Minnesota Comprehensive Statewide Freight and Passenger Rail Plan

Open House – Round 2

October 2009

presented by
Cambridge Systematics, Inc.
Kimley-Horn and Associates, Inc.
TKDA, Inc.

CAMBRIDGE SYSTEMATICS

Agenda

- Outreach – Erika Witzke
- Study Overview Update – Erika Witzke
- Rail Visions – Erika Witzke/Allan Rutter
- Needs Assessment
  - Methodology and Overview – Allan Rutter
  - Findings – Brian Smalkoski
  - Program – Erika Witzke
- Next Steps – Erika Witzke
- Questions and Answers
- Boards and Discussion

Public Outreach

Stakeholders Outreach
May-September, 2009

- Minnesota HSR Commission
- Joint Environmental Panel
- UTU
- Minnesota Regional Railroad Association
- TC&W RR
- West Central Rail Shippers
- Minnesota Farm Bureau
- Minnesota Grain and Feed Association
- Minnesota Chamber of Commerce
- Metropolitan Council
- CTIB
- NLX
- NCDA
- Rural Counties Association
- Rochester/SEMRA
- WisDOT
- MFAC
- Individual Stakeholders

Upcoming Meeting Dates

- Open Houses
  - October 6 – St. Cloud
  - October 7 – Rochester
  - October 8 – Red Wing
  - October 14 – Minneapolis/St. Paul
  - October 15 – Duluth/Superior
  - October 21 – Moorhead
  - October 22 – Mankato
- Freight/passenger TAC meetings – November 12
- PAC meeting – November 13

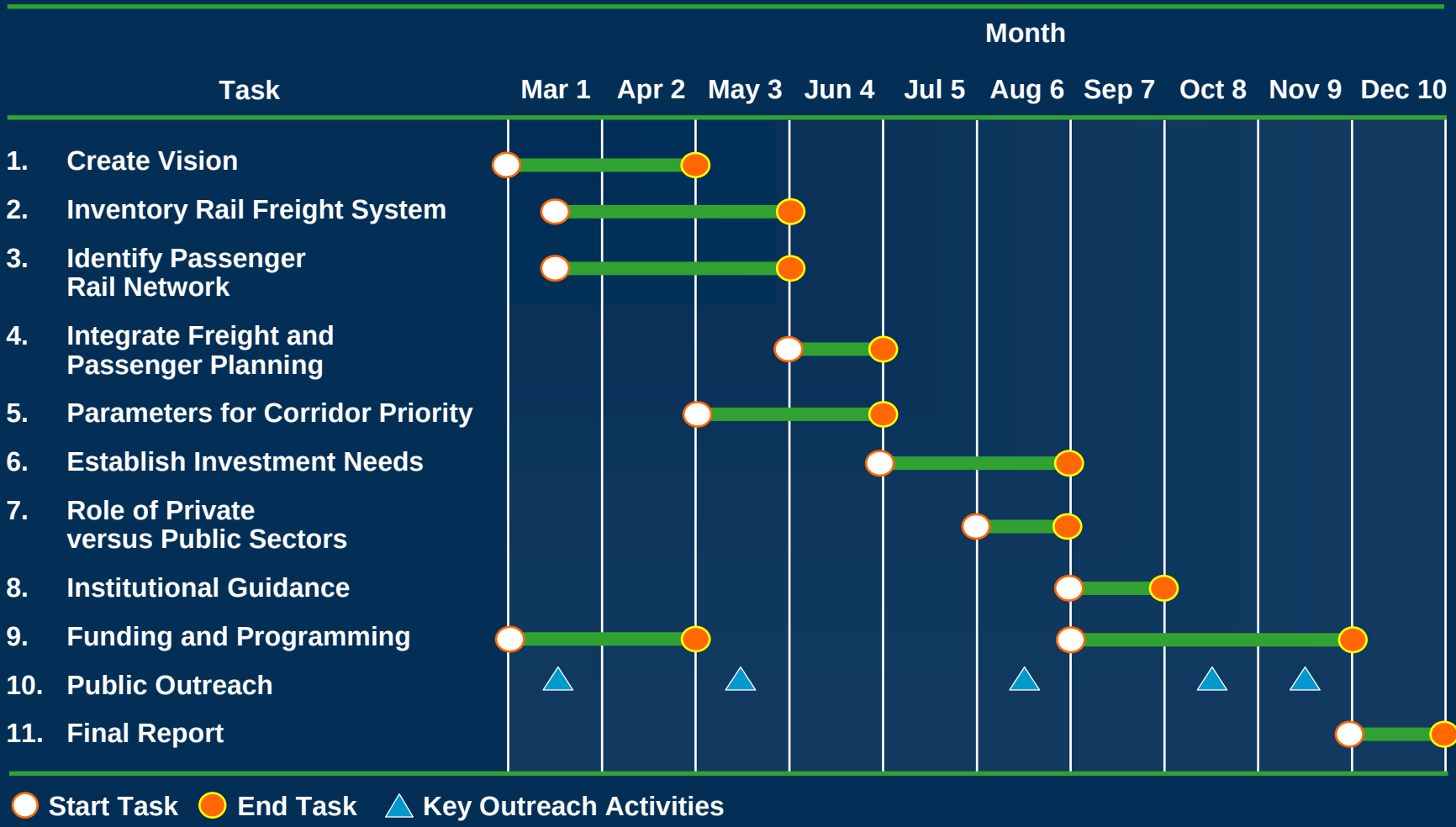
Study Overview

Erika Witzke

Project Phases

Project Phase	Description	Task
Phase I	Rail Vision	Task 1
Phase II	Inventory Freight System and Passenger Rail Plans	Tasks 2 and 3
Phase III	Integration of passenger and freight planning, and development of performance criteria	Tasks 4 and 5
Phase IV	Plan Development – Needs, Institutional Arrangements, Programs, Financing	Tasks 6-9
Continuous Public Outreach		Task 10
Final Report		Task 11

Schedule


Month
Task
Mar 1
Apr 2
May 3
Jun 4
Jul 5
Aug 6
Sep 7
Oct 8
Nov 9
Dec 10
1. Create Vision
2. Inventory Rail Freight System
3. Identify Passenger Rail Network
4. Integrate Freight and Passenger Planning
5. Parameters for Corridor Priority
6. Establish Investment Needs
7. Role of Private versus Public Sectors
8. Institutional Guidance
9. Funding and Programming
10. Public Outreach
11. Final Report
Start Task
End Task
Key Outreach Activities

Rail Vision

Erika Witzke/Allan Rutter

Freight Vision

- Rail is a critical part of the state's multimodal freight system, and provides connections to key markets beyond the state
- Many of the state's major industries rely on freight rail
- A strong rail system supports
  - Economic development
  - Environmental sustainability
  - Preservation of the publicly owned roadway infrastructure
  - Business marketability of the State
- ***Therefore, Minnesota should strive to develop a balanced multimodal freight system which can respond to increased regional and international economic competition, constrained highway capacity, environmental challenges, a diverse customer base and rising energy costs***

Passenger Vision

- **Forecast population and employment growth in the state will continue to increase demand on the state's highway system**
- **Availability of federal funds for rail investment creates a unique opportunity**
- **Macro and global economic and environmental trends are likely to increase fuel costs and impose controls on greenhouse gas emission**
- ***Therefore, Minnesota should develop a robust intra- and interstate intercity passenger rail system which results in improved travel options, costs, and speeds for Minnesota and interstate travelers***

Institutional Assessment

- **Purpose – align institutional responsibilities and actions with vision**
  - **How does rail as a mode interact with public agencies, legislative mandates, programs and regulations?**
  - **What policies and strategies are needed to realize vision?**
- **Many interactions – six state agencies, five federal agencies, plus regional and local governmental entities**
  - **Mandates: primary state-level programs are MRSI, Grade Crossing program and trunk highway construction coordination**
  - **State regulatory constraints make expanded role with freight carriers difficult**

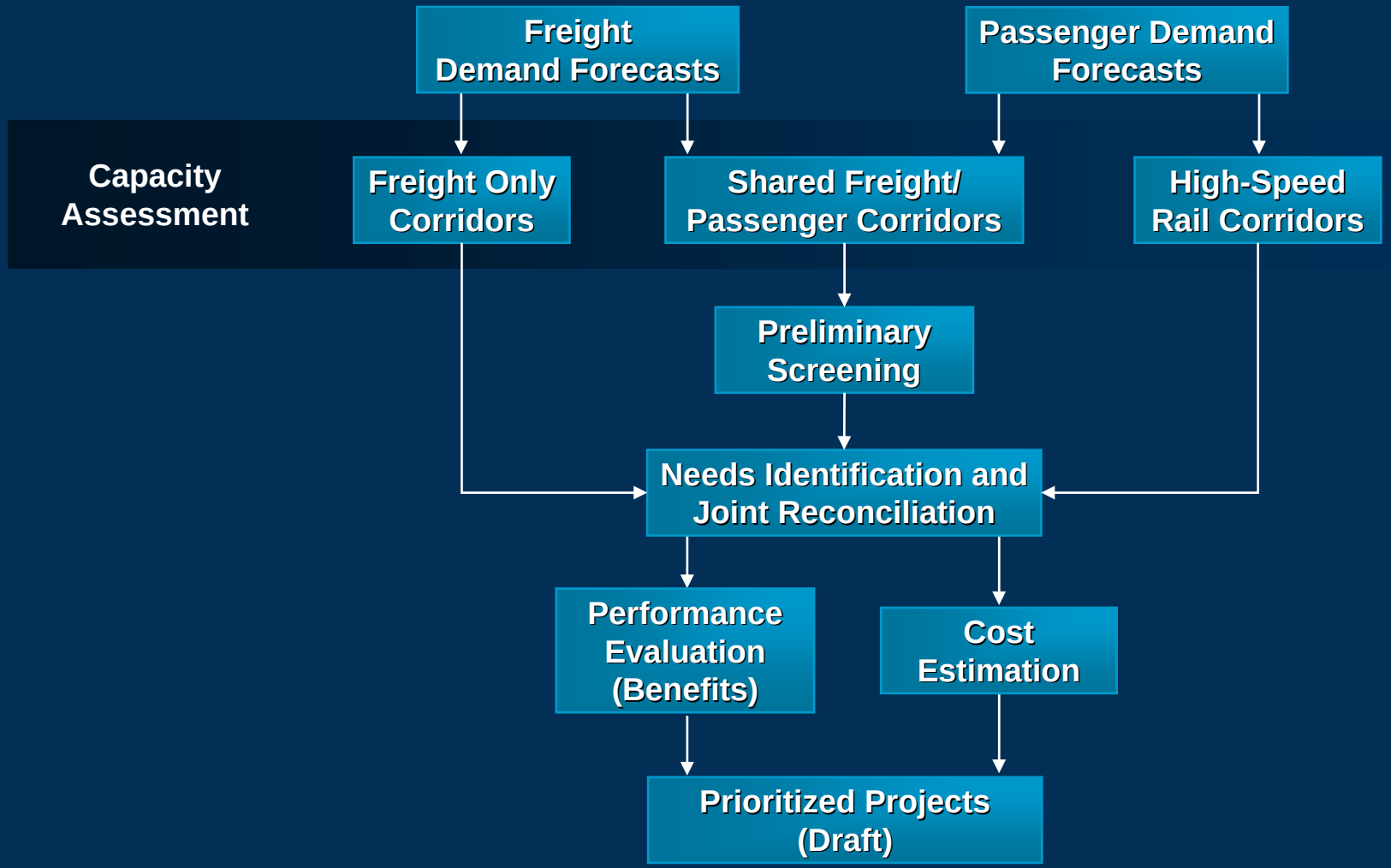
Institutional Assessment
Methodology (Tasks 7/8)

- Review best practices around the country
- Recommend appropriate roles for public sector agencies (state, regional authorities, MPOs, counties, cities, etc.)
- Recommend appropriate roles for the public and private sectors (railroads, shippers, etc.)

Needs Assessment

Erika Witzke/Allan Rutter
Paul Danielson/Brian Smalkoski

Needs Assessment Methodology



Rail Performance Measures

- ***System Performance*** **– capacity, speed, annual production of ton/miles, ridership**
- ***System Condition*** **– track, bridges, crossings**
- ***Connectivity/Accessibility*** **– proximity to users, commercial terms, modes**
- ***Safety and Security*** **– at-grade crossings, hazmat, inspections**
- ***Environmental*** **– positive and negative impacts of construction and operations**
- ***Financial/Economic*** **– Capital costs, operations, taxes, jobs, economic development, cost/benefit comparisons**

Ridership Forecasts
Overview

- Purpose – provide a consistent comparison across all possible state passenger rail projects
- Conservative, sketch-planning approach
- Analyzes travel only between the Twin Cities and key markets
- Analyzes limited intermediate points and no non-Twin Cities origins/destinations
- OFFICIAL FORECASTS – INDIVIDUAL PROJECT PLANNING PROCESSES

Ridership Forecasts
Key Parameters

- Special generators such as casinos, medical centers, universities and tourism markets are considered, as appropriate
- Intermediate stops considered – Superior and Hinckley (NLX) and MSP Airport (Rochester)
- Intermediate stops not considered – commuter rail markets such as Cambridge (NLX) and Rosemount (Rochester)

Ridership Forecasts
Key Variables

- Speeds of 79, 110 and 150 mph
- Fares of $0.20 and $0.32/mile
- Gas prices of $2 and $4/gallon
- Personal/business travel splits of 90/10 and 50/50
- Official state growth forecasts, and:
  - 10% higher
  - More dispersed and less Twin Cities-centric

Ridership Forecasts
Results
2030 Annual Trips with Most Favorable Variables Tested

- Over 1 million
  - Chicago
  - St. Cloud
- 400,000-600,000
  - Duluth (NLX)
  - Rochester
- 100,000-300,000
  - Wisconsin points on MWRRI
  - Mankato
  - Eau Claire
  - Northfield

Ridership Forecasts
Results
2030 Annual Trips with Most Favorable Variables Tested (continued)

- 100,000 or under (selected cities)
  - Fargo
  - Willmar
  - Red Wing
  - Winona

Accomplishing the Freight Vision

- **Infrastructure**
  - Continued improvements in condition and capacity of the primary railroad arterials to accommodate existing and future demand
  - Address critical network bottlenecks
  - Bridge program for essential shortline spans & other operationally critical structures
  - All main line track should be maintained to 25 mph minimum, as warranted
  - The rail network should support 286k pound cars throughout
  - Implement Positive Train Control (PTC) on key arterials
- **Expand intermodal service options**
- **Ensure access to local carload services**

Accomplishing the Freight Vision (continued)

- **Planning and policy development**
  - Rail should be better integrated into the planning process, including modal tradeoff analysis, local and regional comprehensive plans, modal diversion, industrial development strategies, and public ports planning.
- **Adapt and enhance existing rail programs**
  - State rail assistance should go beyond the limited MRSI program to include a range of solutions and financing options, including branch and shortline preservation
  - The rail/highway grade crossing program should expand to consider an array of strategies including grade separations, and match or exceed active warning device replacement needs
  - Develop policies describing when and how to acquire, maintain, and manage preserved rail corridors for possible future use

Accomplishing the Passenger Vision

- Continue to participate in the MWRRI and support development of 110 mph service for connections from the Twin Cities to Wisconsin and Chicago Hub Network
- Develop an intrastate (Twin Cities regional) intercity passenger rail network connecting the Twin Cities with viable service to major outlying regional centers
  - Initial start-up as stand-alone projects, coordinated as part of a larger integrated regional/national system
  - Use interchangeable and interoperable equipment
  - Coordinate with local transit services
  - Achieve minimum speeds of 90 mph

Accomplishing the Passenger Vision (continued)

- Goal of 110-150 mph depending on market and track conditions
- Use existing freight track where feasible, new track where necessary

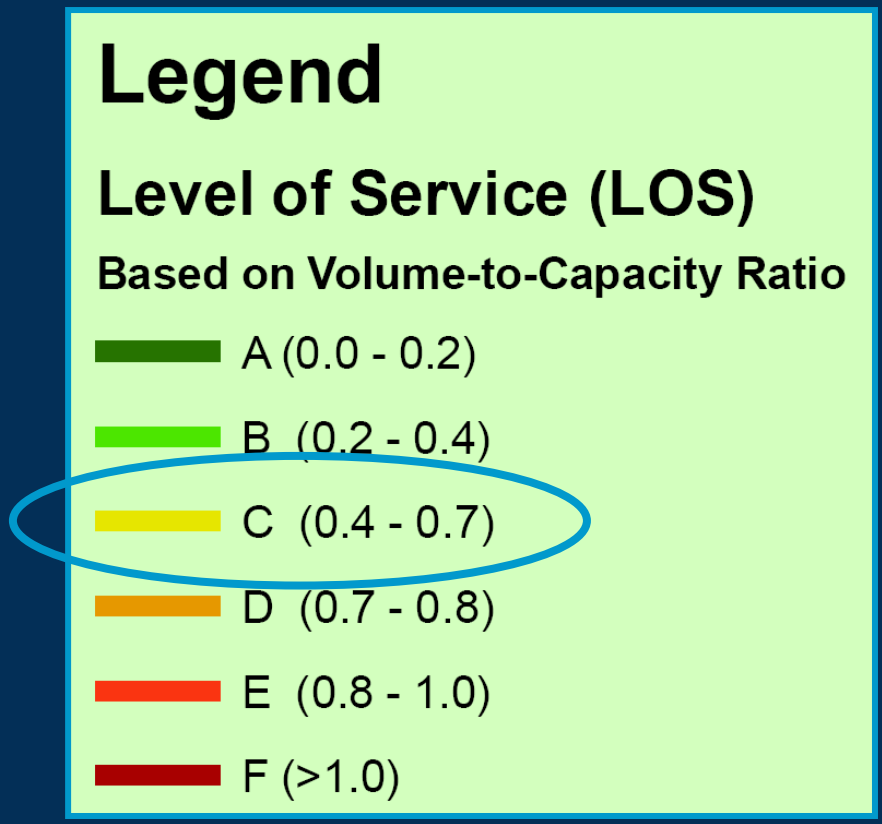
- All services should ultimately connect to both the new Minneapolis downtown terminal and St. Paul Union Depot
- Corridors should be advanced incrementally to build ridership and system advantages, leaving open all future options for viable improvements – stand-alone branches, through routes, new alignments, potential airport connections, and true HSR

Accomplishing the Passenger Vision (continued)

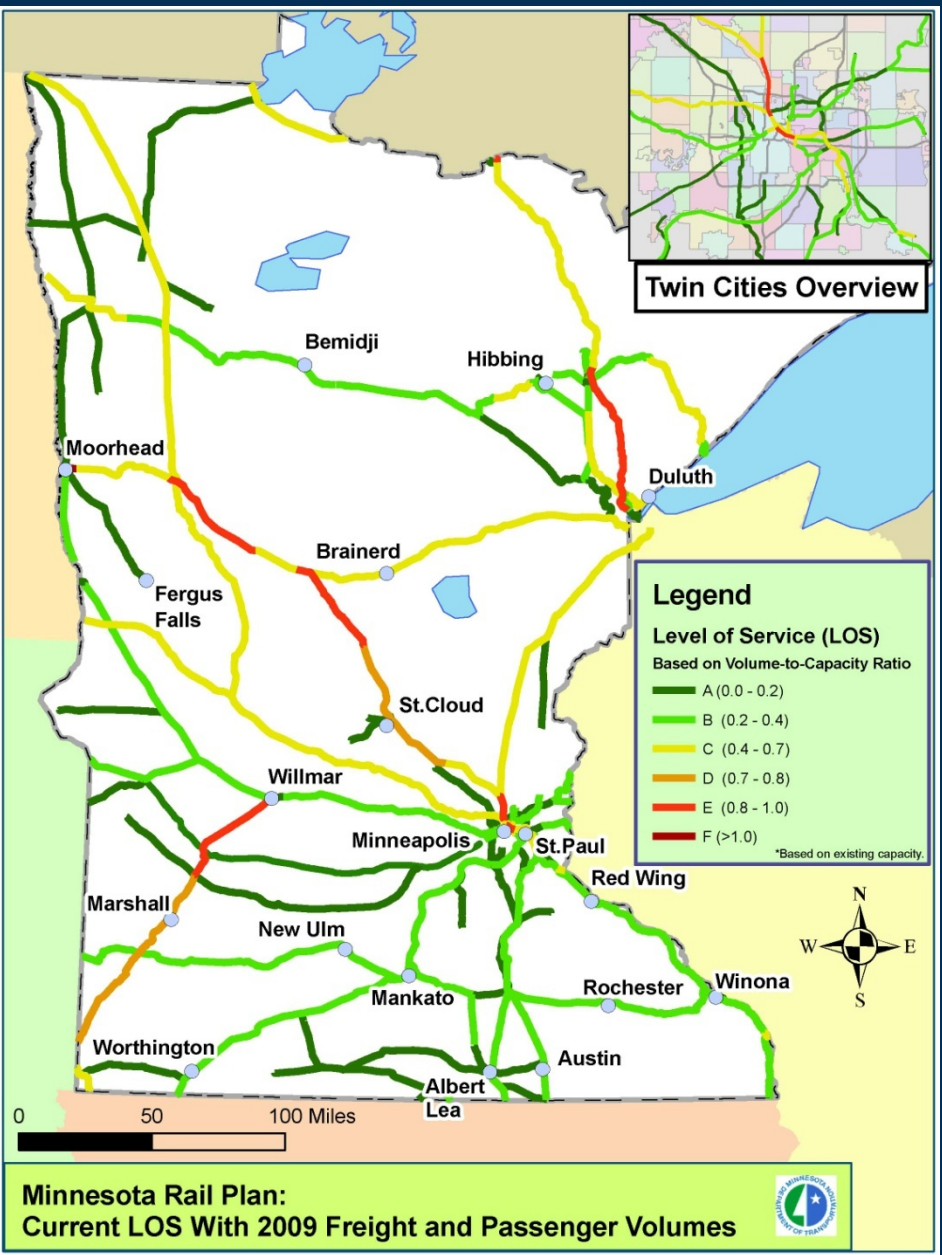
- Projects should advance simultaneously with MnDOT's support; sequencing depending on financing, ROW acquisition and agreements with freight RRs
- In Phase II, rail connections should be established to additional intercity/commuter markets in Minnesota and Wisconsin, and to an Interstate I-35 corridor, Red River Valley, Eastern plains, and Canada

Level of Service (LOS)

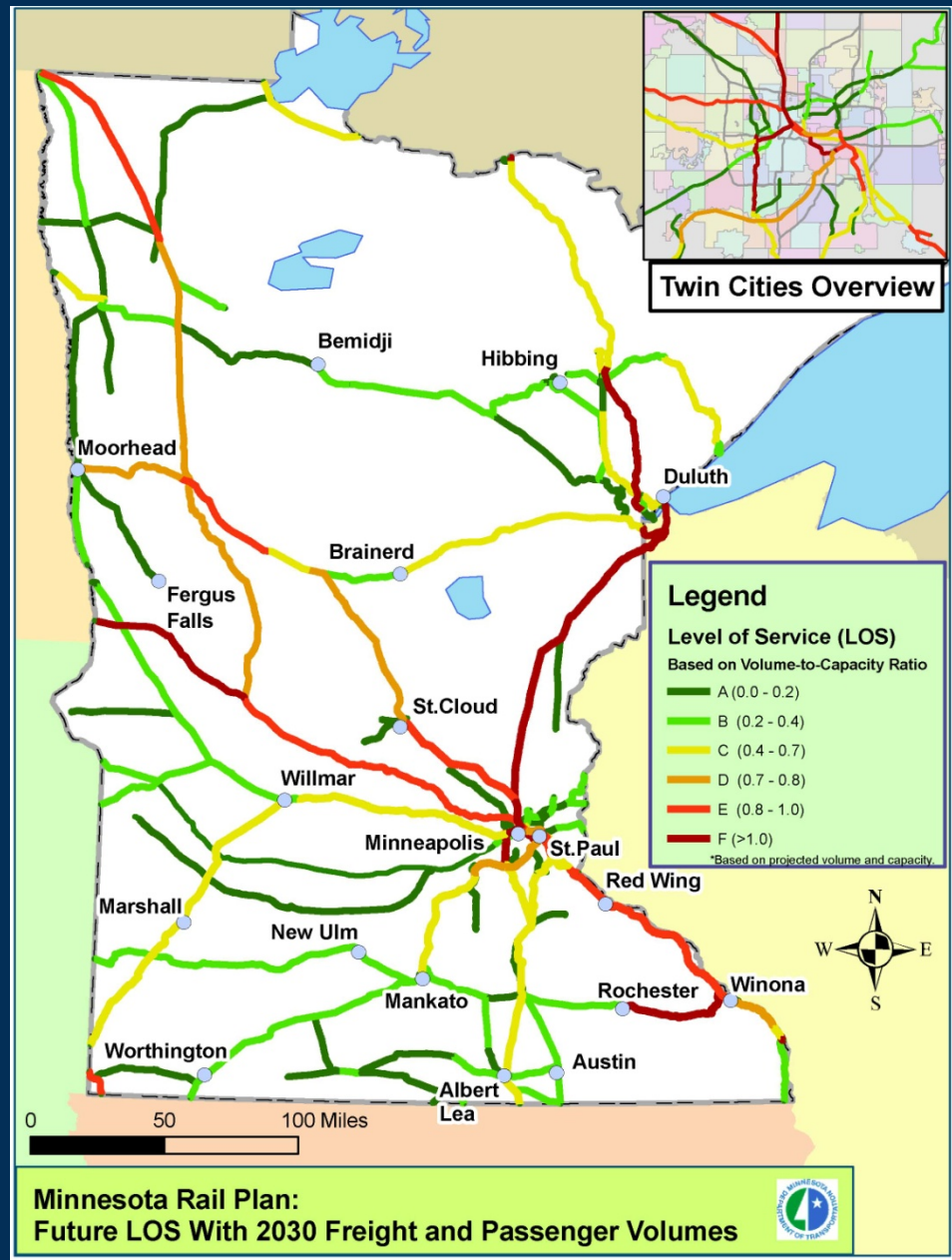
- Volume-to-Capacity Ratio
- Used to determine when upgrades are warranted
  - A, B, C: Below Capacity
  - D: Near Capacity
  - E: At Capacity
  - F: Above Capacity
- Study focus was to ensure freight and passenger rail lines were LOS C, or better



2009 Freight LOS Without Improvements



2030 Freight and Passenger LOS Without Improvements



Improvement Scenarios Analyzed and Shown

- 2009 Freight-only LOS
- 2030 Freight-only LOS with 2009 passenger volumes
- 2009 Freight/Passenger shared corridors
- 2030 Freight/Passenger shared corridors with 2009 passenger volumes
- 2030 Freight/Passenger shared corridors with 2030 passenger volumes

Priority Program Elements/Key Needs
Preliminary Draft

- High speed rail to Chicago, Duluth, and Rochester
  - Upgrade/develop corridors to Class 6 conditions
- Enhanced conventional rail to St. Cloud, Mankato, Fargo, Eau Claire and between the Twin Cities
  - Upgrade corridors to Class 4 conditions
- Positive Train Control (PTC) on all shared corridors
- Grade crossing upgrades on all shared corridors
- Upgrade major junctions and bridges

Priority Program Elements/Key Needs (continued)
Preliminary Draft

- All rail upgraded to 286,000 pound capacity
- Programmed upgrades of all active warning devices and signs
- Additional intermodal facilities
- Shortline bridge upgrades

Cost Estimation Methodology

- Unit costs based on actual experience, forecasts, and professional judgment
- Freight and Passenger
  - Track and signal upgrades
  - Clearance restrictions
  - Grade crossings
- Freight only – 286,000 pound compliant

Cost Estimation Methodology (continued)

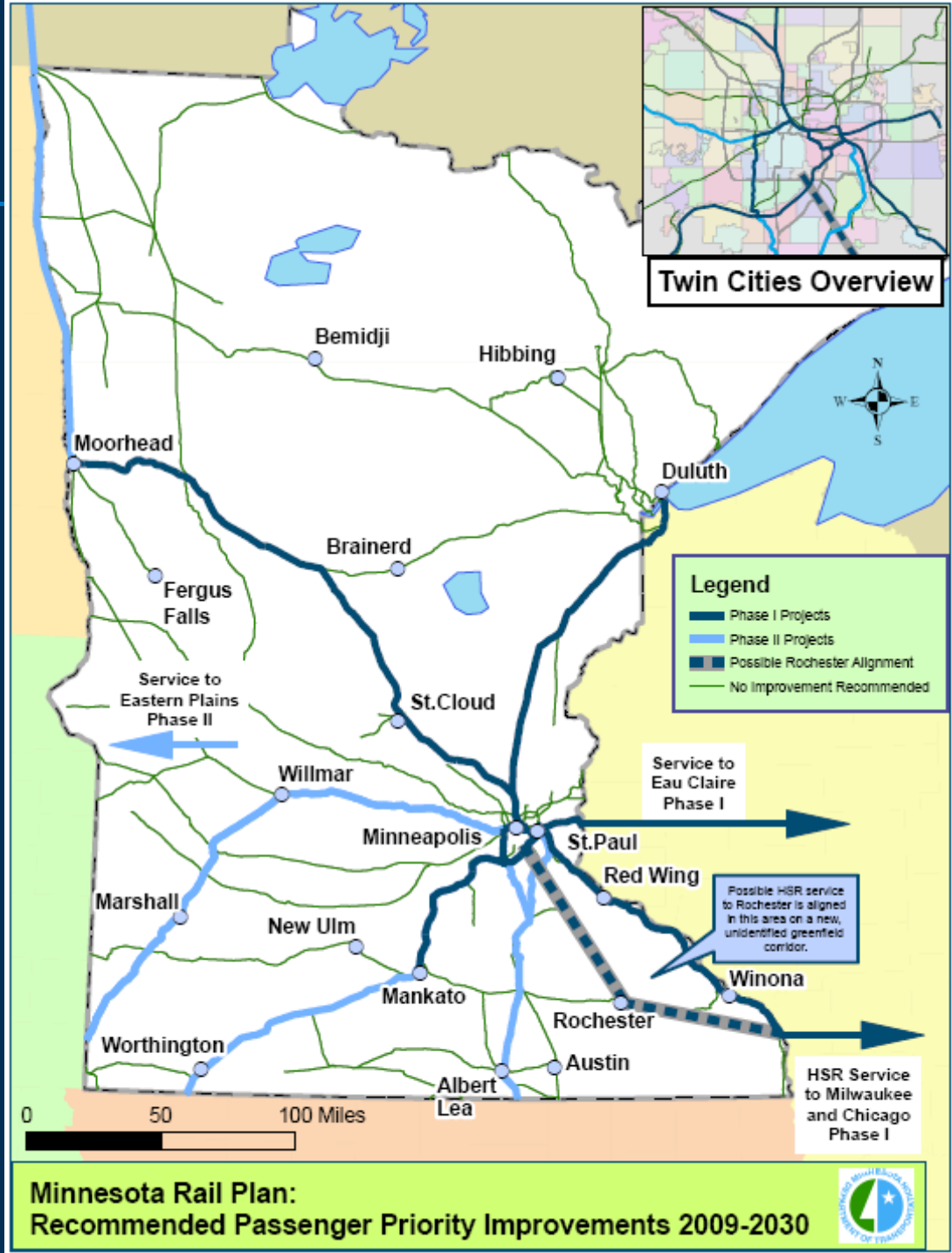
- Passenger only
  - Rolling stock
  - Trackage rights on freight railroads
  - Right-of-Way (HSR new alignments)
  - Operating and Maintenance

Example Improvement Costs Developed For Full System

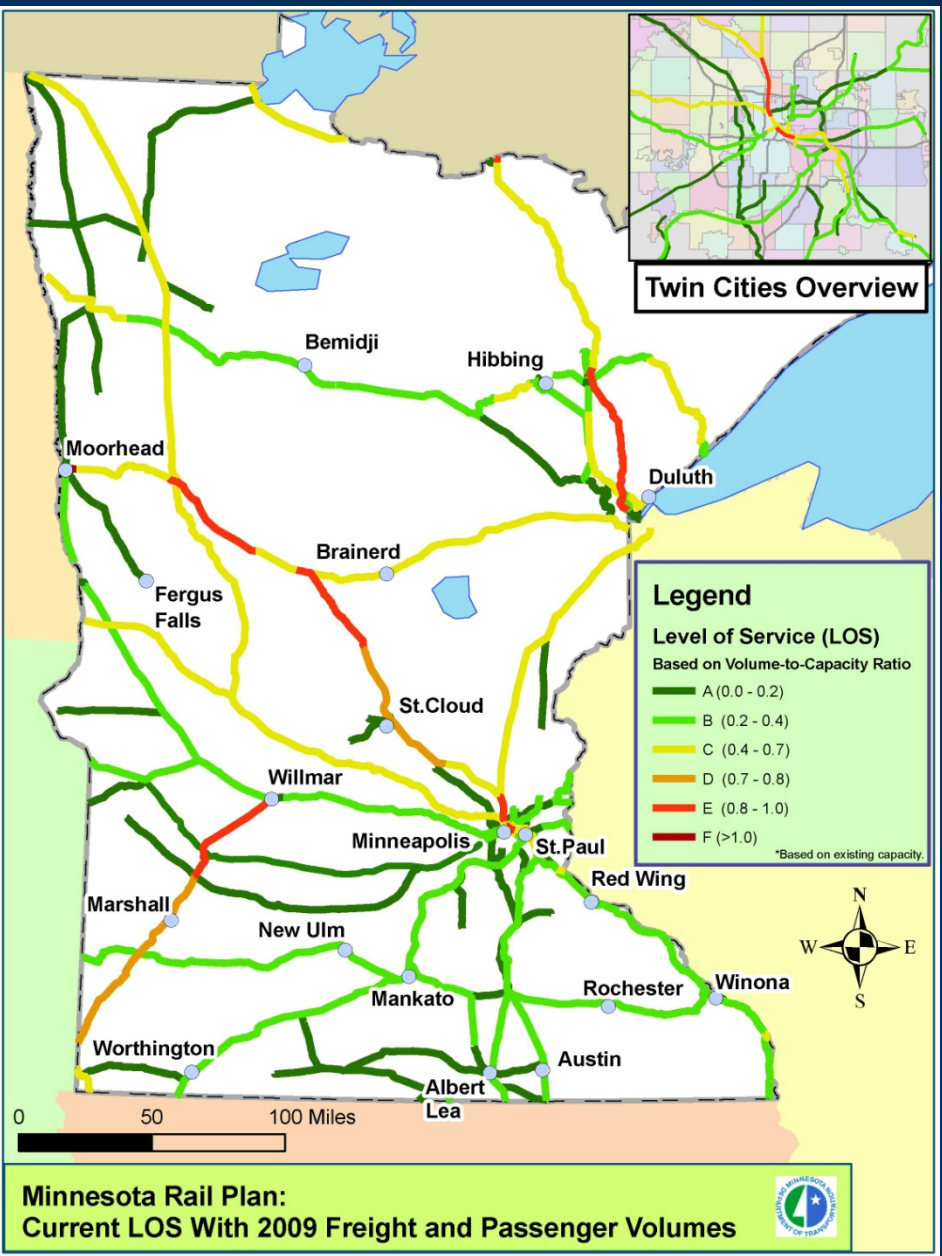
- PTC implementation on all Class I railroads = $1.64 B
- Upgrade all rail lines to 286,000-lb = $586 M
- Safety
  - Upgrade existing active warning devices = $280 M
  - Upgrade crossings as part of passenger corridors = $150 M
- Upgrade rail lines to FRA Class II = $595 M

** Cost estimates under development*

Priority Passenger Rail Needs
Preliminary Draft

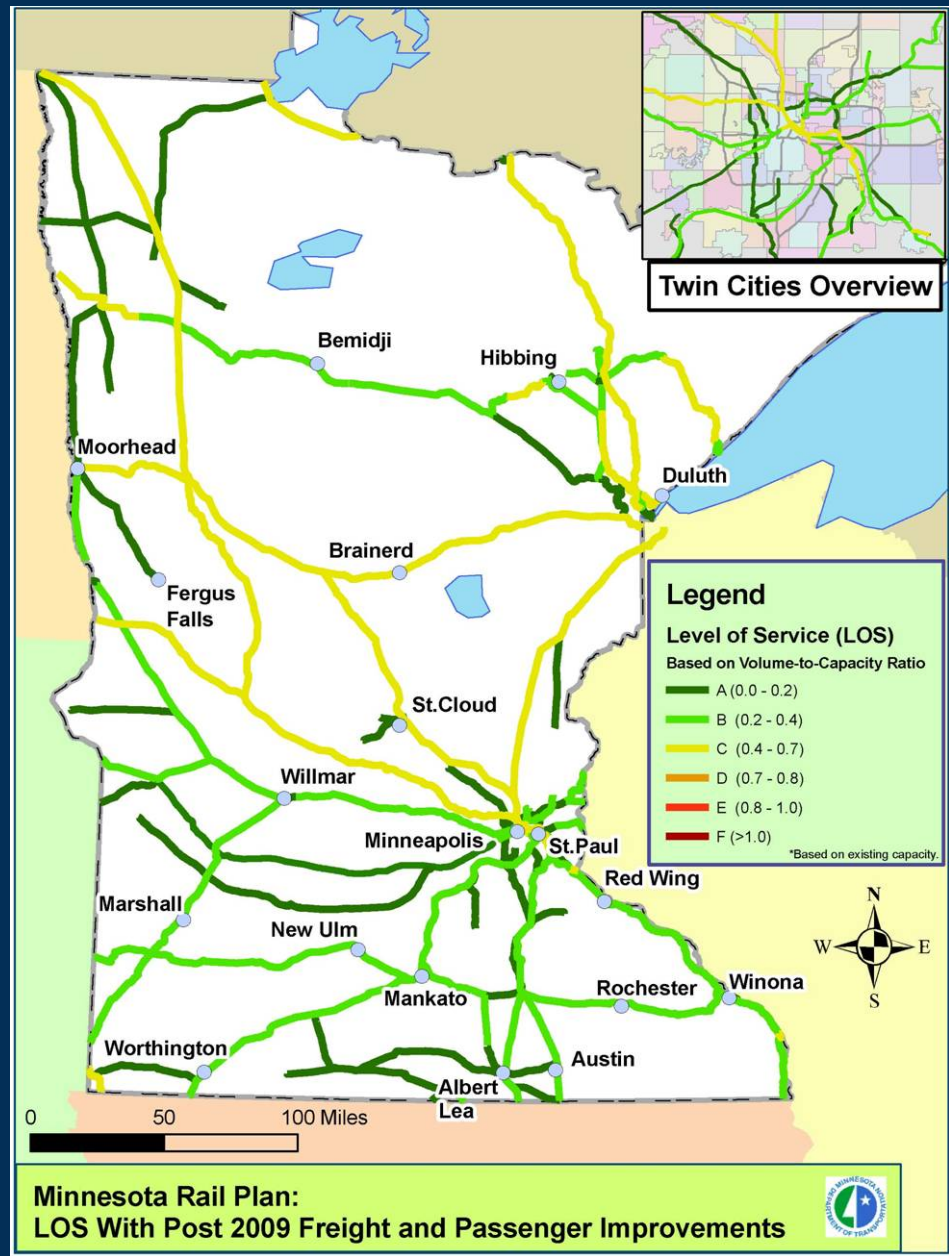


2009 Freight LOS Without Improvements



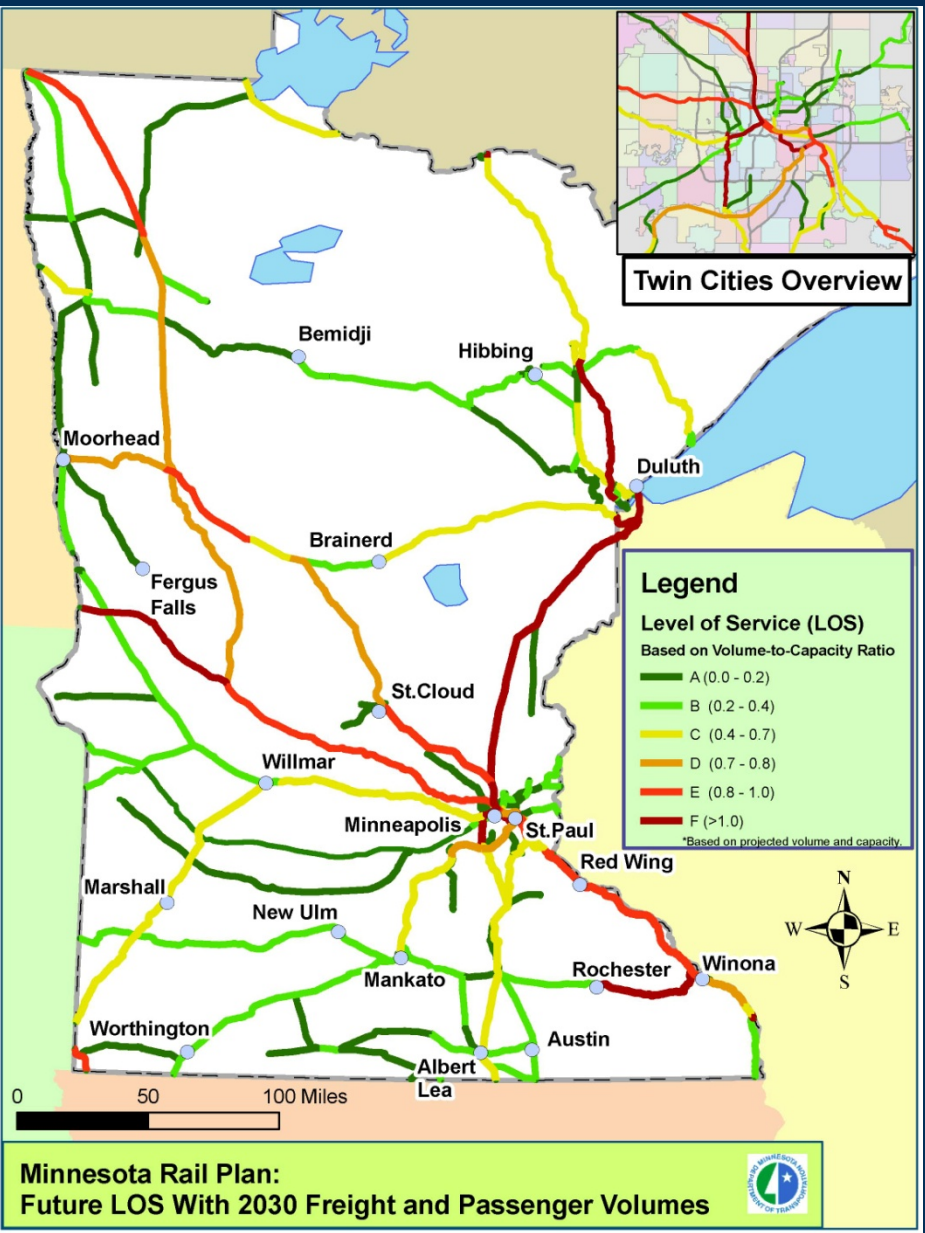
Minnesota Rail Plan:
Current LOS With 2009 Freight and Passenger Volumes

2009 Freight LOS With Improvements

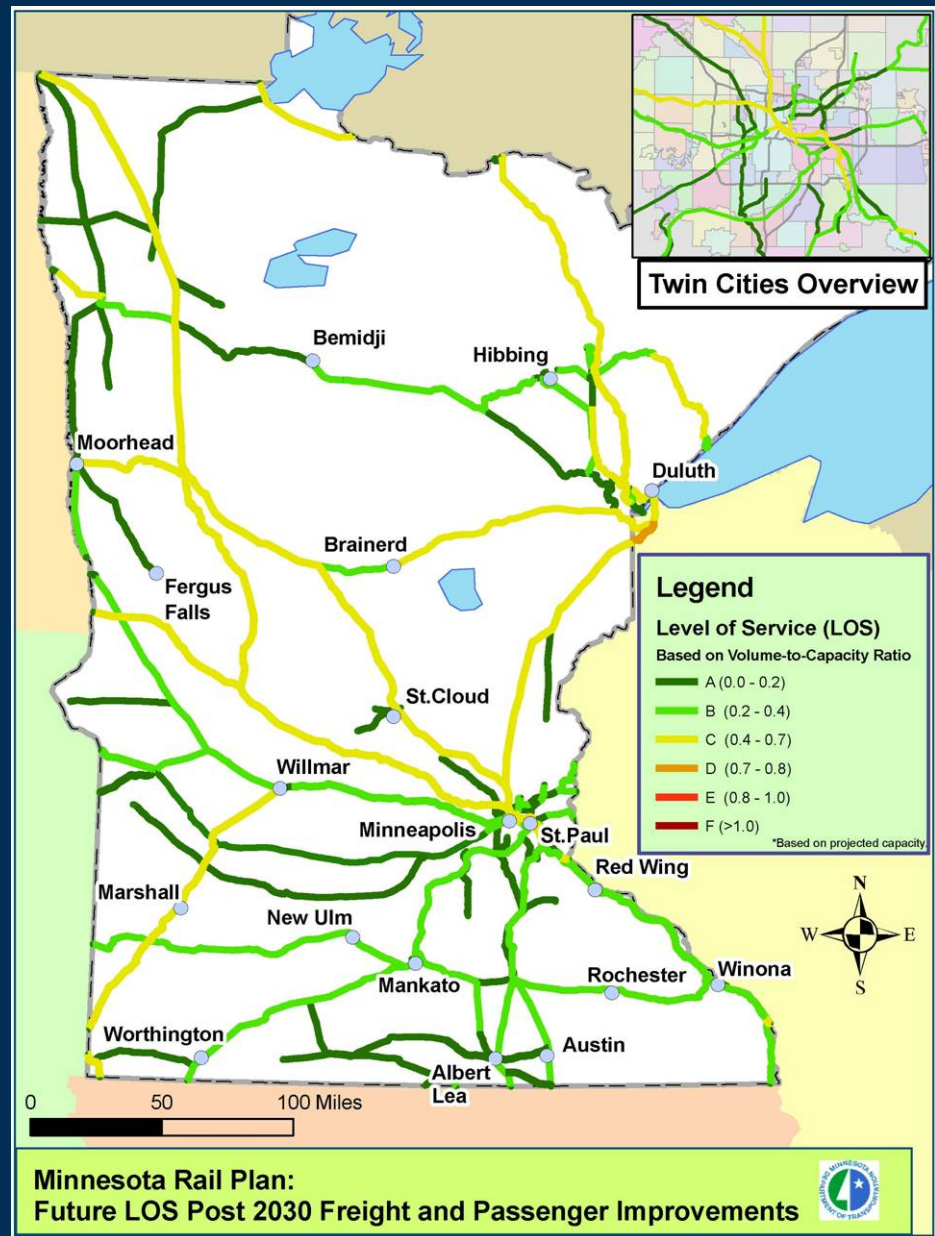


Minnesota Rail Plan:
LOS With Post 2009 Freight and Passenger Improvements

2030 Freight and Passenger LOS Without Improvements



2030 Freight and Passenger LOS With Improvements



Preliminary Draft Program Summary

- All freight improvement needs = $3.8 Billion
- All shared passenger/freight improvement needs
  - Individual projects = $8.4 Billion
  - As a system = $7.2 Billion
  - High priority projects = $5.3 Billion

Next Steps

Erika Witzke

Remaining Phase IV Tasks

- Tasks 7/8 – Institutional Analysis – Oct
- Task 9 – Funding and Programming – Nov
- Task 10 – Outreach
  - Final PAC/TAC meetings – Nov 12-13
- Task 11 – Final Report – end of year

Discussion