Project Update:
Freight Rail Relocation Analysis
Preliminary TC&W Freight Routing Analysis

TranSystems
Jim Terry, February 2014
Area Rail System
• 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.
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:

- The East Metro Rail Capacity Study (Oct. 2012)
- Map and Internet Search
- Public meetings in Minneapolis and Saint Louis Park (Jan. 2014)
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.
Route must:

• Be sound and meet industry standards for safety.

• Not unduly impact the surrounding community.

• Have an acceptable cost.
## Screening Criteria - Elements

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

Far Western Minnesota Connection (Appleton to Benson)

<table>
<thead>
<tr>
<th>Proposed Freight Route</th>
<th>Operations</th>
<th>Commercial Considerations</th>
<th>Implementation Considerations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Far Western MN connection with BNSF (Appleton-Benson)</td>
<td>●</td>
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</tbody>
</table>

○ Strongly supports goal  ● Supports goal  ● Does not support goal
Description of Alternatives

Western Minnesota Connection (Granite Falls to Willmar)

- Western MN connection with BNSF (Granite Falls-Willmar)

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<tr>
<td>● Supports goal</td>
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<tr>
<td>● Does not support goal</td>
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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.

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<tbody>
<tr>
<td>Chaska Cut-off</td>
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Description of Alternatives

Highway 169 Alignment to BNSF
This route is a former railroad abandoned right-of-way.

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<td>Former RR alignment Hwy 169</td>
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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.

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<td>Midtown Corridor</td>
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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

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Description of Alternatives

MN&S South Connection with UP

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<td>MN&amp;S South</td>
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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

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<td>MN&amp;S North</td>
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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

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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
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Safety Enhancements

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

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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

<table>
<thead>
<tr>
<th>Proposed Freight Route</th>
<th>Tier 1 Screening</th>
<th>Tier 2 Screening</th>
</tr>
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<tbody>
<tr>
<td></td>
<td>Operations</td>
<td>Commercial</td>
</tr>
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<td>Kenilworth Corridor</td>
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<td>●</td>
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<tr>
<td>MN&amp;S North</td>
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<td>●</td>
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<tr>
<td>DEIS connection</td>
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<tr>
<td>Modified MN&amp;S connection</td>
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<tr>
<td>Brunswick East connection</td>
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<tr>
<td>Brunswick West connection (at-grade and elevated)</td>
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<tr>
<td>Brunswick Central connection (at-grade and elevated)</td>
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<tr>
<td>TranSystems Connection</td>
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XXX designates discrepancy with page 16 of draft report.
2 routes are viable