Corridor Management Committee

July 16, 2015
Today’s Topics

• Outreach Update
• TI #1 and 2: Target Field Station Connection to I-94: Recommendation
• 85th Station Configuration
• 93rd Station Configuration
• DEIS Scope and Cost Estimate Update
Outreach Update
June 11 Robbinsdale Open House
Community Open Houses

• Crystal: Monday, July 27
• Robbinsdale: Tuesday, July 28
• Minneapolis: Wednesday, July 29
  ▪ Includes Minneapolis Small Area Planning
• Brooklyn Park: Tuesday, August 11
  ▪ Includes West Broadway/County Rd 103 road construction from Candlewood Drive to 93rd Avenue
• Golden Valley: Wednesday, August 12
Technical Issues Update
Technical Issues

Legend
- METRO Blue Line Extension Stations
- METRO Blue Line Extension Alignment
- Technical Issues
- Relevant City Boundaries

Segments
- BP 1: Brooklyn Park 1
- BP 2: Brooklyn Park 2
- C: Crystal
- R: Robbinsdale
- GV: Golden Valley
- M: Minneapolis

Technical Issues
Segmented Issues
1. Target Field Station Area
2. Olson Memorial Highway
3. Olson Memorial Highway Crossing
4. Plymouth Avenue/Golden Valley Road Station
5. Golden Valley Alignment
6. Robbinsdale Station
7. Bass Lake Road Station
8. 63rd Avenue Station
9. Brooklyn Boulevard Station
10. CSAH 103 Reconstruction Project
11. 93rd Avenue/Oak Grove Parkway Station
12. Operations and Maintenance Facility

System-Wide Issues
13. Freight Rail
14. Transmission Line Coordination
15. Traction Power Substation Locations
16. Parks and Trails

METRO Blue Line LRT Extension Technical Issues
Rev. 4
May 2015
Technical Issue #1 and #2: Target Field Station Connection to I-94 Interchange Recommendation
Technical Issue #1: Target Field Station Connection Background

• Plan view from Target Field Station through I-94 Interchange
Technical Issue #1: Target Field Station Connection

• Key Issues:
  ▪ Connection requires coordination with SWLRT
  ▪ 7th Street intersection has a unique geometry
  ▪ Intersection is challenging for safe pedestrian and bike access
Technical Issue #1: Target Field Station Connection - Existing Configuration
Technical Issue #1: Target Field Station SWLRT Connection
Technical Issue #1: Target Field Station
SWLRT and BLRT Connection
Technical Issue #1: Target Field Station Connection viewed through 7th St Intersection
Technical Issue #1: 7th St and Olson Memorial Highway Intersection

- Key movements are Olson Memorial Highway EB right-turn in the AM and 7th Street NB left-turn in the PM
- Existing signal operations have 2-stage pedestrian crossings
- With recommended lane geometry, LRT will operate on its own phase
- EB right-turn will be allowed to be green with LRT phase
- All other phases will be red
- Pedestrian crossings are proposed to be 1-stage
- Intersection is expected to have acceptable operations in 2040 with recommended geometric changes and the addition of LRT
Technical Issue #1: 7th St and Olson Memorial Highway Intersection
Technical Issue #1: 7th St and Olson Memorial Highway Intersection

Recommendation

- 7th Street design to include:
  - 7th Street intersection design as proposed in presentation
  - BLRT crossing east of 7th Street to center median
  - Center running LRT on TH55/Olson Memorial Highway
Technical Issue #2: I-94 Interchange

- Key Issues:
  - LRT center running on existing bridge
  - Bridge requires structural reinforcement under LRT guideway
  - Bridge left intact outside of guideway
  - New signals systems installed at intersections
Technical Issue #2: I-94 Interchange
Technical Issue #2: I-94 Interchange

• Cross section of existing bridge
Technical Issue #2: I-94 Interchange

- Cross section of proposed improvements (removal)
Technical Issue #2: I-94 Interchange

- Cross section of proposed improvements
Technical Issue #2: I-94 Interchange Recommendation

- Center running LRT on existing I-94 bridge
- Continue coordination with the MnDOT and City of Minneapolis on final design of interchange
85th Station Configuration
85th Station from DEIS
85th Station Configuration

• Issues to be resolved:
  ★ Platform configuration
  ★ Pedestrian access
  ★ Bus stop locations
  ★ Passenger drop off
85th Station Configuration

- Platform configuration
  - Changed from split side platform to center platform
- Pedestrian access from 85th Ave and from pedestrian crossing at southern end of station platform
- Bus stops on West Broadway and on 85th Ave
- Passenger drop off
  - Continue to analyze in conjunction with the City and Metro Transit
93rd Station Configuration
93rd Station Configuration

• Issues to be resolved:
  ▪ Track layout and platform location
    o Private development on DEIS park and ride location
      ➢ Track continuing on West Broadway
      ➢ Modified station platform location
  ▪ Pedestrian access
  ▪ Bus stop locations
  ▪ Passenger drop off without park and ride
93rd Station Configuration

- Track layout and platform location
  - Track remains on West Broadway
  - Center platform on south side of 93rd
- Pedestrian access from 93rd and from pedestrian crossing at southern end of station platform near 92nd Ave
- Bus stops on West Broadway and on 93rd Ave
- Passenger drop off
  - Continue to analyze in conjunction with the City and Metro Transit
93rd Station Configuration
Overview of DEIS Scope and Cost Estimate
Cost Uncertainty By Project Phase

- DEIS: 1% Design Complete, 1% Cost Uncertainty
- Municipal Consent: 15% Design Complete, 15% Cost Uncertainty
- Project Development: 30% Design Complete, 30% Cost Uncertainty
- Engineering: 60% Design Complete, 60% Cost Uncertainty
- Construction: 100% Design Complete, 100% Cost Uncertainty
## Project Delivery Process

<table>
<thead>
<tr>
<th>% Design</th>
<th>DEIS</th>
<th>Municipal Consent</th>
<th>Project Development</th>
<th>Engineering</th>
<th>Construction Bid Packages</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1%</td>
<td>15%</td>
<td>30%</td>
<td>60%</td>
<td>90-100%</td>
</tr>
</tbody>
</table>

### Level of Design Detail

**General station locations, route and cost allowances**

**Station footprints, general track location and grade, and OMF location**

**Stations, track, facilities and structure dimensions**

**Station types, track, facilities and structure detail**

**Electrical and communications systems**

**Color and texture of facilities**

**Construction methods**

### Survey Work

**Aerial mapping**

**Phase I: Desk review and field observation – Geotechnical Borings**

**Phase II: Technical field work – Preliminary Soils Analysis**

**Final soils analysis**

**Archaeological recovery, mitigation measures**
Cost Estimate vs. Budget

• Cost Estimate
  ▪ Preliminary cost of project
    o DEIS scope
    o Minimal engineering
    o Initial risk identification
  ▪ Cost estimate updated as design and risks further defined

• Project Budget
  ▪ Based on:
    o Revised scope after Municipal Consent
    o Known risks
    o Contingency held for unknowns
  ▪ Prepared for FTA New Starts application into Engineering Phase (anticipated June 2016)
Cost Estimates and Budget Timeline

**COST ESTIMATE**

- **DEIS**
  - Cost Estimate
  - 1% Engineering

- Updated Cost Estimate
  - 15% Engineering

- **Project Budget**
  - 30% Engineering

**BUDGET**

- **August 2014**
  - Enter Project Development
- **December 2015**
  - Begin Municipal Consent
- **August 2016**
  - Apply to Enter Engineering
## Capital Cost Overview: DEIS Assumptions

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>DEIS Cost Estimate (1% Eng.)</td>
<td>$1.002 B</td>
</tr>
<tr>
<td>Total Project Contingency</td>
<td>34%</td>
</tr>
<tr>
<td>Escalation Factor</td>
<td>3%</td>
</tr>
<tr>
<td>Base Year Estimate</td>
<td>2012</td>
</tr>
<tr>
<td>Forecast Year</td>
<td>2017</td>
</tr>
<tr>
<td>(mid-point of construction)</td>
<td></td>
</tr>
</tbody>
</table>
Contingency and Risk

- Contingency is budget set aside to account for project risks

<table>
<thead>
<tr>
<th>Requirements</th>
<th>Design</th>
<th>Market</th>
<th>Construction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Xcel Transmission Towers</td>
<td>Floodplains</td>
<td>Construction Bids</td>
<td>Unforeseen Conditions</td>
</tr>
<tr>
<td>BNSF Negotiations</td>
<td>Poor Soils</td>
<td>Right-of-Way</td>
<td>Contaminated Soils</td>
</tr>
<tr>
<td>Municipal Consent</td>
<td>Wetlands</td>
<td>Finance Costs</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Schedule Delay</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Light Rail Vehicles</td>
<td></td>
</tr>
</tbody>
</table>
Cost Contingency Targets

Contingency

BLRT Cost Contingency

0% 5% 10% 15% 20% 25% 30% 35% 40%

DEIS, Project Development, Entry into Engineering, Engineering, Construction Bids, Mid Construction, End Construction/Rev Ops

*Subject to FTA risk assessment
Guideway and Track: Included in DEIS Cost Estimate

- Ballasted track
- Guideway structures
  - TH 610 LRT bridge (Brooklyn Park)
  - TH 100 LRT bridge (Robbinsdale)
  - TH 100 BNSF bridge (Robbinsdale)
  - LRT bridge over existing CP Rail Line (Crystal)
  - I-94 bridge modifications
  - HERC LRT bridge (Minneapolis)
- Soil mitigation costs: at exploration level
Guideway and Track: Not Included in DEIS Cost Estimate

• Embedded track
• Grade separation at intersections
  ▪ 42nd Ave
  ▪ 73rd Ave
• Corridor protection between freight rail and light rail
Stations

- Included in DEIS cost estimate:
  - 10 stations
  - 1 elevator at Golden Valley Rd Station

- Not included in DEIS cost estimate:
  - Plymouth Ave Station that requires vertical circulation and bridge replacement
  - Pedestrian overpass at 63rd Ave Station
Support Facilities

• Included in DEIS cost estimate:
  - Operations and Maintenance Facility (OMF) for routine maintenance
  - Storage space for 26 vehicles

• Not included in DEIS cost estimate:
  - OMF site roadway realignment
  - Space and equipment for major repairs
Sitework and Special Conditions: Included in DEIS Cost Estimate

• Roadway bridge reconstruction
  ▪ TH 55

• Roadway bridge minor modifications
  ▪ 36th Ave
  ▪ Golden Valley Rd
  ▪ Theodore Wirth Pkwy
  ▪ Plymouth Ave

• Partial reconstruction of Olson Memorial Highway

• Reconstruction of all at-grade crossings
Sitework and Special Conditions: Included in DEIS Cost Estimate (cont.)

• Park-and-Ride 3 sites
  • North end structure: 800 stalls
  • 63rd Ave: 725 stalls
    ▪ 160 additional stalls with a 3rd level to existing facility
  • Robbinsdale: 500 structured stalls
• Xcel Energy Transmission relocation of 14 towers
Sitework and Special Conditions: Not Included in DEIS Cost Estimate

- Park and Ride
  - Golden Valley Rd Station
  - Bass Lake Rd Station
- Roadway reconstruction on West Broadway
  - Candlewood to 93rd Ave: funded by Hennepin County Capital Improvement Program
- Full reconstruction of Olson Memorial Highway
- Grade separated pedestrian crossings
Systems

• Included in DEIS Cost Estimate:
  ▪ 13 Traction Power Substations
  ▪ Grade crossing protection gates for LRT and/or freight
    o 10 at-grade crossing
    o 12 signalized intersections

• Not Included in DEIS Cost Estimate:
  ▪ Gated crossings along West Broadway
Right-of-Way

• Included in DEIS Cost Estimate:
  ▪ 17 full acquisitions
  ▪ 56 partial acquisitions
  ▪ Acquisition of 50-feet of BNSF right-of-way

• Not Included in DEIS Cost Estimate:
  ▪ Acquisition for additional Park and Ride sites
Vehicles

• Included in DEIS Cost Estimate:
  ▪ 26 vehicles
  ▪ 15% spare ratio
  ▪ Assumption of 2-car consist

• Actual Number of Vehicles Based on:
  ▪ Run time analysis
  ▪ Need for gap train
  ▪ Spare ratio
Next Steps

- **July 2015**: Review DEIS cost estimate and scope with advisory committees, Met Council
- **Nov - Dec 2015**: Refine project scope for Municipal Consent and update cost estimate
- **June - Aug 2016**: Prepare project budget for request to enter engineering
Next Meeting:

August 13, 2015
Brooklyn Center Community Center
6301 Shingle Creek Pkwy
Brooklyn Center, MN 55430
More Information

Website: BlueLineExt.org
Email: BlueLineExt@metrotransit.org
Twitter: @BlueLineExt