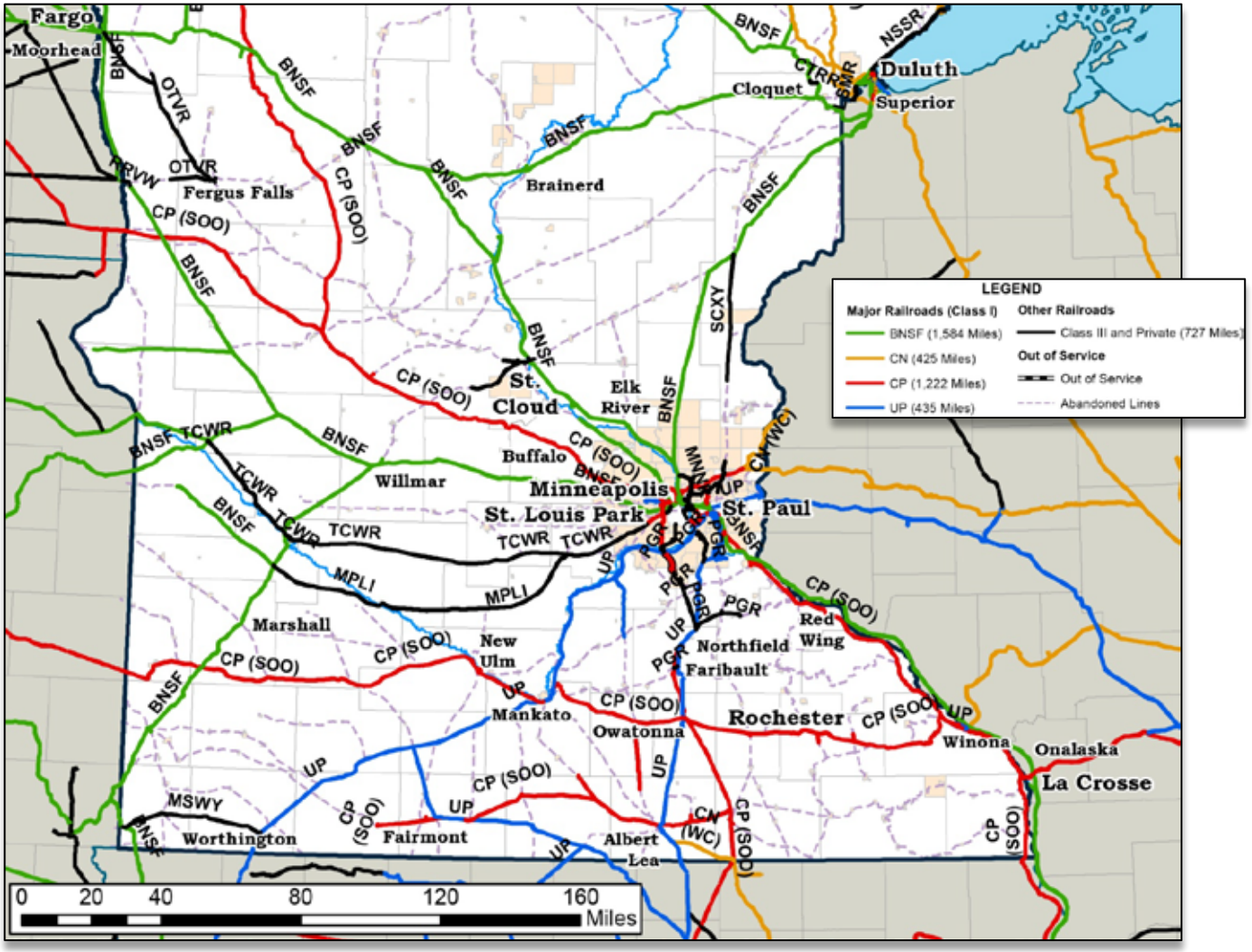
Project Update:
Freight Rail Relocation Analysis

Preliminary TC&W Freight Routing Analysis

TranSystems
Jim Terry, February 2014

Area Rail System



Background

- 30% of Minnesota's freight tonnage is moved by rail.
- 5% of the nation's freight rail traffic passes through the Twin Cities.
- Freight rail is economical, safe and efficient.
- Tracks are predominantly privately owned – the Kenilworth Corridor is one exception.

Background

Changes in freight rail:

- Heavier loads
- Longer trains
- Heavier locomotives
- Shuttle / unit trains
- Safety enhancements

Purpose of Study

- The local preferred alternative for the SWLRT is on the Kenilworth corridor.

- How to accommodate TC&W traffic?
  - Collocate with LRT and Trail?
  - Move to new route?

- All parties are in agreement that freight rail service to businesses on the TC&W network should be maintained.

Study Team

Rail Industry Experts: Considered routing alternatives from operations/commercial perspective

- Jim Terry: Principal with TranSystems with 40+ years rail industry experience, 32 with Union Pacific Railroad
- Karla Geter: Rail industry expert with 18 years industry experience, 11 with Kansas City Southern Railroad

Track Design Professionals:

- Brian Gaddie (Engineer): Developed TranSystems' concepts and reviewed others'; 12 years total experience, including design (UP, KCS & KC Terminal) and planning
- Adam Houk (Engineer): Performed QA/QC reviews and estimated construction costs; 11 years total experience

Support Staff: Technicians and others, as needed

Documents Reviewed for the Study

- St. Louis Park Railroad Study (March 1999)
- TCWR Freight Rail Realignment Study (Nov. 2009)
- Minnesota Comprehensive Statewide Freight and Passenger Rail Plan (Jan. 2010)
- Freight Rail Study – Evaluation of TCWR Routing Alternatives (Nov. 2010)
- SEH Technical Memos (2010 – 2011)
- United Transportation Union Letters (Oct. 2013)

Documents Reviewed for the Study

Additionally:

- Draft Environment Impact Statement (Oct. 2012)
- The East Metro Rail Capacity Study (Oct. 2012)
- Map and Internet Search
- Public meetings in Minneapolis and Saint Louis Park (Jan. 2014)

Screening Criteria – First Level

Viability, route must not:

- Impair freight rail operation.
- Impair commercial opportunities for the shippers or the railroad.
- Unduly delay the re-route or the light rail project.

Screening Criteria – Second Level

Route must:

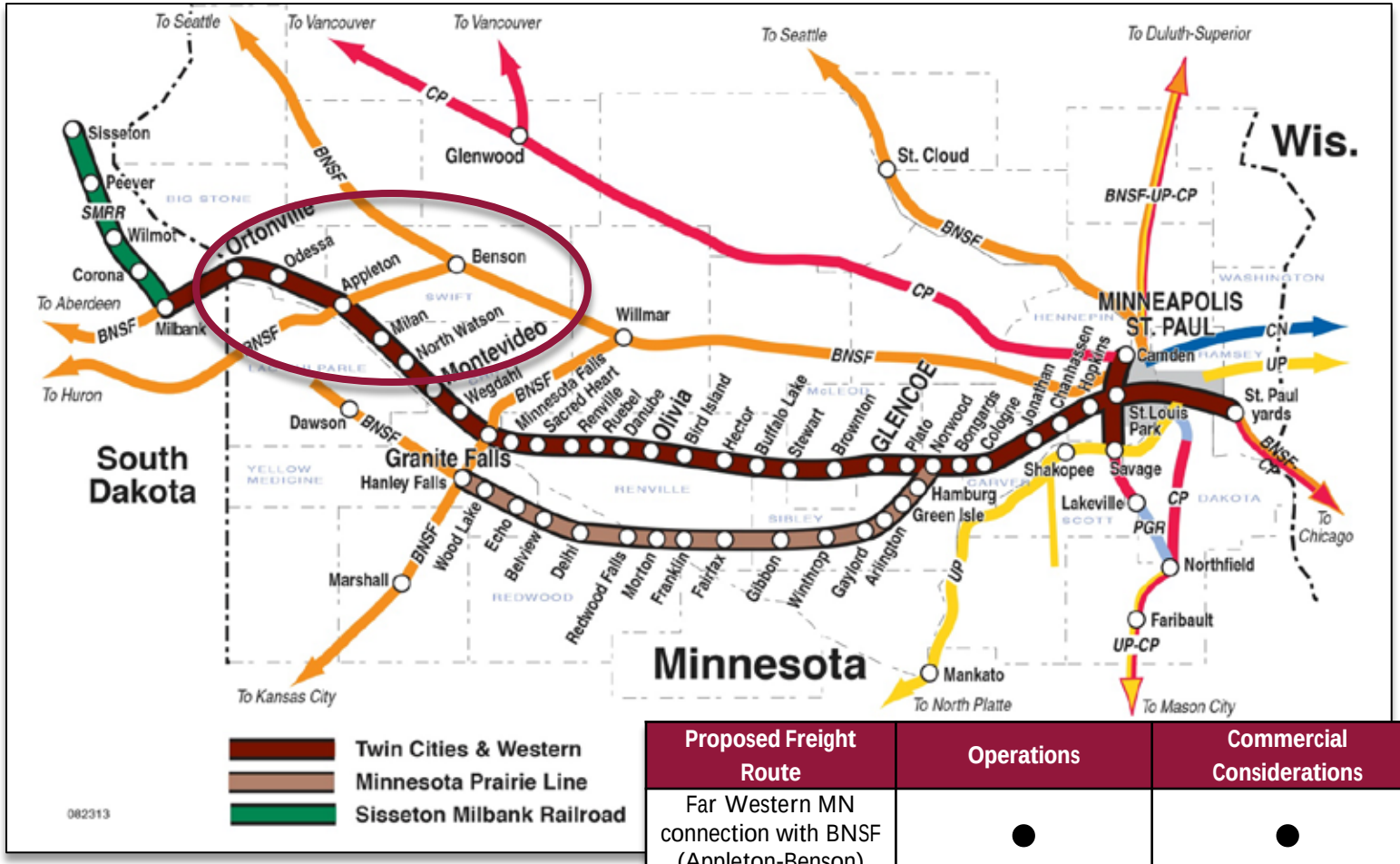
- Be sound and meet industry standards for safety.
- Not unduly impact the surrounding community.
- Have an acceptable cost.

Screening Criteria - Elements

Element	Metric or Measurement
Operational Considerations	• Maximum train speed • Total travel time • Operating costs (e.g., crew, maintenance, fuel, equipment costs) • Preservation of existing and future freight operations • Total freight capacity
Commercial Considerations	• Preservation of railroad interchanges • Access to existing freight customers
Implementation Considerations	• Extent of right of way acquisition required • Permitting issues
Technical Design and Engineering	• Maximum degree of horizontal curves • Maximum vertical grade • Maximum compensated grade • Constructability
Safety Considerations	• Number of at-grade road crossings • Number of potential train-vehicular conflicts at at-grade crossings
Community Impacts	• Property acquisition (Total Acres, Number, or Land Use) • Traffic Impacts (Road Closures, Out of Route Travel, Etc)
Costs	• Construction • Right-of-way

Description of Alternatives

Far Western Minnesota Connection (Appleton to Benson)

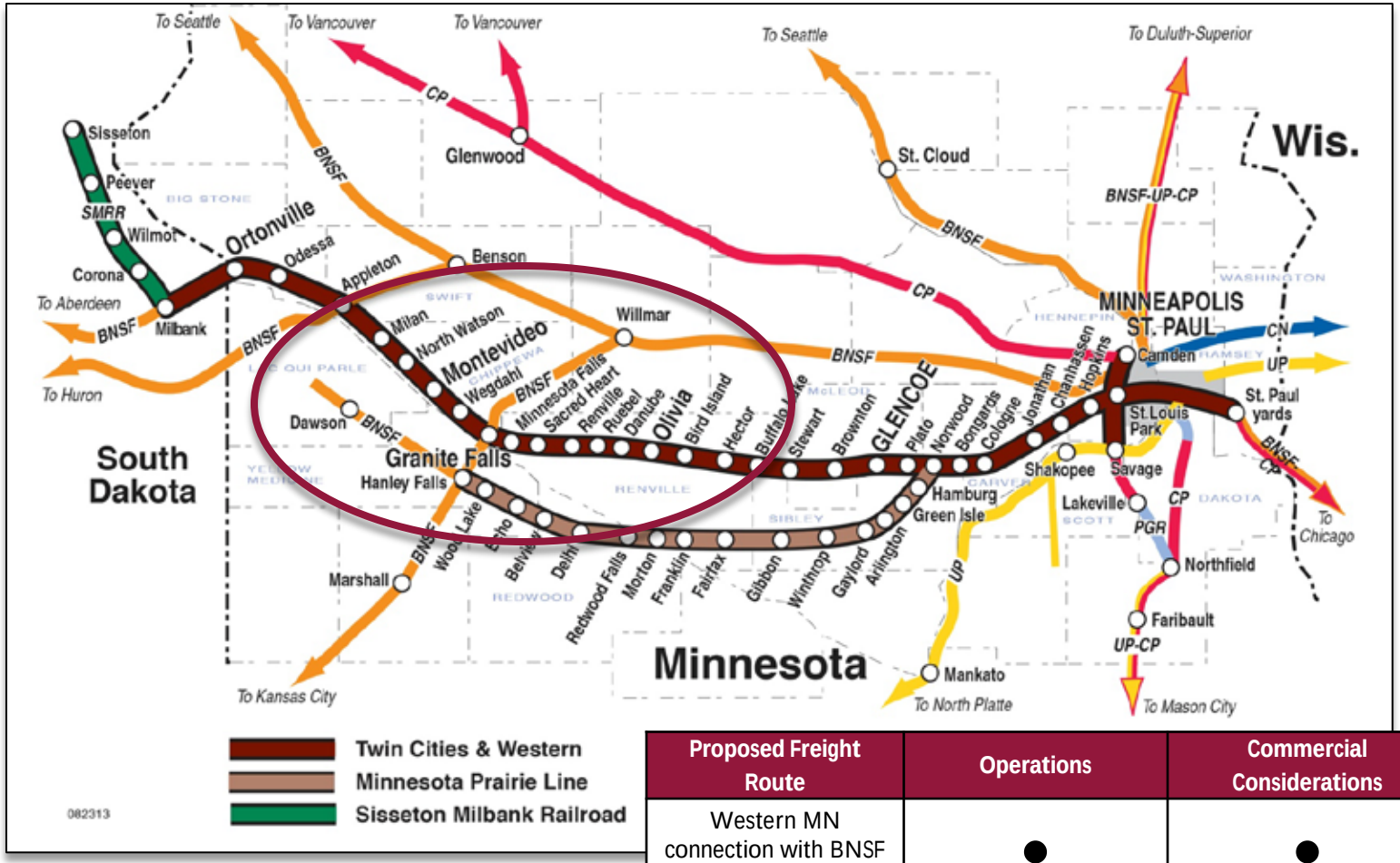


Proposed Freight Route	Operations	Commercial Considerations	Implementation Considerations
Far Western MN connection with BNSF (Appleton-Benson)	●	●	●

○ Strongly supports goal ◐ Supports goal ● Does not support goal

Description of Alternatives

Western Minnesota Connection (Granite Falls to Willmar)



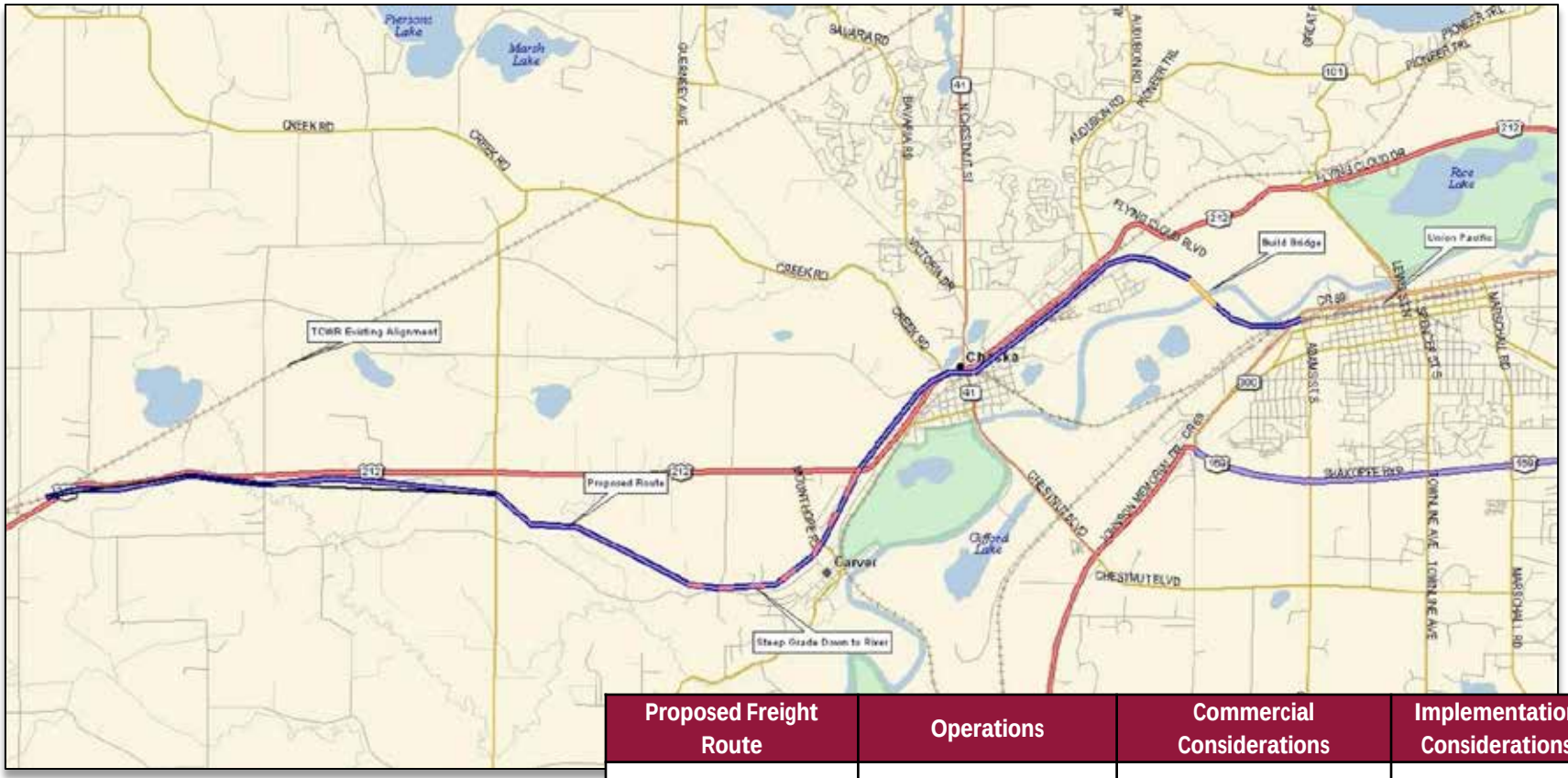
Proposed Freight Route	Operations	Commercial Considerations	Implementation Considerations
Western MN connection with BNSF (Granite Falls-Willmar)	●	●	●

○ Strongly supports goal ◐ Supports goal ● Does not support goal

Description of Alternatives

Chaska Cutoff

The Chaska Cutoff is an abandoned railroad route that runs parallel to Highway 212 from Bonson Junction (east of Cologne) to Chaska.



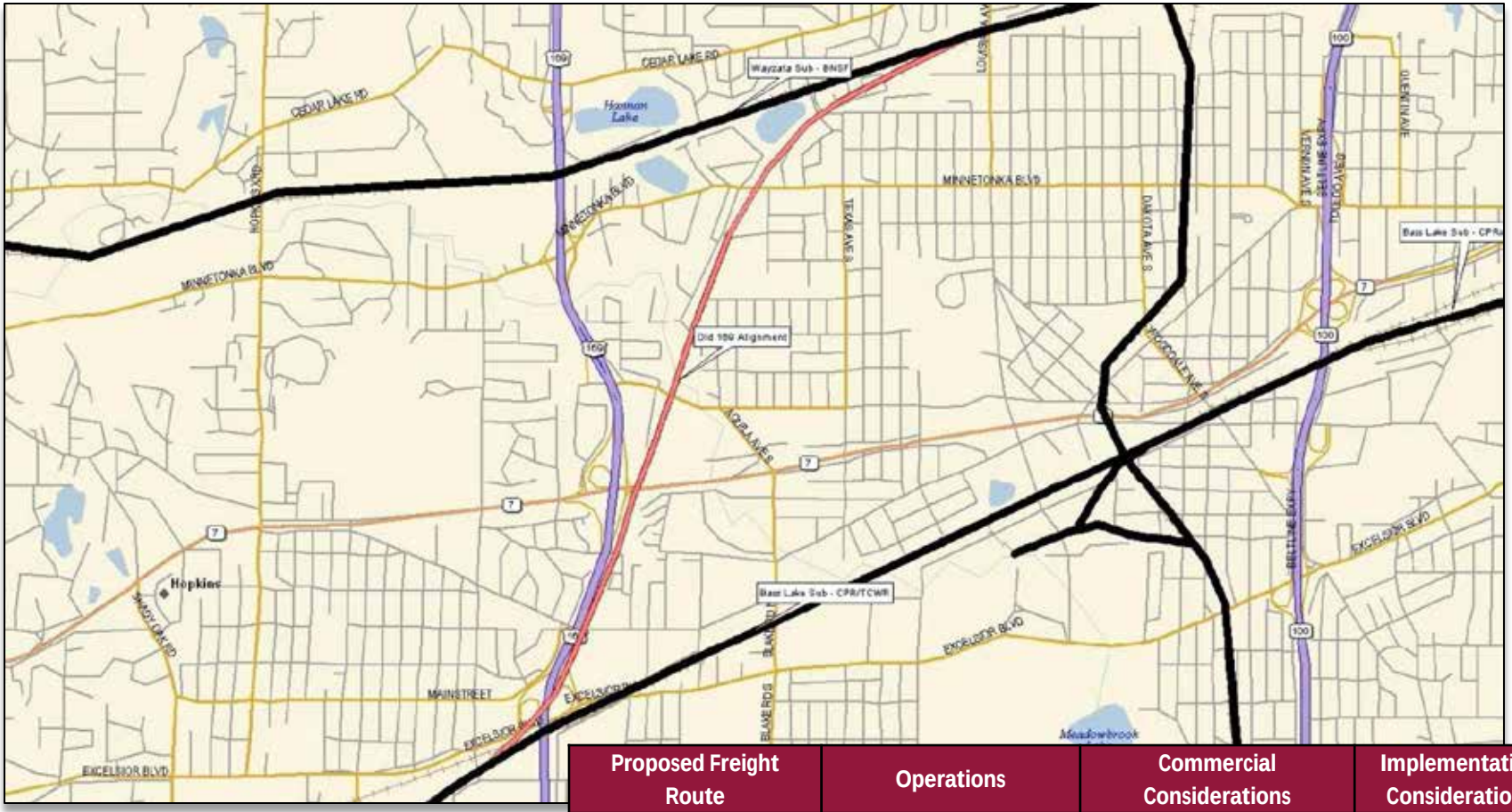
Proposed Freight Route	Operations	Commercial Considerations	Implementation Considerations
Chaska Cut-off	◐	◐	●

○ Strongly supports goal ◐ Supports goal ● Does not support goal

Description of Alternatives

Highway 169 Alignment to BNSF

This route is a former railroad abandoned right-of-way.



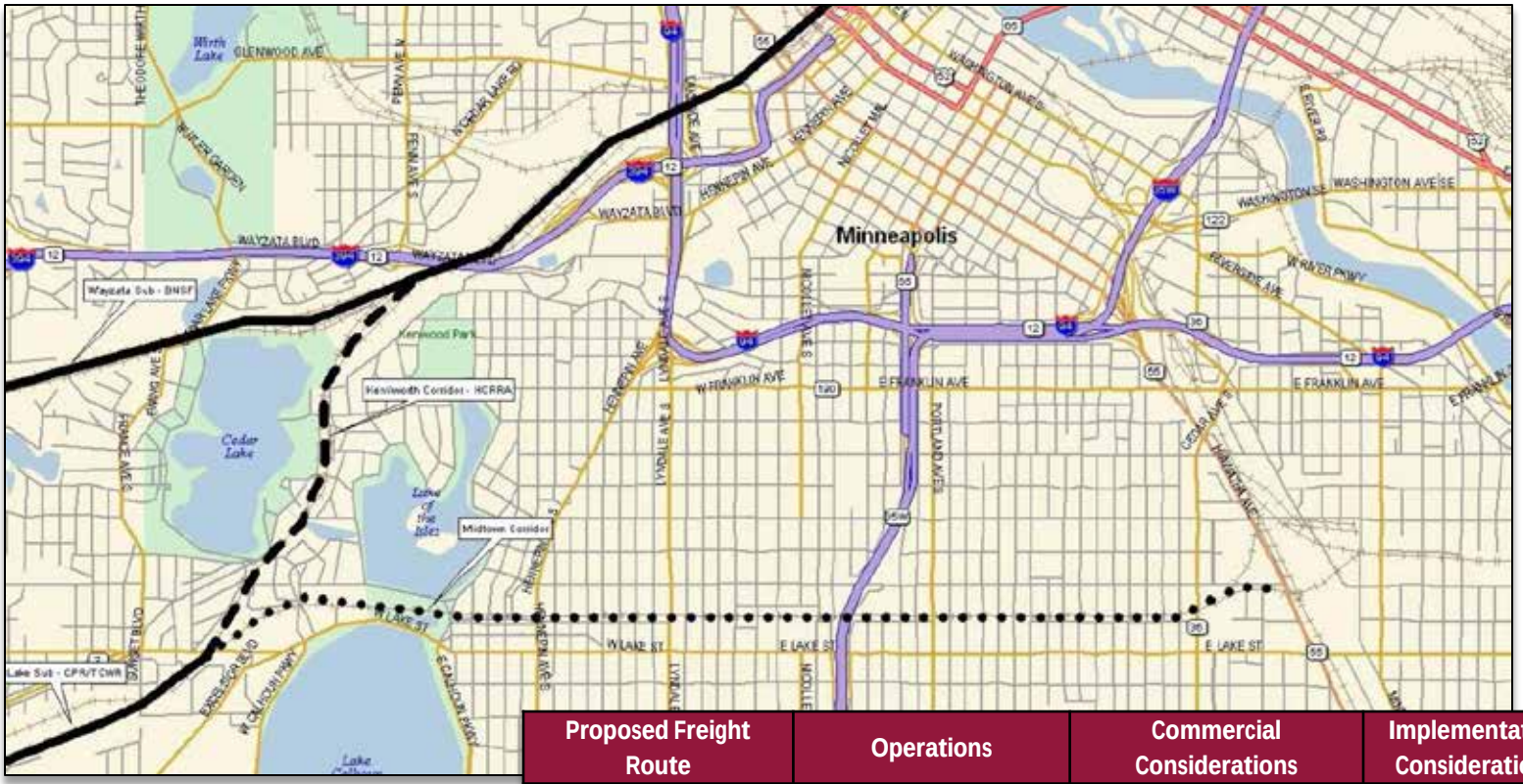
Proposed Freight Route	Operations	Commercial Considerations	Implementation Considerations
Former RR alignment Hwy 169	◐	◐	●

○ Strongly supports goal ◐ Supports goal ● Does not support goal

Description of Alternatives

Midtown Corridor

The Midtown, or 29th Street, Corridor was TC&W's route to the metro area before it was relocated to the Kenilworth Corridor in 1998.



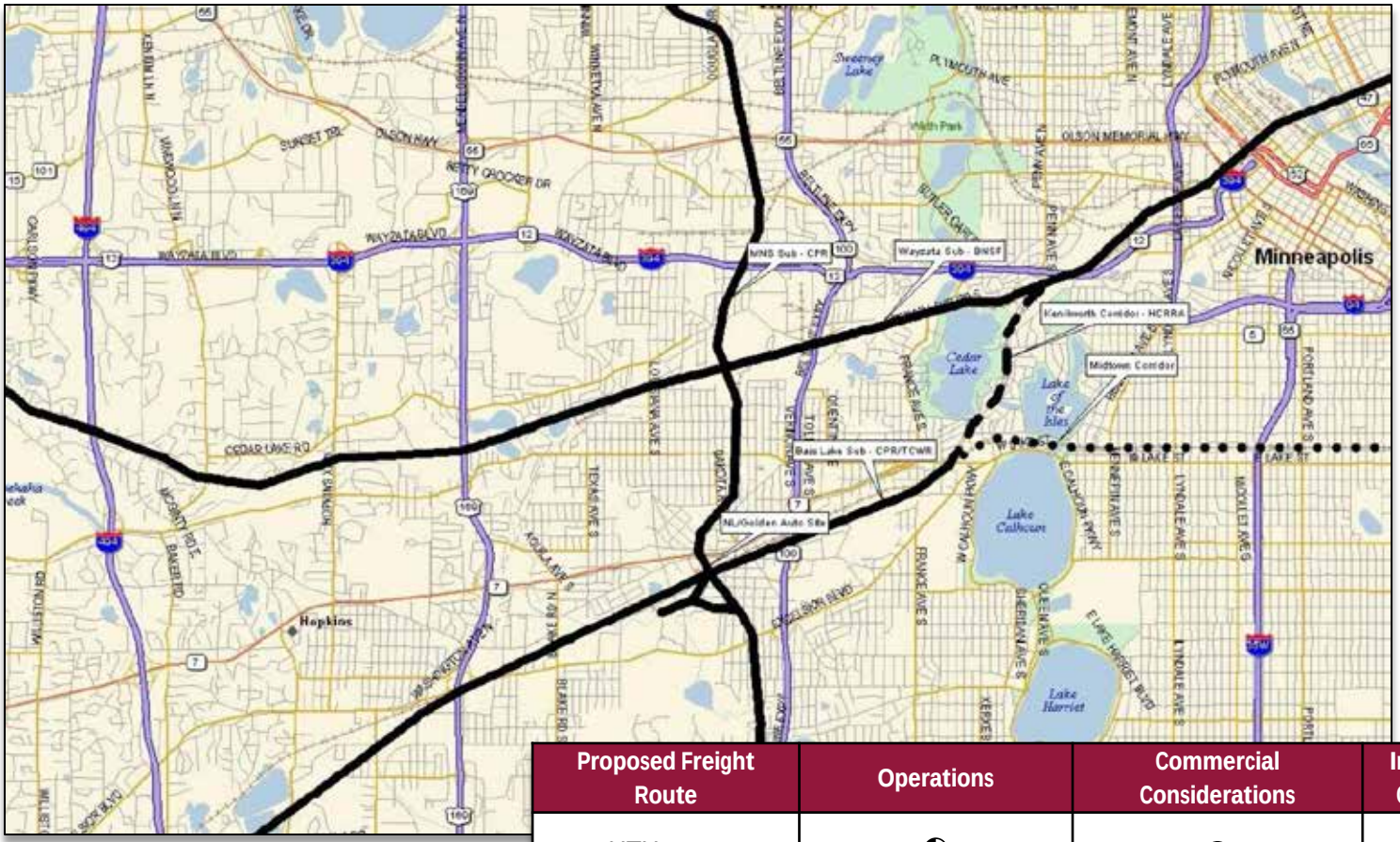
Proposed Freight Route	Operations	Commercial Considerations	Implementation Considerations
Midtown Corridor	○	○	●

○ Strongly supports goal ◐ Supports goal ● Does not support goal

Description of Alternatives

UTU Route

The UTU route makes use of the MN&S, and continues north via the MN&S Wirth corridor.

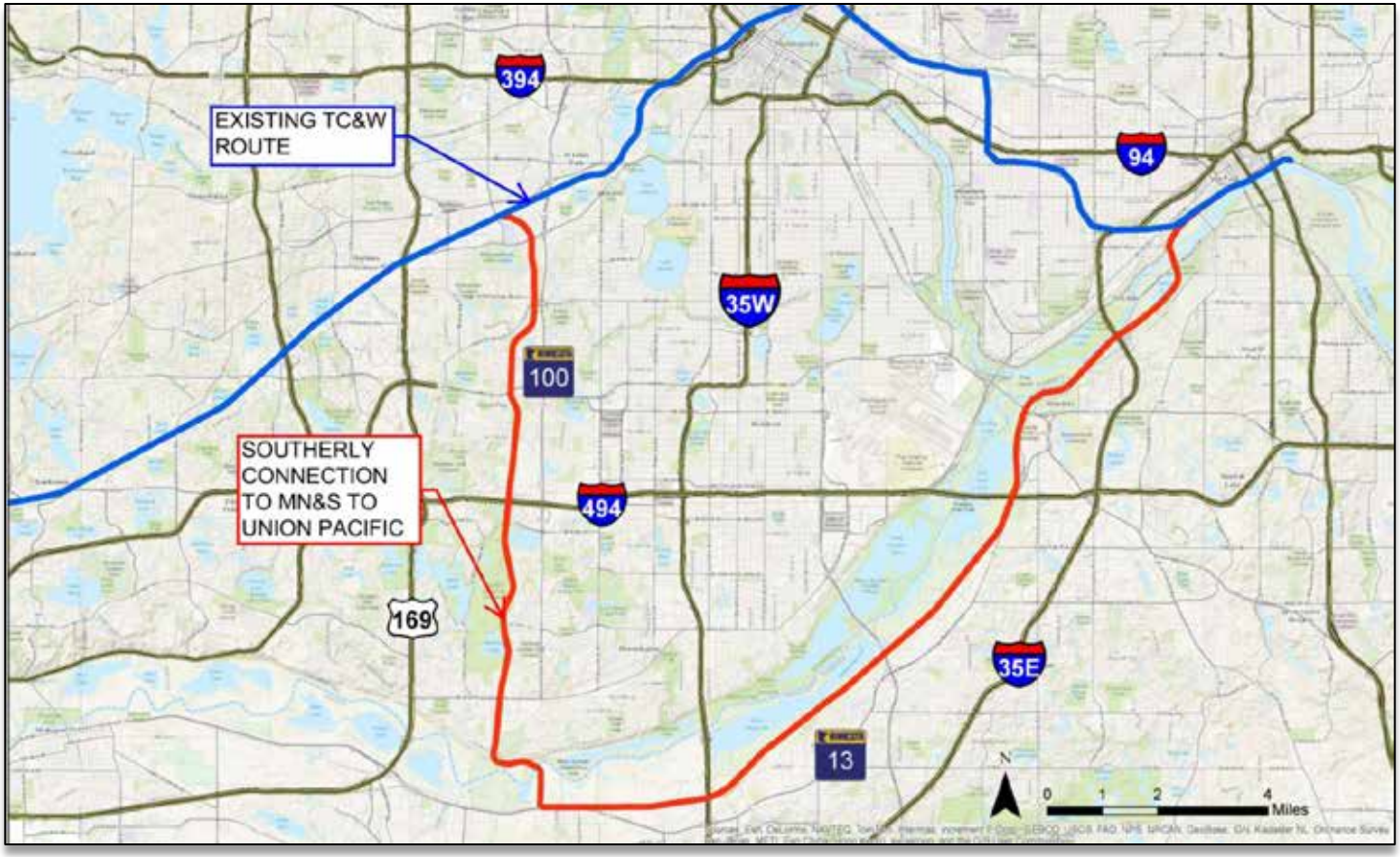


Proposed Freight Route	Operations	Commercial Considerations	Implementation Considerations
UTU route	◐	○	●

○ Strongly supports goal ◐ Supports goal ● Does not support goal

Description of Alternatives

MN&S South Connection with UP



Proposed Freight Route	Operations	Commercial Considerations	Implementation Considerations
MN&S South	◐	◐	◐

○ Strongly supports goal ◐ Supports goal ● Does not support goal

Second Tier Screening

MN&S South Connection to UP

- Engineering – 12 miles of upgrade needed; refurbishment or replacement of bridge; evaluated with less available information; has some engineering challenges

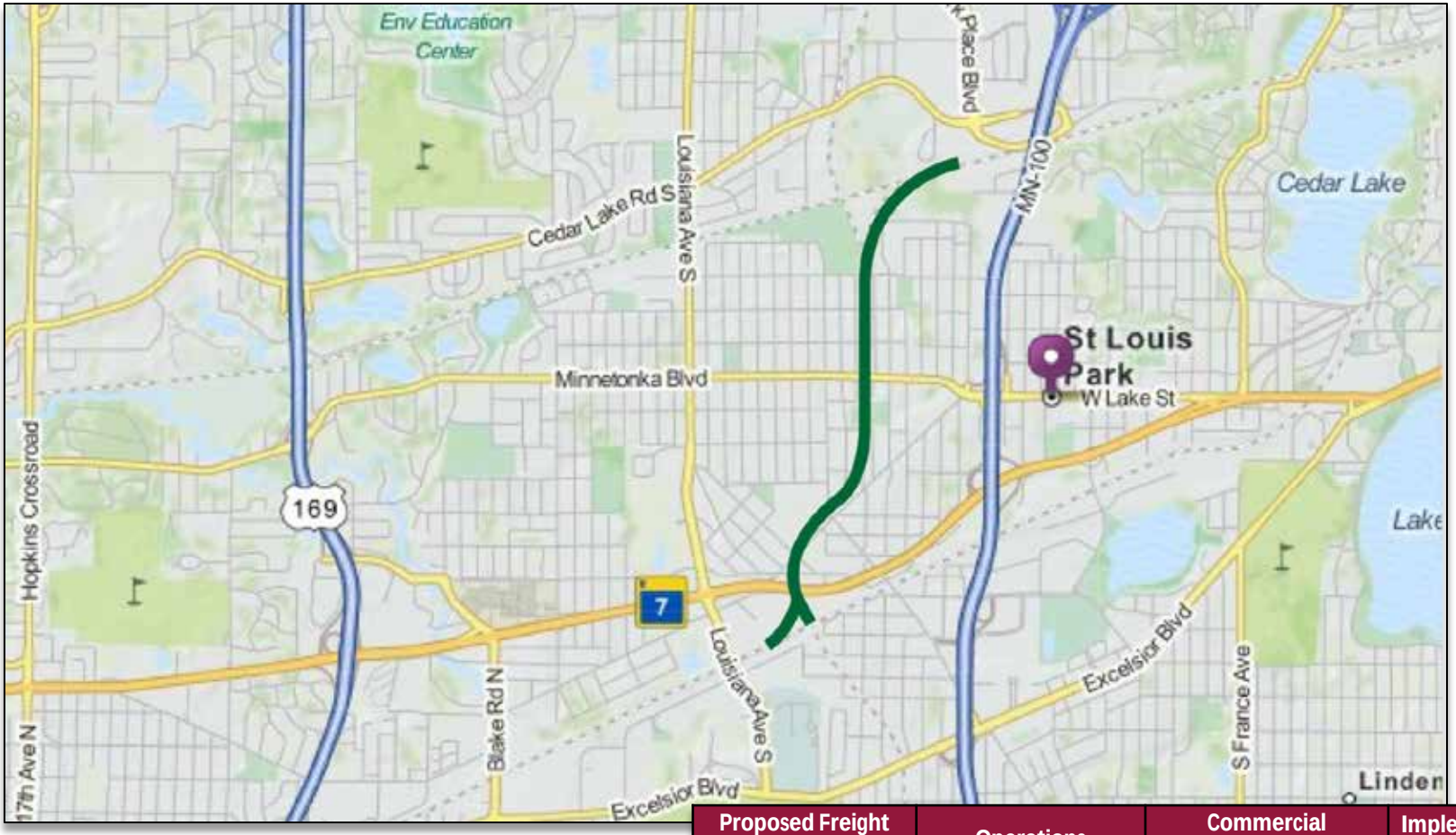
- Safety –15 grade crossings left; AADT 87,763

- Community – New issues for southern Saint Louis Park, Edina and Bloomington; Over 350 housing units

- Cost – $185 million (without property)

Description of Alternatives

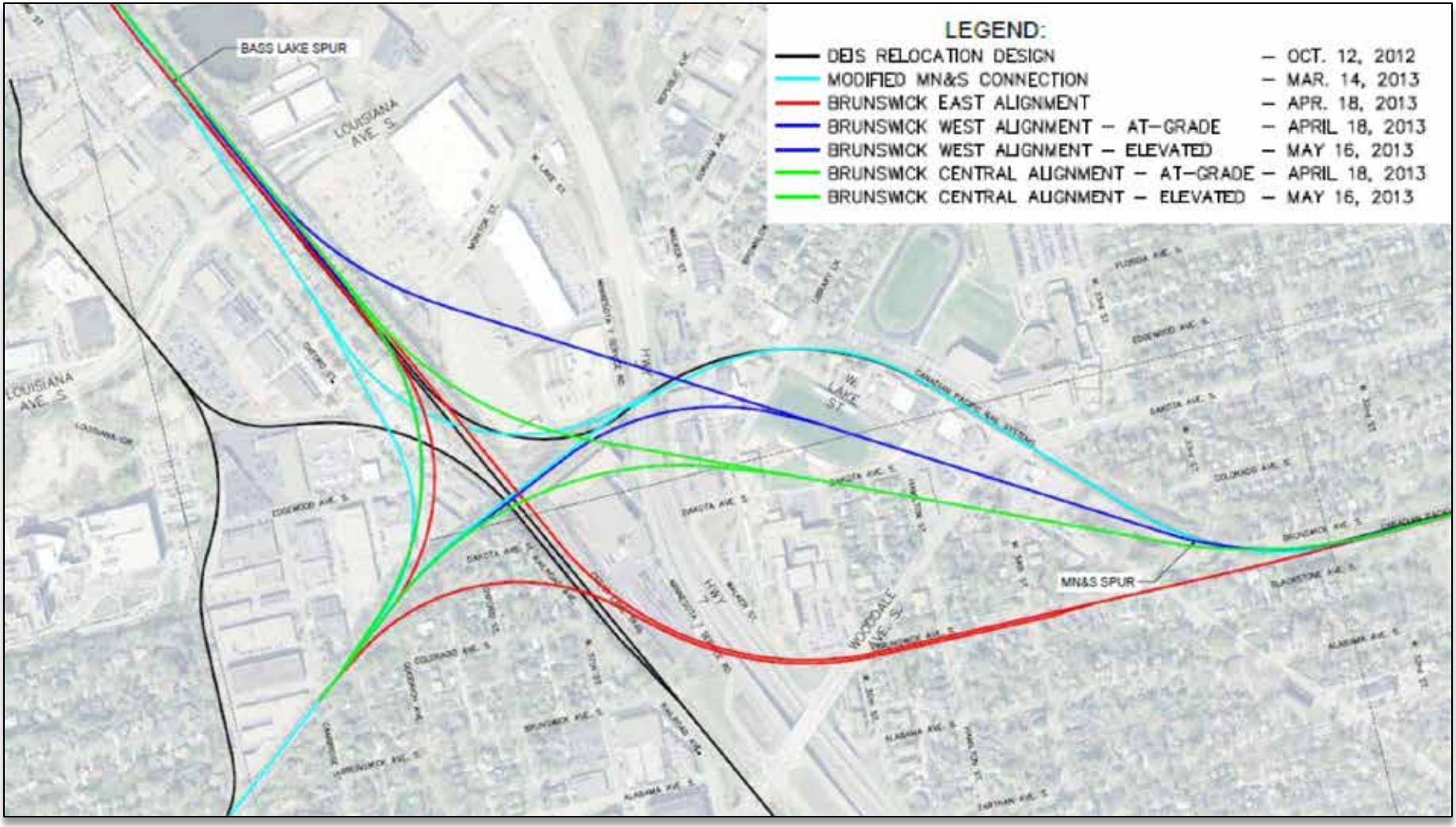
MN&S North Connection with BNSF



Proposed Freight Route	Operations	Commercial Considerations	Implementation Considerations
MN&S North	◐	○	◐

○ Strongly supports goal ◐ Supports goal ● Does not support goal

Second Tier Screening



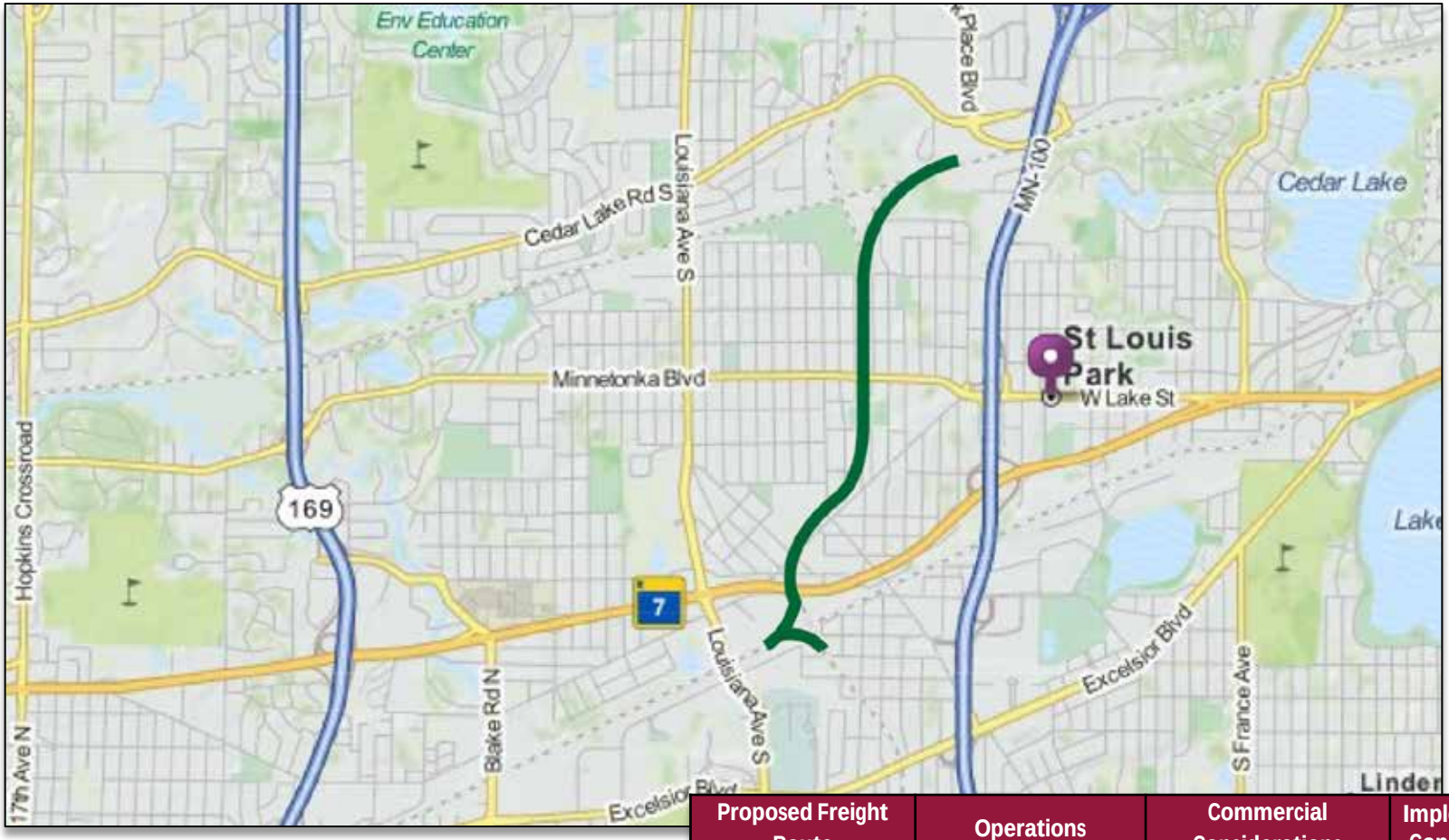
Second Tier Screening

MN&S North – Previous concepts

- Engineering – Severe operating challenges
- Community – High berms, neighborhoods divided, school and business impacts

Second Tier Screening

MN&S North – TranSystems' Concept



Proposed Freight Route	Operations	Commercial Considerations	Implementation Considerations
MN&S North	◐	○	◐

○ Strongly supports goal ◐ Supports goal ● Does not support goal

Second Tier Screening

MN&S North – TranSystems' concept

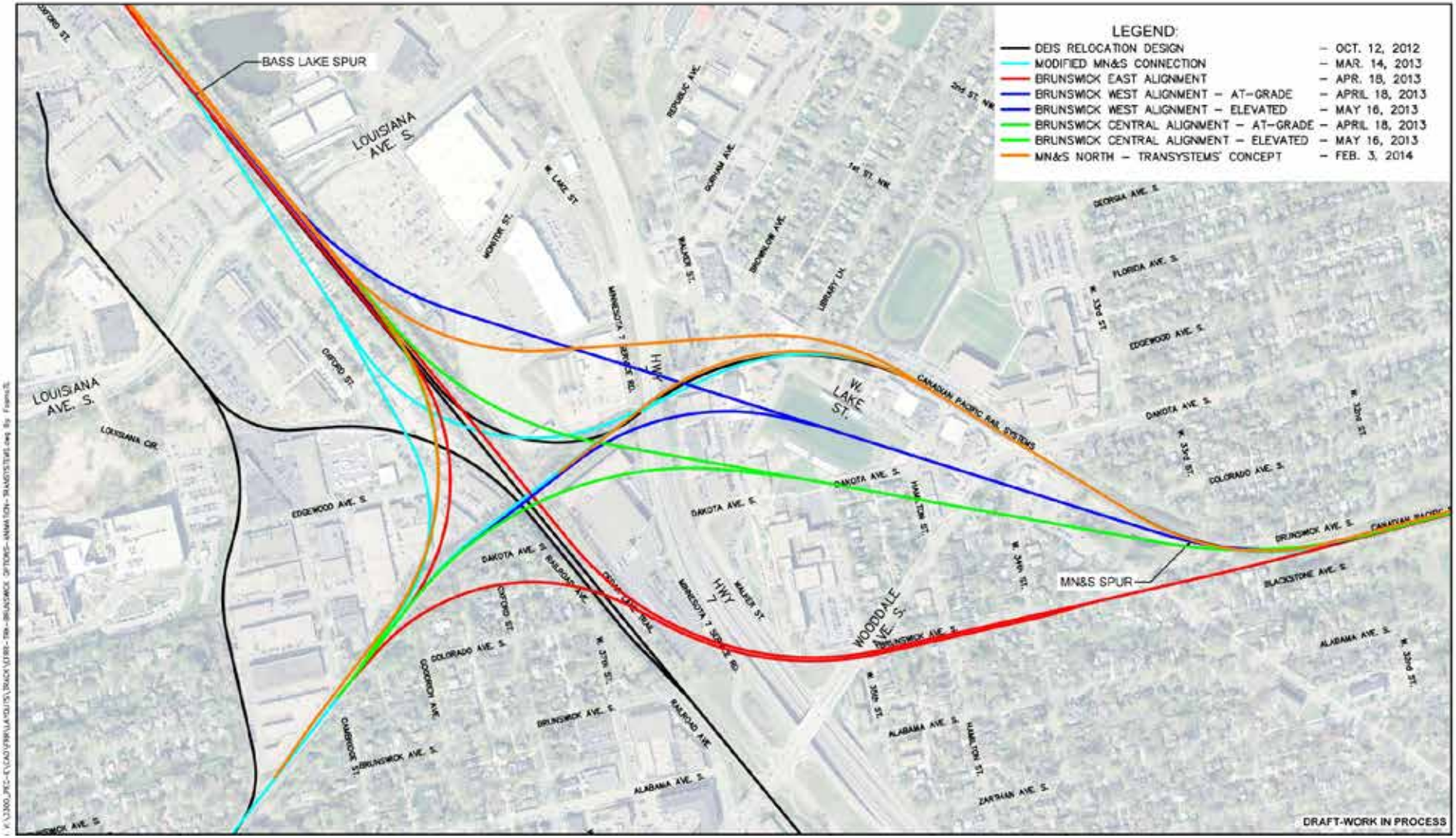
- Engineering – AREMA Standards

- Safety – 2 at-grade crossings retained (down from 6); AADT of 14,125

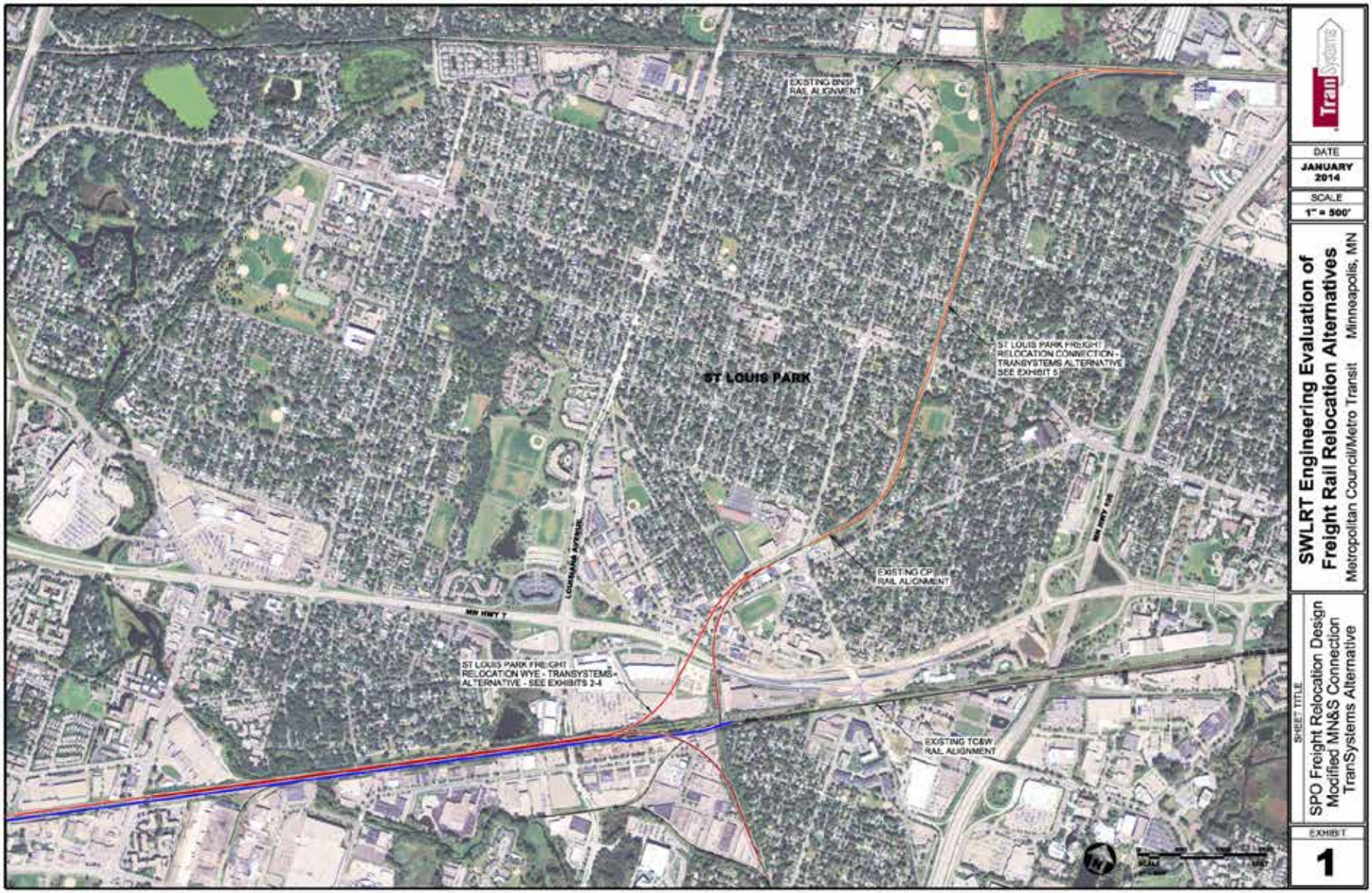
- Community – Improved but no perfect answer; 140 housing units within 150 feet

- Cost – $105 million (without property)

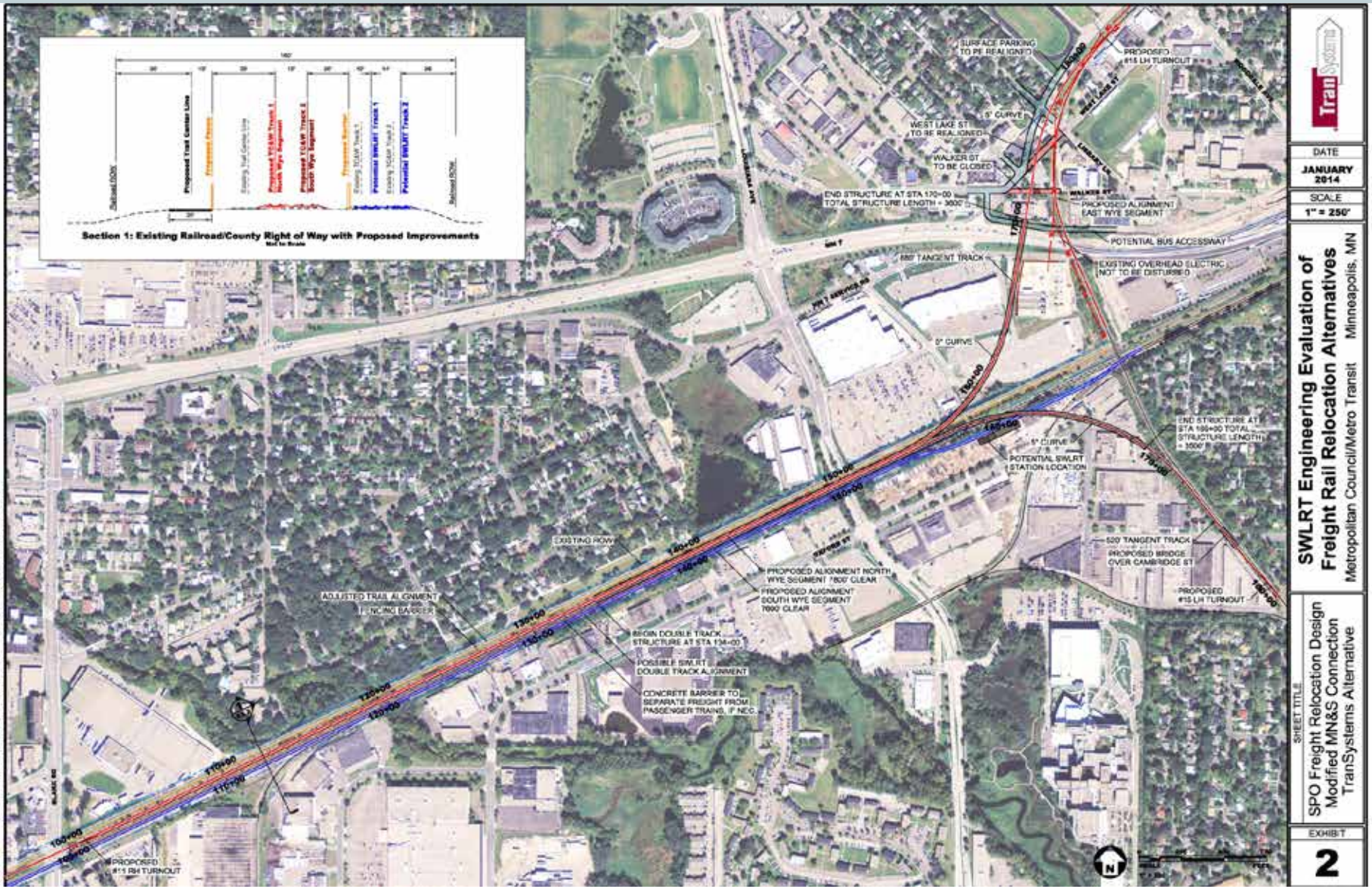
Freight Rail Relocation



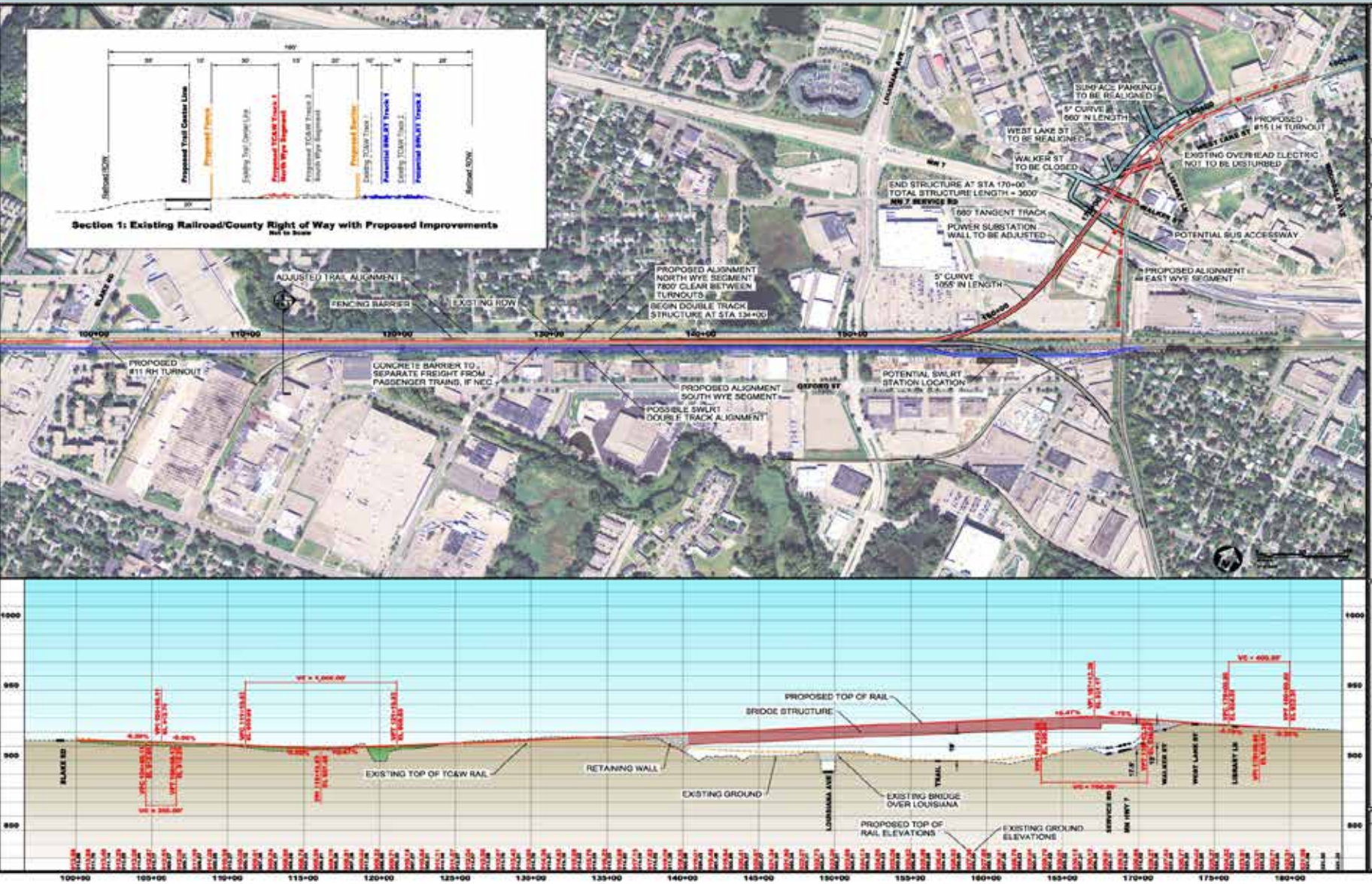
MN&S North – TranSystems' Concept



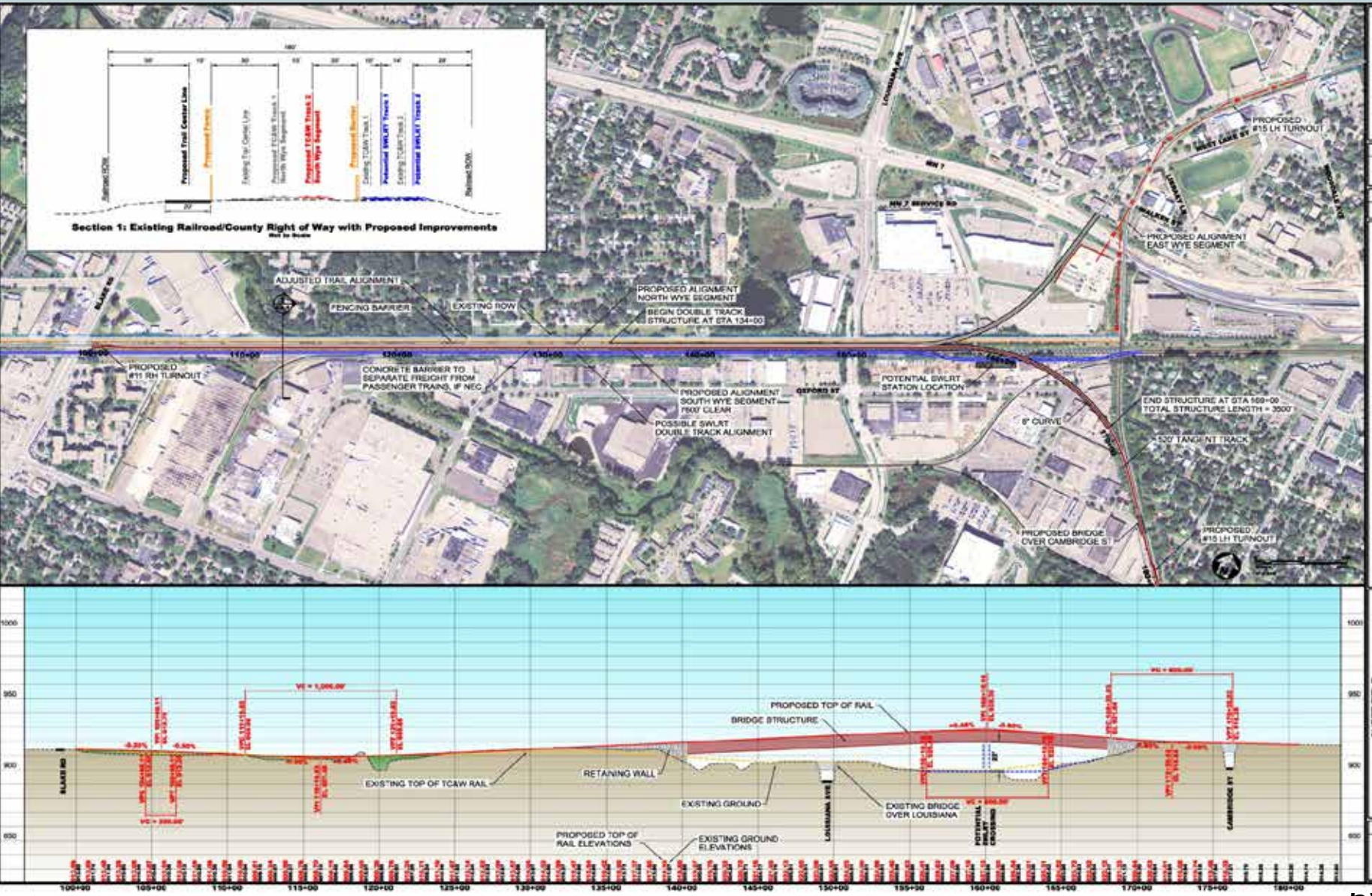
MN&S North – TranSystems' Concept



MN&S North – TranSystems' Concept



MN&S North – TranSystems' Concept



TranSystems

DATE
JANUARY 2014

SCALE
1" = 300'

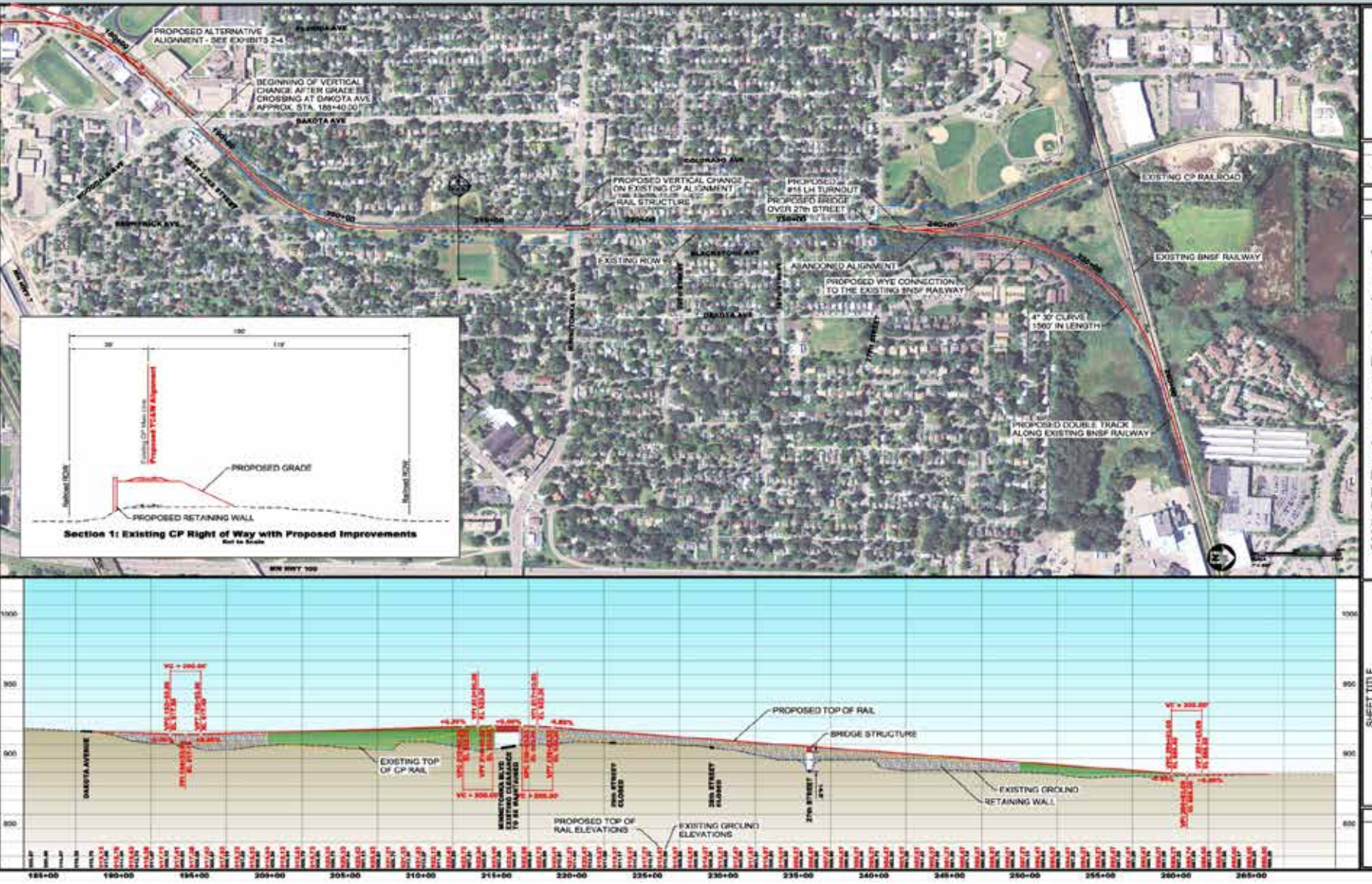
SWLRT Engineering Evaluation of Freight Rail Relocation Alternatives

Metropolitan Council/Metro Transit Minneapolis, MN

SHEET TITLE
SPO Freight Relocation Design
Modified MN&S Connection
TranSystems Alternative

EXHIBIT
4

MN&S North – TranSystems' Concept



Safety Enhancements

- Crossing closures
- Quiet zones
- Robust track structure
- Centralized Traffic Control / Positive Train Control
- Defect detection
- Inside guard rails
- Fencing
- Pedestrian bridge

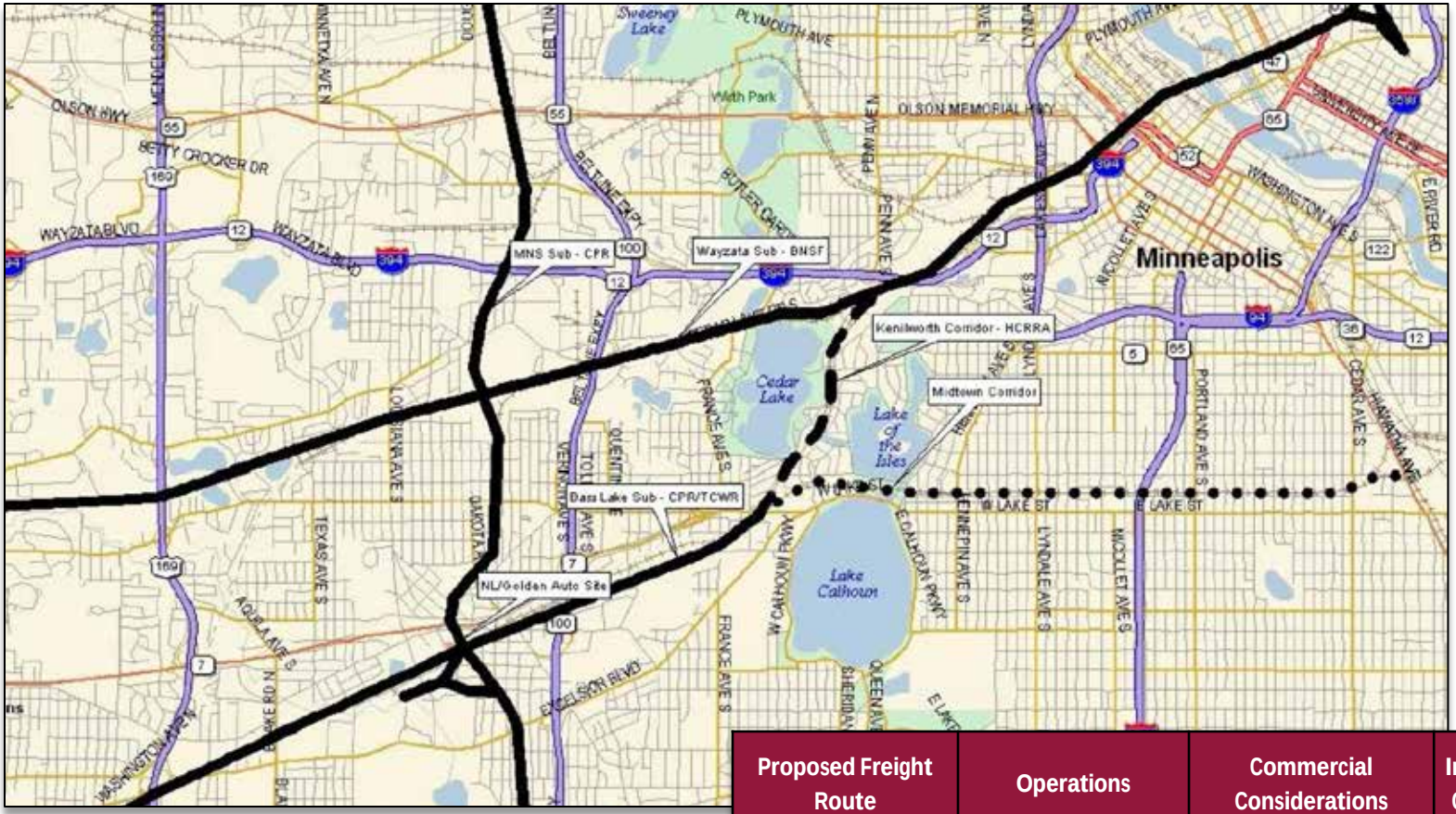
MN&S North $105M Cost Estimate

- Based on 2013 costs
- Includes:
  - Capital improvements (new connections, structures, upgrade to route, BNSF siding, TC&W yard tracks, roadway/trail relocations)
  - Safety enhancements (CTC/PTC, inside guard rail, pedestrian bridge, fencing,)
  - 25% contingency
- Does not include:
  - ROW acquisition costs
  - Design related costs
- Primary cost drivers:
  - Rail bridge structures
  - Upgraded track (grading, sub-ballast, rail, ties, ballast)
  - Streets and roads

Description of Alternatives

Kenilworth Corridor

TC&W's freight rail traffic currently utilizes the Kenilworth corridor.



Proposed Freight Route	Operations	Commercial Considerations	Implementation Considerations
Kenilworth Corridor	○	○	○

○ Strongly supports goal ◐ Supports goal ● Does not support goal

Second Tier Screening

Kenilworth Corridor

- Engineering – Current route works!
- Safety – 4 at-grade crossings; AADT 21,924
- Community – 350+ housing units on route
- Cost - $20 million to $300+ million (without property)

Second Tier Screening

	Tier 1 Screening			Tier 2 Screening			
Proposed Freight Route	**Operations**	**Commercial**	**Implementation Obstacles**	**Engineering**	**Safety**	**Community**	**Cost**
Kenilworth Corridor	○	○	○	○	○	◐	$20 to $300 Million
MN&S North	◐	○	◐				
DEIS connection				●	◐	◐	NCN
Modified MN&S connection				●	◐	◐	NCN
Brunswick East connection				◐	◐	●	NCN
Brunswick West connection (at-grade and elevated)				◐	◐	●	NCN
Brunswick Central connection (at-grade and elevated)				◐	◐	●	NCN
TranSystems Connection				○	○	◐	$105 Million
MN&S South	◐	◐	◐	◐	◐	●	$185 Million

XXX designates discrepancy with page 16 of draft report.

Preliminary Conclusion

2 routes are viable