Metropolitan Transit Commission
April 22, 2009
Overview

• Land Use Framework
• Background
• Purple Line Update
• Blue Line Extension Update
• Next Steps
• MTC Actions
Development Framework
Centers, Corridors and Wedges

- A concept for organizing land uses designed to help our community realize its development vision
- Adopted by Charlotte City Council and BOCC in 1994
- Builds on momentum of historical development pattern
- Guides growth to areas that can support new development and away from areas that cannot
- Integrates land use and transportation needs and served as basis for 2025 Integrated Transit/Land Use Plan

Source: Charlotte-Mecklenburg Planning Department
What are the Benefits of an Integrated Transit / Land Use Strategy?

**Land Use Benefits:** Redirects growth where transportation can support it, encourages higher density in appropriate locations, encourages mixed/multi-use, reduces vehicle miles traveled.

**Transportation Benefits:** Integral in supporting a multi-modal strategy (roads, sidewalks, bike lanes and transit), more travel choices, reduce Single Occupancy Vehicle (SOV) trips.

**Economic Development Benefits:** TOD responds to emerging market of location flexible households, cost savings on autos, gas and insurance, encourages reuse, redevelopment and infill development, and TOD increases property values.

**Environmental Benefits:** Encourages more compact development, TOD uses less acreage, helps preserve open space and tree canopy.

Source: Charlotte-Mecklenburg Planning Department
• The status of 45 projects within ½ mile of Transit Stations is being tracked. Total investment to date is over $247 million and includes 100 affordable housing units.

• More than 1,500 residential units are built or under construction including:

  - Ashton South End: 350 Units
  - 2225 Hawkins: 331 Units
  - The Millennium: 269 Units
  - The Circle: 361 Units
  - South Oak Crossing: 200 Units

Source: Charlotte-Mecklenburg Planning Department
Station Area Development Opportunities

Proposed Eastfield Station

Proposed Griffiths Lake TOD

Proposed 36th Street Station Area

Source: Charlotte-Mecklenburg Planning Department
2030 System Plan
MTC Actions

- System Plan approved November 2006
- Advance Engineering
  - North Corridor (Purple)
  - Northeast Corridor (BLE)
- Consultant Teams hired late 2007/early 2008
Purple Line & BLE History

- Planning & Engineering
  - 2000 - 2002: Major Investment Study
  - 2004 - 2006: Conceptual Engineering
  - 2008 - 2009
    - Purple Line Preliminary and Final Design
    - BLE Preliminary Engineering
FTA Project Development Process

Major Investment Study

System Planning

Conceptual Engineering

Final Design

Full Funding Grant Agreement

Construction

Preliminary Engineering

Operation

City of Charlotte
Cost Estimates

General
• Cost estimate is a “snapshot” at a given milestone in a project
• Typically prepared at conceptual, 15%, 30%, **65%**, 90% and construction documents
• Project scope and construction cost trends will modify each “snapshot”
• Higher contingencies used during earlier design stages

Inflation
• Actual project schedule determines amount of inflation cost added to project
• FTA supports use of 3.25% annual inflation
• City of Charlotte’s current practice is to use 5% annual inflation on capital projects
Lesson Learned
Independent Cost Review

• Objective evaluation of the cost estimate documents
• Review included:
  – Review background data and assumptions
  – Evaluate the estimate methodology
  – Identify and document any areas of concern
• Review concluded:
  – All major project cost categories have been examined and are consistent with what is typically seen on similar transit projects
  – Comparison with other commuter rail (Purple Line) and LRT (Blue Line Extension) estimates fall within normal range of costs typically seen and indicates estimate’s general reasonableness
Lesson Learned
Managing Project Risk

- Risk Log identifies potential risks to budget and schedule
- FTA Risk Review of BLE scheduled in May
- Early coordination with other partners
  - Railroads
  - NCDOT
  - Utilities
  - UNC Charlotte
- City-wide design reviews
Ridership Modeling

- Current ridership model acceptable to FTA only for sizing of parking lots and operations planning
- Anticipate FTA-approved model this fall to determine user benefits
- Blue Line Experience
  - 1st year estimate: 9,100 daily trips
  - 1st year actual: 14,000 daily trips
  - 2025 estimate: 18,100 daily trips

<table>
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<tr>
<th>Transit Line</th>
<th>2006 Estimate for 2030*</th>
<th>2009 Estimate for 2030**</th>
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<td>BLE</td>
<td>10,500</td>
<td>22,500</td>
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<tr>
<td>Blue Line</td>
<td>10,200</td>
<td>27,500</td>
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<tr>
<td>Purple Line</td>
<td>3,600 – 4600</td>
<td>4,900 – 6300</td>
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* Revised model based on FTA guidance
** FTA approved interim model to reflect actual South Corridor experience
Purple Line Project Overview

• Route
  – 25 miles from Charlotte Gateway Station to Mount Mourne
  – Uses existing Norfolk Southern Railroad right-of-way
  – 10 stations
  – Serves historic downtown of Charlotte, Huntersville, Cornelius & Davidson
  – Mount Mourne terminus
Purple Line Two-Phase Implementation Plan (2030 Plan)

• Phase 1 (2012)
  – One-way service
  – No signals or sidings
  – At-grade crossing of CSX
  – $261 million (at completion)

• Phase 2 (2017)
  – Two-way signalized service
  – 2 passing sidings
  – Grade separated with CSX
  – $117 million (at completion)
Purple Line Current Proposal: Single-Phase Project

- Most elements of Phase 1 & 2 combined into single project
  - Serves reverse commute
  - Provides capacity for higher ridership
  - Enhances economic development
Purple Line Project Cost Estimate

- Final project cost depends on implementation date and underlying inflation

<table>
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<tr>
<th>Annual Escalation</th>
<th>2009 Base Cost</th>
<th>Completion by December 2011</th>
<th>Completed December 2015</th>
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<tr>
<td>3.25 %</td>
<td>$ 358 million</td>
<td>$ 368 million</td>
<td>$ 412 million</td>
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<tr>
<td>5 %</td>
<td>$ 358 million</td>
<td>$ 375 million</td>
<td>$ 455 million</td>
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Purple Line Basis for Updated Cost Estimate

- Track Upgrades
  - 90% plans
  - NS & utility cost estimates

- Crossing Upgrades
  - 90% plans
  - NS & CDOT cost estimates

- Stations
  - 30% plans
  - Unit costs and allowances

- Property
  - Current comparables (early 2009)

- Train Equipment
  - Option prices for coaches
  - Recent locomotive purchases by other agencies
Purple Line Project Upgrades
Not Included In 2006 Cost

• Positive Train Control
  – Mandated by Congress (2008)

• Site Improvements at Vehicle Inspection Facility
  – Significant site and exterior enhancements
  – Additional storage tracks
  – Additional property: 1 acre ($3.6 million)

• Lessons Learned From South Corridor Project
  – Increased security & communications costs
  – Increased insurance costs

• Mount Mourne Parking Deck, Second Station Platform

• Additional Infrastructure Improvements
  – Phase 2 sidings and signalization
  – 3rd passing siding for reliability
  – Improvements to reduce humps at Oneida Road & Mayes Road
  – Second platform at Eastfield Station
Purple Line Action Items

• Locally Preferred Alternative
  – Northern terminus: Mount Mourne
  – Stations along route: 10
  – Realignment at Hambright to accommodate TOD
  – Requested: Two-Way Service
  – Maintenance Facility - CGS site is preferred site

• Federal Funding
  – CATS should seek all available federal funding for the project
    ➢ Discretionary Grants (ARRA) – summer 2009
    ➢ Explore FTA New Starts opportunities
LYNX Blue Line Extension (BLE)

- 11 mile extension of the LYNX Blue Line
- 13 stations
  - 6 Walk-up stations
  - 7 Park & rides

- Runs from Center City Charlotte through North Davidson (NoDa) and the University area to south of I-485
  - Uptown to Old Concord Rd: BLE shares right-of-way with NCRR
  - Old Concord Rd to Charlotte Research Institute (near the University of North Carolina Charlotte): BLE is in the median of N. Tryon St
  - Charlotte Research Institute to I-485: BLE follows a new alignment, primarily on the UNC Charlotte campus, with two stations serving the University
Factors Influencing Project Scope at 15% Design

- Blue Line success is Lesson Learned
- Daily ridership significantly exceeded opening year expectations
- Desire to provide greater capacity
  - Longer platforms (300’)
  - Additional vehicles
  - Increased parking
  - Additional power substations
  - More grade separations
  - Expanded maintenance facility needs

Sugar Creek Road
LYNX BLE Complexities

- Railroads
  - North Carolina Railroad
  - NS Intermodal Yard
  - AMTRAK/High Speed Rail
  - CRISP

- Roads
  - North Tryon Street
  - Grade separations
  - Access needs

- UNC Charlotte
  - Charlotte Research Institute
  - Wetlands

NS Intermodal Yard
Tryon/Harris grade separation
UNC Charlotte entrance grade separation
• Base Project Cost estimate (YOE) $928 million
  – Can build good project with reasonable assumptions
  – Provides 2-car operations like current Blue Line
  – Assumes 3.25% annual escalation consistent with FTA
  – Provides grade separated access into and out of North Tryon Street
  – Bridge over W.T. Harris Boulevard
  – Assumes right-of-way impacts minimized
PROPOSED ENHANCEMENTS

- North Tryon roadway/pedestrian amenities $62 million
- Provide platforms/systems for 3-car trains $15 million
- Purchase additional 6 vehicles $32 million
- Use of 5% rather than 3.25% escalation $81 million

- Enhanced project will be competitive in FTA cost-effectiveness criteria
- Good opportunity to leverage additional federal and state funds for enhanced project
APTA Peer Panel Recommendations

SCOPE
• Build BLE to accommodate 3-car trains and pursue 3-car upgrades to Blue Line as part of FFGA
• Consider NS Intermodal Yard for maintenance expansion and additional vehicle storage
• Investigate at-grade crossing of Old Concord and N Tryon St
• Investigate at-grade crossing of the AC&W railroad
• Consolidate parking at several locations
• Consider relocating Tom Hunter Station to Arrowhead Drive

SCHEDULE
• Push FTA on review times
• Provide unallocated schedule “float”
Outstanding Issues

Charlotte Railroad Improvement and Safety Project (CRISP)

• NCDOT-Rail proposal for intercity passenger rail upgrade
• Railroad coordination in 2008 led to current west side BLE alternative through NoDa
• NCDOT and Norfolk Southern now propose to route BLE on east side of NCRR through NoDa

Hospital Access

• Grade separation over Harris Blvd affects intersection of N Tryon and JM Keynes/Hospital entrance
• Keeping intersection open has safety concerns
• JM Keynes is current N Tryon Emergency entrance
BLE 15% Design Schedule

SCHEDULE ADJUSTMENTS at 15%
• Resolution of CRISP and railroad issues adds 7 months

POSSIBLE SCHEDULE ADJUSTMENTS at 30%
• Review FTA approval durations and push for faster resolution (APTA Peer Panel)
• Review unallocated schedule float (APTA Peer Panel)

Aggressively manage schedule but not at expense of the project
Alignment and Station Locations

- Parkwood Station moved to the intersection of Parkwood and Brevard
- 36th Street Station is grade separated
- McCullough Station replaces City Blvd and Ken Hoffman Stations
- New alignment for UNC Charlotte and location for Mallard Creek Church Road Station
- NCRR alignment retained for LPA
MTC Actions

Purple Line
• Accept as information updated cost estimate
• Adopt LPA for Purple Line
• Direct staff to prepare application for Federal Discretionary Stimulus Funds

Blue Line Extension
• Accept as information updated 15% cost estimate
• Adopt LPA for Blue Line Extension
• Advance PE to 30% design level
FY11 Decision Point

• Purple Line
  – Engineering is 90% complete for key elements
  – No Funding in 5-Year CIP
  – Half percent Sales Tax Funded $9.4 million in work to date

• Blue Line Extension
  – Engineering will be 65% complete in mid/late 2010
  – 75% of cost paid by Federal/State Grant Funds
  – Federal funding authorized to date $24.75 million
  – Half percent Sales Tax Share $12.7 million through FY10