

SOUTHWEST

Green Line LRT Extension



City of Minneapolis Transportation and Public Works Committee

Chris Weyer
Jim Alexander

August 20, 2013

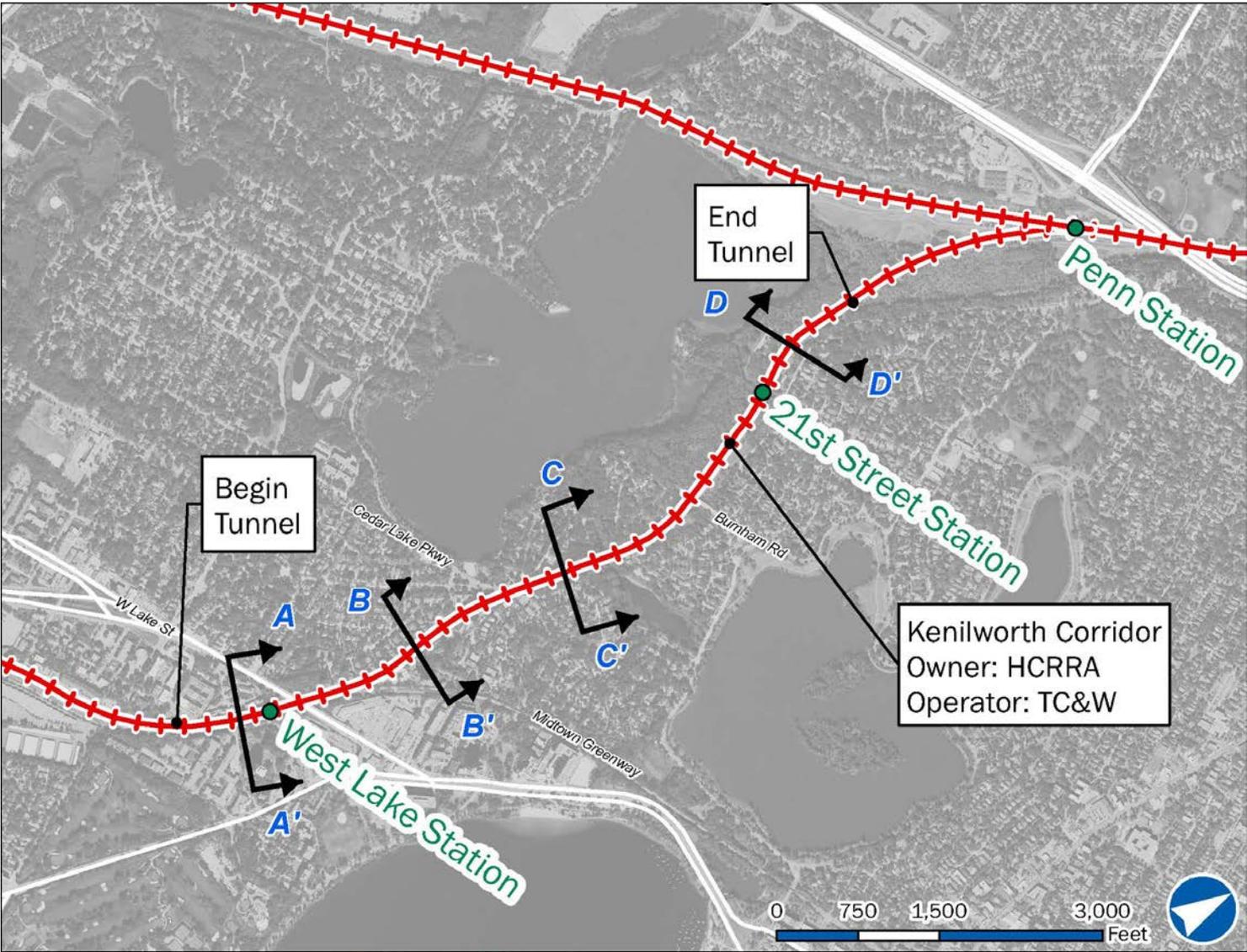


Today's Topics

- Technical Issue #21,
Freight Rail Alternatives
 - Kenilworth LRT Tunnel
Options
 - Deep Bore
 - Shallow
- Project Costs
- Next Steps



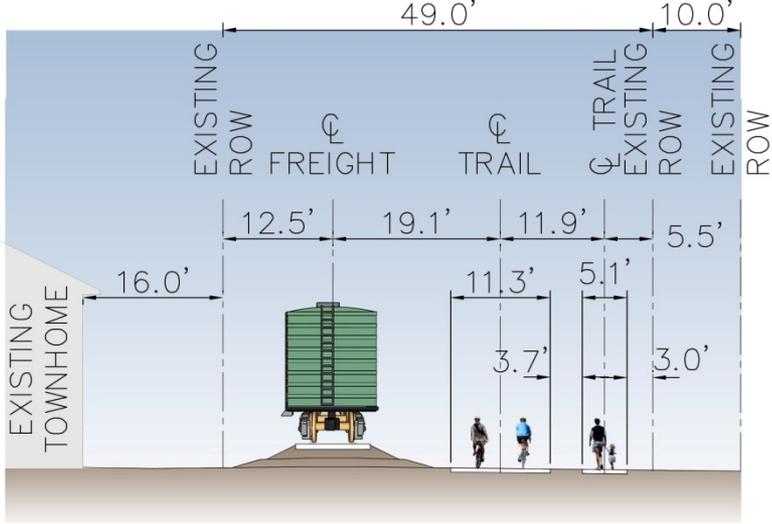
Kenilworth Deep Bore LRT Tunnel



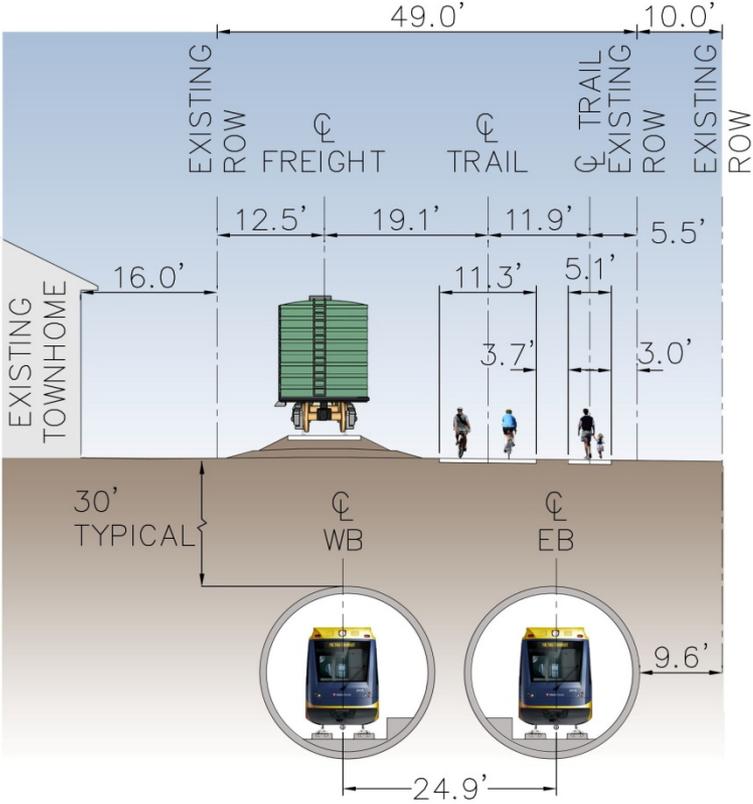
Kenilworth Deep Bore LRT Tunnel Dimensions

| Section | Length in Feet |
|---------------------------|----------------|
| South Transition Zone | 500 |
| South Cut & Cover Section | 1,000 |
| Twin Bore Tunnels | 5,900 |
| North Cut & Cover Section | 550 |
| North Transition Zone | 500 |

Kenilworth Deep Bore LRT Tunnel-Typical Section B-B'



EXISTING TYPICAL SECTION B-B'

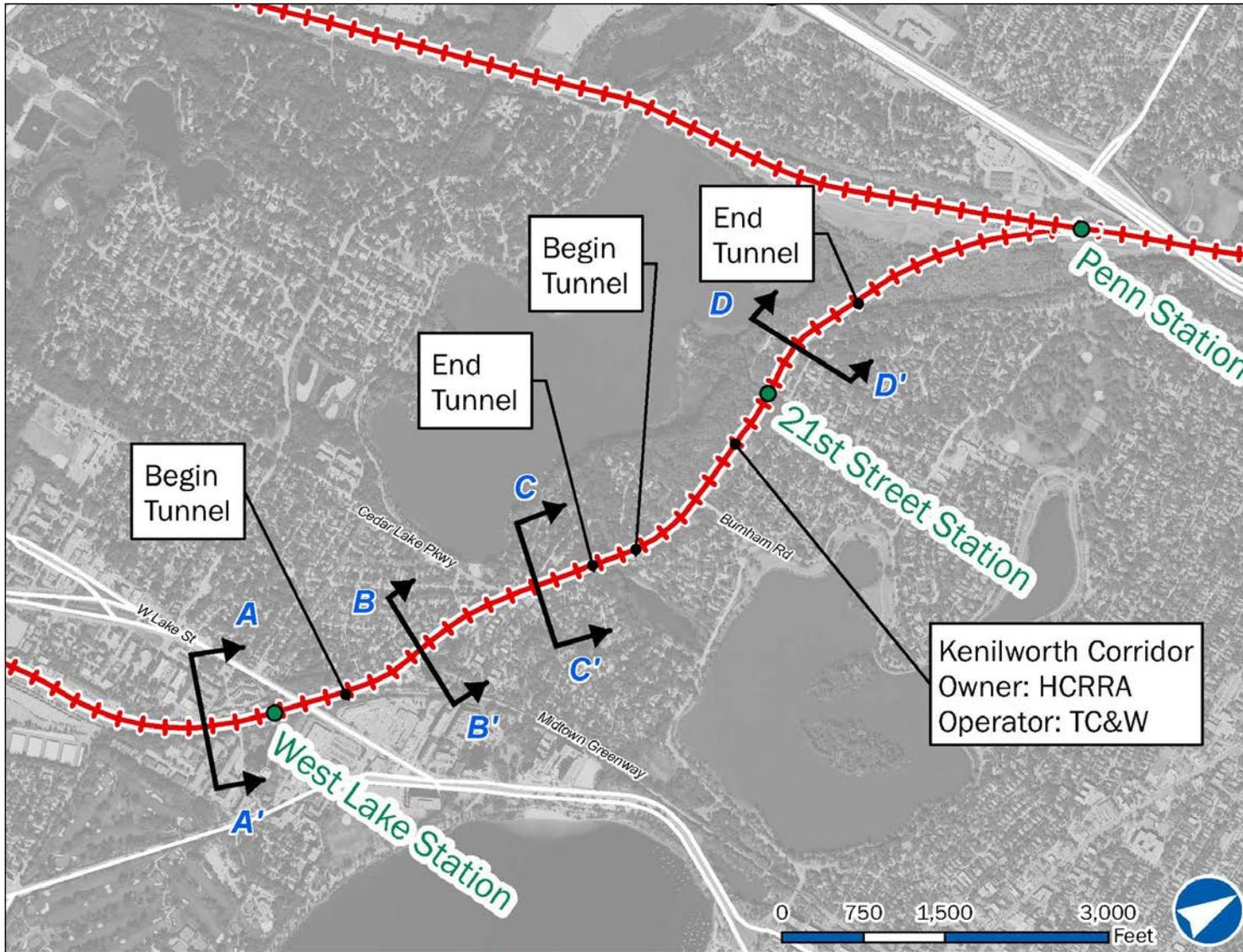


PROPOSED TYPICAL SECTION B-B'

Kenilworth Deep Bore LRT Tunnel

- Primary cost drivers:
 - Tunnel boring machine and access pits
 - Tunnel boring operations & ground settlement control
 - Subway tunnel station at West Lake
 - Vertical circulation at West Lake station
 - Ventilation systems
 - West Lake Street bridge reconstruction
 - Ground water management systems

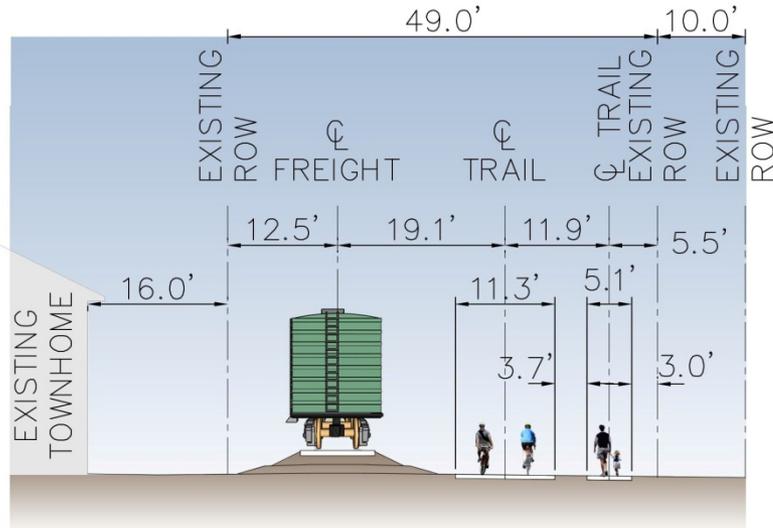
Kenilworth Shallow LRT Tunnel



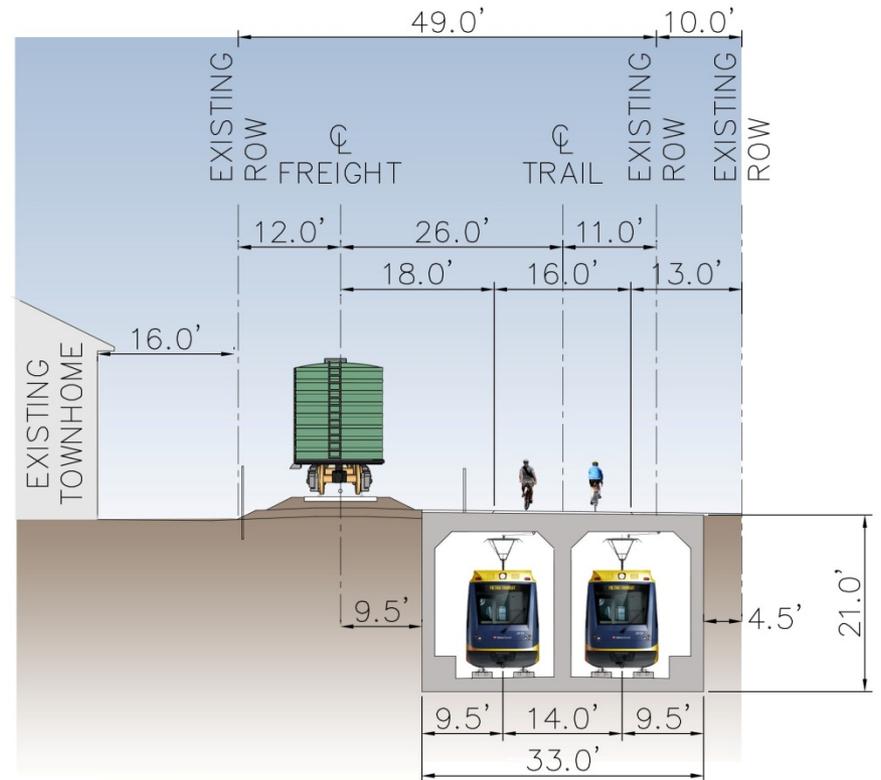
Kenilworth Shallow LRT Tunnel Dimensions

| Section | Length in Feet |
|--|----------------|
| South Transition Zone | 300 |
| South Shallow Tunnel | 2,200 |
| Daylight Section Over Channel (Includes North /South Transition Zone of 300' respectively) | 1,000 |
| North Shallow Tunnel | 2,500 |
| North Transition Zone | 300 |

Kenilworth Shallow LRT Tunnel - Typical Section B-B'



EXISTING TYPICAL SECTION B-B'



PROPOSED TYPICAL SECTION B-B'

Kenilworth Shallow LRT Tunnel

- Primary cost drivers:
 - Cut and cover excavation
 - Restricted construction area west of Channel Creek crossing
 - Ground stabilization at Burnham Road bridge piers

Engineering Coordination with City and MPRB Staff

- Water control
 - De-watering (temporary and permanent)
 - Permanent storm and sanitary sewer connections
 - Lake ecology
- Groundwater hydrogeology
- Construction means and methods
- Historical impacts

Engineering Coordination with City and MPRB Staff (continued)

- Trails
 - Temporary routes during construction
 - Permanent trail location and design
- Tree and vegetation impacts
- Connection to Midtown Corridor

Freight Rail Cost Estimate Summary

| Design Option | Freight Rail Cost Estimate (M) | LPA Δ M |
|---------------------------------|---------------------------------------|----------------------------------|
| Brunswick Central Freight Rail | \$190 - \$200 | \$190 - \$200 |
| Kenilworth Deep Bore LRT Tunnel | \$320 - \$330 | \$320 - \$330 |
| Kenilworth Shallow LRT Tunnel | \$150 - \$160 | \$150 - \$160 |

Total Project Cost Estimate Summary (LRT + Freight)

LRT Project Cost LPA = \$1,250 M

| Description | Revised Design Cost Estimate (M) | LPA Δ M |
|--|-------------------------------------|----------------------|
| Design adjustment cost estimate (LRT Subtotal) | \$1,350 - \$1,400 | \$100 - \$150 |
| Freight rail common costs | \$85 - \$90 | \$85 - \$90 |
| Freight rail cost estimate | \$150 - \$330 | \$150 - \$330 |
| SWLRT Total Project Estimated Costs | \$1,585 – \$1,820 | \$335 - \$570 |

Project Scope and Cost Rollout: Next Steps

- Present / seek input
 - Minneapolis Transportation and Public Works – August 20
 - CTIB Board – August 21
 - SWLRT Corridor Management Committee – August 28
- Present draft recommended scope and cost / seek input
 - SWLRT Corridor Management Committee – September 4
 - Metropolitan Council – September 11
- Request approval on scope and cost
 - Transportation Committee – September 23
 - Metropolitan Council – September 25

A Look Ahead: Design & Engineering

- Q3 2013: Submit Municipal Consent SWLRT Plans for City and County Review
- Q4 2013: Complete Municipal Consent Approval Process
- Q1 2014: Finalize 30% Design Plans and Specs

More Information

Online:

www.SWLRT.org

Email:

SWLRT@metrotransit.org

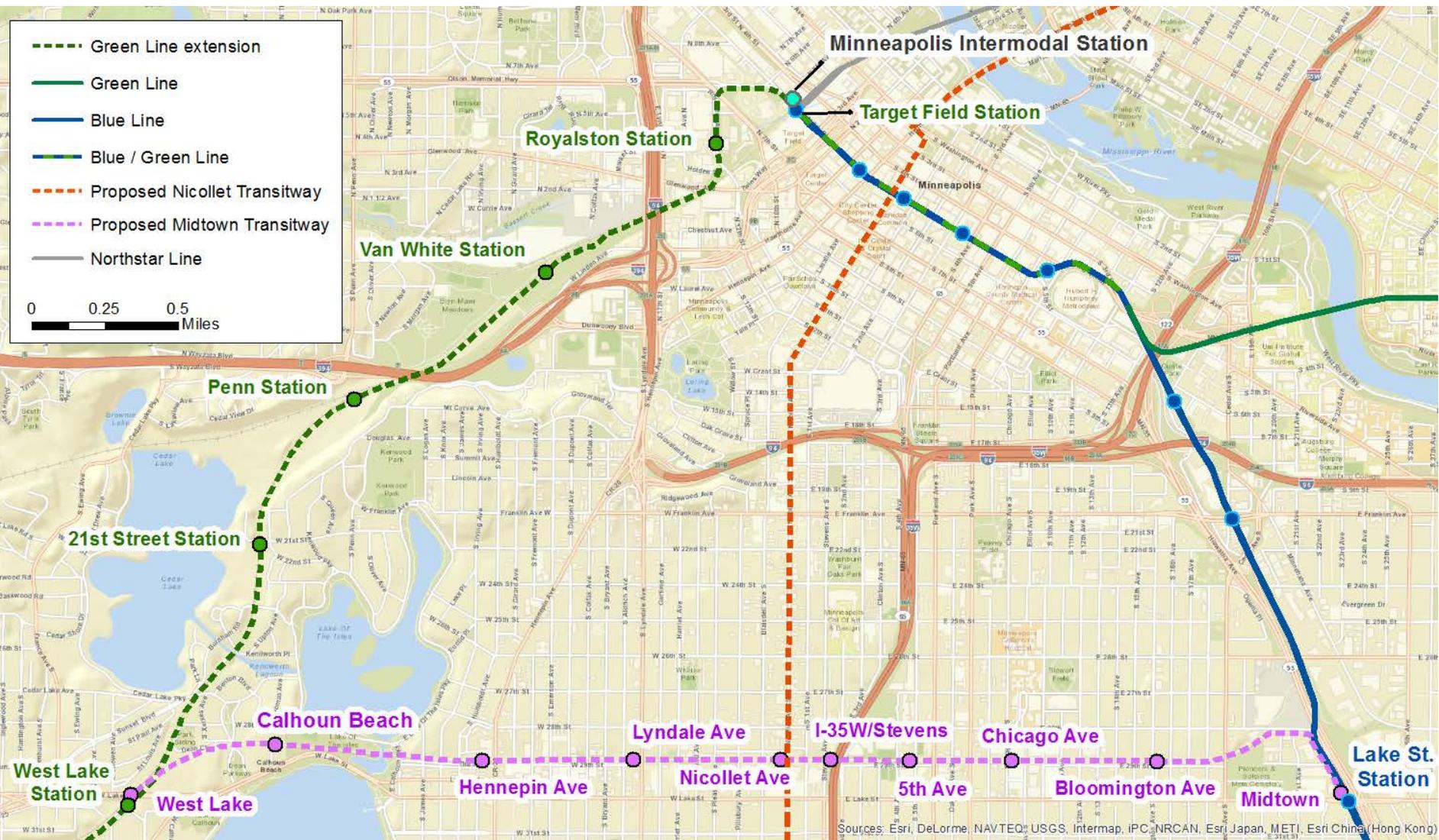
Twitter:

www.twitter.com/southwestlrt



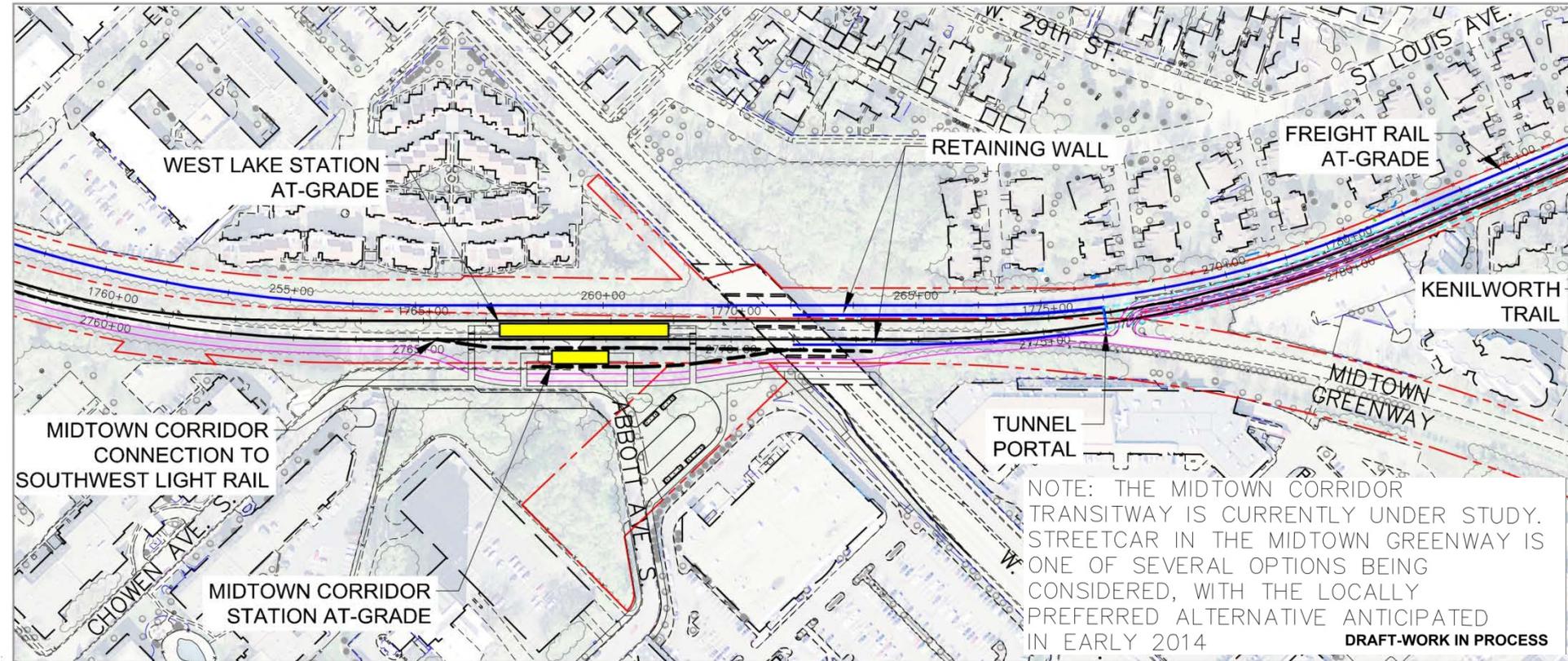
Additional Slides – Handout Referenced in Presentation

Proposed Connections to Midtown Corridor



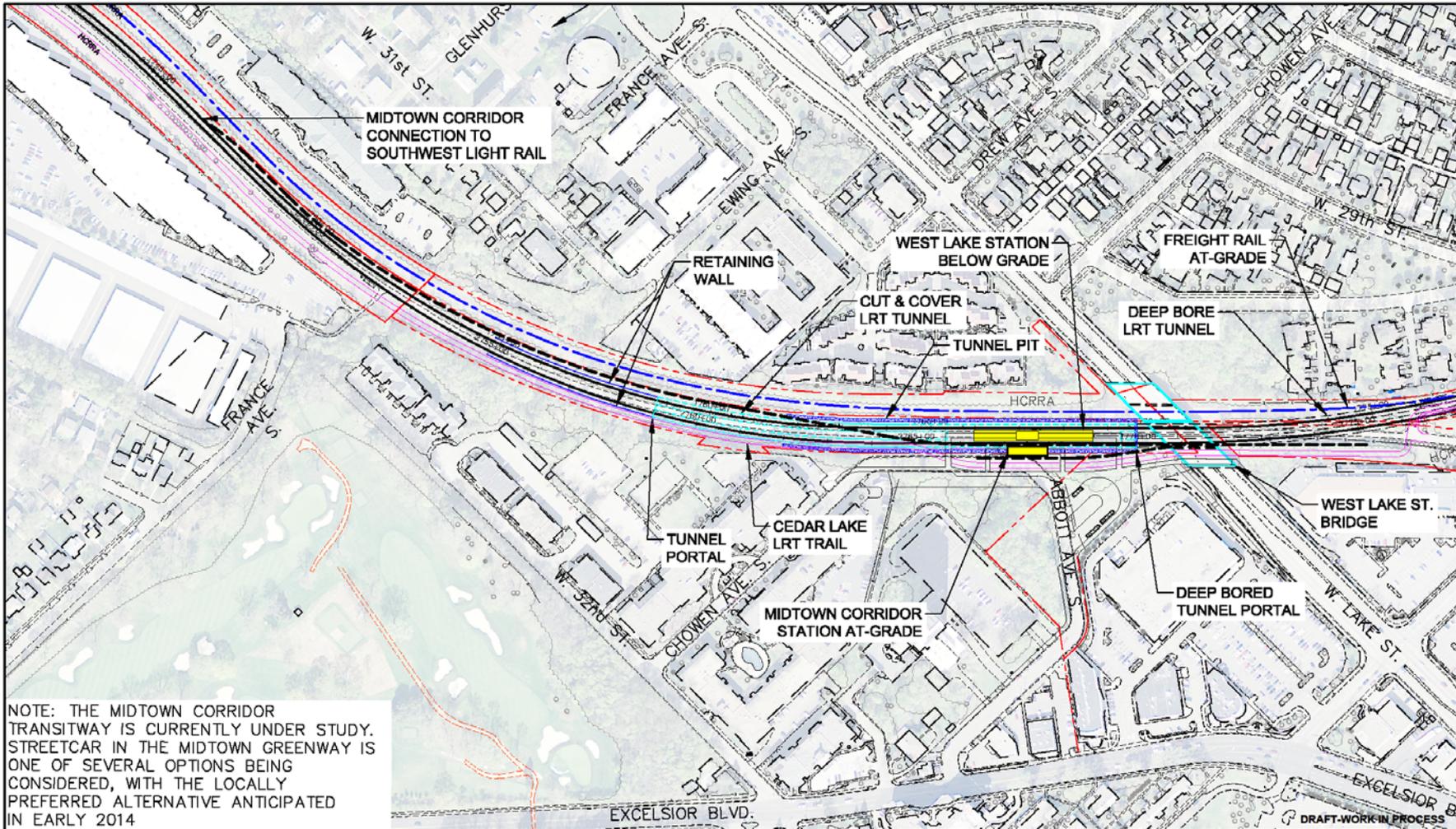
Sources: Esri, DeLorme, NAVTEQ, USGS, Intermap, IPC, NRCAN, Esri Japan, METI, Esri China (Hong Kong)

Proposed Connections to Midtown Corridor



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|--|--|---|--|--|--|
| | <p>SOUTHWEST LIGHT RAIL KENILWORTH SHALLOW LRT TUNNEL WITH MIDTOWN CORRIDOR</p> | <p>IRT # 17 Rev 0 8/12/2013</p> | | | |
|--|--|---|--|--|--|

Proposed Connections to Midtown Corridor



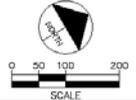
NOTE: THE MIDTOWN CORRIDOR TRANSITWAY IS CURRENTLY UNDER STUDY. STREETCAR IN THE MIDTOWN GREENWAY IS ONE OF SEVERAL OPTIONS BEING CONSIDERED, WITH THE LOCALLY PREFERRED ALTERNATIVE ANTICIPATED IN EARLY 2014

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SOUTHWEST LIGHT RAIL
KENILWORTH DEEP BORE LRT TUNNEL WITH MIDTOWN CORRIDOR

IRT # 17
Rev 0
8/12/2013



Kimley-Horn and Associates, Inc.