to high ridership stops. Thresholds can be set to determine which stops get which amenities, thereby ensuring investments in infrastructure benefit the most users. Investing in shelters and amenities will improve the user experience and customer comfort. The stop analysis should be conducted regularly to monitor growth or change in rider patterns. Having regularly updated stop ridership data will also make it easy to site new amenities should funding be available.

As noted above, shelters should at a minimum include an ADA compliant bus pad, signage, and a bench. Shelters should also ideally have a route or system map, trash receptacle, bike racks, and pedestrian lighting (or be placed near existing lighting).

### **Operations and Maintenance Facilities**

The O&M facilities for CONNECT Beyond agencies are relatively split; half of the agencies have a dedicated facility for transit vehicles, the other half operate and conduct maintenance out of a town, city, or county public works department facility. O&M facilities for agencies in both scenarios were at or close to capacity; therefore, a primary recommendation for CONNECT



Beyond fixed-route providers is to develop short-, mid-, and long-term expansion plans to accommodate transit growth appropriate to their system. Any expansion or development of new facilities should focus on effective circulation, safety, meet all federal, state, and local codes, and have maintenance capabilities on site. Agencies should also develop plans to maintain a State of Good Repair at their facilities.

### **Transit Amenity Guidelines**

It is recommended the CONNECT Beyond agencies work together to develop regional amenity guidelines for transit facilities. The guidelines would identify shared features and content for signage, pad with, placement of trash receptacles, etc. throughout the region. The guidelines could also include warrants for when to place or upgrade certain amenities such as shelters, bike racks, and real time travel information. Finally, the guidelines could contain a mechanism for a shared purchasing agreement for agencies to use to acquire those amenities.

## **Field Observations**

### **CATS**

The Charlotte Area Transit System (CATS) serves the greater Charlotte region, including Mecklenburg County, the City of Charlotte, and the six towns surrounding Charlotte (Davidson, Cornelius, Huntersville, Matthews, Mint Hill, and Pineville). As of 2020, the agency operates over 50 fixed bus routes, including 17 express bus routes, Village Rider town shuttles, light rail, streetcar, demand response, and vanpool services.

On April 20 and May 10, 2021, field observations and photos were taken for the Village Rider, which is a service provided by CATS for north Mecklenburg County (Davidson, Cornelius, and Huntersville). The field visit started in Huntersville and ended in Davidson.

### **Bus Stop Signage**

CATS Village Rider bus stop signs generally include the baseline information necessary for passengers to navigate a transit network. Bus stop signs include the name and number of the routes the stop serves, as well as a service schedule. Bus stop signs also include an agency telephone number, which could be labeled to provide clarity on whether the telephone number is a customer service number or a general agency number. No agency URL or QR code is provided. The schedule information is in very small font size; larger schedule signs would be beneficial to users. Larger signs could also include a route or system map to improve wayfinding. **Figure 1** and **Figure 2** provide examples of bus stop signs in the CATS network.



FIGURE 1: VILLAGE RIDER BUS STOP SIGN IN DOWNTOWN DAVIDSON

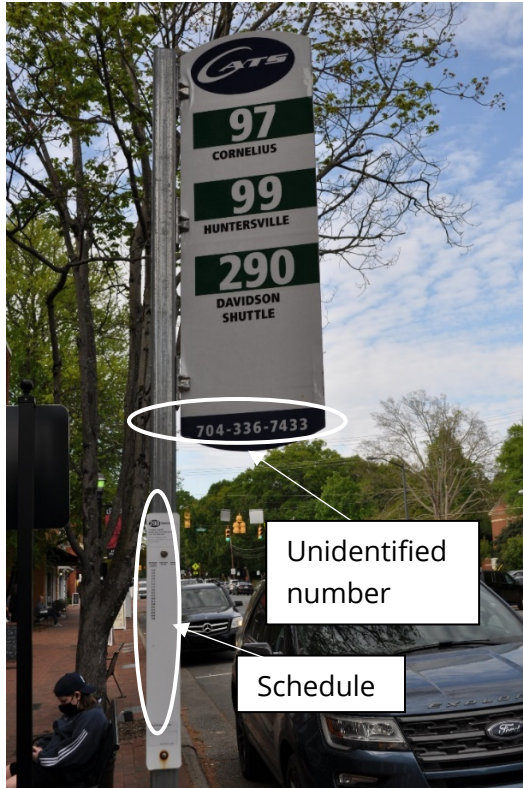


FIGURE 2: BUS STOP SIGN AT HUNTERSVILLE GATEWAY PARK AND RIDE





### Sidewalk Conditions and Connectivity

Throughout large stretches of the CATS Village Rider service area, sidewalk infrastructure is limited or non-existent. Bus stops are often placed in grassy areas that are not necessarily level or accessible. The absence of sidewalk infrastructure significantly reduces customer access, convenience, and safety. It is also particularly limiting for individuals requiring mobility devices (e.g., wheelchair), as there is no bus pad for a bus ramp to be deployed, nor sidewalk to access the stop even if there was a bus pad. Where sidewalks are available, bus stops are often missing a dedicated bus pad, or landscaping or other street utilities obstruct the loading zone which presents the same accessibility challenges as if there were no sidewalk at all. **Figure 3** highlights the lack of sidewalk infrastructure along the Village Rider Route. **Figure 4, Figure 5, and Figure 6** are examples of obstructed and non-ADA accessible loading zones.

**FIGURE 3: VILLAGER RIDER BUS STOP WITH NO SIDEWALK IN HUNTERSVILLE**

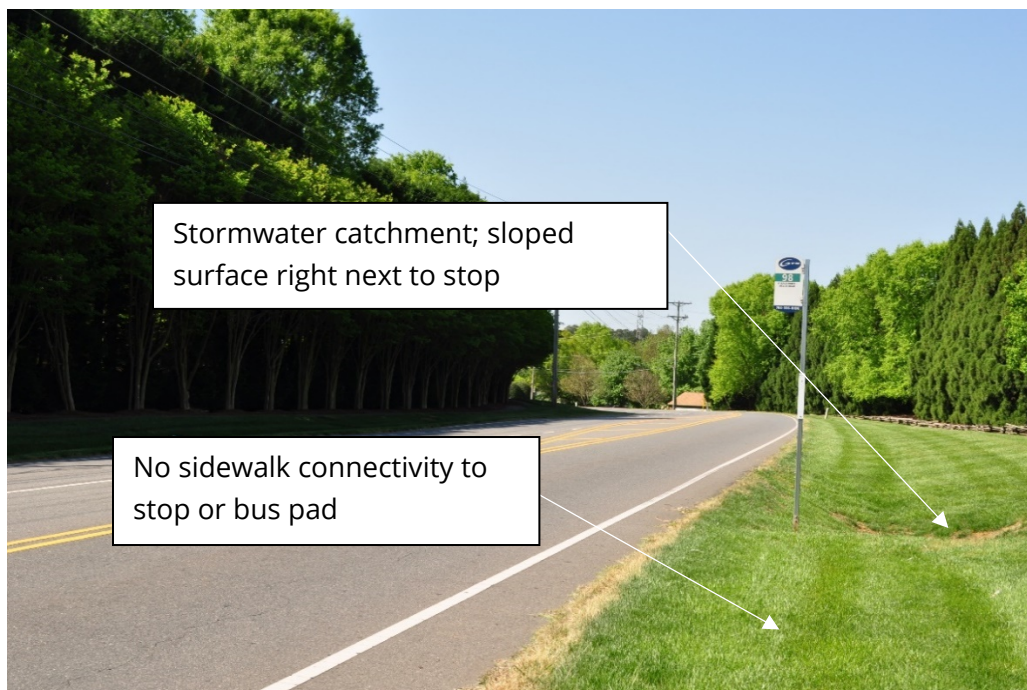




FIGURE 4: VILLAGE RIDER BUS STOP WITH OBSTRUCTED LOADING ZONE IN DOWNTOWN DAVIDSON



FIGURE 5: VILLAGE RIDER BUS STOP WITH OBSTRUCTED LOADING ZONE IN DOWNTOWN DAVIDSON





FIGURE 6: BUS STOP WITHOUT BUS PAD IN HUNTERSVILLE ALONG GILEAD ROAD



### Bus Shelters

Most of the bus stops throughout the CATS transit system do not have a bus shelter. Where shelters were available, the following infrastructure was generally observed: a bench, trash receptacle, route/agency signage, and bike racks. As noted in the bus signage section, bus schedules and route/system information could be printed on larger signs within the shelters to enhance wayfinding. Bus stops with shelters appear to be ADA compliant with clear loading



zones, as depicted in **Figure 7**. Bus operator facilities are also available at the park-and-ride pictured in **Figure 8**.

**FIGURE 7: BUS SHELTERS AT NORTHLAKE MALL PARK AND RIDE**



**FIGURE 8: BUS SHELTERS AT HUNTERSVILLE NORTHCROSS PARK AND RIDE**







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### **Operations and Maintenance Facility**

CATS has four dedicated O&M facilities, two are bus-specific facilities, and two are for the rail system. The CATS fleet is comprised of 304 buses and 48 rail vehicles (light rail and streetcar). Four more rail vehicles will be delivered by the end of 2021 for a total of 52 vehicles. Both rail facilities are at 100 percent capacity. The Tryon bus facility is at 96 percent capacity, with room for approximately 20 more vehicles. The Davidson bus facility is at 85 percent capacity and has room for about 15-20 more vehicles if the existing cutaway bus fleet is moved to a different nearby storage lot.

Though at capacity, if the Charlotte MOVES initiative is approved and the CATS' Envision My Ride service improvement plan is fully implemented, the agency will require approximately an additional 100 new buses. CATS fleet will also need to grow as they begin the process of converting to 100 percent battery-electric buses (BEBs) by 2030. Due to the charging needs of BEBs, this could potentially require a near doubling of the fleet. At least one new facility will be needed to handle the growing and transitioning fleet; however, CATS envisions a decentralization of their facilities with satellite maintenance facilities throughout the service area. The exact number and locations of satellite facilities that would be required to operate the system are unknown at this time. Still, northeast and far southeast Charlotte have been initially identified as areas to explore more closely. CATS does not plan to use in-line charging stations for their BEBs.

The growth of the system, both in terms of service and operating facilities, will require significant human capital augmentation. Generally, CATS needs one mechanic for every four vehicles, one full-time equivalent (FTE) cleaner for every 17 vehicles, and one supervisor for every 12 operators. At this time, the full staffing plan for the Envision My Ride program, including operators and additional administration staff, has not been forecasted. The administration and breakroom facilities at the O&M are currently outdated and insufficient for existing employees and will need to be expanded and modernized to accommodate growth. The Operations Communication Center (OCC) is also in need of significant technological upgrades. No near-, mid-, or long-term O&M facility improvements or expansions are currently planned.

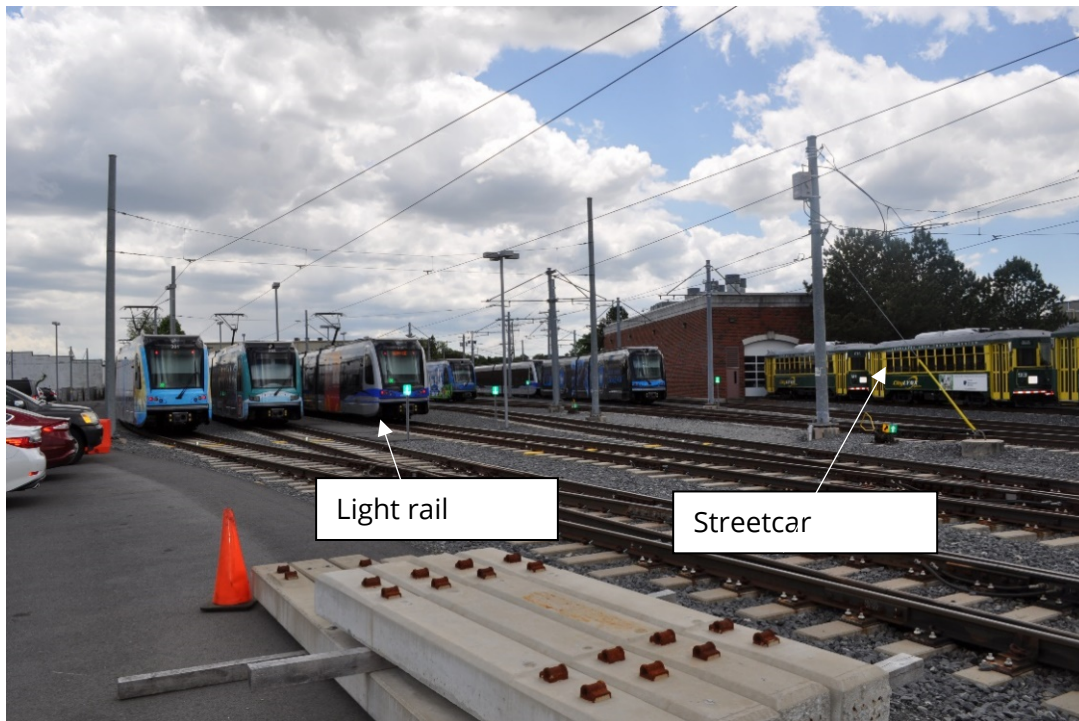


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FIGURE 9: CATS O&M FACILITY BUS YARD



FIGURE 10: CATS O&M FACILITY RAIL YARD



Light rail

Streetcar



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FIGURE 11: CATS OPERATIONS AND ADMINISTRATIVE BUILDING



FIGURE 12: CATS MAINTENANCE SHOP





## City of Gastonia

The City of Gastonia provides both fixed route and paratransit services. All six Gastonia Transit fixed route services begin and end at the City's downtown bus terminal, Bradley Station. The Gastonia Transit ADA van service operates curb-to-curb van service for passengers who cannot utilize the fixed route bus system due to a physical or mental disability.<sup>1</sup>

On March 23, 2021, field observations and photos were taken for select routes for the City of Gastonia Transit. The field visit started in east Gastonia on the Pink Line near "The Shops at Franking Square." Conditions were documented along the Green, Pink, Yellow, Red, Blue, and Brown lines. The highest ridership route in the system is the Pink Line, the lowest ridership route in the system is the Yellow Line.

## Bus Stop Signage

Figure 13 depicts a typical bus stop sign used throughout the City of Gastonia bus network system. Based on field observations, bus stop signs throughout the network were consistent in size and design. The signs include an unidentified telephone number with no area code. Signs do not include information about the routes the stop serves, their destinations, route schedule(s), or information about the agency's website. Figure 14 provides an example of where the bus stop sign could be easily overlooked by the numerous larger signs on the same signpost.

**FIGURE 13: GASTONIA TRANSIT BUS STOP SIGN NEAR THE INTERSECTION OF GASTON MALL DRIVE AND FRANKLIN BOULEVARD**



<sup>1</sup> <https://www.cityofgastonia.com/transportation-2.html>

FIGURE 14: GASTONIA BUS STOP SIGN AT THE NORTHEAST CORNER OF US 74 / US 29 AND BROAD STREET



### Sidewalk Conditions and Connectivity

Generally, the sidewalk conditions along the routes observed were either missing or in poor condition. Figure 15 depicts a stop located at the US 74/US 29 and Broad Street, placed on a pole surrounded by bushes and lacking both a bus pad and sidewalk connectivity. A similar environment is depicted in Figure 16, highlighting the lack of sidewalk infrastructure on a major thoroughfare through town. The absence of sidewalks and bus pads creates significant accessibility challenges for all users, especially individuals with physical disabilities. Where sidewalks exist, they appear to be in poor condition with visible maintenance needs and again, without a bus pad, as depicted in Figure 17.



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FIGURE 15: GASTONIA TRANSIT BUS STOP NEAR THE LOWE'S AT THE SHOPS AT FRANKLIN SQUARE

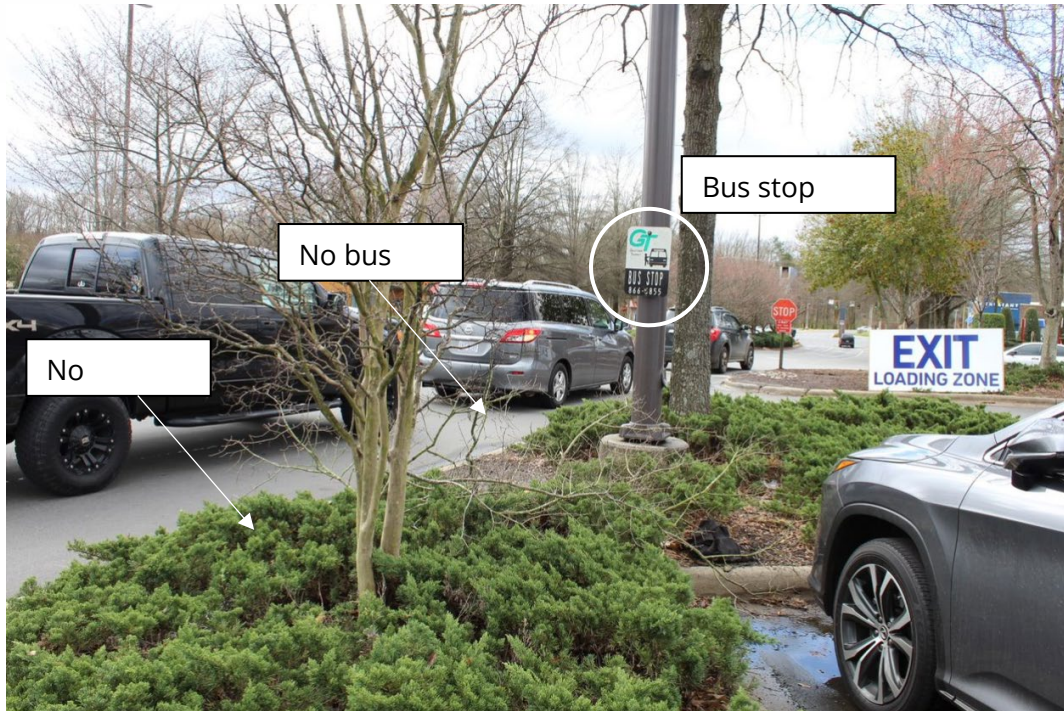


FIGURE 16: GASTONIA TRANSIT BUS STOP AT THE INTERSECTION OF US 29/US 74 AND GREEN DRIVE



FIGURE 17: GASTONIA TRANSIT BUS STOP



### Bus Shelters

Most of the bus stops throughout the City of Gastonia transit system do not have bus shelters. Figure 18 and Figure 19 show two bus shelters observed during the field tour. The shelter infrastructure is consistent and minimal: a bench is provided at both; a trash receptacle is provided behind the shelter. Neither shelter includes additional information about the routes served, timetables, the agency website, a customer service number, or bicycle facilities.

Due to the large setback from the main thoroughfare, it is hard to tell how buses serve the shelter. The slope between the shelter and sidewalk also appears greater than ADA standards, making it difficult and less safe for the bus to deploy the ADA ramp needed for riders using mobility devices.



FIGURE 18: GASTONIA TRANSIT BUS SHELTER NEAR THE INTERSECTION OF US 29 / US 74 AND ECHO LANE







FIGURE 19: GASTONIA TRANSIT BUS SHELTER ALONG BRADFORD HEIGHTS ROAD



### Operations and Maintenance Facility

The City of Gastonia has one O&M facility located at the City of Gastonia Public Works Fleet Maintenance Facility. The facility can hold six vehicles in the shop and 16 vehicles (eight buses, five vans, three support vehicles) in the yard. The facility is at 70 percent capacity.

The facility is need of a new roof, expansion, and general upgrades such as bathrooms and technology. The City is not planning to expand or upgrade the facility at this time, but they are currently conducting an evaluation of the need for such upgrades. Figure 20 and Figure 21 depict the City of Gastonia Public Works facility where the vehicles are stored and maintained.



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FIGURE 20: CITY OF GASTONIA OPERATIONS AND MAINTENANCE FACILITY



FIGURE 21: CITY OF GASTONIA OPERATIONS AND MAINTENANCE FACILITY





## CONNECT Beyond

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### City of Salisbury Transit

The City of Salisbury Transit operates fixed route services in the City and adjacent communities of Spencer and East Spencer.<sup>2</sup> Salisbury Transit System operates three bus fixed routes and contracts with Rowan Transit System for demand response services for paratransit trips within the required areas of the system.<sup>3</sup> Service connections are available to Mid-Carolina Regional Airport, Greyhound bus, Amtrak, and Concord Kannapolis Rider.<sup>4</sup> Through June 2021, City of Salisbury Transit connected to the Rowan Express, however, the service was discontinued by Rowan County. The connection provided a critical link for area residents and it is recommended this service be reinstated.

On March 23, 2021, field observations and photos were taken for select routes for the City of Salisbury Transit. The field visit started in downtown Salisbury near the Amtrak station and continued throughout the City of Salisbury. Conditions were documented along Routes 1, 2, and 3.

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<sup>2</sup> Services assumed to have started in 2013 as NTD does not report data prior to that year.

<sup>3</sup> Demand response service information is reported by Rowan Transit System.

<sup>4</sup> <https://salisburync.gov/Portals/0/Documents/Transit/Salisbury%20Transit%20Master%20Plan.pdf>

<sup>4</sup> <https://salisburync.gov/Government/Transit>



## Bus Stop Signage

Figure 22 represents what most bus stop signs look like throughout the system. The sign includes a symbol of a bus and the text “Bus Stop” but does not include any information pertaining to the routes served, schedule, or agency contact information. The sign shown in Figure 23 represents what other signs look like. This sign includes information related to the route, including where the route travels, destinations it serves, customer service information, and the agency’s web page.

**FIGURE 22: SALISBURY TRANSIT STANDARD BUS STOP SIGN**



**FIGURE 23: SALISBURY ENHANCED BUS STOP SIGN**





### Sidewalk Conditions and Connectivity

Generally, the sidewalk conditions along the routes observed were in good condition, although the neighborhoods are older and the presence of sidewalks is somewhat inconsistent.

Figure 24 shows a bus stop and the sidewalk conditions along Horah Street where Routes 1 and 2 intersect. The sidewalk in this location appeared to be in good condition but the bus stop lacks a bus pad, which makes the deployment of ADA bus ramps more difficult and less safe.

**FIGURE 24: BUS STOP AND SIDEWALK CONDITIONS AT HORAH ST./CRAIGE ST. INTERSECTION**



Figure 25 shows the bus stop outside the College Park Apartments, and although there are sidewalks at the bus stop, there are no sidewalks beyond ~10 feet of the stop. Though the sidewalk and bus pad appear to be in good condition, it seems there may be some deterioration occurring where the ramp and roadway meet, which may make it challenging for those that are physically impaired to use the ramp. A sidewalk is present on the opposite side of the road, as shown in Figure 26. Figure 26 also shows there is an unprotected crosswalk for pedestrians; given the posted speed limit, limited visibility on the road, and lack of street lighting, it may be unsafe for the user to cross the road at this location.



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FIGURE 25: BUS STOP AND SIDEWALK CONDITIONS AT THE COLLEGE PARK APARTMENTS



FIGURE 26: BUS STOP AND SIDEWALK CONDITIONS AT THE COLLEGE PARK APARTMENTS





## Bus Shelters

Like many other agencies, most of the bus stops throughout the transit system for the City of Salisbury do not have bus shelters; however, the shelters that exist are in good condition. For comparison purposes, Figure 27 and Figure 28 show the difference between two bus shelters observed during the field tour. The bus shelter in Figure 27 has a bench and trash receptacle, but there isn't additional information about the route or the transit system in general. The shelter in Figure 28 has two benches, a trash receptacle, a large system map, and within the shelter there is information posted about COVID-19 and the rules related to wearing masks. The shelter in Figure 28 is part of the City's "Adopt a Shelter" program and was adopted by the Civitan Club of Salisbury. Regardless, it should serve as a good example of a shelter to be emulated at other key destinations throughout the City of Salisbury.

**FIGURE 27: BUS SHELTER AT THE COLLEGE PARK APARTMENTS**



**FIGURE 28: BUS SHELTER AT ALEXANDER POINTE**





### **Operations and Maintenance Facility**

The City of Salisbury has one dedicated transit facility located approximately one mile from downtown Salisbury. The facility includes an administration office, parts storage room, fleet garage with three maintenance bays, and a wash bay. There is also a multi-purpose room which serves as the mechanics office, breakroom, service staff workspace, and ADA coordinator workspace. The facility has the capacity to store and maintain 15 vehicles; it is currently at 67 percent capacity (Salisbury has six fixed route vehicles, three ADA paratransit vans, and one service vehicle).

Though the facility has capacity to handle more vehicles, the administration portion of the building is inadequate for the staff. Most notably there is an insufficient amount of dedicated workspace for employees. Two other key improvements are the need for updated HVAC and roof repairs. At present, there are no plans for expanding or upgrading the facility, but there are plans to transition the nearby Amtrak station, located in downtown Salisbury, to a multimodal transportation hub which could lend more space to transit operations. Figure 29 depicts the City of Salisbury's transit O&M facility.

**FIGURE 29: CITY OF SALISBURY TRANSIT OPERATIONS AND MAINTENANCE FACILITY**







## ICATS

Iredell County Area Transportation System (ICATS) is a community transportation program serving both community service agencies and the general public. ICATS operates as a ride-sharing system that enables routes and schedules to be structured to transport multiple passengers to multiple destinations. Services are provided through five fixed routes, subscription routes, and demand response service trips. The fixed loops or shuttle services have designated stops but can deviate to accommodate the needs of their passengers.<sup>5</sup> Express bus route service began in 2017 and provides connection to CATS routes.

On March 23, 2021, field observations and photos were taken for select ICATS routes. The field visit started in Mooresville at Exit 36 following the Mooresville Main bus route. Conditions were observed along the Mooresville Main, the Community Connection and the Statesville Bloom. Field observations were made to understand the quality of infrastructure available to system users.

### Bus Stop Signage

Bus stop signs for ICATS include the stop number, bus route name, route schedule, and agency URL. While most of the information is clear, the agency URL provided for users to access additional stop time and route information is printed in tiny font that is difficult to read. No customer service number is provided. Notably, bus stop signs are not present at all active bus stops, which can be confusing for customers. Figure 30 is an example of ICATS bus stop signage.

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<sup>5</sup> <https://www.co.iredell.nc.us/DocumentCenter/View/486/Iredell-County-Comprehensive-Transportation-Plans-PDF?bidId=>

FIGURE 30: ICATS BUS STOP SIGN AT MOORESVILLE (EXIT 36)



### Sidewalk Condition and Connectivity

Bus stops in the ICATS transit network are generally placed near sidewalks, though bus pads are not always present to provide the connection between sidewalk and curb, as demonstrated in Figure 31. Bus pads are necessary to meet national ADA accessibility standards, but help improve access for the general public as well. Figure 32 is an example of a bus stop with a clear loading zone and sidewalk connectivity; the stop may not fully meet today's national ADA standards, but the clear loading zone likely makes it feasible to safely deploy an ADA ramp.



FIGURE 31: BUS STOP MISSING A BUS PAD AT MOORESEVILLE (EXIT 36)





FIGURE 32: BUS STOP WITH CLEAR LOADING ZONE AND SIDEWALK CONNECTIVITY IN DOWNTOWN MOORESVILLE



### Bus Shelters

Bus shelters in the ICATS system contain the same signage as the rest of the network. No additional route or system maps are provided. The shelters include a bench; sometimes a trash receptacle is available. Lighting and bike racks are not provided. Bus shelters include an ADA-compliant bus pad, though not always connected to a sidewalk, as depicted in Figure 33.

FIGURE 33: MOORESVILLE MAIN BUS SHELTER AT THE YMCA





### **Operations and Maintenance Facility**

ICATS has one dedicated operations facility. ICATS has access to the Iredell County vehicle maintenance garage and occasionally uses third party contractors for maintenance that cannot be facilitated at their operations site. The ICATS operations facility has the capacity to store 29 transit vehicles; the agency currently has 10 demand response vans, 11 demand response cutaway buses, and seven fixed route buses. As such, the ICATS O&M facility is at 97 percent capacity. Figure 34 depicts the ICATS operations facility.

A significant challenge faced by ICATS is the absence of a proper maintenance facility at their operations site. Additionally, as noted, the operations site is at fully capacity; a larger site is needed for system expansion. The operations site is also not located in an ideal spot given the service area and it is not accessible by transit or other mobility options, except automobile, for those working at the site. Due to these restrictions, ICATS is currently conducting a feasibility study for a new transit facility in a more transit-conductive location. ICATS hopes to secure a new location and facility within the next three years.

**FIGURE 34: ICATS OPERATIONS FACILITY**





## My Ride

The City of Rock Hill in York County, South Carolina partnered with Winthrop University, Piedmont Medical Center, and Family Trust Federal Credit Union, to debut a new fixed route transit system branded as My Ride Rock Hill, on July 1, 2019. The fare-free service operates four fixed routes.

On March 23, 2021, field observations and photos were taken for select My Ride routes. The field visit started in east Rock Hill near US 21 and Dunkins Ferry Road. Conditions were documented along the route My Ride routes: Blue, Green, Yellow and Red.

## Bus Stop Signage

Figure 35 depicts a typical bus stop sign used for My Ride bus stops. Bus stop signs throughout the network are consistent in size, design, and content. The signs include information about the routes the stop serves, stop ID number, a customer service number and the agency's website. The information provided on the sign works seamlessly with the information found on the agency's website.

**FIGURE 35: MY RIDE BUS STOP SIGN AT THE DOWNTOWN HUB NEAR LAUREL STREET AND PEACHTREE STREET**





### Sidewalk Conditions and Connectivity

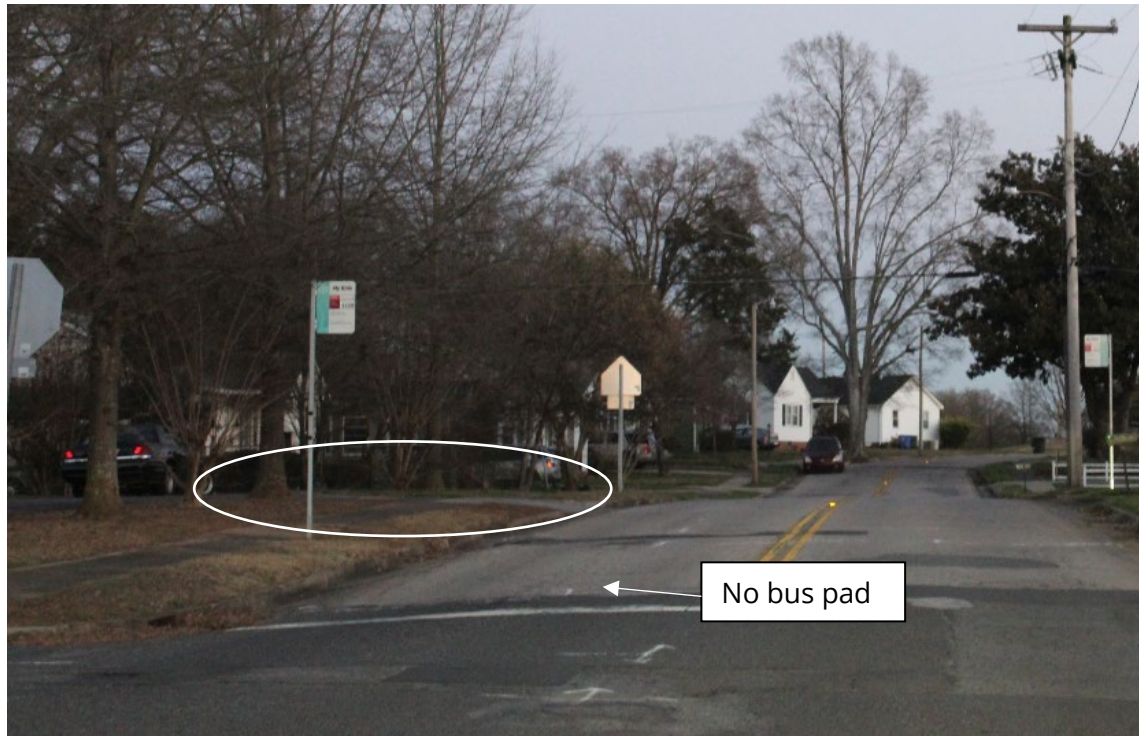
Sidewalks in the corridors observed were in fair to good condition. Bus pads were not consistently provided at bus stops, and where they are provided, they tend to be small and likely not up to ADA standards. As noted, the absence of a bus pad at stops limits ADA accessibility. Figure 36 depicts a My Ride bus stop with appropriate sidewalk connectivity and a small bus pad. Figure 37 provides an example of a bus stop without a bus pad.

**FIGURE 36: MY RIDE BUS STOP AT CHERRY ROAD AND CRANFORD STREET**





FIGURE 37: MY RIDE BUS STOP ALONG THE RED ROUTE



### Bus Shelters

Shelters in the My Ride system include signs with full schedules for the routes the stop serves, agency website and customer service number information, a trash receptacle, and a cigarette receptacle. Figure 38 shows a My Ride shelter at the Downtown Hub. Notably, throughout the network, the open-side of the shelter does not face the street, which may make it difficult for bus operators to see passengers waiting at the stop.





FIGURE 38: MY RIDE BUS SHELTER AT THE DOWNTOWN HUB



### Operations and Maintenance Facility

My Ride utilizes the City of Rock Hill's Operations Center for O&M activities, which is shared with many other City departments. My Ride has seven fixed route buses and three paratransit vans; the facility is currently setup to accommodate a total of 10 fixed route buses and approximately four more smaller vehicles such as paratransit vans. My Ride plans to purchase three more fixed route buses and two more paratransit vans in fiscal year 2022. The Operations Center has capacity to accommodate the additional vehicles but is nearing full capacity. The City has started the process of expanding the facility, which will include 11 acres dedicated to transit. The City is also actively creating a new transit hub as part of a parking garage near the existing hub on Laurel St. The new transit hub will house offices and dispatch until the expansion of the Operations Center is complete. The facility is expected to be operational in late 2021 or early 2022. The existing and future transit hub and Operations Center are both centrally located to downtown Rock Hill.

### Rider Transit

On March 22, 2021, field observations and photos were taken for select routes for Rider Transit. Rider has provided local fixed route service in Concord and Kannapolis since 2004, as well as



federally mandated complementary Americans with Disabilities Act (ADA) paratransit services (contracted to a private company). Rider's fixed route bus service includes seven local routes and the Concord Charlotte Express (CCX), a regional express route that connects passengers traveling from Cabarrus County to the greater Charlotte metropolitan area.

On March 23, 2021, field observations and photos were taken for select Rider Transit routes. The field visit started at the Transit Center and continued throughout the Rider Transit service area. Conditions were documented along the Brown, Blue, Purple and Orange routes.

### Bus Stop Signage

Bus route signage was consistent throughout all routes, with the route name being clearly identified on each sign. As shown in Figure 39, a typical bus stop sign includes the route name/color, Rider's web page URL, and a phone number to the transit center. The sign also includes information related to the route, including a route map, the inbound and outbound time points, and the destinations it serves.

**FIGURE 39: TYPICAL RIDER TRANSIT BUS STOP SIGN**





### Sidewalk Conditions and Connectivity

Sidewalk conditions and connectivity throughout the Rider service area were inconsistent. Figure 40 shows a bus stop for the Brown Route at the intersection of S Main Street and Springway Drive. Many bus stops include a concrete pad, but lack the supporting infrastructure, such as sidewalks and lighting, making it difficult for users to easily access the bus stop. Figure 41 shows a bus stop along the Blue Route at the intersection of S. Canon Boulevard and Delane Street. Similar to the stop shown in Figure 40, this bus stop may have a place where people can stand, but it has limited accessibility and low safety, as it is wedged between a driveway and intersection.

**FIGURE 40: BUS STOP ALONG BROWN ROUTE**



**FIGURE 41: BUS STOP CONDITIONS ALONG THE BLUE LINE AT DELANE ST./S. CANON BLVD.**

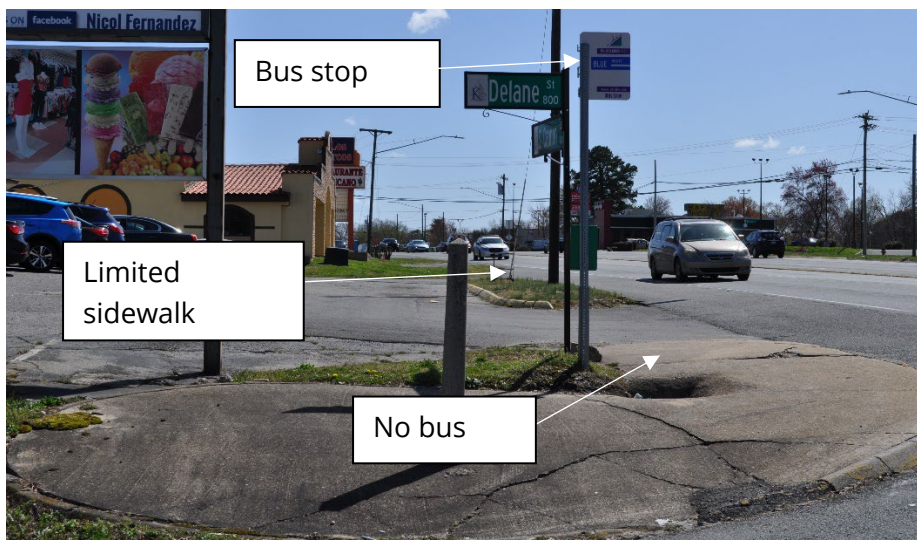




Figure 42 illustrates a good example of how a sidewalk can be designed to allow for physically challenged or wheelchair bound individuals to access a bus stop. However, debris can also be seen building up on the ramp, so even if someone wanted to use the ramp and they were in a wheelchair, it might be challenging for them to do so. Additionally, there are no sidewalks that lead up to this stop, there is no bus pad, and the location is not separated from the road via a curb. Some bus stops, as shown in Figure 43, have good access and lighting and provide a great opportunity for interagency coordination. At this station, users can access Amtrak, Rider Transit and the Rowan Express. While not an official mobility hub, the existing convergence of transit agencies at this location gives this facility high potential to transform into a proper transit hub for the region.

**FIGURE 42: BUS STOP AT MARKET SQUARE SHOPPING CENTER**



FIGURE 43: BUS STOP AT THE KANNAPOLIS AMTRAK STATION



### **Bus Shelters**

A majority of the bus stops along the routes observed did not have a bus shelter; however, Figure 44 and Figure 45 provide good examples of the bus shelters around downtown Concord. While shelters are beneficial for protecting riders from the elements, the Rider shelters lack information to assist transit riders, such as a schedule or system map. The only lighting observed near this stop was lighting for the roadway and lighting from the adjacent properties. Some additional pedestrian lighting would make this bus stop more inviting and safer for the rider.



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FIGURE 44: BUS SHELTER NEAR DOWNTOWN CONCORD



FIGURE 45: DETAILED VIEW OF BUS SHELTER





### **Operations and Maintenance Facility**

Rider Transit has one fully dedicated O&M facility which is leased by the service provider. The facility has capacity for 18 vehicles. The facility is at 100 percent capacity; any further expansion of fleet will require offsite parking and storage.

The facility is made with a pre-fabricated metal shell that is visibly aging and there is inadequate space for efficient circulation of vehicles. There is also limited parking for revenue fleet. Additionally, the space for employees is limited for everything from lockers and parking to training and breakroom space. There are no plans to expand the facility at this time due to limited funding. Figure 46 and Figure 47 depict the Rider O&M facility.

**FIGURE 46: RIDER OPERATIONS AND MAINTENANCE FACILITY**





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FIGURE 47: RIDER OPERATIONS AND MAINTENANCE FACILITY







## Appendix A: Additional Photos by Fixed Route Provider

### ICATS

FIGURE 48: MOORESVILLE MAIN - BUS STOP #51



FIGURE 49: MOORESVILLE MAIN - BUS STOP #51





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FIGURE 50: MOORESVILLE MAIN IN DOWNTOWN MOORESVILLE - STOP #44



FIGURE 51: ICATS TYPICAL BUS STOP SIGNAGE





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FIGURE 52: MOORESVILLE MAIN BUS SHELTER AT THE LIBRARY



FIGURE 53: TYPICAL ICATS BUS





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FIGURE 54: ICATS ADMINISTRATIVE BUILDING



## Rider Transit

FIGURE 55: RIDER TRANSIT CENTER





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FIGURE 56: RIDER TRANSIT CENTER





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FIGURE 57: ICATS TYPICAL BUS



FIGURE 58: RIDER TRANSIT BROWN ROUTE BUS STOP





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FIGURE 59: RIDER TRANSIT BLUE ROUTE BUS STOP



FIGURE 60: RIDER TRANSIT BLUE ROUTE BUS STOP





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FIGURE 61: RIDER TRANSIT BLUE & BROWN BUS STOP AT THE KANNAPOLIS TRAIN STATION







FIGURE 62: RIDER TRANSIT TYPICAL BUS ROUTE SIGN





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## City of Salisbury Transit

FIGURE 63: SALISBURY AMTRAK STATION



FIGURE 64: CITY OF SALISBURY TYPICAL BUS STOP SIGNAGE





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FIGURE 65: CITY OF SALISBURY BUS STOP AT HORAH AND CRAIGE STREETS



FIGURE 66: CITY OF SALISBURY BUS STOP AND SHELTER AT COLLEGE PARK APARTMENTS





FIGURE 67: CITY OF SALISBURY ROUTE 2 RED BUS STOP SIGN





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FIGURE 68: CITY OF SALISBURY TRANSIT BUS STOP AT THE SALISBURY MALL



FIGURE 69: CITY OF SALISBURY TRANSIT BUS STOP AND SHELTER ON BENNER AVENUE





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FIGURE 70: CITY OF SALISBURY TRANSIT BUS SHELTER



FIGURE 71: CITY OF SALISBURY TRANSIT BUS SHELTER







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FIGURE 73: CITY OF SALISBURY TRANSIT BUS STOP IN DOWNTOWN SALISBURY



FIGURE 74: SALISBURY AMTRAK TRAIN STATION







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## My Ride

FIGURE 75: MY RIDE O&M BATTERY ELECTRIC CHARGING STATION



FIGURE 76: INSIDE OF MY RIDE BUS





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FIGURE 77: MY RIDE BUS STOP #1110



FIGURE 78: MY RIDE BUS STOP #1149





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## City of Gastonia Transit

FIGURE 79: CITY OF GASTONIA BUS STOP



FIGURE 80: CITY OF GASTONIA TRANSIT HUB





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FIGURE 81: OBSTRUCTED CITY OF GASTONIA BUS STOP



## Appendix C: Service Recommendations by Agency

**Table C-1: CATS Recommendations**

Route/Service	Existing Operating Characteristics	Near-Term (0-5 Years)	Mid-Term (5-10 Years)	Long-Term (10-20 Years)
<b>All routes</b>	Varies	- 29 total routes with 15-minute service or better between 6 am - 7 pm	-All routes at a minimum of all-day 30-minute frequency on weekdays	-All routes at a minimum of all-day 30-minute frequency on weekends
<b>All local routes</b>	Varies	- All routes to a minimum of 15 hours of weekday service - All routes to a minimum of 14 hours of service on Saturday - All routes to a minimum of 12 hours of service on Sundays		
<b>All express routes</b>	Varies	- All routes to a minimum of 4 inbound (am) / 4 outbound (pm) trips	- Increase number of trips based on demand	
<b>Route 74X</b>	2 am inbound trips; 1 am outbound trip 2 pm outbound trips; 1 pm inbound trip	- Extend 74X to Wingate and add two more inbound and outbound trips		- Reroute the 74X to travel from Marshville to Uptown along the Monroe Bypass - Improve 74X service from Wingate and add two more inbound and outbound trips
<b>6 - Kings Drive</b>	<i>Weekday</i> Hours: 6:15 am - 12:15 am Frequency: 20-30 mins <i>Weekend</i> Hours: 6:15 am - 12:15 am Frequency: 20-60 mins	- Extend route past Meyers Park through Barclay Downs to Southpark		

Route/Service	Existing Operating Characteristics	Near-Term (0-5 Years)	Mid-Term (5-10 Years)	Long-Term (10-20 Years)
<b>10 - West Boulevard</b>	<i>Weekday</i> Hours: 5:45 am - 1:15 am Frequency: 20-30 mins <i>Weekend</i> Hours: 5:45 am - 1:15 am Frequency: 30-60 mins	- Extend line to edge of Dixie/Shopton		
<b>14 - Providence Road</b>	<i>Weekday</i> Hours: 6:15 am - 12:00 am Frequency: 30-60 mins <i>Weekend</i> Hours: 6:15 am - 12:00 am Frequency: 30-60 mins	- Extend line to Providence Country Club Dr		
<b>19 - Park Road</b>	<i>Weekday</i> Hours: 5:30 am - 12:30 am Frequency: 25-60 mins <i>Weekend</i> Hours: 5:30 am - 1:00 am Frequency: 25-60 mins	- Extend line to Pineville/Carmel Commons		
<b>29 - UNCC / JW Clay</b>	<i>Weekday</i> Hours: 6:40 am - 1:30 am Frequency: 30 mins <i>Weekend</i> Hours: 6:40 am - 1:30 am Frequency: 30 mins	- Extend line through College Downs to Coventry Woods		
<b>New Local Service 17 - Matthews / Lawyers</b>	N/A	- Replace Route 17 - Commonwealth Ave with this bus line which extends from Silverstone - Matthews	- Extend Route 17 – Matthews Lawyer to Monroe; also connects to Indian Trail	- Extend Route 17 - Matthews Lawyer from Monroe to Marshville
<b>New Local Service 32 - Mallard Creek</b>	N/A	- Add this bus line which extends from Northwood to University City		

Route/Service	Existing Operating Characteristics	Near-Term (0-5 Years)	Mid-Term (5-10 Years)	Long-Term (10-20 Years)
<b>New Local Service 37 - Rea Road</b>	N/A	- Add this bus line which extends from Southpark to Raeburn		
<b>New Local Service 90 - Abermarle</b>	N/A	- Add this bus line which extends from Downtown Charlotte to Cresswind Boulevard		
<b>New Local Service 92 - Selwyn Ave</b>	N/A	- Add this bus line which extends from Downtown Charlotte to Southpark		
<b>New Local Service 93 - Plaza Extension</b>	N/A	- Add this bus line which extends from Carolinas Health Care System Harrisburg Plaza to Pumpnickel Rd/Orchid Bridge loop		
<b>New Local Service 94 WT - Harris Connector</b>	N/A	- Add this bus line which extends from Northlake to University City		
<b>New Local Service 95 - Ballantyne</b>	N/A	- Start this line with 30 weekday revenue hours - Start this line with 42.6 weekend revenue hours		
<b>New Local Service 95 - Red Ventures</b>	N/A	- Add this bus line which extends from Sharonbrook to Colonial Village		
<b>New Local Service 221 - Idlewild</b>	N/A	- Add this bus line which extends from Statewood to Wood Hollow		
<b>New Express Service 41x - Steel Creek Express</b>	N/A	- Add this bus line which extends from Downtown Charlotte to Rivergate Shopping Center		



Route/Service	Existing Operating Characteristics	Near-Term (0-5 Years)	Mid-Term (5-10 Years)	Long-Term (10-20 Years)
<b>New Express Service 61x - Arboretum Express</b>	N/A	- Add this bus line which extends from Downtown Charlotte through Providence		
<b>New Express Service 65x - Matthews Express</b>	N/A	- Add this bus line which extends from Downtown Charlotte to Matthews		
<b>New Express Service 83x - Mooresville Express</b>	N/A	- Add this bus line which extends from Downtown Charlotte to Mooresville		
<b>New Express Service 88x - Mountain Island Express</b>	N/A	- Add this bus line which extends from Downtown Charlotte to Mountain Island Village		
<b>New Circulator Service 207 - Sunset Rd</b>	N/A	- Add this bus line which extends from Salem Church Rd to Northlake		
<b>New Circulator Service 208 - Hovis-Moores Chapel</b>	N/A	- Add this bus line which extends from Enderly Park to Arlington		
<b>New Circulator Service 229 - Pavilion</b>	N/A	- Add this bus line which extends from The Shoppes at Mallard Creek to Ikea Blvd		
<b>New Circulator Service 240 - Mint Hill</b>	N/A	- Add this bus line which extends from Silverstone to Mint Hollow		
<b>New Circulator Service 243 - Blakeney</b>	N/A	- Add this bus line which extends from Ballantyne to Providence Rd		

Route/Service	Existing Operating Characteristics	Near-Term (0-5 Years)	Mid-Term (5-10 Years)	Long-Term (10-20 Years)
<b>New Circulator Service 251 - Levine</b>	N/A	- Add this bus line which extends from Matthews Park to Sardis Rd N		
<b>Infrastructure</b>	N/A	- Add two new transit facilities in uptown Charlotte	- Develop Charlotte Gateway District Multimodal Station	
<b>Infrastructure</b>	N/A		- Update bus O&M facilities to accommodate electric fleet	
<b>Infrastructure</b>	N/A		- Expand and update bus O&M facilities administrative and breakroom space; expand for additional human capital required to accommodate system growth	
<b>Infrastructure</b>	N/A	- Conduct needs assessment, identify sites for new O&M facilities, evaluate construction of multimodal facility	- Develop two new O&M satellite facilities: northwest Charlotte and far southeast Charlotte	

**Table C-2: City of Gastonia Recommendations**

Route/Service	Existing Operating Characteristics	Near-Term (0-5 Years)	Mid-Term (5-10 Years)	Long-Term (10-20 Years)
<b>Brown Line</b>	<i>Weekday</i> Hours: 5:30 am - 6:30 pm Frequency: 60 mins <i>Saturday</i> Hours: 8:00 am - 5:00 pm Frequency: 120 mins	- Extend weekday operating span to 15 hours - Implement 60-minute service on Saturdays - Extend Saturday operating span to 12 hours		- Add Sunday service for 12 hours at 60-minute frequency - Implement 30-minute peak period service on weekdays
<b>Green Line</b>	<i>Weekday</i> Hours: 5:30 am - 6:30 pm Frequency: 60 mins <i>Saturday</i> Hours: 8:00 am - 5:45 pm Frequency: 120 mins	- Extend weekday operating span to 15 hours - Implement 60-minute service on Saturdays - Extend Saturday operating span to 12 hours		- Add Sunday service for 12 hours at 60-minute frequency - Implement 30-minute peak period service on weekdays
<b>Blue Line</b>	<i>Weekday</i> Hours: 5:30 am - 6:30 pm Frequency: 60 mins <i>Saturday</i> Hours: 8:00 am - 5:00 pm Frequency: 120 mins	- Extend weekday operating span to 15 hours - Implement 60-minute service on Saturdays - Extend Saturday operating span to 12 hours		- Split into two separate routes with bi-directional service (possibly combine with part of Pink Line) - Add Sunday service for 12 hours at 60-minute frequency - Implement 30-minute peak period service on weekdays
<b>Pink Line</b>	<i>Weekday</i> Hours: 5:30 am - 6:30 pm Frequency: 60 mins <i>Saturday</i> Hours: 9:00 am - 5:45 pm Frequency: 120 mins	- Extend weekday operating span to 15 hours - Implement 60-minute service on Saturdays - Extend Saturday operating span to 12 hours		- Split into two separate routes with bi-directional service (possibly combine with part of Blue Line) - Add Sunday service for 12 hours at 60-minute frequency - Implement 30-minute peak period service on weekdays

Route/Service	Existing Operating Characteristics	Near-Term (0-5 Years)	Mid-Term (5-10 Years)	Long-Term (10-20 Years)
<b>Red Line</b>	<i>Weekday</i> Hours: 5:30 am - 6:15 pm Frequency: 60 mins <i>Saturday</i> Hours: 9:00 am - 5:45 pm Frequency: 120 mins	- Extend weekday operating span to 15 hours - Implement 60-minute service on Saturdays - Extend Saturday operating span to 12 hours		- Add Sunday service for 12 hours at 60-minute frequency - Implement 30-minute peak period service on weekdays
<b>Yellow Line</b>	<i>Weekday</i> Hours: 5:30 am - 6:15 pm Frequency: 60 mins <i>Saturday</i> Hours: 8:30 am - 5:00 pm Frequency: 120 mins	- Extend weekday operating span to 15 hours - Implement 60-minute service on Saturdays - Extend Saturday operating span to 12 hours		- Add Sunday service for 12 hours at 60-minute frequency - Implement 30-minute peak period service on weekdays
<b>85X-Gastonia Express (operated by CATS)</b>	<i>Weekday</i> To Uptown Charlotte: 4 am trips, 1 pm trip From Uptown Charlotte: 1 am trip, 4 pm trips	- Add morning and afternoon peak - Add midday service at 60-minute frequency		- Implement pilot program to extend peak period service to King's Mountain (midday service to be considered at later date)
<b>35-Wilkinson-Amazon (operated by CATS)</b>	<i>Weekday/Sat/Sun</i> Inbound: 3 am peak trips, 3 pm peak trip Outbound: 2 am peak trips, 2 pm peak trips	- Extend to Wilkinson Blvd and Park St. to connect to the 85X park-and-ride and the proposed Silver Line end-of-line (connect to the Amazon facility)		- Extend to Gastonia Transit Center
<b>New service</b>	N/A	- Consider micro transit solutions in areas where some demand exists built environment doesn't warrant traditional transit solutions		
<b>New service</b>	N/A			-Develop east/west spine route with high frequency service

Route/Service	Existing Operating Characteristics	Near-Term (0-5 Years)	Mid-Term (5-10 Years)	Long-Term (10-20 Years)
<b>New service</b>	N/A			- Consider developing north/south spine route with high frequency service (combine or rework Brown Line)
<b>New service</b>	N/A			- New service from Gaston Community College to Tech Park along US 321
<b>New service</b>	N/A			- Franklin Irving Sports & Entertainment District to Downtown Gastonia
<b>Infrastructure</b>	N/A			- Ensure all bus stop locations are ADA accessible - Expand amenities at high boarding stop locations (e.g., shelters, bike racks, trash cans, etc.)
<b>Infrastructure</b>	N/A		- Add bike racks to vehicles to improve access and intermodal connectivity	
<b>Infrastructure</b>	N/A		- Develop transit center at Entertainment District	

**Table C-3: City of Salisbury Recommendations**

Route/Service	Existing Operating Characteristics	Near-Term (0-5 Years)	Mid-Term (5-10 Years)	Long-Term (10-20 Years)
<b>1-Green</b>	<i>Weekday</i> Hours: 6:00 am - 7:00 pm Frequency: 70-80 mins <i>Saturday</i> Hours: 9:30 am - 3:30 pm Frequency: 70 mins	- Implement 60-minute service on weekdays/Saturdays - Extend weekday operating span to 15 hours Extend Saturday operating span to 12 hours		- Add Sunday service for 12 hours at 60-minute frequency - Implement 30-minute peak period service on weekdays
<b>2-Red</b>	<i>Weekday</i> Hours: 6:00 am - 7:00 pm Frequency: 70-80 mins <i>Saturday</i> Hours: 9:30 am - 3:30 pm Frequency: 70 mins	- Implement 60-minute service on weekdays/Saturdays - Extend weekday operating span to 15 hours Extend Saturday operating span to 12 hours		- Add Sunday service for 12 hours at 60-minute frequency - Implement 30-minute peak period service on weekdays
<b>3-Blue</b>	<i>Weekday</i> Hours: 6:00 am - 7:00 pm Frequency: 70-80 mins <i>Saturday</i> Hours: 9:30 am - 3:30 pm Frequency: 70 mins	- Implement 60-minute service on weekdays/Saturdays - Extend weekday operating span to 15 hours Extend Saturday operating span to 12 hours		- Add Sunday service for 12 hours at 60-minute frequency - Implement 30-minute peak period service on weekdays
<b>New Service</b>	N/A	- Work with Rowan County to reinstate Rowan Express		
<b>New service</b>	N/A	- Consider micro transit solutions in areas where some demand exists built environment doesn't warrant traditional transit solutions - Implement commuter service connecting Salisbury to Kannapolis (10 am/10 pm peak trips)	- Implement commuter service connecting Salisbury to Lexington (4 am/4 pm peak trips)	- Implement commuter service connecting Salisbury to Statesville (4 am/4 pm peak trips) - Implement commuter service connecting Salisbury to Rockwell (4 am/4 pm peak trips)

Route/Service	Existing Operating Characteristics	Near-Term (0-5 Years)	Mid-Term (5-10 Years)	Long-Term (10-20 Years)
<b>New service</b>	N/A		- Implement fixed route or micros transit college service on Friday and Saturday evenings	
<b>New service</b>	N/A			- Implement Express service from Salisbury, via I-85 to connect University City and Uptown Charlotte
<b>Infrastructure</b>	N/A			- Ensure all bus stop locations are ADA accessible - Expand amenities at high boarding stop locations (e.g., shelters, bike racks, trash cans, etc.)

**Table C-4: City of Rock Hill (My Ride) Recommendations**

Route/Service	Existing Operating Characteristics	Near-Term (0-5 Years)	Mid-Term (5-10 Years)	Long-Term (10-20 Years)
<b>1-Downtown/ Knowledge Park Loop</b>	<i>Mon-Thurs</i> Hours: 7:15 am - 7:15 pm Frequency: 30 mins <i>Fri-Sat</i> Hours: 7:15 am - 9:15 pm Frequency: 30 mins <i>Sunday</i> Hours: 9:15 am - 5:15 pm Frequency: 30 mins	- Extend weekday operating span to 14 hours	- Add bi-directional service (one-way loop currently)	- Add Sunday service for 14 hours at 30-minute frequency
<b>2-Saluda/Heckle Loop</b>	<i>Mon-Sat</i> Hours: 7:00 am - 7:00 pm Frequency: 60 mins <i>Sunday</i> Hours: 9:00 am - 5:00 pm Frequency: 60 mins	- Split route into two (northern loop & southern loop) and add bi-directional service. Would require additional staff, buses, and funding.  - Extend weekday operating span to 14 hours	- Implement 30-minute service on weekdays/Saturdays	- Add Sunday service for 14 hours at 30-minute frequency
<b>3- Cherry/Riverwalk Line</b>	<i>Mon-Sat</i> Hours: 7:00 am - 7:00 pm Frequency: 60 mins <i>Sunday</i> Hours: 9:00 am - 5:00 pm Frequency: 60 mins	- Extend weekday operating span to 14 hours	- Implement 30-minute service on weekdays/Saturdays	- Add Sunday service for 14 hours at 30-minute frequency
<b>4-Dave Lyle/Galleria Line</b>	<i>Mon-Sat</i> Hours: 7:00 am - 7:00 pm Frequency: 60 mins <i>Sunday</i> Hours: 9:00 am - 5:00 pm Frequency: 60 mins	- Extend weekday operating span to 14 hours	- Implement 30-minute service on weekdays/Saturdays	- Add Sunday service for 14 hours at 30-minute frequency



Route/Service	Existing Operating Characteristics	Near-Term (0-5 Years)	Mid-Term (5-10 Years)	Long-Term (10-20 Years)
<b>82x - Rock Hill Express (CATS route)</b>	<i>Weekday</i> 2 inbound am peak trips 2 outbound pm peak trips	- Add morning and afternoon peak trips. Consider adding reverse commute trips as well.		
<b>New service</b>	N/A	- Consider micro transit solutions in areas where some demand exists built environment doesn't warrant traditional transit solutions		
<b>New service</b>	N/A		-All-day route along Celanese Road from about Cherry Road to Heckle Blvd and potentially connecting to the My Ride Green Line at Piedmont Medical Center.	
<b>New service</b>	N/A			- Two express bus trips in the morning from both Chester and Lancaster to Center City Charlotte with an intermediate stop at a proposed transit center near Dave Lyle Boulevard and I-77. There would be two return trips from Charlotte in the afternoon, again with an intermediate stop in Rock Hill
<b>New service</b>	N/A			- Lake Wylie to Charlotte Express Route (AM/PM peak service)
<b>New service</b>	N/A	- Startup phase for HCT (LRT, BRT, commuter rail) corridor with all-day limited stop service connecting RFATS study area with I-485 light rail station us US-21	- Addition of local bus service to Tega Cay and Fort Mil and New connections to Gold Hill Commons - Implement first stage of exclusive HCT (LRT, BRT, commuter rail) ROW segments	- Implementation of remaining exclusive HCT (LRT, BRT, commuter rail) ROW

Route/Service	Existing Operating Characteristics	Near-Term (0-5 Years)	Mid-Term (5-10 Years)	Long-Term (10-20 Years)
<b>New service</b>	N/A		- Provide new service for north and south travel via Mt Gallant Road, Anderson Road, or Cel-River Road within Rock Hill with connections to existing routes and connection to the Panthers Headquarters.	
<b>New service</b>	N/A	- Provide additional service to connect Black St / White St / and Albright service area to Downtown Rock Hill		
<b>New service</b>	N/A		Extend Route 16 South Tryon (Mecklenburg Co.) along Charlotte Hwy to SC HWY 274 (York Co.)	- Add an express route with two bus trips in the morning (perhaps an extension of the US-521 CATS route) into northern Lancaster County
<b>New service</b>	N/A	Connect the Whispering Hills and College Farms neighborhood areas along Crawford Rd or Ogden Rd from Downtown Rock Hill		
<b>Infrastructure</b>	N/A	- Ensure all bus stop locations are ADA accessible - Expand amenities at high boarding stop locations (e.g., shelters, bike racks, trash cans, etc.)	- Ensure all bus stop locations are ADA accessible - Expand amenities at high boarding stop locations (e.g., shelters, bike racks, trash cans, etc.)	- Ensure all bus stop locations are ADA accessible - Expand amenities at high boarding stop locations (e.g., shelters, bike racks, trash cans, etc.)

**Table C-5: Cabarrus County (Rider) Recommendations**

Route/Service	Existing Operating Characteristics	Near-Term (0-5 Years)	Mid-Term (5-10 Years)	Long-Term (10-20 Years)
<b>1-Blue Route</b>	<i>Weekday</i> Hours: 5:30 am - 8:30 pm Frequency: 60-75 mins <i>Weekend</i> Hours: 8:30 am - 8:30 pm Frequency: 60-75 mins	- Extend hours of service to 5:30 am to 12:30 am - Implement 30-minute peak service and 60-minute service in off-peak hours	- Implement 30-minute all-day service on weekends - Implement countywide demand response	- Implement 15-minute peak/30-minute off-peak service on weekdays - Implement 30-minute weekend service
<b>2-Green Route</b>	<i>Weekday</i> Hours: 5:30 am - 8:30 pm Frequency: 60-75 mins <i>Weekend</i> Hours: 8:30 am - 8:30 pm Frequency: 60-75 mins	- Extend hours of service to 5:30 am to 12:30 am - Implement 30-minute peak service and 60-minute service in off-peak hours	- Implement 30-minute all-day service on weekends - Implement countywide demand response	- Implement 15-minute peak/30-minute off-peak service on weekdays - Implement 30-minute weekend service
<b>3-Orange Route</b>	<i>Weekday</i> Hours: 5:30 am - 8:30 pm Frequency: 60-75 mins <i>Weekend</i> Hours: 8:30 am - 8:30 pm Frequency: 60-75 mins	- Extend hours of service to 5:30 am to 12:30 am - Implement 30-minute peak service and 60-minute service in off-peak hours - Redesign with Route 4 for efficiency	- Implement 30-minute all-day service on weekends - Implement countywide demand response	- Implement 15-minute peak/30-minute off-peak service on weekdays - Implement 30-minute weekend service
<b>4-Purple Route</b>	<i>Weekday</i> Hours: 5:30 am - 8:30 pm Frequency: 60-75 mins <i>Weekend</i> Hours: 8:30 am - 8:30 pm Frequency: 60-75 mins	- Extend hours of service to 5:30 am to 12:30 am - Implement 30-minute peak service and 60-minute service in off-peak hours - Redesign with Route 3 for efficiency	- Implement 30-minute all-day service on weekends - Implement countywide demand response	- Implement 15-minute peak/30-minute off-peak service on weekdays - Implement 30-minute weekend service

Route/Service	Existing Operating Characteristics	Near-Term (0-5 Years)	Mid-Term (5-10 Years)	Long-Term (10-20 Years)
<b>5-Yellow Route</b>	<i>Weekday</i> Hours: 5:30 am - 8:30 pm Frequency: 60-75 mins <i>Weekend</i> Hours: 8:30 am - 8:30 pm Frequency: 60-75 mins	- Extend hours of service to 5:30 am to 12:30 am - Implement 30-minute peak service and 60-minute service in off-peak hours	- Implement 30-minute all-day service on weekends - Implement countywide demand response	- Implement 15-minute peak/30-minute off-peak service on weekdays - Implement 30-minute weekend service
<b>6-Red Route</b>	<i>Weekday</i> Hours: 5:30 am - 8:30 pm Frequency: 60-75 mins <i>Weekend</i> Hours: 8:30 am - 8:30 pm Frequency: 60-75 mins	- Extend hours of service to 5:30 am to 12:30 am - Implement 30-minute peak service and 60-minute service in off-peak hours	- Implement 30-minute all-day service on weekends - Implement countywide demand response	- Implement 15-minute peak/30-minute off-peak service on weekdays - Implement 30-minute weekend service
<b>7-Brown Route</b>	<i>Weekday</i> Hours: 5:30 am - 8:30 pm Frequency: 60-75 mins <i>Weekend</i> Hours: 8:30 am - 8:30 pm Frequency: 60-75 mins	- Extend hours of service to 5:30 am to 12:30 am - Implement 30-minute peak service and 60-minute service in off-peak hours - Redesign route for efficiency and to capture new ridership	- Implement 30-minute all-day service on weekends - Implement countywide demand response	- Implement 15-minute peak/30-minute off-peak service on weekdays - Implement 30-minute weekend service
<b>CCX-Concord Charlotte Express</b>	<i>Weekday</i> Hours: 5:30 am - 8:30 pm Frequency: 60-75 mins <i>Weekend</i> Hours: 8:30 am - 8:30 pm Frequency: 60-75 mins	- Extend hours of service to 5:30 am to 12:30 am - Implement 30-minute peak service and 60-minute service in off-peak hours	- Implement 30-minute all-day service on weekends - Implement countywide demand response	- Implement 15-minute peak/30-minute off-peak service on weekdays - Implement 30-minute weekend service
<b>New service</b>	N/A	- Consider micro transit solutions in areas where some demand exists built environment doesn't warrant traditional transit solutions		- New service to research park and/or airport - New connection to Huntersville

Route/Service	Existing Operating Characteristics	Near-Term (0-5 Years)	Mid-Term (5-10 Years)	Long-Term (10-20 Years)
<b>New service</b>	N/A		- Implement Concord Mills Circulator at 15-minute frequency	
<b>New service</b>	N/A		- Add 8 new fixed routes	
<b>New service</b>	N/A			- Add 1 fixed route
<b>New service</b>	N/A			- Introduce HCT modes (LRT, BRT, commuter rail)
<b>New service</b>	N/A			- Add 4 fixed routes including service to Huntersville (45-minute frequency)
<b>Infrastructure</b>	N/A	- Establish downtown Concord hub and Kannapolis train station hub	- Begin operation of downtown Concord hub and Kannapolis train station hub - Establish Harrisburg Town Commons hub	- Ensure all bus stop locations are ADA accessible - Expand amenities at high boarding stop locations (e.g., shelters, bike racks, trash cans, etc.) - Begin operation of Harrisburg Town Commons hub
<b>Infrastructure</b>	N/A	- Conduct O&M needs and site assessment	- New administration and maintenance facility	
<b>Infrastructure</b>	N/A		- Future transit center at University City Mall and location along US 73 (exact location TBD)	

**Table C-6: Iredell County (ICATS) Recommendations**

Route/Service	Existing Operating Characteristics	Near-Term (0-5 Years)	Mid-Term (5-10 Years)	Long-Term (10-20 Years)
<b>ICATS Express</b>	<i>Weekday</i> 2 inbound am peak trips 2 outbound pm peak trips	<ul style="list-style-type: none"> <li>- Add 2 more trips during weekday peak periods (both directions)</li> <li>- Evaluate, pilot, and deploy interstate bus on-shoulder from I-77/I-40 to Mooresville to eventually merge onto the I-77 Express lanes that begins/ends at exit 36</li> </ul>	<ul style="list-style-type: none"> <li>- Add 2 more trips during weekday peak periods (both directions)</li> </ul>	<ul style="list-style-type: none"> <li>- Implement all-day weekday service (15 hours, e.g. one trip every hour during off peak hours)</li> </ul>
<b>Statesville Bloom</b>	<i>Weekday</i> Hours: 9:00 am - 5:00 pm Frequency: 100-140 mins	<ul style="list-style-type: none"> <li>- Add bi-directional service (one-way loop currently) or split into two interconnected routes</li> <li>- Implement 60-minute service on weekdays</li> <li>- Extend weekday operating span to 15 hours</li> </ul>	<ul style="list-style-type: none"> <li>- Review need and add new stop locations to be served on a demand, call-in, deviated basis</li> </ul>	<ul style="list-style-type: none"> <li>- Add weekend service for 12 hours at 60-minute frequencies</li> <li>- Implement 30-minute peak period service on weekdays</li> </ul>
<b>The Community Connection</b>	<i>Weekday</i> Hours: 6:30 am - 4:30 pm Frequency: 75 mins	<ul style="list-style-type: none"> <li>- Reinstate service</li> <li>- Implement 60-minute service on weekdays</li> <li>- Extend weekday operating span to 15 hours</li> </ul>	<ul style="list-style-type: none"> <li>- Review need and add new stop locations to be served on a demand, call-in, deviated basis</li> </ul>	<ul style="list-style-type: none"> <li>- Add weekend service for 12 hours at 60-minute frequencies</li> <li>- Implement 30-minute peak period service on weekdays</li> </ul>
<b>Mooresville Main</b>	<i>Weekday</i> Hours: 7:15 am - 6:45 pm Frequency: 80-115 mins	<ul style="list-style-type: none"> <li>- Add bi-directional service (one-way loop currently) or split into three interconnected routes</li> <li>- Implement 60-minute service on weekdays</li> <li>- Extend weekday operating span to 15 hours</li> </ul>	<ul style="list-style-type: none"> <li>- Review need and add new stop locations to be served on a demand, call-in, deviated basis</li> </ul>	<ul style="list-style-type: none"> <li>- Add weekend service for 12 hours at 60-minute frequencies</li> <li>- Implement 30-minute peak period service on weekdays</li> </ul>

Route/Service	Existing Operating Characteristics	Near-Term (0-5 Years)	Mid-Term (5-10 Years)	Long-Term (10-20 Years)
<b>New service</b>	N/A	- Consider micro transit solutions in areas where some demand exists built environment doesn't warrant traditional transit solutions		
<b>New Service</b>	NA		- Add connective route services to the route services provided by the Concord, Hickory and Salisbury transit systems.	
<b>New service</b>	N/A		- Develop new route to serve Statesville, Harmony, and Love Valley	
<b>New service</b>	N/A			- Develop new service to Concord that would connect with Rider Transit
<b>New service</b>	N/A			- Develop new service to Hickory that would connect with Greenway
<b>New service</b>	N/A			- Add east/west connector service to CATS Red Line commuter rail
<b>Infrastructure</b>	N/A	- Develop new multi-modal transit facility (funded by BUILD grant)		
<b>Infrastructure</b>	N/A		Build/Develop/Purchase a facility to accommodate the expansion of ICATS. The facility will contain space for operations, administration, vehicle maintenance & an inter-modal, transfer center.	

Route/Service	Existing Operating Characteristics	Near-Term (0-5 Years)	Mid-Term (5-10 Years)	Long-Term (10-20 Years)
<b>Infrastructure</b>	N/A			<ul style="list-style-type: none"> <li>- Ensure all bus stop locations are ADA accessible</li> <li>- Expand amenities at high boarding stop locations (e.g., shelters, bike racks, trash cans, etc.)</li> </ul>