



SOUTHWEST
transitway

green means go.



Overview of Environmental Issues for Screening of LRT Alternatives April 8, 2009

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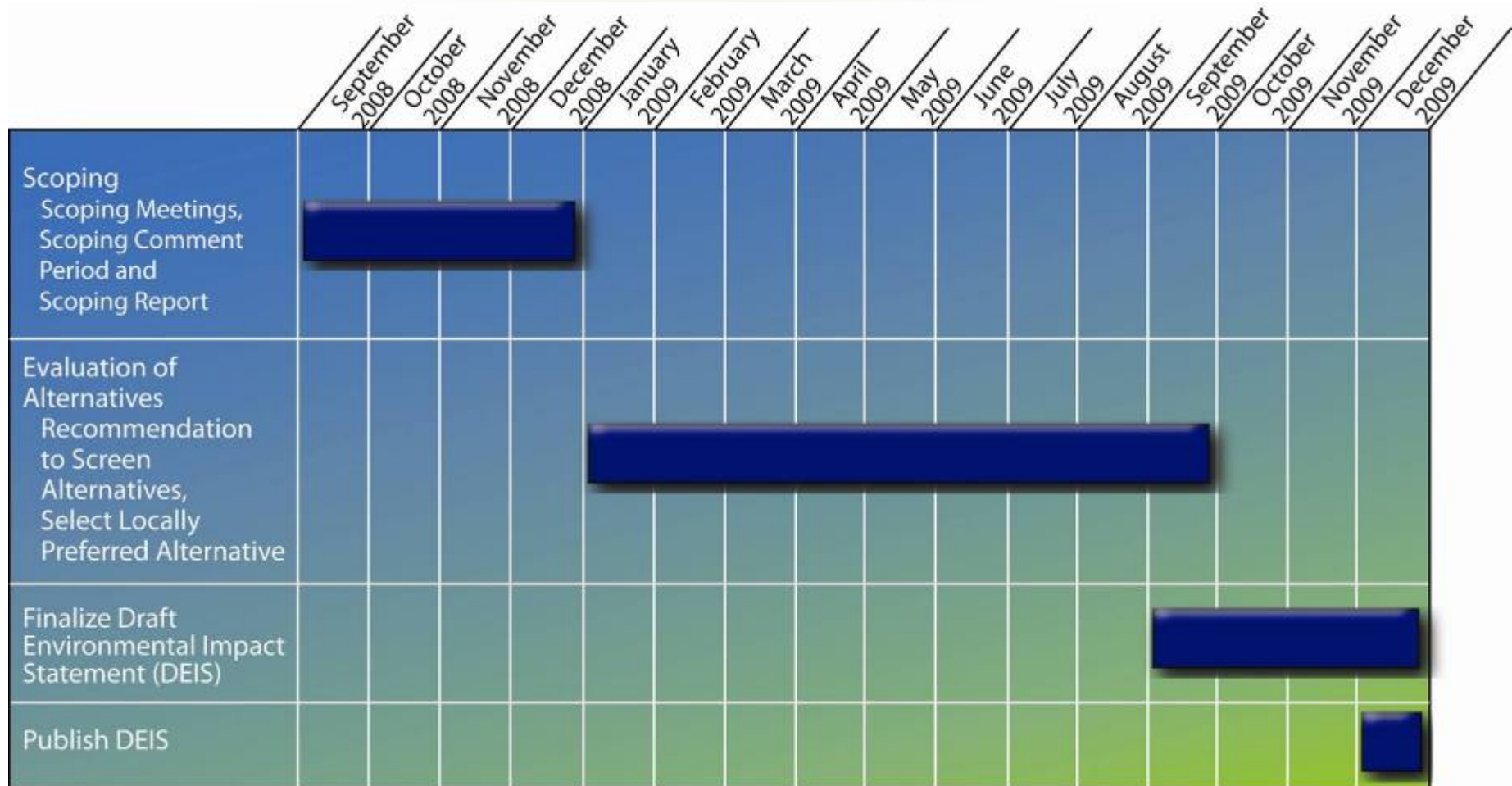
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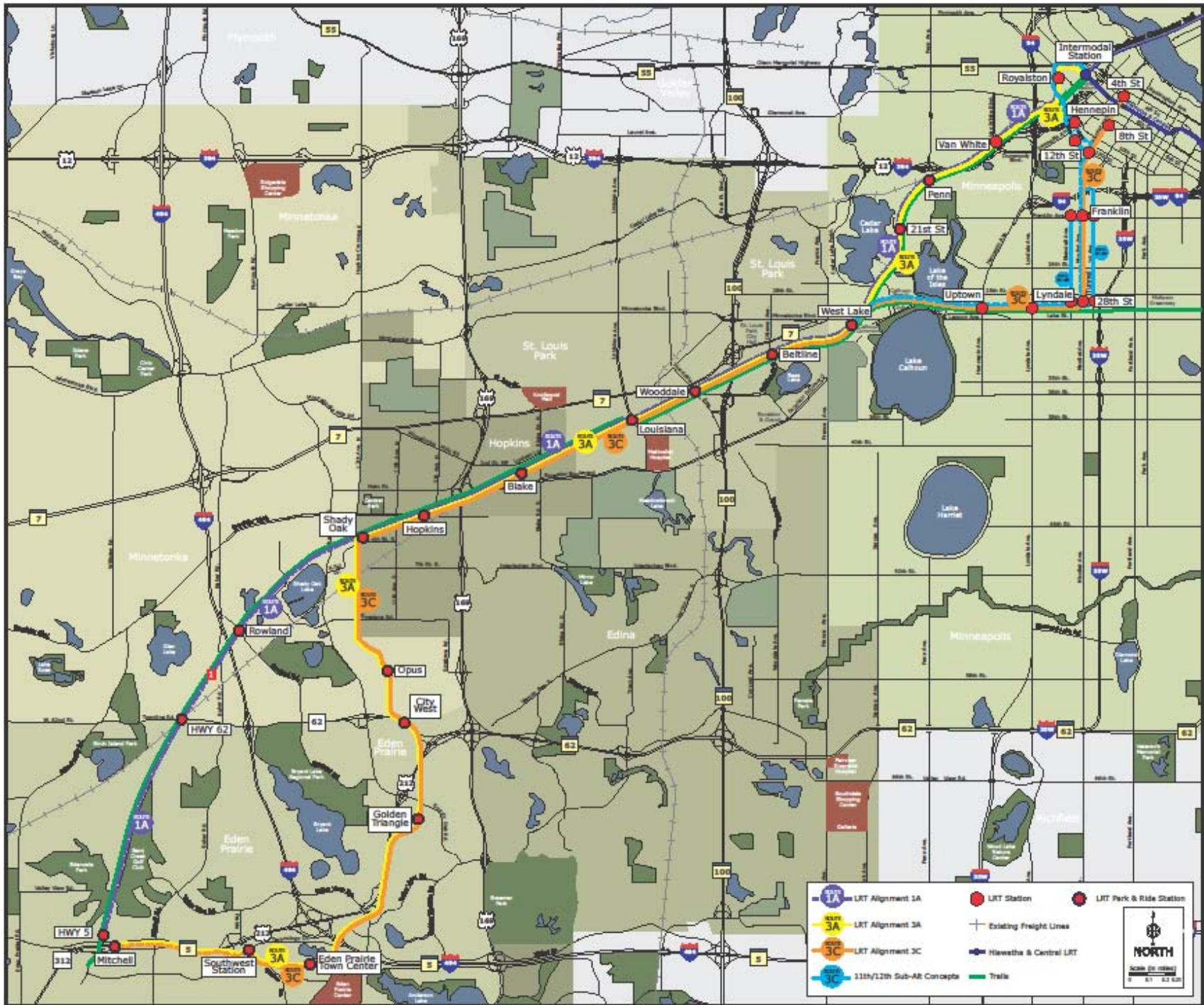
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	LRT Alignment 1A		LRT Station
	LRT Alignment 3A		LRT Park & Ride Station
	LRT Alignment 3C		Existing Freight Lines
	11th/12th Sub-Alt Concepts		Hawatha & Central LRT
	Trails		NORTH

Scale (in miles)
0 0.1 0.2 0.3

Council on Environmental Quality (CEQ) Guidance

The test of 'reasonableness' for alternatives

- Must be **practical or feasible** from the technical and economic standpoint and using common sense
- **Not simply desirable** from the standpoint of the **applicant**
- Not feasible if it cannot be built as a matter of **sound engineering judgment**

Evaluation Criteria

- Planning Compatibility
- Performance (mobility, cost, cost-effectiveness)
- Environmental Impacts/Benefits
- Other Factors

INTENT IS TO IDENTIFY FATAL FLAWS

NEPA Requirements

- Historic Resources
- Parklands and Recreation 4(f)
- Groundwater & Soil Resources
- Water Resources
- Natural Resources
- Noise & Vibration
- Hazardous or contaminated material
- Land Use and Socio-Economic
- Neighborhoods, Community Services & Community Cohesion
- Acquisition and Displacements/Relocations
- Visual Quality and Aesthetics
- Safety and Security
- Environmental Justice
- Air Quality
- Energy

Legal and Regulatory Resources

FEDERAL

National Environmental Policy Act (NEPA) Policies & Guidance

<http://www.epa.gov/Compliance/resources/policies/nepa/index.html>

STATE (MEPA)

Statutes and rules of the Environmental Quality Board (EQB)

<http://www.eqb.state.mn.us/resource.html?id=17970>

State Statutes and Rules

- Environmental Quality Board: *Minnesota Statutes* [116C.01-03](#).
- Environmental policy and program coordination: *Minnesota Statutes* [116C.04](#), [116C.06](#) and [116D.10- .11](#).
- Water resources: *Minnesota Statutes* [103A.204](#), [103A.403](#), [103A.43](#) and [103B.151](#).
- Environmental review: *Minnesota Statutes* [116D.04](#)
- Environmental review: [Minnesota Rules Chapter 4410](#).

Resource Areas for Environmental Screening

Environmental Inventory of:

- Historic Properties
- Natural Resources
- Water Resources
- Section 4(f) Properties
- Hazardous or Contaminated Material
- Geological Evaluation
- Noise and Vibration



Why These Resources?

- Resources are highly important and impacts to them may be **irreversible**
- In case of 4(f) and historic, may be directed to “prudent and reasonable alternative” (**avoiding** impacting the resource)
- The mitigation and permits required to obtain permission to impact the resource may significantly affect **budget and schedule**
- Identified during **Scoping Process** as significant

Historic Properties

- Structures, districts, places
- Archaeological sites
- Traditional cultural properties



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Historic Preservation

- National Historic Preservation Act (NHPA) 1966
 - Section 106 requires Federal Agencies to consider the effects of undertaking on historic properties
 - Designates State Historic Preservation Officer (SHPO) with authority to review and concur in all determinations
- FTA delegated MnDOT as project lead
 - APE
 - Eligible properties
 - Project effects
 - Treatments
 - Effects after treatment
- SHPO must review and concur with findings
- Test is reasonable and feasible alternative that avoids or minimizes adverse effects

Section 4(f) Properties

Section 4(f) of the US Department of Transportation (USDOT) Act of 1966 prohibits the constructive use or taking of 4(f) properties for transportation purposes.

- Section 6(f) Land and Water Conservation Fund Act



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Section 4(f) Properties

- Public parks/recreation areas
- Wildlife/waterfowl refuges
- Eligible Historic Properties
- Archaeological sites (protection in place)



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Section 4(f) Exceptions

- There is no feasible and prudent alternative to the use of the land.
- The project includes all possible planning to minimize harm to the property.

Public Parks and Conservation Areas: Segment C



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**Draft Environmental
Impact Statement**

Legend

- Station
- Park & Ride Station
- Park
- LRT Segment 3C
- LRT 3A Alternative
- Hiawatha Light Rail
- One-quarter mile buffer area

Natural Resources

- Threatened or endangered (T&E) species
- Critical habitat for (T&E)
- Vegetation restoration
- Wetland habitat for flora/fauna of interest



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Natural Resources

- Section 7 Endangered Species Act (ESA) 1973
- MN Statute 84.0895 (MN Endangered Species Law)
- Migratory Bird Treaty Act 1918

Water Resources

- Clean Water Act (CWA) 1977
- DNR: Protected Water Permit and Crossing License
- Multiple Watershed Management Organizations
- Local Units of Government Vegetation Ordinances & Wetland Regulation

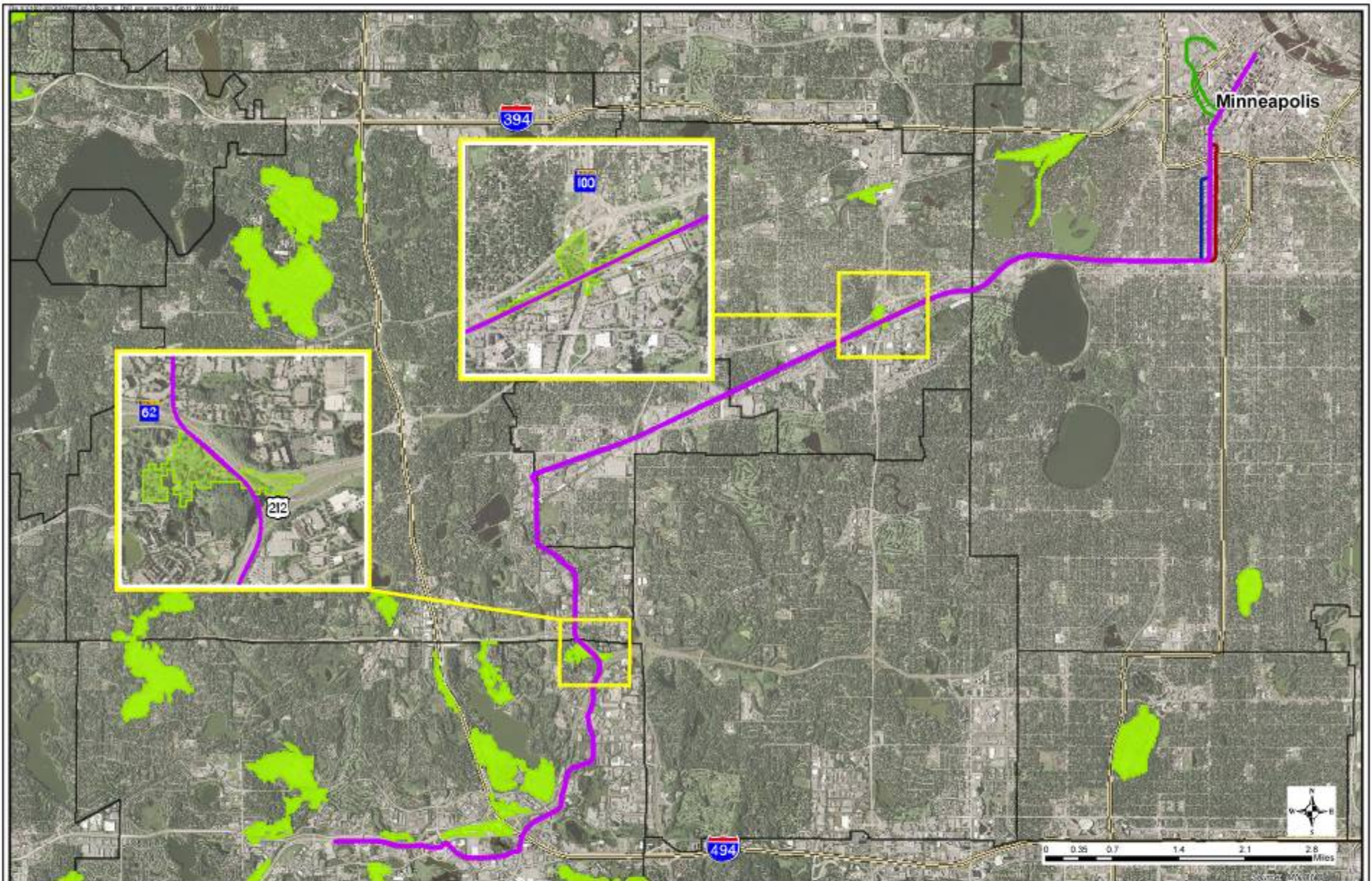
Water Resources

- US Army Corps of Engineers (COE)
 - Section 404 of the Clean Water Act (CWA)
 - Section 10 of the Rivers and Harbors Act of 1899
- Minnesota Department of Natural Resources (DNR)
 - Public Water Works Permits
 - License to Cross Permits
- Minnesota Pollution Control Agency (MPCA)
 - National Pollutant Discharge Elimination System Permits (NPDES)
- Local Government Units (LGU) (i.e. Minnetonka, Eden Prairie)
 - Wetland Conservation Act (WCA)
- Minnehaha Creek Watershed District (MCWD)
 - WCA for Cities of Hopkins and St. Louis Park
 - Local Watershed Permits
- Bassett Creek Watershed Management Commission (BCWMC)
 - Local Watershed Permits
- Mississippi Watershed Management Organization (MWMO)
 - Regulatory authority lies with LGU's
- Nine Mile Creek Watershed District (NMCWD)
 - Local Watershed Permits
- Riley/Purgatory/Bluff Creek Watershed District
 - Regulatory authority Transferred to LGU's in 2008

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Legend

- LRT Route 3C
- Blaisdell Ave Tunnel
- 1st Ave South 3C Sub-Alternative
- 11 12th Street 3C Sub-Alternative
- Munciple Boundary
- DNR Regionally Significant Ecological Areas (2008)

Figure 6-3
Threatened and Endangered
Species Review
LRT Route 3C - Sensitive Habitats
 Draft Environmental Impact Statement

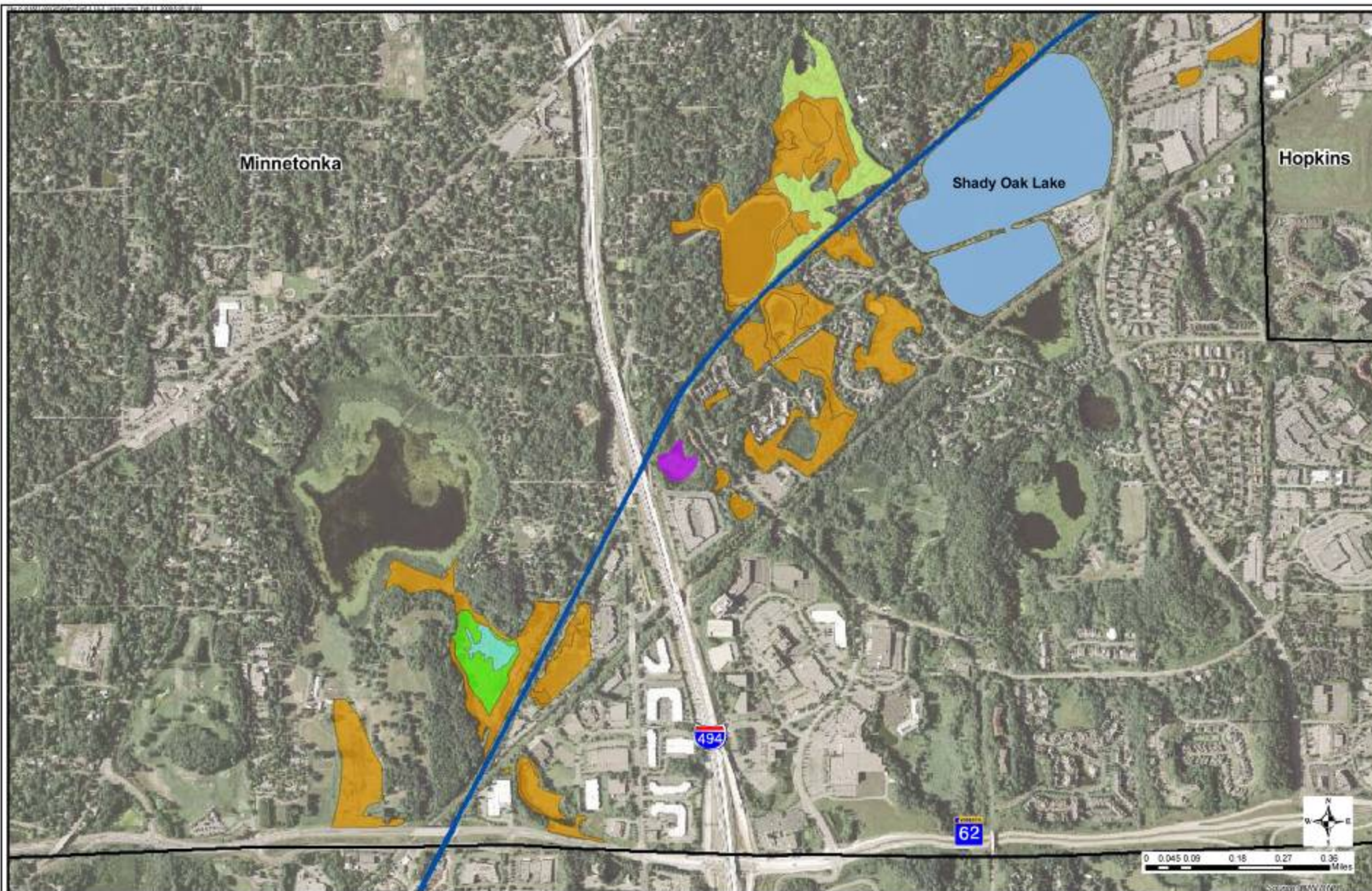
Water Resources

- Waters of US (Corp of Engineers 404 permit)
- Federal Emergency Management Agency (FEMA)
- Wetlands
- Riparian areas
- Floodplains
- Watershed managements areas
- Shallow ground water
- Groundwater recharge areas



Water Resources

- Clean Water Act (CWA)
- Minnesota Wetland Conservation Act (WCA)
- US Army Corps of Engineers (USACE) 404 process
- Designation of Waters of US
- If affected requires permit
- Loss of wetlands requires mitigation
- USACE can dictate entirely new alignment to avoid
- Avoid or minimize impacts is highly recommended



Legend

— LRT Route 1A

Wetland and Riparian Habitats

Unique Features

Lowland hardwood forest

Open sphagnum bog

Rich fen floating-mat subtype - saturated soils

Tamarack swamp sphagnum subtype

Figure 5.3.1A-3
Wetland and Riparian Habitats
Corridor 1A - Minnetonka

Draft Environmental Impact Statement



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Legend

- Wetland
- 100-year Floodplain
- DNR Public Watercourses
- Potential Impacts

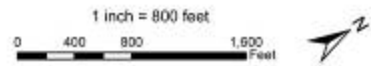
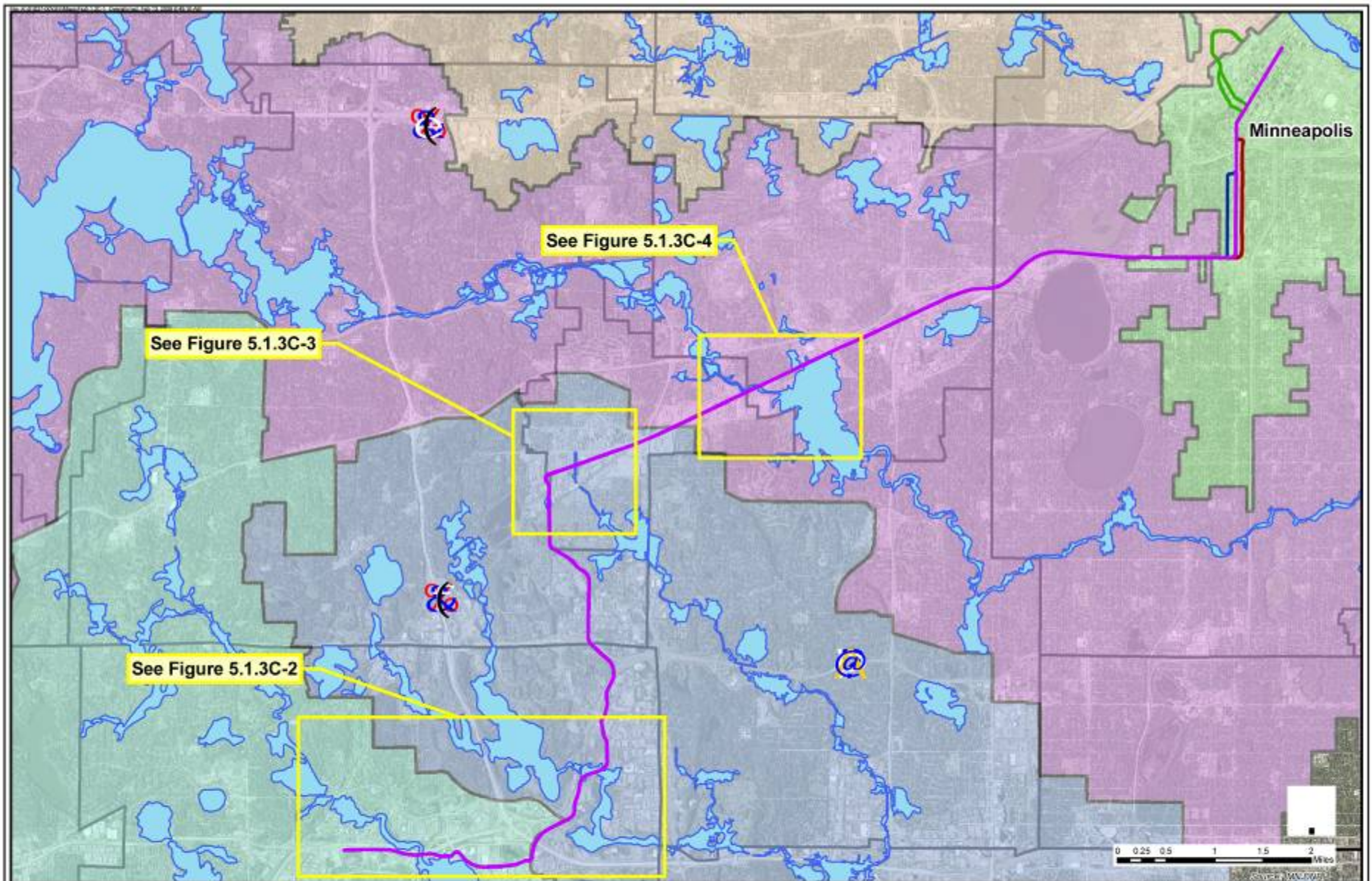


Figure 1-2
Major Segment 1
Potential Impacts 6 to 12

Southwest Transitway





Legend

- | | |
|---|--|
|  LRT Route 3C | Watershed Management Areas |
|  Blaisdell Ave Tunnel |  BASSETT CREEK WMO |
|  1st Ave South 3C Sub-Alternative |  MINNEHAHA CREEK WD |
|  11 12th Street 3C Sub-Alternative |  MISSISSIPPI RIVER WMO |
|  100-year Floodplain |  NINE MILE CREEK WD |
| |  RILEY/PURGATORY/BLUFF CREEK WD |

Figure 5.1.3C-1
100-yr Floodplain and
Watershed Management Areas
Corridor 3C

Draft Environmental Impact Statement

Shallow Wells with Groundwater Within 10 Feet of Land Surface:Segment C

Figure H-1



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**Draft Environmental
Impact Statement**

Legend

- Station
- Park & Ride Station
- Parks
- LRT 3C Alternative
- LRT 3A Alternative
- LRT 1A Alternative
- Hawatha Light Rail
- Interstate
- US Highway
- State Highway
- County Road

WMN_PCA_Hennepin

- Leaking Underground Storage Tank Site
- Agricultural Chemical Spill
- Agricultural Chemical Site Investigation
- Superfund
- Unpermitted Dump
- VIC/NFRAP

Shallow Wells with Groundwater Within 10 Feet of Land Surface: Segment 4

Figure H-1



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SOUTHWEST transit

Draft Environmental Impact Statement

<p>Legend</p> <ul style="list-style-type: none"> ● Station ● Park & Ride Station Parks 	<ul style="list-style-type: none"> — LRT 3C Alternative — LRT 3A Alternative — LRT 1A Alternative — Hawatha Light Rail Interstate US Highway State Highway County Road 	<p>WMN_PCA_Hennepin</p> <ul style="list-style-type: none"> ● Leaking Underground Storage Tank Site ● Agricultural Chemical Spill Agricultural Chemical Site Investigation ● Other ● Superfund ● Unpermitted Dump ● VIC/NFRAP
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Hazardous or Contaminated Material

- Potential major cost exposure
- Understanding is important to the design process
- Discoveries during construction play havoc with schedule



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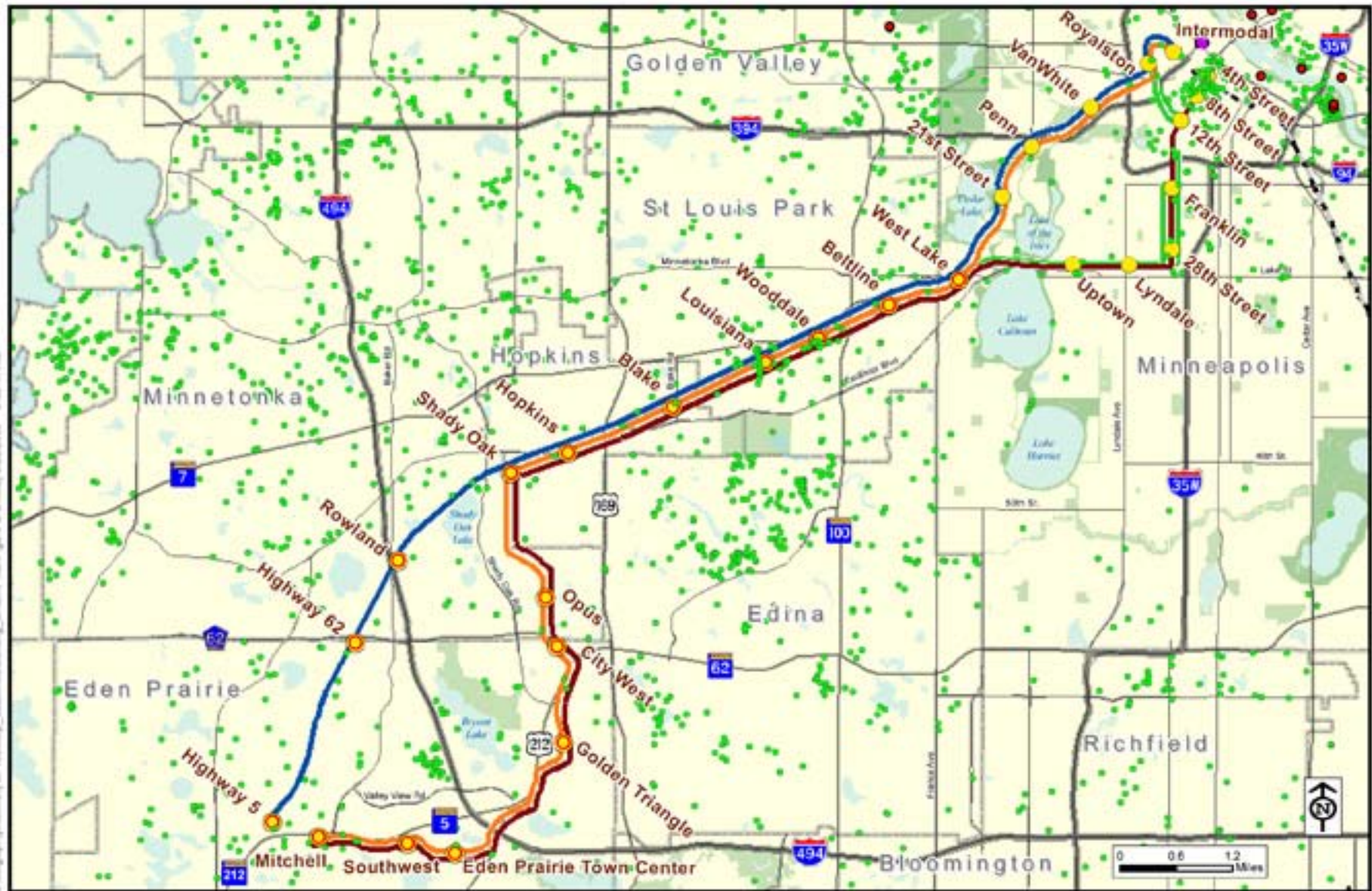


Geological Evaluation

- Can be a cost driver
- Need to understand to develop cost estimate
- Could influence the feasibility of an alignment

Occurrence of Bedrock Within 10 Feet of Land Surface

Figure G-2



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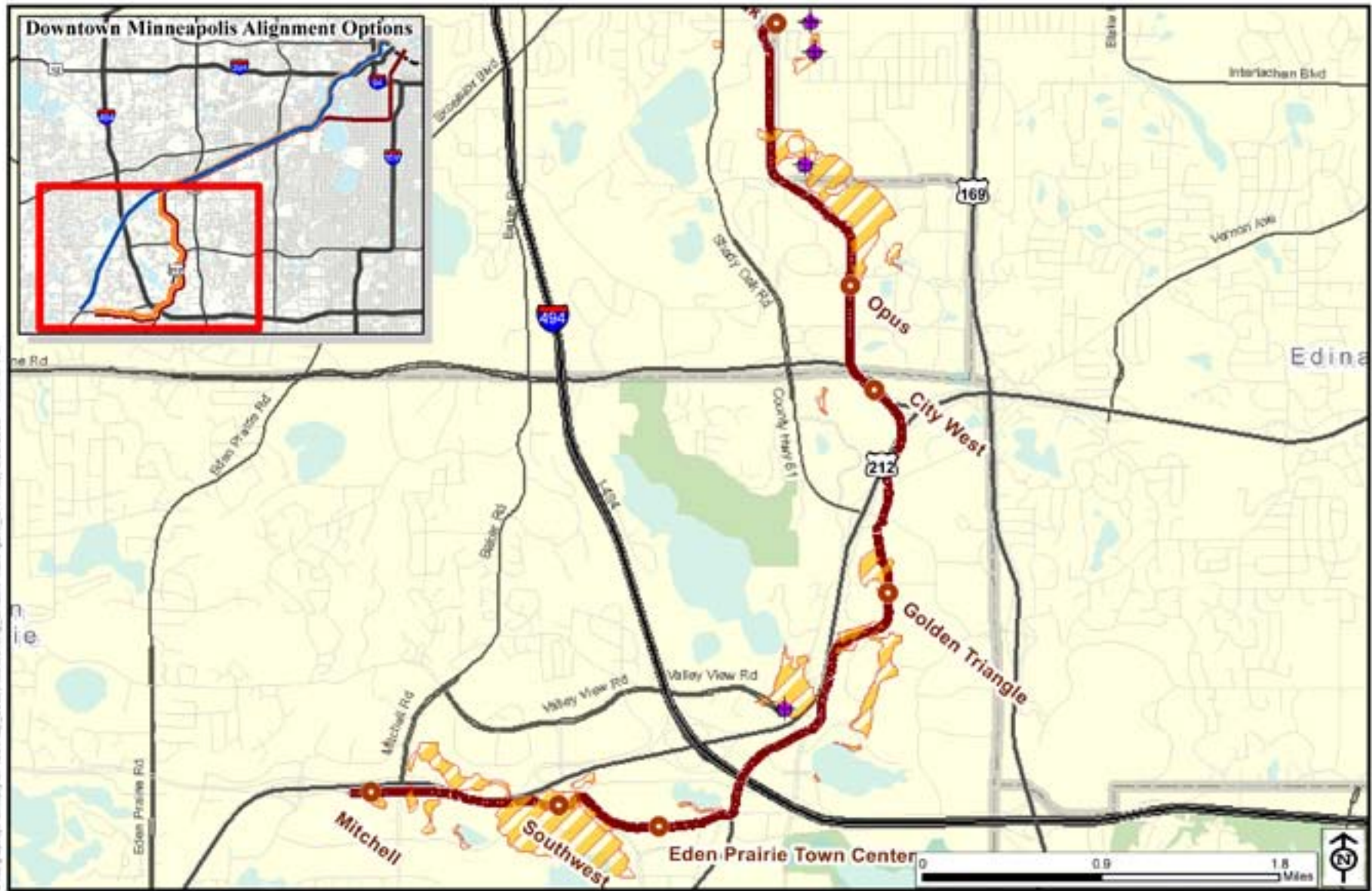
Draft Environmental Impact Statement

Legend

- Station
- Park & Ride Station
- LRT 1A Alternative
- LRT 3A Alternative
- LRT 3C Alternative
- LRT 3C (11th/12th Sub-Alternative)
- - - Hiawatha Light Rail
- Inferred Extent of Shallow Bedrock
- Bedrock Encountered within 10 ft
- Wells Penetrating Bedrock

Areas with Compressible Soils: Segment 3

Figure G-7



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**Draft Environmental
Impact Statement**

Legend

- Station
- LRT 3C Alternative
- LRT 3A Alternative
- LRT 1A Alternative
- Hiawatha Light Rail
- Parks
- Interstate
- US Highway
- State Highway
- County Road
- Wells Encountering Peat or Muck
- Peat

Locations of Large Excavations:Segment C

Figure G-4



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 CONSULTING

**Draft Environmental
 Impact Statement**

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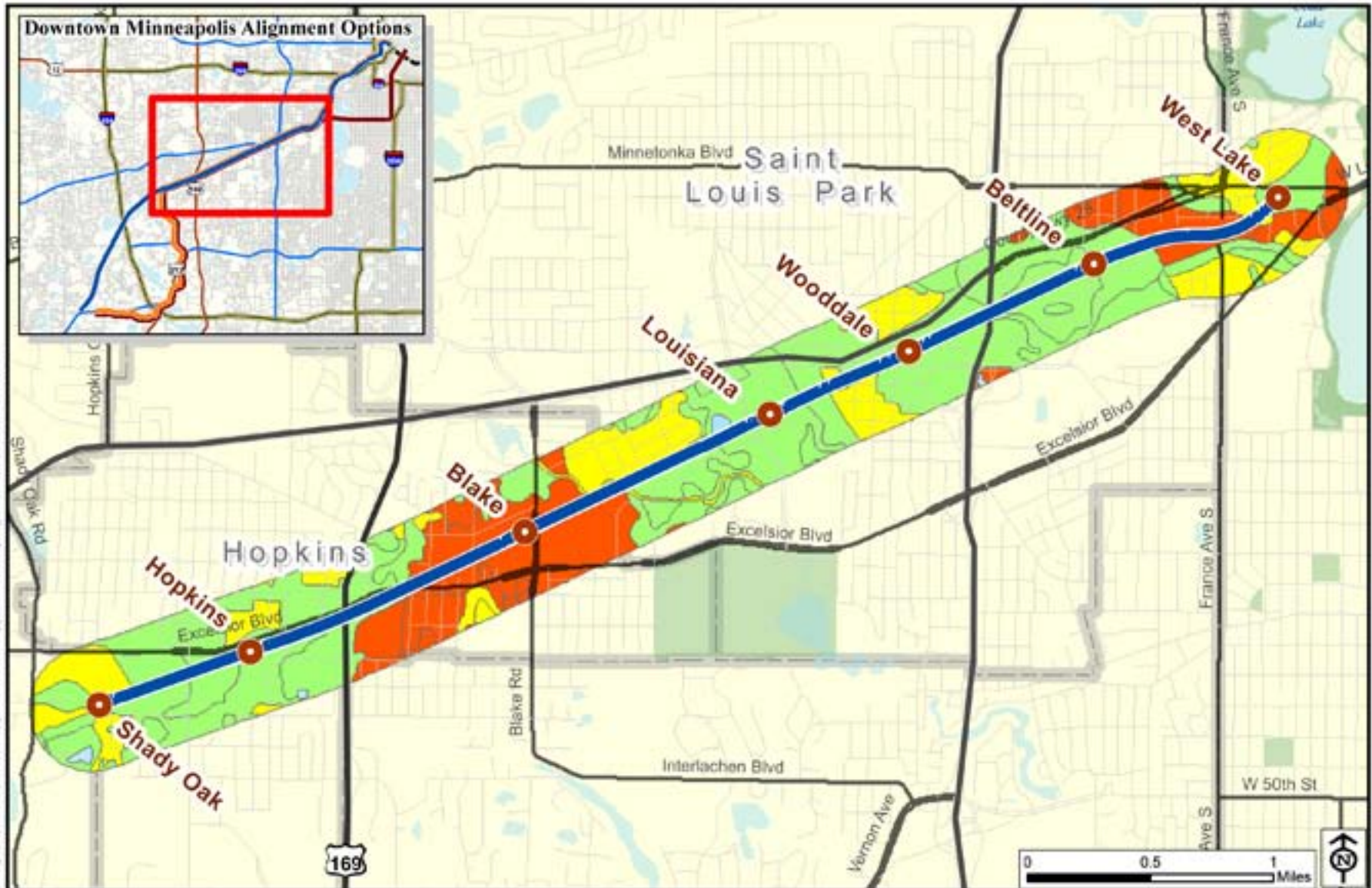
Station	LRT 3C Alternative	Interstate	Large Excavation
Park & Ride Station	LRT 3A Alternative	US Highway	
Parks	LRT 1A Alternative	State Highway	
	Hiawatha Light Rail	County Road	

Noise and Vibration

- Potential for ground transmission
- Identify sensitive receptors
- Potential public concern
- Mitigation strategy may require time to establish
- FTA Transit Noise and Vibration Impact Assessment 2006

Potential for Propagation of Ground-borne Vibrations : Segment 4

Figure G-1



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Impact Statement**

Legend

- Station
- Park & Ride Station
- Potential for GBV Propagation in Bedrock

Potential for GBV in Soils

- High
- Moderate
- Low
- Water

Line Types

- LRT 3C Alternative
- LRT 3A Alternative
- LRT 1A Alternative
- Hawthorne Light Rail
- Interstate
- US Highway
- State Highway
- County Road



For more information, please visit

www.southwesttransitway.org

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