



**LYNX Blue Line Extension
(Northeast Corridor)
Light Rail Project
Contract #: 08-477
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LYNX Blue Line Extension Scope Reduction

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1.0 INTRODUCTION

The Charlotte Area Transit System (CATS), in cooperation with the Federal Transit Administration (FTA) is evaluating potential transit improvements in the Northeast Corridor of the Charlotte-Mecklenburg region; namely the LYNX Blue Line Extension Northeast Corridor Light Rail Project (LYNX BLE). A Draft Environmental Impact Statement (EIS) was completed to evaluate the social, economic, environmental and transportation effects associated with the proposed light rail extension from Center City Charlotte to I-485 near the Mecklenburg-Cabarrus County line (August 2010).

In Fall 2010, CATS engaged a financial consultant to review CATS short and long-term financial plans. Subsequently, in November 2010, the Metropolitan Transit Commission (MTC), CATS governing board, received a report on the financial capacity of CATS and its ability to deliver the 2030 Transit System Plan. Revenues from the special half-cent sales tax that was intended to fund the transit system plan, and specifically the LYNX BLE, had fallen due to the economic conditions of the past couple of years. It was estimated that funds for the transit system plan would be more than \$1 billion under projections by the year 2030. Given the financial realities of a lagging sales tax revenue, the financial capacity study recommended, among other things, a reduction in the projected capital and operating costs of the proposed LYNX BLE. In order to advance the proposed project, the MTC directed CATS staff to reduce the project scope by approximately 20 percent. CATS initiated an extensive coordination and evaluation effort to develop a list of preliminary recommendations. The guiding philosophy in all project changes considered was that they had to maintain the project goals that consist of:

- **Land Use:** Support the region's Centers, Corridors and Wedges Growth Framework
- **Mobility:** Improve access and mobility in the corridor and throughout the region; Increase transit ridership; Improve quality of transportation service
- **Environment:** Preserve and protect the environment
- **Financial:** Develop affordable, cost-effective transportation solutions
- **System Integration:** Develop transportation improvements that function as part of the larger transportation system

Additionally, the proposed project changes had to maintain flexibility for the future. To that end, the following parameters were also a factor in recommendations:

- **Schedule:** Minimize potential project schedule delays
- **Potential to add back later:** Consider elements that could potentially be added at a later time through adjacent developments or other projects
- **Safety and reliability:** Ability to maintain a safe and reliable transit system for patrons, employees and the public.
- **Operations and Maintenance Costs:** Consider the extent to which capital cost reductions could also achieve a reduction in operations and maintenance costs.
- **Lessons Learned:** Consider lessons learned on the South Corridor Light Rail Project to maintain needed capacity, provide sufficient parking and protect safety items such as grade separations.

Equipped with these goals and parameters, an approximate two-month process was undertaken to identify and evaluate potential cost reduction options. In that time, extensive coordination was

carried out, engaging various stakeholders and project team members through a series of meetings summarized in Table 1-1.

**Table 1-1
LYNX BLE Scope Reduction Decision Process Meetings**

Meeting Date	Entity	Meeting Purpose
November 17, 2010	MTC	To receive direction to re-scope the LYNX BLE project, the goal of which was to reduce capital costs by 20 percent and operations and maintenance costs by 6.5 percent.
November 22, 2010	Key Business Executives (KBE)	To discuss proposed process for evaluation of cost reductions and to receive KBE guidance and policy direction.
November 29, 2010	Project Management Team	To define potential cost saving opportunities and identify pros/cons of each item.
December 1, 2010	Transportation and Planning Cabinet	To receive KBE confirmation of path forward.
December 3, 2010	FTA	To provide an update on the status of re-scoping the proposed project and obtain guidance on the implications of the project development process, including on the National Environmental Policy Act (NEPA).
December 7, 2010	Project Management Team	To develop and/or confirm recommendation on one or two overall cost reduction options for the Growth Strategy Steering Team (GSST) and MTC to consider.
December 7, 2010	UNC Charlotte and University City Partners	To discuss implications of the re-scoped project with UNC Charlotte and University City Partners relative to the interests of their constituents.
December 8, 2010	MTC Managers	To provide a preview of the presentation to be made to the MTC on December 15, 2010.
December 9, 2010	GSST	To provide KBE with a review of the recommendations to be presented to the MTC on December 15, 2010.
December 14, 2010	Citizens Transit Advisory Group	To present a summary of the recommendations to be presented to MTC on December 15, 2010.
December 15, 2010	Project Management Oversight Contractor	To discuss process for advancing the re-scoped project through 65% design and environmental review.
December 15, 2010	MTC	To present recommended project changes to the MTC for consideration.
January 10, 2011	Charlotte City Council	To present a summary of the proposed project changes and review the revised budget.
January 12, 2011	Public Meeting	To present proposed project changes and seek input.
January 14, 2011	Transit Services Advisory Committee	To present a summary of the proposed project changes that will be recommended for adoption to the MTC on January 26, 2011.
January 19, 2011	MTC Managers	To provide a preview of the presentation to be made to the MTC on January 26, 2011.
January 26, 2011	MTC	To adopt the revised project.

Through the culmination of the two-month process and meetings, the following project changes were recommended:

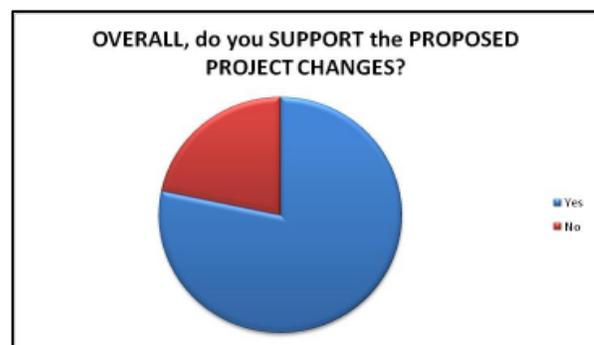
- Reduce project length by 1.2 miles, terminating at the UNC Charlotte Station and eliminating the Mallard Creek Church Road Station and I-485/N. Tryon Station, including parking (yielding lower capital costs); Appendix A, Figure 1

- Reduce service frequency by operating 2-car trains every 7.5 minutes initially and 3-car trains every 10 minutes in the future (2028) (yielding lower operating and maintenance costs)
- Reduce number of vehicles to be purchased from 26 to 18 (yielding lower capital costs and lower operating and maintenance costs; feasible by reduction of the project length, which reduces the vehicle requirement)
- Eliminate the proposed Vehicle Light Maintenance Facility at the existing Norfolk Southern Intermodal Yard; construct a storage yard only at the existing Norfolk Southern Intermodal Yard and make minor improvements to the existing South Boulevard Light Rail Facility (yielding lower capital costs); Appendix A, Figure 2
- Construct surface lots at the Sugar Creek Station instead of a parking garage (yielding lower capital costs); Appendix A, Figure 3
- Eliminate park-and-ride facilities at Tom Hunter Station (consistent with a Value Engineering recommendation made in July 2010) and McCullough Station (yielding lower capital costs)
- Accelerate the project schedule to begin revenue service in 2016 (yielding lower capital costs as each year of delay can bring a cost escalation of approximately 4 percent)

Milestone Meetings

The Project Management Team convened on November 29, 2010 and again on December 7, 2010 to review and discuss Cost Savings evaluation matrices (Appendix B). Subsequently, on December 15, 2010, CATS presented recommended project changes to the MTC for review and consideration (Appendix B). A public meeting was held on January 12, 2011 at the Oasis Shriner's Center to review the proposed project changes and gather input from the public

prior to the MTC's anticipated approval of the project changes. A copy of the presentation is located in Appendix B. The proposed project changes were generally accepted by the public as evidenced by written comments received and response to a survey given to all in attendance and available on-line.



Public Meeting – Survey Results Excerpt

On January 26, 2011, a presentation was made to the MTC, detailing the proposed project changes (see Appendix B for a copy of the presentation and the Action Item). A summary of Public Involvement was also provided to the MTC (see Appendix B). The MTC unanimously approved a revised LPA alignment and station locations for the proposed LYNX BLE to reduce project costs and ensure its financial feasibility. The Light Rail Alternative between Center City Charlotte and UNC Charlotte was selected as the revised LPA and National Environmental Policy Act (NEPA) preferred alternative.

2.0 COST REDUCTIONS

Terminating the proposed project at the UNC Charlotte Station (Appendix A, Figure 1) would result in an estimated \$92 million in net savings. A large part of the savings is attributed to the elimination of approximately 1.1 miles of mostly bridge structure that crosses wetlands/streams and provides a grade separation of Mallard Creek Church Road. In addition, the changes at the Sugar Creek Station result in an estimated net savings of \$9 million gained by providing surface lots, a lower cost option to a parking garage (Appendix A, Figure 3). The reduction in vehicle fleet size results in a savings of approximately \$38 million, with a savings of \$26 million attributed to the reduction in the Vehicle Light Maintenance Facility needs (Appendix A, Figure 2). The overall net savings resulting from the listed changes is approximately \$165 million. The following sections describe the specific measures for reducing the capital costs and operations and maintenance costs of the LYNX BLE.

2.1 Project Length

The largest component to achieving a cost reduction for the project was terminating the project at the UNC Charlotte Station, which would result in a 1.2-mile reduction of the project length. This reduction results in elimination of two stations, namely the Mallard Creek Church Station and the I-485/N. Tryon Station, as well as the elimination of civil infrastructure, track and systems north of the UNC Charlotte Station. By shortening the project, CATS is able to keep key project elements that ensure a high quality system, reliable service, and safe and secure operations.

2.2 Parking

Despite elimination of the 2,000 space parking garage at the I-485/N. Tryon Station, it was determined that approximately 90 percent of ridership would be retained and that most of the ridership would redistribute to other nearby stations, namely the JW Clay Blvd. Station and the University City Blvd. Station. To accommodate increased ridership at these two stations, the proposed project now includes increased parking (approximately 1,485 spaces) in a parking garage at the University City Blvd. Station and the addition of a parking garage (approximately 690 spaces) at the JW Clay Blvd. Station. Approximately \$40 million in budget was retained to replace the parking previously proposed for the I-485/N. Tryon Station. Additionally, a right/through lane along North Tryon Street/US-29 from Orchard Trace to Shopping Center Drive has been added to accommodate the additional traffic that would result from the University City Blvd. Station park-and-ride facility. These changes, as well as those at other park-and-ride facilities are described in the following sections.

2.2.1 Sugar Creek Station

At the conclusion of the Draft EIS, two options for the Sugar Creek Station park-and-ride facility were under consideration for the proposed LYNX BLE. The proposed Sugar Creek Station Park-and-Ride Option 1 would be located along the north side of the existing rail corridor and would include three surface parking lots accommodating a total of 899 spaces that would be located at the northwest and northeast corners of Sugar Creek Road and Raleigh Street and west of Sugar Creek Road between Raleigh Street and the Light Rail Alternative. The proposed station platform would be located on a bridge structure where Sugar Creek Road would be depressed under the existing freight tracks and proposed light rail tracks. The proposed Sugar Creek

Station Park-and-Ride Option 2, accommodating a total of 1,010 spaces, would be located along the south side of the existing rail corridor, just north of North Davidson Street. This proposed station would consist of a five-story parking garage with bus transfer facilities, and the platform would remain in the same location as with the proposed Sugar Creek Station Park-and-Ride Option 1.

Following publication of the Draft EIS (August 2010) and under the recently evaluated project changes (based on project team meetings and updated ridership data), the Sugar Creek Station Park-and-Ride, Option 2 was eliminated from further consideration due to a decrease in projected ridership at this station and to reduce the overall capital costs of the proposed project. Under the proposed project changes, Option 1 would carry forward with a slight modification. Due to the decrease in projected ridership, the Sugar Creek Station design would be modified to two surface lots, accommodating approximately 665 parking spaces instead of three surface lots accommodating approximately 924 spaces. The surface lots would be located on the north and south sides of Raleigh Street, just west of the Sugar Creek Road and Raleigh Street intersection; accommodating approximately 180 parking spaces in the southern lot and approximately 485 spaces in the western lot. Vehicular access to the park-and-ride lots would be available from Raleigh Street, Sugar Creek Road and a connection to Greensboro Street. Access to the south end of the station would be provided via a walkway from a sidewalk along the north side of the southern parking lot. A parking garage could feasibly be built later in place of the surface lots should ridership exceed expectations thereby necessitating additional parking options (lessons learned from the South Corridor project) and/or if funds become available by some other means.

2.2.2 Tom Hunter Station

A Value Engineering exercise was performed by a third party in July 2010 to assure efficient use of funds, capital and life cycle costs to provide the best value and meet the project goals. Revised projections for parking requirements indicate a need of 35 spaces at this location. Due to low demand and alternate park-and-ride locations nearby, the 117 space park-and-ride was recommended for elimination. This recommendation was carried forward under the recently proposed cost reduction measures. Ridership modeling data indicates that the majority of the station generated trips are redistributed to the University City Blvd. Station.

2.2.3 McCullough Station

Due to the proximity of other park-and-ride stations, namely the University City Blvd. Station, an evaluation was performed to determine the effects of eliminating the McCullough Station park-and-ride facility. The McCullough Station park-and-ride facility was originally designed to accommodate approximately 225 parking spaces based on projected ridership at that station. A choice was made to test the replacement of both the park-and-ride parking associated with McCullough station as well as the parking loss resulting from the proposed project changes (i.e., the reduction of the project length, which resulted in the elimination of parking previously associated with the I-485/N.Tryon Station and Mallard Creek Church Station). With the proposed project changes, a choice was made based on both the proximity of adjacent stations (i.e., JW Clay Blvd. Station and the University City Blvd. Station) and the modeled ability for generated trips to redistribute to adjacent stations. In the modeled test of this change, the majority of the McCullough Station generated trips redistributed to the JW Clay Blvd. Station. Therefore, the McCullough Station park-and-ride facility was recommended for removal from the proposed project.

2.2.4 University City Blvd. Station

As a result of the project changes, namely elimination of the I-485/N. Tryon Station and its associated 2,000-space parking facility, the parking capacity at the University City Blvd. Station park-and-ride is proposed to be increased to accommodate an increase in traffic volume expected at the station. As previously proposed, elements of this station and park-and-ride facility included a surface parking lot with approximately 800 spaces. In order to accommodate an increase in traffic a parking garage to accommodate approximately 1,485 spaces is proposed. The parking garage would be located within the footprint of the previously-proposed surface parking lot (Appendix A, Figure 4).

Increased traffic at the station would increase the volume of traffic traveling on North Tryon Street/US-29 and other roadways to/from the University City Blvd. Station park-and-ride facility. The “weave area” where the University City Blvd. Station would be located, is a 4-lane segment of North Tryon Street/U-29 between the I-85 Connector and University City Blvd./NC 49; where merging and diverging traffic from the I-85 ramps and University City Blvd./NC-49 creates a short weaving segment (approximately 0.3 miles). Traffic narrows to a single lane prior to merging areas. Due to the demand of traffic traveling from I-85 to and from the University Area, a highly intense weave area is created within this segment. To alleviate this condition, the US-29/NC-49 Improvement Project, currently under construction by the City of Charlotte, creates two full movement 8-phase intersections at the North Tryon Street/US-29 & I-85 Connector and North Tryon Street/US-29 & University City Blvd./NC-49 intersections. A 4-lane typical section, with turn lanes, is also planned for North Tryon Street/US-29 in this area, which eliminates the aforementioned narrowing of the roadway to a single lane prior to merging areas. Due to the additional parking needs and the expected increased traffic at the University City Blvd. Station, additional improvements to North Tryon Street/US-29 were considered. To address this increased volume of traffic, right turn lanes along North Tryon Street that are currently being constructed as part of the US-29/NC-29 Improvement Project, or that were previously included in the LYNX BLE project, would be connected to create a continuous thru/right turn lane in the vicinity of the University City Blvd. station (Appendix A, Figure 5). This would create a 3-lane section in each direction on North Tryon Street between I-85 Connector and University City Blvd, with the outside lane being the continuous thru/right lane. Additional right turn lanes, outside of the continuous thru/right lane, would not be added. Left turn lanes would continue to be provided at intersections.

2.2.5 JW Clay Blvd. Station

As a result of the project changes, namely elimination of the I-485/N. Tryon Station and its associated 2,000-space parking facility, parking at the JW Clay Blvd. Station is proposed to capture traffic and ridership that would have utilized the I-485/N. Tryon Station. As previously proposed, this station did not include a park-and-ride facility. Therefore, the evaluation of parking at the JW Clay Blvd. Station was one of the more intensive of the project changes under consideration, as evidenced by the detailed description that follows.

Members of the LYNX BLE project team were assembled in December 2010 to identify potential sites around the proposed JW Clay Blvd. Station that could accommodate parking. To be considered, potential sites needed to be within a reasonable proximity to station platform and had to be large enough to accommodate adequate parking.

Based on the above, six sites were identified as depicted in Appendix C – Figure 1 and described in Table 2-1.

Table 2-1
Initial Screening – Six Potential Sites for the JW Clay Blvd. Park-and-Ride Lot

Site No.	Site Evaluation Matrix Name	Parcel ID No.	General Location	Current Use
1	CMC-University	04931108	Adjacent to Carolinas Medical Center – University	Undeveloped/Vacant
2	Talbots/Old Navy	0472703 and 0472704	North Tryon Street/JW Clay Boulevard intersection, southwest quadrant	Active Retail (Old Navy, Talbots)
3	Triangle (Retail)	0472706 and 0472707	North Tryon Street/JW Clay Boulevard intersection, southwest quadrant	Vacant Retail
4	Church School / Burger Bites	04729146 and 04729147	North Tryon Street/JW Clay Boulevard intersection, northwest quadrant	School/Active Retail (Burger Bites)
5	Burger Bites / Panda Express	04729147 and 04729148	North Tryon Street/JW Clay Boulevard intersection, northwest quadrant	Active Retail (Panda Express, Nona's Bakery)
6	Panda Express/ HoneyBaked Ham	04729148 and 04729149	North Tryon Street/JW Clay Boulevard intersection, northwest quadrant	Active Retail (HoneyBaked Ham)

A brief summary of these sites, each shown in Appendix C, Figure 1, is as follows:

- Site 1 (CMC-University), Adjacent to Carolinas Medical Center – University (CMC-University): Site 1 is located on the east side of North Tryon Street/US-29, between the intersections of W.T. Harris Boulevard and JW Clay Boulevard, across from the southern end of the proposed JW Clay Blvd. Station platform. The site is currently vacant/undeveloped, and land uses surrounding the site are comprised of CMC-University and active/recreational space associated with the University of North Carolina at Charlotte (UNC Charlotte) fitness trails.
- Site 2 (Talbots/Old Navy), North Tryon Street/US-29 and JW Clay Boulevard intersection, southwest quadrant: Site 2 is located on the west side of North Tryon Street/US-29, between the intersections of W.T. Harris Boulevard and JW Clay Boulevard, directly across from the proposed JW Clay Blvd. Station platform (Figure 1). The site is currently occupied by retail uses, including Old Navy and Talbots stores. Surrounding land uses consist of active and inactive retail.
- Site 3 (Triangle Retail), North Tryon Street/US-29 and JW Clay Boulevard intersection, southwest quadrant: Site 3 is a triangular shaped site that is comprised of two parcels located on the west side of North Tryon Street/US-29, between the intersections of W.T. Harris Boulevard and JW Clay Boulevard, across from the northern portion of the proposed JW Clay Blvd. Station platform (Figure 1). The site is a relatively large-scale

retail development that occasionally houses seasonal/temporary retail uses, but is largely empty/vacant. Surrounding land uses consist of active retail.

- Site 4 (Church School/Burger Bites), North Tryon Street/US-29 and JW Clay Boulevard intersection, northwest quadrant: Site 4 is comprised of two parcels located on the west side of North Tryon Street/US-29, just north of the North Tryon Street/US-29 and JW Clay Boulevard intersection. The site is set back slightly from North Tryon Street/US-29 (Figure 1). The site is currently occupied by a small private school and active retail (Burger Bites). Surrounding land uses consist of active retail and multi-family residential (apartments).
- Site 5 (Burger Bites/Panda Express), North Tryon Street/US-29 and JW Clay Boulevard intersection, northwest quadrant: Site 5 is comprised of two parcels located on the west side of North Tryon Street/US-29, just north of the North Tryon Street/US-29 and JW Clay Boulevard intersection (Figure 1). The site is currently occupied by active retail, including Burger Bites and Panda Express restaurants and Nona's Bakery. Surrounding land uses consist of active retail and a small private school.
- Site 6 (Panda Express/HoneyBaked Ham), North Tryon Street/US-29 and JW Clay Boulevard, northwest quadrant: Site 6 is comprised of two parcels located on the west side of North Tryon Street/US-29, just north of the North Tryon Street/JW Clay Boulevard intersection (Figure 1). The site is currently occupied by active retail, including a Panda Express restaurant, Nona's Bakery, and a HoneyBaked Ham store. Surrounding land uses consist of active retail.

2.2.5.1 Preliminary Screening Process

CATS staff first brought the potential site locations to a stakeholder meeting on December 7, 2010. The meeting included representatives of CATS, UNC Charlotte, CMC-University, CASTO (owner/manager of the University Shoppes properties, i.e., Site 2 [Talbots/Old Navy] and Site 3 [Triangle Retail]), and University City Partners. The main purpose of the meeting was to identify which sites would be feasible for a park-and-ride facility and which would not be. To aid in the discussion, CATS provided a Preliminary Evaluation of Potential Parking Sites, which detailed the initial perceived pros and cons of each site and any additional information needed. During this discussion, it was communicated by representatives of UNC Charlotte and CMC-University that they would not support selection of a park-and-ride facility on their properties (i.e., Site 1 [CMC-University]). CASTO indicated, however, that they would be interested in working with CATS.

Subsequently, to equally evaluate each of the six sites, a set of criteria was developed by which to compare the strengths and weakness of each of the sites. Evaluation criteria included:

- Local context (including Stakeholder Support),
- Environmental considerations,
- Configuration/access; and,
- Cost considerations.

The evaluation criteria were put into a matrix, and the project team subsequently met on December 15, 2010 to discuss and evaluate each of the six sites against the evaluation criteria.

Appendix C includes the screening matrix (marked Draft 12/15/10), along with the rankings for each site under each category. The conceptual layouts evaluated are included in Appendix D. At the conclusion of the evaluation exercise, all of the sites, with the exception of Site 1 (CMC-University), scored relatively similarly. However, Site 6 (Panda Express/HoneyBaked Ham) ultimately scored the highest, with Site 3 (Triangle Retail) closely behind that. A summary of the meeting discussions relative to each criterion are as follows:

Local Context

The criteria for local context centered on land use compatibility; appropriateness to the scale and character of the surrounding area; likely acceptability of stakeholders and/or property owners; and effects on economic development. All six sites under evaluation were generally favorable to each of these criteria, with the exception of Site 1 (CMC-University) which did not garner support from stakeholders. CMC-University and UNC Charlotte stakeholders would not support Site 1 (CMC-University), as all potential locations on Site 1 (CMC-University) for a CATS parking deck would be in conflict with existing facilities and/or adopted master plans.

Environmental Considerations

Criteria within the environmental considerations category included wetlands and streams, protected species, hazardous materials, historic sites, community resources, low income and minority neighborhoods, visual and aesthetics, and noise and vibration. A literature review and limited field reconnaissance (e.g., windshield survey) were performed to identify potential environmental constraints for each of the six sites.

Through the environmental considerations evaluation, it was determined that Site 1 (CMC-University) would likely result in the greatest amount of environmental impact if further developed for a park-and-ride facility. Its close proximity to CMC-University and jurisdictional streams and wetlands created various human and natural environment concerns. In particular, CMC-University could be subjected to increased noise and vibration impacts and visual and aesthetic impacts. Evaluation of Site 2 (Talbots/Old Navy) also revealed potential environmental concerns associated with the former presence of a dry cleaning facility on-site. Development of Site 2 (Talbots/Old Navy) could require mitigation measures for potential contamination from on-site hazardous material. Generally, evaluation of the other four sites did not reveal significant environmental concerns or constraints and were comparable to one another in those terms. Environmental site evaluation parameters and summaries are included in Appendix E.

Configuration/Access

Criteria within the configuration/access category included the approximate walking distance to the station, pedestrian access, the garage configuration (i.e., number of spaces and levels it could accommodate; and any opportunity for ground-floor uses), vehicular access and bus access. Conceptual layouts were developed for each of the six sites by which to evaluate each of these criteria.

Through the configuration/access evaluation, it was determined that Site 2 (Talbots/Old Navy) would likely be best suited under the aforementioned criteria. Positive attributes of Site 2 (Talbots/Old Navy) included convenience for pedestrians due to its close proximity to the station platform and the ability to provide a direct, at-grade crossing of North Tryon Street/US-29; the capacity to accommodate the needed number of spaces; its accessibility from JW Clay

Boulevard and JM Keynes Drive; and the space needed to allow for queuing of traffic during peak hours.

Estimated Costs

The project team developed an order of magnitude cost estimate for each of the six sites based on broad units and prices for acquisitions, relocations and site preparation costs. While each site would require a commitment of financial resources, it was determined that use of Site 2 (Talbots/Old Navy) would result in the greatest acquisition and relocation costs, largely due to the existing major anchor stores located on-site. Site preparation costs, which include demolition, would also be highest for this site, again largely due to the presence of anchor retail buildings. The other sites were relatively similar in terms of acquisition costs, though relocation costs varied somewhat, depending on the current uses.

Site Evaluation Summaries

A brief summary of the screening results for each site is as follows:

Site 1 (CMC-University): At the conclusion of the evaluation exercise, Site 1 scored the lowest of all six sites. As noted, early discussions with project stakeholders, including CMC-University, revealed a lack of support for development of this site for a park-and-ride facility. Additionally, development of a park-and-ride facility is not compatible to the existing/planned land uses and it has potential for impacts to both the natural and human environment in terms of wetlands/streams, protected species, noise and vibration, and visual and aesthetic considerations. The need to build a new access road was also an element that reflected poorly on the use of Site 1. Due to its lowest overall score and lack of stakeholder support, this site was eliminated from further consideration.

Site 2 (Old Navy/Talbots): As noted, Site 2 had many positive attributes including its proximity to the station platform and ability of pedestrians to cross North Tryon Street/US-29 adjacent to the station. A conceptual layout indicated that the site could provide the capacity to accommodate a parking garage with the needed number of spaces and that its accessibility from JW Clay Boulevard and JM Keynes Drive would be favorable. However, evaluation of Site 2 also revealed potential environmental concerns associated with the former presence of a dry cleaning facility on-site. Development of Site 2 could require costly mitigation measures for potential on-site hazardous material contamination. Additionally, it was determined that Site 2 would result in the greatest overall commitment of financial resources due to higher acquisition and relocation costs, as well as higher site preparation costs as compared to the other sites. This factor is largely due to the large retail anchor stores that currently exist on the site. Additionally, this site was identified as a potential schedule risk, as it would require CATS to integrate and negotiate with the developer. Overall, this site did not score highest or lowest and was not to be carried forward for further evaluation.

Site 3 (Triangle Retail): Site 3 likewise had several positive and negative attributes. For instance, the site is currently vacant/underutilized, limiting the impact to existing uses and offering revitalization potential through the development of a park-and-ride facility. It is located within close proximity to the station platform, offering users of the park-and-ride facility a short walk, including a direct at-grade crossing of North Tryon Street/US-29 adjacent to the station platform. As with Site 2 (Talbots/Old Navy), a conceptual layout indicated that the site could provide the capacity to accommodate a parking garage with the needed number of spaces and

that its accessibility to/from JW Clay Boulevard and JM Keynes Drive would be favorable. The potential to add freestanding ground floor uses along JM Keynes Drive and potentially near the intersection of JW Clay Boulevard/North Tryon Street/US-29 was also seen as a positive attribute. However, one of the largest concerns associated with use of the site was its irregular shape (triangular). The irregular shape of the site would require a custom-built parking garage and internal ramping would likely be difficult for vehicular access. Additionally, full use of the irregular shape is difficult, resulting in unusable remnants of the property. Given the limited potential for use of an irregular parking garage shape, the project team discussed the use of a rectilinear parking garage with additional levels and used this concept to evaluate the site in the evaluation matrix. This site received the second highest score and was carried forward for further evaluation.

Site 4 (Church School/Burger Bites): Site 4 was relatively favorable in terms of compatibility with the local context. However, a private school currently occupies a portion of the site. While early discussions with school representatives indicated that they were considering relocation of the school already, regardless of future redevelopment plans, discussions with FTA discouraged use of the site as it would impact a community resource. The site otherwise scored well in terms of environmental considerations as no environmental concerns were identified other than the potential introduction of a new visual element to an adjacent multi-family residential community. Site 4 (Church School/Burger Bites) was generally favorable in terms configuration/access parameters in that it provides sufficient space for a park-and-ride facility, and has frontage to private and public streets on all sides. Negative components of Site 4 (Church School/Burger Bites) include its distance to the station platform and that pedestrians would have to cross both JW Clay Boulevard and North Tryon Street/US-29 to access the station platform from the park-and-ride facility. Site 4 (Church School/Burger Bites) was eliminated from further evaluation.

Site 5 (Burger Bites/Panda Express): Site 5, currently occupied by retail/restaurant development, scored well in terms of compatibility with the local context and for environmental considerations. It is closer to the station platform than Site 4 (Church School/Burger Bites), but would still require pedestrians to cross both JW Clay Boulevard and North Tryon Street/US-29 to access the station platform from the parking garage. The site provides adequate space for development of a sufficiently-sized park-and-ride facility and provides desirable frontage on two public streets. The primary negative regarding the use of this site is relative to site access. Entrance to the park-and-ride facility could occur from both JW Clay Boulevard and North Tryon Street/US-29, but egress would be limited to JW Clay Boulevard only. Based on the feasible layout, direct access to the adjacent property would be eliminated; thereby impacting three properties total. For this reason, Site 5 (Burger Bites/Panda Express) was eliminated from further consideration.

Site 6 (Panda Express/HoneyBaked Ham): Site 6, currently occupied by retail/restaurant development, also scored well in terms of compatibility with the local context and for environmental considerations. Like Site 5 (Burger Bites/Panda Express), it is closer to the station platform than Site 4 (Church School/Burger Bites), but would still require pedestrians to cross both JW Clay Boulevard and North Tryon Street/US-29 to access the station platform from the park-and-ride facility. The site provides adequate space for development of a sufficiently-sized parking garage and provides desirable frontage on two public streets. Unlike Site 5 (Burger Bites/Panda Express), Site 6 (Panda Express/HoneyBaked Ham) provides access from public and private streets without impacting additional properties. The primary negative regarding the use of this site is relative to the need to displace/relocate active retail/restaurant uses. This site received the highest score and was carried forward for further evaluation.

Conclusion

The site with the highest ranking, namely Site 6 (Panda Express/HoneyBaked Ham), was carried forward for further review. The engineering team was directed to proceed with the development of more-detailed concepts and access plans for this site. Given the concern for pedestrian conflicts generated at the meeting, regarding the fact that pedestrians would have to cross the street twice in order to access the station platform, and an additional pedestrian conflict concern brought forth by the Charlotte Department of Transportation shortly following the meeting, regarding the fact that pedestrians would have to cross in front of a heavy right turn movement; two possible mitigation measures were proposed. The mitigation measures included: moving the station platform to the north side of the JW Clay Boulevard/North Tryon Street/US-29 intersection and/or building a pedestrian bridge from the parking garage across JW Clay Boulevard. Therefore, the engineering team was directed to include these potential measures in the development of more-detailed concepts for the park-and-ride facility.

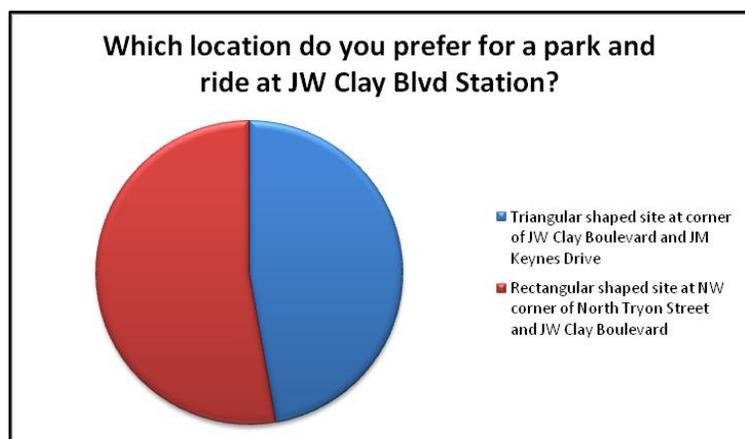
2.2.5.2 Detailed Screening Process

Stakeholder Input

A preference for Site 6 (Panda Express/HoneyBaked Ham) was communicated to CASTO in late December 2010. On January 7, 2011, CASTO indicated a desire to continue working with CATS by providing a proposal for potential transfer of their underutilized property (Site 3 [Triangle Retail]). CATS received a proposal on January 10, 2011 for the transfer of Site 3 (Triangle Retail) to CATS. Due to the various constraints Site 3 (Triangle Retail) (as detailed previously), it was relayed to CASTO that Site 6 (Panda Express/HoneyBaked Ham) was still the preferred site. However, the CATS project team developed several concepts for Site 3 (Triangle Retail) and included further evaluation of this site in the Detailed Screening Process (described below).

Public Input

On January 12, 2011, a public meeting was held at the Oasis Shriener's Center to review the proposed project changes and gather input from the public. The addition of parking at the JW Clay Blvd. Station was included in the proposed project changes presented, as well as the two sites under evaluation (Site 3 [Triangle Retail] and Site 6 [Panda Express/HoneyBaked Ham]). A survey was provided to the public at the meeting and on-line and included a request to indicate which site was preferred. At the conclusion of the survey period, the public opinion was nearly equal for both sites.



Public Meeting – Survey Results Excerpt

Detailed Screening

The project team convened again on January 21, 2011 to review and evaluate each of the new conceptual layouts for Site 3 (Triangle Retail) and Site 6 (Panda Express/HoneyBaked Ham) against the evaluation criteria. The evaluation criteria are the same as that described in Section 2.2.2.1:

- Local context (including Stakeholder Support),
- Environmental considerations,
- Configuration/Access, and
- Cost considerations

Appendix C includes the screening matrix (marked Draft 1/21/11), along with the rankings for each site under each category. The conceptual layouts evaluated are included in Appendix D, and a brief summary of the screening results is as follows:

Site 3 (Triangle Retail): Four concepts for use of Site 3 were evaluated by the project team. Each concept involved use of a rectilinear parking structure and avoided impact to the adjacent Site 2 (Talbots/Old Navy) property to the extent practicable. While Site 3 (Triangle Retail) continued to have positive attributes, including its close proximity to the station platform and access from JW Clay Boulevard and JM Keyes Drive, several undesirable characteristics were still prevalent. As before, the irregular shape of the site continued to be a challenge, particularly in terms efficient use of the site and allowing sufficient space in unused remnants for other future uses. Options A1 and A4 (Appendix D) were particularly difficult in this regard. Opportunities for ground-floor retail were also limited, particularly with Options A2 and A3 (Appendix D). Three of the four concepts (Options A2, A3 and A4) would impact the adjacent Old Navy/Talbots property primarily by eliminating some surface parking and/or by changing the site access (Appendix D). An additional concern continued to be the known presence of a former dry cleaner. A more-detailed records review revealed that the former dry cleaner was located on the adjacent parcel (Site 2 [Talbots/Old Navy]), not on Site 3 (Triangle Retail) as previously thought, but very near the Site 3 (Triangle Retail) property boundary. The former dry cleaner site is part of the Dry-Cleaning Solvent Cleanup Act Program and is currently under assessment. Soil and groundwater contamination have been documented at the site and at this time appear to be entirely within the boundaries of Site 2 (Talbots/Old Navy). However, given the close proximity to Site 3 (Triangle Retail) and the potential impacts to Site 2 (Talbots/Old Navy) associated with most of the concepts, the costs for potential contamination clean-up and assumption of liability remained a relevant concern. In the end, Options A1 and A4 were the most favorable of the four concepts evaluated.

Site 6 (Panda Express/HoneyBaked Ham): As previously mentioned, evaluation of Site 6 included shifting the station platform to the north side of the JW Clay Boulevard/North Tryon Street/US-29 intersection and/or building a pedestrian bridge from the parking garage across JW Clay Boulevard. Two concepts were presented; one that left the station on the south side of JW Clay Boulevard but included a pedestrian bridge to cross JW Clay Boulevard and/or North Tryon Street/US-29 (Option B1 and B2, Appendix D); and one that shifted the station to the north of JW Clay Boulevard and included a pedestrian bridge across North Tryon Street/US-29 (Option B3, Appendix D). When evaluated against the matrix, all three concepts scored very close to one another. Additionally, due to the improvements to pedestrian access attained by making platform adjustments and/or addition of the pedestrian bridge, Site 6 (Panda

Express/HoneyBaked Ham) scored higher overall during this evaluation than it did in the December 15, 2010 exercise. Of the three options presented, Option B3 was generally more favorable than Option B1 and Option B2 as the merits of Option B3 included its closer proximity to the relocated station platform. Concerns over sight distance/impediments and some pedestrian traffic still needing to cross JW Clay Boulevard (e.g., those coming from UNC Charlotte and those coming from buses) were discussed relative to Option B1 and B2.

2.2.5.3 Conclusion

Following the January 21, 2011 project team meeting, CATS hosted a follow-up meeting with representatives of CASTO, CATS, City of Charlotte Economic Development and UNC Charlotte. CASTO presented a continued desire to work with CATS in utilizing Site 3 (Triangle Retail). The outcome of the meeting was that CASTO would prepare a more formal proposal, which would meet CATS' requirements for site configuration and customer access, as well as keeping CATS real estate and relocation costs neutral to that of the preferred Site 6 (Panda Express/HoneyBaked Ham). Subsequently, representatives of CASTO and CATS shared information relevant to real estate costs, preliminary site configurations, retail management and potential tax incentives. On February 17, 2011, CASTO submitted an updated proposal to CATS. However, based on evaluation by representatives of CATS, the Charlotte-Mecklenburg Planning Department and City of Charlotte Economic Development, it was determined that the proposal did not warrant a change to the proposed park-and-ride facility at Site 3 (Triangle Retail). The density and land use configuration in the February 17, 2011 CASTO concept did not provide enough incentive to make the necessary changes and to incur the associated impact/risk to the LYNX BLE schedule.

Overall, after very careful consideration and final discussions amongst the project team, Site 6 (Panda Express/HoneyBaked Ham), Option B3 was officially identified as the preferred site for the proposed JW Clay Blvd. Station park-and-ride facility. Though it would result in the need to shift the previously-proposed station platform location, it was determined that Site 6 (Panda Express/HoneyBaked Ham) and the Option B3 concept are the most viable of the sites and concepts reviewed.

2.3 Operating Plan/Vehicle Fleet Size

Under both the previous terminus at I-485 or the revised terminus at UNC Charlotte, the LYNX BLE creates projected ridership loads that require either the operation of ten-minute headways with 3 car trains or six-minute headways with 2 car trains. Under the previous terminus at I-485, the proposed operating plan was to operate six-minute headways with 2 car trains. This plan required 26 vehicles to be added to CATS current fleet of 20 (total fleet size 46). By reducing the project length as well as changing the operating plan to ten-minute headways with 3 car trains, the number of light rail vehicles needed for the project is reduced from 26 (the number necessary to operate 2 car trains at six-minute headways to I-485) to 18 (the number necessary to operate 3 car trains at 10 minute headways to I-485) for a total fleet size of 38 (see Appendix F). A reduction in the vehicle fleet size results in a reduction in procurement costs for new vehicles and has the added benefit of lower operations and maintenance costs.

2.4 Vehicle Maintenance

As part of the Light Rail Alternative described in the Draft EIS (August 2010), a Vehicle Light Maintenance Facility (VLMF) and storage yard would be constructed on the existing Norfolk

Southern Intermodal Facility that abuts North Brevard Street as shown in Appendix A, Figure 2. The VLMF was to include a maintenance building and a storage yard, and the existing CATS Vehicle Maintenance Facility would have needed minor modifications to the Rail Operations Control Center. Light maintenance activities (those that could be done in less than 24 hours) were to take place at this new facility, whereas heavy maintenance was to take place at the existing South Boulevard Light Rail Facility.

Reducing the fleet size as described in Section 2.3 removes the need for a second maintenance facility and requires less storage space requirements for vehicles. In an effort to reduce costs per the MTC direction, it was determined during evaluations that if the existing South Boulevard Light Rail Facility received minimal improvements to accommodate maintenance of the expanded fleet, then only a storage yard at the existing NS Intermodal Facility would be needed under the proposed project changes. The South Boulevard Light Rail Facility would be utilized for maintenance activities and the building could be retrofitted to add additional maintenance capacity.

This change in scope would result in a \$26 million savings to the project. As such, the recommendation is to eliminate the VLMF and to include only a storage yard for 24 vehicles and a small dispatch building at the existing Norfolk Southern Intermodal Facility (Appendix A, Figure 2).

2.5 Right-of-Way

The majority of the proposed project would be constructed within existing transportation corridors (rail and roadway). However, portions of the proposed project would be constructed in areas where there is insufficient right-of-way (ROW) width (rail and roadway) and in areas outside of existing rail and roadway corridors, such as where the proposed project would transition from existing rail corridors to existing roadway corridors. Park-and-ride facilities are proposed at several of the station locations and would also require property acquisition for their development. Additional areas that would likely require acquisition of property for modification of existing streets and railway ROWs include areas of potential widening, relocation and intersection improvements. New access roads, bridge structures and ancillary facilities related to the development and implementation of the proposed project, including power substations, signal houses and crossing equipment (gates and signals), would also require the acquisition of property. Implementation of the proposed project would require the full and partial acquisition of parcels along the proposed corridor and would potentially result in the displacement of residential, commercial, industrial and office uses. The proposed project may also include the acquisition and/or trade of railroad ROW.

ROW acquisition can be a significant cost to transportation projects, and to this end, the CATS project team evaluated areas in which ROW acquisition could potentially be reduced. As noted, the proposed project would be constructed mostly within existing rail and roadway corridors, the exception being where the alignment transects the UNC Charlotte campus. Railroad ROW needs are largely dictated by track separation requirements. Therefore, it was determined that essentially nothing could be done to reduce the ROW needs within the railroad portion of the corridor. With regards to UNC Charlotte, as previously determined, the ROW needed for construction and operation of the proposed light rail project would be made available to CATS at no cost through a partnership between UNC Charlotte and CATS. Therefore, the only opportunity to reduce ROW requirements would be on the North Tryon Street/US-29 segment of the project.

Existing ROW along North Tryon Street/US-29 is not wide enough to accommodate the proposed project, including the light rail tracks, travel lanes for personal vehicles, bike lanes, planting strips and sidewalks, as proposed. By reducing the typical section to eliminate or reduce amenities such as bike lanes and planting strips, it was estimated that ROW needs could be reduced for a cost savings of approximately \$52.6 million. However, subsequent discussion with the project team revealed a strong desire to maintain the full typical section as proposed. Sidewalks and bike lanes enhance connectivity to rail stations and provide a true multi-modal facility by accommodating cyclists and pedestrians. Additionally, inclusion of these elements satisfies the City of Charlotte's adopted Urban Street Design Guidelines, a tool intended to create "complete" streets, or those which provide for motorists as well as pedestrians, cyclists and neighborhood residents. Maintaining the typical section as proposed is also consistent with improvements made to the South Corridor where the existing LYNX Blue Line operates. Therefore, it was determined that the project would retain the North Tryon Street/US-29 typical section as proposed. However, through various meetings with the project team and City of Charlotte Engineering and Property Management, it was determined that CATS' financial contribution to the North Tryon Street/US-29 improvements could be reduced through use of other local funds. A separate project known as the Northeast Corridor Infrastructure (NECI) program is currently under development by City of Charlotte Engineering and Property Management. This program consists of infrastructure improvements (e.g., roadway, pedestrian, etc.) to enhance business and residential access within the LYNX BLE corridor and will be funded through the City of Charlotte's Capital Improvement Program. It was determined that the NECI program could feasibly fund incremental ROW costs and street improvements proposed as part of the LYNX BLE. This has the advantage of reducing CATS' financial contribution, with the added benefit of retaining leverage for state and federal funds for NECI-related improvements. Overall, CATS financial contribution is reduced by approximately \$11.25 million under this alternative.

The proposed project would also require the acquisition of parcels for the development of park-and-ride facilities at four of the proposed station locations, including Sugar Creek Station, Old Concord Road Station, University City Blvd. Station and JW Clay Blvd. Station. Acquisition of parcels for development of these facilities constitutes the majority of the full acquisitions that would be required for the proposed project. However, through elimination of the park-and-ride facilities at Tom Hunter Station and McCullough Station, ROW cost savings are achieved. Additional ROW cost savings are also garnered from truncating the proposed project at the UNC Charlotte Station, eliminating ROW needs for the alignment beyond UNC Charlotte, as well as ROW needs for the Mallard Creek Church Station and I-485/N. Tryon Station.

2.6 Other Changes

CATS and the project team evaluated other potential project changes, including:

- Deferring or elimination of the 25th Street Station and McCullough Station
- Elimination of the W.T. Harris Boulevard Grade Separation

As with the other project changes detailed in this document, the Project Management Team discussed the option of deferring or eliminating stations as a cost savings measure. Members of the Project Management Team were concerned that deferral or elimination of stations would be a detriment to land use goals and to mobility goals; thereby contradicting the guiding philosophy of the scope reduction considerations (see Section 1.0). Therefore, deferring or eliminating the 25th Street Station and/or McCullough Station was removed from further consideration.

The W.T. Harris Boulevard and North Tryon Street/US-29 intersection is one of the most highly-used intersections in the City of Charlotte, accommodating high traffic volumes throughout the day, particularly in the AM and PM peak periods. This intersection currently operates at a level of service D (a delay of 35 to 55 seconds per vehicle) during the AM and PM peak periods. To that end, the proposed project includes a grade separation of this intersection, accomplished by an aerial structure that would carry the light rail over the intersection. Given the costly nature of the aerial structure, the Project Management Team considered elimination of the grade separation. However, significant safety concerns associated with the current and future high traffic volumes were expressed. Additionally due to high traffic volumes, it would likely not be feasible for the light rail to pre-empt the traffic signals as trains pass through the intersection. Therefore, operations and timings of the LYNX BLE would be negatively affected. For these reasons, the Project Management Team did not eliminate the W.T. Harris Boulevard Grade Separation from the proposed project.

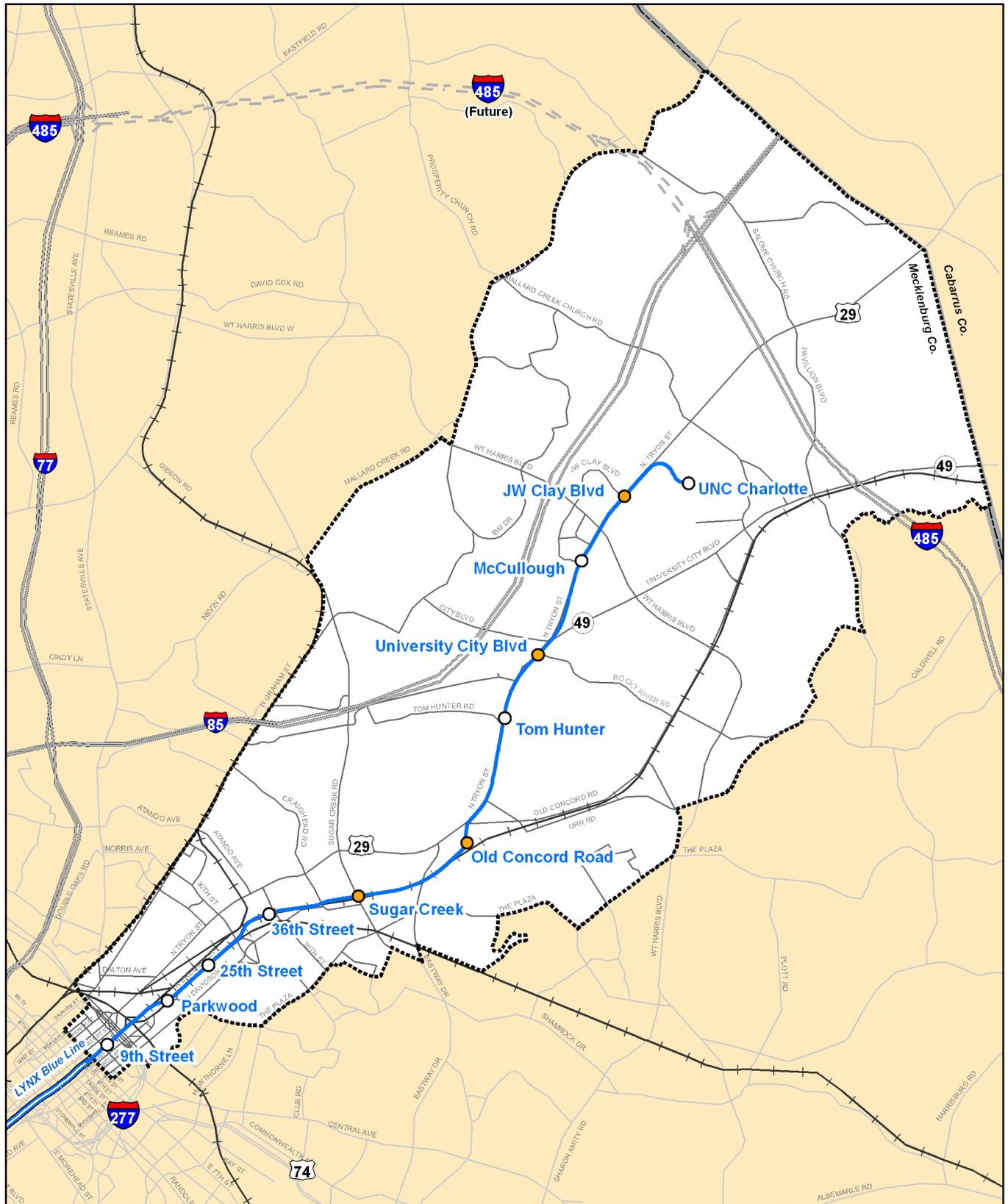
The project team is continuing to evaluate other miscellaneous cost reduction items such as:

- CCTV quantity adjustment and validation
- TVM quantity adjustment
- Reduction in landscaping
- Reduction in the art-in-transit budget commensurate with the overall project reductions

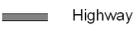
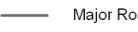
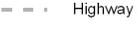
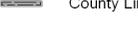
3.0 CONCLUSION

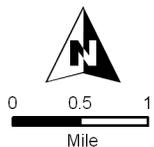
At the conclusion of CATS' extensive coordination and evaluation effort, it was determined that the proposed project changes maintain the vision and the purpose and need of the LYNX BLE. The majority of the ridership is retained and the project still reaches UNC Charlotte, a major ridership generator. The proposed changes provide the ability to expand capacity, purchase more vehicles and add storage capacity in the future, if warranted and if funds are available. The proposed changes additionally allow for future extension of light rail to I-485 and Cabarrus County. Next steps include progressing the design of the project to 65 percent and completion of the Final EIS in 2011. CATS will also prepare and submit to FTA a New Starts submittal that includes an updated financial plan for the proposed project.

**APPENDIX A
COST REDUCTION EXHIBITS**



Legend

-  Northeast Corridor Limits
-  Light Rail Transit
-  LYNX Existing Light Rail Transit
-  Proposed Stations
-  Proposed Stations with Park-and-Ride
-  Railroads
-  Highway
-  Major Roads
-  Highway (Future)
-  County Line

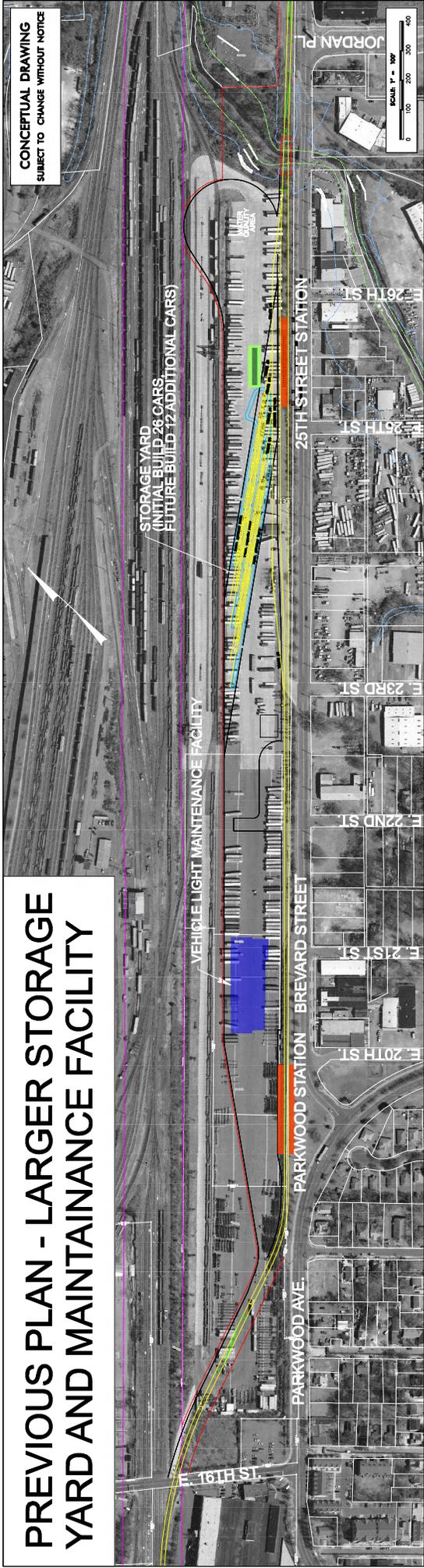


Data Source:
CATS, City of Charlotte GIS, and Mecklenburg County GIS

BLE_Corridor_Map01-11.pdf

01_04_11

Figure 2
VLMF and Storage Yard



Storage Yard At NS Intermodal Site

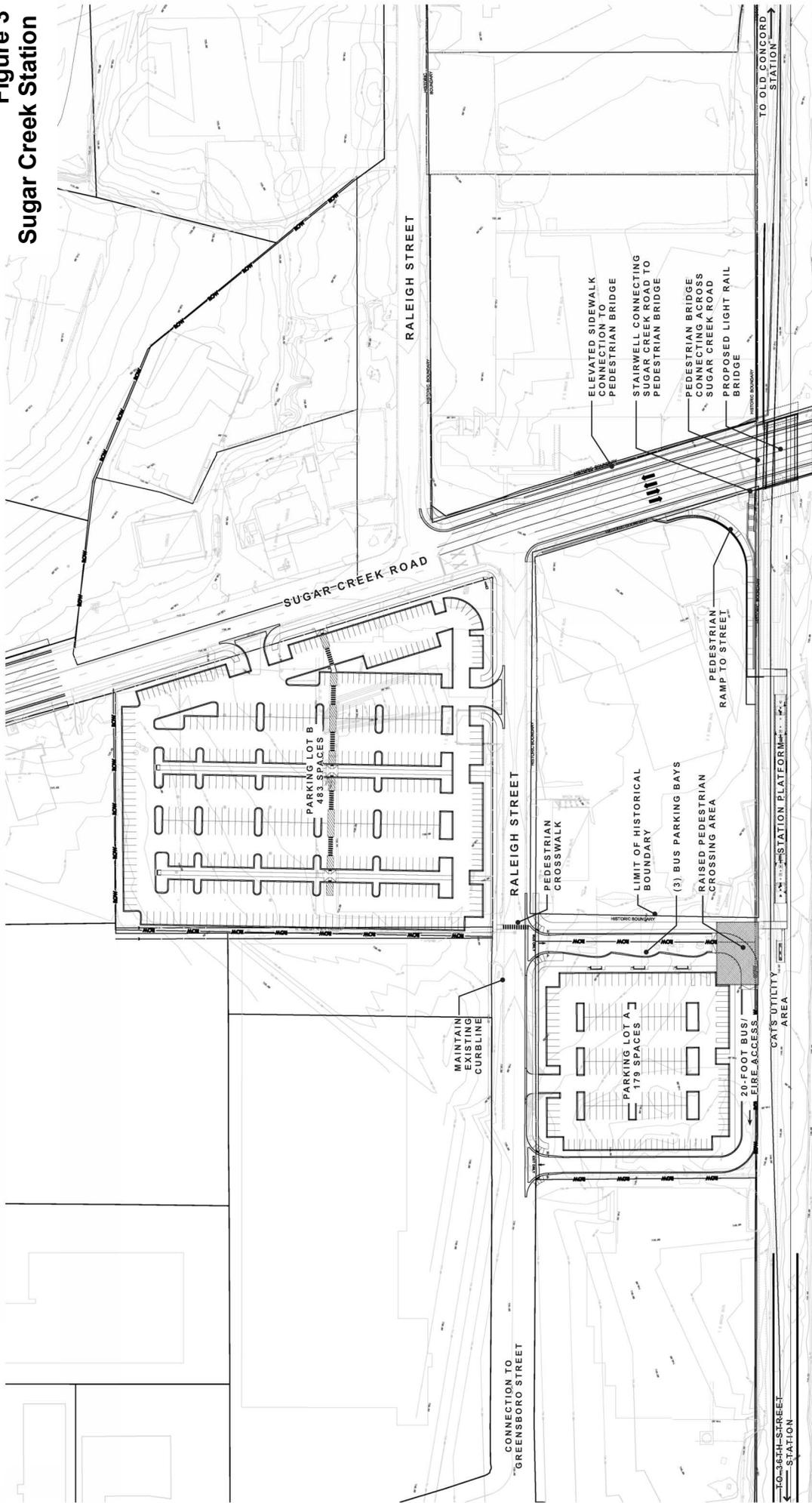
LYNX BLUE LINE EXTENSION | NORTHEAST CORRIDOR LIGHT RAIL PROJECT



DATE: 01-12-11



Figure 3
Sugar Creek Station



DATE: 01-11-11

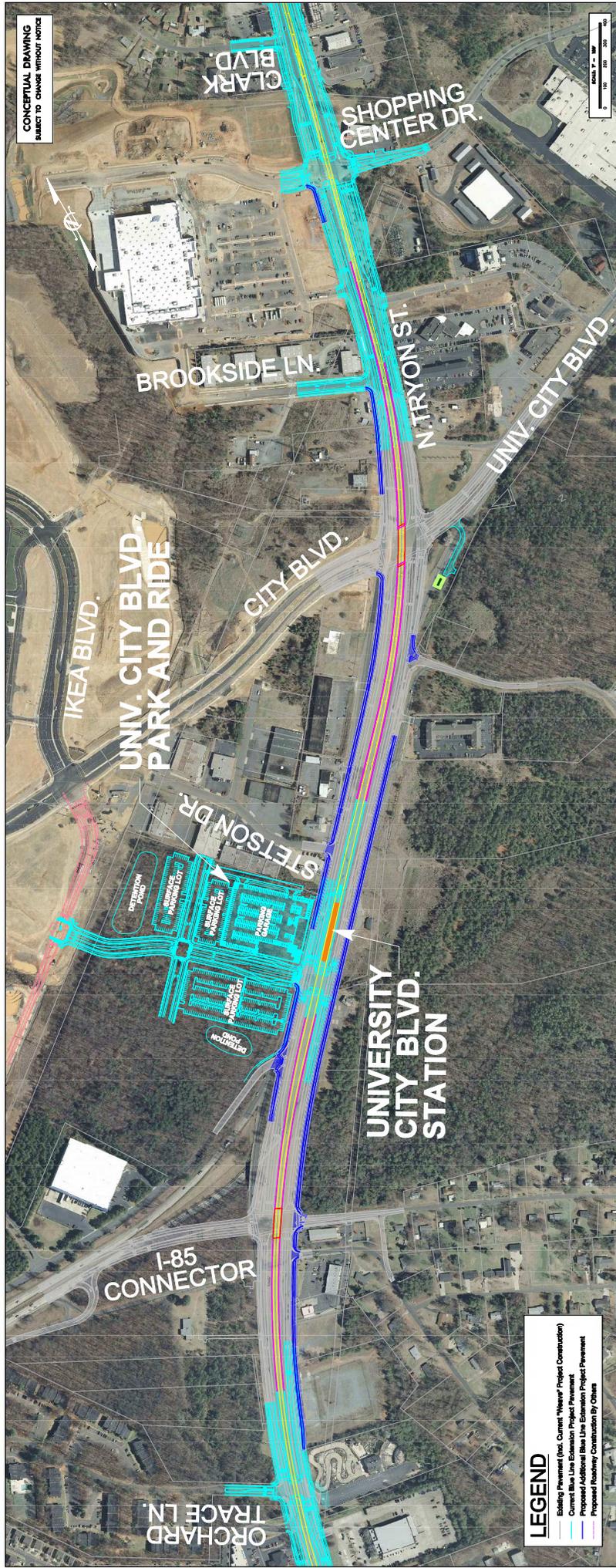
-CONCEPTUAL DRAWING-
SUBJECT TO CHANGE WITHOUT NOTICE



LYNX BLUE LINE EXTENSION | NORTHEAST CORRIDOR LIGHT RAIL PROJECT



Figure 5
University City Blvd. Station
Roadway Improvements



CONCEPTUAL DRAWING
 SUBJECT TO CHANGE WITHOUT NOTICE

LEGEND
 Existing Pavement (Red, Current "Wear" Project Construction)
 Current Blue Line Extension Project Pavement
 Proposed Additional Blue Line Extension Project Pavement
 Proposed Roadway Construction By Others

DATE: 01-12-11



University City Boulevard Station
 LYNX BLUE LINE EXTENSION | NORTHEAST CORRIDOR LIGHT RAIL PROJECT



APPENDIX B
PROJECT CHANGES MEETINGS AND PRESENTATIONS

APPENDIX B1 – PROJECT MANAGEMENT TEAM MEETINGS
COST SAVINGS EVALUATION MATRICES

**COST SAVINGS OPTIONS
PROJECT TEAM MEETING**

November 29, 2010

DRAFT

from 11/29/0 meeting

- A** BEST options for reducing cost
- B** GOOD options for reducing cost
- C** "OK" options for reducing cost
- D** POOR options for reducing cost

No.	Seg	Description	UNCC Terminus 2010 Estimated Cost Savings * (millions)	I-485 Terminus	PROS	CONS	weight										TOTAL GRADE
							1	1	1	1	1	1	1	1	1	1	
							Land-Use	Mobility	Environment	Financial	System Integration	Schedule	Easy to Add Later	Safety & Reliability	O & M Costs		
1 End Project at UNC Charlotte Station																	
1A	C	Eliminate civil infrastructure, track, and systems north of UNC Charlotte station	\$55.6	NA	- Significant cost savings - Reduces O&M costs	- Determine if this is a Phase or redefined project for FEIS (requires FTA buy-in) - Doesn't get to I-485 - Tail track and crossovers requires geometry changes - Potential "drop-off" traffic issue on campus											ERR
1B	C	Eliminate LRT Bridge over Mallard Creek Church Road	\$7.1	NA													ERR
1C	C	Eliminate Mallard Creek Church Station	\$7.3	NA													ERR
1D	C	Eliminate I-485 Station	\$2.9	NA													ERR
1E	C	Eliminate I-485 park and ride and provide an additional parking garage (assume 1,000 space garage)	\$59.0	NA													ERR
1F	C	1,200 space garage at University City Blvd.	(\$25.5)	NA		- Traffic analysis / Transportation revisions to FEIS - Additional traffic on North Tryon and I-485											ERR
1G	C	450 space garage at McCullough	(\$14.0)	NA	Distributes traffic better	- Cheaper at UCB - Traffic analysis / Transportation revisions to FEIS - Additional traffic on North Tryon and I-485											ERR
1H	Proj. Wide	Reduce number of vehicles by 4 due to shorter line	\$18.8	NA													ERR
1I	Proj. Wide	Other effects of reduced ridership due to ending the project at the UNC Charlotte Station	tdb	NA	Achieves 6.5% O&M cost savings												ERR
		Subtotal:	\$111.2	\$0.0													ERR

**COST SAVINGS OPTIONS
PROJECT TEAM MEETING**

November 29, 2010

DRAFT

from 11/29/0 meeting

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No.	Seg	Description	UNCC Terminus	I-485 Terminus	2010 Estimated Cost Savings * (millions)	PROS	CONS	weight										TOTAL GRADE
								1	1	1	1	1	1	1	1	1	1	
								Land-Use	Mobility	Environment	Financial	System Integration	Schedule	Easy to Add Later	Safety & Reliability	O & M Costs		
2 Vehicles																		
2A	Proj. Wide	Reduce number of vehicles from 26 (2 car trains at 6 min.) to 22 (3 car trains at 10 min.)	\$18.8	\$18.8			- 2-car at 7.5 min. headway required initially											ERR
																		ERR
		Subtotal:	\$18.8	\$18.8														
3 N. Tryon Street Typical Section																		
3A	B	Eliminate center median, bike lanes, planting strips, and 8' sidewalk. Use conc. median barrier and 5' sidewalk back of curb	\$18.9	\$18.9			- Significant revisions to FEIS - Sets poor precedent for future development - Doesn't achieve community enhancement/transformation goals - Doesn't achieve some environmental goals (land-use, visual, alt. modes)											ERR
3B	C	Eliminate center median, bike lanes, planting strips, and 8' sidewalk. Use conc. median barrier and 5' sidewalk back of curb	\$25.8	\$25.8														ERR
																		ERR
		Subtotal:	\$44.7	\$44.7														
4 Parking Garages / Lots																		
4A	A	Eliminate Sugar Creek parking garage and use surface lots	\$9.0	\$9.0			- "Easy" to add back later. - Consider City acquiring add'l. land req'd. for surface lots.											ERR
4B	B	Eliminate University City Blvd. parking garage and use surface lots	NA	\$15.0			- "Easy" to add back later. - Consider City acquiring add'l. land req'd. for surface lots. (Synthetic TIFF)											ERR
																		ERR
		Subtotal:	\$9.0	\$24.0														

**COST SAVINGS OPTIONS
PROJECT TEAM MEETING**

November 29, 2010

DRAFT
from 11/29/0 meeting

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No.	Seg	Description	UNCC Terminus 2010 Estimated Cost Savings * (millions)	I-485 Terminus	PROS	CONS	weight										TOTAL GRADE
							1	1	1	1	1	1	1	1	1	1	
							Land-Use	Mobility	Environment	Financial	System Integration	Schedule	Easy to Add Later	Safety & Reliability	O & M Costs		
5 Park and Ride Access																	
5A	A	Eliminate Old Concord park and ride access to N. Tryon	\$0.6	\$0.6		- Many items require reworking Design Criteria - Relatively low savings - Requires reworking bus access										ERR	
5B	B	Eliminate Univ. City Blvd park and ride access to Ikea Blvd	NA	\$1.2		- Assumed in the traffic analysis										ERR	
5C	C	Eliminate I-485 park and ride north access to N. Tryon	NA	\$0.3		- High ridership station - inconvenience										ERR	
5D	C	Eliminate bus loop, kiss and ride and employee parking from I-485 park and ride	NA	\$3.0		- High ridership station - inconvenience										ERR	
																ERR	
		Subtotal:	\$0.6	\$5.1													
6 Stations																	
6A	A	Defer 25th Street Station (build foundations only)	\$1.7	\$1.7	- Need a lot of small savings to accumulate enough savings to consider reaching I-485. - Significant floodplains complicate adjacent development. - If VLMF moves, less need for this station.	- Lose opportunity for land-use transformation (in Mecklenburg County) - Building later doesn't spur adjacent development - Lose opportunity for \$300k annual tax revenue - 25th Street has "Southend" type opportunity on a shorter timeframe - Savings are "small"										ERR	
6B	A	Additional savings by eliminating 25th Street Station	\$0.7	\$0.7												ERR	
6C	C	Defer Mallard Creek Church Station (build foundations only) **	NA	\$4.3	- Significant savings vs. ridership loss	- Lose access to pending development										ERR	
6C	C	Additional savings by eliminating Mallard Creek Church Station **	NA	\$3.0	- May be able to pursue 3rd party funding to preserve station	- Lose access to pending development										ERR	
		Defer/Eliminate Tom Hunter?				- Transit dependent ridership - Already eliminated park-and-ride											
		Defer/Eliminate McCullough?				- Already eliminated park-and-ride										ERR	
		Defer/Eliminate/Combine other stations?															

**COST SAVINGS OPTIONS
PROJECT TEAM MEETING**

November 29, 2010

DRAFT
from 11/29/0 meeting

- A** BEST options for reducing cost
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No.	Seg	Description	UNCC Terminus	I-485 Terminus	2010 Estimated Cost Savings * (millions)	PROS	CONS	weight										TOTAL GRADE
								1	1	1	1	1	1	1	1	1	1	
								Land-Use	Mobility	Environment	Financial	System Integration	Schedule	Easy to Add Later	Safety & Reliability	O & M Costs		
Subtotal:			\$2.4	\$9.7														
7 VLMF / Storage Yard																		
7A	A	Move VLMF and Storage Yard to the existing South Blvd Light Rail Facility	\$14.5	\$14.5		- Significant savings - Adjacent property is currently for sale	- Increases O&M costs - Savings don't seem to make sense - need to reconfirm - Removes "buffer" with freight track yards at existing NS Intermodal - Need to add back "pocket track" capacity											ERR
7B	A	Additional savings by reducing the cost of the VLMF at the South Blvd facility by 1/2	\$9.9	\$9.9														ERR
7C	A	Reduce capacity of storage yard (2 Storage Tracks)	\$2.0	\$2.0		- Long term Streetcar plan calls for a separate Streetcar VMF												ERR
Subtotal:			\$26.4	\$26.4														ERR
8 Bridges																		
8B	C	Shorten LRT bridge over WT Harris Blvd (do not accommodate future interchange)	\$3.0	\$3.0														ERR
8C	C	Additional Savings by eliminating WT Harris BLVD bridge	\$12.0	\$12.0		- Some support for this option at the 11/29/10 Project Team meeting - Doesn't affect Harris/North Tryon intersection	- Increases travel time - Emergency vehicle pre-emption creates uncertain timing and delays (is data available? traffic signal data? emergency responder data?) - Complicates future interchange											ERR
8D	C	Eliminate NB N. Tryon bridge over LRT at exit from median	\$13.4	\$13.4														ERR
8E	C	Eliminate I-485 park and ride grade separated entrance and lower LRT main line along N. Tryon **	NA	\$13.0														ERR
Subtotal:			\$28.4	\$41.4														ERR

**COST SAVINGS OPTIONS
PROJECT TEAM MEETING**

November 29, 2010

DRAFT

from 11/29/0 meeting

- A** BEST options for reducing cost
- B** GOOD options for reducing cost
- C** "OK" options for reducing cost
- D** POOR options for reducing cost

No.	Seg	Description	UNCC Terminus 2010 Estimated Cost Savings * (millions)	I-485 Terminus	PROS	CONS	weight										TOTAL GRADE
							1	1	1	1	1	1	1	1	1	1	
							Land-Use	Mobility	Environment	Financial	System Integration	Schedule	Easy to Add Later	Safety & Reliability	O & M Costs		
9 Two-Car Trains																	
9A	Proj. Wide	Defer construction of 3-car platforms (build foundations only for 3rd car platform)	\$4.8	\$4.8													ERR
9B	Proj. Wide	Additional savings by eliminating 3rd car platform	\$2.6	\$2.6													ERR
9C	Proj. Wide	Size Traction Power System for 2-car trains, including eliminating 1 substation ***	\$4.2	\$4.2													ERR
																	ERR
		Subtotal:	\$11.6	\$11.6													
10 Platform / Corridor Amenities																	
10A	Proj. Wide	Eliminate crawl space under platforms	\$2.4	\$2.4		- Eliminates future flexibility - Increases O&M costs											ERR
10B	Proj. Wide	Eliminate trees on platforms	\$0.7	\$0.7		- "Equity" issues with South Corridor											ERR
10C	Proj. Wide	Put all TVMs on platforms	\$0.2	\$0.2													ERR
10D	Proj. Wide	Reduce the number of TVMs by 25%	\$2.7	\$2.7													ERR
10E	Proj. Wide	Use I-beam, instead of fluted OCS poles	\$0.6	\$0.6													ERR
10G	Proj. Wide	Reduce the amount of fiber provided for future use by 50%	\$1.7	\$1.7													ERR
10H	Proj. Wide	Reduce landscaping by 25%	\$0.8	\$0.8													ERR
10I	Proj. Wide	Reduce art commensurate with project cost savings (1%)	\$1.5	\$1.5													ERR
10J	Proj. Wide	Reduce the number of CCTV cameras by 25%	\$2.4	\$2.4		- South corridor cameras not sufficient (Operational vs Safety & Security use)											ERR
																	ERR
		Subtotal:	\$13.0	\$13.0													

**COST SAVINGS OPTIONS
PROJECT TEAM MEETING**

November 29, 2010

DRAFT
from 11/29/0 meeting

A BEST options for reducing cost
B GOOD options for reducing cost
C "OK" options for reducing cost
D POOR options for reducing cost

No.	Seg	Description	UNCC Terminus	I-485 Terminus	2010 Estimated Cost Savings * (millions)	PROS	CONS	weight										TOTAL GRADE
								1	1	1	1	1	1	1	1	1	1	
								Land-Use	Mobility	Environment	Financial	System Integration	Schedule	Easy to Add Later	Safety & Reliability	O & M Costs		
11 Single Track Operations																		
		Single track from UNC Charlotte station to I-485 station:																
11A	C	- "Temporary" single track with Mallard Creek Church station and grade-separated entrance to I-485 station	NA	\$8.0			- Maintenance single track operations could extend back to south of JW Clay. - Does not work for 6 min. headways / doubtful for 7.5 min. headways. - May require additional trainsets										ERR	
11B	C	- Additional savings for a "permanent" single track without Mallard Creek Church station and with at-grade entrance to I-485 station	NA	\$20.0			- Maintenance single track operations could extend back to south of JW Clay. - Doubtful at 6 min. headways / OK for 7.5 min. headways - May require additional trainsets										ERR	
		Single track from exit from North Tryon median to UNC Charlotte station:																
11C	C	- "Temporary" single track, with provisions for future double track	Doubtful	Doubtful at 10 min.			- Current horizontal and vertical geometry does not work. - May require additional trainsets.										ERR	
11D	C	- Additional savings for a "permanent" single track, without provisions for future double track	Doubtful	Doubtful at 10 min.			- Current horizontal and vertical geometry does not work. - May require additional trainsets.										ERR	
		Single track from JW Clay station to exit from North Tryon median UNC Charlotte station:																
11E	C	- "Temporary" single track, with provisions for future double track	\$8.0	NA			- Current horizontal and vertical geometry would need to be revised. - Doubtful for 6 min. headways.										ERR	
11F	C	- Additional savings for a "permanent" single track, without provisions for future double track	\$10.0	NA			- Current horizontal and vertical geometry would need to be revised. - Doubtful for 6 min. headways.										ERR	
																	ERR	
		Subtotal:	\$18.0	\$28.0														

**COST SAVINGS OPTIONS
PROJECT TEAM MEETING**

November 29, 2010

DRAFT
from 11/29/0 meeting

- A** BEST options for reducing cost
- B** GOOD options for reducing cost
- C** "OK" options for reducing cost
- D** POOR options for reducing cost

No.	Seg	Description	UNCC Terminus 2010 Estimated Cost Savings * (millions)	I-485 Terminus	PROS	CONS	weight										TOTAL GRADE
							Land-Use	Mobility	Environment	Financial	System Integration	Schedule	Easy to Add Later	Safety & Reliability	O & M Costs		
12 Other:																	
		Stay in North Tryon with spur onto campus or University station on North Tryon				- Expensive to stay in North Tryon - Doubtful University would support										ERR	
		Stay on Railroad right-of-way to I-485				- Requires starting project over										ERR	
		Bid UNC Charlotte to I-485 as add-on alternate														ERR	
		NECI funding for North Tryon typical section			- Leverage state and Federal funds - Cost effective to include it now - Some NECI funds have already been allocated - Helps maintain the schedule for the FEIS and design											ERR	
		Defer project				- Delays project for decades if get out of pipeline											
		Cost sharing opportunities with UNC Charlotte															
		Eliminate traffic counting on parking decks															
		Apparent consensus - Doesn't sound like a bare-bones project to get to I-485 is preferred															
		Provide any additional comments to D. Rogers by end of the day														ERR	
		Subtotal:	\$0.0	\$0.0													
TOTALS							TOTALS										

With all items

\$284.1 \$222.7

Without yellow-highlighted items

\$259.1 \$197.7

Cumulative

	UNCC Terminus		I-485 Terminus	
	Per Category	Cumulative	Per Category	Cumulative
A	\$0.0	\$0.0	\$0.0	\$0.0
A/B	\$0.0	\$0.0	\$0.0	\$0.0
B	\$0.0	\$0.0	\$0.0	\$0.0

**COST SAVINGS OPTIONS
PROJECT TEAM MEETING**

November 29, 2010

DRAFT
from 11/29/0 meeting

- A BEST options for reducing cost
- B GOOD options for reducing cost
- C "OK" options for reducing cost
- D POOR options for reducing cost

No.	Seg	Description	2010 Estimated Cost Savings * (millions)		PROS	CONS	weight									TOTAL GRADE
			UNCC Terminus	I-485 Terminus			1	1	1	1	1	1	1	1	1	
							B/C	\$0.0	\$0.0	\$0.0	\$0.0					
							C	\$0.0	\$0.0	\$0.0	\$0.0					
							D	\$0.0	\$0.0	\$0.0	\$0.0					

* 2010 estimated costs include construction, right-of-way, allocated contingencies, professional services and unallocated contingencies.
 ** Cost savings from these items are not additive with the cost savings from Item 8.
 *** With the elimination of 1 substation and if 1 substation goes out of service, train performance will be reduced.

**COST SAVINGS OPTIONS
PROJECT TEAM MEETING**
December 7, 2010

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12/07/10

No.	Seg	Description	UNCC	I-485	Assessment			Comments	2010 Estimated Cost Savings *
			Terminus	Terminus	Recommended	Further Study Required	Not Recommended		
			2010 Estimated Cost Savings * (millions)						
1 End Project at UNC Charlotte Station									(millions)
1A	C	Eliminate civil infrastructure, track, and systems north of UNC Charlotte station	\$55.6	NA	X			This option is recommended because: - Provides significant cost savings - Reduces O&M costs - Still meets project goals/purpose and need	\$55.6
1B	C	Eliminate LRT Bridge over Mallard Creek Church Road	\$7.1	NA	X				\$7.1
1C	C	Eliminate Mallard Creek Church Station	\$7.3	NA	X				\$7.3
1D	C	Eliminate I-485 Station	\$2.9	NA	X				\$2.9
1E	C	Eliminate I-485 park and ride and provide an additional parking garage (assume 1,000 space garage)	\$59.0	NA	X				\$59.0
1F	C	1,200 space garage at University City Blvd.	(\$25.5)	NA	X				(\$25.5)
1G	C	450 space garage at McCullough	(\$14.0)	NA		X		In addition to UCB, another parking location is recommended to distribute the end-of-line parking demand. McCullough and JW Clay locations are being evaluated.	(\$14.0)
1H	Proj. Wide	Reduce number of vehicles by 4 due to shorter line	\$18.8	NA	X				\$18.8
1I	Proj. Wide	Other effects of reduced ridership due to ending the project at the UNC Charlotte Station	tbd	NA	X			Achieves 6.5% O&M cost savings	tbd
Subtotal:			\$111.2	\$0.0					\$111.2

**COST SAVINGS OPTIONS
PROJECT TEAM MEETING**
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No.	Seg	Description	UNCC	I-485	Assessment			Comments	2010 Estimated Cost Savings *
			Terminus	Terminus	Recommended	Further Study Required	Not Recommended		
			2010 Estimated Cost Savings * (millions)						
2 Vehicles									
2A	Proj. Wide	Reduce number of vehicles from 26 (2 car trains at 6 min.) to 22 (3 car trains at 10 min.)	\$18.8	\$18.8	X			The recommended operating plan is 2 car trains at 7.5 min headway initially, and 3 car trains at 10 min headways in future	\$18.8
Subtotal:			\$18.8	\$18.8					\$18.8
3 N. Tryon Street Typical Section									
3A	B	Eliminate center median, bike lanes, planting strips, and 8' sidewalk. Use conc. median barrier and 5' sidewalk back of curb	\$18.9	\$18.9			X	This option is not recommended because - Doesn't achieve community enhancement/transformation goals - Doesn't achieve some project goals (land-use, visual, alt. modes) - Sets poor precedent for future development - The City of Charlotte has indicated support for contribution of City funds (NECI) to realize CATS cost reduction.	\$18.9
3B	C	Eliminate center median, bike lanes, planting strips, and 8' sidewalk. Use conc. median barrier and 5' sidewalk back of curb	\$25.8	\$25.8			X		\$25.8
Subtotal:			\$44.7	\$44.7					\$44.7

**COST SAVINGS OPTIONS
PROJECT TEAM MEETING**
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No.	Seg	Description	UNCC	I-485	Assessment			Comments	2010 Estimated Cost Savings *
			Terminus	Terminus	Recommended	Further Study Required	Not Recommended		
			2010 Estimated Cost Savings * (millions)						
4 Parking Garages / Lots									
4A	A	Eliminate Sugar Creek parking garage and use surface lots	\$9.0	\$9.0	X			The option is recommended because: - Provides required parking at lower cost. - Deck can be added back later. - Consider City acquiring add'l. land req'd. for surface lots.	\$9.0
4B	B	Eliminate University City Blvd. parking garage and use surface lots	NA	\$15.0			X		NA
Subtotal:			\$9.0	\$24.0					\$9.0
5 Park and Ride Access									
5A	A	Eliminate Old Concord park and ride access to N. Tryon	\$0.6	\$0.6			X	This option is not recommended because: - Relatively low savings - Requires reworking bus access	NA
5B	B	Eliminate Univ. City Blvd park and ride access to Ikea Blvd	NA	\$1.2			X	This option is not recommended because: - The access is for park and ride traffic.	NA
5C	C	Eliminate I-485 park and ride north access to N. Tryon	NA	\$0.3			X	Included in UNCC terminus option.	NA
5D	C	Eliminate bus loop, kiss and ride and employee parking from I-485 park and ride	NA	\$3.0			X	Included in UNCC terminus option.	NA
Subtotal:			\$0.6	\$5.1					\$0.0

**COST SAVINGS OPTIONS
PROJECT TEAM MEETING**
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No.	Seg	Description	UNCC	I-485	Assessment			Comments	2010 Estimated Cost Savings *
			Terminus	Terminus	Recommended	Further Study Required	Not Recommended		
			2010 Estimated Cost Savings * (millions)						
6 Stations									
6A	A	Defer 25th Street Station (build foundations only)	\$1.7	\$1.7			X	This option is not recommended because: -Lose opportunity for land-use transformation - Building later doesn't spur adjacent development - Lose opportunity for \$300k annual tax revenue - 25th Street has "Southend" type opportunity on a shorter timeframe - Savings are "small"	NA
6B	A	Additional savings by eliminating 25th Street Station	\$0.7	\$0.7			X		NA
6C	C	Defer Mallard Creek Church Station (build foundations only) **	NA	\$4.3			X	Included in UNCC terminus option.	NA
6C	C	Additional savings by eliminating Mallard Creek Church Station **	NA	\$3.0			X	Included in UNCC terminus option.	NA
		Defer/Eliminate Tom Hunter?					X	This option is not recommended because: - Serves transit dependent ridership - Already eliminated park-and-ride	
		Defer/Eliminate McCullough?					X	This option is not recommended because: - Ridership demand and land use goals	
		Defer/Eliminate/Combine other stations?					X		
Subtotal:			\$2.4	\$9.7					\$0.0

**COST SAVINGS OPTIONS
PROJECT TEAM MEETING**
December 7, 2010

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No.	Seg	Description	UNCC	I-485	Assessment			Comments	2010 Estimated Cost Savings *
			Terminus	Terminus	Recommended	Further Study Required	Not Recommended		
			2010 Estimated Cost Savings * (millions)						
7 VLMF / Storage Yard									
7A	A	Move VLMF and Storage Yard to the existing South Blvd Light Rail Facility	\$14.5	\$14.5		X		Options that combine expansion of existing facility and storage at NS Intermodal site are under evaluation to realize cost reduction.	\$14.5
7B	A	Additional savings by reducing the cost of the VLMF at the South Blvd facility by 1/2	\$9.9	\$9.9		X			\$9.9
7C	A	Reduce capacity of storage yard (2 Storage Tracks)	\$2.0	\$2.0	X			This option is recommended because: - Reduced vehicle requirements	\$2.0
Subtotal:			\$26.4	\$26.4					\$26.4
8 Bridges									
8B	C	Shorten LRT bridge over WT Harris Blvd (do not accommodate future interchange)	\$3.0	\$3.0			X	This option is not recommended because: - Visual impacts - Long range plan for interchange	NA
8C	C	Additional Savings by eliminating WT Harris BLVD bridge	\$12.0	\$12.0			X	This option is not recommended because: - Increases travel time - Emergency vehicle pre-emption creates uncertain timing and delays - Complicates future interchange	NA
8D	C	Eliminate NB N. Tryon bridge over LRT at exit from median	\$13.4	\$13.4			X	This option is not recommended because: - Traffic and safety analysis indicated need for grade separation	NA
8E	C	Eliminate I-485 park and ride grade separated entrance and lower LRT main line along N. Tryon **	NA	\$13.0			X	Included in UNCC terminus option.	NA
Subtotal:			\$28.4	\$41.4					\$0.0

**COST SAVINGS OPTIONS
PROJECT TEAM MEETING**
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No.	Seg	Description	UNCC	I-485	Assessment			2010 Estimated Cost Savings *	
			Terminus	Terminus	Recommended	Further Study Required	Not Recommended		Comments
			2010 Estimated Cost Savings * (millions)						
9 Two-Car Trains									
9A	Proj. Wide	Defer construction of 3-car platforms (build foundations only for 3rd car platform)	\$4.8	\$4.8			X	This option is not recommended because: - Operating plan for 3 car trains is recommended, which reduces operating cost and requires fewer vehicles - "Lessons Learned" from South Corridor, more expensive to retrofit	NA
9B	Proj. Wide	Additional savings by eliminating 3rd car platform	\$2.6	\$2.6			X	This option is not recommended because: - Operating plan for 3 car trains is recommended, which reduces operating cost and requires fewer vehicles - "Lessons Learned" from South Corridor	NA
9C	Proj. Wide	Size Traction Power System for 2-car trains, including eliminating 1 substation ***	\$4.2	\$4.2			X	This option is not recommended because: - Operating plan for 3 car trains is recommended - "Lessons Learned" from South Corridor	NA
Subtotal:			\$11.6	\$11.6					\$0.0
10 Platform / Corridor Amenities									
10A	Proj. Wide	Eliminate crawl space under platforms	\$2.4	\$2.4			X	This option is not recommended because: - Eliminates future flexibility - Increases O&M costs	NA
10B	Proj. Wide	Eliminate trees on platforms	\$0.7	\$0.7			X	This option is not recommended because: - "Equity" issues with South Corridor	NA

**COST SAVINGS OPTIONS
PROJECT TEAM MEETING**
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No.	Seg	Description	UNCC	I-485	Assessment			2010 Estimated Cost Savings *
			Terminus	Terminus	Recommended	Further Study Required	Not Recommended	
			2010 Estimated Cost Savings * (millions)					
10C	Proj. Wide	Put all TVMs on platforms	\$0.2	\$0.2		X		\$0.2
10D	Proj. Wide	Reduce the number of TVMs by 25%	\$2.7	\$2.7		X		\$2.7
10E	Proj. Wide	Use I-beam, instead of fluted OCS poles	\$0.6	\$0.6		X		\$0.6
10G	Proj. Wide	Reduce the amount of fiber provided for future use by 50%	\$1.7	\$1.7		X		\$1.7
10H	Proj. Wide	Reduce landscaping by 25%	\$0.8	\$0.8		X		\$0.8
10I	Proj. Wide	Reduce art commensurate with project cost savings (1%)	\$1.5	\$1.5	X			\$1.5
10J	Proj. Wide	Reduce the number of CCTV cameras by 25%	\$2.4	\$2.4		X		\$2.4
Subtotal:			\$13.0	\$13.0				\$9.9
11 Single Track Operations								
		Single track from UNC Charlotte station to I-485 station:					X	These options are not recommended because:
11A	C	- "Temporary" single track with Mallard Creek Church station and grade-separated entrance to I-485 station	NA	\$8.0			X	- Maintenance single track operations could extend back to south of JW Clay. - Does not work for 6 min. headways / doubtful for 7.5 min. headways. - May require additional trainsets
11B	C	- Additional savings for a "permanent" single track without Mallard Creek Church station and with at-grade entrance to I-485 station	NA	\$20.0			X	- Maintenance single track operations could extend back to south of JW Clay. - Doubtful at 6 min. headways / OK for 7.5 min. headways - May require additional trainsets

**COST SAVINGS OPTIONS
PROJECT TEAM MEETING**
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No.	Seg	Description	UNCC	I-485	Assessment			2010 Estimated Cost Savings *	
			Terminus	Terminus	Recommended	Further Study Required	Not Recommended		Comments
		Single track from exit from North Tryon median to UNC Charlotte station:					X		
11C	C	- "Temporary" single track, with provisions for future double track	Doubtful	Doubtful at 10 min.			X	- Current horizontal and vertical geometry does not work. - May require additional trainsets.	NA
11D	C	- Additional savings for a "permanent" single track, without provisions for future double track	Doubtful	Doubtful at 10 min.			X	- Current horizontal and vertical geometry does not work. - May require additional trainsets.	NA
		Single track from JW Clay station to UNC Charlotte station:					X		
11E	C	- "Temporary" single track, with provisions for future double track	\$8.0	NA			X	- Current horizontal and vertical geometry would need to be revised. - Doubtful for 6 min. headways.	NA
11F	C	- Additional savings for a "permanent" single track, without provisions for future double track	\$10.0	NA			X	- Current horizontal and vertical geometry would need to be revised. - Doubtful for 6 min. headways.	NA
		Subtotal:	\$18.0	\$28.0					\$0.0
12 Other:									
		Stay in North Tryon with spur onto campus or University station on North Tryon					X	This option is not recommended because: - Expensive to stay in North Tryon	
		Stay on Railroad right-of-way to I-485					X	This option is not recommended because: - This does not meet the purpose and need for the project, and was eliminated in the Major Investment Study	

**COST SAVINGS OPTIONS
PROJECT TEAM MEETING**
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No.	Seg	Description	UNCC	I-485	Assessment			2010 Estimated Cost Savings *	
			Terminus	Terminus	Recommended	Further Study Required	Not Recommended		Comments
		Bid UNC Charlotte to I-485 as add-on alternate					X	This option is not recommended because: - Not financial feasible to add-on - Requires final design for full length	
		Cost sharing opportunities with UNC Charlotte				X			
		Eliminate traffic counting on parking decks					X	This option is not recommended because: - Needed for customer service - Currently being added in South Corridor	
		Subtotal:	\$0.0	\$0.0					\$0.0
TOTALS									
		<i>With all items</i>	\$284.1	\$222.7					\$220.0
		<i>Without yellow-highlighted items</i>	\$259.1	\$197.7					\$211.6

APPENDIX B2 – MTC INFORMATION ITEM

DECEMBER 15, 2010

METROPOLITAN TRANSIT COMMISSION

MEETING SUMMARY

December 15, 2010

Presiding: Jennifer Roberts (Chairman, Mecklenburg County Commission)
Mayor Anthony Foxx (Charlotte)

Present: Curt Walton (Charlotte City Manager)
Tom Cox (CTAG Co-chair)
Terry Lansdell (TSAC Co-chair)
Mayor Jeff Tarte (Cornelius)
Anthony Roberts (Cornelius Town Manager)
Mayor John Woods (Davidson)
Leamon Brice (Davidson Town Manager)
Mayor Jill Swain (Huntersville)
Greg Ferguson (Huntersville Town Manager)
Mayor Jim Taylor (Matthews)
Ralph Messera (Matthews)
Brian Welch (Mint Hill Town Manager)

Chief Executive Officer: Carolyn Flowers

I. Call to Order

The regular meeting of the Metropolitan Transit Commission was called to order at 5:35 pm by MTC's Co-chair, Mayor John Woods. Commissioner Roberts joined the meeting shortly thereafter. MTC members introduced themselves.

II. Approval of the November 17 Workshop Summary

The workshop summary of November 17 was approved as written.

III. Transfer of MTC Chair

Jennifer Roberts

Commissioner Roberts relinquished the Chair to Mayor Foxx. Mayor Foxx stated that the November workshop was very productive and he looks forward to working with everyone.

IV. Transit Services Advisory Committee (TSAC) Chair's Report

Terry Lansdell

Mr. Lansdell reported that TSAC met on December 9 and re-elected the current chair and co-chair. TSAC members received reports on financial sustainability, upcoming February service changes and transit service policies. TSAC approved the proposed service policies with an 8-1 vote. TSAC also discussed how services will be frozen over the next few years, and whether there will be growth for Special Transportation Service (STS).

V. Citizens Transit Advisory Group (CTAG) Chair's Report

Tom Cox

Mr. Cox commented that five CTAG members attended the November 17 workshop. CTAG met on December 14 with guests from UNC Charlotte attending. Staff reviewed how potential changes to the Blue Line Extension (BLE) project might impact the university.

VI. Red Line Task Force Update John Woods

Mayor Woods reported that the Red Line Task Force met on December 15 and discussed the financial report received at the November 17 MTC workshop, with a special focus on the North Corridor Red Line and its close relationship to the Northeast Corridor BLE. The complexities of the report will require ongoing discussion so both corridors can continue.

VII. Public Comments

Mary Hopper, Executive Director of University City Partners (UCP), noted that her tax district encompasses four stops on the BLE. She offered her support on behalf of those who will be at the terminus of the BLE. UCP members were energized by what they heard at the workshop last month. The group assumed that cuts to the BLE would occur at their end of the line and feel it is an appropriate trade-off in order to have rail sooner rather than later. Ms. Hopper noted that CATS and Michael Barnes, City Council Representative for the University area, have kept UCP members updated and encouraged them to hold meetings with property owners who may be impacted by the re-design. Ms. Hopper concluded that UCP members view the trade-off as a chance to turn an opportunity into reality, hopefully by 2016.

VIII. Action Items

a. Selection of Vice Chair

Anthony Foxx

Mayor Tarte stated that MTC would benefit from continuity in the Vice Chair role and nominated Mayor Woods for Vice Chair. Commissioner Roberts seconded the motion.

Discussion: None.

Resolution: MTC members voted unanimously to select Mayor Woods as Vice Chair of MTC.

IX. Information Items

a. Service Policies

Larry Kopf

Mr. Kopf, CATS Chief Operations Planning Officer and Manager of Bus Operations, presented the Transit Service Guidelines Policy as an information item. The policy is up for three year review, and will be presented as an action item at an upcoming MTC meeting. The Transit Service Guidelines Policy provides a framework to guide staff for service planning and delivery. Several changes to the policy are recommended. Most of the proposed changes are minor wording changes. Significant changes entail the removal of references to the historic trolley service since that service is no longer operated by CATS and changing rail vehicle loading standards to 150 passengers per vehicle during standard service and 194 passengers per vehicle for special events.

Discussion: Mr. Lansdell asked Mr. Kopf to elaborate on how the change would affect the frequency of trains in the future. Mr. Kopf asked Danny Rogers, Senior Project Manager for Transit Corridors, to elaborate. Mr. Rogers said that BLE staff reviewed other systems' standards as well as the Transportation Research Board's report to determine appropriate loading standards. The new loading standards will align CATS' standards with appropriate loading standards followed by other rail transit systems and industry best practices.

b. Customer Survey Results

Olaf Kinard

Mr. Kinard, CATS Director of Marketing & Communications, presented the results from the first customer satisfaction survey in three years. This survey was the first time CATS surveyed both bus and rail passengers in one survey. Surveys were conducted based on the

proportion of ridership across service type and day part. Customers continue to rate highly the quality of service, value to community, management of the transit system and planning for the future. CATS' customer profile saw a shift toward a younger customer base from a 39 to 36 average age along with an increase in educational accomplishments. On key customer service elements, customers continued to rate the performance at a good to exceeds level across all elements. The ability to access schedules and maps through the website has jumped from 29th to 3rd place. The top ten important customer service elements were also the top ten performing items indicating that customers recognize that we focus on the most important items that attract and retain customers. This was illustrated in the percentage of customers riding more than a year, which increased to 72 percent from 57 percent in 2002. Customers feel CATS could improve in the areas of lighting and safety at stations and stops. CATS will continue to focus on the top ten items, as well as the safety areas where customers indicate room for improvement.

Discussion: Commissioner Roberts asked if CATS has completed an app for cell phones. Mr. Kinard replied that CATS is testing an app for rail and bus with every stop. CATS hopes to launch the iPhone app in January, with versions for Blackberrys and Droids coming later. Commissioner Roberts asked if higher high school student ridership might have affected the customer age category. Mr. Kinard replied that the survey took place over the entire day, not just in the morning and late afternoon when high school student ridership is highest. Ms. Flowers commented that there have been articles about younger people delaying getting automobiles and driver's licenses, and said that may be taking place in Charlotte also. Mayor Tarte asked about the areas customers noted for improvement. Mr. Kinard said that CATS uses survey results for continuous reviews. Some of the reviews may result in action and some may require continuing monitoring.

Commissioner Roberts remarked that Charlotte Mecklenburg Schools (CMS) is voting on January 25 about possible major transportation cuts. There may be a lot of discussion for high school students. She asked if CATS planned to speak with CMS and see how it can help. Mr. Kinard replied that there were discussions last year, and asked Mr. Kopf if CATS had recent contact with CMS. Mr. Kopf replied that the last contact was over the summer. He said that CATS could speak and work with them again, but must be careful with our budget also. Mayor Foxx said that staff should speak with CMS staff, as they are facing drastic budget cuts. Mr. Kinard said that media coverage indicates CMS is focusing on magnet school transportation. Mr. Kopf said that CATS has service to a number of those schools, and could provide education so people know what service CATS offers. Commissioner Roberts asked about service frequency near magnet schools. Mr. Kopf replied that CATS can adjust service, but must maintain consistent service. FTA will not allow public transit systems to transport students for a school system. Mr. Messera said that when school boundaries are designed, they should take into account CATS bus route possibilities and commented that his children took CATS daily when they attended high school.

Mayor Taylor asked whether the historical rankings were averages from prior years. Mr. Kinard replied that it was an average of the last two in-depth surveys. The top ten was consistent over the past ten years. Mr. Lansdell questioned the proportion of bus to rail ridership. Mr. Kinard replied that ridership was surveyed according to the proportion of ridership across service type and day part, based on last year's ridership.

c. BLE Affordable Alternative Concept

John Muth and Danny Rogers

Mr. Muth, CATS Deputy Director, introduced the presentation by reviewing staff's direction from MTC and the timeline for the process used to redefine the BLE project. CATS has scheduled public meetings on January 11 and 12, and will present the results to MTC members in January and for members to take action on the proposed changes. Staff's guide was to maintain the project's goals for land use, mobility, environmental protection and system integration while developing affordable, cost-effective transportation solutions, as well as maintaining flexibility for the future.

Mr. Rogers reviewed the project's design at the completion of the 30 percent level. He reviewed general categories considered for potential cost reductions, including the project's length, station parking, vehicle fleet costs, maintenance facility, right of way (ROW) requirements, and miscellaneous smaller items. He discussed project length considerations, the impact to ridership, whether there would be sufficient parking and how needs would change, whether the project would still meet its purpose and need, what other cost savings would be needed, and whether changes would preserve the option to extend the line in the future.

Changing the project's terminus to UNC Charlotte brings an estimated net savings of \$92 million. Revised ridership models indicate that 90 percent of the ridership will redistribute to other stations with the elimination of the I-485 parking deck and Mallard Creek Church station. Shortening the line reduces the required fleet size by 4 vehicles; adjusting service frequency also changes vehicle requirements. Maintaining 3-car trains on the BLE will require retrofitting of Blue Line stations in the future. CATS would start service with two-car trains since that is what the Blue Line will accommodate. There will be no parking at the UNC Charlotte station due to negative campus impacts. CATS is studying the possibility of decks rather than surface lots at the JW Clay and University City Boulevard (UCB) stations, to capture ridership before WT Harris Boulevard. Ridership models indicate that ridership will shift to these stations. The UCB station was planned to have three surface lots, so CATS will add a deck to one of those lots to maintain the same footprint. Eliminating the deck at Sugar Creek Station and using surface parking instead saves \$9 million and maintains the flexibility to add a deck in the future.

CATS has reexamined vehicle maintenance facility needs. Running vehicles from the current vehicle maintenance facility (VMF) all the way up the line to UNC Charlotte every day adds operating costs. Mr. Rogers reviewed the original plan for the BLE VMF, then the current plan for a few storage tracks and a small building for the operators to start from each day. The other option is to expand the current VMF, which would require purchasing the adjacent building. Either scenario saves about \$26 million in project cost.s

Mr. Rogers reviewed BLE ROW requirements, and the factors impacting ROW needs and costs. Reducing the North Tryon Street ROW would save \$45 million, but would not meet the intent of the Charlotte Urban Street Design Guidelines and is not consistent with US DOT's "Complete Streets" Policy. Staff has identified a way to leverage federal and state funds by using City of Charlotte bond funds to cover the needed ROW savings. CATS is also evaluating miscellaneous items such as moving TVMs, reducing the landscaping budget and reducing the Art in Transit budget commensurate with overall project reductions. Mr.

Rogers reviewed items considered but rejected for reduction, such as eliminating stations or building two-car platforms.

CATS has identified \$165 million in total estimated savings. Combined with the additional funds from the City, the redefined Affordable BLE project meets the needs of the financial plan developed by Jeffrey A. Parker & Associates (JPA).

Mr. Rogers reviewed how the changes in the project might impact the project under FTA's New Starts Process. Although ridership dips slightly, the lower cost improves cost effectiveness so the project's overall rating should remain at medium.

Mr. Rogers reviewed the immediate next steps. Staff will brief the Charlotte City Council on the proposed BLE changes at Council's dinner meeting on January 10, 2011. The traditional project delivery method has been design-bid-build. JPA suggested using a design-build model, which CATS is evaluating further. Mr. Rogers reviewed the project's planned activities for 2011.

Discussion: Mayor Foxx thanked staff for the work involved, and asked if MTC accepted the scope change options, would the opportunity to extend the line into Cabarrus County be preserved for the future. Mr. Rogers said that the main work would be to examine where to place the I-485 station. It was originally planned beyond I-485 but was pulled inside the loop to save money. If a future project crosses I-485, it may make sense to locate the station on the other side of I-485. Mr. Cox commented that there are 12 grade separations planned for the BLE, and asked about the likelihood of being required to add additional grade separations. Mr. Rogers replied that the BLE has worked closely with NCDOT and CDOT to identify locations best suited for grade separations. All the areas identified by NCDOT and CDOT are grade separated in this plan. Major intersections are grade separated.

Mr. Cox asked where the plan is most at risk from a cost viewpoint. Mr. Rogers replied that the plan is more conservative than before. JPA suggested that the plan be reduced to \$800 million. CATS used a more conservative cost escalation rate of 4 percent; the 30 percent cost estimate was at 3.25 percent escalation. Staff cut more than directed by the workshop, so that the base year estimate when escalated at 4 percent meets the JPA number. Mr. Rogers commented that the item that concerns him the most is the Intermodal Yard and its access. CATS is working with Norfolk Southern on the yard, which presents more of a schedule risk than a monetary one.

Mr. Walton stated that accomplishing the North Tryon vision is very important to the City of Charlotte, of which the "Complete Streets" concept and urban design guidelines are an important part. The city has identified \$30 million in bond funds, and he will recommend to Council that the city allocate \$11 million to the BLE. He asked if the full \$30 million was put in, how much of the cost could be leveraged and what costs would be ineligible for the Full Funding Grant Agreement. Mr. Rogers responded that staff will investigate grant eligibility.

Mr. Messera noted that if there is only a storage yard at the current Intermodal Yard site, CATS will not need the entire yard. He asked whether CATS would purchase the entire yard for expansion in the future, or only the part needed immediately. Mr. Rogers said that in order to attain the needed savings, CATS plans to purchase only the portion of the yard that we need. The remainder of it will remain "railroad use" either by Norfolk Southern, North

Carolina Railroad, or perhaps for NCDOT's high speed rail project. CATS will not have the \$6.5 million it would probably take to purchase the entire property. Bill Thunberg of Mooresville commented that expanding the South Tryon VMF instead of constructing on the Intermodal Yard site may be preferable, as it would cost less to maintain one facility than two. Mr. Rogers replied that the plan was for one maintenance facility with two storage yards and the ability to stage from both yards. All maintenance functions would take place at the current VMF, but inspections and overnight cleanings can occur anywhere.

X. Chief Executive Officer's Report

Carolyn Flowers

Under the CEO's report, Ms. Flowers discussed the following:

a. JPA Proposed Contract Amendment:

Dymphna Pereira, CATS Chief Financial Officer, gave the background for the current contract with JPA and the work JPA has performed to date on the Charlotte model to develop Affordable BLE and Red Line projects while maintaining financial viability for the system. In January 2011, staff will request that Charlotte's City Council amend the current JPA contract to allow them to develop a detailed financial plan for delivering the BLE project, and to provide options for advancing the Red Line commuter rail project and help CATS organize a framework of tasks and decisions on the project's unfunded components.

Discussion: None.

b. Work Efforts Resulting from November MTC Workshop:

Ms. Flowers reviewed MTC's direction to staff on the particulars of the work to be done for the BLE, Red Line commuter rail project, and the JPA project. The work plan in the next few months will continue these efforts. Staff will present a preliminary budget to MTC next month, which will be key in the financial plan.

Discussion: None.

XI. Other Business

Mayor Foxx noted that some meeting dates in 2011 will present conflicts for Commissioner Roberts and him. He cited the June 22 meeting, and noted that the November and December meetings may also present conflicts. Commissioner Roberts commented that there was usually no meeting in July. Perhaps MTC could forego a meeting in June next year instead of July. Mayor Foxx directed staff to draft a schedule for MTC meetings in 2011 for consideration.

XII. Adjourn

The meeting was adjourned at 7:30 pm by Mayor Foxx.

NEXT MTC MEETING: WEDNESDAY, JANUARY 26, 2010, 5:30 PM

APPENDIX B3 – PUBLIC MEETING PRESENTATION

JANUARY 12, 2011



Public Meeting
January 12, 2011

- Reduce Cost and Accelerate Schedule
 - Cut capital cost by 20%
 - Reduce annual operating and maintenance costs by 6.5%
 - Open project in 2016



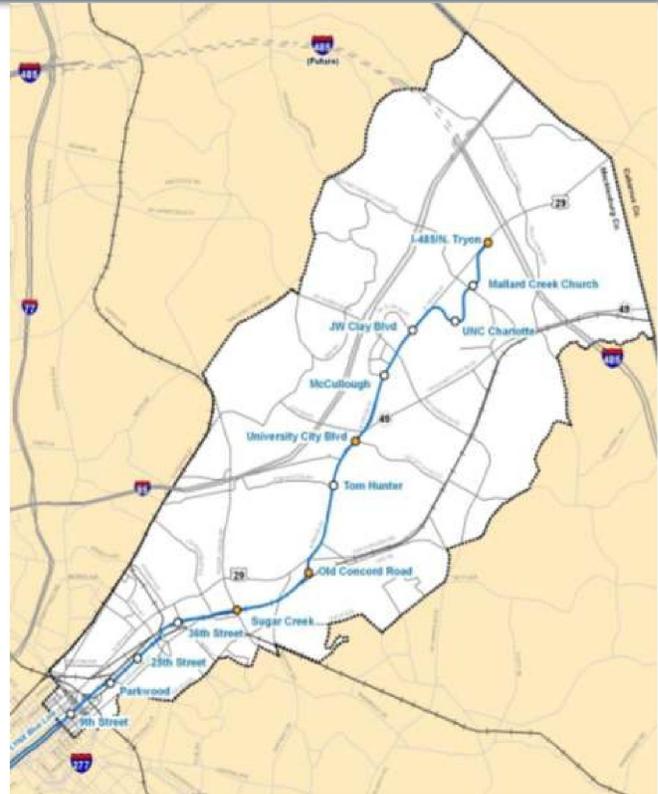
- Maintain project goals:
 - **Land Use** – Support the Region’s Centers, Corridors & Wedges Growth Framework
 - **Mobility** – Improve access & mobility in the corridor & region; Increase transit
 - **Environment** – Preserve & protect the environment
 - **Financial** – Develop affordable, cost-effective transportation solutions
 - **System Integration** – Develop transportation improvements that function as part of a larger transportation system



- Maintain flexibility for the future:
 - **Schedule** – Minimize potential BLE schedule delays (Environmental, Design, ROW, Construction)
 - **Easy to Add Later** – Cuts easiest to add later through adjacent development or other projects
 - **Equity** - Consistency between corridors and travel markets; preserve service to existing riders
 - **Safety & Reliability** – Safe and reliable transit system for patrons, employees and the public
 - **O & M Costs** – Extent to which capital cost reductions also facilitate achieving a 6.5% reduction in O & M Costs
 - **Lessons Learned** – maintain capacity, provide sufficient parking, accommodate special events, and protect safety items such as grade separations



- 30% Project Description
 - Extending from 7th Street to I-485 (10.6 miles)
 - 13 Stations: 9 walk-up & 4 park and ride (3 parking decks)
 - 12 at-grade crossings and 5 grade separations
 - Fleet size: 46 vehicles (South plus Northeast) operating two-car trains at six-minute headways
 - Includes second maintenance facility



- Project Length: Don't extend all the way to I-485
- Parking: Surface lots versus decks, parking locations
- Vehicle Fleet Size: Evaluate operating scenarios and car requirements
- Vehicle Maintenance Facility: Re-evaluate minimum maintenance and storage needs
- Right-of-way requirements: Evaluate North Tryon Street cross-section
- Other: Miscellaneous smaller cost items

- Ridership Impact - UNC Charlotte is a major ridership generator
- Provision of sufficient parking
- Minimum project must meet purpose and need
- Types and magnitude of additional cost savings needed to offset extra length
- Preserve option to extend in future



Change Project Terminus to UNC Charlotte

- Estimated net savings is \$92 million
- Eliminates 1.1 miles of mostly bridge structure crossing wetlands including grade separation over Mallard Creek Church Road
- Most of I-485 ridership redistributes to other stations (JW Clay, McCullough and University City Blvd (UCB)) – revised ridership projections estimate approximately 90% of ridership will be retained.
- Reduces annual operating expenses by about 7 percent
- Retains \$40 million in budget to replace I-485 parking needs

Current cost estimate includes purchase of 26 vehicles to provide 2-car trains @ 6 minute headways to I-485

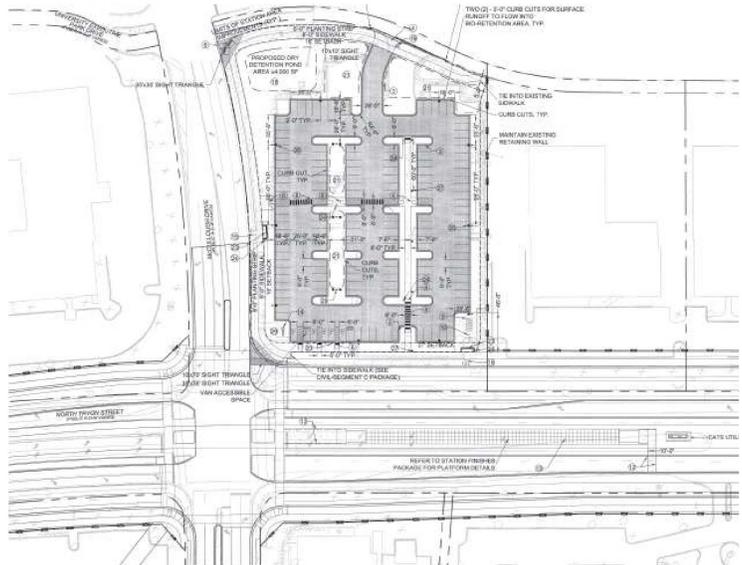
- Shorter project length reduces fleet size by 4 vehicles
- Changing Operating Plan to 3-car trains @ 10 minute headways reduces fleet size by 4 vehicles
- Total Reduction is 8 vehicles for a savings of \$38 million



Shorter project eliminates I-485 station with 2000 parking spaces

- No parking at UNC Charlotte station due to impacts to campus traffic
- Ridership model indicates most I-485 parking would redistribute to JW Clay and/or McCullough, and University City Boulevard (Cost savings calculations assume \$40 million required to add parking at these stations)
- Sugar Creek station parking currently includes a deck, but the Draft EIS also evaluated three surface lots
- Delaying construction of deck at Sugar Creek saves approximately \$9 million

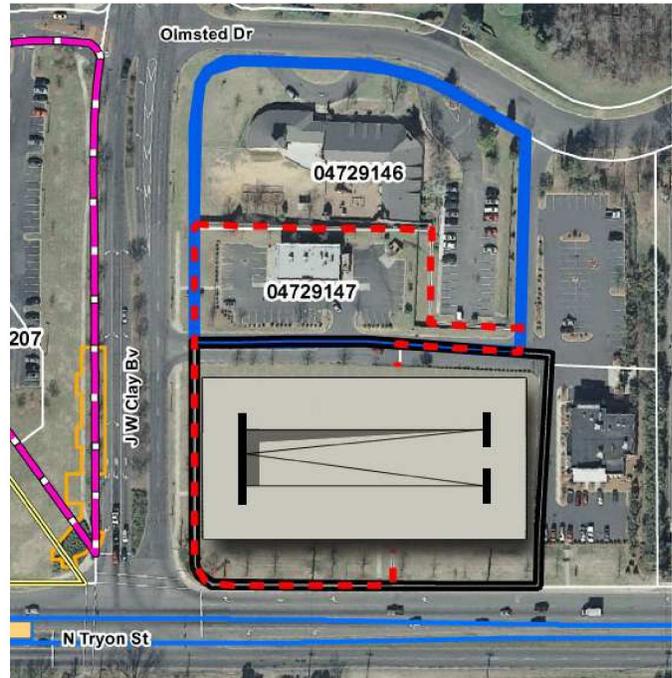
- Previously eliminated and moved to UCB
- Elimination of I-485 deck requires additional parking that cannot be provided by UCB station alone
- Ridership projections indicate lower demand for McCullough than JW Clay
- McCullough more expensive



- Parking supply is 600 spaces
- Access off of JM Keynes Drive
- Some reconfiguration of property may allow for a more traditional deck
- Access to station only requires crossing Tryon Street
- Costs for Options A and B are similar



- Parking supply 600 cars
- Easier access for cars
- Requires CATS customers to cross JW Clay and Tryon Street to access station
- May be more conducive to future development
- Requires purchasing existing businesses

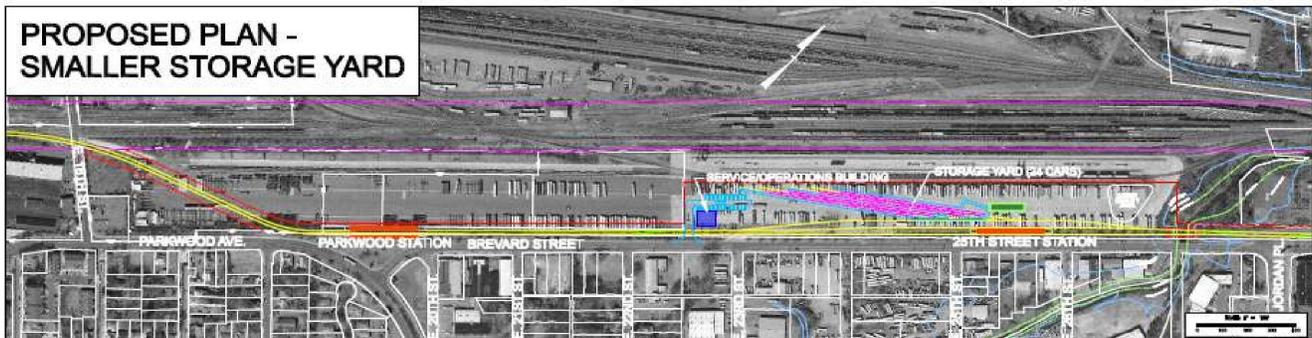


- Total parking spaces provided 1480 (600 additional)
- Increased traffic from parking requires lengthening turn lanes through the Weave
- Requires deck and surface lots



Reducing the fleet size removes the need for a second maintenance facility and less storage area.

Reducing the planned facility at the NS Intermodal site to a small yard with minimal improvements to the facilities at the existing South Boulevard site saves \$26 million

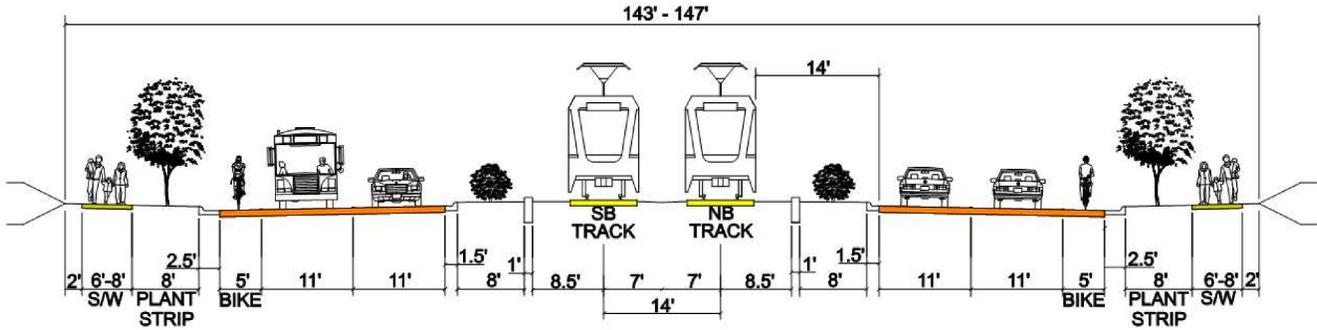


Project traverses multiple types of right-of-way

- North Carolina Railroad
- North Tryon Street between Old Concord Road and UNC Charlotte
- UNC Charlotte campus

Factors impacting right-of-way needs and costs

- Railroad ROW dictated by track separation requirements
- UNC Charlotte ROW will be made available at no cost
- Only opportunity to reduce ROW requirements is on North Tryon Street segment – Cost Savings \$52.6 million



Benefits of full typical section

- Enhances connectivity to light rail stations
- Provides multi-modal facility – accommodates bikes and pedestrians
- Satisfies adopted Urban Street Design Guidelines
- Consistent with improvements made in South Corridor (SCIP)
- Eligible for federal and state funds

BLE Right-of-Way Requirements - Recommendations

- Retain planned street cross-section as part of BLE project – retain leverage of state and federal funds
- fund incremental ROW costs and new street improvements with local funds (NECI)
- reduces CATS financial contribution by \$11.25 million



Other miscellaneous items still being evaluated

- Move all TVMs to platforms and reduce total by 25%
- Reduce the landscaping budget by 25%
- Reduce art budget commensurate with overall project reductions
- Eliminate crawl spaces under platforms

Items considered but not recommended

- Deferring/eliminating stations (25th, McCullough)
- Eliminating grade separations
- Two-car platforms

In summary, the estimated net savings, in 2010 dollars, due to scope reductions are as follows:

End project @ UNC Charlotte	\$ 92 million
Sugar Creek Parking modifications	\$ 9 million
Reduce fleet size by 8 vehicles	\$ 38 million
<u>Reduce VMF needs</u>	<u>\$ 26 million</u>
Total Scope and Cost Reductions	\$165 million
Reduction of “½ cent” contribution due to reductions above	\$41.25 million
Alternate funding of local share of <u>North Tryon improvements</u>	<u>\$11.25 million</u>
Total reduction of CATS “½ cent” share	\$52.50 million

BLE 30% Design Cost Estimate

Base Year Estimate (2010): \$983 million
YOE Cost Estimate (2016): \$1.12 billion

“Affordable “ BLE Approximate Cost Estimate

Base Year Estimate (2010): \$818 million
YOE Cost Estimate (2016): \$961 million

- Maintains project purpose and need
- Maintains vision for North Tryon Street
- Retains majority of ridership - still reaches UNC Charlotte which is a major ridership generator
- Keeps 3-car platforms and systems (South Corridor Lesson Learned)
- Provides ability to expand capacity by purchasing more vehicles and adding storage capacity
- Allows future extension to I-485 and Cabarrus County with primary parking at those locations

Average Weekday Ridership

- I-485 Terminus: 27,200 daily trips (6 minute headways)
- UNC Charlotte Terminus: 24,500 daily trips (10 minute headways)

Cost Effectiveness

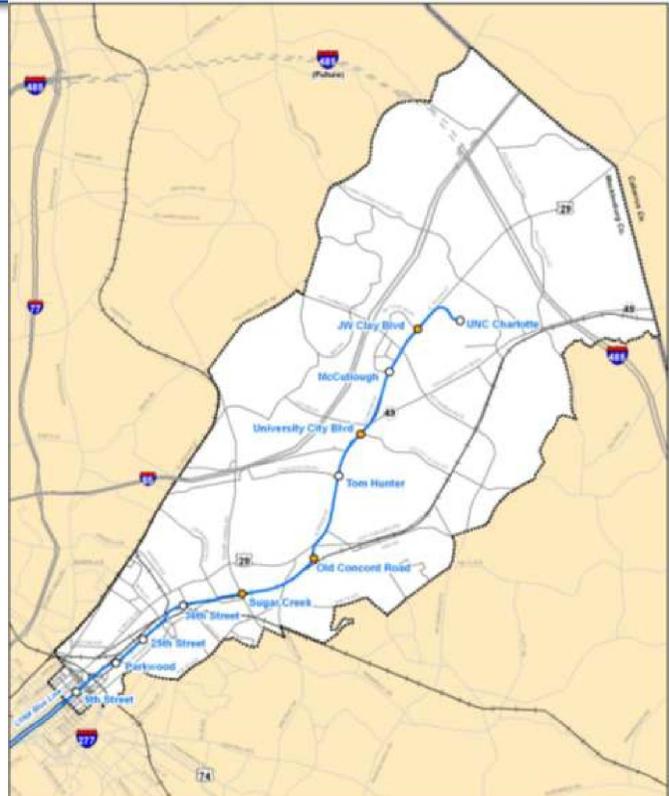
- I-485 Terminus: Medium to Medium-High
- UNC Charlotte Terminus: Similar

Overall Rating

- I-485 Terminus: Medium (2009)
- UNC Charlotte Terminus: Should be similar, re-rating in fall 2011

- Revised Locally Preferred Alternative (LPA) to MTC for Action/Adoption on January 26, 2011
- Amend STV contract
- Re-evaluate project delivery method
- Prepare revised “Affordable” 30% cost estimate

- 7th Street to UNC-Charlotte (9.4 miles)
- 11 Stations – 4 park and rides with parking decks at JW Clay and University City
- 38 vehicle fleet
- Small vehicle storage yard at intermodal site
- Minor capacity increase at existing VMF
- New Cost is \$961 million
- Opening date in late 2016



APPENDIX B4 – MTC PRESENTATION

JANUARY 26, 2011



LYNX Blue Line Extension LPA and NEPA Preferred Alternative

Reduce Cost and Accelerate Schedule

- Cut capital cost by 20%
- Reduce annual operating and maintenance costs by 6.5%
- Open project in 2016



- Change project terminus to UNC Charlotte
- Operate 2-car trains every 7.5 minutes initially and 3-car trains every 10 minutes in future
- Purchase 18 vehicles
- Use surface lots at Sugar Creek station
- Eliminate park and rides at Tom Hunter and McCullough
- Construct a storage yard only at the NS Intermodal Yard and up-fit the existing South Blvd facility
- Retain North Tryon cross-section

Change Project Terminus to UNC Charlotte

- Estimated net savings is \$92 million
- Eliminates 1.1 miles of mostly bridge structure crossing wetlands including grade separation over Mallard Creek Church Road
- Most of I-485 ridership redistributes to other stations (JW Clay Blvd and University City Blvd) – revised ridership projections estimate approximately 90% of ridership will be retained.
- Reduces annual operating expenses by about 7 percent
- Retains \$40 million in budget to replace I-485 parking needs

Provide additional spaces at University City Blvd (UCB) and JW Clay Blvd stations to replace the 2000 spaces lost by elimination of I-485 deck

- \$40 million retained in project cost for replacement parking
- Roadwork needed to address traffic from additional parking required at the UCB station
- New parking deck proposed for the JW Clay Blvd station

Replace Sugar Creek deck with surface parking

- Estimated \$9 million savings

No parking at Tom Hunter or McCullough stations

- Tom Hunter has low demand for parking
- McCullough is high cost, constrained site

Traffic mitigation required at UCB station

- Approximately 800 parking spaces have been transferred from the I-485 station to the UCB station
- CATS can provide improvements to mitigate traffic impacts to minimum required service levels (minor adjustments to lengths of left turn lanes into and out of the park and ride road); or
- An alternative improvement (lengthen right turn lanes to create continuous right/through lanes from I-85 Connector to UCB) would provide better overall traffic flow – requires additional funding
- City staff is exploring options to fund the better treatment; the total cost of this improvement is approximately \$4 million; the City share would be around \$1 million

Purchase 18 vehicles*

- Estimated savings is \$38 million
- Initial operation: 7.5 minutes (2-car)
- Ultimate operation: 10 minutes (3-car) needed around 2028
- 10-minute headways yield lower annual operating and maintenance cost over originally planned 2-car trains at 6 minutes

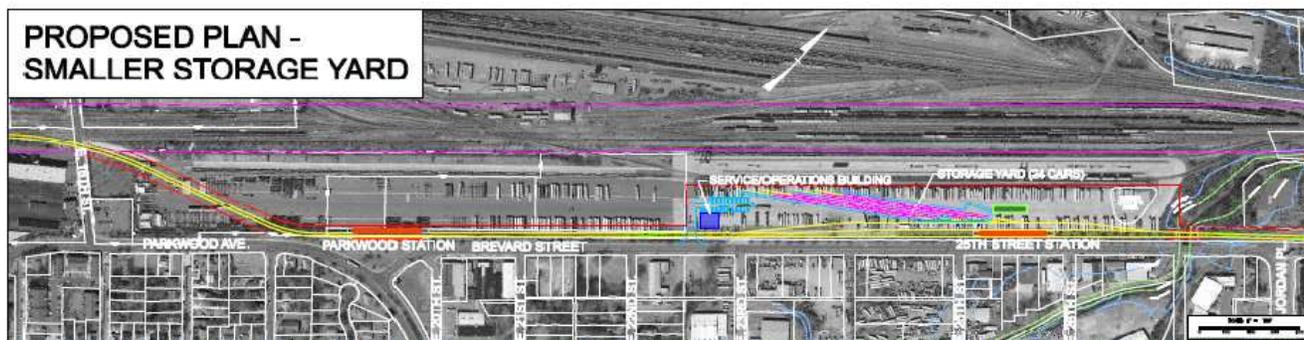


Reduction of 8 vehicles from current estimate

- Shorter project reduces vehicle requirement by 4
- 3-car trains require 4 fewer vehicles

Vehicle Maintenance Facility Needs - Recommendations

- Reduce the planned facility at the NS Intermodal site to a small yard with minimal improvements to the facilities at the existing South Boulevard site
- Reduces cost by \$26 million



- Retain planned North Tryon Street cross-section and right of way (ROW)
- Fund incremental ROW costs and new street improvements with \$13 million in alternative local funds (NECI) to leverage state and federal funds



In summary, the estimated net savings, in 2010 dollars, due to scope reductions are as follows:

End project @ UNC Charlotte	\$ 92 million
Sugar Creek parking modifications	\$ 9 million
Reduce fleet size by 8 vehicles	\$ 38 million
Reduce VMF needs	\$ 26 million
Total Scope and Cost Reductions	\$165 million

BLE 30% Design Cost Estimate

Base Year Estimate (2010\$): \$983 million

YOE Cost Estimate (YOE\$): \$1.12 billion (3.25% escalation)

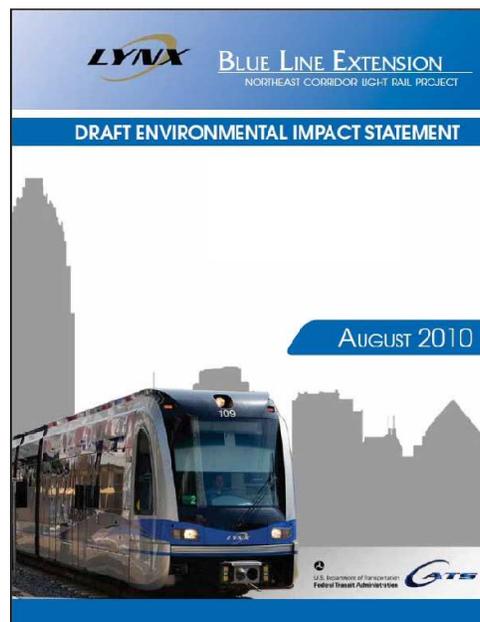
Revised BLE Cost: \$983-\$165 = \$818 million

Revised BLE Approximate Cost Estimate

Base Year Estimate (2010\$):		\$812 million
YOE Cost Estimate (YOE\$):		\$967 million (4.0% escalation)
Federal	50%	\$483 million
State	25%	\$242 million
CATS	24%	\$228 million
City of Charlotte	1%	\$14 million

JPA recommended CATS share target: \$227 million

- Comment Period August 27 - October 12, 2010
- Public Comments (18)
 - 12 Written Comments
 - 6 Verbal Comments at Public Hearing
- Agency Comments (9)
 - US Environmental Protection Agency (EPA)
 - NC Dept. of Transportation (NCDOT)
 - State Historic Preservation Office (SHPO)
 - NC Wildlife Resources Commission
 - NC Dept. of Environment and Natural Resources (DENR) Water Quality Division
 - NC DENR Division of Environmental Health
 - Town of Harrisburg
 - Mecklenburg-Union Metropolitan Planning Organization (MUMPO)
 - US Dept. of Interior (US Geological Service, US Fish and Wildlife Service)

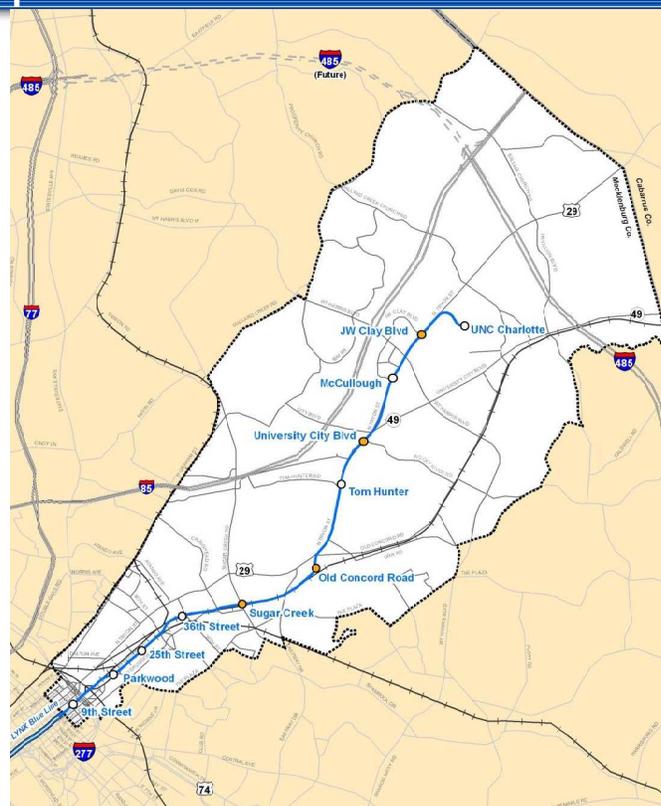


- Stakeholder meetings
 - UNC Charlotte, University City Partners, CMC-University
- Recommendations announced at MTC Meeting on December 15, 2010
- Extensive media coverage
- Public meeting
 - Oasis Shriner’s Center held January 12, 2011
 - 28 attendees
- Public survey (at meeting and on-line)
 - 298 responses
 - 76% support changes overall

MTC Action – Adopt Preferred Alternative

Adopt Light Rail Alternative to UNC Charlotte as Locally Preferred Alternative (LPA) and NEPA Preferred Alternative

- 7th Street to UNC Charlotte (9.4 miles)
- 11 stations, including 4 with park and rides



- Complete 65% Design and Final EIS
- Prepare /submit New Starts information package including updated financial plan for revised project
- Conduct Risk Assessment
- Prepare Independent Cost Estimate
- Confirm budget of revised project - identify project elements for bid alternates
- Amend STV Preliminary Engineering contract to finish 65% design

APPENDIX B5 – MTC ACTION ITEM

JANUARY 26, 2011

**METROPOLITAN TRANSIT COMMISSION
ACTION ITEM
STAFF SUMMARY**

**SUBJECT: LYNX Blue Line Extension Locally Preferred
Alternative and NEPA Preferred Alternative**

DATE: January 26, 2011

1.0 PURPOSE/SCOPE: The purpose of this action item is to present the proposed changes to the LYNX Blue Line Extension project to achieve a revised budget and to recommend a revised Locally Preferred Alternative (LPA) alignment and station locations.

2.0 BACKGROUND/JUSTIFICATION:

The MTC adopted a refined Locally Preferred Alternative (LPA) on April 22, 2009 for the LYNX Blue Line Extension project and amended it on October 28, 2009. The Draft Environmental Impact Statement (EIS) and 30% design was completed for the project during 2010. In November 2010, the Metropolitan Transit Commission received a report on the financial capacity of CATS and its ability to deliver the 2030 Transit System Plan. Based on the analysis performed by Jeff Parker Associates, it was determined that the current plan could not be completed as planned. In order to advance the Blue Line Extension, the MTC directed CATS staff to reduce the project scope by approximately 20 percent.

Proposed Project Changes/Locally Preferred Alternative. Staff has worked to redefine the project to fit within this budget. Extensive coordination has been undertaken with our partner departments, UNC Charlotte, NCDOT and FTA. Additionally, a public meeting was held on January 12 at Oasis Shriners Center. The public meeting scheduled for January 11 was cancelled due to inclement weather. Staff will present a summary of the public input at the MTC meeting.

Staff recommends the following changes to the Blue Line Extension project to reduce project costs and ensure the financial feasibility of the project.

- 1) Project terminus at UNC Charlotte (removes 1.2 miles of alignment and the I-485/N. Tryon Station and Mallard Creek Church Station),
 - New parking location at JW Clay station (650 space deck),
 - Additional parking at University City Boulevard station (total 1,500 spaces in surface and deck parking)
- 2) Operate 2-car trains every 7.5 minutes initially and 3-car trains every 10 minutes in the future, instead of 2-car trains every 6 minutes;
- 3) Use surface lots rather than a parking deck at Sugar Creek station and
- 4) Eliminate park-and-ride lots at Tom Hunter or McCullough stations;
- 5) Eliminate the Vehicle Light Maintenance Facility at the NS intermodal site along N. Brevard St. and construct a storage yard and dispatch building only; and up-fit the existing South Blvd. maintenance facility.

Draft EIS/NEPA Preferred Alternative. FTA approved the Draft EIS for public and agency circulation on August 11, 2010. On August 17, 2010, CATS distributed the Draft EIS to Federal, State and local agency officials, interested parties, affected parties and local libraries and other depositories. A Notice of Availability was sent to over 10,000 elected and appointed officials, agency representatives, interested parties and property owners. Bilingual posters and flyers were also distributed along the alignment.

The Notice of Availability appeared in the Federal Register on August 27, 2010 and opened the required 45-day circulation period that ended on October 12, 2010. Local advertisements announcing the Draft EIS were placed in the Charlotte Observer, La Noticia, Charlotte Post, and Que Pasa. A bilingual Rider's Alert was placed on all bus and rail vehicles.

Public meetings were held along the corridor on September 9 and 14, 2010. Comment sheets were distributed at the meetings. Comments were received at a public hearing on Wednesday, September 22, 2010 and written comments were received through October 12, 2010. A summary of these comments is included in Attachment C.

The NEPA Preferred Alternative, or environmentally preferred alternative, identifies the alternative that causes the least damage to the biological and physical environment; it also means the alternative which best protects, preserves, and enhances historic, cultural, and natural resources. The Sugar Creek Design Option has less impact on streams than the Light Rail Alternative/Locally Preferred Alternative (LPA) and avoids potential noise/vibration impacts at Leafmore Drive and St. Anne's Place. However, the Light Rail Alternative/LPA avoids impacts to an historic resource, has significantly fewer acquisitions and displacements of businesses, fewer visual impacts, will include mitigation to eliminate noise/vibration impacts, and is significantly less costly. Therefore, staff recommends the LPA be selected as the NEPA Preferred Alternative.

Next Steps. Upon selection of the LPA and NEPA Preferred Alternative, staff will prepare the Final EIS. The Final EIS incorporates and responds to comments received during the circulation period, updates technical information as necessary and documents efforts to reduce impacts. The Final EIS will be transmitted to the FTA in mid-2011 for approval. Once the Final EIS is published, FTA will issue a Record of Decision (ROD). The ROD is expected by the end of 2011. A request for approval to enter into final design is expected to be made to the FTA following the completion of 65% design and the ROD. Approval to enter final design cannot be granted until a ROD has been issued.

3.0 PROCUREMENT BACKGROUND: N/A

4.0 POLICY IMPACT: By taking this action, The MTC will establish the LPA that will be advanced to 65 percent design and evaluated in the Final EIS. This action selects the NEPA Preferred Alternative for the LYNX Blue Line Extension Northeast Corridor Light Rail Project.

5.0 ECONOMIC IMPACT: N/A

6.0 ALTERNATIVES:

- a. Select the Light Rail Alternative from 9th Street to UNC Charlotte as the Locally Preferred Alternative and NEPA Preferred Alternative
- b. Select the Light Rail Alternative – Sugar Creek Design Option
- c. Select the No Build Alternative

7.0 RECOMMENDATION: Staff recommends that the MTC:

- a. Adopt recommended alignment and station alternative for the refined LPA.
- b. Select the Light Rail Alternative (9th Street to UNC Charlotte) as the LYNX Blue Line Extension Northeast Corridor NEPA Preferred Alternative.
- c. Direct staff to advance Preliminary Engineering for the LPA to the 65 percent design level and prepare the Final Environmental Impact Statement.

6 **ATTACHMENT(S):**

Attachment A- LPA Description

Attachment B- Project Map

Attachment C-Summary of comments received on the Draft EIS

SUBMITTED AND RECOMMENDED BY:

A handwritten signature in black ink that reads "Carolyn Flowers". The signature is written in a cursive, flowing style.

Carolyn Flowers
CEO, Charlotte Area Transit System
Director of Public Transit, City of Charlotte

ATTACHMENT A
LYNX Blue Line Extension- Northeast Corridor Light Rail Project

LPA Description

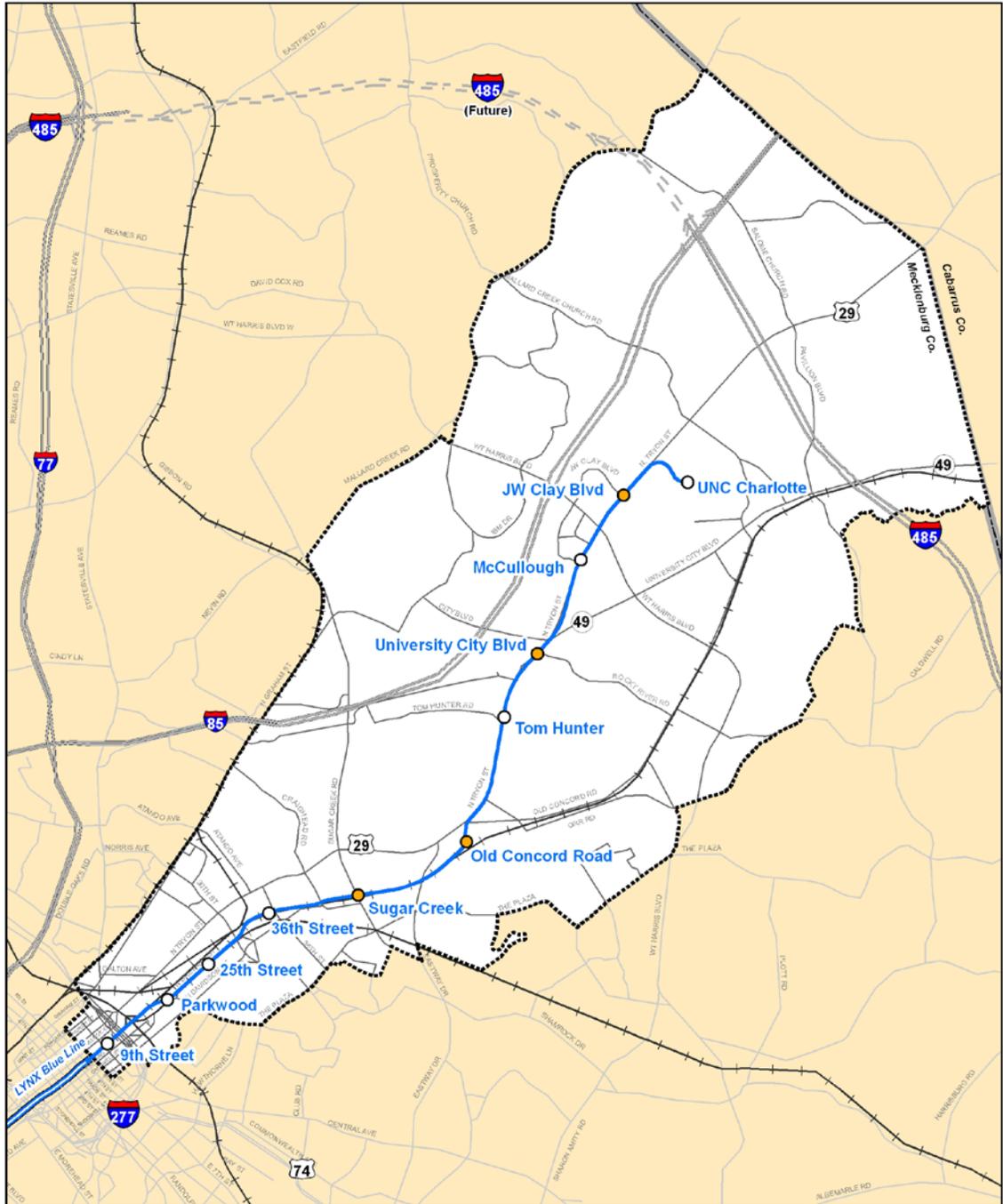
The recommended refined LPA includes 11 stations and is approximately 9 miles long. The BLE alignment begins in Uptown Charlotte, where the Blue Line currently ends at 7th Street. The first part of the alignment primarily stays within railroad right-of-way, through NoDa, until Old Concord Rd., where it enters into the median of North Tryon Street. The alignment follows North Tryon Street through the University City area then enters the UNC Charlotte campus north of JW Clay Blvd. The project terminus would be at UNC Charlotte. The following are the recommendations that make up this alignment for MTC approval:

Station Recommendations

Staff recommends adoption of the proposed stations listed below:

- **9th Street Station-** Staff recommends that a station be included at this location to serve the many private developments, which are being built in this section of downtown. It is located north of 9th Street in Uptown and will serve the UNC Charlotte uptown campus.
- **Parkwood Station-** Staff recommends that this station be located near Parkwood Ave and Brevard St. This Station was previously located near 16th Street but was relocated to provide improved access to nearby neighborhoods such as Villa Heights.
- **25th Street Station-** Staff recommends this station be located along Brevard Street between 25th and 26th Streets. This station will serve future development and provide access to the vehicle storage yard.
- **36th Street Station-** Staff recommends this station be located at the intersection of 36th Street and the Norfolk-Southern railroad tracks, on the east (NoDa) side. This station has been coordinated with the NCDOT-Rail, Norfolk-Southern Railroad and North Carolina Railroad and is proposed to be built in conjunction with a grade separation of 36th Street, to provide enhanced pedestrian and bicycle access to the station.
- **Sugar Creek Station-** Staff recommends that this station be located near the intersection of the Norfolk- Southern railroad tracks and Sugar Creek Road. This station will include a park & ride.
- **Old Concord Road Station-** Staff recommends that this station be located near the intersection of North Tryon Street and Old Concord Road. This station will include a park & ride.
- **Tom Hunter-** Staff recommends that this station be located near the intersection of Tom Hunter Road and North Tryon Street. A park and ride will not be included due to the low projected demand for parking.
- **University City Blvd Station-** Staff recommends this station be located in the median of the North Tryon Street in the vicinity of the Weave project. This station will include a park & ride.
- **McCullough Station-** Staff recommends that this station be located near the intersection of North Tryon Street and McCullough Road. This station is the product of combining two previously planned stations that were located too closely together. This station will not include a park & ride due to the addition of parking at JW Clay Blvd.
- **JW Clay Blvd Station-** Staff recommends that this station be located near the intersection of North Tryon St and JW Clay Dr. This station will include a park & ride.
- **UNC Charlotte Station-** Staff recommends that this station be located near Laurel Hall on UNC Charlotte's campus. The station and alignment location was coordinated with the University.

ATTACHMENT B LYNX Blue Line Extension – Northeast Corridor



Legend

Northeast Corridor Limits	Railroads
Light Rail Transit	Highway
LYNX Existing Light Rail Transit	Major Roads
Proposed Stations	Highway (Future)
Proposed Stations with Park-and-Ride	County Line

0 0.5 1
Mile

Data Source:
CATS, City of Charlotte GIS, and Mecklenburg County GIS

BLN_Corridor_Map0111.pdf

01/14/11

**ATTACHMENT C
LYNX BLE Draft EIS
Summary of Public Comments**

#	Sender	Comment
1	Mark Kistler	Terminate closer to the Charlotte Motor Speedway
2	Wil Russell	Consider using permeable surface materials, utilidors, rubber sidewalk pavers and solar power
3	Louis Raymond	Request for information: how "walk to transit" trip numbers were calculated
4	Lance Reagan	Terminate closer to the Charlotte Motor Speedway
5	Virginia Ingram	Concern about people crossing track; keep backyard fence intact
6	Andrew Street, Charlotte Area Bicycle Alliance	Provide continuous bicycle/pedestrian path along entire length of BLE project with connections to stations and other bikeways
7	Marguerite Cooke	Stations close to uptown should be opened first; build in segments if necessary
8	Deirdre Grubbs	Supports project; provide more protection at stations from wind/rain; consider pathway from parking/drop-off to platform
9	Saundra Jackson	Keep park and ride lot at Tom Hunter Station for Hidden Valley residents
10	Frank E. Bishop	Concern over lack of connectivity at Stetson and Tyner Drive
11	Mark W. Merritt, Robinson Bradshaw & Hinson, PA (Attorney representing owners of Mallard Creek Apartments)	Concern about effects of project on property, including acquisition, visual, noise, and traffic concerns
12	Matt Prink, Level 3 Communications	Coordinate regarding the adjustment and/or relocation of the Facilities necessary to accommodate Project
13	Mary Hopper, University City Partners	In support of project; project supports land use plans and goals for area
14	Peter Franz, UNC Charlotte	In support of project; project appropriately coordinated with campus master plan
15	Nancy Reitz, CASTO Development	In support of project; CATS willingness to work with stakeholders
16	Bill Leonard, CMC University	In support of project; CATS responded to concerns; traffic signal to remain is important
17	Michael Morgan	Build the project as soon as possible; build in segments if necessary
18	Charles Strickland	Build the project as soon as possible; build in segments if necessary; ensure bus connections to light rail

**LYNX BLE Draft EIS
Summary of Agency Comments**

#	Sender	Agency Name	Comment
1	Joshua Watkins, Planning Director	Town of Harrisburg	Town would like to work with CATS on extension to Cabarrus County
2	Robert Cook, MUMPO Secretary	Mecklenburg-Union Metropolitan Planning Organization (MUMPO)	Clarify discussion of N. Tryon Street related to the 2035 Long Range Transportation Plan (LRTP)
3	Renee Gledhill-Early	NC State Historic Preservation Office (SHPO)	No comment; all properties and effects correctly noted
4	Anil Panicker, Transportation Engineer III	NC Department of Transportation (NCDOT), Transportation Planning Branch	Coordinate with Division 10 on other projects in the vicinity
5	Marla Chambers, Western NCDOT Permit Coordinator	NC Wildlife Resources Commission (WRC), Habitat Conservation Program	Sugar Creek Design Option (SCDO) has less impact to natural resources (streams, wetlands, forests); concerned about indirect and cumulative impacts to natural resources; recommends Low Impact Development (LID) techniques
6	Polly Lespinasse	NC Department of Environment and Natural Resources (NCDENR) - Division of Water Quality (DWQ), Mooresville Regional Office	Requests that the design provide treatment of stormwater runoff through best management practices (BMPs) to protect area streams; concerned about the selection of the Light Rail Alternative (LPA) because it has greater impacts on streams compared to the Sugar Creek Design Option; sufficient justification, including avoidance and minimization will be needed for the 401 Water Quality Certification; a qualitative analysis of cumulative and secondary impacts on water quality is required; comments on design and mitigation details
7	Brian Setzer	NCDENR - Division of Environmental Health, Public Water Supply Section (PWSS), Regional Office	Plans for relocation of water lines must be reviewed and approved by Charlotte Mecklenburg Utilities Department (CMU) prior to construction
8	Heinz Mueller, Chief, NEPA Program Office	US Environmental Protection Agency, Region 4 (EPA)	"Lack of objections" rating, no impacts requiring substantive changes to the preferred alternative; EPA supports the project's purpose and need and the recommended avoidance, minimization measures, and mitigation; requested information on noise mitigation in the Final EIS
9	Willie R. Taylor, Director, Office of Environmental Policy and Compliance	US Department of the Interior (includes comments from USGS and USFWS)	Address groundwater impacts in more detail in Final EIS; concurs with no impact finding on endangered species; confirm no presence of nests of migratory birds; comments on design practices to minimize impacts to fish and wildlife habitat (streams and wetlands); recommendations on mitigation ratios for use of Charlotte's Umbrella Stream and Wetland Mitigation Bank; concurs with 4(f) de minimis finding



BLE Cost Reduction
Public Meeting Comment Sheet and
On-line Survey Results Summary
January 2011

CATS presented recommended project changes to the BLE at the public meeting on Wednesday, January 12, 2011, to reduce the cost of the light rail project. The following are responses from the public regarding changes to the BLE project scope to achieve the desired cost reductions. Surveys were completed during the January 12 public meeting and on-line from January 13 – 21. A total of 316 surveys were completed during this time frame; 300 of these were completed on-line.

OVERALL, do you SUPPORT the PROPOSED PROJECT CHANGES? Percentage based on 298 respondents to this question.

Yes	76%
No	24%

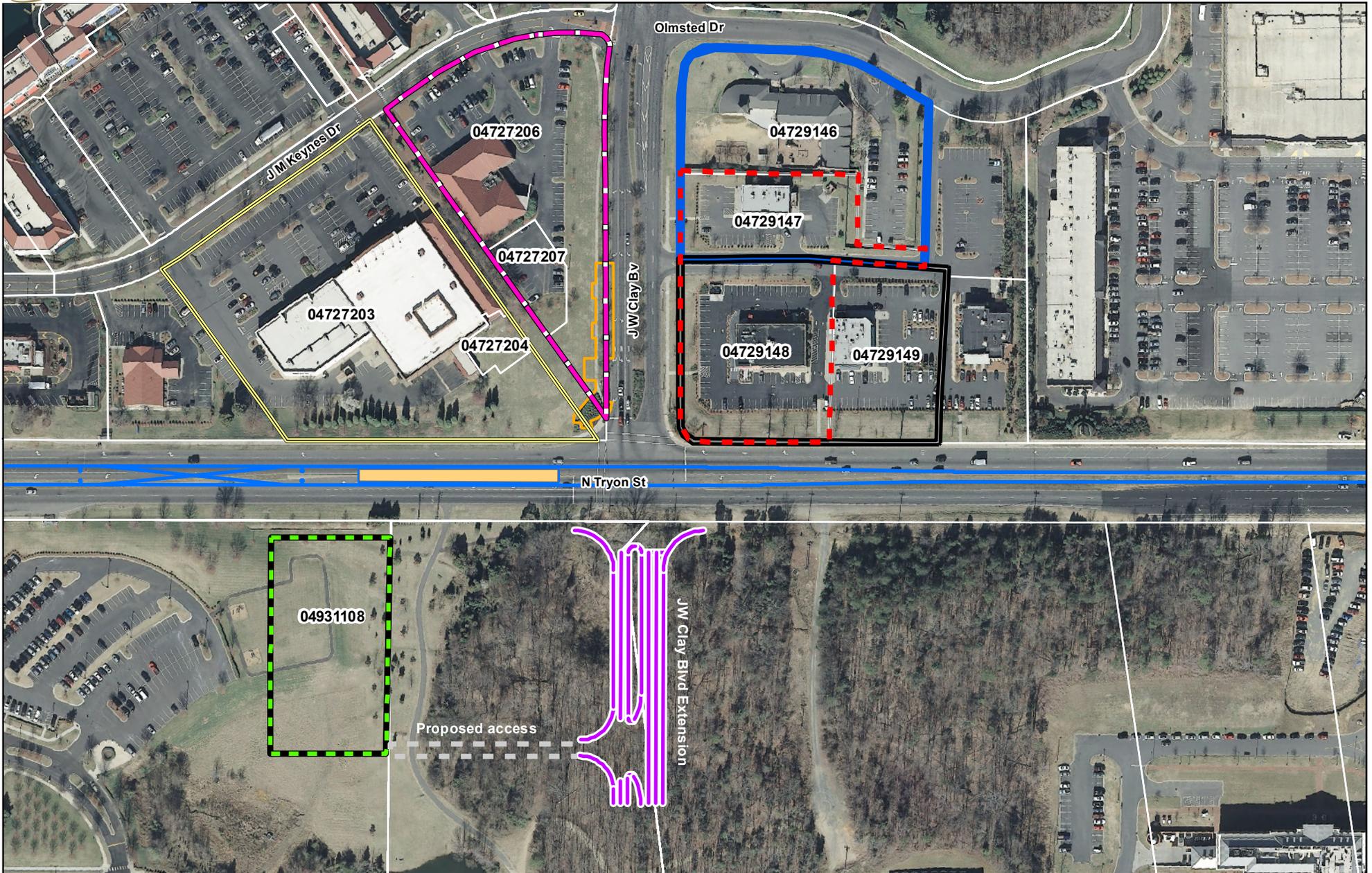
Please INDICATE how much you AGREE or DISAGREE with the proposed project changes.			
	Somewhat to Strongly Agree	Neither Agree nor Disagree	Somewhat to Strongly Disagree
Shorten the project to UNC Charlotte Station (Eliminating I-485/N. Tryon Station and Mallard Creek Church Station)	42.1%	10.5%	47.4%
Operate 3-car trains every 10 minutes instead of 2-car trains every 6 minutes	70.0%	16.8%	13.2%
Add a parking garage at JW Clay Blvd Station (650 spaces)	54.7%	34.2%	11.1%
Provide additional parking at University City Blvd Station (1,500 total spaces)	55.9%	34.8%	9.4%
Eliminate all parking at McCullough Station	16.3%	55.9%	27.8%
Provide surface lots instead of a parking garage at Sugar Creek Station	40.7%	36.0%	23.3%
Provide sidewalks and bicycle lanes along North Tryon Street	70.2%	16.4%	13.4%
Provide a storage yard for rail vehicles at the site along North Brevard Street and use the existing South Blvd Light Rail Facility for maintenance	51.5%	42.2%	6.3%
Provide an additional right/through lane along North Tryon Street from Orchard Trace to Shopping Center Drive to accommodate additional traffic from the University City Boulevard park and ride	56.4%	38.3%	5.4%



**BLE Cost Reduction
Public Meeting Comment Sheet and
On-line Survey Results Summary
January 2011**

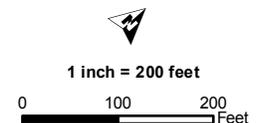
Additional Comments:	Approximate # of Responses
Disagree with change in terminus/deletion of I-485/N Tryon Station & Mallard Creek Church Station (includes comments regarding Concord/speedway/extension, traffic, lost ridership)	67
Generally agree with proposed project changes given the current fiscal environment	31
Complete construction of the Blue Line Extension ASAP	26
Look at other funding options (increase fare, TIF, private partnerships, more federal money, stimulus money, parking fees)	21
Keep 36 th Street Station, but change the name to NoDa Station	20
JW Clay Park and Ride (includes wanting a deck, concerns with deck design/safety, pedestrian crossing safety, overcrowding as the first park and ride, overall security at park and ride lots)	12
Cut stations	10
Complete the streets (bike lanes, sidewalks, bike paths etc)	10
Less expensive art and landscaping (use neighborhoods to help develop)	7
Build the 2-car platforms	6
Surface lots instead of garages	6
Don't build, it's not needed, a waste of money, or other areas of Charlotte needs transit more	6
Reduce other CATS services that will be replaced with LYNX service and provide necessary connectivity between bus and rail	5
Maintain/improve headway frequencies	4
Need more UNC Charlotte parking and/or shuttles	4
Adjust train frequency to 15 to 20 minute headways	3
Build the 3-car platforms	2
Keep Sugar Creek deck	1
Eliminate bike lanes on North Tryon. I'm a biker and it is too dangerous; I'll use the sidewalks	1

APPENDIX C
JW CLAY BLVD. STATION PARK-AND-RIDE FACILITY
SITE EVALUATION MATRICES



Legend

- Track Alignment
- Retaining Walls
- Site 3 04727206, 04727207
- Site 2 04727203, 04727204
- Site 1 04931108
- Platforms
- Bus Bay
- Structures
- Site 5 04729147, 04729148
- Site 6 04729148, 04729149
- Site 4 04729146, 04729147



APPENDIX C1

JW CLAY BLVD. STATION PARK-AND-RIDE FACILITY

SITE EVALUATION MATRIX – DECEMBER 15, 2010

DRAFT
12/15/10

**JW Clay Blvd Parking Deck
SITE EVALUATION MATRIX**
December 15, 2010

CRITERIA	ISSUES	Site 1 - CMC-University		Site 2 - Talbots/Old Navy		Site 3 - Triangle (Retail)		Site 4 - Church/Burger Bites		Site 5 - Burger Bites/Panda Xpress		Site 6 - Panda Xpress/Honeybaked		
		Comments	Rating -1/0/+1	Comments	Rating -1/0/+1	Comments	Rating -1/0/+1	Comments	Rating -1/0/+1	Comments	Rating -1/0/+1	Comments	Rating -1/0/+1	
1.0 Rail Operations														
	N/A													
2.0 Local Context														
2.01	Land use	Compatibility with existing / planned land use	walking trails, vacant land	-1	deters future active uses; unusable remnants	-1	deters future active uses on south side of JW Clay; segments retail on north side of JW Clay from south side of JW Clay; unusable remnants	-1		1		1	1	
2.02	Neighborhood	Appropriate to scale and character of surrounding neighborhood	adjacent to hospital	1		1		1		1		1	1	
2.03	Stakeholder Support	Likely acceptable of stakeholders/property owners	not supported by CMC-Univ.	-1	significant retail impact	0	currently vacant/underutilized	1	school possibly moving	0	minor retail impact	0	minor retail impact	0
2.04	Economic impact	Affect on economic development, incl. current and future jobs		0	deters future development/ redevelopment potential	-1		1	doesn't disturb CASTO plans	1	doesn't disturb CASTO plans	1		1
2.05	Other	<describe>												
3.0 Environmental Considerations														
3.01	Wetlands and streams	Potential wetland and stream impacts / extent of mitigation required	not field reviewed; mapping doesn't show wetlands/ streams; large pond nearby	1	none likely	1	none likely	1	none likely	1	none likely	1	1	
3.02	Protected species	Potential protected species sites / extent of mitigation required	potential	-1	none likely	1	none likely	1	none likely	1	none likely	1	1	
3.03	Hazardous materials	Potential for hazardous materials on site / extent of mitigation required	no concerns identified	1	no concerns identified	1	former dry cleaner on-site	-1	no concerns identified	1	no concerns identified	1	no concerns identified	1
3.04	Historic and archaeology	Potential historic properties / extent of mitigation required	vacant	1	built 1984	1	built 1985	1	built in 1984 and 1997	1	built 1997 and 1996	1	built 1996 and 1997	1
3.05	Community resources	Potential impacts to community services / extent of mitigation required	parklands, hospital access	-1		1		1	private school relocation	0		1		1
3.06	Low income and minority	Potential impacts to low income and minority populations / extent of mitigation required	no direct impact to low income/minority	1		1		1		1		1		1
3.07	Visual and aesthetic	Potential visual and aesthetic impacts / extent of mitigation required	new visual element	-1	consistent with commercial/parking uses	1	potential "visual corridor" impact?	1	consistent with commercial/parking uses; new visual element to residential properties to north	0	consistent with commercial/parking uses	1	consistent with commercial/parking uses	1
3.08	Noise and vibration	Potential noise and vibration impacts / extent of mitigation required	potential for additional noise at hospital	-1		1		1		1		1		1
4.0 Configuration/Access														
4.01	Walking distance to station		long, 400 feet to closest space	-1	close to station	1	300' to platform	0	long, 480 feet to closest space	-1	300' to station	0	300' to station	1
4.02	Pedestrian access		at-grade crossing of N. Tryon; adjacent to station location	1	at-grade crossing of N. Tryon; adjacent to station location	1	at-grade crossing of N. Tryon; adjacent to station location	1	cross JW Clay and N. Tryon	-1	cross JW Clay and N. Tryon	-1	cross JW Clay and N. Tryon	-1
4.03	Deck Configuration	Number of spaces	650	1	650	1	650	1	650	1	650	1	650	1
		Number of levels	4 levels	1	3 levels	1	4 levels, irregular configuration; custom build; opportunity for ground-level parking	1	3 levels (no subgrade)	1	4 levels	1	4 levels	1
		Opportunity for ground floor uses	small deck will not allow for internal ramping; small for 18' ceiling	-1	deck will need to be larger and fronts only one street	0	irregular shape makes internal ramping difficult; small for 18' ceiling	-1	footprint is small for 18' ceiling; has frontage on 4 sides/2 public streets	0	good length and frontage on two public streets	1	good length and frontage on two public streets	1
4.04	Vehicular Access	access on multiple sides	N. Tryon, JW Clay Blvd Extension	0	JM Keynes; maybe N. Tryon	0	JM Keynes; maybe JW Clay	0	access on all 4 sides	1	access from JW Clay & N. Tryon; egress on JW Clay only	-1	access from public and private streets	1
		impacts to existing infrastructure	self-contained parcel	1	self-contained parcel	1	self-contained parcel	1	self-contained parcel	1	cut-off direct access to Honeybaked property from JW Clay; (FATAL FLAW)	-1	self-contained parcel	1
		addition of traffic signals and/or turn lanes	would require extension of unbuilt street	-1	JW Clay & JM Keynes set up for high volume already	1	JW Clay & JM Keynes set up for high volume already	1	maybe need signal at Olmstead/JW Clay	0	maybe on Olmstead	0	maybe on Olmstead	0
		queuing on site	large site, ample opportunity to queue on-site	1	large site, ample opportunity to queue on-site	1	deck takes most of space, no room for queuing	1	room to queue on private street	0	room to queue on private street	0	room to queue on private street	0
4.05	Bus Access		across N. Tryon	-1	JW Clay	1	JW Clay	1	across street	0	across street	0	across street	0

CRITERIA		ISSUES		Site 1 - CMC-University	Site 2 - Talbots/Old Navy	Site 3 - Triangle (Retail)	Site 4 - Church/Burger Bites	Site 5 - Burger Bites/Panda Xpress	Site 6 - Panda Xpress/Honeybaked					
5.0 Estimated Costs														
5.01	Relocations	Estimated number of relocations	no acquisition/relocation of active businesses	1	2 major retail relocations	-1	vacant but viable	0	church/school relocation; minor retail relocation	0	2 minor active retail relocations (FATAL FLAW)	-1	2 minor retail relocations	-1
		Estimated costs for relocations	\$0	1	\$3,900,000	-1	\$1,300,000	0	\$2,275,000	-1	\$650,000	0	\$650,000	0
5.02	Acquisition	Estimated area of acquisition (sf)	52,272	1	176,854	-1	101,451	0	112,777	0	100,101	0	106,156	0
		Estimated acquisition cost	\$1,045,440	1	\$3,300,000	-1	\$1,500,000	0	\$2,100,000	0	\$2,100,000	0	\$2,400,000	0
5.03	Site preparation	Estimated costs including site preparation, building demolition, parking deck; does not include unallocated contingencies	\$9,937,410	1	\$10,925,184	0	\$10,191,519	0	\$10,261,562	0	\$10,146,514	0	\$10,192,676	0
		Total Relocation, Acquisition and Site Preparation Costs	\$10,982,850	1	\$18,125,184	-1	\$12,991,519	0	\$14,636,562	0	\$12,896,514	0	\$13,242,676	0
5.04	Likelihood for Joint Use		not likely - concept not supported by CMC-Univ.	-1	potential redevelopment by CASTO; potential joint use for shopping center users	1	ground floor retail opportunity	1	low potential for ground floor retail (previous retail failure; front Olmstead; walk-up retail limited/not likely)	0	ground floor retail opportunity	1	ground floor retail opportunity	1
5.05	Stormwater			1	may need underground detention, no room for pond	0	may need underground detention, no room for pond	0	may need underground detention, no room for pond	0	may need underground detention, no room for pond	0	may need underground detention, no room for pond	0

TOTALS	Site 1 - CMC-University	6	Site 2 - Talbots/Old Navy	11	Site 3 - Triangle (Retail)	15	Site 4 - Church/Burger Bites	10	Site 5 - Burger Bites/Panda Xpress	11	Site 6 - Panda Xpress/Honeybaked	16
	ELIMINATED		#2 SELECTION			ELIMINATED		#1 SELECTION				

APPENDIX C2

JW CLAY BLVD. STATION PARK-AND-RIDE FACILITY

SITE EVALUATION MATRIX – JANUARY 21, 2011

**JW Clay Blvd Parking Deck
SITE EVALUATION MATRIX**
January 21, 2011

DRAFT
1/21/11

CRITERIA	ISSUES	IMPORTANCE 1 - low 2 - medium 3 - high	Site 3 - Triangle (Retail)					Comments 1/21/11	Site 6 - Panda Xpress/Honeybaked								
			Comments 12/15/10	12/15/10 Rating -1/0/+1	1/21/11 Rating -1/0/+1	1/21/11 Rating -1/0/+1	1/21/11 Rating -1/0/+1		1/21/11 Rating -1/0/+1	Comments 12/15/10	12/15/10 Rating -1/0/+1	1/21/11 Rating -1/0/+1	1/21/11 Rating -1/0/+1	1/21/11 Rating -1/0/+1			
1.0 Rail Operations																	
	N/A																
2.0 Local Context																	
2.01	Land use	Compatibility with existing / planned land use	3	eters future active uses on south side of JW Clay; segments retail on north side of JW Clay from south side of JW Clay; unusable remnants	-1	-1	1	1	-1	A1 & A4. doesn't leave room for add'l future uses		1	1	1	1		
2.02	Neighborhood	Appropriate to scale and character of surrounding neighborhood	2		1	1	1	1	1			1	1	1	1		
2.03	Stakeholder Support	Likely acceptable of stakeholders/property owners	3	currently vacant/underutilized	1	0	1	1	1	A1. doesn't leave room for add'l future uses; impacts service area of other active retail	minor retail impact	0	0	0	0		
2.04	Economic impact	Affect on economic development, incl. current and future jobs	2		1	1	1	1	1			1	1	1	1		
2.05	Other	<describe>															
3.0 Environmental Considerations																	
3.01	Wetlands and streams	Potential wetland and stream impacts / extent of mitigation required	3	none likely	1	1	1	1	1	none likely	none likely	1	1	1	1		
3.02	Protected species	Potential protected species sites / extent of mitigation required	3	none likely	1	1	1	1	1	none likely	none likely	1	1	1	1		
3.03	Hazardous materials	Potential for hazardous materials on site / extent of mitigation required	2	former dry cleaner on-site	-1	-1	-1	-1	-1	former dry cleaner on-site	no concerns identified	1	1	1	1		
3.04	Historic and archaeology	Potential historic properties / extent of mitigation required	2	built 1985	1	1	1	1	1	built 1985	built 1996 and 1997	1	1	1	1		
3.05	Community resources	Potential impacts to community services / extent of mitigation required	3		1	1	1	1	1			1	1	1	1		
3.06	Low income and minority	Potential impacts to low income and minority populations / extent of mitigation required	1		1	1	1	1	1			1	1	1	1		
3.07	Visual and aesthetic	Potential visual and aesthetic impacts / extent of mitigation required	2	potential "visual corridor" impact?	1	1	1	1	1	potential "visual corridor" impact?	consistent with commercial/parking uses	1	1	1	1		
3.08	Noise and vibration	Potential noise and vibration impacts / extent of mitigation required	3		1	1	1	1	1			1	1	1	1		
4.0 Configuration/Access																	
4.01	Walking distance to station			450' to platform	0	1	1	1	1	directly across N. Tryon. 300' to station		1	0	0	1	B3 = station moves across from deck	
4.02	Pedestrian access			at-grade crossing of N. Tryon, adjacent to station location	1	1	1	1	1	directly across N. Tryon. cross JW Clay and N. Tryon		-1	1	1	1	B1, B2 & B3: ped bridge added; those going to UNC Charlotte still have to cross JW Clay; bus drop-off/pick-up	
4.03	Deck Configuration	Number of spaces		650	1	1	1	1	1		650	1	1	1	1		
		Number of levels		opportunity for ground-level parking	1	1	-1	-1	1	A1: 4 levels; A2: 7 levels; A3: 6 levels; A4: 4 levels	4 levels		1	1	1	1	B3 = 3 to 4 levels
		Opportunity for ground floor uses		small for 18' ceiling	-1	1	-1	-1	1	A2 = no opps for retail; A3: no opps for retail	good length and frontage on two public streets		1	1	1	1	
4.04	Vehicular Access	access on multiple sides		JM Keynes; maybe JW Clay	0	-1	0	0	0	one side, JM Keynes; A1 access conflicts w/ retail service entrance	access from public and private streets		1	1	1	1	
		impacts to existing infrastructure		self-contained parcel	1	1	-1	-1	-1	self-contained parcel; A2, A3 and A4. impacts retail next to self-contained parcel Old Navy			1	1	1	1	
		addition of traffic signals and/or turn lanes		JW Clay & JM Keynes set up for high volume already	1	1	1	1	1	JW Clay & JM Keynes set up for high volume already	maybe on Olmstead		0	0	0	0	b3: improvements likely needed at Olmstead
		queuing on site		deck takes most of space, no room for queuing; new configuration could provide room for queuing	1	0	0	0	0		room to queue on private street		0	0	0	0	
4.05	Bus Access			JW Clay	1	1	1	1	1	across street		0	0	0	0	under review for alternate locations; scored under assumption that bus access stays on south side of JW Clay	
5.0 Estimated Costs																	
5.01	Relocations	Estimated number of relocations		vacant but viable	0	-1	-1	-1	-1	assumes existing retail is vacant; assumes no relocation of Old Navy/Talbots buildings. A1, A2, A3 & A4 impacts retail next to Old Navy	2 minor retail relocations	-1	-1	-1	-1	2 retail relocations	
		Estimated costs for relocations		\$1,235,000	0	-1	-1	-1	-1	\$1,235,000 + cost to relocate small business adjacent to Old Navy	\$552,500	0	0	0	0	\$552,500	
5.02	Acquisition	Estimated area of acquisition (sf)		101,451	0	0	0	0	0	up to approximately 139,000	106,156	0	0	0	0	106,156	
		Estimated acquisition cost (determined by Real Estate)		\$1,500,000	0	0	0	0	0	approx. \$1.5 to 1.6 million	\$2,400,000	0	0	0	0	\$2,400,000	
5.03	Site preparation	Estimated costs including site preparation, building demolition, parking deck; does not include unallocated contingencies		\$10,191,519	0	0	0	0	0	\$19,875,538	\$10,192,676	0	0	0	0	\$10,192,676	
		Total Relocation, Acquisition and Site Preparation Costs		\$12,926,519	0	0	0	0	0	\$22,610,538	\$13,145,176	0	0	0	0	\$13,145,176	
5.04	Likelihood for Joint Use			ground floor retail opportunity	1	1	-1	-1	1	A2 = no opps for retail; A3: no opps for retail	ground floor retail opportunity	1	1	1	1	ground floor retail opportunity	
5.05	Stormwater			may need underground detention, no room for pond	0	0	0	0	0	may need underground detention, no room for pond	may need underground detention, no room for pond	0	0	0	0		

TOTALS

Site 3 - Triangle (Retail) 15 13 9 9 13
#2 SELECTION (12/15/10)

Site 6 - Panda Xpress/Honeybaked 16 17 17 18
#1 SELECTION (12/15/10)

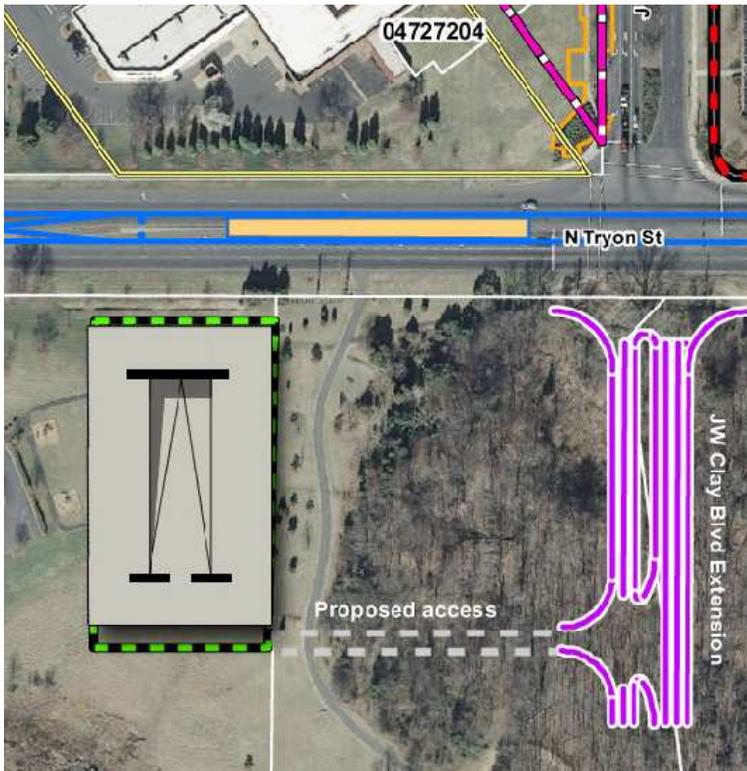
#1 SELECTION (1/21/11)

APPENDIX D
JW CLAY BLVD. STATION PARK-AND-RIDE FACILITY
CONCEPTUAL LAYOUTS

APPENDIX D1

JW CLAY BLVD. STATION PARK-AND-RIDE FACILITY

CONCEPTUAL LAYOUTS – DECEMBER 15, 2010



JW Clay Blvd Possible Parking Deck Options

Alternate #6 Summary

Parcel ID: 04729148, 04729149
 Parcel Size: 1.33 acres (app.)
 Property Value: \$1,417,900 (\$24.47 sf) (app.)
 Potential Deck Cost: \$XXX,XXX
 Parking Deck Size: 180' x 300'
 Spaces per Level: +/- 145 spaces

Alternate #6 Advantages

- Recessed grade from N. Tryon Street would allow lower level of deck to be below grade
- Frontage along N. Tryon St. is flat in topography
- Opportunity for a pedestrian bridge connection to the southern end of the platform from the deck

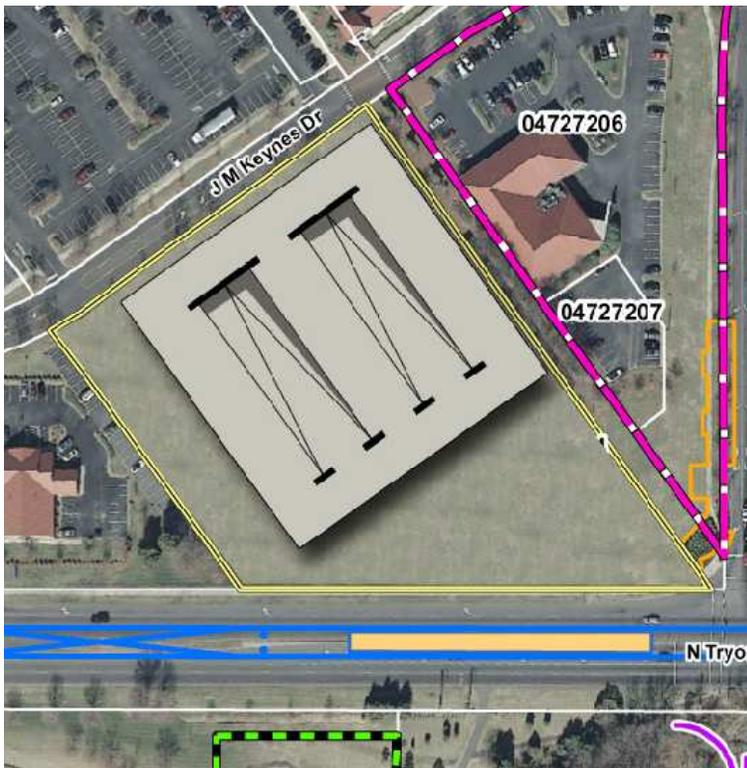
Alternate #6 Disadvantages

- Access to deck is limited to and dependent on future extension of JW Clay Blvd at UNC Charlotte campus
- Distance from station platform to closest space is app. 400-feet



JW CLAY BOULEVARD STATION
Site 1 (CMC-University)

DECEMBER 10, 2010 | LDH1007232



JW Clay Blvd Possible Parking Deck Options

Alternate #1 Summary

Parcel ID: 04727203, 04727204
 Parcel Size: 4.06 acres
 Property Value: \$2,857,200 (\$16.16 sf)
 Potential Deck Cost: \$XXX,XXX
 Parking Deck Size: 300' x 300'
 Spaces per Level: +/- 240 spaces (370 sf)

Alternate #1 Advantages

- Recessed grade from N. Tryon Street would allow lower level of deck to be below grade
- Site can accommodate large parking deck footprint (largest of six site options)

Alternate #1 Disadvantages

- Access will be from JM Keynes Dr. only unless a right-in / right-out can be created along N. Tryon Street
- Deters active uses to be developed in close proximity to station platform and causes concern if this is the best use for this site given the opportunity for redevelopment
- Irregular shape of parcel is inefficient for parking deck rectilinear shape and leaves unusable property remnants



JW CLAY BOULEVARD STATION
Site 2 (Old Navy/Talbots)

DECEMBER 10, 2010 | LDH1007232



JW Clay Blvd Possible Parking Deck Options

Alternate #2 Summary

Parcel ID: 04727206, 04727207
 Parcel Size: 2.34 acres
 Property Value: \$1,611,100 (\$13.50 sf)
 Potential Deck Cost: \$XXX,XXX
 Parking Deck Size: 380' x 280'
 Spaces per Level: +/- 185 spaces

Alternate #2 Advantages

- Recessed grade from JW Clay Blvd would allow lower level of deck to be below grade
- Site would displace large existing surface parking lot in close proximity to station
- Bus drop-off along JW Clay Boulevard could be coordinated with deck facade
- Site is located closest in to the station platform

Alternate #2 Disadvantages

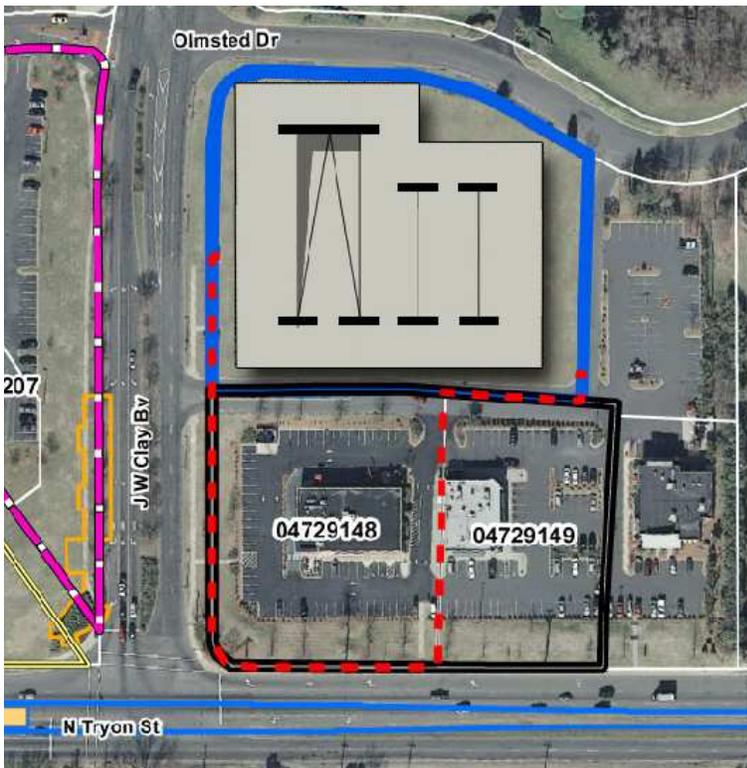
- Access from JW Clay Blvd will be right-in / right-out, requiring all traffic from N. Tryon to access deck via JM Keynes Dr.
- Deters active uses to be developed in close proximity to station platform & question if this is the best use for this site given the opportunity for redevelopment
- Irregular shape of parcel is inefficient for parking deck rectilinear shape, leaves unusable property remnants



JW CLAY BOULEVARD STATION

DECEMBER 10, 2010 | LDH1007232

Site 3 (Triangle Retail)



JW Clay Blvd Possible Parking Deck Options

Alternate #3 Summary

Parcel ID: 04729146, 04729147
 Parcel Size: 2.59 acres
 Property Value: \$2,245,400 (\$19.90 sf)
 Potential Deck Cost: \$XXX,XXX
 Parking Deck Size: 300' x 280'
 Spaces per Level: +/- 210 spaces

Alternate #3 Advantages

- Site can accommodate a large parking deck footprint
- Location allows for future redevelopment of properties immediately adjacent to the station platform
- Access to the deck uses a right turn movement, allowing ease of access to and egress from JW Clay Blvd
- Egress from deck is via full movement intersection at Olmstead Dr
- Site access on four sides via public & private streets
- Frontage along JW Clay Blvd is flat in topography

Alternate #3 Disadvantages

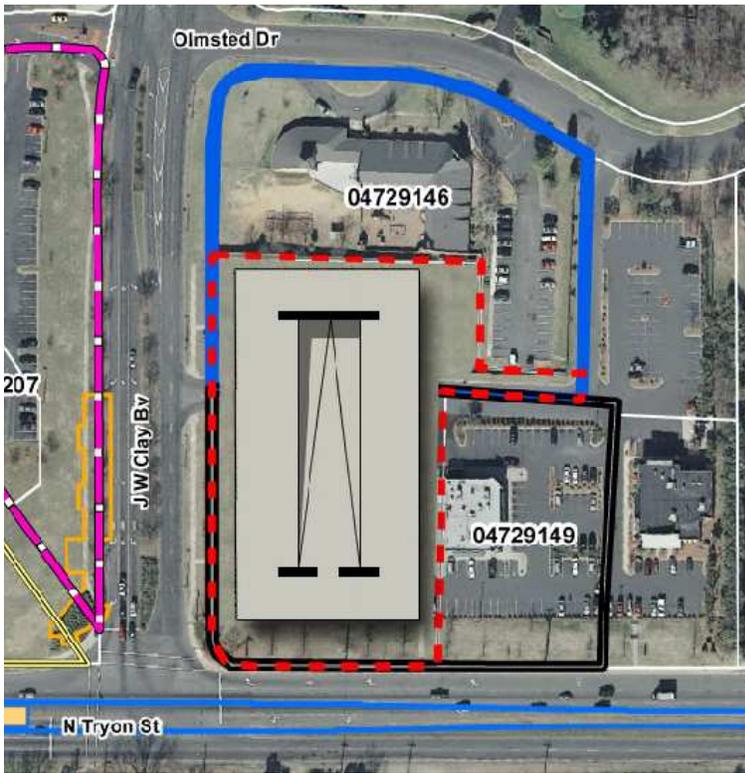
- Adequate signage will need to direct patrons to deck from N. Tryon Street
- Distance from station platform to closest space is app. 400-feet



JW CLAY BOULEVARD STATION

DECEMBER 10, 2010 | LDH1007232

Site 4 (Church School/Burger Bites)



JW Clay Blvd Possible Parking Deck Options

Alternate #4 Summary

Parcel ID: 04729147, 04729148

Parcel Size: 2.30 acres

Property Value: \$1,989,800 (\$19.86 sf)

Potential Deck Cost: \$XXX,XXX

Parking Deck Size: 180' x 340'

Spaces per Level: +/- 165 spaces

Alternate #4 Advantages

- Recessed grade from N. Tryon Street would allow lower level of deck to be below grade
- Access to the deck uses a right turn movement, allowing ease of access to and egress from JW Clay Blvd
- Frontage along JW Clay Blvd and N. Tryon St. is flat in topography
- Length of deck will more easily allow for ceilings to exceed 12-feet in height for retail uses

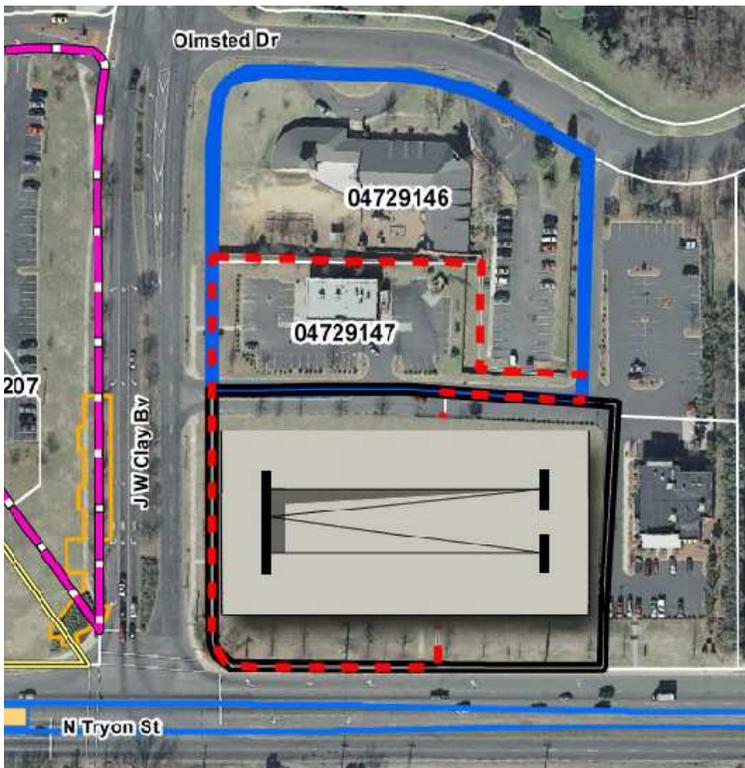
Alternate #4 Disadvantages

- Deters active uses to be developed in close proximity to station platform
- Parcel 04729149 has limited access via Olmsted Dr. only
- Egress from deck to JW Clay may be limited to right-in/ right-out due to proximity to N. Tryon Street



JW CLAY BOULEVARD STATION
Site 5 (Burger Bites/Panda Express)

DECEMBER 10, 2010 | LDH1007232



JW Clay Blvd Possible Parking Deck Options

Alternate #5 Summary

Parcel ID: 04729148, 04729149

Parcel Size: 2.44 acres

Property Value: \$2,179,800 (\$20.51 sf)

Potential Deck Cost: \$XXX,XXX

Parking Deck Size: 360' x 180'

Spaces per Level: +/- 175 spaces

Alternate #5 Advantages

- Recessed grade from N. Tryon Street would allow lower level of deck to be below grade
- Access to the deck uses a right turn movement, allowing ease of access to and egress from JW Clay Blvd
- Frontage along JW Clay Blvd and N. Tryon St. is flat in topography
- Length of deck will more easily allow for ceilings to exceed 12-feet in height for retail uses

Alternate #5 Disadvantages

- Egress from deck to JW Clay may be limited to right-in/ right-out due to proximity to N. Tryon Street
- Deters active uses to be developed in close proximity to station platform
- Parcel 04729149 has limited access via Olmsted Dr. only



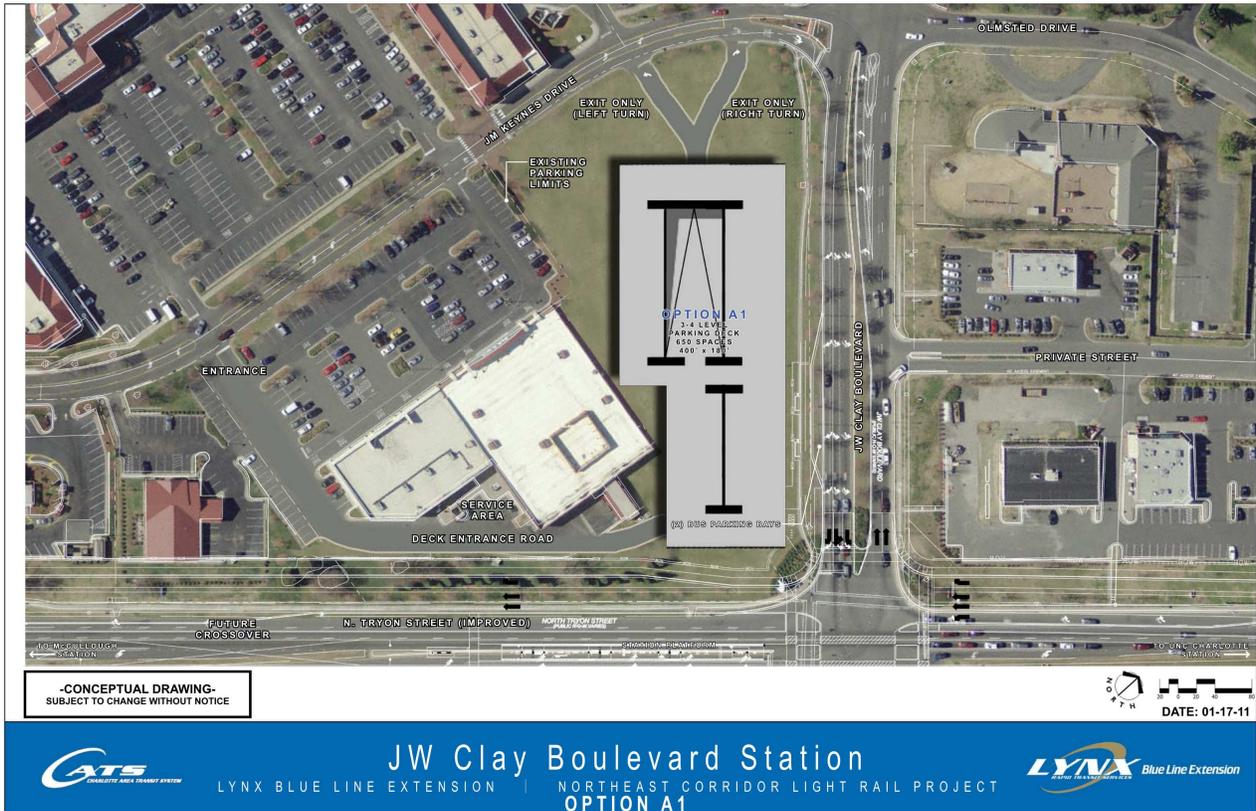
JW CLAY BOULEVARD STATION
Site 6 (Panda Express/HoneyBaked Ham)

DECEMBER 10, 2010 | LDH1007232

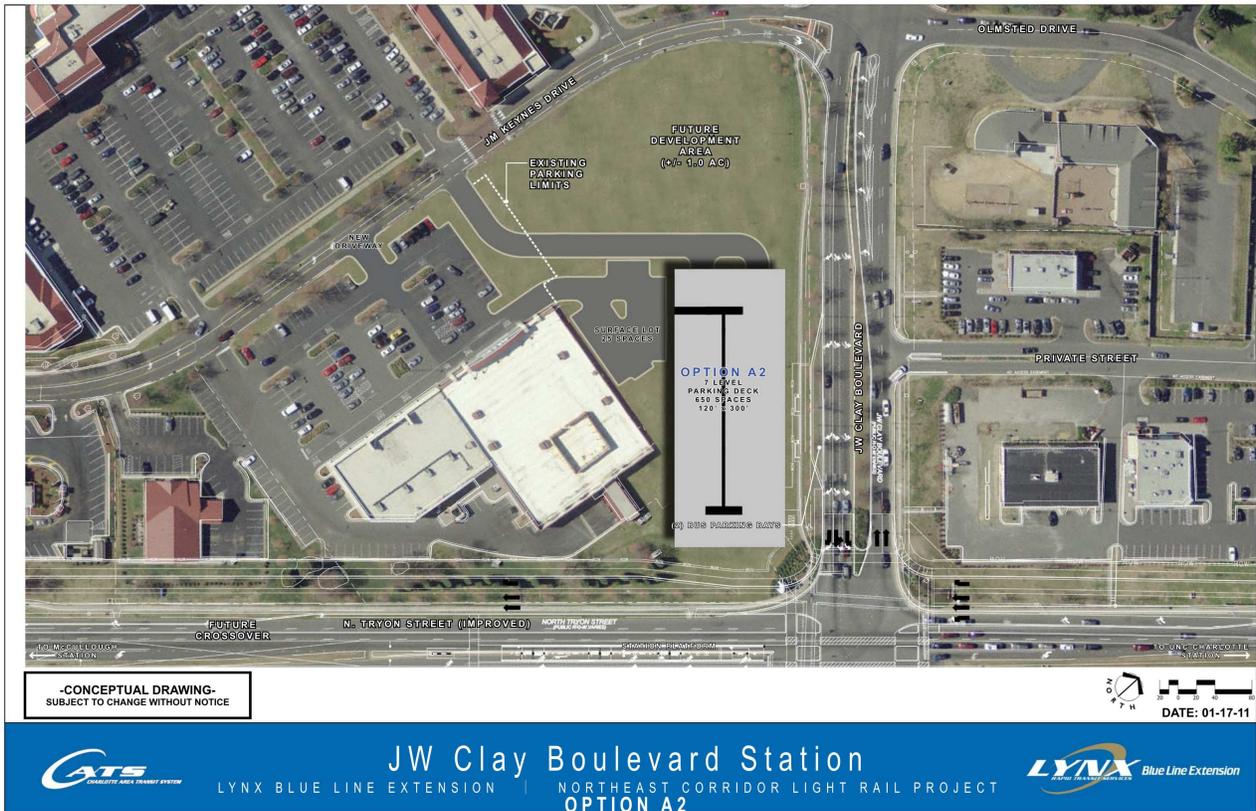
APPENDIX D2

JW CLAY BLVD. STATION PARK-AND-RIDE FACILITY

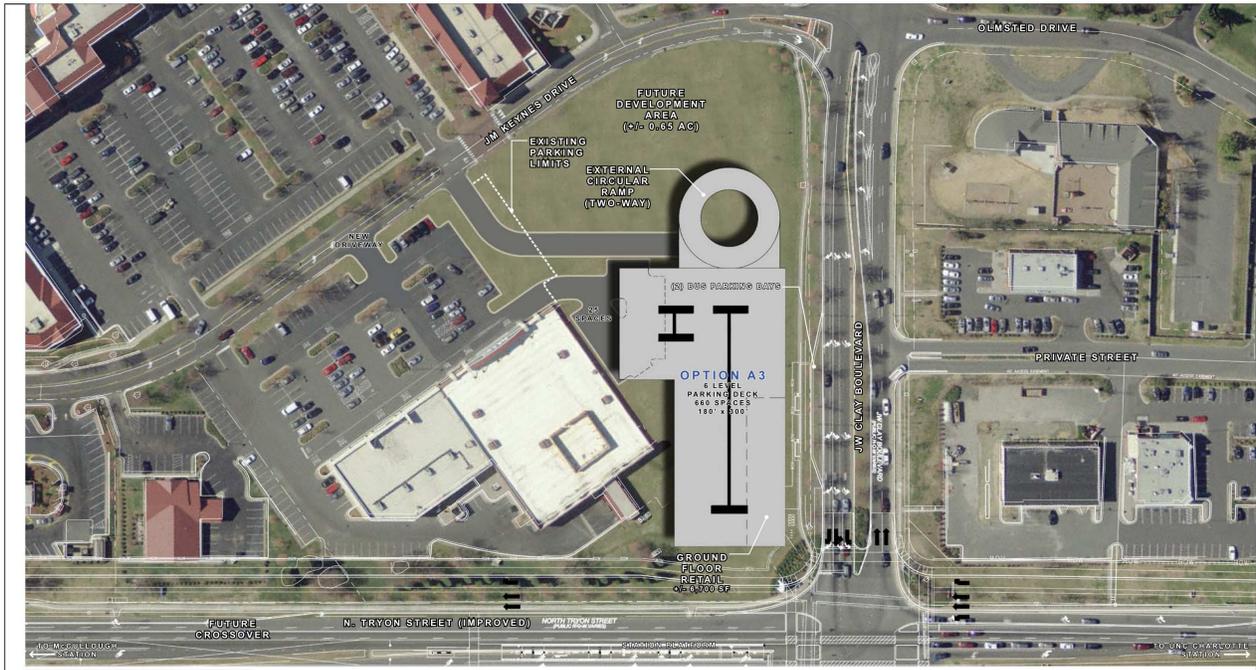
CONCEPTUAL LAYOUTS – JANUARY 21, 2011



Site 3 (Triangle Retail)



Site 3 (Triangle Retail)



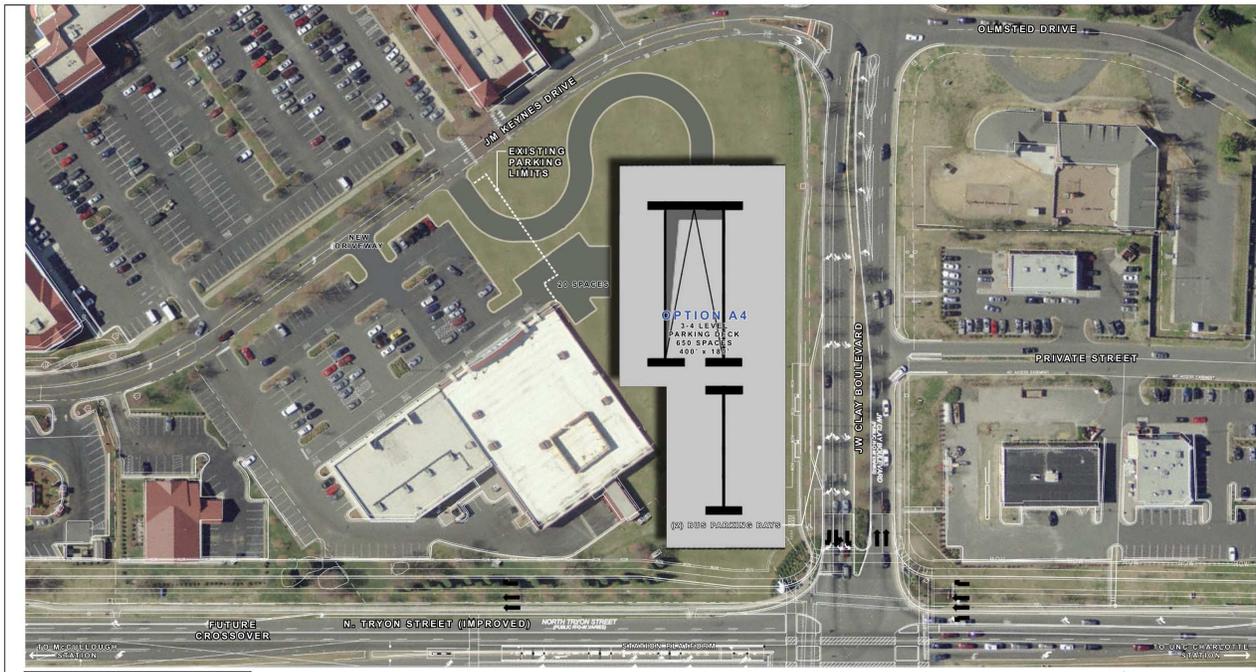
-CONCEPTUAL DRAWING-
SUBJECT TO CHANGE WITHOUT NOTICE



DATE: 01-17-11


JW Clay Boulevard Station
 LYNX BLUE LINE EXTENSION | NORTHEAST CORRIDOR LIGHT RAIL PROJECT
OPTION A3


Site 3 (Triangle Retail)



-CONCEPTUAL DRAWING-
SUBJECT TO CHANGE WITHOUT NOTICE



DATE: 01-17-11


JW Clay Boulevard Station
 LYNX BLUE LINE EXTENSION | NORTHEAST CORRIDOR LIGHT RAIL PROJECT
OPTION A4


Site 3 (Triangle Retail)



-CONCEPTUAL DRAWING-
SUBJECT TO CHANGE WITHOUT NOTICE



JW Clay Boulevard Station
 LYNX BLUE LINE EXTENSION | NORTHEAST CORRIDOR LIGHT RAIL PROJECT
 OPTION B1 & B2

Site 6 (Panda Express/HoneyBaked Ham)



-CONCEPTUAL DRAWING-
SUBJECT TO CHANGE WITHOUT NOTICE



JW Clay Boulevard Station
 LYNX BLUE LINE EXTENSION | NORTHEAST CORRIDOR LIGHT RAIL PROJECT
 OPTION B3

Site 6 (Panda Express/HoneyBaked Ham)

APPENDIX E

**JW CLAY BLVD. STATION PARK-AND-RIDE FACILITY
ENVIRONMENTAL SITE EVALUATION PARAMETERS AND SUMMARIES**

Environmental Site Selection Criteria

Criteria within the environmental considerations category for the JW Clay Blvd. park-and-ride facility site selection process included wetlands and streams, protected species, hazardous materials, historic sites, community resources, low income and minority neighborhoods, and noise and vibration. A literature review and limited field reconnaissance (e.g., windshield survey) were performed to identify potential environmental constraints for each of the sites. Literature and mapping reviews consisted of a review of the following readily-available materials, which helped to identify potential environmental concerns:

- Mecklenburg County GIS mapping
- Aerial photography, including infrared photography
- U.S. Geologic Survey topographic quadrangles
- U.S. Department of Agriculture Soil Survey mapping
- U.S. Fish and Wildlife Service (USFWS) and North Carolina Natural Heritage Program protected species databases
- National Wetland Inventory (NWI) mapping
- FEMA mapping
- National Register of Historic Places
- U.S. Census Data

Following the literature and mapping review, members of the project team conducted a multidisciplinary field reconnaissance in December 2010. This limited field reconnaissance consisted of a windshield survey and low-level pedestrian survey to confirm and augment the literature review of existing conditions on and adjacent to each site. The environmental review included the following:

Natural Resources

- Wetlands/Streams: Wetlands and streams were identified using NWI maps, supplemented with other available mapping and limited ground-truthing. The ambient conditions of wetlands and streams located on the sites were described. Delineations were not performed.
- Protected Species: Potential habitat for federal and state threatened and endangered species that exists was identified on each site. GIS data, including aerial photography, was used to identify potentially suitable habitat for protected species.

Human Resources

- Historic Resources. A cursory identification of historic resources was conducted for each site. This included a background review of known resources within each site through review of the National Register of Historic Places and local historic register. Other historic properties, at least 50 years old, were also identified based on review of tax records. Intensive architectural historic properties and archaeological surveys and delineations were not performed.
- Hazardous Materials. A limited investigation was conducted to identify known and potential hazardous materials and hazardous waste generators on each site consisting of:
 - A limited site reconnaissance to look for apparent surface indications of past and present waste-handling activities and presence of potential underground storage tanks.

- A review of the site and area geology and hydrogeology from available references that would assist in identifying potential pathways for contaminant migration.
- Vehicular reconnaissance of accessible areas near each site to identify surrounding property uses and area facilities that appear to handle or generate hazardous materials, have underground storage tanks or are documented sites of environmental contamination.
- Review of the ownership history for businesses (such as gasoline stations) suspected of generating or storing hazardous materials.
- Residential Land Uses: The field inspection identified the number of parcels, public facilities, businesses, residences and estimated family sizes of potential relocations.
- Noise: Potential noise-sensitive receivers (residences and commercial businesses) adjacent to each site were identified from available aerial photography. A Noise Analysis, including collection of existing ambient noise measurements and modeling, was not performed.
- Environmental Justice: Potential low-income and/or minority areas were identified within the general area of each site.

The following is a summary of the environmental evaluation performed for each of the six sites.

Site 1: Carolinas Medical Center - University

Natural Resources

Streams and Wetlands

Records and mapping review revealed the likely occurrence of wetlands or other jurisdictional waters of the U.S. within or near to the proposed JW Clay Blvd. park-and-ride facility footprint and the proposed access road. Additionally, a large pond is located just south of the proposed access road. Recent construction activities in the area (on the UNC Charlotte campus) may have altered the localized drainage to this pond, potentially altering drainage patterns and stormwater conveyance. If so, it is possible that new drainage swales or channels may have established which could be jurisdictional.

Protected Species

Within Mecklenburg County, there are currently four federally endangered species listed by the USFWS, protected under the Endangered Species Act (ESA). These species are smooth coneflower (*Echinacea aevigata*), Schweinitz's sunflower (*Helianthus schweinitzii*), Carolina heelsplitter (*Lasmigona decorata*), and Michaux's sumac (*Rhus michauxii*).

Site 1 (CMC-University) encompasses vacant/undeveloped land consisting of open fields and wooded areas. A portion of the project site was previously field reviewed and did not reveal suitable habitat or the presence of protected species. However, portions of the proposed site and the area defined for a proposed access road have not been field reviewed. Suitable habitat or the presence of protected species in these areas is possible.

Human Resources

Historic Resources

There are no known historic sites located on the property.

Hazardous Materials

Based on limited field review and previous evaluations performed for the LYNX BLE, no potentially hazardous conditions were identified on or nearby to Site 1 (CMC-University).

Neighborhoods

Site 1 (CMC-University) is located within the University City South neighborhood. Institutional land uses dominate this neighborhood, with CMC-University and UNC Charlotte making up the northern two-thirds of the area. Surrounding land uses to Site 1 are institutional (UNC Charlotte and CMC-University). There are neither residential neighborhoods nor residential uses such as UNC Charlotte residence halls located on or adjacent to Site 1 (CMC-University).

Noise

CMC-University is located directly adjacent to the site. Development of a park-and-ride facility could result in noise impacts to this noise-sensitive receiver. Additionally, the site and proposed access road are located adjacent to and within the UNC Charlotte Fitness Trails, which provide active and passive recreational uses in a natural setting. Development of a park-and-ride facility and the associated access road could result in increased noise levels and a potential noise impact to the UNC Charlotte Fitness Trails. Additional survey and analysis would be required.

Environmental Justice

The area surrounding Site 1 (CMC-University) is not categorized as having low income and/or minority populations. Given the existing use of the proposed site, impacts to the human environment (e.g. community cohesion, etc.) are not expected.

Site 2: Talbots/Old Navy

Natural Resources

Streams and Wetlands

There are no streams or wetlands located on or around Site 2 (Talbots/Old Navy).

Protected Species

Within Mecklenburg County, there are currently four federally endangered species listed by the USFWS, protected under the ESA. These species are smooth coneflower, Schweinitz's sunflower, Carolina heelsplitter, and Michaux's sumac. However, Site 2 (Talbots/Old Navy) is entirely developed/maintained limiting the likelihood of the presence of protected species. A field review indicated no suitable habitat for the aforementioned species on the proposed site. Therefore, it is anticipated that no impact would occur to protected species with the development of Site 2 (Talbots/Old Navy).

Human Resources

Historic Resources

No historic resources were identified near to Site 2 (Talbots/Old Navy). The buildings located on this site were constructed in 1984.

Hazardous Materials

One potentially hazardous condition was identified adjacent to Site 2 (Talbots/Old Navy), namely a former dry cleaning service. A more-detailed records review revealed that the former

dry cleaner was located on Site 2 (Talbots/Old Navy), not the adjacent Site 3 (Triangle Retail) as previously thought. The former dry cleaner site is part of the Dry-Cleaning Solvent Cleanup Act Program and is currently under assessment. Soil and groundwater contamination have been documented at the site and at this time appear to be entirely within the boundaries of Site 2 (Talbots/Old Navy). Potential contamination clean-up and assumption of liability is a concern.

Neighborhoods

Site 2 (Talbots/Old Navy) is located within the University City North neighborhood. The area includes a mix of commercial and higher-density residential uses as well as some undeveloped land. Large commercial development, including Site 2 (Talbots/Old Navy), can be found near the intersection of W.T. Harris Boulevard and North Tryon Street/US-29. Development of a park-and-ride facility on Site 2 (Talbots/Old Navy) is not likely to affect travel patterns and accessibility and would not cause displacements and/or relocations of residents. No community facilities are located on the site.

Noise

Adjacent properties to Site 2 (Talbots/Old Navy) are commercial in nature. Noise-sensitive receptors were not identified. Therefore, it is not expected that development and use of Site 2 (Talbots/Old Navy) would result in noise impacts.

Environmental Justice

Site 2 (Talbots/Old Navy) is located within the University City North neighborhood. Concentrations of low-income and/or minority populations are not located within the University City North neighborhood. Therefore, development of Site 2 (Talbots/Old Navy) would not cause a disproportionate impact to low-income and/or minority populations.

Site 3: (Triangle Retail)

Natural Resources

Streams and Wetlands

There are no streams or wetlands located on or around Site 3 (Triangle Retail).

Protected Species

Within Mecklenburg County, there are currently four federally endangered species listed by the USFWS, protected under the ESA. These species are smooth coneflower, Schweinitz's sunflower, Carolina heelsplitter, and Michaux's sumac. However, Site 3 (Triangle Retail) is almost entirely developed/maintained limiting the likelihood of the presence of protected species. A field review indicated no suitable habitat for the aforementioned species on the proposed site. Therefore, it is anticipated that no impact would occur to protected species with the development of Site 3 (Triangle Retail).

Human Resources

Historic Resources

There are no historic resources located on or adjacent to Site 3 (Triangle Retail). The building located on-site was built in 1985.

Hazardous Materials

One potentially hazardous condition was identified on Site 3 (Triangle Retail), namely a former dry cleaning service. A more-detailed records review revealed that the former dry cleaner was located on the adjacent parcel (Site 2 [Talbots/Old Navy]), not on Site 3 (Triangle Retail) as previously thought, but very near the Site 3 (Triangle Retail) property boundary. The former dry cleaner site is part of the Dry-Cleaning Solvent Cleanup Act Program and is currently under assessment. Soil and groundwater contamination have been documented at the site and at this time appear to be entirely within the boundaries of Site 2 (Talbots/Old Navy). However, given the close proximity to Site 2 (Talbots/Old Navy) potential contamination is a concern.

Neighborhoods

Site 3 (Triangle Retail) is located within the University City North neighborhood. The area includes a mix of commercial and higher-density residential uses as well as some undeveloped land. Large commercial development, including Site 3 (Triangle Retail), can be found near the intersection of W.T. Harris Boulevard and North Tryon Street/US-29. Development of a park-and-ride facility on Site 3 (Triangle Retail) is not likely to affect travel patterns and accessibility and would not cause displacements and/or relocations of residents. No community facilities are located on the site.

Noise

Adjacent properties to Site 3 (Triangle Retail) are commercial in nature. Noise-sensitive receptors were not identified. Therefore, it is not expected that development and use of Site 3 (Triangle Retail) would result in noise impacts.

Environmental Justice

Site 3 (Triangle Retail) is located within the University City North neighborhood. Concentrations of low-income and/or minority populations are not located within the University City North neighborhood. Therefore, development of Site 3 (Triangle Retail) would not cause a disproportionate impact to low-income and/or minority populations.

Site 4: Church School/Burger Bites

Natural Resources

Streams and Wetlands

There are no streams or wetlands located on or around Site 4 (Church School/Burger Bites).

Protected Species

Within Mecklenburg County, there are currently four federally endangered species listed by the USFWS, protected under the ESA. These species are smooth coneflower, Schweinitz's sunflower, Carolina heelsplitter, and Michaux's sumac. However, Site 4 (Church School/Burger Bites) is almost entirely developed/maintained limiting the likelihood of the presence of protected species. A field review indicated no suitable habitat for the aforementioned species on the proposed site. Therefore, it is anticipated that no impact would occur to protected species with the development of Site 4 (Church School/Burger Bites).

Human Resources

Historic Resources

There are no historic resources located on or adjacent to Site 4 (Church School/Burger Bites). The buildings located on-site were built in 1984 and 1997.

Hazardous Materials

Based on limited field review and previous evaluations performed for the LYNX BLE, no potentially hazardous conditions were identified on or nearby to Site 4 (Church School/Burger Bites).

Neighborhoods

Site 4 (Church School/Burger Bites) is located within the University City North neighborhood. The area includes a mix of commercial and higher-density residential uses as well as some undeveloped land. Large commercial development, including Site 4 (Church School/Burger Bites), can be found near the intersection of W.T. Harris Boulevard and North Tryon Street/US-29. Development of a park-and-ride facility on Site 4 (Church School/Burger Bites) would not cause displacements and/or relocations of residents. However, Site 4 (Church School/Burger Bites) is located adjacent to a multi-family apartment community. Travel patterns to/from this community could be affected slightly if residents take other routes to avoid commuter traffic that may pass by the community's access drives. Additionally, development of a park-and-ride facility on Site 4 (Church School/Burger Bites) may result in the introduction of a new visual element for this community. Site 4 (Church School/Burger Bites) currently encompasses a private school. Therefore, development of a park-and-ride facility on this site would result in a community facility impact.

Noise

Adjacent properties to Site 4 (Church School/Burger Bites) are primarily commercial in nature, with a multi-family residential use to the west. It is not anticipated that a park-and-ride facility would generate a potential noise impact to noise-sensitive receptors, such as the adjacent multi-family community. However, additional analysis would be necessary.

Environmental Justice

Site 4 (Church School/Burger Bites) is located within the University City North neighborhood. Concentrations of low-income and/or minority populations are not located within the University City North neighborhood. Therefore, development of Site 4 (Church School/Burger Bites) would not cause a disproportionate impact to low-income and/or minority populations.

Site 5: Burger Bites/Panda Express

Natural Resources

Streams and Wetlands

There are no streams or wetlands located on or around Site 5 (Burger Bites/Panda Express).

Protected Species

Within Mecklenburg County, there are currently four federally endangered species listed by the USFWS, protected under the ESA. These species are smooth coneflower, Schweinitz's sunflower, Carolina heelsplitter, and Michaux's sumac. However, Site 5 (Burger Bites/Panda Express) is almost entirely developed/maintained limiting the likelihood of the presence of

protected species. A field review indicated no suitable habitat for the aforementioned species on the proposed site. Therefore, it is anticipated that no impact would occur to protected species with the development of Site 5 (Burger Bites/Panda Express).

Human Resources

Historic Resources

There are no historic resources located on or adjacent to Site 5 (Burger Bites/Panda Express). The buildings located on-site were built in 1997 and 1996.

Hazardous Materials

Based on limited field review and previous evaluations performed for the LYNX BLE, no potentially hazardous conditions were identified on or nearby to Site 5 (Burger Bites/Panda Express).

Neighborhoods

Site 5 (Burger Bites/Panda Express) is located within the University City North neighborhood. The area includes a mix of commercial and higher-density residential uses as well as some undeveloped land. Large commercial development, including Site 5 (Burger Bites/Panda Express), can be found near the intersection of W.T. Harris Boulevard and North Tryon Street/US-29. Development of a park-and-ride facility on Site 5 (Burger Bites/Panda Express) is not likely to affect travel patterns and accessibility and would not cause displacements and/or relocations of residents. No community facilities are located on the site.

Noise

Adjacent properties to Site 5 (Burger Bites/Panda Express) are primarily commercial in nature. However, a private school is located directly adjacent to the west side of Site 5 (Burger Bites/Panda Express). Development of a park-and-ride facility on this site could result in a noise impact to this noise-sensitive receiver. Additional analysis would be necessary

Environmental Justice

Site 5 (Burger Bites/Panda Express) is located within the University City North neighborhood. Concentrations of low-income and/or minority populations are not located within the University City North neighborhood. Therefore, development of Site 5 (Burger Bites/Panda Express) would not cause a disproportionate impact to low-income and/or minority populations.

Site 6: Panda Express/HoneyBaked Ham

Natural Resources

Streams and Wetlands

There are no streams or wetlands located on or around Site 6 (Panda Express/HoneyBaked Ham).

Protected Species

Within Mecklenburg County, there are currently four federally endangered species listed by the USFWS, protected under the ESA. These species are smooth coneflower, Schweinitz's sunflower, Carolina heelsplitter, and Michaux's sumac. However, Site 6 (Panda Express/HoneyBaked Ham) is almost entirely developed/maintained limiting the likelihood of the presence of protected species. A field review indicated no suitable habitat for the

mentioned species on the proposed site. Therefore, it is anticipated that no impact would occur to protected species with the development of Site 6 (Panda Express/HoneyBaked Ham).

Human Resources

Historic Resources

There are no historical resources located on or adjacent to Site 6 (Panda Express/HoneyBaked Ham). The buildings located on-site were built in 1997 and 1996.

Hazardous Materials

Based on limited field review and previous evaluations performed for the LYNX BLE, no potentially hazardous conditions were identified on or nearby to Site 6 (Panda Express/HoneyBaked Ham).

Neighborhoods

Site 6 (Panda Express/HoneyBaked Ham) is located within the University City North neighborhood. The area includes a mix of commercial and higher-density residential uses as well as some undeveloped land. Large commercial development, including Site 6 (Panda Express/HoneyBaked Ham), can be found near the intersection of W.T. Harris Boulevard and North Tryon Street/US-29. Development of a park-and-ride facility on Site 6 (Panda Express/HoneyBaked Ham) is not likely to affect travel patterns and accessibility and would not cause displacements and/or relocations of residents. No community facilities are located on the site.

Noise

Adjacent properties to Site 6 (Panda Express/HoneyBaked Ham) are commercial in nature. Noise-sensitive receptors were not identified. Therefore, it is not expected that development and use of Site 6 (Panda Express/HoneyBaked Ham) would result in noise impacts.

Environmental Justice

Site 6 (Panda Express/HoneyBaked Ham) is located within the University City North neighborhood. Concentrations of low-income and/or minority populations are not located within the University City North neighborhood. Therefore, development of Site 6 (Panda Express/HoneyBaked Ham) would not cause a disproportionate impact to low-income and/or minority populations.

APPENDIX F
VEHICLE REQUIREMENTS

LYNX Blue Line Extension (Northeast Corridor)
LRV Fleet Calculations

	I-485 Terminus (2035)			UNCC (2016)	UNCC Terminus (2035)		
	Build	Build	Build	Build	Build	Build	Build
	South-Northeast	South-Northeast	South-Northeast	South-Northeast	South-Northeast	South-Northeast	South-Northeast
Peak Headway	6 min	7.5 min	10 min	7.5 min	6 min	7.5 min	10 min
Route Length	19.94 mi	19.94 mi	19.94 mi	19.94 mi	18.51 mi	18.51 mi	18.51 mi
NB Run Time	51 min	51 min	51 min	47 min	47 min	47 min	47 min
SB Run Time	52 min	52 min	52 min	48 min	48 min	48 min	48 min
Layover Time	17 min	17 min	17 min	17.5 min	13 min	17.5 min	15 min
RT Cycle Time	120 min	120 min	120 min	112.5 min	108 min	112.5 min	110 min
Pk Trains Required	20	16	12	15	18	15	11
Peak Period Load	9,981	9,813	9,316	7,763	9,588	9,283	8,783
Peak Hour Load	2,395	2,355	2,236	1,863	2,301	2,228	2,108
Reqr. Cars / Train (seated)	4.2	5.2	6.5	4.1	4.0	4.9	6.2
Reqr. Cars / Train (total capacity)	1.9	2.3	3.0	1.8	1.8	2.2	2.8
Cars / Train Adjusted	2	3	3	2	2	3	3
Person Capacity	2,520	3,024	2,268	2,016	2,520	3,024	2,268
Capacity Utilization	95%	78%	99%	92%	91%	74%	93%
Avg. Load Factor over peak hour	1.76	1.44	1.83	1.71	1.69	1.37	1.72
Peak In-Service Cars	40	48	36	30	36	45	33
Standby Train Cars	0	0	0	0	0	0	0
Spares (15%)	6.00	7.20	5.40	4.50	5.40	6.75	4.95
Spares (Rounded)	6	8	6	5	6	7	5
Total LRV Fleet	46	56	42	35	42	52	38

Notes:

Minimum total layover time for Build-UNCC Terminus is 13 minutes (8 min at I-485 and 5 minutes at UNCC)

Peak Vehicle Capacity is 150 passengers per vehicle (seated and standing).

Source: Based on Metrolina Regional Travel Demand Model results, I-485 Terminus (7-13-10 & 11-9-10); UNCC Terminus 2035 (11-9-10) and 2016 (1-24-11)