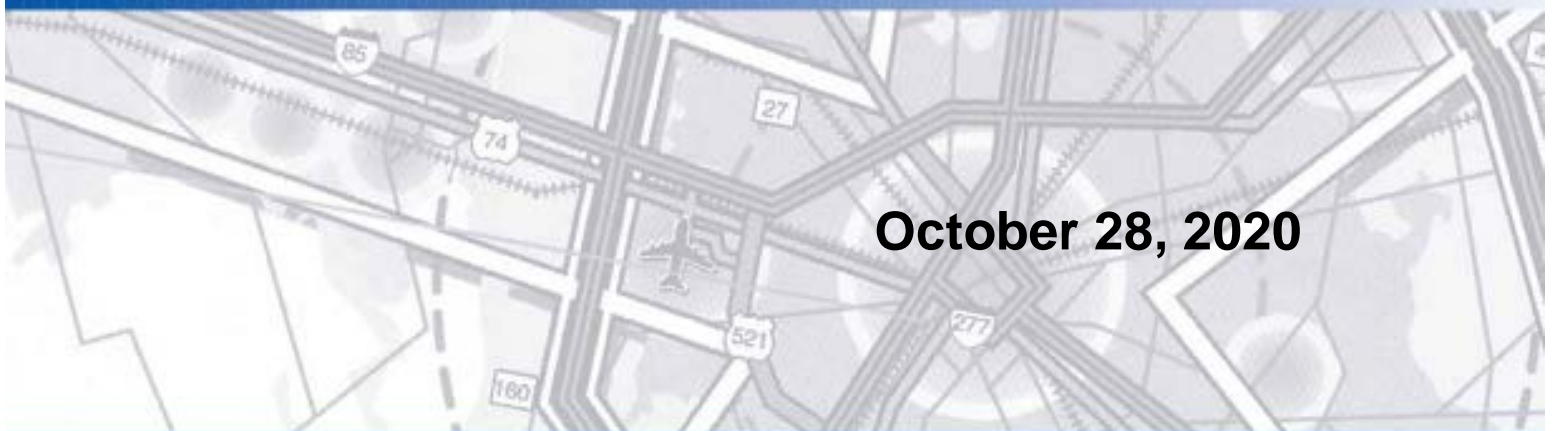


Metropolitan Transit Commission



October 28, 2020

METROPOLITAN TRANSIT COMMISSION

Wednesday, October 28, 2020

5:30pm

South Boulevard Light Rail Facility

WebEx

AGENDA

- I. Call to OrderCommissioner Susan Harden
 - Invocation
 - Pledge of Alliance
 - Attendance (Roll Call)
- II. Approval of the September 23, 2020 Summary (**p.5-10**)Commissioner Susan Harden
- III. Report from the Chair of the Transit Service Advisory Committee (TSAC)Krissy Oechslin
- IV. Report from the Chair of the Citizens Transit Advisory Group (CTAG)..... Edward Tillman
- V. Public Comments
- VI. Action Items
 - None
- VII. Informational Items
 - NCDOT Annual Safety Report (**p.12-37**)David Moskowitz
 - CONNECT Beyond Status Update (**p.39-58**)Jason Lawrence
- VIII. MTC Commissioners' BusinessCommissioner Susan Harden
 - None
- IX. Chief Executive Officer's Report (**p.60-63**) John Lewis, Jr
 - COVID 19 Operational Update
- X. Adjourn

METROPOLITAN TRANSIT COMMISSION
MEETING SUMMARY
September 23, 2020
(Approved on October 28, 2020)

Presiding: Commissioner Susan Harden, BOCC Mecklenburg County

Present:

Mayor Vi Lyles (City of Charlotte)	Ryan Spitzer (Town Manager, Pineville)
Taiwo Jaiyeoba (Assistant Manager, Charlotte)	Randy Hemann (Town Manager, Mooresville)
Mayor Woody Washam (Town of Cornelius)	Bill Thunberg (Town of Mooresville)
Mayor Rusty Knox (Town of Davidson)	Randi Gates, (GCCMPO, City of Gastonia)
Mayor John Aneralla (Town of Huntersville)	Mayor Pro-Tem Marion Holloway (City of Monroe)
Mayor John Higdon (Town of Matthews)	E. L. Faison (City Manager, Monroe)
Brian Welch (Town Manager, Mint Hill)	Mayor William Dusch (City of Concord)
Mayor Jack Edwards (Town of Pineville)	

CATS Chief Executive Officer: John Lewis, Jr

I. Call to Order

The regular meeting of the Metropolitan Transit Commission was called to order via WebEx conferencing at 5.30p.m. by MTC Chairwoman Commissioner Susan Harden.

- Invocation was delivered by MTC Chairwoman Commissioner Susan Harden
- All gave attention and recited the Pledge of Alliance

II. Review of Meeting Summary

The meeting summary of June 24, 2020 was approved.

III. Transit Services Advisory Committee (TSAC) Chairman's Report

Krissy Oechslin (Chairwoman) reported the following recap from the August and September meetings: In our August meeting we welcomed two new members to TSAC. We also received an overview of COVID-related changes in operations and maintenance, including cleaning, mask usage, ridership levels compared to earlier in the pandemic, as well as compared to normal times, and other issues. We also received a briefing on the bus priority study, which we heard about in more detail at our September meeting and I will touch on in a moment. We also received an update on the 2030 system plan, including the Silver Line, the North Corridor bus rapid transit, the Pineville and Ballantyne Blue Line extension, regional transit plan, and the Charlotte Moves committee.

In our September meeting we again heard an overview of operations and how they continue to change. We met the new director of bus operations, Jennifer Fehribach, and we look forward to working with her and hearing about her ideas to innovate and to grow ridership. We had a brief update on the Silver Line public hearings that are currently being held, which you will hear more about later tonight. I attended one of those meetings last night, and I can say that it was very well run, and there was a lot of good public comment and questions, especially about the pros and cons of the various possible rail alignments.

We also heard an overview about the process for adding, moving, or otherwise changing bus stop locations along existing bus routes. We voted unanimously in favor of proposed

schedule changes taking effect in early October to add additional morning bus service on two busy routes and to make permanent the route utilizing the 4th Street bus/bike lane for certain bus routes.

We also received a detailed presentation on the Central Avenue pilot bus lane that you will be hearing more about tonight. We voted unanimously on a statement of support for this pilot bus lane project, and it reads:

"TSAC supports CATS' proposed bus lane pilot project on Central Avenue. We know that this project will support rider demands to speed up service along Charlotte's busiest bus transit corridor and to provide more reliable and consistent service to this demographically diverse corridor. The existing conditions along this corridor create an unsafe environment for transit users as well as for motorists, cyclists, pedestrians, and other travelers. We hope this project and future planning can provide a dedicated facility configuration that will increase bus speed and reliability, as well as allow for safe active transportation, pedestrian interfaces, and ADA mobility service. We believe that this project will support city goals of reducing congestion, improving transit efficiency, and improving safety along this critical destination and transportation corridor." Again, this statement passed TSAC unanimously.

Finally, we are aware that a North Carolina nonprofit called You Can Vote has approached CATS about placing public service announcement ads on buses and trains with information on how to vote. This organization is already working with at least five other transit systems across the state, and we hope CATS participates in this important nonpartisan effort to increase civic engagement.

IV. Citizens Transit Advisory Group (CTAG) Chairman's Report – No report

V. Public Comments – None

VI. Action Item

2020 Summer Meeting Schedule

Arlanda Rouse

Arlanda Rouse – CATS Civil Rights Officer made a presentation for 2020 Title VI Program, based on page 13-114 in the MTC Agenda packet for September 23rd, 2020.

Resolution: A motion to adopt the 2020 Title VI Program was made by **Mayor Woody Washam (Town of Cornelius)**; seconded by **Mayor John Higdon (Town of Matthews)**. Motion carried unanimously.

VII. Informational Items

a. LYNX Silver Line Program Update

Andy Mock

Andy Mock – CATS Senior Transit Project Development Manager – made a presentation on LYNX Silver Line Program Update, based on pages 116-122 in the MTC Agenda packet for September 23rd, 2020 meeting.

Discussion:

CATS CEO LEWIS: A couple of comments from our strategic standpoint. I think Andy and the team have done a fantastic job really pivoting from live solicitation and public input to almost on a dime going to this kind of interactive surveying. They had to develop working with the consulting team. This method of public outreach, I think it has gone spectacularly well. If you can imagine, anytime 166 people show up to a public hearing it's normally because we're

doing something to someone and they're coming to defend themselves or their community. In this case it just shows, I think, some of the excitement surrounding this project.

I don't think we can underestimate that we are in the process of refining that corridor. The action taken by the MTC was a broad corridor designation. What the team has been doing over the last several months is going into each one of those focus areas and adjusting the corridor. We may be on one side of the street or another, we may realize that there are certain impacts that have to be mitigated. As we continue through this process and the end of this month we will come up with and come back to the MTC with a final designated corridor. That will be the corridor that we will begin actual engineering and design next year, and really the environmental and engineering design process begins.

It's our hope to bring this back to the MTC in February 2021, for information and action in March; and then really the required engineering work begins after that. Our goal at the end of this process is to refine, have an engineered pre-project development that will put us in a position to compete for federal funding if we can answer the funding question. As the Corridor Development Team continue to work diligently on that and will be back in front of the MTC and other governing bodies as we continue to move forward.

b. Envision My Ride (Central Avenue – Bus Lane Only)

Jason Lawrence

Jason Lawrence – CATS Senior Transit Planner made a presentation on Envision My Ride (Central Avenue – Bus Lane Only) Project Pilot, based on pages 124-132 in the MTC Agenda packet for September 23rd, 2020.

VIII. MTC Commissioners' Business

a. Charlotte Moves Update

Taiwo Jaiyeoba

Taiwo Jaiyeoba – City of Charlotte Assistant City Manager/Director – Planning, Design & Development made a presentation on Charlotte Moves Task Force Update, based on pages 134-145 in the MTC Agenda packet for September 23rd, 2020 meeting.

Discussion:

MAYOR LYLES (City of Charlotte): Before the pandemic, we were just really moving along and we were thinking about how we are going to accommodate the hundreds of thousands of people that are moving into this area? We've all recognized now that there are many different needs for mobility and it's not just one path to take. Instead of taking multiple different studies and trying to figure them out; Harvey Gantt, former Mayor of Charlotte, agreed to come and look through everything that we've done. Tai and Harvey went through everything that's been on the shelf forever, and he said what we really need is a way to line this up, to fund it to make sure that it happens as people can see it.

I'm looking forward to the work of the committee, the task force, to come back on Charlotte Moves. This will be presented at the Charlotte Alliance retreat. Harvey will speak to it at that point I believe with Tai again. You would've seen this, and some updates would be planned at this time. I think that's October 10th or 11th, somewhere around in there. I hope that we we'll all just continue to look at the information but also critique it as we go along. I think it's really important that we begin to think about what's missing, are there things that should be considered that haven't been considered. We've got a great group of citizens working on it, but we need advice from every part of our county and, as well, our region.

We're successful because people can still move around the city and the county in a reasonable amount of time. As people continue to grow and come here, that's something that could be lost to us if we don't get out and actually figure out how to move people around and

get these projects underway with some infrastructure. That's kind of what the vision was, is to make us a very livable region and continue to be able to have commerce, to utilize the airport, and to utilize our highways, utilize our ability to have bike and pedestrian greenways and just to support the development that's going to be taking place. We know it's happening. Even with the pandemic we have recruited two businesses, one with over 3000 employees, in the University area. We've got to figure out, as Tai said, think about it 15 years out instead of what we've done 15 years prior.

MAYOR ANERALLA (Town of Huntersville): Just on an overarching theme: How the future of transportation may or may not be changing due to more stay-at-home workers, due to the COVID crisis, and then also the shared society that we have with Uber and Lyft, and how we are incorporating that into our future plans.

ASSISTANT CITY MANAGER JAIYEoba (City of Charlotte): It's something that's a passion of mine. Because we've moved into that walk-in space and people worry about two things as a result of the coronavirus, will I be able to use transit again or ride with people, and do I really want to live in a dense environment?

Some of the things that we've be doing as part of our survey is also to measure that with the public, and it's interesting the responses and the feedback that we're getting, not just from Mecklenburg County but from the surrounding counties, that people are still very, very much interested in an integrated system of mobility and public transit. The numbers are actually very, very interesting, and at some point, in the future when we have the ability to, I will share those numbers with this group. The people are still interested in public transit, interested in the Greenway network and using their bicycle and walk to move around. Walking will continue to increase, which means obviously that the mode shift that we're trying to target is doable. If we have more people working from home or working from Panera Bread or Starbucks or their neighborhood coffee shop, that people can still do that without having to get on the road, which also means that we can actually achieve our air quality road goals sooner rather than later.

All of these things have been started as part of the work that Charlotte Moves is doing, including how we introduce the concept of 5G or even autonomous vehicles on some of our major roadways, and what will be the impact on parking as well. All of those things are being considered as part of the study.

MAYOR DUSCH (City of Concord): I want to make sure that we are included in these discussions. I haven't heard Concord, Kannapolis, or Cabarrus County mentioned. We really want to be a part of this as we are going forward. We've just actually approved our 20-year plan and Charlotte/Mecklenburg County is a big part of that.

MAYOR LYLES (City of Charlotte): We understand that. I often use you as an example of where we've stopped the rail line at UNC Charlotte and the connection that would probably be 6 miles to the old Philip Morris site and think about the opportunities in the region and where you can be. We definitely see that. I think that what the Charlotte Moves task force has been doing and been saying is we always should be thinking about how everyone in the region connects and how they want to do that and having those conversations. I probably won't be around when they're doing this work and finishing it up, but if we don't start it, then I'm not quite sure who would be able to start it. It may just not happen.

We will make sure, and we're working really with the idea, again, including the entire region but knowing that we've got to starting place here in Charlotte to get the planning and the ideas that

we can use to calculate infrastructure costs that then everybody can have a sense of what it means.

BILL THUNBERG (Mooresville Representative): What Mayor Lyles alluded to, one of the key elements, whether it's in Mecklenburg County or in the region as a whole, is the overarching question – is how are you going to fund this? It may be that the mechanism that we need does not exist at this point but at some juncture, whether it's through the connect process that's going on right now combined with this Charlotte Moves process, there's going to have to be a serious discussion where people are going to actually say I'm going to ante up, and then we're going to go forward with this. I would hope that at the end of all this that there is a commitment to have a serious discussion and that we don't care if Joe Blow says the answer is no then that's Joe's answer, but we can't keep going down these planning roads and not at some point just say you're either in or you're out, and if you're in we're going to have to do this and if you're out, well, you're just going to sit around and watch.

ASSISTANT CITY MANAGER JAIYEOBA (City of Charlotte): I should have shared, just to be safe, is that we've been presenting this also to House delegation representative Kelly Alexander. Liz Babson and I presented to him and the 16 members. Then next week we will actually be presenting this to Senators Burr and Tillis as well as representative Adams and Bishop. Not only are we addressing this locally or regionally, but we are also speaking to our elected officials at the state and national level as well.

b. CRTPO Representative – Commissioner Harden started a discussion that an alternate is needed to attend CRTPO meetings. Mr. Thunberg shared that individual couldn't be an elected official that already represents a jurisdiction on the CRTPO. Mayor John Aneralla (Town of Huntersville) volunteered to serve as that alternate.

c. Meeting Logistics and Schedule for the remainder of 2020 – Discussion was held about attempting to have hybrid meeting for October and November MTC. Also, recognizing that the schedule would move in November and no meeting in December,

Resolution: A motion was made to attempt to hold hybrid MTC meetings for October and November; recognizing that the November meeting will be moved to November 18th, to accommodate the Thanksgiving Holiday; and to not hold a December MTC meeting to accommodate for the Christmas Holiday; was made by **Mayor Woody Washam (Town of Cornelius)**; seconded by **Mayor John Aneralla (Town of Huntersville)**. Motion carried unanimously.

IX. Chief Executive Officer's Report

John Lewis, Jr. shared the following:

*** Ridership Program** - If you look at our ridership program, we are starting to see an increase in ridership both on bus and rail. Over the last month we've seen a 12% increase in our express ridership. We're starting to see that trend also in our local bus activity after the 20% loss of ridership due to COVID. Once you factor that 12% increase, the ridership continues to recover. With COVID FY20 revenue projections, we are just \$2M, under our projected budget, we do not budget to the gross projections, we have reduced expenditures during the same period so reduced revenues, actually reduce the money that would not have gone into our reserves. We are maximizing use of federal CARES funds due to an increased loss of revenue from decreased

ridership and also installation of personal protective equipment on board our buses and trains. CATS continues to be in a very strong position financially, and I think that is a pleasant surprise.

Discussion:

MAYOR ANERALLA (Town of Huntersville): If somebody goes on the bus or the train do you have extra masks and things for them, or are they denied service? How does that work?

CATS CEO LEWIS: We do have extra face coverings that we will provide to any customer for free. They can get it at our transit center or any of our CATS supervisors, safety personnel, or security personnel. Our bus operators and train operators do not have them. I want them concentrating on moving people and not handing out masks and coverings. We are prohibited under the Governor's executive order for denial of service to anyone because they don't have a face mask. We will offer. We make masks available for free to anybody who wants it, but it is not a precursor to service.

X. Adjourn

The meeting was adjourned at 7:07 p.m. by Commissioner Susan Harden – MTC Chairwoman (Board of County Commissioners - Mecklenburg County).

NEXT MTC MEETING: WEDNESDAY, OCTOBER 28TH, 2020, STARTS AT 5:30 P.M.

**METROPOLITAN TRANSIT COMMISSION
INFORMATION ITEM
STAFF SUMMARY**

SUBJECT: NCDOT Annual Safety Report

DATE: October 28, 2020

1.0 PURPOSE/SCOPE: Present and discuss with the MTC the annual NCDOT Safety Report.

2.0 BACKGROUND:

- As part of new federal regulations, the State Safety Oversight (SSO) is required to present an annual Safety Report to the MTC. This is the first year this report has been drafted and sent to the MTC.

3.0 PROCUREMENT BACKGROUND: N/A

4.0 POLICY IMPACT: N/A

5.0 ECONOMIC IMPACT: N/A

6.0 ALTERNATIVES: N/A

7.0 RECOMMENDATIONS: N/A

8.0 ATTACHMENT: N/A

SUBMITTED AND RECOMMENDED BY:



**John M. Lewis, Jr.
Chief Executive Officer, Charlotte Area Transit System
Director of Public Transit, City of Charlotte**

State of North Carolina Department of Transportation




State Safety Oversight Program

2019 Annual Status of Safety Report

July 2020

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION (NCDOT)


ENDORSEMENTS

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9/22/2020

Timothy P Abbott
Safety Enforcement and Oversight Manager
SSO Program Manager
Rail Division
North Carolina Department of Transportation


Date

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9/22/2020

Jahmal Pullen, PE
Engineering Coordination and Safety Manager
Rail Division
North Carolina Department of Transportation

Date

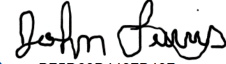
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9/23/2020

Jason Orthner, PE
Director
Rail Division
North Carolina Department of Transportation

Date

CHARLOTTE AREA TRANSIT SYSTEM (CATS) ENDORSEMENTS

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John Lewis
Chief Executive Officer and Director of Public Transit
Charlotte Area Transit System

9/23/2020

Date


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Allen Smith, III
Chief Operating Officer &
Interim General Manager, Rail Operations
Charlotte Area Transit System

9/23/2020

Date

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Kenneth Chapman
General Manager, Safety and Security
Charlotte Area Transit System

9/23/2020

Date

Executive Summary

The N.C. Department of Transportation's (NCDOT) Rail Division has been designated by State General Assembly Statute G.S. 136-18(36)¹ to serve as the State Safety Oversight Agency (SSOA) for the State of North Carolina to comply with Title 49 of the Code of Federal Regulations (CFR) Part 674² and 49 U.S.C Section 5330³. As the SSOA, NCDOT's Rail Division is responsible for managing the State Safety Oversight (SSO) Program of the Rail Transit Agencies (RTAs) operating in the State of North Carolina, not otherwise regulated by the Federal Railroad Administration (FRA). RTAs subject to NCDOT's SSO Program are currently limited to the *Charlotte Area Transit System (CATS) light rail system (LYNX Blue Line) and the CATS streetcar system (LYNX Gold Line)*.

SSO Program Certification to 49 CFR Part 674

The SSO Rule (49 CFR Part 674) became effective on April 15, 2016. All SSO agencies nationwide were required to develop a compliant SSO Program and obtain FTA certification of the Program within three years of the effective date. Per 49 CFR Part 674.25(a), NCDOT's SSO Program (hereinafter NCDOT) established minimum standards for the safety of all RTAs within its jurisdiction. These minimum standards are included in NCDOT's State Safety Oversight Program Standard (SSOPS) and are consistent with the National Public Transportation Safety Plan, the Public Transportation Safety Certification Training Program, the Public Transportation Agency Safety Plan and applicable Federal and State laws. NCDOT's SSO Program was approved and certified by the FTA on July 10, 2018.

NCDOT completed an annual review of its SSOPS and issued SSOPS-Revision 4 to CATS on April 2, 2019. The SSOPS and FTA regulations are utilized by NCDOT and CATS to ensure that safety policies, procedures and compliance enforcement are effective to minimize safety risk within CATS operations.

Title 49 CFR Part 674.13(a)(7) requires that at least once a year, NCDOT must report the status of safety for each RTA to the Governor, FTA, and the board of directors, or equivalent entity, of the RTA. This report has been prepared in accordance with this requirement and reflects the status of CATS' safety performance as assessed by NCDOT during the 2019 calendar year.

Findings of NCDOT's assessment include:

- Ridership on the CATS LYNX light rail system, as measured by unlinked passenger trips, has increased nearly each year since 2008 while light rail vehicle revenue miles have remained largely consistent since 2008. This is consistent with nationwide trends. [Click here for additional information.](#)

¹ General Assembly of North Carolina, Session 2013, Session Law 2014-58, House Bill 1025; G.S. 136-18(36), Update Fixed Guideway System Safety Oversight, Section 9.

² Department of Transportation, Federal Transit Administration, 49 CFR Part 674, State Safety Oversight; Final Rule, March 16, 2016.

³ 49 U.S.C. § 5330 – U. S. Code – Unannotated Title 49. Transportation § 5330. State Safety Oversight.

- Ridership on the CATS Gold Line Streetcar system has decreased since the system began operation in July 2015. The decrease in ridership is in contrast to the nationwide trend. This downward trend is attributed to the following: 1) system is a new start-up service and excitement over a new system often levels off, 2) system often operated at 50% capacity due to the scheduled maintenance programs for new streetcars, and 3) the system is one of the shortest service lines (at 1.5 miles) in comparison to other industry streetcar systems. [Click here for additional information.](#)
- In 2019, CATS reported the following safety events to NCDOT. [Click here for additional information:](#)
 - One light rail fatality
 - Ten light rail collisions
 - Two light rail vehicle yard derailments (non-passenger trains)
 - Nine employee injuries
 - Four non-employee injuries (passengers, patrons or other vehicle occupants)
- The frequency of collisions experienced by the CATS light rail system has historically been greater than that of the national average. [Click here for additional information.](#)
- CATS reported thirteen (13) injuries involving its light rail system to NCDOT in 2019. This is lower than the national injury rate average for light rail systems nationwide. [Click here for additional information.](#)
- CATS experienced fewer light rail system fatalities than the national average for 2019, reporting one (1) fatality to NCDOT during this time period. [Click here for additional information.](#)
- CATS identified eleven (11) findings through its internal safety audit program in 2019, requiring Corrective Action Plans (CAPs). All have been verified as being implemented by NCDOT. [Click here for additional information.](#)
- NCDOT's last Triennial Audit of CATS' rail transit operations were completed in November 2019 and resulted in thirty-two (32) findings, twenty-one (21) CAPs and forty-six (46) technical guidance recommendations to assist CATS with its development of an Agency Safety Plan (ASP), per 49 CFR Part 673. [Click here for additional information.](#)
- NCDOT collaborated with CATS on a monthly basis to assess CATS' progress towards the development of the CATS ASP. These monthly assessments required CATS to submit status updates, whereby NCDOT offered additional technical guidance. As of December 2019, CATS had established a full draft ASP which was formally approved and adopted by CATS' policy board, the Metropolitan Transit Commission (MTC) in April 2020. [Click here for additional information.](#)
- CATS reported four (4) light rail vehicle wrong-side door opening safety events to NCDOT in 2018. This number nearly doubled to seven (7) in 2019. These events are

considered Unacceptable Hazardous Conditions (UHCs) by NCDOT. [Click here for additional information.](#)

- On February 21, 2019, NCDOT's SSO Program issued a Finding of Noncompliance (FNC-2019-02-19) to CATS for failing to comply with its own safety standards and NCDOT's SSOPS. CATS failed to take sufficient corrective actions to reduce the frequency of wrong-side door opening events. Report #FNC-2019-02-19 resulted in three (3) findings of noncompliance and five (5) CAPS. The report was closed on April 22, 2019. [Click here for additional information.](#)
- NCDOT's SSO Program conducted an Independent Accident Investigation of CATS' incident 2019-0710-01, which involved a wrong-side door opening that resulted in a passenger exiting the train on the field side of the train, opposite the passenger platform. This was the sixth wrong-side door opening within six months. NCDOT's investigation resulted in seventeen (17) findings and twelve (12) mandatory CAPs. [Click here for additional information.](#)
- CATS initiated a total of thirty-nine (39) CAPS in 2019 and successfully implemented thirteen (13) which were all verified by NCDOT. [Click here for additional information.](#)

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1.0 Introduction

The N.C. Department of Transportation's (NCDOT) Rail Division has been designated by State General Assembly Statute G.S. 136-18(36)⁴ to serve as the State Safety Oversight Agency (SSOA) for the State of North Carolina to comply with Title 49 of the Code of Federal Regulations (CFR) Part 674⁵ and 49 U.S.C Section 5330⁶. As the SSOA, NCDOT's Rail Division is responsible for managing the State Safety Oversight (SSO) Program of the Rail Transit Agencies (RTAs) operating in the State of North Carolina, not otherwise regulated by the Federal Railroad Administration (FRA). RTAs subject to NCDOT's SSO Program are currently limited to the *Charlotte Area Transit System (CATS) light rail system (LYNX Blue Line) and the CATS Streetcar system (LYNX Gold Line)*.

Title 49 CFR Part 674.13(a)(7) requires that at least once a year, NCDOT report the status of safety for CATS to the Governor, FTA, and the board of directors, or equivalent entity, of CATS. This report has been prepared in accordance with this requirement and reflects the status of CATS' safety performance as assessed by NCDOT during the 2019 calendar year.

The FTA's safety program for RTAs is increasingly guided by the evaluation of industry data, including trends in safety indicators, accident/incident (safety events) data, and the results of on-site assessments, audits and reviews. As such, NCDOT's assessment of CATS' safety performance for calendar year 2019 is based on analysis of CATS operating data, including accident/incident data, compared to that of previous operating years, as well as to data of other similar RTAs operating in the United States. Through this quantitative analysis, NCDOT is able to direct its SSO Program activities toward those areas presenting the highest risks to the RTAs under its jurisdiction.

The following describes the CATS public transportation system subject to NCDOT's SSO Program and reflects the status of their safety performance, as assessed by NCDOT during the 2019 calendar year.

1.1 Limitations of the Data Analysis

This report presents safety data reported to both NCDOT's SSO Program and to FTA's National Transit Database (NTD) Program. The analysis is only as accurate as the data reported to both Programs and does not account for errors that may exist as a result of differing reporting thresholds existing between each Program.

⁴ General Assembly of North Carolina, Session 2013, Session Law 2014-58, House Bill 1025; G.S. 136-18(36), Update Fixed Guideway System Safety Oversight, Section 9.

⁵ US Department of Transportation, Federal Transit Administration, 49 CFR Part 674, State Safety Oversight; Final Rule, March 16, 2016.

⁶ 49 U.S.C. § 5330 – U. S. Code – Unannotated Title 49. Transportation § 5330. State Safety Oversight.

2.0 CATS Rail Transit Operations

CATS rail transit operations subject to the requirements of NCDOT's SSO Program include CATS LYNX Blue Line (light rail system) and the LYNX Gold Line (Streetcar System). Each is operated and managed by CATS Rail Operations Control Center (ROCC) in accordance with CATS Procedure ROD201: Rail Operations Control Center Responsibilities. Operating characteristics of both are provided herein.

2.1 LYNX Blue Line Light Rail System

The LYNX Blue Line Light Rail system began operation in November 2007, initially providing service from I-485 to 7th Street. Preliminary engineering of the "Blue Line Extension" began in 2008 and construction of the extension was completed in March 2018. As depicted in **Figure 1**, the system is now 19.3 miles long and operates from I-485 at South Boulevard to UNC Charlotte's main campus. Current service includes 26 stations, including 11 Park and Ride locations. Trains operate 7 days a week with weekday service operating from 5:26 a.m. to 1:26 a.m. Service operates every 7.5 minutes during weekday peak periods (i.e., rush-hour) and every 15 minutes during non-peak hours. Weekend service operates every 20 minutes during the day and every 30 minutes during the late evening/night hours.

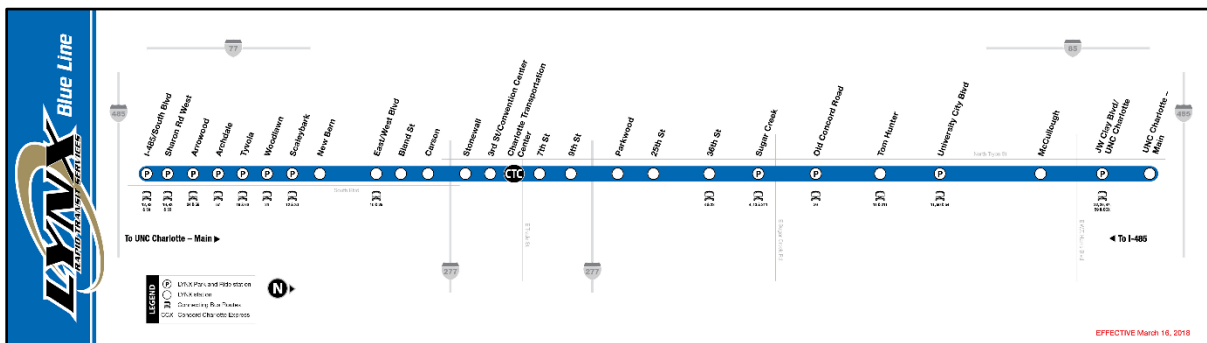


Figure 1: CATS LYNX Blue Line Light Rail Map

The light rail fleet consists of 42 double articulated, low floor light rail vehicles (LRVs) similar to that shown in **Figure 2**. The LRVs are approximately 93 feet long and 9 feet wide and include 70% low floor design, 100% low floor boarding, a minimum of 68 passenger seats, automatic passenger counters, cameras, and allow for bi-direction operation and a maximum operating speed of 55 MPH. The LRVs and the station platform interface and are compliant with the Americans with Disabilities Act (ADA).



Figure 2: CATS Light Rail Vehicle

In addition, the LRVs are capable of operating as single units or coupled in up to three car consists. Each LRV is equipped with operating cabs at both ends and feature alternating current (AC) propulsion and cab signaling.

In January 2019, CATS began pre-project development of the CATS Silver Line, which would create one continuous light rail corridor from the Town of Matthews to Center City Charlotte, continuing west to the Charlotte Douglas International Airport and beyond to a western terminus in the City of Belmont in Gaston County. Preliminary engineering of the Silver Line has begun, and construction is scheduled to begin in 2027.

2.2 LYNX Gold Line Streetcar System

The LYNX Gold Line Streetcar System is a conventional in-street running fixed-guideway streetcar operating in mixed traffic which began operating in 2015. The system is 1.5 miles long with six stops, each equipped with shelters to provide protection from inclement weather. As shown in **Figure 3**, the system operates from the Charlotte Transportation Center (CTC) to the intersection of Hawthorne Lane and Fifth Street.

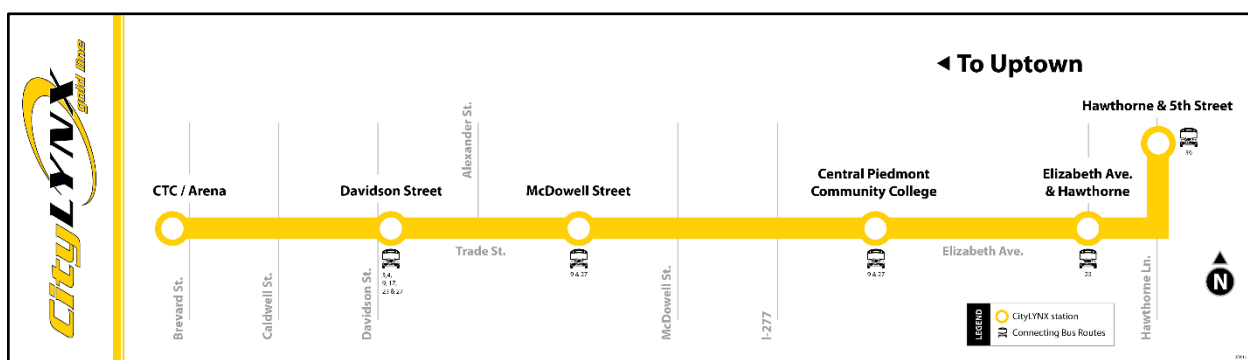


Figure 3: CATS LYNX Gold Line Streetcar Map

Streetcars operate 7 days a week with weekday service beginning at approximately 6 a.m. and ending at approximately 11 p.m. Service is provided every 15 minutes during weekday rush hours and less frequently (up to every 20 minutes) during non-peak hours. Weekend and holiday service operate as frequently as every 20 minutes. Operation of the Streetcar system is line of sight and the operators communicate with the ROCC by radio. **(Note: The CATS LYNX Gold Line Streetcar system was taken out of service on June 2, 2019 due to planned construction to expand service, and thus did not operate for the remainder of 2019).**



Figure 4: Gomaco Streetcar

The streetcar fleet consists of three replica Gomaco Birney trolleys, represented in **Figure 4**. These streetcars started to be decommissioned in 2019 and are being replaced by new Siemens modern streetcars with hybrid technology, depicted in **Figure 5**.

The streetcars are approximately 43 feet long with 8.74-foot car body width (10-foot width with mirrors). They include ADA lifts, pantographs, cameras, interfaces with a 6-inch curbs at stops, 48 passenger seats and room for 38 standing passengers. The streetcars allow for bi-directional operation and operate at a maximum speed of 25 MPH.



Figure 5: Modern Streetcar

Phase 2 of the Gold Line is under construction and will extend the system by two miles on the west end from the CTC to French Street, and by one-half mile on the east end from Novant Presbyterian Hospital to Sunnyside Avenue. Once completed, the system will be four miles long with 11 additional stops.

3.0 CATS' Safety Event Reporting to FTA/NCDOT

NCDOT's assessment of CATS' RTA safety performance for calendar year 2019 is based on analysis of CATS operating (i.e., unlinked passenger trips, revenue miles, etc.) data and accident/incident data, compared to that of previous operating years, as well as to data of other similar Rail Fixed Guideway Public Transportation Systems (RFGPTSs) operating in the United States.

Data between calendar years 2008 and 2019 was collected from CATS and NCDOT's SSO Program, as well as from the National Transit Database (NTD), the National Highway Traffic Safety Administration (NHTSA), the Federal Railroad Administration (FRA), the National Transportation Safety Board (NTSB) and the National Safety Council as applicable. The gathered data was analyzed to identify trends and safety performance indicators for CATS' RTAs for calendar year 2019 as compared to that of previous years. Only accident/incident data meeting the reporting thresholds of 49 CFR Parts 659.33 and 674.33 was analyzed to standardize the data set with FTA's accident/incident reporting requirements.

There is a direct correlation between ridership and accident/incident frequency, in that as ridership increases so does the probability or likelihood that an accident/incident involving a passenger may occur. Likewise, as the operating system increases in size, so does the probability that an accident/incident involving the system may occur. Accident/incident data has therefore been standardized using unlinked passenger trips and vehicle revenue miles to account for operational changes, including changes in ridership and system expansions.

3.1 Safety Event Reporting Thresholds

CATS is required by Section 6.0 of NCDOT's SSOPS⁷ and the requirements of 49 CFR Part 674 to notify NCDOT and the FTA within two (2) hours of any safety event meeting the following reporting thresholds involving a safety event defined as an accident.

- A fatality at the scene or where an individual is confirmed dead within thirty (30) days of a rail transit-related event;
- One or more persons suffering serious injury, as defined in 49 CFR Part 674 and this SSOPS;
- A derailment of a rail transit vehicle defined as a non-collision event in which one or more wheels of a rail transit vehicle unintentionally leave the rails. Two-hour accident notification is required anytime there is the derailment of a rail transit vehicle at any location, at any time, whatever the cause;
- An evacuation due to life safety reasons. An evacuation for a life safety reason is a condition that occurs when persons depart from transit vehicles or facilities for life safety reasons, including self-evacuation;
- A collision involving at least one rail transit vehicle at a grade crossing, with a person or object that results in substantial property damage, serious injury or fatality;
- A collision between a rail transit vehicle and another rail transit vehicle (main line or yard); and
- FRA notifications. Anytime CATS must notify the FRA of an accident, as defined by 49 CFR 225.5 (i.e. shared use of the general railroad system trackage or corridors), CATS must also notify the SSO Agency and FTA of the accident within the same time frame established by the FRA.

NCDOT's SSO Program also requires CATS to notify NCDOT of "Other" safety events involving an Unacceptable Hazardous Condition (UHC), meeting the following criteria:

- Evacuation of passengers onto the right-of-way for non-life-threatening reasons and not to a waiting train (due to disabled train or stopped train);
- A collision involving at least one rail transit vehicle and any object in which property damage or personal injury is a potential or real outcome of the collision;
- A revenue vehicle opening doors on the wrong side away from the platform or opening vehicle doors when the railcar doors are off the platform;

⁷ State of North Carolina Department of Transportation State Safety Oversight Program Standard, Revision 4, Section 6.0 – Final, March 2019.

- Stop/Red signal violations. A signal is a mechanical or electrical device erected beside a track to pass information relating to the state of the line ahead to train operators. Stop/Red signal violations occur any time a train operator passes a red signal, or passes an employee on the right of way who is communicating to the train operator not to move any farther;
- Signal device failures (i.e., an incident in which a signal device fails to operate as designed);
- Near miss contact of a rail transit vehicle with another vehicle (rail or non-rail);
- Near miss contact of a rail transit vehicle with roadway workers; and
- Pantograph and OCS damage (Catenary line pulled down or pantograph entanglement).

As defined by NCDOT's SSOPS, reportable Safety Events include four (4) types of hazards shown in **Table 1** below and include Accidents, Incidents, Occurrences, and UHCs.

Table 1: Safety Event Notification/Reporting Requirements for RTAs

	Notification	RTA Hazard Log Entry	Preliminary Report	Final Report Draft	NCDOT Approval
Accident	NCDOT & FTA within 2 hours	Required	Within 72 hours	Within 30 Days	Formal Approval
Incident	RTA Hazard Log (Quarterly to NCDOT)	Required	N/A	N/A	Formal CAPS only
Occurrence	RTA Hazard Log (Quarterly to NCDOT)	Required	N/A	N/A	Formal CAPS only
UHC (NCDOT)	NCDOT within 2 hours	Required	Within 72 hours	Within 30 Days	Formal Approval

3.2 Ridership Statistics

As depicted in **Figure 6**, ridership, *as measured by unlinked passenger trips, on the CATS LYNX light rail system, has generally increased each year since 2008*. The increase of more than 1 million additional unlinked passenger trips in 2018 is due, in part, to the opening of the Blue Line Extension which began passenger service in March 2018, adding 9.3 miles of rail service and 11 additional stations. As shown in **Figure 7**, *CATS' increased light rail ridership between 2008 and 2018 has occurred while vehicle revenue miles have remained largely consistent over this same timeframe*.

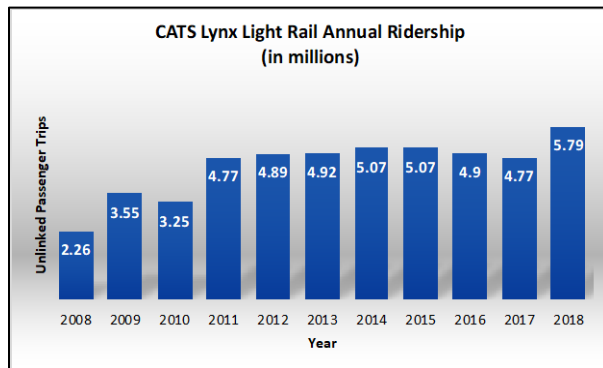


Figure 6: CATS LYNX Light Rail System Ridership, 2008 - 2018

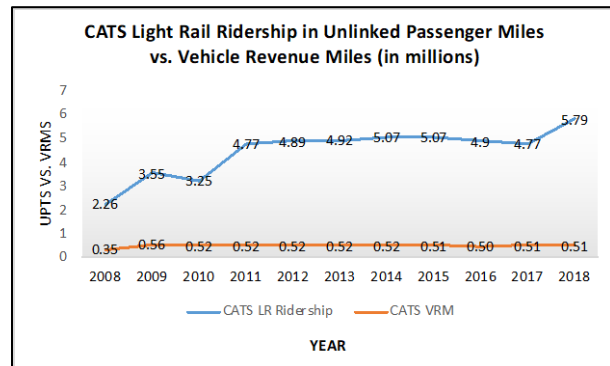


Figure 7: CATS LYNX Light Rail Ridership vs. Light Rail Revenue Miles, 2008 - 2018

This increase in light rail ridership is consistent with nationwide trends, which have shown similar increases in ridership over the same time period while light rail vehicle revenue miles have remained largely consistent. This trend is depicted in **Figures 8 and 9**.

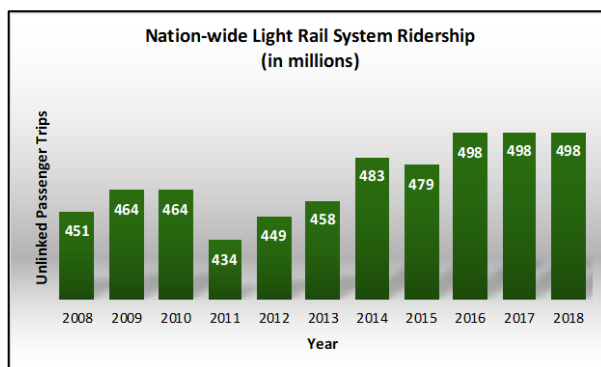


Figure 8: Nationwide Light Rail System Ridership, 2008 - 2018

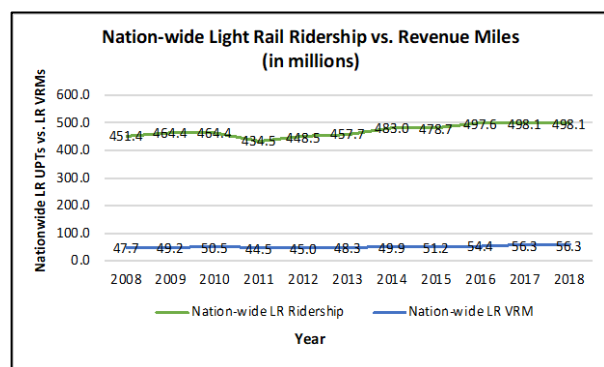


Figure 9: Nationwide Light Rail Ridership vs. Light Rail Revenue Miles, 2008 - 2018

Conversely, as shown in **Figures 10 and 11**, ridership on CATS' Gold Line Streetcar System has decreased since the system began operation in July 2015. This decrease in ridership contrasts with the nationwide trend which has shown an increase in both ridership (as measured by unlinked passenger trips) and revenue miles. This downward trend is attributed to the following: 1) system is a new start-up service and excitement over a new system often levels off, 2) system often operated at 50% capacity due to the scheduled maintenance programs for new streetcars, and 3) the system is one of the shortest service lines (at 1.5 miles) in comparison to other industry streetcar systems.

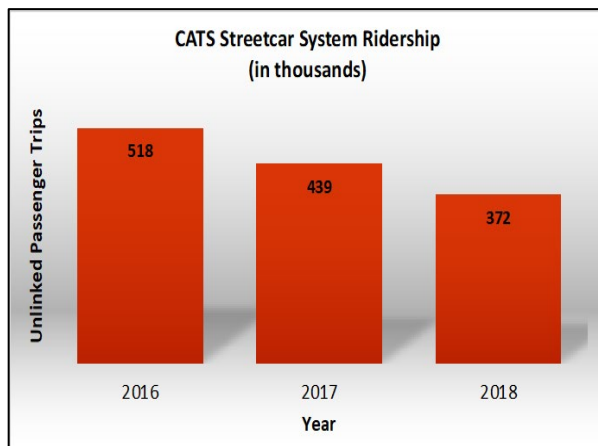


Figure 10: CATS' Streetcar Ridership, 2015 - 2018

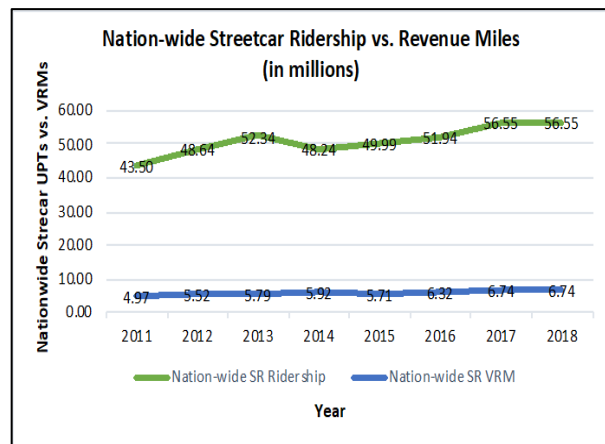


Figure 11: Nationwide Streetcar Ridership vs. Revenue Miles, 2011 - 2018

3.3 LYNX Light Rail System Safety Event Statistics

FTA's compilation of rail transit industry data is published annually through the NTD. NCDOT has used the NTD data and the event data reported to its SSO Program by CATS to analyze CATS' RFGPTS safety performance. Findings of the analysis are summarized as follows:

Between 2008 and 2018, CATS' light rail system experienced:

- 38 total light rail collisions, 13 of which occurred at grade crossings
- One fire-related event in which the rubber gasket surrounding the heated windshield of an LRV began to smoke
- Five Hi-Rail vehicle derailments
- 12 "Other" type events that have predominantly included wrong-side door openings, signal violations and catenary system issues

In 2019 CATS reported the following safety events to NCDOT:

- One light rail fatality
- 10 light rail collisions
- Two light rail vehicle yard derailments (non-passenger trains)
- Nine employee injuries
- Four non-employee injuries (passengers, patrons or other vehicle occupants)

Figure 12 summarizes the number and types of events reported by CATS for its LYNX light rail system between calendar year 2008 and 2018. Due to the nature of CATS' light rail system, which is largely unfenced and operates through population centers, including Uptown Charlotte, "Other" type events are the most frequently reported, while collisions are the second most frequently reported type of accident/incident experienced.

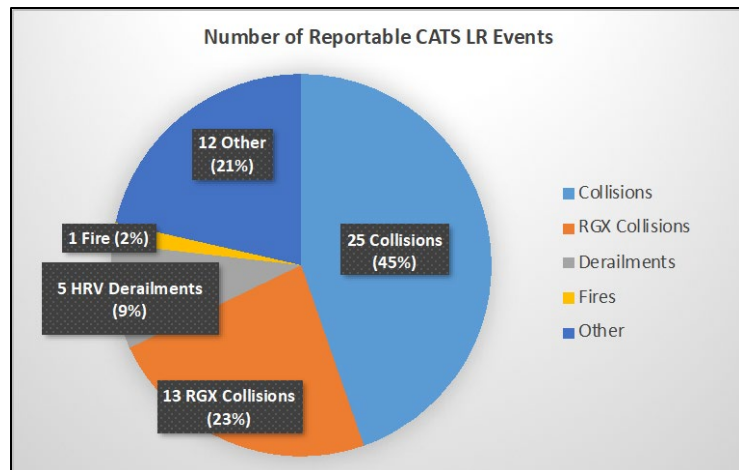


Figure 12: Number of CATS' Light Rail Reportable Events, 2008 - 2018

Incident rates have been standardized by light rail vehicle revenue miles to compare the frequency of collisions experienced by CATS light rail system between 2008 and 2018 to that of the nation's light rail transit industry over that same period. **Figure 13** demonstrates that *the frequency of collisions experienced by CATS' light rail system has historically been greater than that of the national average, even as light rail service (as measured in light rail vehicle miles) has increased across the nation since 2008.*

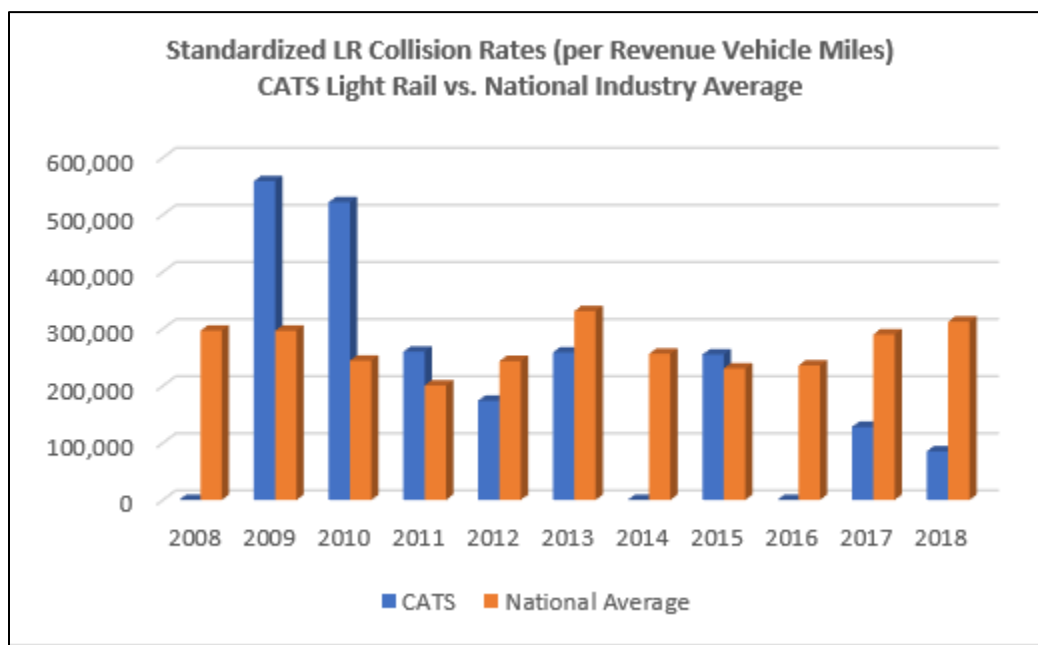


Figure 13: Frequency of CATS' Light Rail Collisions Compared to Light Rail Industry, 2008 – 2018, Standardized by Vehicle Revenue Mile

3.4 LYNX Light Rail System Injuries and Fatalities

Between 2008 and 2018, CATS reported 86 events resulting in injury involving its light rail system to FTA's NTD. **Figure 14** compares CATS' light rail system injury rates compared to the national average using NTD data standardized by light rail vehicle revenue miles. Looking at Figure 15, *the number of injuries experienced on CATS' light rail system is generally lower than the national average*. Exceptions include calendar years 2008 and 2012. The large rate of injuries experienced by CATS each of these years is the result of grade crossing collisions that resulted in multiple reported injuries. For instance, in 2012 CATS' light rail system experienced a single grade crossing collision that resulted in three motor vehicle occupant injuries, three LRV passenger injuries and one LRV operator injury. This single event accounts for nearly half of the injuries reported by CATS in 2012.

Due to differing reporting thresholds, CATS reported just 29 injuries involving its light rail system to NCDOT's SSO Program during this same period. Despite the difference in reporting thresholds, when standardized and compared to NTD data, CATS' rate of light rail system related injuries reported remains lower than the national average, with the exception of the 2012 calendar year.

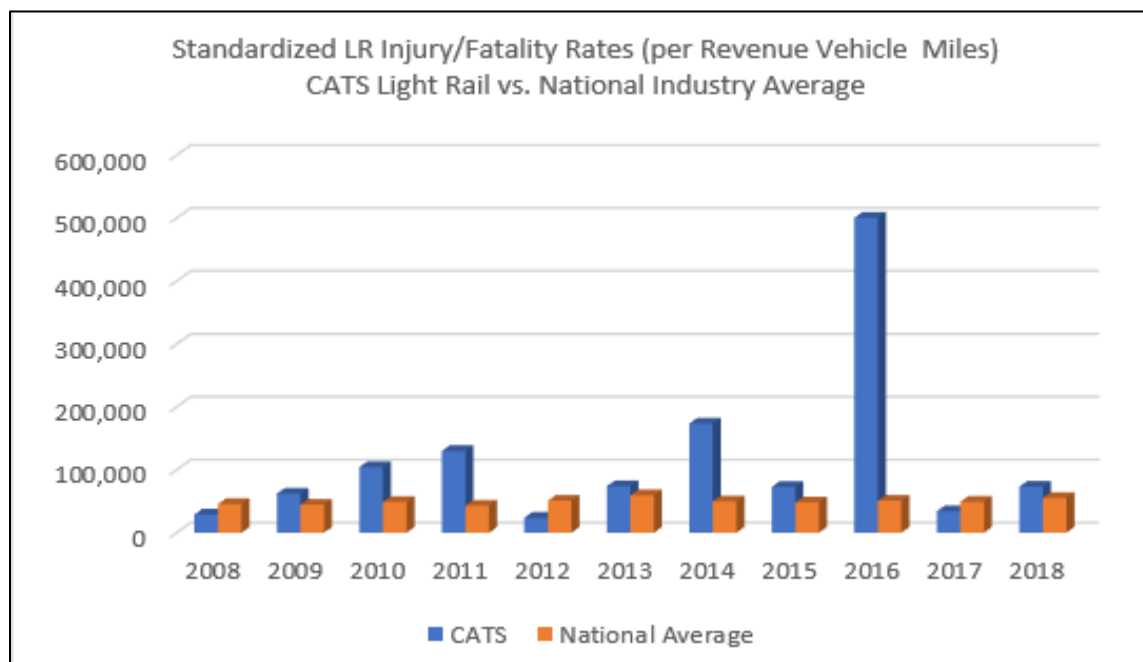


Figure 14: CATS Light Rail Injury Rates vs. National Light Rail Injury Rates Standardized by LRV Revenue Miles, 2008 - 2018

Between 2008 and 2018, CATS reported five (5) fatalities involving the light rail system to FTA's NTD and (3) fatalities to NCDOT's SSO Program. Two of those reported to the SSO Program were the result of trespassers being struck by an LRV and one was the result of a collision at a grade crossing. Similar to injury statistics, *CATS has experienced far fewer light rail system fatalities than the national average*.

CATS reported thirteen (13) injuries involving its light rail system to NCDOT in 2019. This is lower than the national injury rate average for light rail systems nationwide. CATS experienced fewer light rail system fatalities than the national average for 2019, reporting one (1) fatality to NCDOT during this time period.

3.5 Streetcar System Safety Event Statistics

NCDOT again used the NTD data and the event data reported to its SSO Program by CATS to analyze the safety performance of CATS' streetcar system. Findings of the analysis are summarized as follows:

Between 2015 and 2018, CATS' streetcar system experienced:

- **18 total collisions**
- **Two fire/smoke related events: one involving a malfunctioning operator fan and one involving leaking compressor fluid mist that was mistaken for smoke**
- **One streetcar derailment**
- **Two "Other" type events in which motor vehicles struck streetcar canopies**

Due to the street running in mixed traffic with other passenger vehicles, collisions are the most frequent type of reportable event experienced by CATS' streetcar operations. **Figure 15** provides the number and type of collisions experienced by CATS' streetcar system since 2015.

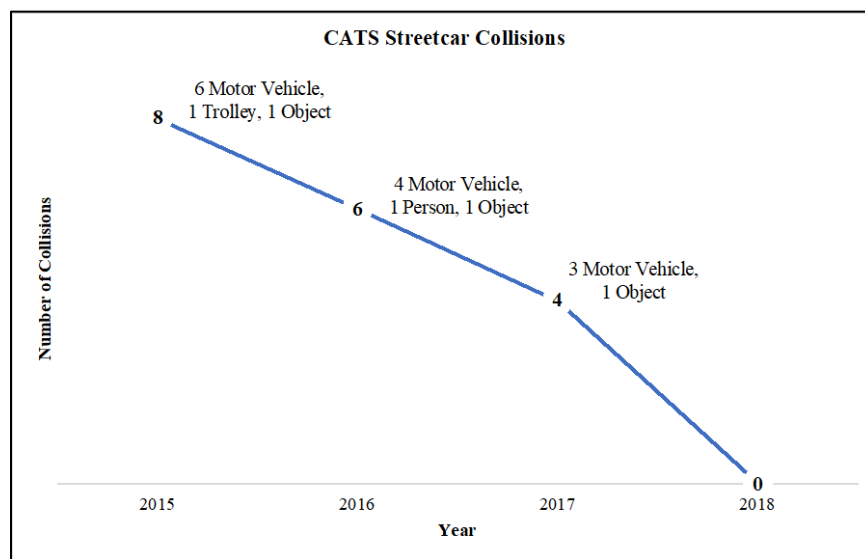


Figure 15: Number and Type of CATS Streetcar Collisions, 2015 - 2018

As shown in **Figure 16**, while the number of collisions involving CATS’ streetcar system decreased to a low of zero collisions in 2018, the rate of streetcar collisions nation-wide has increased over the same period.

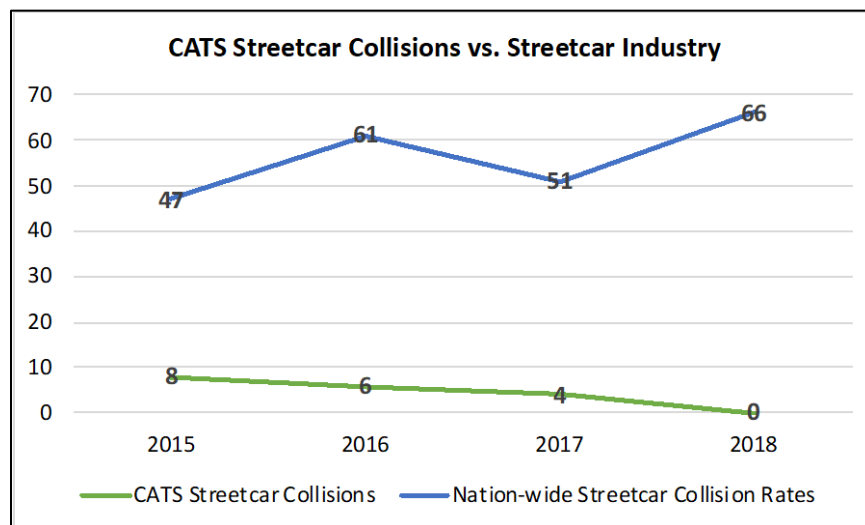


Figure 16: CATS Streetcar Collision Rate vs. National Streetcar Collision Rate, 2015 - 2018

3.6 Streetcar System Injuries and Fatalities

Between 2015 and 2018, CATS reported zero (0) injuries and zero (0) fatalities involving its streetcar system to FTA’s NTD but did report one (1) injury to NCDOT’s SSO Program in calendar year 2015. The difference in the data is again the result of differing reporting thresholds for each Program. *CATS’ streetcar system injury and fatality rates are below that reported by the nation’s streetcar systems as a whole which, between 2015 and 2018, reported an average of 182 injuries and two fatalities each year.*

4.0 Safety Assurance Programs

CATS is required by 49 CFR Part 673.27⁸ and Section 4.6 of NCDOT’s SSO Program Standard⁹ to implement a “safety assurance process” that includes “ongoing Internal Safety Audits (ISAs)” directed toward reviewing the implementation and performance of all elements of CATS’ Safety Program. The Safety Assurance process must include: safety performance monitoring and measurement of the agency’s procedures for operations and maintenance; monitoring of operations to identify ineffective, inappropriate, or unimplemented safety risk mitigations; investigation of safety events to identify causal factors; and monitoring information reported through any internal safety reporting programs. CATS is required to conduct ISAs of all elements of its Safety Program over a three-year audit cycle to comply with NCDOT’s SSO Program and FTA requirements.

⁸ Department of Transportation, Federal Transit Administration, 49 CFR Part 673 Public Transportation Agency Safety Plan; Final Rule, July 19, 2018.

⁹ State of North Carolina Department of Transportation State Safety Oversight Program Standard, Section 4.6, Page 56, Revision 4 – Final, March 2019.

CATS must also establish a process for identifying and assessing, using its Safety Risk Management (SRM) process, operational changes that may introduce new hazards or impact its safety performance. If deficiencies are identified as part of CATS' safety assurance and performance assessment processes, CATS must develop and carry out CAPs under the direction of the Accountable Executive (i.e., Chief Executive Officer), to address the identified deficiencies. NCDOT is required to verify that these CAPs have been implemented as intended and are effective.

CATS initiated a total of thirty-nine (39) CAPS in 2019 and successfully implemented thirteen (13), which were all verified by NCDOT.

4.1 CATS' Internal Safety Audit Program

CATS' three-year ISA cycle began in January 2017 and concluded Dec. 31, 2019. *As a result of its ISAs in 2019, CATS' identified eleven (11) findings requiring corrective action; all of which have been verified as being implemented by NCDOT.*

Table 1 summarizes the ISAs completed during the audit cycle and the number of audit findings and CAPs that resulted.

Table 1				
	Safety Element Title	Audit Date	Audit Findings	CAP
1	Policy Statement and Authority for SSPP	5/17/17 - 6/29/17	0	0
2	Goal and Objectives	5/17/17 - 6/29/17	0	0
3	Overview of Management Structure	5/17/17 - 6/29/17	0	0
4	Control and Update Procedure (plus SSP, Section 8)	8/29/17	0	0
5	Implementation Activities and Responsibilities (plus SSP, Section 4)	8/29/17	SSPP4-2017-01	1
6	Hazard Management Process (plus SSP, Section 6)	Jul./Aug. 2018	SSPP05-2018-01 SSPP06-2018-01 SSPP18-2018-01	1 1 1
7	Safety Certification (plus SSP, Section 9)	2/23/17 - 12/18/17	SSPP07-2017-01 SSPP09-2017-01	1 1
8	System Modification	2019	SSPP08-2019-01	1
9	Safety Data Collection and Analysis	Jul./Aug. 2018	0	0
10	Accident/Incident Investigations	Jul./Aug. 2018	0	0
11	Emergency Management Program	2019	0	0
12	ISAs (and SSP, Section 8.1)	2019	0	0
13	Rules Compliance	2/23/17	0	0
14	Facilities and Equipment Inspections	2019	SSPP14-2019-01	1
15	Maintenance Audits and Inspections	2019	SSPP15-2019-01	1
16	Training and Certification Program for Employees and Contractors	2019	SSPP16-2019-01 SSPP16-2019-02 SSPP16-2019-03	3
17	Configuration Management and Control	2019	SSPP17-2019-01	1
18	Local, State and Federal Requirements	2019	SSPP18-2019-01 SSPP18-2019-02	2

Table 1				
	Safety Element Title	Audit Date	Audit Findings	CAP
19	Hazardous Materials Programs	2019	SSPP19-2019-01 SSPP19-2019-02	2
20	Drug and Alcohol Program	11/2016 – 01/2017	SSPP20-2019-01	1
21	Procurement Process	11/2016 - 01/2017	SSPP21-2019-01	1

4.2 NCDOT Triennial Audit Program

NCDOT's SSO Program is required by 49 CFR Part 674.31¹⁰ to conduct a complete independent audit of CATS' rail transit operations and CATS' compliance with its Agency Safety Plan (ASP) at least once every three (3) years. This audit must be carried out in accordance with the requirements of Section 5 of NCDOT's SSO Program Standard¹¹.

NCDOT's on-site audit includes record examinations, inspections, observations, field checks, interviews and testing. At the conclusion of the three-year audit cycle, NCDOT issues a report with findings and recommendations arising from the audit which must include, at a minimum, an analysis of the effectiveness of CATS' ASP, recommendations for improvements, and a corrective action plan, if necessary or appropriate.

NCDOT's last Triennial Audit of CATS' rail transit operations were completed November 2019 and resulted in thirty-two (32) findings, twenty-one (21) CAPs and forty-six (46) technical guidance recommendations to assist CATS with its development of an Agency Safety Plan (ASP), per 49 CFR Part 673.

NCDOT collaborated with CATS on a monthly basis to assess CATS' progress towards the development of the CATS ASP. These monthly assessments required CATS to submit status updates, whereby NCDOT offered additional technical guidance. As of December 2019, CATS had established a full draft ASP which was formally approved and adopted by CATS' Board of Directors in April 2020.

4.3 Unacceptable Hazardous Conditions and Findings of Non-compliance

CATS is required by Section 4.2.5 of NCDOT's SSO Program Standard¹² to notify NCDOT within 24 hours of any Unacceptable Hazardous Conditions (UHCs) identified by CATS involving its light rail and streetcar systems. UHCs are defined as conditions presenting a level of safety risk that is deemed unacceptable to CATS and/or NCDOT. In addition, should a non-reportable accident represent a UHC, the accident shall be considered reportable and CATS must

¹⁰ Department of Transportation, Federal Transit Administration, 49 CFR Part 674 State Safety Oversight; Final Rule, March 16, 2016.

¹¹ State of North Carolina Department of Transportation State Safety Oversight Program Standard, Section 5.0, Page 58, Revision 4 – Final, March 2019.

¹² State of North Carolina Department of Transportation State Safety Oversight Program Standard, Section 4.2.5, Page 42, Revision 4 – Final, March 2019.

report the accident and the UHC to NCDOT within two (2) hours. NCDOT's SSO Program may also identify a UHC as part of its oversight activities. In such instances, NCDOT makes CATS aware of the UHC and CATS is required to develop and implement a CAP to mitigate and/or control the UHC to NCDOT's satisfaction.

In accordance with Section 1.6.2.2 of NCDOT's SSO Program Standard¹³, if NCDOT determines a UHC presents an imminent threat to public safety, and if CATS has failed to abate the condition (in scope or timeframe) following notice from NCDOT, the department will issue a Finding of Noncompliance (FNC), elevating its concern directly to CATS' Accountable Executive (i.e., Chief Executive Officer and Director of Public Transit) to resolve the matter.

If the matter remains unresolved NCDOT may take any further action permitted by law, including but not limited to reporting the safety concern to the North Carolina Attorney General's Office, delaying, suspending, or cancelling rail service until the UHC is addressed, and/or withholding State funding to CATS' rail transit programs.

4.3.1 CATS' Light Rail System Wrong-side Door Openings

CATS is required to report to NCDOT events involving a light rail vehicle or streetcar opening its doors on the wrong side away from the passenger platform or opening vehicle doors when the railcar doors are off the platform. Wrong-side door openings present a serious risk to passengers who, as a result of the event, can disembark the railcar into the active rail right-of-way, or in the case of the streetcars, into passing motor vehicle traffic. As such, NCDOT classifies these events as UHCs and CATS must report within two-hours.

CATS reported four (4) light rail vehicle wrong-side door opening safety events to NCDOT in 2018. This number nearly doubled to seven (7) in 2019. These events are considered Unacceptable Hazardous Conditions (UHCs) by NCDOT. In total, CATS has reported eleven (11) wrong-side door openings during the past two years.

As a result of NCDOT's escalating concerns regarding the continued frequency of wrong-side door openings, on Aug. 8, 2018, NCDOT requested that CATS complete another detailed Hazard Analysis of the UHCs. Further, on Jan. 14, 2019, NCDOT wrote to CATS' General Manager of Safety and Security regarding CATS' LRV wrong-side door opening incidents, noting that CATS had implemented a "5 Second Rule" that requires all LRV Operators to make verbal announcements indicating the platform side prior to activating the door control button. CATS was also required to provide re-instruction to LRV Operator Trainees as another corrective measure to influence operator behavior.

As wrong-side door opening events continued to occur, NCDOT required CATS to ensure that LRV Operator Trainees had additional time during their training/probationary periods to be observed and instructed by Line Platform Instructors (LPI). CATS was also required to conduct more frequent auditing to monitor Operator compliance with Rail Rulebook Section 3.2.4, Door Operation.

¹³ State of North Carolina Department of Transportation State Safety Oversight Program Standard, Section 1.6.2.2, Page 15, Revision 4 – Final, March 2019.

On Feb. 6 and 7, 2019, NCDOT's SSO Program staff conducted a series of forty (40) unannounced LRV door operation inspections to examine LRV Operator compliance with CATS' rules and procedures, including the "5 Second Rule" and requirement for verbal announcements indicating platform sides. **Of the forty (40) inspections, in only three (3) instances were LRV Operators observed complying with the "5 Second Rule."**

Based on the results of NCDOT's unannounced LRV door operation inspections and the historical data trends related to wrong-side door openings, NCDOT concluded that CATS had not taken sufficient corrective action to control the occurrence of wrong-side door opening events. LRV Operators were **NOT** following CATS' prescribed methods and procedures for reducing the likelihood of wrong-side door openings as required by Rail Rulebook Section 3.2.4, and CATS management was not enforcing its safety procedures.

Therefore, *on Feb. 21, 2019, NCDOT's SSO Program issued a Finding of Noncompliance (FNC-2019-02-19) to elevate its concern regarding the wrong-side door openings to CATS' Chief Executive Officer and Director of Public Transit.* As part of the FNC, CATS was required to:

- Immediately begin operator auditing and enforcement of CATS Rail Rule Book, Section 3.2.4. CATS was required to submit documentation to NCDOT within fifteen (15) days from the date of the FNC being issued to demonstrate that operator auditing, and rule enforcement was taking place.
- Within fifteen (15) days of the FNC being issued, NCDOT ordered CATS to:
 - provide detailed information as to the LPI's role and responsibilities when present in the cab of the LRV during operator training;
 - re-evaluate the corrective measures implemented to date and determine why they have not been effective;
 - investigate additional corrective actions including, but not limited engineering controls, and present these corrective actions to NCDOT for review; and
 - survey other like transit properties with similar vehicles to determine industry best practices to control wrong-side door openings.

CATS responded to NCDOT's FNC on March 8, 2019 with a list of actions taken to address NCDOT's directives. NCDOT reviewed CATS' response and determined that it did not include sufficient evidence of required compliance actions to warrant closure of NCDOT's FNC and on March 14, 2019 provided CATS with additional instructions to address NCDOT's concerns. On April 22, 2019, NCDOT verified that CATS had taken sufficient action and had provided NCDOT with sufficient evidence to address NCDOT's directives and warrant closure of NCDOT FNC-2019-02-19.

4.3.2 NCDOT SSO Program Investigation of CATS' Light Rail System Wrong-side Door Opening Incident 19-0710-01

CATS reported three (3) additional wrong-side door opening events following NCDOT's closure FNC-2019-02-19 on April 22, 2019. The most severe event occurred on July 10, 2019 and resulted in a passenger alighting from the LRV to the field side maintenance walkway where he moved along the side of the train and crossed between LRV 201 and 111 over the coupler to gain access to the platform. In doing so, the passenger placed himself at great risk of injury and possible death.

As a result of the severity of this incident, NCDOT's SSO Program conducted its own independent investigation of the event. The results of NCDOT's investigation included the following:

NCDOT determined the probable cause of the incident to be:

- 1) Rail Operator-trainee R215 failed to comply with CATS' operating rules and procedures; and
- 2) LPI R120 failed to comply with CATS' LPI Expectations while overseeing the operation of a revenue service train.

In addition to the above, NCDOT identified the following contributing factors:

- 1) Rail Operator-trainee R215 was inadequately trained and prepared by CATS management personnel to operate revenue service trains while under the oversight of LPIs;
- 2) Rail Operator-trainee R215 panicked upon activating the wrong-side doors and, as a result, opened and closed the wrong-side doors again;
- 3) LPI R120 failed to maintain situational awareness while overseeing the operation of a revenue service train and was unaware that the wrong-side doors had been activated until after Rail Operator-trainee R215 opened and closed the wrong-side doors a second time; and
- 4) LPI R120 was inadequately trained and prepared by CATS management personnel to effectively prevent and respond to unsafe operation of revenue service trains.

As a result of its investigation of CATS Incident 19-0710-01, NCDOT identified the following seventeen (17) Findings:

Finding 1: Rail Operator-trainee R215 violated established rules and procedures.

Finding 2: LPI R120 violated established LPI Expectations.

Finding 3: CATS' Light Rail and Streetcar New Operator Training Course Manual is not compliant with CATS QA02-Control and Distribution of Plans, Manuals, Policies, and Procedures, Section 2.0.

- Finding 4:** CATS' Light Rail and Streetcar New Operator Training Course Manual does not provide adequate documentation of the training provided to new rail operators.
- Finding 5:** CATS' Light Rail and Streetcar New Operator Training Program curriculum does not adequately prepare new rail operators to safely operate revenue service trains.
- Finding 6:** CATS' LPI Training Course Manual is not compliant with CATS QA02-Control and Distribution of Plans, Manuals, Policies, and Procedures, Section 2.0.
- Finding 7:** CATS' LPI Training Program curriculum does not adequately prepare LPIs to provide effective revenue service training to new rail operators.
- Finding 8:** CATS' LPI Student Evaluation forms do not adequately document the level of training provided to new rail operators during revenue service training.
- Finding 9:** CATS has not established a process or procedure to facilitate agency-wide reviews and assessments of internal employee training programs.
- Finding 10:** CATS has not established a process or procedure to assess the LPI's performance and capabilities.
- Finding 11:** CATS has not established a process or procedure to formally communicate new and revised operating rules and procedures throughout the CATS organization.
- Finding 12:** CATS' LRV video/camera systems do not maintain accurate recording for time of day.
- Finding 13:** CATS has not established a process or procedure to adequately engage front-line employees (operators, LPIs, and maintenance) to resolve identified hazards.
- Finding 14:** CATS has not established a formal process or procedure to ensure that adult learning methodologies are incorporated into internal employee training programs.
- Finding 15:** CATS has failed to comply with NCDOT SSOPS, Section 7.1, Event Reports, when submitting CATS' Final Incident Reports, for prior incidents, to NCDOT SSO Program.
- Finding 16:** CATS has not established a process or procedure to adequately maintain internal document distribution and control.
- Finding 17:** CATS' ongoing rail operator staffing shortages is contributing to additional identified hazards, negative events and lack of effective hazard risk control.

Following the adoption of its final investigation report, NCDOT required CATS to develop a CAP for each of the above findings. The CAPs were submitted to NCDOT for review and approval through the Rail Safety web application. Realistic implementation dates were established for each and NCDOT's oversight and monitoring continues today.

**METROPOLITAN TRANSIT COMMISSION
INFORMATION ITEM
STAFF SUMMARY**

SUBJECT: CONNECT Beyond Status Update

DATE: October 28, 2020

1.0 PURPOSE/SCOPE: CATS and CCOG have prepared information to update the MTC on input received thus far on the High Capacity Transit corridors as well as the next steps to advance the regional transit plan.

2.0 BACKGROUND/JUSTIFICATION: CONNECT Beyond is a two-state, 12 county regional mobility initiative conducted by the Centralina Regional Council and the Metropolitan Transportation Commission. With the collaboration of municipal and county governments, regional planning organizations, and various transit agencies, the aim is to create a long-term strategic regional transit plan that will include a transit vision along with implementation strategies that project partners can use to guide their individual planning efforts and capital investment projects.

Project Goals

- Define a single, coordinated transit vision for the project study area that includes multiple transit modes.
- Identify high capacity transit corridors that build upon and complement the Charlotte Area Transit System 2030 Plan and other regional and local transportation plans.
- Strategize on key topics and methods for regional coordination that cross modes of transit as well as organizational and geographic boundaries.
- Develop action-oriented implementation strategies that support:
 - Improved mobility and access.
 - Effective, regionally coordinated transit investments.
 - Coordinated and resilient transit operations to meet the needs of a growing and changing region.
 - Environmentally sustainable investments and policies.
 - Advancement of equitable and community-driven improvements

3.0 PROCUREMENT BACKGROUND: N/A

4.0 POLICY IMPACT: N/A

5.0 ECONOMIC IMPACT: N/A

6.0 ALTERNATIVES: N/A

7.0 RECOMMENDATION: N/A

8.0 ATTACHMENT(S):

(A) CONNECT Beyond Study Area Map

SUBMITTED AND RECOMMENDED BY:

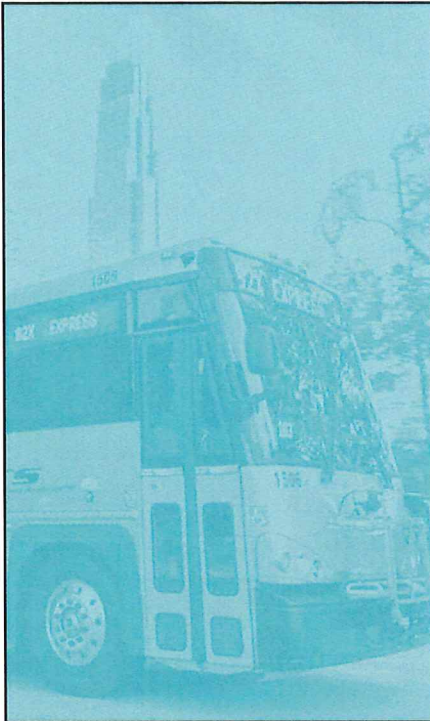
A handwritten signature in black ink, appearing to read 'John M. Lewis, Jr.', written in a cursive style.

John M. Lewis, Jr.
Chief Executive Officer, Charlotte Area Transit System
Director of Public Transit, City of Charlotte

Project Study Area

2020





**CONNECT
Beyond**

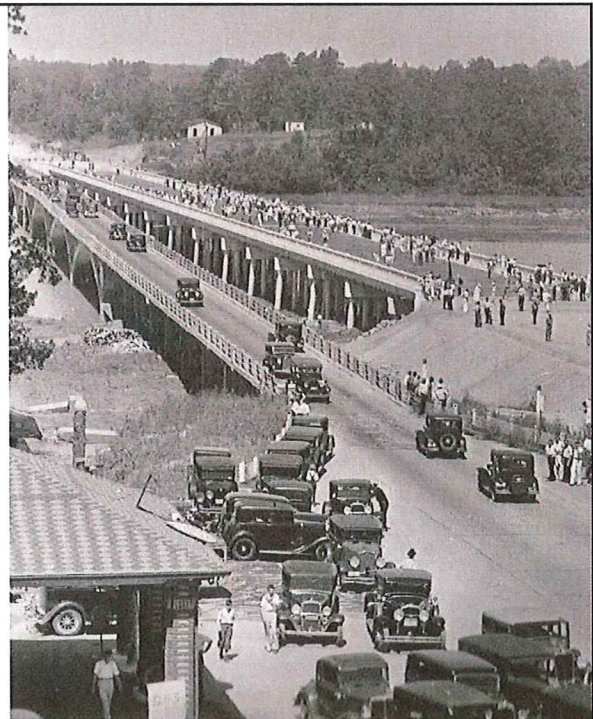
A Regional Mobility Initiative

October 28, 2020

Metropolitan Transit Commission

Where we've been

- 2/24 Project Kickoff
- 5/21 Policy Advisory Committee Meeting #1
- 5/22 Technical Advisory Committee Meeting #1
- 6/24 Technical Advisory Committee Meeting #2
- 8/20 Charlotte Moves Task Force | Project Update
- 9/2020 5-MPOs/RPO | High Capacity Transit Input
- 9/14 Leadership NC Alumni Meeting Focus Group
- 9/30 Policy Advisory Committee | HCT Input
- 10/5 Cabarrus Co Commission | Project Update
- 10/27 Trans Planning Orgs | Plan Alignment



Project Overview

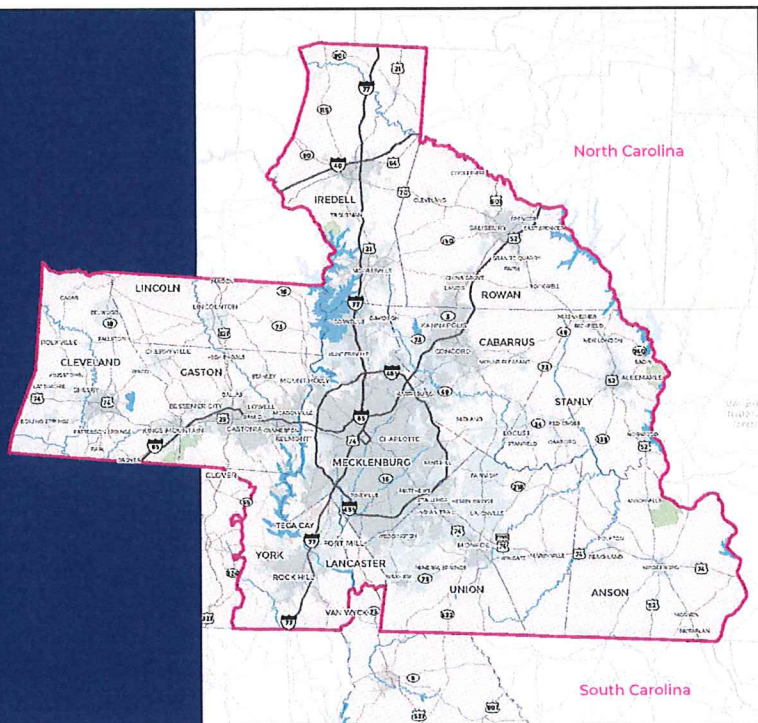
Our Region

2 States

12 Counties

5K Square Miles

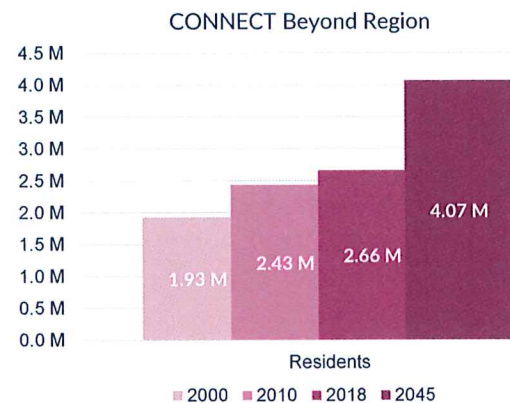
2.6 Million People



Why Mobility Matters

As our region continues to grow, access to reliable, efficient, and well-connected transportation options is one of the **most important factors** to ensure everyone can benefit.

We need to find solutions to ensure that our neighbors and visitors can easily get where they want and need to go.



Source: Metrolina Regional Model (MRM2001, Working Version, Aug 8, 2020)
Source: NC Statewide Travel Model (NCSTM, Version 3.0)

CONNECT Beyond will...

- **Define** a transit vision
- **Identify** corridors and complement plans and infrastructure
- **Strategize** coordination opportunities
- **Develop** implementation tools





Project Priorities



Increase Economic Competitiveness



Improve Transportation Choices



Enhance Public Transit



Promote Sustainable Regional Growth



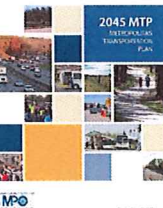
Advance Social Equity



Encourage Environmental Stewardship

Coordination is Critical

Comprehensive Transportation and Metropolitan Transportation Plans



CHAPTER 1 | INTRODUCTION

Introduction

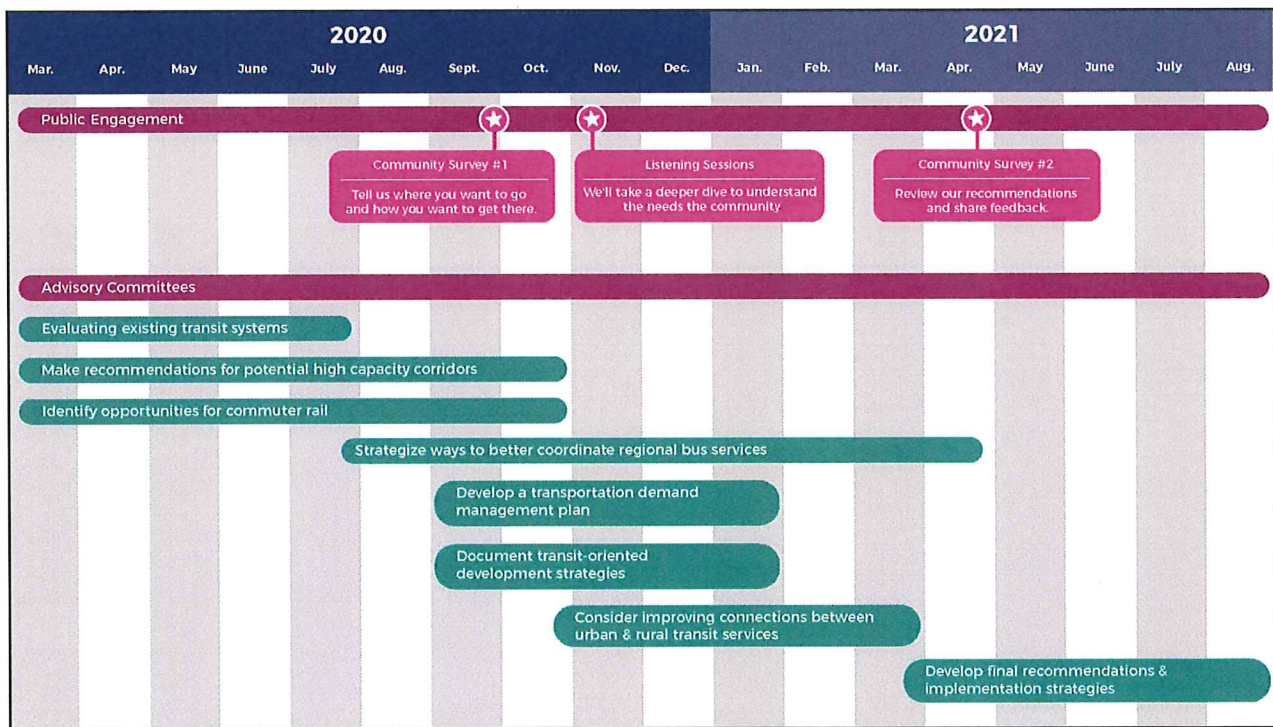
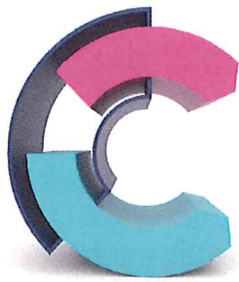
About this Plan

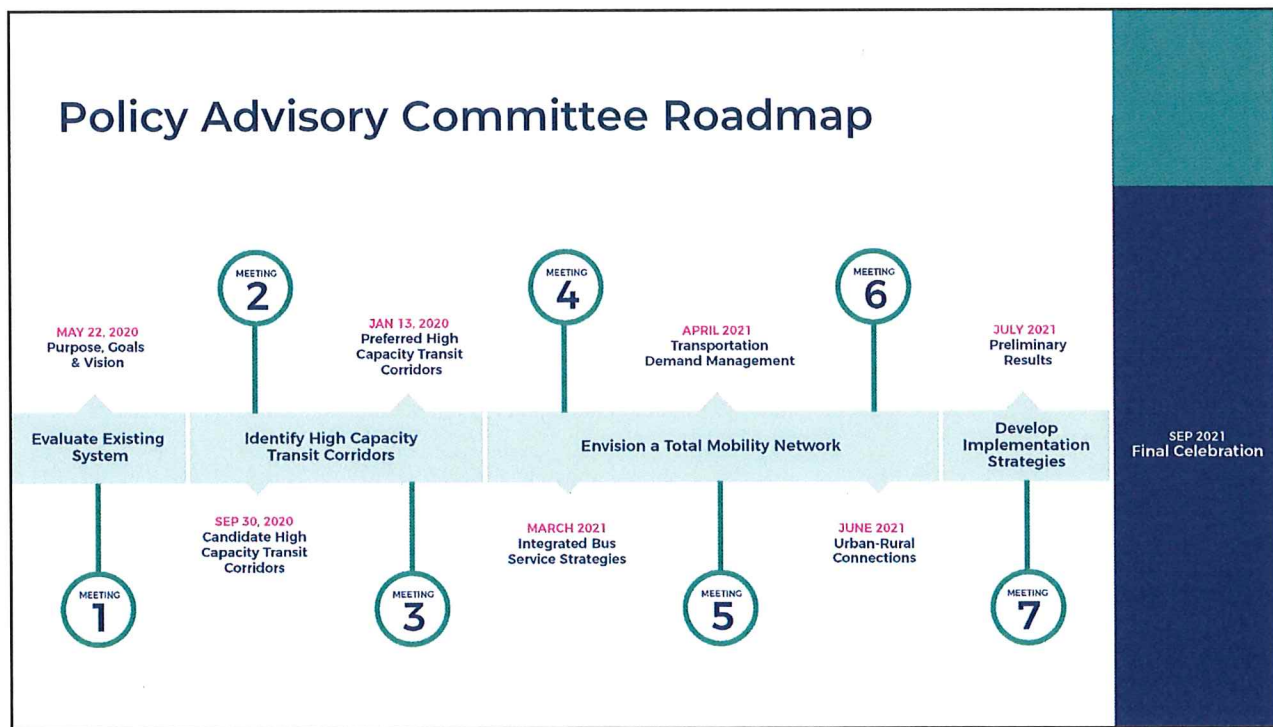
This document is the 2045 Long Range Transportation Plan (LRTP) for the unincorporated areas of York and Lancaster counties, South Carolina. It has been prepared by the Rock Hill-Port Mill Area Transportation Study (REATS), which is the agency responsible for regional transportation planning in this area. Federal law requires the preparation of this plan, and also specifies issues which the plan must consider.

The plan is multi-modal, covering highways, public transportation, freight, bicycle and pedestrian travel, as well as aviation. It includes a financial plan for transportation expenditures to 2045, as well as a congestion process. The plan also takes social and equity considerations into account, along with public involvement during the course of its preparation.

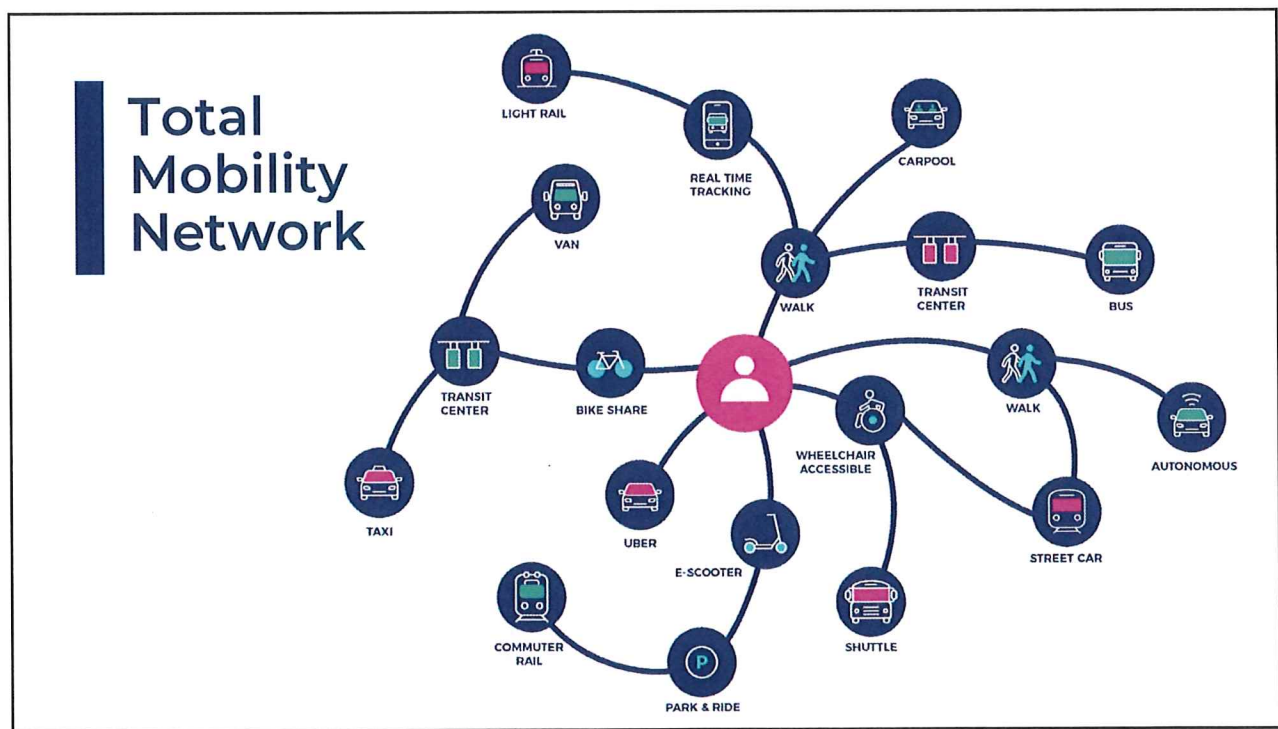


Project Timeline

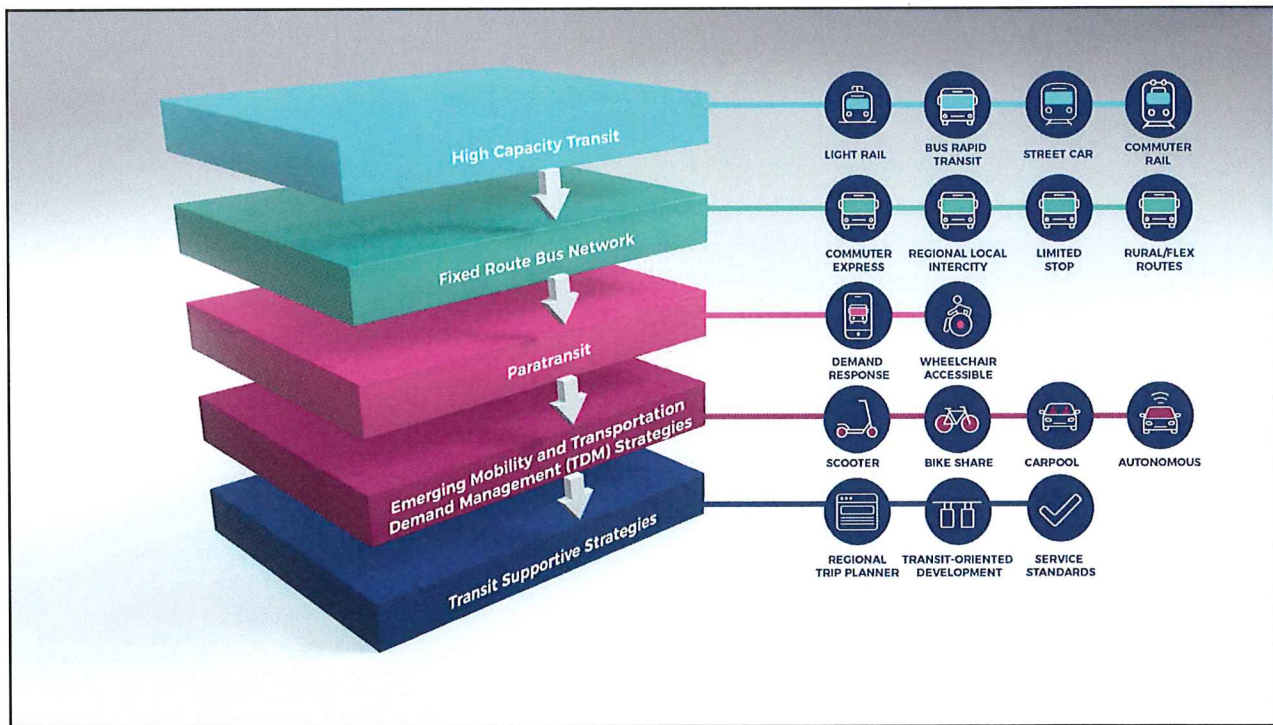
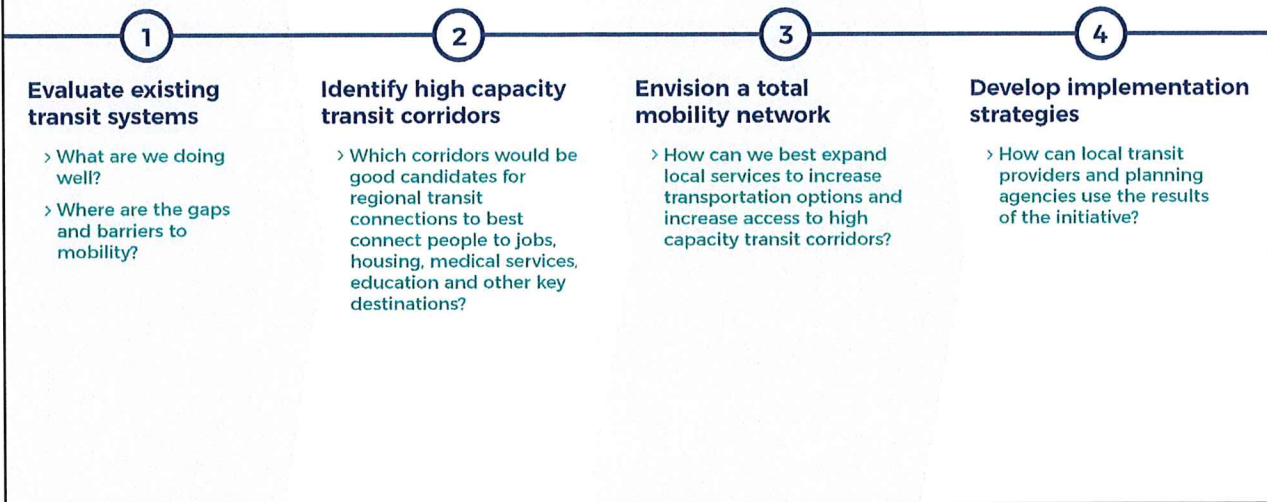




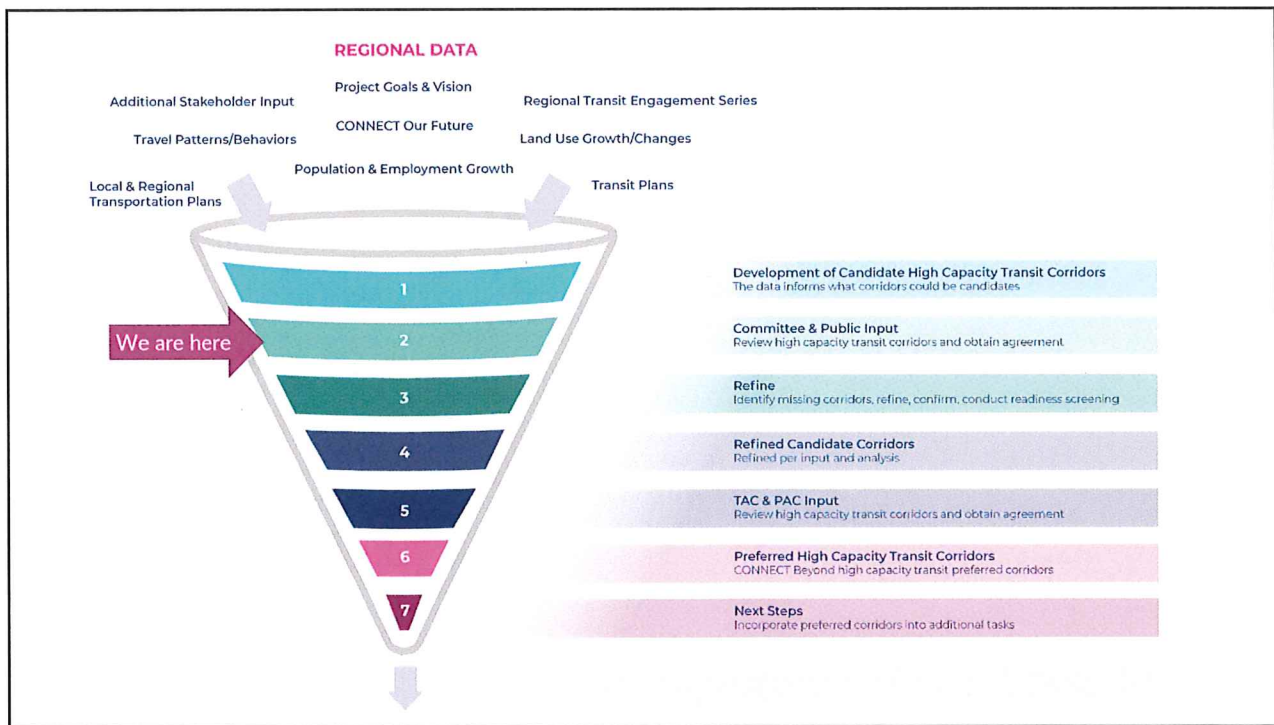
Total Mobility Network



Planning Process

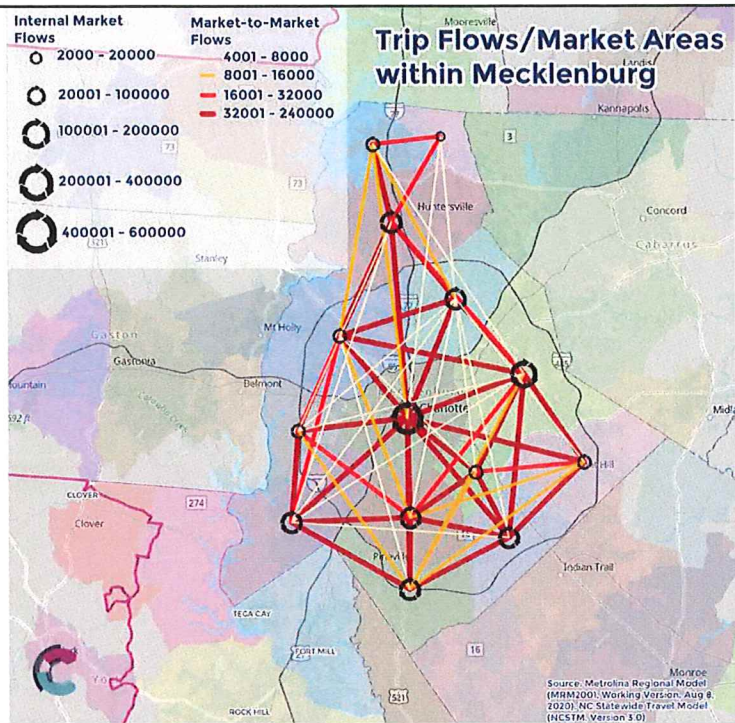


High Capacity Transit Input



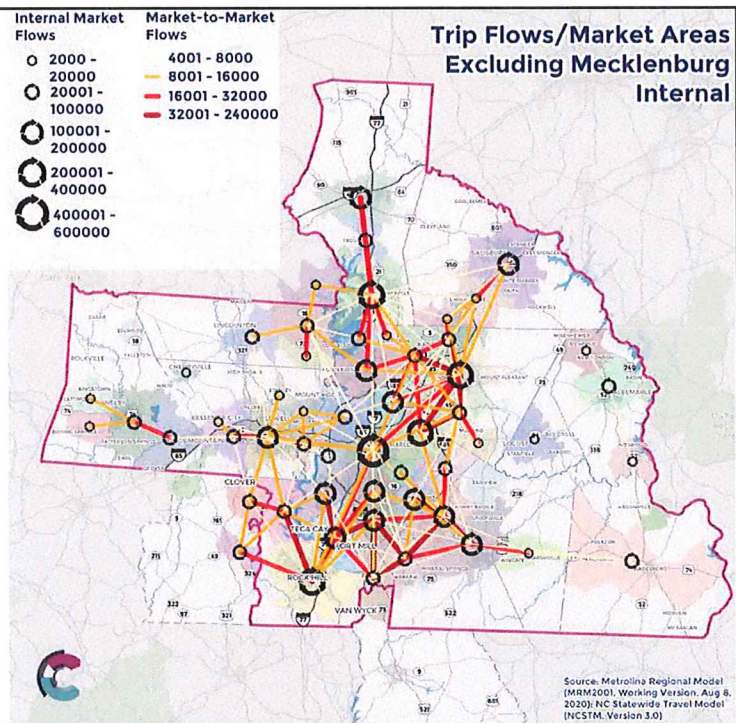
Mecklenburg Internal Market Areas

- Many trips stay internal to market areas, they **start and end in Uptown**
- Strong attraction from outer market areas to Uptown from the north
- Strong radial travel patterns surrounding Uptown
- Airport attractor



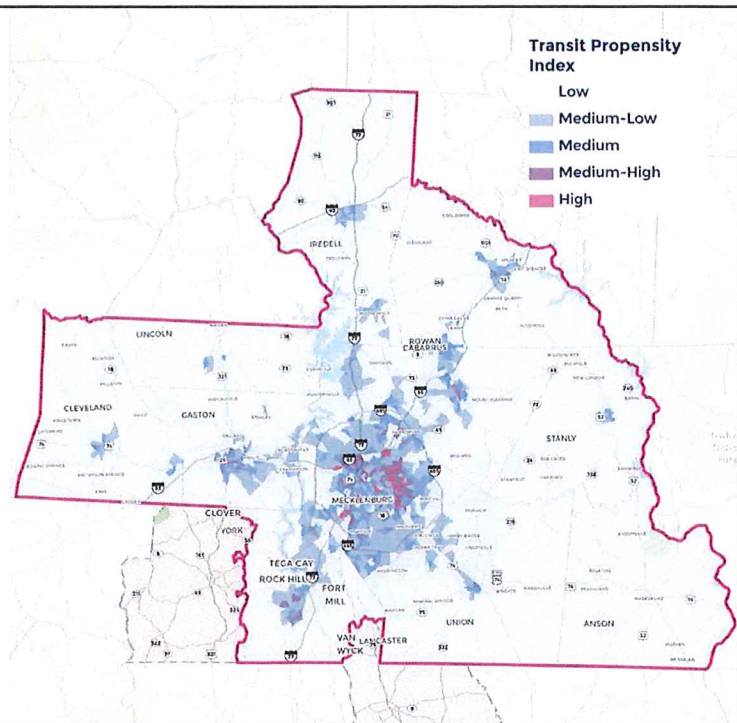
Market Areas Excluding Internal Mecklenburg

- Many trips stay internal to market areas: Uptown, Gaston, Salisbury, Monroe, Rock Hill
- East-west travel on NC73
- Ballantyne area drawing trips from southern study area
- Concord / Kannapolis attracting neighboring travel markets



Transit Propensity

- Youth
 - Elderly
 - Minority
 - Low Income
 - Disabled
 - Zero Car Households
- (ACS 2018)

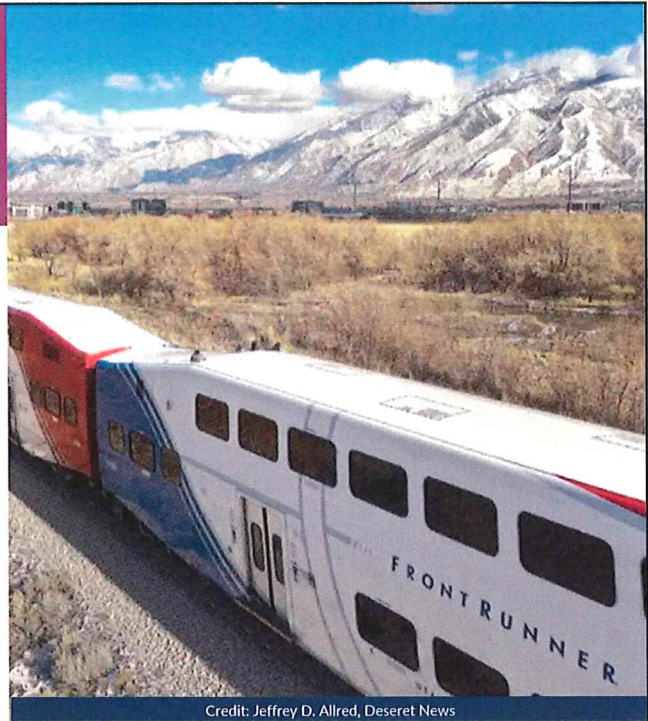


What is High Capacity Transit?

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.

What is Commuter Rail?

Urban passenger train service consisting of local travel between a central city and outlying areas operating on a regular basis and is generally characterized by specific station-to-station fares, relatively long distance between stops, and only 1-2 stations in the central business district.



Credit: Jeffrey D. Allred, Deseret News

Candidate Corridors

MPO/RPO Sessions



Sep 3, 2020



Sep 3, 2020



Sep 16, 2020

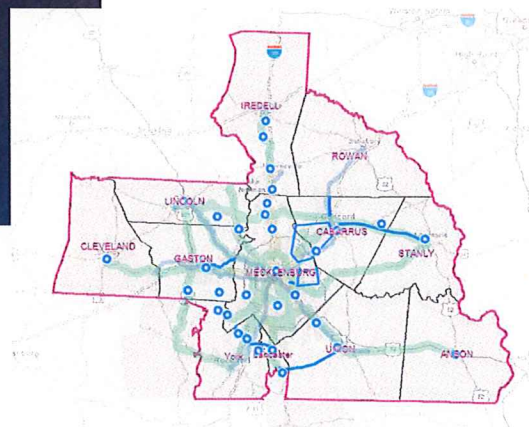


Sep 16, 2020



Sep 18, 2020

High Capacity Transit Input



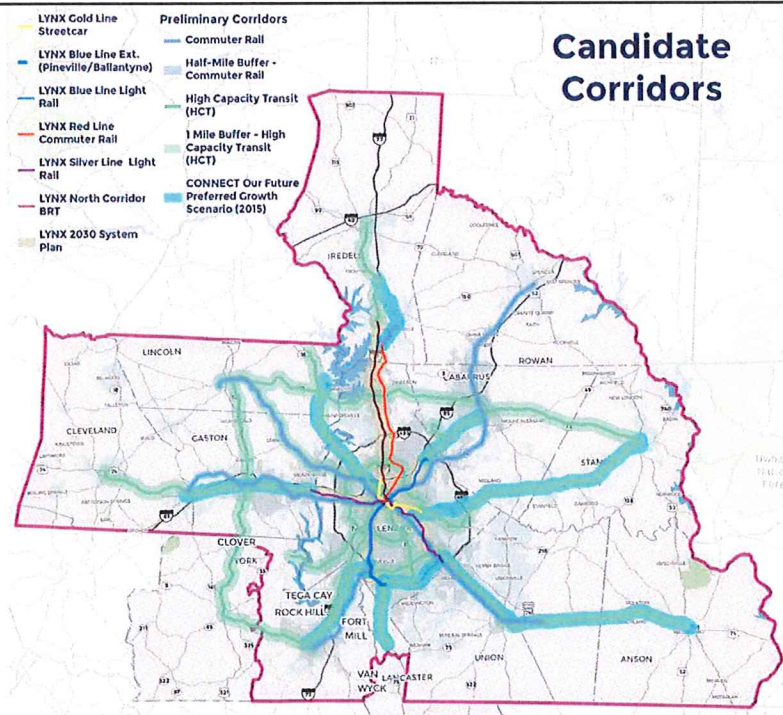
[Click here for Interactive Story Map](#)

What we asked

1. Do the preliminary corridors make sense?
2. Are there additional corridors that need to be considered and are we reaching the right key destinations?
3. Are there key areas or emerging areas of your community that may warrant HCT in the future?
4. Are there areas of regional significance that we need to know about because either the area should be considered for a corridor connection or because the area should be avoided due to cultural, environmental, or other reasons?

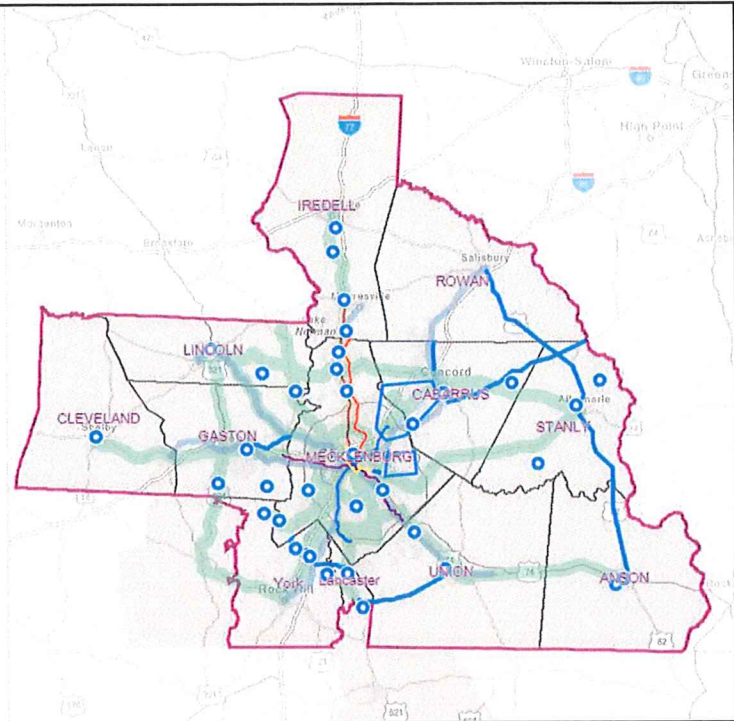
Candidate Corridors

Corridors do not assume a specific transit technology (e.g. light rail, bus rapid transit, or other).



What We've Heard

- Stakeholders and the public added additional corridors and activity centers.
- What's next? How does the region move concept to reality?
- What are possible funding strategies?



What's Beyond 2030?

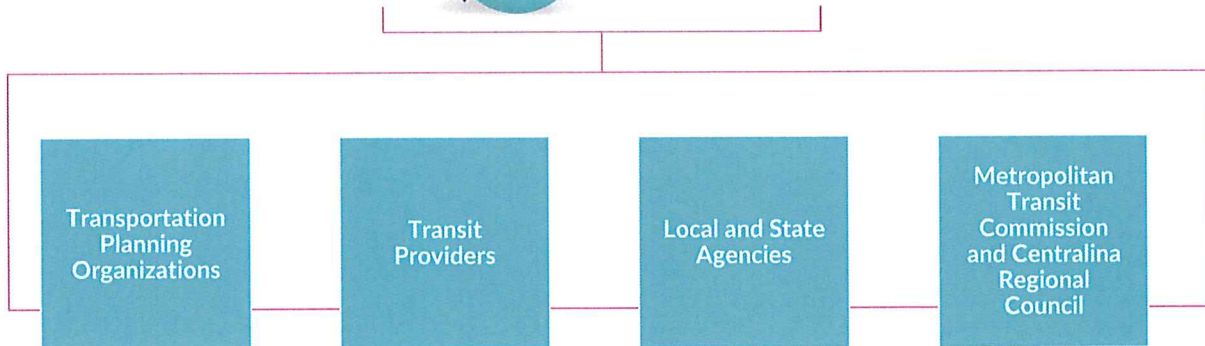
- Develop the next generation of CATS rapid transit corridors
- Synchronize with CLT 2040 growth scenarios
- Strategically position CATS to partner with future NCDOT road and freight rail projects



Path to Implementation



**CONNECT
Beyond**



What's Next?

Project Management Team

- Launch Community Survey
- Evaluate preferred HCT corridors
- Initiate bus integrated strategies task

Committee

- Provide feedback on candidate corridors
- Be our champions for future public involvement to further refine the corridors to be evaluated
- **Next Policy Advisory Committee Meeting
January 13, 2021**

Contact Us



contact@connect-beyond.com





Thank You

Metropolitan Transit Commission
Charlotte Area Transit System Ridership Report
Sep-20

Mode / Service	Sep-20	Sep-19	Percent Increase/Decrease	YTD FY 2021	YTD FY 2020	Percent Increase/Decrease	Avg Daily Ridership per Month		
							WeekDay	Saturday	Sunday
Local									
BOD Local	476,968	957,212	-50.2 %	1,448,769	2,907,480	-50.2 %	17,559	13,919	10,508
Subtotal	476,968	957,212	-50.2 %	1,448,769	2,907,480	-50.2 %	17,559	13,919	10,508
Local Express									
Arboretum Express	-	5,037	n/a	-	14,388	n/a	-	-	-
Harrisburg Road Express	383	2,483	-84.6 %	997	8,177	-87.8 %	18	-	-
Northcross Express	225	8,786	-97.4 %	716	26,362	-97.3 %	11	-	-
Idlewild Road Express	352	2,069	-83.0 %	1,066	6,571	-83.8 %	17	-	-
Independence Blvd Express	126	4,261	-97.0 %	395	13,117	-97.0 %	6	-	-
Lawyers Road Express	302	2,566	-88.2 %	1,046	7,764	-86.5 %	14	-	-
Matthews Express	-	4,010	n/a	-	12,097	n/a	-	-	-
Mountain Island Express	-	1,269	n/a	-	3,877	n/a	-	-	-
Northlake Express	194	6,397	-97.0 %	694	17,984	-96.1 %	9	-	-
North Mecklenburg Express	225	13,734	-98.4 %	631	38,954	-98.4 %	11	-	-
Huntersville Express	385	-	n/a	1,027	-	n/a	18	-	-
Rea Road Express	299	3,439	-91.3 %	887	10,822	-91.8 %	14	-	-
Steele Creek Express	-	1,393	n/a	-	4,248	n/a	-	-	-
Huntersville Greenhouse Express	166	577	-71.2 %	462	1,387	-66.7 %	8	-	-
Subtotal	2,657	56,021	-95.3 %	7,921	165,748	-95.2 %	126	-	-
Regional Express									
Gastonia Express	577	3,881	-85.1 %	1,781	11,753	-84.8 %	27	-	-
Rock Hill Express	231	2,974	-92.2 %	704	9,151	-92.3 %	11	-	-
Union County Express	267	2,347	-88.6 %	800	7,161	-88.8 %	13	-	-
Subtotal	1,075	9,202	-88.3 %	3,285	28,065	-88.3 %	51	-	-
Community Circulator									
Neighborhood Shuttles	14,326	33,529	-57.3 %	44,480	101,051	-56.0 %	531	465	263
Eastland Neighborhood Shuttle	8,738	16,367	-46.6 %	26,741	49,070	-45.5 %	310	266	231
Pineville-Matthews Road	1,446	3,513	-58.8 %	4,273	10,068	-57.6 %	60	45	-
Village Rider	3,860	7,866	-50.9 %	11,649	21,968	-47.0 %	145	122	68
Subtotal	28,370	61,275	-53.7 %	87,143	182,157	-52.2 %	1,046	898	562
Human Services Transportation									
Special Transportation Services	11,494	21,132	-45.6 %	33,519	63,444	-47.2 %	492	175	91
DSS	77	280	-72.5 %	231	887	-74.0 %	4	-	-
Subtotal	11,571	21,412	-46.0 %	33,750	64,331	-47.5 %	496	175	91
Rideshare Services									
Vanpool	6,624	11,340	-41.6 %	13,968	35,260	-60.4 %	315	-	-
Subtotal	6,624	11,340	-41.6 %	13,968	35,260	-60.4 %	315	-	-



Metropolitan Transit Commission
Charlotte Area Transit System Ridership Report

Sep-20

Mode / Service	Sep-20	Sep-19	Percent Increase/Decrease	YTD FY 2021	YTD FY 2020	Percent Increase/Decrease	Avg Daily Ridership per Month		
							WeekDay	Saturday	Sunday
Rail									
LYNX Blue Line	204,832	796,287	-74.3 %	639,924	2,396,557	-73.3 %	7,839	5,956	3,279
Subtotal	204,832	796,287	-74.3 %	639,924	2,396,557	-73.3 %	7,839	5,956	3,279
Total	732,097	1,912,749	-61.7 %	2,234,760	5,779,598	-61.3 %	27,432	20,948	14,440



September | CATS Sales Tax Report FY2021

July Receipts

Sales Tax Collections and Distribution – July 2020

- The July 2020 receipts of \$8,921,474 were \$821,512 (10.1%) above budget target for the month
- The July 2020 receipts were \$671,686 (8.14%) above forecast for the month.
- The July 2020 receipts were -\$762,096 (-7.87%) below July of 2019

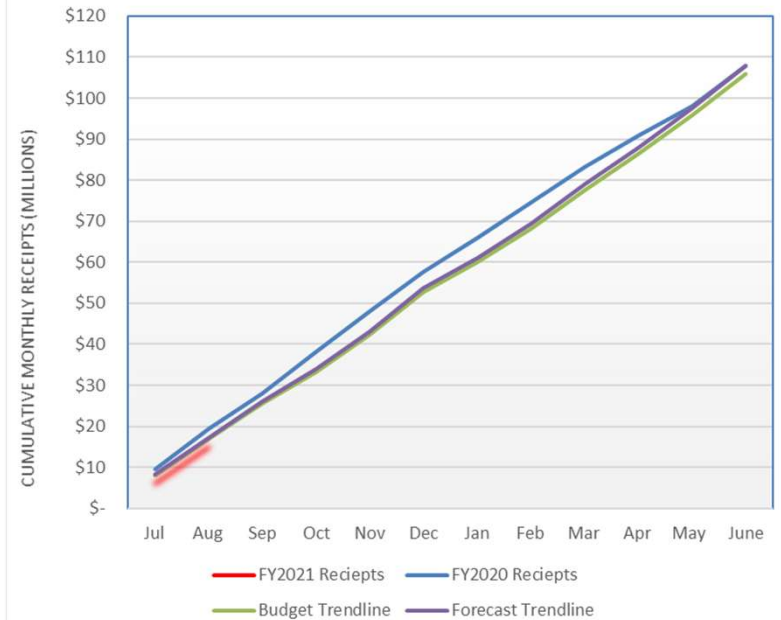
Sales Tax Budget Data

- FY2021 sales tax budget is \$105,980,101
- The FY2021 model forecasts year-end receipts of \$107,940,425 which is \$1,960,324 (1.85%) above the budget target of \$105,980,101
- FY2020 actual sales tax was \$107,778,982

Local Government Sales and Use Tax Distribution

- Source: North Carolina Department of Revenue Sales & Use Distribution Report for the month July 31st, 2020
- Published by NC Secretary of Revenue on 9/10/2020 with actual receipts through July 2020
- CATS sales tax report only includes Mecklenburg County Article 43 sales tax

FY2021 Sales Tax Receipts Forecast



FY2021 Budget Sales Tax Receipts (Actuals and Estimates)

Jurisdiction		Population	% of Total	Jul 20 Actuals	Aug 20 estimate	Sep 20 estimate	Oct 20 estimate	Nov 20 estimate	Dec 20 estimate	Jan 21 estimate	Feb 21 estimate	Mar 21 estimate	April 21 estimate	May 21 estimate	Jun 21 estimate	Total
Charlotte	40.59%	830,258	40.5%	\$ 3,620,850	\$ 3,612,161	\$ 3,662,987	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 10,895,998
Cornelius	1.46%	30,207	1.5%	130,199	129,886	131,714	-	-	-	-	-	-	-	-	-	391,800
Davidson	0.61%	12,572	0.6%	54,648	54,517	55,284	-	-	-	-	-	-	-	-	-	164,449
Huntersville	2.76%	57,145	2.8%	245,976	245,386	248,839	-	-	-	-	-	-	-	-	-	740,200
Matthews	1.51%	30,849	1.5%	134,304	133,982	135,867	-	-	-	-	-	-	-	-	-	404,154
Mint Hill	1.29%	26,690	1.3%	115,516	115,239	116,860	-	-	-	-	-	-	-	-	-	347,615
Pineville	0.43%	8,873	0.4%	38,598	38,506	39,047	-	-	-	-	-	-	-	-	-	116,151
Meck. County	51.35%	1,053,545	51.4%	4,581,383	4,570,389	4,634,699	-	-	-	-	-	-	-	-	-	13,786,470
Total	100.00%	2,050,139	100.0%	\$ 8,921,474	\$ 8,900,065	\$ 9,025,298										\$ 26,846,837

FY2021 Budget Sales Tax Comparison Year over Year

Year-over-Year Comparison (FY21-FY20)	-7.9%	-9.1%	4.1%													-75.0%
FY21 Budget Target	\$ 8,099,962	\$ 8,738,429	\$ 8,861,388	\$ 7,605,667	\$ 9,030,896	\$ 10,469,767	\$ 7,265,169	\$ 8,096,533	\$ 9,530,693	\$ 8,747,576	\$ 9,281,313	\$ 10,252,708				105,980,101
% of FY21 Budget Achieved	8.4%	16.8%	25.3%													50.7%

Prior Year Sales Tax Receipts: FY2017 – FY2020

Fiscal Year	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June	Total
FY2020	9,683,570	9,787,973	8,671,558	9,890,136	9,858,570	9,800,116	8,278,036	8,606,547	8,735,473	7,635,380	6,997,727	9,833,896	\$ 107,778,982
FY2019	\$ 7,708,503	\$ 9,621,386	\$ 9,103,726	\$ 8,067,019	\$ 9,425,129	\$ 8,906,774	\$ 8,195,787	\$ 7,918,012	\$ 10,155,891	\$ 9,880,419	\$ 9,435,500	\$ 9,117,052	\$ 107,535,197
FY2018	\$ 8,147,197	\$ 8,436,960	\$ 8,784,051	\$ 7,883,713	\$ 8,884,437	\$ 9,324,267	\$ 6,897,695	\$ 7,842,800	\$ 9,303,951	\$ 8,539,748	\$ 9,277,676	\$ 9,699,263	103,021,757
FY2017	6,706,169	8,123,310	8,099,598	6,984,259	8,275,157	9,927,120	5,142,666	7,510,515	9,105,261	7,459,176	6,747,425	8,520,759	92,601,412

