

**Appendix A**  
**List of Recipients**

---



**APPENDIX A****List of Recipients**

---

The following is a list of agencies, organizations, and persons to whom electronic copies of the Supplemental Draft EIS were sent. Copies of the Supplemental Draft EIS were sent out to other interested businesses, individuals, and organizations, as requested.

**Federal Agencies**

Advisory Council on Historic Preservation

Centers for Disease Control

Federal Emergency Management Agency

United States Federal Highway Administration

United States Federal Railroad Administration

United States Federal Transit Administration

United States Army Corps of Engineers

United States Department of Agriculture, Natural Resources Conservation Science

United States Department of the Army

United States Department of Commerce

United States Department of Energy

United States Department of Homeland Security

United States Department of Housing & Urban Development

United States Department of the Interior, Office of Environmental Policy and Compliance

United States Department of Public Safety

United States Environmental Protection Agency

United States Coast Guard

United States Fish and Wildlife Service

Surface Transportation Board

**United States Legislators**

Hon. Amy Klobuchar, U.S. Senator

Hon. Al Franken, U.S. Senator

Hon. Eric Paulsen, U.S. Representative (District 3)

Hon. Keith Ellison, U.S. Representative (District 5)

**Federal Agencies – Regional Offices**

United States Federal Aviation Administration, Great Lakes Regional Office

United States Federal Highway Administration, Minnesota Division

United States Army Corps of Engineers, St. Paul District

United States Coast Guard, Ninth Coast Guard District

United States Department of Housing and Urban Development, Region V

United States Federal Railroad Administration, Region IV

United States Federal Transit Administration, Region V

United States Environmental Protection Agency, Region V

### **State Agencies**

Minnesota Board of Water and Soil Resources

Minnesota Department of Agriculture

Minnesota Department of Commerce

Minnesota Department of Health

Minnesota Department of Natural Resources

Minnesota Department of Public Safety

Minnesota Department of Transportation

Minnesota Environmental Quality Board

Minnesota Historical Society

Minnesota Indian Affairs Council

Minnesota Office of the State Archaeologist

Minnesota Pollution Control Agency

Minnesota State Historic Preservation Office

### **State Elected Officials**

Hon. Mark Dayton, Governor

Hon. Terri Bonoff, Minnesota State Senator (District 44)

Hon. Ron Latz, Minnesota State Senator (District 46)

Hon. David Hann, Minnesota State Senator (District 48)

Hon. Melisa Franzen, Minnesota State Senator (District 49)

Hon. Bobby Joe Champion, Minnesota State Senator (District 59)

Hon. Kari Dziedzic, Minnesota State Senator (District 60)

Hon. Scott Dibble, Minnesota State Senator (District 61)

Hon. Patricia Torres Ray, Minnesota State Senator (District 63)

Hon. Sarah Anderson, Minnesota State Representative (District 44A)

Hon. Jon Applebaum, Minnesota State Representative (District 44B)

Hon. Ryan Winkler, Minnesota State Representative (District 46A)

Hon. Cheryl Youakim, Minnesota State Representative (District 46B)

Hon. Yvonne Selcer, Minnesota State Representative (District 48A)

Hon. Jennifer Loon, Minnesota State Representative (District 48B)

Hon. Ron Erhardt, Minnesota State Representative (District 49A)

Hon. Paul Rosenthal, Minnesota State Representative (District 49B)

Hon. Joe Mullery, Minnesota State Representative (District 59A)  
Hon. Raymond Dehn, Minnesota State Representative (District 59B)  
Hon. Diane Loeffler, Minnesota State Representative (District 60A)  
Hon. Phyllis Kahn, Minnesota State Representative (District 60B)  
Hon. Frank Hornstein, Minnesota State Representative (District 61A)  
Hon. Paul Thissen, Minnesota State Representative (District 61B)  
Hon. Karen Clark, Minnesota State Representative (District 62A)  
Hon. Susan Allen, Minnesota State Representative (District 62B)  
Hon. Jim Davnie, Minnesota State Representative (District 63A)  
Hon. Jean Wagenius, Minnesota State Representative (District 63B)

### **Local Elected Officials**

Hon. Betsy Hodges, Mayor of Minneapolis  
Hon. Kevin Reich, Minneapolis City Councilor (Ward 1)  
Hon. Cam Gordon, Minneapolis City Councilor (Ward 2)  
Hon. Jacob Frey, Minneapolis City Councilor (Ward 3)  
Hon. Barbara Johnson, Minneapolis City Council President (Ward 4)  
Hon. Blong Yang, Minneapolis City Councilor (Ward 5)  
Hon. Abdi Warsame, Minneapolis City Councilor (Ward 6)  
Hon. Lisa Goodman, Minneapolis City Councilor (Ward 7)  
Hon. Elizabeth Glidden, Minneapolis City Councilor (Ward 8)  
Hon. Alondra Cano, Minneapolis City Councilor (Ward 9)  
Hon. Lisa Bender, Minneapolis City Councilor (Ward 10)  
Hon. John Quincy, Minneapolis City Councilor (Ward 11)  
Hon. Andrew Johnson, Minneapolis City Councilor (Ward 12)  
Hon. Linea Palmisano, Minneapolis City Councilor (Ward 13)  
Hon. Jeff Jacobs, Mayor of St. Louis Park  
Hon. Steve Hallfin, St. Louis Park City Councilor (At-Large)  
Hon. Jake Spano, St. Louis Park City Councilor (At-Large)  
Hon. Susan Sanger, St. Louis Park City Councilor (Ward 1)  
Hon. Anne Mavity, St. Louis Park City Councilor (Ward 2)  
Hon. Gregg Lindberg, St. Louis Park City Councilor (Ward 3)  
Hon. Tim Brausen, St. Louis Park City Councilor (Ward 4)  
Hon. Gene Maxwell, Mayor of Hopkins  
Hon. Molly Cummings, Hopkins City Councilor  
Hon. Jason Gadd, Hopkins City Councilor  
Hon. Kristi Halverson, Hopkins City Councilor

Hon. Aaron Kuznia, Hopkins City Councilor  
Hon. Terry Schneider, Mayor of Minnetonka  
Hon. Dick Allendorf, Minnetonka City Councilor (At-Large)  
Hon. Patty Acomb, Minnetonka City Councilor (At-Large)  
Hon. Bob Ellingson, Minnetonka City Councilor (Ward 1)  
Hon. Tony Wagner, Minnetonka City Councilor (Ward 2)  
Hon. Brad Wiersum, Minnetonka City Councilor (Ward 3)  
Hon. Tim Bergstedt, Minnetonka City Councilor (Ward 4)  
Hon. Nancy Tyra-Lukens, Mayor of Eden Prairie  
Hon. Brad Aho, Eden Prairie City Councilor  
Hon. Sherry Butcher Wickstrom, Eden Prairie City Councilor  
Hon. Ron Case, Eden Prairie City Councilor  
Hon. Kathy Nelson, Eden Prairie City Councilor  
Hon. Mike Opat, Hennepin County Commissioner (District 1, Chair)  
Hon. Linda Higgins, Hennepin County Commissioner (District 2)  
Hon. Marion Greene, Hennepin County Commissioner (District 3)  
Hon. Peter McLaughlin, Hennepin County Commissioner (District 4)  
Hon. Randy Johnson, Hennepin County Commissioner (District 5)  
Hon. Jan Callison, Hennepin County Commissioner (District 6)  
Hon. Jeff Johnson, Hennepin County Commissioner (District 7)

### **County Agencies**

Hennepin County, Department of Housing, Community Works  
Hennepin County, Department of Energy and Environment  
Hennepin County, Department of Transportation  
Hennepin County, Department of Policy, Planning & Land Management  
Hennepin Conservation District

### **Libraries**

Minnesota Legislative Reference Library  
Hennepin County Library – Minneapolis Central Branch  
Hennepin County Library – Eden Prairie Branch  
Hennepin County Library – Minnetonka Branch  
Hennepin County Library – Hopkins Branch  
Hennepin County Library – St. Louis Park Branch  
Hennepin County Library – Franklin Branch  
Hennepin County Library – Linden Hills Branch  
Hennepin County Library – Sumner Branch

Hennepin County Library – Walker Branch

MnDOT Transportation Library

Metropolitan Council Library

### **Local Municipalities**

City of Eden Prairie

City of Eden Prairie, Heritage Preservation Commission

City of Edina

City of Hopkins

City of Minneapolis

City of Minneapolis, City Planning and Economic Development

City of Minneapolis, Heritage Preservation Commission

City of Minneapolis, Public Works

City of Minnetonka

City of St. Louis Park

### **Local and Regional Agencies**

Bassett Creek Watershed District and Management Organization

Flandreau Santee Sioux

Fort Peck Tribes

Greater Minneapolis BOMA

Kenwood Isles Area Association

Lower Sioux Indian Community Council

Metropolitan Council - Local Planning Assistance

Metropolitan Council - Metro Transit

Metropolitan Council District 3, Jennifer Munt

Metropolitan Council District 6, James Brimeyer

Metropolitan Council District 7, Gary Cunningham

Metropolitan Council District 8, Adam Duininck

Minneapolis Parks and Recreation Board

Minneapolis Regional Chamber of Commerce

Minnehaha Creek Watershed District

Mississippi Watershed Management Organization

Nine Mile Creek Watershed District

Prairie Island Indian Community

Riley/Purgatory/Bluff Creek Watershed District

Santee Sioux Nation

Shakopee Mdewakanton Sioux Community

Sisseton-Wahpeton

Sisseton-Wahpeton Oyate

Southwest LRT Project Office

Spirit Lake Nation

Three Rivers Park District

Turtle Mountain

Upper Sioux Indian Community

**Other**

Burlington Northern Santa Fe Railroad

Canadian Pacific Railroad

Twin Cities & Western Railroad



**Appendix B**  
**List of Preparers**

---



**APPENDIX B****List of Preparers****United States Department of Transportation - Federal Transit Administration**

- Maya Sarna, Washington, DC
- Ben Owen, Washington, DC
- Michelle Hershman, Washington, DC
- Sheila Clements, Region V
- Kathryn Loster, Region V
- Cyrell McLemore, Region V
- Bill Wheeler, Region V

**Metropolitan Council**

Name	Role	Education
Nani Jacobson	Assistant Director, Environmental & Agreements	B.S., Biology, Virginia Polytechnic Institute & State University, 1997 M.S., Environmental Sciences & Policy, Johns Hopkins University, 2010
Craig Lamothe, AICP	Acting Project Director	B.A., Government, St. Lawrence University, 1996 Master of Planning, University of Minnesota, 2001 American Institute of Certified Planners (AICP), 2002
Jim Alexander, PE	Director, Design & Engineering	B.S., Civil Engineering, University of Wyoming, 1988 M.S., Geotechnical Engineering, University of Washington, 1995
Tom Domres, PE, NCEES	Manager, Engineering	B.S, Civil Engineering, University of Minnesota, 1997
Ryan Kronzer, AIA, LEED, AP	Manager, Design	BA, Architecture, University of Minnesota, 1997 Masters of Architecture, University of Minnesota, 2000
Robin Cauffman	Assistant Director, Administration, Public Involvement & Communications	B.S. Environmental Studies, University of Minnesota College of Natural Resources, 1994 Master of Urban and Regional Planning, University of Minnesota, Humphrey Institute, 2001
Sam O'Connell, AICP	Manager, Public Involvement	B.S. Geography, Minnesota State University Mankato, 2010
Melanie Steinborn	Assistant Director, Project Controls/ Budget-Grants/ROW-Permits	B.S., Mechanical Engineering, University of Minnesota, 2001 M.S., Technology Management, University of St. Thomas, 2006
Caroline Miller	Environmental Specialist	B.A., Anthropology, Hamilton College, 2009 Master of Urban and Regional Planning, University of Minnesota, Humphrey Institute, 2014

**Minnesota Department of Transportation**

Name	Role	Education
James DeLuca	Environmental Mitigation Specialist, Hazardous and Contaminated Materials	B.S., Geology, University of Wisconsin-Madison, 1982 M.S., Geology, Virginia Polytechnic Institute & State University, 1986
Greg Mathis	Cultural Resource Specialist, SHPO Coordination	B.A., Geography, University of Nebraska – Lincoln, 1994 M.C.R.P., Community and Regional Planning, University of Nebraska – Lincoln, 2000

Aaron Tag	Manager, ROW/Permits	B.S., Civil Engineering, University of Minnesota – Twin Cities, 2004
-----------	----------------------	----------------------------------------------------------------------

## Consultants

Name	Role	Education
<b>CH2M HILL</b>		
Karin Lilienbecker	Project Manager	M.S., Biology, University of San Francisco, 1999 B.S., Environmental Science, University of San Francisco, 1993
Mary Gute, AICP	Deputy Project Manager	M.S., Urban and Regional Planning, University of Iowa, 2001 M.P.A., Public Administration, Southwest Texas State University, 1999 B.S., Anthropology/Environmental Studies, Iowa State University, 1994
Rob Rodland, AICP	Socioeconomics, Environmental Justice	B.A., Geography, University of Washington, 2000
Dan Dupies	Environmental Documentation	Master of Urban Planning, University of Wisconsin at Milwaukee, 1982 B. S. Political Science, University of Wisconsin at Stevens Point, 1980
Nikki Farrington	Transportation and Traffic	B.S. Civil Engineering, University of Minnesota, 2001
Tom Priestley	Visual Quality and Aesthetics	Ph.D., Environmental Planning, Department of Landscape Architecture, University of California, Berkeley, 1988 M.C.P., City Planning, Department of City and Regional Planning, University of California, Berkeley, 1976 M.L.A., Environmental Planning, Department of Landscape Architecture, University of California, Berkeley, 1974 B.U.P., Urban Planning, Department of Urban and Regional Planning, University of Illinois, 1969
Michael Hoffman	Parks and Recreation Areas, Section 4(f)	Master of Urban and Regional Planning, Portland State University, 2004 B.A., English, Binghamton University, 1993
Theresa Campbell	Editing and Document Processing	M.A., Mass Communication, Journalism and Communication, University of Florida, 2013 B.A., English, Journalism and Communication, University of Florida, 2008
Jason Reynolds	Multiple Resource Areas: Visual Quality and Aesthetics, Noise, and Vibration	B.S., City and Regional Planning, California Polytechnic State University, San Luis Obispo, 1994
Zach Bentzler	Graphics development	M.U.P., Urban and Regional Planning, University of Wisconsin – Milwaukee, 2011 B.S., Geography, University of Wisconsin – La Crosse, 2009
<b>Leon Skiles &amp; Associates</b>		
Leon Skiles	Environmental Specialist, Section 4(f)	Masters in Urban and Regional Planning, University of Oregon, Eugene, 1985 B.A., History, University of Oregon, Eugene, 1979
<b>Zan Associates</b>		
Dan Edgerton, AICP	Multiple Resource Areas: Land Use, Acquisitions and Displacements, Economic Effects, and Responses to Draft EIS Comments	M.A., Urban and Regional Planning, Minnesota State University – Mankato, 2007 B.S., Finance, Insurance and Real Estate, St. Cloud State University, 2006
<b>Anderson Engineering</b>		
Benjamin Hodapp, PWS	Wetlands and Water Resources	M.S., Water Resources Management, University of Wisconsin-Madison, 2002 B.S., Biology, Ecology, Minnesota State University- Mankato, 1999

Joe Aden	Geographic Information Systems	Geomatics Advanced Technical Certificate, St. Paul College, 2007
Todd Udvig	Wetlands and Water Resources	M.S., Candidate, Geographic Information Science, St. Mary's University, Minneapolis, 2013 M.S., Forestry, Southern Illinois University, Carbondale, 1985 B.S., Biology, University of Washington, River Falls, 1980
<b>Cross-Spectrum Acoustics</b>		
Lance Meister, INCE Member	Environmental Documentation: Noise/Vibration	B.S. Civil Engineering, Temple University, Philadelphia, PA, 1994, Magna Cum Laude
Herb Singleton, PE, INCE Board Certified	Environmental Documentation: Noise/Vibration	B.S., Mechanical Engineering, Massachusetts Institute of Technology, 1995
<b>106 Group</b>		
Jennifer Bring	Cultural Resources – Section 106	B.A., Anthropology-Archaeology Emphasis, Minnesota State University Moorhead, 2001
Saleh Miller	Cultural Resources – Architectural History	M.S., Historic Preservation, School of the Art Institute of Chicago, 2006 B.A., Art History with Architectural History emphasis, University of Wisconsin, Milwaukee, 2003
Anne Ketz	Cultural Resources – Archaeology/Historical Archaeology	M.A., Historical Archaeology, University of Massachusetts, Boston, 1986 B.A., Ancient History/Archaeology, University of Manchester, England, 1980
Peer Halvorsen	Cultural Resources – Archaeology	B.A., Anthropology, Hamline University, 2005
Nathan Moe	GIS/Graphics	B.A., Urban and Regional Studies, University of Minnesota, Duluth, 2003 AutoCAD Certification, Ketiv Technologies, 2007

**Appendix C**  
**Supporting Documents and Technical Reports**  
**(Incorporated by Reference)**

---



## APPENDIX C

**Supporting Documents and Technical Reports (Incorporated by Reference)**

The following supporting documents and technical reports are incorporated by reference in the Supplemental Draft EIS. All documents are available for review during the Supplemental Draft EIS comment period at [www.swlrt.org](http://www.swlrt.org), unless otherwise noted. A hard copy of each document can also be viewed at the Southwest LRT Project Office located at 6465 Wayzata Blvd., Suite 5000, St. Louis Park, MN 55426.

- 10,000 Lakes Archaeology, LLC, Archaeological Research Services, Archaeo-Physics, LLC, and Merjent, Inc. 2014. *Phase II Archaeological Survey for the Southwest Light Rail Transit Project*. Prepared for Metropolitan Council. This report is not available publicly to help preserve the identified resources.
- The 106 Group Ltd. 2014a. *Phase I/Phase II Architectural History Survey, Southwest LRT Project, Hennepin County, Minnesota, Volume Six: Supplemental Report Number Three (SDEIS), SDEIS Areas in the Following Survey Zones: Eden Prairie Survey Zone, Hopkins Survey Zone, St. Louis Park Survey Zone, Minneapolis West Residential Survey Zone*. Prepared for Metropolitan Council. This report identifies all previously listed and eligible properties within the area of potential effect (APE), and identifies the surveys of properties to determine if any properties are recommended as eligible for listing in the National Register of Historic Places.
- The 106 Group Ltd. 2014b. *Phase 1a Archaeological Investigation, Southwest Light Rail Transit, Hennepin County, Minnesota, SDEIS Areas: Eden Prairie Segment, Hopkins Operations and Maintenance Facility, and St. Louis Park/Minneapolis Segment*. Prepared for Metropolitan Council. This report identifies previously listed and eligible or potentially eligible archaeological sites within the APE (including sites identified during previous investigations for the Southwest LRT Project) and determines the potential for the presence of unknown archaeological resources. This report has redacted information about archaeological sites to help preserve the identified resources.
- The 106 Group Ltd. 2014c. *Phase I Archaeological Investigation, Southwest Light Rail Transit, Hennepin County, Minnesota, SDEIS Areas: Eden Prairie Segment*. This report summarizes the Phase I investigation of Area C, which was identified as an area of higher archaeological potential in the Phase 1a investigation. Attachment B, which includes figures, has been redacted to help preserve the identified resources.
- AECOM. 2013. *Supplemental Draft EIS Traffic Analysis – Technical Issue #1*. Prepared for Metropolitan Council. This memorandum documents the traffic analysis of potential Eden Prairie alignment adjustments considered in the Southwest LRT Supplemental Draft EIS. The memorandum documents the technical methodology, assessment of traffic impacts, traffic analysis results, and potential mitigation strategies.
- AECOM and Kimley-Horn and Associates, Inc. 2014. *Operations and Maintenance Facility (OMF) Site Selection TI #23*. Prepared for Metropolitan Council. This report documents the site-selection process and recommended finalist sites for the OMF.
- Anderson Engineering of Minnesota, LLC. 2013. *Wetland Investigation Report, Southwest LRT (Metro Green Line Extension)*. Prepared for Metropolitan Council. This report documents the identification and delineation of aquatic resources occurring within the defined project study area, in accordance with the *Corps of Engineers Wetlands Delineation Manual* (United States Army Corps of Engineers [USACE], 1987) and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Midwest Region* (USACE, 2010).
- Anderson Engineering of Minnesota, LLC. 2014. *2014 Supplemental Wetland Investigation Report, Southwest LRT (Metro Green Line Extension)*. Prepared for Metropolitan Council. This report documents the identification and delineation of aquatic resources occurring within the defined project study area, in accordance with the *Corps of Engineers Wetlands Delineation Manual* (United States Army Corps of Engineers [USACE], 1987) and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Midwest Region* (USACE, 2010).



- Federal Transit Administration (FTA) and Minnesota State Historic Preservation Office (MnSHPO). 2012. *Section 106 Programmatic Agreement Between the Federal Transit Administration and The Minnesota State Historic Preservation Office Regarding the Construction of the Interchange Project Minneapolis, Minnesota*. This agreement documents the stipulations with which the Interchange Project will be implemented in order to take into account the effects of the undertaking on historic properties.
- Hennepin County Regional Railroad Authority (HCRRA). 2007. *Southwest Transitway Alternatives Analysis Final Report*. Available at: [http://old.swlrtccommunityworks.org/technical-documents/cat\\_view/57-archive/4-alternatives-analysis.html](http://old.swlrtccommunityworks.org/technical-documents/cat_view/57-archive/4-alternatives-analysis.html). This report identifies and compares the benefits, costs, and impacts of a range of transit options for the Southwest Corridor. Alternatives identified as most likely to meet project goals were recommended for further evaluation in future steps of the Project Development process.
- Hennepin County Regional Railroad Authority (HCRRA). 2009/2012. *Southwest Transitway Scoping Summary Report*. Available at: <http://www.metrocouncil.org/Transportation/Projects/Current-Projects/Southwest-LRT/Environmental/Scoping.aspx>. This report summarizes the results of the Draft EIS scoping process. The scoping process obtained public input on the project purpose and need, identified potential options to address the purpose and need, and identified environmental issues associated with the proposed project to analyze in the Draft EIS. On September 25, 2012, the HCRRA amended the Southwest Transitway Scoping Summary Report (which serves as the Scoping Decision Document under MEPA) to include the impacts of relocating freight rail for the four build alternatives and including a collocation alternative where freight rail, light rail and the commuter bike trail collocate, share a common corridor, between Louisiana Avenue and Penn Avenue. The amendment was authorized with approval of Board Action Request 12-HCRRA-0049 (see <http://board.co.hennepin.mn.us/sirepub/cache/246/jpxfy0xt402wb2w41np5tk3x/20603003192015020512715.PDF>). Notice of the amendment to the scoping report was issued in the Environmental Quality Board Monitor on October 15, 2012.
- Hennepin County Regional Railroad Authority (HCRRA). 2012. *Southwest Transitway Draft Environmental Impact Statement*. October 2012. Available at: <http://www.metrocouncil.org/Transportation/Projects/Current-Projects/Southwest-LRT/Environmental/DEIS.aspx>. The Draft EIS describes and discusses the purpose and need for the project, alternatives considered, impacts to those alternatives, and agencies and persons consulted.
- Hess, Roise and Company. 2012. *Phase I/Phase II Architecture History Investigation for the Proposed Southwest Transitway Project, Hennepin County, Minnesota, Volume Two: Minneapolis West Residential Survey Zone, Minneapolis South Residential/Commercial Survey Zone, Minneapolis Downtown Survey Zone, Minneapolis Industrial Survey Zone, Minneapolis Warehouse Survey Zone (Excluding Railroad Properties)*. Prepared for Metropolitan Council. This report identifies all previously listed and eligible properties within the area of potential effect (APE), and identifies the surveys of properties to determine if any properties are recommended as eligible for listing in the National Register of Historic Places.
- Kimley-Horn and Associates, Inc. 2013. *Freight Alignment – Traffic Impact Evaluation Memorandum*. Prepared for Metropolitan Council. This technical memorandum summarizes the traffic impact evaluation of proposed freight alignments. The memorandum updates the analysis and documentation of freight alignments presented in the Draft EIS.
- Mead & Hunt, Inc. 2014. *Phase I/Phase II Architecture History Investigation for the Proposed Southwest LRT Project, Hennepin County, Minnesota, Volume Five: Supplemental Report Number Two, Additional Areas/Properties in the Following Survey Zones: St. Louis Park Survey Zone, Minneapolis West Residential Survey Zone*. Prepared for Metropolitan Council. This report supplements the Phase I/Phase II Architecture History investigations conducted between 2008 and 2012 for this project. Investigations were conducted for: 1) one property in the St. Louis Park survey zone that was not included in the original Phase I survey, and 2) a Phase II evaluation of three residential properties and a potential historic district identified in the Minneapolis West Residential Survey Zone.

- Mead & Hunt. 2010. *Phase I/Phase II Architecture History Investigation for the Proposed Southwest Transitway Project, Hennepin County, Minnesota, Volume One: Eden Prairie Survey Zone, Minnetonka Survey Zone, Hopkins Survey Zone, St. Louis Park Survey Zone (Excluding Railroad Properties)*. Prepared for Metropolitan Council. This report identifies all previously listed and eligible properties within the area of potential effect (APE), and identifies the surveys of properties to determine if any properties are recommended as eligible for listing in the National Register of Historic Places.
- Metropolitan Council. 2013. *Southwest Light Rail Transit Operations and Maintenance Facility Basis of Design Report*. This report documents the methodology used in defining the functional and operating requirements for the proposed OMF to store, service, and maintain the light rail vehicles.
- Metropolitan Council. 2014a. *Agency Coordination Plan for the Southwest LRT (Green Line Extension) Project*. This plan is an update to the Agency Coordination Plan completed for the Draft EIS to reflect current coordination practices and procedures. The plan provides the structure for coordination among Federal Transit Administration (FTA), Metropolitan Council, participating agencies, and the public during the Supplemental Draft EIS and Final EIS processes to comply with various federal and state environmental regulations.
- Metropolitan Council. 2014b. *Communications and Public Involvement Plan*. This plan identifies key business and community groups within the Southwest LRT corridor and strategies to maximize opportunities for public involvement and communication during the design and construction process of the Southwest LRT Project.
- Metropolitan Council. 2014c. *Kenilworth Corridor Vegetation Inventory*. This report provides a vegetation inventory in the Kenilworth corridor to inform potential future landscaping design.
- Metropolitan Council. 2014d. *Kenilworth Shallow LRT Tunnel Basis of Design Technical Report*. This report describes the design specifications and construction sequencing of the shallow light rail tunnels' alignment developed by the Southwest LRT Project engineering team; summarizes the potential mitigation of environmental and recreational resource impacts; and details operations and maintenance activities anticipated to be directly related to the shallow tunnel.
- Metropolitan Council. 2015a. *Draft Preliminary Evaluation of Adjustments, Eden Prairie Alignment, Technical Issue #1*. This technical memorandum evaluates alignment and station location adjustments and decision making process for Technical Issue #1 – Eden Prairie Alignment/Stations in Eden Prairie for the Southwest Light Rail Transit Project.
- Metropolitan Council. 2015b. *Southwest LRT Project Identification of Grant-Funded Parks and Natural Areas Technical Memorandum*. This technical memorandum documents the analysis of the proximity of 6(f) properties to the Southwest Light Rail Transit Project.
- Metropolitan Council. 2015c. *Guide to the Supplemental Draft EIS*. This guide highlights key changes to the Project since the publication of the Draft EIS, and focuses on the potential impacts that have generated the most interest among residents of the Twin Cities region.
- Minnesota State Historic Preservation Office. National Register of Historic Places files. Minnesota Historical Society. Available at: 345 Kellogg Blvd. W., St. Paul, MN 55102. These files include historic property inventory forms, reports, and National Register nomination forms. These files are not available to the public.
- MnDOT Cultural Resources Unit. 2014a. Section 106 Consultation Package (April 2014). This package includes potential effects on historic properties, photolog, overview map, and track drawings.
- MnDOT Cultural Resources Unit. 2014b. Section 106 Consultation Meeting Notes (April 30, 2014).
- MnDOT Cultural Resources Unit. 2014c. Section 106 Consultation Package (November 2014). This package includes preliminary determination of effects on historic properties, photolog, track drawings, Kenilworth Lagoon study (historic context and history of the lagoon, and detailed physical description), and plan sheets of the existing and proposed bridge across the Kenilworth Lagoon.

- MnDOT Cultural Resources Unit 2014d. Section 106 Meeting Notes (November 24, 2014).
- MnDOT Cultural Resources Unit. 2015a. Section 106 Consultation Package (February 2015). This package includes information on effects to historic properties related to the Kenilworth Lagoon crossing, revised bridge design concepts, and comments received on the November 2014 consultation.
- MnDOT Cultural Resources Unit. 2015b. Section 106 Consultation Meeting Notes (February 6, 2015).
- MnDOT Cultural Resources Unit. 2015c. Section 106 Consultation Meeting Notes (February 24, 2015).
- Short Elliott Hendrickson Inc. 2013a. *Modified Phase I Environmental Site Assessment, Southwest Light Rail Transit – Segment A and Freight Rail Co-location*. Prepared for Metropolitan Council. The modified Phase I environmental site assessment (ESA) identifies the locations of areas with soil and groundwater contamination for areas evaluated in this Supplemental Draft EIS. Appendices available at the Southwest LRT Project Office.
- Short Elliot Hendrickson Inc. 2013b. *Modified Phase I Environmental Site Assessment, Southwest Light Rail Transit – Segment 4*. Prepared for Metropolitan Council. The modified Phase I ESA identifies the locations of areas with soil and groundwater contamination for areas evaluated in this Supplemental Draft EIS. Appendices available at the Southwest LRT Project Office.
- State of Minnesota, Department of State. Julius A. Schmahl, Secretary of State. Kenilworth Corridor Right of Way Easement; excerpted from book A of State Bank Records, p. 209. (June 1912).
- Summit EnviroSolutions. 2010. *Phase I/Phase II Architecture History Investigation for the Proposed Southwest Transitway Project, Hennepin County, Minnesota, Volume Three: Minneapolis and Saint Louis Railroad Survey Zone, Chicago Milwaukee and St. Paul Railroad Survey Zone, Minneapolis Northfield and Southern Railroad Survey Zone, Great Northern Survey Zone*. Prepared for Metropolitan Council. This report identifies all previously listed and eligible railroad properties within the area of potential effect (APE), and identifies the surveys of properties to determine if any properties are recommended as eligible for listing in the National Register of Historic Places.

**Appendix D**  
**Sources and References Cited**

---



## APPENDIX D

**Sources and References Cited**

---

**B**

Burns & McDonnell. 2014. *Southwest Light Rail Transit: Kenilworth Shallow LRT Tunnels Water Resources Evaluation*. Available at: <http://metro council.org/METC/files/d9/d93aa10d-e84a-4176-82e9-a19bee8ad0f2.pdf>.

**C**

City of Eden Prairie. 2006. *Eden Prairie Major Center Area Study*. City of Eden Prairie, MN. Available at: <http://www.edenprairie.org/city-government/departments/community-development/planning/major-center-area-study>. Accessed January 17, 2013.

City of Eden Prairie. 2009. *City of Eden Prairie Comprehensive Guide Plan*. City of Eden Prairie, MN. Available at: <http://www.edenprairie.org/city-government/departments/community-development/planning/comprehensive-guide-plan>. Accessed October 20, 2013.

City of Hopkins. 2009. *Comprehensive Plan*. City of Hopkins, MN. Available at: <http://www.hopkinsmn.com/development/plan/>.

City of Hopkins. 2012. *Revenue Summary – 2011*. City of Hopkins, MN. Available at: <http://www.hopkinsmn.com/budget/pdf/2011-budget.pdf>.

Clinton, William. 1994. *Executive Order 12898. Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*. February 11, 1994. Available at: <http://www.archives.gov/federal-register/executive-orders/pdf/12898.pdf>.

Corridors of Opportunity (now The Partnership for Regional Opportunity). 2014. *Community Outreach and Engagement*. Available at: <http://www.corridorsofopportunity.org/activities/engagement>.

**F**

Federal Highway Administration (FHWA). 1987. *Guidance for Preparing and Processing Environmental and Section 4(f) Documents*. Technical Advisory T 6640.8A. Federal Highway Administration, Office of Environmental Policy, Washington, DC. Available at: <http://environment.fhwa.dot.gov/guidebook/vol2/doc7i.pdf>

Federal Highway Administration (FHWA). 1988. *Visual Impact Assessment for Highway Projects*. Publication FHWA-HI-88-054. Federal Highway Administration, Office of Environmental Policy, Washington, DC. Available at: <http://www.dot.ca.gov/ser/downloads/visual/FHWAVisualImpactAssmt.pdf>.

Federal Highway Administration (FHWA). 2012. *Section 4(f) Policy Paper*. Federal Highway Administration, Office of Planning, Environment and Realty, Project Development and Environmental Review, Washington, DC. July 20, 2012. Available at: <http://environment.fhwa.dot.gov/4f/4fpolicy.asp>.

Federal Transit Administration (FTA). 2006. *Transit Noise and Vibration Impact Assessment*. Publication FTA-VA-90-1003-06. United States Department of Transportation, Federal Transit Administration, Office of Planning and Environment, Washington, DC. May 2006. Available at: [http://www.fta.dot.gov/documents/FTA\\_Noise\\_and\\_Vibration\\_Manual.pdf](http://www.fta.dot.gov/documents/FTA_Noise_and_Vibration_Manual.pdf).

Federal Transit Administration (FTA). 2008a. *Circular FTA C 5010.1D, Grant Management Requirements*. November 1, 2008. Available at: [http://www.fta.dot.gov/documents/C\\_5010\\_1D\\_Finalpub.pdf](http://www.fta.dot.gov/documents/C_5010_1D_Finalpub.pdf).

Federal Transit Administration (FTA). 2008b. "Notice of Intent to Prepare an Environmental Impact Statement On The Proposed Southwest Transitway Project In Hennepin County, Minnesota." *Federal Register*. September 23, 2008. Available at: <https://www.federalregister.gov/articles/2008/09/23/E8-22257/preparation-of-an-environmental-impact-statement-on-the-proposed-southwest-transitway-project-in>.

- Federal Transit Administration (FTA). 2012a. *Circular FTA C 4703.1, Environmental Justice Policy Guidance for Federal Transit Administration Recipients*. United States Department of Transportation, Federal Transit Administration. August 15, 2012. Available at: [http://www.fta.dot.gov/documents/FTA\\_EJ\\_Circular\\_7.14-12\\_FINAL.pdf](http://www.fta.dot.gov/documents/FTA_EJ_Circular_7.14-12_FINAL.pdf).
- Federal Transit Administration (FTA). 2012b. *Circular FTA C 4702.1B, Title VI Requirements and Guidelines for Federal Transit Administration Recipients*. Effective October 1, 2012. United States Department of Transportation, Federal Transit Administration. October 1, 2012. Available at: [http://www.fta.dot.gov/documents/FTA\\_Title\\_VI\\_FINAL.pdf](http://www.fta.dot.gov/documents/FTA_Title_VI_FINAL.pdf).
- Federal Transit Administration (FTA). 2013. "Notice of Intent to Prepare a Supplemental Draft Environmental Impact Statement for the Southwest Light Rail Transit Extension Project (Formerly Referred to as the Southwest Transitway)." *Federal Register*. July 22, 2013. Available at: <http://www.gpo.gov/fdsys/pkg/FR-2013-07-22/pdf/2013-17506.pdf>.
- Federal Emergency Management Agency (FEMA). 2004. Flood Insurance Rate Map, No. 27053C0361E. Accessible at: <http://msc.fema.gov/portal/>
- Federal Emergency Management Agency (FEMA). September 2007. Letter of Map Revision to City of St. Louis Park. Accessible at: <http://map1.msc.fema.gov/data/27/L/07-05-4704P-270184.pdf>. Accessed December 2014.

## H

- Hennepin County. 2013a. *Hennepin County Parcel Data*. Hennepin County, MN. Available at: <http://www.hennepin.us/portal/site/HennepinUS/menuitem.b1ab75471750e40fa01dfb47ccf06498/?vgnnextoid=81f06f275d813210VgnVCM10000049114689RCRD>. Accessed January 28, 2013.
- Hennepin County. 2013b. *Property Tax Information Search*. Preliminary property acquisitions table provided by the Southwest LRT Project Office (SPO) via Minnesota Department of Transportation (MnDOT). October 1, 2013.
- Hennepin County. 2014. *Southwest Corridor Investment Framework*. Hennepin County, MN. January 16, 2014. Available at: <http://www.swlrtccommunityworks.org/beyond-rails/planning-information/investment-framework>.
- Hennepin County Board of Commissioners. 2011a. *2030 Hennepin County Transportation Systems Plan. Adopted November 2011*. Hennepin County, MN. Available at: <http://www.hennepin.us/~media/hennepinus/Business/work-with-hennepin-county/Documents/2030-hctsp-complete.pdf>.
- Hennepin County Board of Commissioners. 2011b. *Hennepin County 2030 Comprehensive Plan Update*. Adopted June 28, 2011. Hennepin County, MN. Available at: <http://www.hennepin.us/~media/hennepinus/Business/work-with-hennepin-county/Documents/2030-comprehensive-plan-small.pdf>.
- Hennepin County Regional Railroad Authority (HCRRA). 2008. *Coordination Plan for the Preparation of the Southwest Transitway Draft Environmental Impact Statement*. (Appendix G to *Southwest Transitway Scoping Summary Report*.) Hennepin County Regional Railroad Authority, Hennepin, MN. September 2008. Available at: <http://metro council.org/getattachment/d12ad34c-8387-4abc-93b8-20effc27595a/.aspx>.

## M

- Metropolitan Council (Council). 2010, amended 2013. *2030 Transportation Policy Plan*. Final November 2010; amended May 2013. Metropolitan Council, St. Paul, MN. Available at: [http://www.metro council.org/Transportation/Planning/Transportation-Policy-Plan/2030-Transportation-Policy-Plan-\(1\).aspx](http://www.metro council.org/Transportation/Planning/Transportation-Policy-Plan/2030-Transportation-Policy-Plan-(1).aspx).

- Metropolitan Council (Council). 2013. *Tabular Data (Population, Households, and Employment Forecasts)*. Metropolitan Council, St. Paul, MN. Available at: [http://stats.metc.state.mn.us/data\\_download/DD\\_start.aspx?source=main](http://stats.metc.state.mn.us/data_download/DD_start.aspx?source=main). Accessed September 2013.
- Metropolitan Council and City of Minneapolis (Council and City). 2014. *Proposed Redesign of a Portion of Southwest Light Rail Project*. Memorandum of Understanding. Available at: <http://metro council.org/sdeis/minneapolis-mou-2014.aspx>
- Metropolitan Council (Council) and Minnesota Department of Transportation (MnDOT). 2012. *Southwest Light Rail Transit Project: Cooperation Agreement - MnDOT*. Agreement signed August 30, 2012. Available at: <http://metro council.org/swlrt/sdeis/mndot-coop-2012.aspx>
- Minneapolis Park & Recreation Board (MPRB). 2007. *Comprehensive Plan 2007 – 2020. Approved October 17, 2007*. Minneapolis Park & Recreation Board, Minneapolis, MN. Available at: [https://www.minneapolis parks.org/\\_asset/9h52lq/comprehensive\\_plan.pdf](https://www.minneapolis parks.org/_asset/9h52lq/comprehensive_plan.pdf). Peter Park Nelson is going to provide a new web link for this document. Will update when available.
- Minnesota Department of Agriculture (MDA). 2013. *What's in My Neighborhood? Agricultural Interactive Mapping*. Minnesota Department of Agriculture, St. Paul, MN. Available at: <http://www.mda.state.mn.us/chemicals/spills/incidentresponse/neighborhood.aspx>. Accessed July 2013.
- Minnesota Department of Natural Resources (MnDNR). 2013. *The DNR Data Deli. FEMA Q3 Floodways, Metadata Product ID 26000010*. Minnesota Department of Natural Resources, St. Paul, MN. Available at: <http://deli.dnr.state.mn.us/metadata.html?id=L260000102101>. Accessed October 1, 2013.
- Minnesota Department of Natural Resources (MnDNR). 2014. *Minnesota Natural Heritage Information System Index Report of records within 1-mile radius of Supplemental Draft EIS Study Area*. January 2014.
- Minnesota Environmental Quality Board. 2008. "Notice of EIS Preparation, Project Title: Southwest Transitway." *EQB Monitor*. Minnesota Environmental Quality Board, St. Paul, MN. September 8, 2008. Available at: <http://www.eqb.state.mn.us/documents/EQB%20Monitor9-8-08.pdf>.
- Minnesota Environmental Quality Board. 2012. "Draft EIS Available, Notice of Scoping Amendment, Public Hearings and Draft Environmental Impact Statement (DEIS) Availability for the Southwest Transitway Project, Hennepin County, Project Title: Southwest Transitway." *EQB Monitor*. October 15, 2012. Minnesota Environmental Quality Board, St. Paul, MN. Available at: <http://www.eqb.state.mn.us/documents/EQB%20Monitor%2010-15-12.pdf>.
- Minnesota Environmental Quality Board. 2013. "Notice of Supplemental DEIS Preparation, Project Title: Supplemental Draft Environmental Impact Statement for the Southwest Light Rail Transit Project (formerly referred to as the Southwest Transitway)." *EQB Monitor*. Minnesota Environmental Quality Board, St. Paul, MN. July 22, 2013. Available at: <http://www.eqb.state.mn.us/documents/EQB%20Monitor%2007-22-13.pdf>.
- Minnesota Pollution Control Agency (MPCA). 2013. *What's in My Neighborhood*. Environmental Data Access. Minnesota Pollution Control Agency, MN. Available at: <http://www.pca.state.mn.us/index.php/data/wimn-whats-in-my-neighborhood/whats-in-my-neighborhood.html>. Accessed July 2013.

## N

- National Center for Education Statistics. 2012. *Common Core of Data Search for Public Schools*. United States Department of Education Institute of Education Sciences, National Center for Education Statistics, Alexandria, VA. Available at: <http://nces.ed.gov/ccd/schoolsearch/>. Accessed September 2013.



National Center for Education Statistics. 2013. *Common Core of Data Search for Public Schools*. United States Department of Education Institute of Education Sciences, National Center for Education Statistics, Alexandria, VA. Available at: <http://nces.ed.gov/ccd/schoolsearch/>. Accessed September 2013.

## S

Shaw, Samuel P. and C. Gordon Fredine. 1956. *Wetlands of the United States – their extent and their value to waterfowl and other wildlife*. U. S. Department of the Interior, Washington, DC. Circular 39. Northern Prairie Wildlife Research Center Online.

SRF Consulting Group, Inc. 2014. *Facility Siting Equity Evaluation, Southwest Light Rail Transit, Operations and Maintenance Facility (OMF)*.

## T

TranSystems. 2014. *SWLRT Engineering Evaluation of Freight Rail Relocation Alternatives*. Available at: <http://metro council.org/Transportation/Projects/Current-Projects/Southwest-LRT/Engineering/Freight-Rail-Study.aspx>.

## U

United States Army Corps of Engineers (USACE). 1987. *Corps of Engineers Wetlands Delineation Manual*. Wetlands Research Program Technical Report Y-87-1 (on-line edition). USACE Environmental Laboratory. Vicksburg, MS. January 1987. Available at: <http://el.erdc.usace.army.mil/elpubs/pdf/wlman87.pdf>.

United States Census Bureau (U.S. Census). 2010. *American FactFinder. Decennial Census – 2010 Census Summary File 1*. United States Department of Commerce, United States Census Bureau, Washington, DC. Available at: <http://factfinder2.census.gov/faces/nav/jsf/pages/searchresults.xhtml?refresh=t>. Accessed September 2013.

United States Census Bureau (U.S. Census). 2012. *American FactFinder. 2007-2011 ACS 5-Year Estimate*. United States Department of Commerce, United States Census Bureau, Washington, DC. Available at: <http://factfinder2.census.gov/faces/nav/jsf/pages/searchresults.xhtml?refresh=t>. Accessed September 2013.

United States Department of Agriculture. 2010. *Geospatial Data Gateway*. United States Department of Agriculture, Natural Resources Conservation Service, Washington, DC. Available at: <http://datagateway.nrcs.usda.gov/>. Accessed November 14, 2012.

United States Department of Transportation (USDOT). 2006. *SAFETEA-LU Environmental Review Process (Public Law 109-59) Final Guidance*. United States Department of Transportation, Federal Highway Administration, Washington, DC. November 15, 2006. Available at: <http://www.fhwa.dot.gov/hep/section6002/>.

United States Department of Transportation (USDOT). 2012. *Department of Transportation Updated Environmental Justice Order 5610.2(a)*. United States Department of Transportation, Office of the Secretary of Transportation, Washington, DC. Available at: [http://www.fhwa.dot.gov/environment/environmental\\_justice/ej\\_at\\_dot/order\\_56102a/dot56102a.pdf](http://www.fhwa.dot.gov/environment/environmental_justice/ej_at_dot/order_56102a/dot56102a.pdf).

United States Fish and Wildlife Service (USFWS). 2013. *National Wetlands Inventory*. U.S. Fish & Wildlife Service - Ecological Services, Arlington, VA. Available at: <http://www.fws.gov/wetlands/Data/index.html>.

**Appendix E**  
**Agency Coordination Letters**

---



**APPENDIX E****Agency Coordination Letters**

---

1. Letter to U.S. Fish and Wildlife Service requesting concurrence – No Effect Determination – Higgins eye pearlymussel for the Southwest Light Trail Transit Project, July 23, 2012
2. Response from U.S. Fish and Wildlife Service indicating that there are no federally listed or proposed species and/or designated or proposed critical habitat within the action area of the proposed project, August 21, 2012
3. Minnesota State Historic Preservation Office letter regarding Phase I Archaeology Report for the Southwest Light Rail Transit Project, SHPO Number: 2009-0080, February 14, 2013
4. Minnesota State Historic Preservation Office letter regarding Phase I Archaeology Report for the Southwest Light Rail Transit Project, SHPO Number: 2009-0080, March 12, 2013
5. Invitation letter to U.S. Army Corps of Engineers to become a cooperating agency for the Southwest Light Rail Transit Project, June 14, 2013
6. Letter of acceptance from the U.S. Army Corps of Engineers to become a cooperating agency for the Southwest Light Rail Transit Project, July 18, 2013
7. Minnesota State Historic Preservation Office letter regarding Phase I/II Architecture History Investigations, Volume 5, Supplemental Report Number Two, SHPO Number 2009-0080, April 2, 2014
8. Minnesota State Historic Preservation Office letter regarding Phase II Archaeological Survey, SHPO Number 2009-0080, April 2, 2014
9. Minneapolis Park and Recreation Board letter regarding comments on the April 2014 Section 106 consultation package, May 16, 2014
10. City of Minneapolis comment email regarding comments on the April 2014 Section 106 consultation package, May 16, 2014
11. Minnesota State Historic Preservation Office letter regarding the Section 106 consultation package materials and meeting, SHPO Number 2009-0080, May 21, 2014
12. Minnesota State Historic Preservation Office letter providing concurrence on Grand Rounds and other property boundaries, SHPO Number: 2009-0080, June 5, 2014
13. Minnesota State Historic Preservation Office review letter regarding Phase I/Phase II Architecture History Investigation and Phase 1a Archaeological Investigation for the Southwest Light Rail Transit Project, SHPO Number: 2009-0080, June 5, 2014
14. Minnesota State Historic Preservation Office review letter providing clarification on Phase II investigations in the vicinity of archaeological sites 21HE0436 and 21HE0437, SHPO Number: 2009-0080, July 3, 2014
15. FTA letter to Surface Transportation Board seeking concurrence to rescind its cooperating agency status due to project changes, July 9, 2014
16. Response from the Surface Transportation Board to FTA concurring on rescinding cooperating agency status, August 22, 2014
17. Federal Railroad Administration letter regarding FRA safety jurisdiction determination, October 6, 2014

18. MnDOT CRU letter to Minnesota State Historic Preservation Office letter regarding consulting party comments on April 2014 Section 106 consultation package, SHPO Number: 2009-0080, October 13, 2014
19. United States Army Corps of Engineers letter to FTA regarding the Southwest Light Rail Transit Concurrence Points package, October 16, 2014
20. Minnesota State Historic Preservation Office letter regarding Phase I Archaeology report for Area C for the Southwest Light Rail Transit Project, SHPO Number: 2009-0080, November 7, 2014
21. Kenwood Isles Area Association (KIAA) letter regarding comments on April 2014 Section 106 consultation package, and regarding October 17, 2014 adjustments to the Area of Potential Effect. Sent on behalf of KIAA by Preservation Design Works, LLC, November 12, 2014
22. Kenwood Isles Area Association (KIAA) letter regarding comments on November 2014 Section 106 consultation package. Sent on behalf of KIAA by Preservation Design Works, LLC, December 10, 2014
23. Minneapolis Park and Recreation Board letter regarding comments on November 2014 Section 106 consultation package, December 12, 2014
24. Minnesota State Historic Preservation Office review letter regarding comments on November 2014 Section 106 consultation package, and regarding October 17, 2014 revisions to the Area of Potential Effect and research design addendum, SHPO Number: 2009-0080, December 12, 2014
25. FTA letter to United States Army Corps of Engineers (USACE) inviting USACE to delegate Section 106 responsibilities to FTA, December 16, 2014
26. MnDOT CRU letter to Hennepin County (HC), inviting HC to become a Section 106 consulting party, December 16, 2014
27. Hennepin County letter to MnDOT CRU accepting consulting party status, December 17, 2014
28. Minneapolis Parks and Recreation Board letter to FTA regarding request for meeting to discuss legal jeopardy to the FTA New Starts Program Created by the Implementation of the Program for the Southwest Light Rail Project ("SWLRT Project") in Minneapolis, Minnesota by the FTA and the Metropolitan Council, January 2, 2015.
29. FTA letter to Minneapolis Parks and Recreation Board in response to MPRB letter dated January 2, 2015, regarding the Southwest Light Rail Project in Minneapolis, Minnesota, January 15, 2015.
30. United States Army Corps of Engineers (USACE) letter to Federal Transit Administration (FTA) accepting Section 106 Delegation to FTA for the Southwest LRT Project and requesting continuing involvement as a Section 106 consulting party, January 15, 2015
31. Minnesota State Historic Preservation Office email to MnDOT CRU concurring with consulting party status for Cedar-Isles-Dean Neighborhood Association, February 2, 2015
32. FTA letter to Cedar-Isles-Dean Neighborhood Association concurring on consulting party status, February 17, 2015
33. United States Army Corps of Engineers letter to SPO regarding the Southwest Light Rail Transit Preliminary Jurisdictional Determination, February 18, 2015



U.S. Department  
of Transportation  
**Federal Transit  
Administration**

REGION V  
Illinois, Indiana,  
Michigan, Minnesota,  
Ohio, Wisconsin

200 West Adams Street  
Suite 320  
Chicago, IL 60606-5253  
312-353-2789  
312-886-0351 (fax)

July 23, 2012

Tony Sullins, Field Supervisor  
U.S. Fish and Wildlife Service  
Twin Cities Field Office  
4101 East 80<sup>th</sup> Street  
Bloomington, MN 55425

RE: Request for Concurrence - No Effect Determination – Higgins eye pearly mussel  
Southwest Transitway Project, Hennepin County, Minnesota

Dear Mr. Sullins:

The Federal Transit Administration (FTA) is requesting concurrence from the U.S. Fish and Wildlife Service (Service) that the above referenced action will have no effect on federally-listed species.

#### Project Description

Hennepin County and the Metropolitan Council are proposing to construct a light rail transit (LRT) facility connecting the southwestern suburbs of the Twin Cities metropolitan area to downtown Minneapolis. Five build alternatives are being considered in the Draft Environmental Impact Statement. These alternatives are presented in the attached figure. None of these alternatives would cross or touch the Mississippi River. The project components would include:

- Between 14 and 16 miles of trackway and overhead catenary power (depending on the alternative selected)
- Up to 21 light rail stations
- Up to 15 park and ride lots
- Approximately 17 traction power substations
- An operations and maintenance facility

All project components would be located within Hennepin County. The end of the line for four of the alternatives would be the Target Field Station located between 5<sup>th</sup> Avenue North and I-394 on North 5<sup>th</sup> Street and approximately 0.6 of a mile from the Mississippi River. The end of line for the fifth alternative would be at the intersection of Washington Avenue and Nicollet Mall approximately 0.3 of a mile from the river. (See attached detailed graphic for line locations.)

The closest construction staging area would be located in the vicinity of 6<sup>th</sup> Avenue North and North 4<sup>th</sup> Street approximately 0.5 of a mile from the Mississippi. (See attached detailed graphic for construction staging location.) The project elements and construction limits do not cross the Mississippi River; therefore no direct impacts to the river are anticipated. The only potential

impacts that appear possible at this time would be uncontrolled runoff from within the project construction limits reaching the Mississippi River. Should this occur, limited temporary incremental degradation of river water quality could occur. However, this is unlikely due to the distance of the project construction limits from the river and the fact that best management practices (BMPs) would be employed during construction to eliminate uncontrolled runoff.

Listed Species within the Project Area

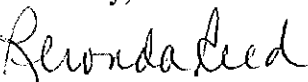
According to the "County Distribution of Minnesota's Federally-Listed Threatened, Endangered, Proposed and Candidate Species" list provided by the Service, the only federally-listed species within Hennepin County is the Higgins eye pearlymussel (*Lampsilis higginsii*), a federally-listed endangered species. This species occurs within the Mississippi River, which is outside the limits of the proposed LRT project.

Determination

Based on the fact that the Higgins eye pearlymussel does not occur within the project limits and that the project will not impact Higgins eye pearlymussel habitat, the FTA has determined that the proposed action will have no effect on federally-listed species. We are requesting concurrence that consultation with your office under Section 7 of the Endangered Species Act of 1973, as amended, is complete.

If you require additional information, please contact Maya Sarna, AICP, Environmental Protection Specialist at (202) 366-5811.

Sincerely,

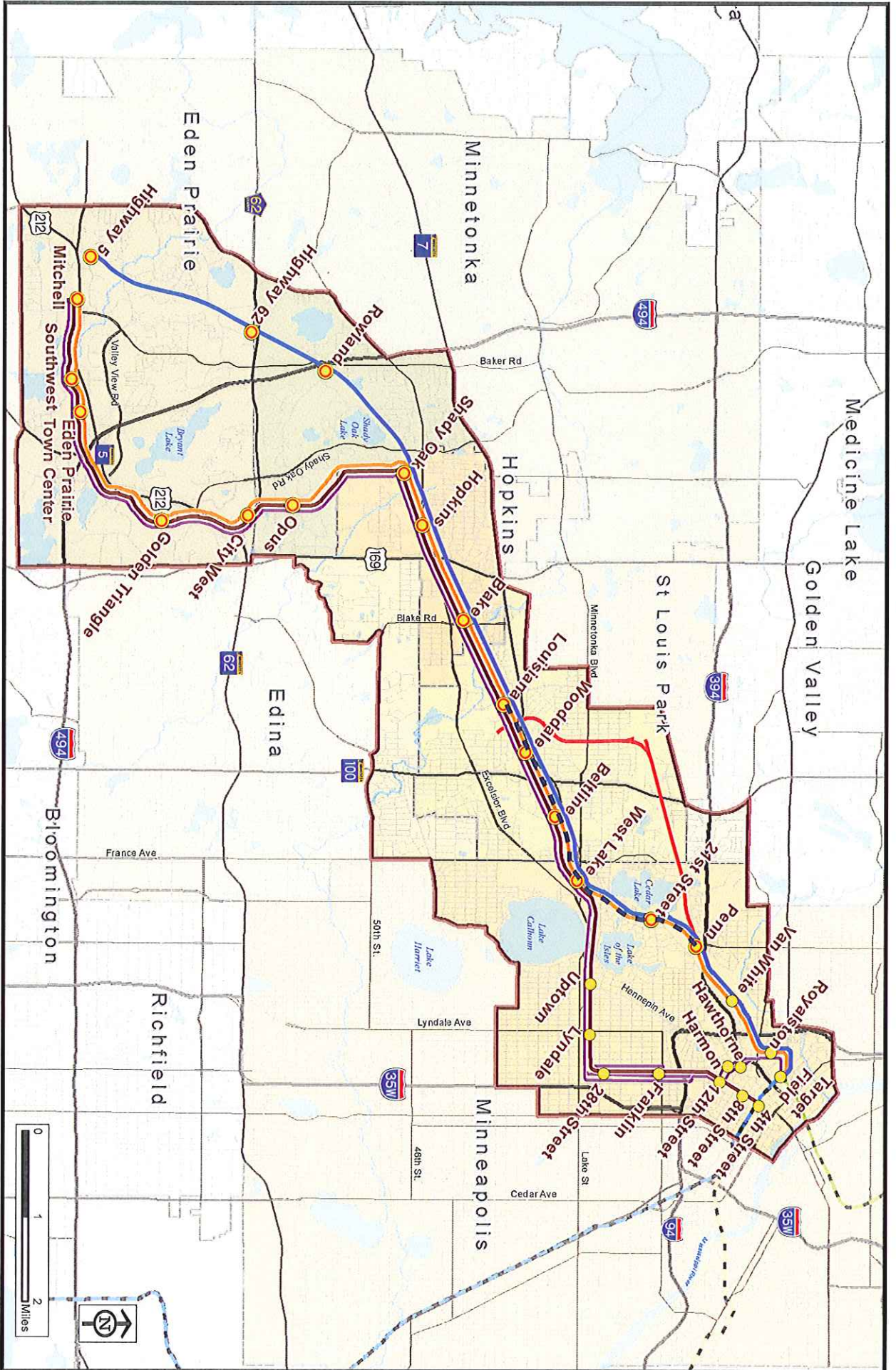


for  
Marisol R. Simón  
Regional Administrator

cc:

USFWS – Nick Rowse  
Hennepin County – Katie Walker  
Metropolitan Council – Nani Jacobson  
HDR – Janet Kennison, Scott Reed  
file

# Southwest Transitway Study Area



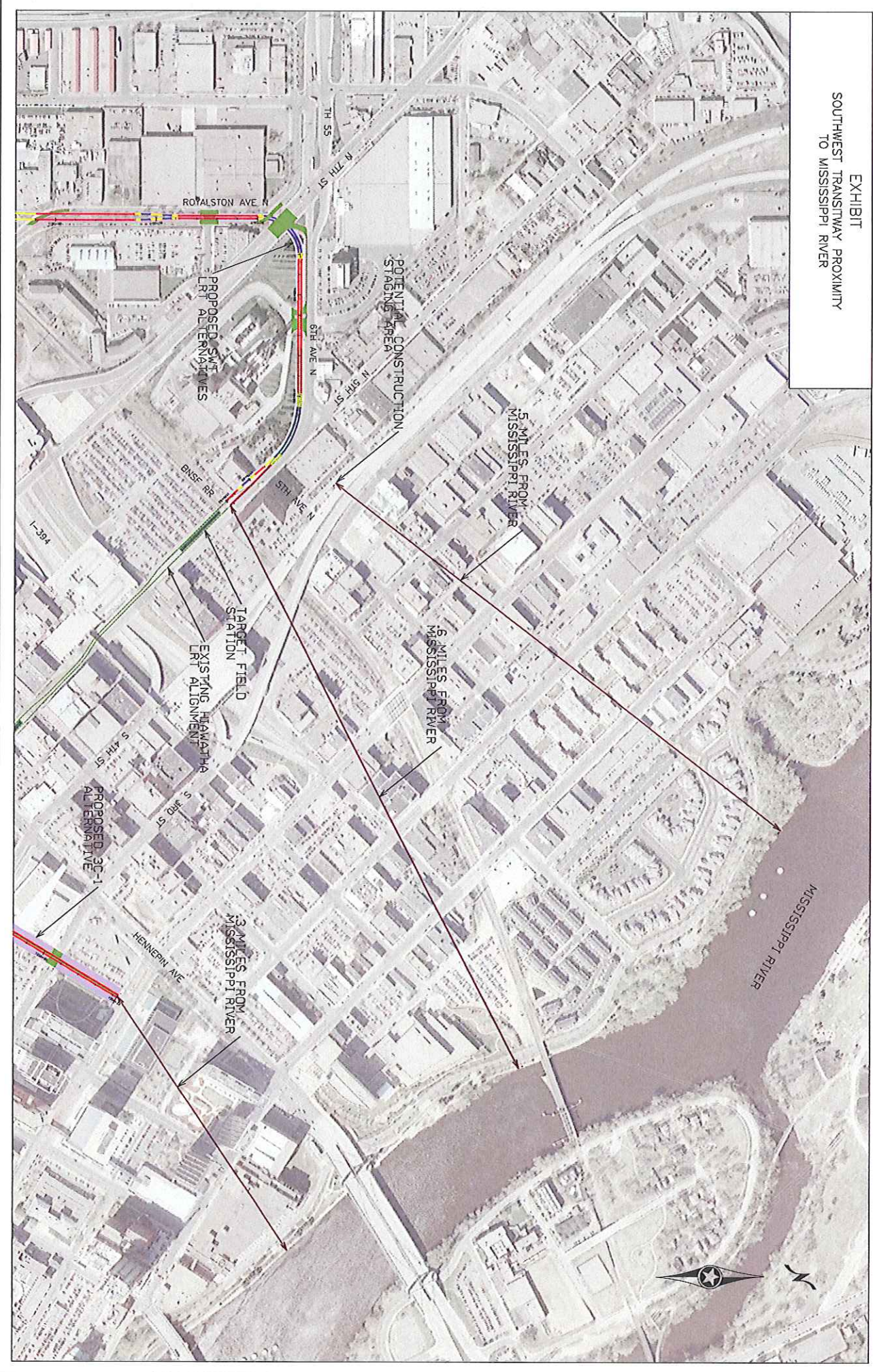
## Draft Environmental Impact Statement



- Study Area
- Station
- Park & Ride Station
- Freight Rail Relocation
- LRT 1A
- LRT 3A
- Colocation area with 3A-1
- LRT 3C-1 (Niccollet Mall)
- LRT 3C-2 (11th/12th Street)
- Hiawatha Light Rail
- Northstar Commuter Rail
- Central Corridor Light Rail
- Municipal Boundaries



EXHIBIT  
SOUTHWEST TRANSITWAY PROXIMITY  
TO MISSISSIPPI RIVER



**From:** [Andrew.Horton@fws.gov](mailto:Andrew.Horton@fws.gov) [mailto:[Andrew.Horton@fws.gov](mailto:Andrew.Horton@fws.gov)]

**Sent:** Tuesday, August 21, 2012 4:01 PM

**To:** Simon, Marisol (FTA)

**Cc:** [Maya.Sarna@fta.dot.gov](mailto:Maya.Sarna@fta.dot.gov)

**Subject:** Southwest Transitway Project

Ms. Simon,

I have reviewed the Southwest Transitway Study Area and our records indicate there are no federally listed or proposed species and/or designated or proposed critical habitat within the action area of the proposed project. If project plans change, additional information on listed or proposed species becomes available, or new species are listed that may be affected by the project, consultation should be reinitiated. This concludes section 7 consultation for proposed construction at the above location. Thank you for your cooperation in meeting our joint responsibilities under section 7 of the Endangered Species Act. If you have any further endangered species questions, please contact me at (612) 725-3548 x2208

Andrew Horton  
Fish and Wildlife Biologist  
U.S. Fish and Wildlife Service  
Twin Cities ES Field Office  
4101 American Blvd East  
Bloomington, MN 55425-1665  
(612) 725-3548 ext. 2208



## State Historic Preservation Office

February 14, 2013

Mr. Dennis Gimmestad  
MnDOT Cultural Resources Unit  
Transportation Building, MS620  
395 John Ireland Boulevard  
St. Paul, MN 55155

Re: Phase I Archaeology Report for Southwest Transitway Project  
Eden Prairie, Minnetonka, Edina, Hopkins, St. Louis Park & downtown Minneapolis  
Hennepin County  
SHPO Number: 2009-0080

Dear Mr. Gimmestad:

Thank you for providing the Phase I Archaeology Report dated December 2012, prepared for the above-referenced project by SWCA Environmental Consultants, to cover the locally preferred route alternative. We previously reviewed two Phase IA reports, in 2010 and 2012. Those investigations formed the basis of the Phase I archaeological survey presented in the December 2012 report.

It is difficult to review this report, because the maps and photographs are not included. They are listed in the Table of Contents as Appendices A-E, but they are not in the report we received. Instead, there is a page at the back that says: "Appendices A through E – Due to the sensitive nature of the information provided in the appendices, these maps will not be provided except by request to the Metropolitan Council." We need to have these materials to complete our review.

On the basis of the text, it appears that the Phase I archaeological survey was thorough. Forty areas identified in the Phase IA investigations were surveyed. Four other areas were found to be outside the APE, or too disturbed to warrant survey. A total of eight archaeological sites were identified, and recommended by the consultant for Phase II evaluation. Mn/DOT is currently planning Phase II studies for seven of these sites. **We agree that this is appropriate.**

The report states that a Phase II evaluation will not be performed on one of the sites identified in area 3:k (21HE0410), because it is located at the edge of the APE, and will thus not be affected by the project. We will need to see the maps, photographs, and construction drawings to determine whether we agree. If a Phase II evaluation will not be conducted at this site, protective fencing or other measures should be depicted in the construction plans. If protective fencing will not be provided, the site should be evaluated or the APE revised.

We look forward to receiving the missing information and site documentation. Meanwhile, please call David Mather at 651-259-3454 if you have any further questions on this review.

Sincerely,

A handwritten signature in blue ink, appearing to read 'Mary Ann Heidemann'.

Mary Ann Heidemann, Manager  
Government Programs and Compliance

**State Historic Preservation Office**

March 12, 2013

Mr. Dennis Gimmestad  
MnDOT Cultural Resources Unit  
Transportation Building, MS620  
395 John Ireland Boulevard  
St. Paul, MN 55155

Re: Phase I Archaeology Report for the Southwest Transitway Project  
Eden Prairie, Minnetonka, Edina, Hopkins, St. Louis Park & downtown Minneapolis  
Hennepin County  
SHPO Number: 2009-0080

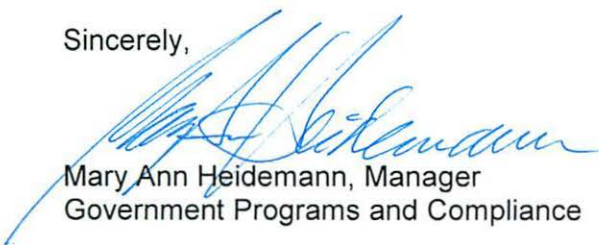
Dear Mr. Gimmestad:

Thank you for providing the missing maps and appendices prepared for the above-referenced project by SWCA Environmental Consultants, to cover the locally preferred route alternative. We previously reviewed two Phase IA reports, in 2010 and 2012. Those investigations formed the basis of the Phase I archaeological survey presented in the December 2012 report.

Based on the supplemental information provided, we now can understand and agree with the report, which states that a Phase II evaluation will not be performed on one of the sites identified in area 3:k (21HE0410), because it is located at the edge of the APE, and will thus not be affected by the project. In fact, we now see that the sites of concern are located on the opposite side of TH 62, and therefore will not be affected. We agree that protective fencing will not be required, based on site location.

Please call David Mather at 651-259-3454 if you have any further questions on this review.

Sincerely,

  
Mary Ann Heidemann, Manager  
Government Programs and Compliance



U.S. Department  
of Transportation  
**Federal Transit  
Administration**

REGION V  
Illinois, Indiana,  
Michigan, Minnesota,  
Ohio, Wisconsin

200 West Adams Street  
Suite 320  
Chicago, IL 60606-5253  
312-353-2789  
312-886-0351 (fax)

June 14, 2013

Ms. Tamara Cameron, Chief, Regulatory Branch  
Department of the Army  
St. Paul District, Corps of Engineers  
180 Fifth Street East, Suite 700  
St. Paul, Minnesota 55101



Re: Invitation to Become a Cooperating Agency for the Southwest Light Rail Transit Project in Minneapolis, Minnesota

Dear Ms. Cameron:

For the purposes of complying with the National Environmental Policy Act (NEPA), the Federal Transit Administration (FTA) and the Metropolitan Council (Council) are preparing a Supplemental Draft Environmental Impact Statement (SDEIS) and Final Environmental Impact Statement (FEIS) for the proposed Southwest Light Rail Transit (SWLRT) Project. The SWLRT SDEIS will follow the October, 2012 Draft Environmental Impact Statement (DEIS), completed by FTA in partnership with Hennepin County Regional Railroad Authority (HCRRRA) and the Council. HCRRRA served as the local lead governmental agency during the Alternatives Analysis and DEIS phases, until transitioning the project to the Council upon the close of the public comment period for the DEIS on December 31, 2012. The U.S. Army Corps of Engineers (USACE) had previously prepared a Preliminary Jurisdictional Determination in July, 2009 for the DEIS, at the request of HCRRRA. The USACE also submitted comments on the DEIS in December, 2012. Pursuant to those comments regarding the likely need for a Clean Water Act Section 404 permit, SWLRT was selected as a "Nationally or Regionally Significant Project" as part of the Federal Infrastructure Projects Permitting Dashboard. A copy of the Dashboard is attached.

The USACE has jurisdiction and expertise with respect to the discharge or fill material into Waters of the United States (WOUS). With this letter, and subsequent to our initial request for the USACE to become a cooperating agency sent September 25, 2008, we are formally requesting the USACE to participate in the SWLRT Project as a Cooperating Agency in preparation of the SDEIS and FEIS, in compliance with sections of the CEQ Regulations addressing cooperating agencies status (40 CFR 1501.6 and 40 CFR 1508.5).

The SWLRT Project will operate from downtown Minneapolis through the southwestern suburban cities of St. Louis Park, Hopkins, Minnetonka, and Eden Prairie, passing in close proximity to the city of Edina (map attached). The proposed alignment will be primarily at-grade and will include 17 new stations and approximately 15.8-miles of double track. The line will

Re: Invitation to Become a Cooperating Agency for the Southwest Light Rail Transit Project in Minneapolis, Minnesota

connect major activity centers in the region including downtown Minneapolis, Methodist Hospital in St. Louis Park, the Opus/Golden Triangle employment area in Minnetonka and Eden Prairie, and , the Eden Prairie Center Mall. Ridership in 2030 is projected at 29,660 weekday passengers. The project will interline with the Green Line (Central Corridor LRT), which will provide a one-seat ride to destinations such as the University of Minnesota, the State Capitol, and downtown St. Paul. The proposed SWLRT will be part of an integrated system of transitways, including connections to the METRO Blue Line, the Northstar Commuter Rail line, a variety of major bus routes along the alignment, and proposed future transitway and rail lines. The FTA is the lead federal agency and the Council is the project sponsor and grantee of Federal funds.

By becoming a Cooperating and Participating Agency, we invite the USACE to become more directly involved in the development of SWLRT Project in the following ways:


1. Continue to provide timely review and written comments, as the SDEIS and other documents are developed;
2. Participate in coordination meetings, conference calls, and joint field reviews, as appropriate; and
3. Pursuant to 40 CFR 1506.3, the USACE may adopt without re-circulating the SWLRT SDEIS or FEIS when the USACE concludes that its comments and suggestions have been satisfied.

The Council's manager for the SDEIS and FEIS, Ms. Nani Jacobson, has been in contact with your agency's local representative, Ms. Melissa Jenny, over the last few months. We believe the best interests of both the SWLRT Project and the USACE are served by your agency's active participation as a Cooperating Agency.

Please respond to FTA in writing an acceptance or denial of the invitation prior to July 19, 2013. If you elect not to become a Cooperating Agency, you must decline this invitation in writing, indicating your agencies reason for declining, specifically that the USACE has no jurisdiction or authority with respect to this project, has no expertise or information relevant to the project, and does not intend to submit comments on the project. The acceptance or declination of this invitation may be sent electronically to William Wheeler, Community Planner, at [William.Wheeler@dot.gov](mailto:William.Wheeler@dot.gov); please include the title of the official responding. Please contact Mr. Wheeler at 312-353-2639 if you have any questions or would like to discuss the project in more detail.

Thank you for your cooperation and interest in this project.

Sincerely,

  
for Marisol Simon  
Regional Administrator

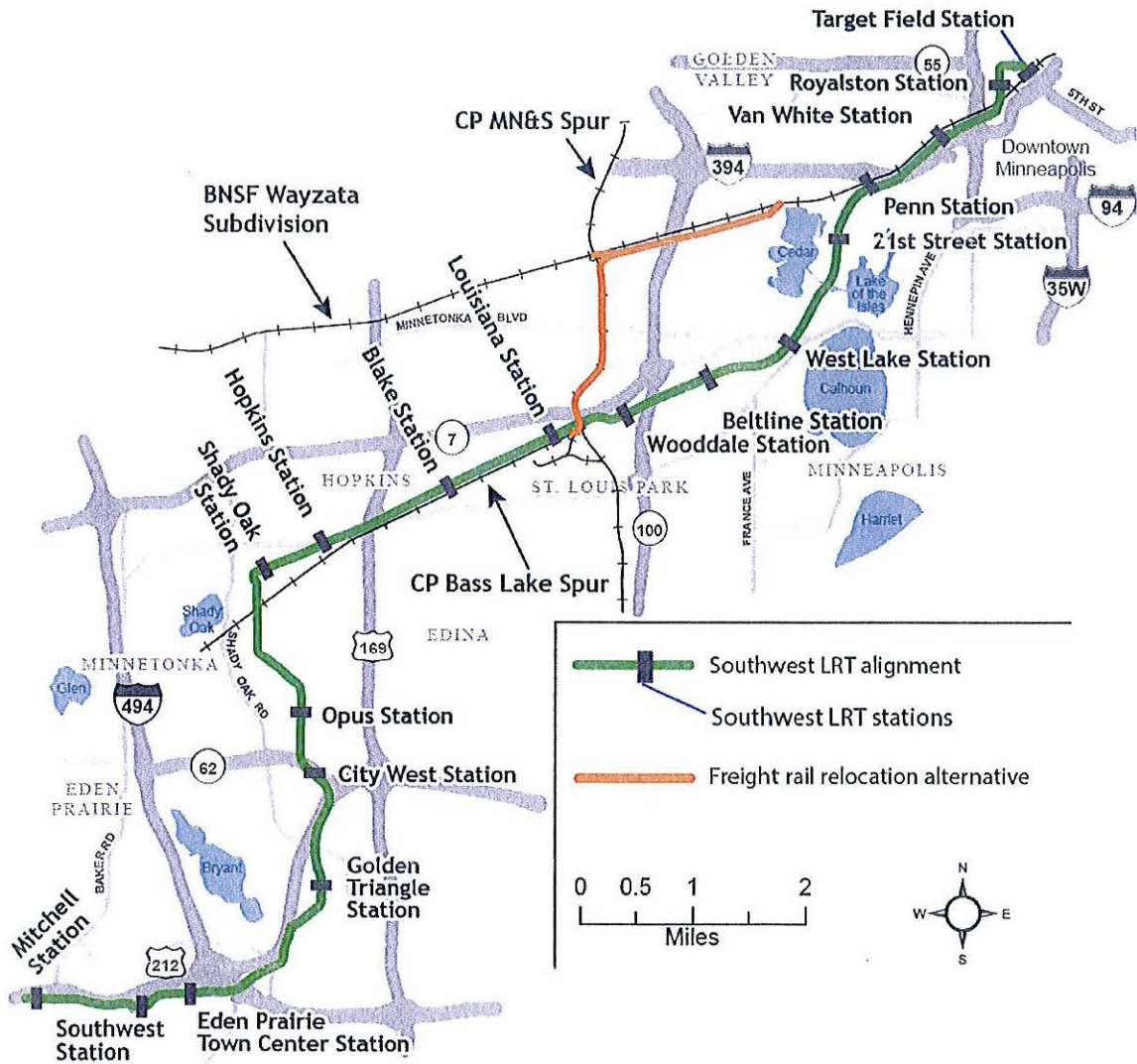
Cc:Melissa Jenny, St. Paul District, Corps of Engineers

Re: Invitation to Become a Cooperating Agency for the Southwest Light Rail Transit Project in  
Minneapolis, Minnesota

Maya Sarna, FTA HQ  
Bill Wheeler, FTA, Region V  
Nani Jacobson, Metropolitan Council

Attachments:  
SWLRT Project Map  
Federal Infrastructure Projects Permitting Dashboard

### Southwest LRT Project Map (DEIS Alternative LRT3A)





**Federal Infrastructure Projects  
Permitting Dashboard**  
Beta

Search

- [Home](#)
- [Agencies](#)
- [Projects](#)
- [IT Developers](#)
- [Contact Us](#)
- [News & Updates](#)

Home » Southwest Light Rail Transit Line

SOUTHWEST LIGHT RAIL TRANSIT LINE (NATIONALLY OR REGIONALLY SIGNIFICANT PROJECTS)

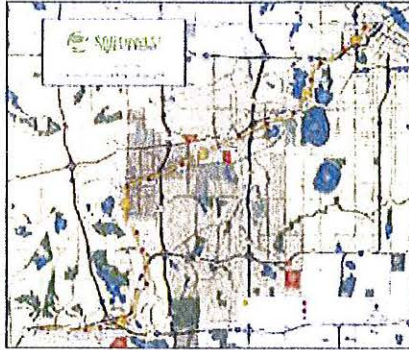
**Coordinating Agency**  
Department of Transportation

**Accountable POC**  
Bill Wheeler

**Project Status**  
In Progress

**Download**  
XML Excel

**Project Website**  
<http://www.southwesttransitway.org/>



**Description**

The Southwest Light Rail Transitway (LRT) Project will greatly improve access to major employment centers and all area attractions for residents and commuters in greater Minneapolis by building new light rail service running between Read More

**Reviews, Approvals and Permits**

Click on the ▼ icon to view more information

Title	Responsible Agency	Responsible Agency POC Name	Target Completion Date	Status
Notice of Availability - FEIS	Department of Transportation	Maya Sarna	10/15/2014	Planned
Section 4(f) Determination	Department of Transportation	Maya Sarna	07/01/2014	Planned
Section 404 Permit	Department of Defense	Tamara Cameron	07/01/2014	Planned
Section 9 of the Rivers and Harbors Act Permit	Department of Homeland Security	Eric Washburn	07/01/2014	Planned
Section 106 Process	Department of Transportation	Maya Sarna	09/30/2014	Planned
Section 10 of the Rivers and Harbors Act	Department of Defense	Tamara Cameron	07/01/2014	Planned
Public Comment Period on DEIS	Department of Transportation	Maya Sarna	12/31/2012	Complete
SURFACE TRANSPORTATION BOARD APPROVAL	Department of Transportation	Christa Stoebner	11/10/2014	Planned
Availability of the FEIS	Department of Transportation	Maya Sarna	11/17/2014	Planned
Input on DEIS & FEIS content from Participating Agencies	Department of Transportation	Colleen Vaughn, Emeka Ezekwemba	11/14/2014	Planned
Publish Record of Decision	Department of Transportation	Maya Sarna	11/15/2014	Planned

- Facebook
- Twitter
- Share
- RSS

[Home](#) [USA.gov](#) [Accessibility](#) [Plugins and Viewers](#) [Privacy Policy](#) [API](#) [Site Map](#)

Permits Performance gov is an official website of the U.S. Government.



**DEPARTMENT OF THE ARMY**  
ST. PAUL DISTRICT, CORPS OF ENGINEERS  
180 FIFTH STREET EAST, SUITE 700  
ST. PAUL MINNESOTA 55101-1678

**JUL 18 2013**

REPLY TO  
ATTENTION OF

Operations  
Regulatory (MVP-2009-01283-MMJ)

Ms. Marisol Simon  
U.S. Department of Transportation  
Federal Transit Administration, Region V  
200 West Adams Street, Suite 320  
Chicago, Illinois 60606-5253

Dear Ms. Simon,

We recently received your invitation to become a cooperating agency in the preparation of the Supplemental Draft Environmental Impact Statement (SDEIS) and Final Environmental Impact Statement (FEIS) for the Southwest Light Rail Transit (SWLRT) Project, located in Hennepin County, Minnesota. As you mentioned in your letter, the Corps of Engineers does have jurisdiction and expertise with respect to wetlands and waters of the U.S. in proximity to the SWLRT project corridor. Therefore, in accordance with the Council on Environmental Quality's regulations for implementing the procedural provisions of the National Environmental Policy Act (NEPA), we accept your invitation to become a cooperating agency, and look forward to participating in the review of the SDEIS, the FEIS and other NEPA documents completed for this project.

We commented on the SWLRT Draft Environmental Impact Statement (DEIS) in December 2012. In our letter we concurred with the SWLRT Project Purpose & Need, as well as the Array of Alternatives & Alternatives Carried Forward for Further Analysis, points 1 & 2 as described in the NEPA/Clean Water Act (CWA) Section 404 merger process. We were unable to concur with point 3 of the merger process, Identification of the Selected Alternative, because the SWLRT Locally Preferred Alternative (LPA) as described in the DEIS is not the Least Environmentally Damaging Practicable Alternative (LEDPA), as defined in the 404(b)(1) Guidelines (Guidelines).

We understand that the SWLRT SDEIS will be analyzing additional route and Operations and Maintenance Facility (OMF) alternatives that were not discussed in the DEIS. Therefore, we will be revisiting point 2 of the merger process to determine if the range of alternatives evaluated in the SDEIS, and potentially carried forward into the FEIS, would satisfy CWA Section 404 regulatory requirements.

We are also committed to continuing coordination with you and the local SWLRT project team on concurrence point 3 of the NEPA/CWA Section 404 merger process, through technical review of the SDEIS, and through evaluation of impact avoidance measures.

Again, we appreciate and accept your invitation to become a cooperating agency in preparation of the SDEIS and FEIS for the SWLRT Project. If you have any questions, contact Melissa Jenny at (651) 290-5363. In any correspondence or inquiries, please refer to the Regulatory number shown above.

Sincerely,



Tamara E. Cameron  
Chief, Regulatory Branch

Copies furnished:

Maya Sarna, FTA HQ  
Bill Wheeler, FTA, Region V  
Nani Jacobson, Metropolitan Council

## STATE HISTORIC PRESERVATION OFFICE

April 2, 2014

Mr. Dennis Gimmestad  
MnDOT Cultural Resources Unit  
Transportation Building, MS620  
395 John Ireland Boulevard  
St. Paul, MN 55155

Re: Southwest Transitway Project  
Eden Prairie, Minnetonka, Edina, Hopkins, St. Louis Park & Downtown Minneapolis  
Hennepin County  
SHPO Number: 2009-0080 (Phase I/II Architecture History Investigations)

Dear Mr. Gimmestad,

Thank you for continuing consultation on above-referenced project. It is being reviewed under Section 106 of the National Historic Preservation Act (36CFR800) and provisions of the Minnesota Historic Sites Act.

We have completed our review of the survey report entitled *Phase I/Phase II Architecture History Investigation for the Proposed Southwest Light Rail Transit Project, Hennepin County, Volume 5, Supplemental Report Number Two, Additional Areas/Properties in the Following Survey Zones: St. Louis Park Survey Zone, Minneapolis West Residential Survey Zone* (February 2014) which was submitted to our office on 25 February 2014.

We concur with your agency's determination that the following properties are eligible for listing in the National Register of Historic Places (NRHP):

- **Mahalia and Zachariah Saveland House** (HE-MPC-6766), 2405 West 22<sup>nd</sup> Street, Minneapolis - eligible under criterion C (architecture);
- **Frank W. and Julia C. Shaw House** (HE-MPC-6603), 2036 Queen Avenue South, Minneapolis - eligible under criterion C (architecture);
- **Kenwood Parkway Residential Historic District** (HE-MPC-18059), 1805 – 2206 Kenwood Parkway, Minneapolis – the residential historic district is eligible under criterion A (community planning and development). For clarification to what is stated in the report regarding the residential district's eligibility under criterion C, this parkway section is part of the contributing Kenwood Parkway Sub-segment of the Grand Rounds, a property previously determined eligible for listing in the NRHP under both criteria A and C.

We also concur with the determination that both the Nora C. and William Klein House (HE-MPC-6761) and the B'nai Abraham Synagogue (HE-SLC-566) are **not eligible** for listing in the NRHP.

Again, we thank you for your agency's commitment to completing high-quality identification and evaluation survey reports for the proposed light rail project. Feel free to contact me at 651-259-3456 or [sarah.beimers@mnhs.org](mailto:sarah.beimers@mnhs.org) if you have any questions or concerns regarding our review.

Sincerely,



Sarah J. Beimers  
Manager, Government Programs and Compliance

cc: Hilary Dvorak, Minneapolis Heritage Preservation Commission  
Heather Goodson, Mead and Hunt

STATE HISTORIC PRESERVATION OFFICE

April 2, 2014

Mr. Dennis Gimmestad  
MnDOT Cultural Resources Unit  
Transportation Building, MS620  
395 John Ireland Boulevard  
St. Paul, MN 55155

Re: Southwest Transitway Project  
Eden Prairie, Minnetonka, Edina, Hopkins, St. Louis Park & Downtown Minneapolis  
Hennepin County  
SHPO Number: 2009-0080 (Phase II Archaeological Survey)

Dear Mr. Gimmestad,

Thank you for continuing consultation on above-referenced project. It is being reviewed under Section 106 of the National Historic Preservation Act (36CFR800) and provisions of the Minnesota Historic Sites Act.

We have completed our review of the survey report entitled *Phase II Archaeological Survey for the Southwest Light Rail Transit Project* (February 2014) which was submitted to our office on 27 February 2014.

We concur with your agency's determination that the following properties are **not eligible** for listing in the National Register of Historic Places (NRHP):

- **Brookview Terrace (21HE0413)**, St. Louis Park
- **Upton Avenue Ridge (21HE0412)**, Minneapolis
- **M&StL Cedar Lake Yards (21HE0408)**, Minneapolis
- **Kenwood Station (21HE0414)**, Minneapolis

We also concur with the determination that the following properties are **eligible** for listing in the NRHP:

- **St. Paul & Pacific Rail Bed (21HE0435)**, St. Louis Park, eligible under criteria C and D
- **Cedar Lake Ice Company (21HE0409)**, Minneapolis, eligible under criterion D

Regarding the sites identified as **Royalston North (21HE0436)** and **Royalston South (21HE0437)** in Minneapolis, your agency has indicated that additional field survey is necessary in order to determine NRHP eligibility and that this additional survey would potentially be combined with Phase III treatment. While we do agree that additional Phase II evaluation work may be warranted for these sites, we believe that the current information is sufficient to demonstrate that the two Royalston sites are **eligible** for

listing in the NRHP under criterion D. If future investigation does take place in the existing Royalston Road street bed and intact archaeological deposits are found, then they may contribute to the significance of these two sites. However, it is our feeling that if additional intact deposits are not found, the two sites would still be eligible.

Again, we thank you for your agency's commitment to completing high-quality identification and evaluation survey reports for the proposed light rail project. In particular, this Phase II archaeological survey and evaluation is an excellent report and provides a significant contribution to the archaeology of the Minneapolis and St. Louis Park metropolitan area.

Feel free to contact me at 651-259-3456 or [sarah.beimers@mnhs.org](mailto:sarah.beimers@mnhs.org) if you have any questions or concerns regarding our review.

Sincerely,



Sarah J. Beimers  
Manager, Government Programs and Compliance



**Minneapolis  
Park & Recreation Board**

*Administrative Offices*  
2117 West River Road  
Minneapolis, MN 55411-2227

*Operations Center*  
3800 Bryant Avenue South  
Minneapolis, MN 55409-1000

*Phone*  
612-230-6400

*Fax:*  
612-230-6500

[www.minneapolisparcs.org](http://www.minneapolisparcs.org)

*President*  
Liz Wielinski

*Vice President*  
Scott Vreeland

*Commissioners*  
Brad Bourn  
John Erwin  
Meg Forney  
Steffanie Musich  
Jon C. Olson  
Anita Tabb  
M. Annie Young

*Superintendent*  
Jayne Miller

*Secretary to the Board*  
Pamela French



May 16, 2014

Dennis Gimmestad  
MNDOT Cultural Resources Unit  
Office of Environmental Stewardship  
Mail Stop 620  
395 John Ireland Boulevard  
Saint Paul, MN 55155

**RE: Southwest Light Rail Transit Project, Minneapolis Park and Recreation Board Comments on April 18, 2014 Consultant Materials**

Dear Mr. Gimmestad:

Thank you for the opportunity to review the Section 106 materials provided to Sarah Beimers of the Minnesota State Historic Preservation Office and to participate in the April 30, 2014 consultant meeting for the Southwest Light Rail Transit (SWLRT) Project. Minneapolis Park and Recreation Board (MPRB) staff provide the following comments on the materials:

**Table of Potential Effects on Historic Properties (4/15/14)**

- 1) *No 8, Grand Rounds/Lake Calhoun (eligible) HE-MPC-01811:* No adverse effect is indicated for this portion of the Grand Rounds Historic District based on preliminary engineering and station area plans. This property is close to the station area in an area of the city that has poor vehicle, pedestrian and bicycle circulation. The MPRB is concerned that this property will be adversely impacted by changes to traffic and parking patterns that result from the SWLRT project in this area. We request continued consultation on this property throughout the final design and development of the SWLRT, similar No 21, Grand Rounds/Kenwood Parkway (eligible) HE-MPC-01796 in the table.
- 2) *No 9, Grand Rounds/Cedar Lake Parkway (eligible) HE-MPC-01833:* The MPRB is concerned about the long-term noise and visual intrusion at this intersection and its impacts on adjacent park land. We understand this it is currently a quiet zone. We also understand that this status is unique and are concerned that this designation may not carry over into the SWLRT project. The MPRB is welcomes the opportunity to continue the consultation on this intersection.
- 3) *No 13, Grand Rounds/Kenilworth Lagoon/Channel (eligible) HE-MPC-1822:* The MPRB agrees with the need for continued consultation on the impacts to the Kenilworth Channel and Lagoon. The size and scale of the proposed bridge structures are not consistent with the design intent and historic cultural landscape of the channel. The MPRB would



like to include the introduction of massive portals on each side of the channel to this review, as well as the noise and vibration impacts that will result from the SWLRT moving in and out of the shallow tunnels and crossing the channel. The MPRB is concerned that it will not be possible to mitigate the impacts of bridge structures and portals that co-locate freight, light rail and trail over the channel. To assist with defining the design intent and historic landscape character of the Kenilworth Channel and Lagoon, the MPRB provides the following information:

The creation of the Kenilworth Lagoon was driven by rising interest in “water sports of all kinds on the lakes and streams,” according to Theodore Wirth, writing in his 1944 history of the park system. As early as 1906, Wirth’s first year as superintendent, one of his main goals was to connect Isles, Calhoun, Cedar, and Brownie together, an idea called the “Venice of America”—with specific reference to the “beautiful drives and bridges”—in the 1908 Board President’s Report.

Excavation of the Kenilworth Lagoon as far as the Minneapolis and St. Louis Railroad was completed in 1911 and extended to Cedar Lake by 1913. In his 1914 Superintendent’s Report, Wirth notes the adoption of the name “Kenilworth Lagoon” for the entire water connection between Isles and Cedar, and describes its original design:

“During the winter season the grounds along the south shore of the lagoon, between Bridge No. 4 [Lake of the Isles Parkway over the Kenilworth Lagoon] and the railroad, were graded, and in the spring seeded and planted, and they have become very attractive in their new garb of lawn and shrubbery. During the fall months the north side of the main lagoon and the banks of the waterway between the railroad bridge and Cedar Lake have also been graded, dressed with loam, planted, and seeded. Walks along both shores have been established leading from Lake of the Isles Boulevard to Cedar Lake Avenue, or what is now called ‘Burnham Avenue.’ Pipe rails were erected along the walks where they come close to the narrow channel under the railroad bridge.

This work was completed less than a year after similar planting and grading was done around Lake of the Isles and along the channel between Isles and Calhoun. Wirth viewed the dredging and interconnection of the four lakes as a single grand project with similar design parameters. In 1907 he envisioned that the Isles-Calhoun connection would have a “natural picturesque appearance.” This design style would have been applied to the entire chain of lakes.

The interconnection of the lakes required six bridges, which were enumerated in the 1909 Annual Report. A competition was held to design them, and designs were selected and built over the Lake Calhoun inlet (bridge #1), Lake of the Isles outlet to Calhoun (bridge #3), and the Kenilworth Lagoon at Lake of the Isles (bridge #4). The railroad bridge over the Isles-Calhoun channel (bridge #2) was built by the railroad. These four bridges were completed in 1911. A design was purchased for the Burnham Road (then

“Cedar Lake Avenue”) bridge (bridge #6) but it was never built. Bridge #5, the railroad bridge over the Kenilworth Lagoon at the present day location of the proposed Southwest LRT crossing, was completed in 1913 and considered temporary.

Though in 1909 Wirth agreed to focus efforts and money on the more prominent Bridges 1, 3, and 4, by 1913 he “[hopes that the railroad company will replace [the temporary timber structure] in due time with a better and safer structure.” In 1916, two years after completion of the Kenilworth Lagoon with its plantings and trails, the railroad bridge continued to bother Wirth: “I wish to renew my suggestion that the city be requested to build a suitable permanent bridge across the channel on Cedar Lake Avenue (Burnham Road), and that the Minneapolis and St. Louis Railway Company replace the unsightly wooden bridge with a permanent, neat looking concrete structure.”


The Kenilworth Lagoon was originally envisioned as a recreational water and pedestrian connection in the picturesque style that predominated throughout the Isles/Calhoun area. All the bridges in the area—including the railroad bridges—were considered key features of that recreational connection. In the 1914 Annual Report, Wirth sets forth his grand vision specifically for the Kenilworth Lagoon:

“After permanent ornamental bridges have been established to replace the present unsightly wooden structures [of the Burnham Road and Minneapolis and St. Paul Railroad bridges], this waterway between the two lakes will be one of the most attractive features of the entire park system, viewed alike from land or water.”

- 4) *No 14 – 18, Grand Rounds*: The MPRB agrees with the need for continued consultation on the visual impacts of the bridge structures over the Kenilworth Channel from surrounding properties. The MPRB is concerned that the visual impact of the bridges over the Kenilworth Channel from Burnham Road Bridge are not evaluated in the consultation materials. The MPRB recommends that this be included in the consultation.

Again, thank you for the opportunity to review these materials and to participate in future consultation for the Section 106 review of the Southwest Light Trail Transit Project.

Sincerely,



Bruce L. Chamberlain, ASLA  
Assistant Superintendent for Planning

cc: Sarah Beimers, Minnesota State Historic Preservation Office

**From:** [Byers, Jack P.](#)  
**To:** [Gimmestad, Dennis \(DOT\)](#)  
**Cc:** [sarah.beimers@mnhs.org](mailto:sarah.beimers@mnhs.org); [Jacobson, Nani \(Nani.Jacobson@metrotransit.org\)](mailto:Jacobson.Nani@metrotransit.org); [Hager, Jenifer A](#); [Schaffer, Brian C.](#)  
**Subject:** Southwest LRT 106 Consultation - Your request for comments from Minneapolis by May 18th  
**Date:** Friday, May 16, 2014 11:02:32 AM

---

Dennis,

Thank you for convening all of the consulting parties on the Southwest Transitway Section 106 process on April 30<sup>th</sup>. We appreciate your presentation of the updated Potential Effects table and we appreciate the research and chronology that the 106 Group presented during that meeting. Both were illuminating and very helpful. Thank you for your hard work on this project.

As you are aware, the City of Minneapolis and the other municipalities along the proposed corridor are currently engaged the Municipal Consent process; one that includes a specific set of proposals from SPO. City of Minneapolis staff are reviewing the SPO package and preparing our comments for subsequent review and consideration by our City Council. City staff are certainly keeping matters related to historic resources in mind as we conduct our Municipal Consent review. However, given that the Municipal Consent process is formally underway, it would be premature for us to comment specifically on 106 matters separately and before our City Council's review and decision on Municipal Consent is completed.

Thank you for understanding. Please feel free to contact me if you have any questions or require further clarification.

Regards,  
Jack Byers

---

**Jack Byers, AICP**

*Long Range Planning Manager*

**City of Minneapolis – Community Planning and Economic Development**

105 Fifth Avenue South – 200  
Minneapolis, MN 55401-2534

Office: 612-673-2634

[jack.byers@minneapolismn.gov](mailto:jack.byers@minneapolismn.gov)

[www.minneapolismn.gov/cped](http://www.minneapolismn.gov/cped)



STATE HISTORIC PRESERVATION OFFICE

May 21, 2014

Mr. Dennis Gimmestad  
MnDOT Cultural Resources Unit  
395 John Ireland Boulevard, Mail Stop 620  
St. Paul, MN 55155-1899

RE: Southwest Light Rail Transit Project  
Multiple Communities, Hennepin County  
SHPO Number: 2009-0080

Dear Mr. Gimmestad:

Thank you for continuing consultation on the above project. It is being reviewed pursuant to the responsibilities given the State Historic Preservation Officer by the National Historic Preservation Act of 1966 and implementing federal regulations at 36 CFR 800, and to the responsibilities given the Minnesota Historical Society by the Minnesota Historic Sites Act and the Minnesota Field Archaeology Act.

We have completed our review of the consultation package you submitted to our office on 18 April 2014. This submittal included:

- Consultation letter dated 18 April 2014
- Table of Potential Effects on Historic Properties
- Photo Log of Historic Properties
- Historic Properties Maps 1-6
- Attachment A: Additional Project Information in the Vicinity of Hopkins M&StL Depot
- Attachment B: Additional Project Information in the Vicinity of Cedar Lake Parkway/Grand Rounds Historic District
- Preliminary Track Drawings: East Segments 1-4

In addition to reviewing these materials, we participated in the Section 106 Consulting Parties meeting held at the Southwest Project Office on 30 April 2014. Thank you for convening all of the consulting parties for this meeting, it was very beneficial. Our comments and recommendations are outlined below.

#### **Archaeological Phase II Evaluation**

We concur with your determination that archaeological sites 21HE0436 and 21HE0437 are eligible for listing in the National Register of Historic Places (NRHP) under Criterion D. It is our understanding that your agency will complete additional Phase II investigations at these sites in order to determine site boundaries which will assist in the resolution of potential adverse effects to these sites. We agree with this approach.

### **Area of Potential Effects Revisions**

We have taken into account the various adjustments to the project's area of potential effect (APE) which you have summarized in your letter and are illustrated on the Historic Properties Maps. As you have indicated, one of the most significant adjustments to the project APE is in the location of the new light rail bridge crossings over the Kenilworth Lagoon/Channel. We appreciate the fact that, due to the change in scope for this segment of the project, the APE has been expanded in order to comprehensively apply the criteria of adverse effect to significant characteristics of the historic Grand Rounds. We look forward to continuing consultation regarding potential effects to historic properties in these additional areas.

### **Preliminary Project Effects Assessments**

You have indicated that the assessments of potential effects on historic properties have been determined based upon preliminary project engineering plans and that final adverse effect determinations will be made by the Federal Transit Administration. In general, we agree with many of the assessments that have been completed thus far and it is our opinion that these assessments will provide a basis for provisions to be included in a Section 106 agreement document, perhaps in the form of a programmatic agreement, for the Southwest Light Rail Transit Project. Our comments and recommendations on your April 18<sup>th</sup> correspondence are outlined below:

- Based on our review of the current preliminary engineering and station area plans, we concur with your determination that the project will not adversely affect the following nine (9) properties: Hopkins City Hall (Hopkins), Hoffman Callan Building (St. Louis Park), Minikahda Club (Minneapolis), Grand Rounds-Lake Calhoun Segment (Minneapolis), Mac Martin House (Minneapolis), Dunwoody Institute (Minneapolis), Minneapolis St. Paul & Manitoba Railroad Historic District (Minneapolis), Osseo Branch/Minneapolis St. Paul & Manitoba Railroad Historic District (Minneapolis), and the Minneapolis Warehouse District (Minneapolis). We agree that no further consultation is required for these properties unless subsequent project plan development results in effects to these historic properties.
- Please Note: Based upon discussions at the April 30<sup>th</sup> consulting parties meeting, we do not concur with the "no adverse effect" finding for the CM&StP Saint Louis Park Depot (Saint Louis Park), due to the fact that project plans have changed in the vicinity of this historic property which may necessitate additional effect assessment and/or design changes. We look forward to continuing consultation at this location.
- We agree with your agency's determination that avoidance of adverse effects for the following four (4) properties may be possible through appropriate design modifications and/or protection measures during construction: M&StL Hopkins Depot (Hopkins), Peavey-Haglin Experimental Concrete Grain Elevator (Saint Louis Park), Grand Rounds-Cedar Lake Parkway Segment (Minneapolis), and Archaeological Site 21HE0409. We will continue to consult with your agency as project plans are further developed.
- In regards to the proposed location of the two (2) new Lake of the Isles-Cedar Lake Channel Bridges, you have indicated that we will continue to consult with your agency on ways to minimize or avoid adverse effects to the six (6) historic properties identified within the APE for these bridges. These historic properties include: the Kenilworth Lagoon/Channel, Cedar Lake, Lake of the Isles, Lake of the Isles Parkway, and Park Board Bridge No. 4 which are contributing elements to the Grand Rounds, as well as the Lake of the Isles Residential Historic District. We agree that avoidance or minimization of adverse effects is the most desirable outcome, but we

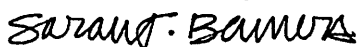
also recommend that continued consideration be given to potential mitigation of any adverse effects resulting from this segment of the project's construction.

- We agree with your recommendation for continued consultation regarding avoidance or minimization of potential adverse effects which may result from construction of the Penn LRT Station. It is our opinion that your agency should continue to consider potential mitigation of adverse effects at this station location as well. We agree that further consideration of effects resulting from the design and development of access routes between the Penn LRT Station and Kenwood Parkway will need to be assessed. The four (4) historic properties located within the Penn LRT Station APE include: the Kenwood Parkway Historic District, and three contributing elements to the Grand Rounds which include Kenwood Parkway, Kenwood Park, and Kenwood Water Tower. You have also indicated that additional assessment of potential auditory effects will be completed for the northern section of the Kenwood Parkway Historic District.
- We will continue to consult with your agency and consulting parties in the City of Hopkins regarding continued assessment of potential effects to the Hopkins Commercial Historic District resulting from the Downtown Hopkins LRT Station area development. We agree that a provision for listing the historic district in the National Register of Historic Places is an acceptable strategy for avoiding adverse effects and look forward to continuing consultation with your agency and the City of Hopkins.
- We agree with your determination that archaeological sites 21HE0436 and 21HE0437 will be directly affected by construction of the Royalston LRT Station and that avoidance of adverse effects has been considered and deemed infeasible. Therefore, we need to further consult regarding minimizing or mitigating for the adverse effect. Perhaps through the additional archaeological survey which is to be completed in the near future. The boundaries of these sites will be clarified which may allow for avoidance of direct impacts and continued preservation of site elements. We agree that a logical mitigation strategy for destruction of these sites will be a provision in a future agreement document for Phase III Data Recovery. We also recommend continued consultation with our office and consulting parties from the City of Minneapolis to develop additional relevant mitigation strategies.
- We agree with your determination that impacts to the following four (4) non-contributing elements, either directly or indirectly, will not adversely affect the Grand Rounds: the two (2) Railroad Bridges over Kenilworth Lagoon, the Burnham Road Bridge, and The Parade.

Again, thank you for your agency's efforts in bringing all of the Section 106 consulting parties together on April 30<sup>th</sup> to discuss the preliminary effects assessments, the proposed light rail route from Hopkins to Minneapolis, as well as providing a project update regarding the proposed Lake of the Isles-Cedar Lake Channel Bridges. We are aware of the fact that your agency will be in receipt of comment letters from the various consulting parties regarding the preliminary effects assessments and we look forward to continuing consultation as all comments and recommendations are taken into account.

If you have any questions or concerns regarding this comment letter, please feel free to contact me at 651-259-3456 or [sarah.beimers@mnhs.org](mailto:sarah.beimers@mnhs.org).

Sincerely,



Sarah Beimers, Manager  
Government Programs & Compliance

STATE HISTORIC PRESERVATION OFFICE

June 5, 2014

Mr. Dennis Gimmestad  
MnDOT Cultural Resources Unit  
395 John Ireland Boulevard, Mail Stop 620  
St. Paul, MN 55155-1899

RE: Southwest Light Rail Transit Project  
Multiple Communities, Hennepin County  
SHPO Number: 2009-0080

Dear Mr. Gimmestad:

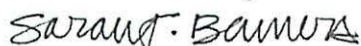
Thank you for continuing consultation on the above project. It is being reviewed pursuant to the responsibilities given the State Historic Preservation Officer by the National Historic Preservation Act of 1966 and implementing federal regulations at 36 CFR 800, and to the responsibilities given the Minnesota Historical Society by the Minnesota Historic Sites Act and the Minnesota Field Archaeology Act.

We have completed our review of your correspondence dated 2 April 2014 in which you provide clarification regarding the historic property boundaries for segments of the Grand Rounds and the M&StL RR Depot, properties previously determined eligible for listing in the National Register of Historic Places and located within the area of potential effects (APE) for the Southwest Light Rail Transit Project. Our comments are summarized below:

- **Grand Rounds-Kenilworth Lagoon/Channel (HE-MPC-1822)** – we concur with your determination of the historic property boundary as described in your correspondence and illustrated on the map dated 02/13/14;
- **Grand Rounds-Cedar Lake Parkway (HE-MPC-1833)** – we concur with your determination of the historic property boundary as described in your correspondence and illustrated on the map dated 02/13/14;
- **M&StL RR Hopkins Depot (HE-HOC-0014)** – we concur with your determination of the historic property boundary as described in your correspondence and illustrated on the map dated 02/13/14.

We look forward to continuing consultation on this important project. If you have any questions or concerns regarding this comment letter, please feel free to contact me at 651-259-3456 or [sarah.beimers@mnhs.org](mailto:sarah.beimers@mnhs.org).

Sincerely,



Sarah Beimers, Manager  
Government Programs & Compliance

STATE HISTORIC PRESERVATION OFFICE

June 5, 2014

Mr. Dennis Gimmestad  
MnDOT Cultural Resources Unit  
395 John Ireland Boulevard, Mail Stop 620  
St. Paul, MN 55155-1899

RE: Southwest Light Rail Transit Project  
Multiple Communities, Hennepin County  
SHPO Number: 2009-0080

Dear Mr. Gimmestad:

Thank you for continuing consultation on the above project. It is being reviewed pursuant to the responsibilities given the State Historic Preservation Officer by the National Historic Preservation Act of 1966 and implementing federal regulations at 36 CFR 800, and to the responsibilities given the Minnesota Historical Society by the Minnesota Historic Sites Act and the Minnesota Field Archaeology Act.

We have completed our review of additional transit project materials received in our office on 8 May 2014 which included:

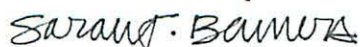
- Correspondence letter dated 8 May 2014
- Report entitled *Phase I/Phase II Architectural History Investigation, Southwest LRT Project, Hennepin County, Minnesota: Volume Six, Supplemental Report Number Three (SDEIS)* (CH2M HILL, April 2014)
- Report entitled *Phase 1a Archaeological Investigation: Southwest Light Rail Transit, Hennepin County, Minnesota: SDEIS Areas Eden Prairie Segment, Hopkins Operations and Maintenance Facility, St. Louis Park/Minneapolis Segment* (CH2M HILL, March 2014)

You have indicated that these additional cultural resources studies have been completed as a result of scope adjustments which have been made to the proposed light rail transit project and that a Supplemental Draft Environmental Impact Statement (SDEIS) is currently being finalized.

Based upon information provided to us at this time, we concur with your determination that, in the SDEIS project areas surveyed for architecture/history resources, no additional properties listed or eligible for listing in the National Register of Historic Places (NRHP) were identified. Also, we concur with the determination that Phase 1 archaeological surveys should be completed for Areas A, B, and C identified in the Phase 1a archaeological report and that outside these three (3) areas targeted for survey, there are no additional NRHP listed or eligible properties identified.

We look forward to continuing consultation on this important project. If you have any questions or concerns regarding this comment letter, please feel free to contact me at 651-259-3456 or [sarah.beimers@mnhs.org](mailto:sarah.beimers@mnhs.org).

Sincerely,



Sarah Beimers, Manager  
Government Programs & Compliance



STATE HISTORIC PRESERVATION OFFICE

July 3, 2014

Mr. Dennis Gimmestad  
MnDOT Cultural Resources Unit  
Transportation Building, MS620  
395 John Ireland Boulevard  
St. Paul, MN 55155

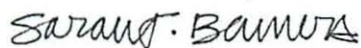
Re: Southwest Transitway Project  
Eden Prairie, Minnetonka, Edina, Hopkins, St. Louis Park & Downtown Minneapolis  
Hennepin County  
SHPO Number: 2009-0080

Dear Mr. Gimmestad:

Thank you for your letter of 2 June 2014 that provided clarification on additional Phase II investigations in the vicinity of archaeological sites 21HE0436 and 21HE0437 and clarification on the properties that will require further consultation on design and/or protective measures to avoid adverse effects as project planning moves forward.

We look forward to continuing consultation on this project. Please feel free to contact me at 651-259-3456 or [sarah.beimers@mnhs.org](mailto:sarah.beimers@mnhs.org) if you have any questions or concerns regarding our review.

Sincerely,



Sarah J. Beimers, Manager  
Government Programs and Compliance

cc: Greg Mathis, MnDOT CRU



U.S. Department  
of Transportation  
Federal Transit  
Administration

REGION V  
Illinois, Indiana,  
Michigan, Minnesota,  
Ohio, Wisconsin

200 West Adams Street  
Suite 320  
Chicago, IL 60606-5253  
312-353-2789  
312-886-0351 (fax)

July 9, 2014

Victoria Rutson  
Surface Transportation Board  
Office of Environmental Analysis  
395 E Street, SW  
Washington, DC 20423

Re: Rescinding Cooperating Agency Status for the Southwest Light Rail Transit (SWLRT) Project and Invitation to Become a Participating Agency for the SWLRT Project

Dear Ms. Rutson:

Federal Transit Administration (FTA), in cooperation with the Metropolitan Council, is developing a public transit project that will benefit the residents of the Minneapolis/St. Paul Region. A Draft Environmental Impact Statement (DEIS) was published on October 12, 2012 with the public comment period ending on December 31, 2012. The Surface Transportation Board (STB) is currently included as a cooperating agency for the SWLRT (METRO Green Line Extension) Project under the National Environmental Policy Act (NEPA). Due to modifications to the project since publication of the DEIS, the FTA and Metropolitan Council intend to publish a Supplemental Draft Environmental Impact Statement (SDEIS). It is anticipated that the SDEIS scope will include, but not be limited to, an evaluation of the following areas: Eden Prairie Light Rail Transit (LRT) alignment and stations, LRT Operations and Maintenance Facility (OMF) site, freight rail alignments (i.e., Re-location and Co-location), and other areas where FTA and the Metropolitan Council determine that there is a need to be supplemented with additional information which was not included in Project's October 2012 DEIS. This letter serves to rescind STB as a cooperating agency due to adjustments in the project scope made since publication of the DEIS in October 2012.

On April 9, 2014, the Metropolitan Council adopted a project scope and budget which includes retaining current operations for freight rail on the Bass Lake Spur and Kenilworth Corridor. As STB noted in their comment letter on the Draft EIS from December 2012, "[STB] board approval is not required to improve, upgrade, or realign an existing line without extending the territory or markets that the railroad serves." Under the LPA, there would be the following general areas of freight rail modifications:

- Existing freight rail tracks would be shifted to the north approximately 40-45 feet on the Canadian Pacific (CP)-owned Bass Lake Spur, beginning in Hopkins and extending through St. Louis Park. The freight rail and light rail shift would continue into Minneapolis on the Hennepin County Regional Railroad Authority (HCRRA)-owned Cedar Lake Junctions (commonly referred to as the Kenilworth Corridor) (see Exhibits 1-3). This shift allows the proposed light rail alignment to be located south of the freight rail tracks thereby providing better LRT station connections to local activity centers.

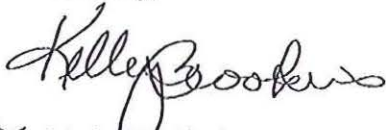
- o A portion of the northern leg of the existing Skunk Hollow switching wye between the Bass Lake Spur and Oxford Street would be removed and replaced with a new southerly connection between the Bass Lake Spur and the MN&S Spur (which is also owned by CP) that would cross over the proposed light rail alignment on a structure, which would allow freight trains traveling on the Bass Lake Spur tracks to continue to access the MN&S Spur tracks (see Exhibit 3)<sup>1</sup>.

The Supplemental Draft EIS, planned for publication later this year, includes the above adjustments of freight rail as part of the Locally Preferred Alternative (LPA). FTA believes the changes made to the LPA no longer require STB approval. FTA is seeking concurrence to rescind cooperating agency status, eliminating the need for STB's role as a cooperating agency under NEPA, as previously identified under 40 CFR § 1501.6.

Pursuant to Section 6002 of the Safe, Accountable, Flexible, and Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) (23 USC § 139), FTA would like to invite STB to become a participating agency in the on-going environmental review process for the project. FTA believes STB may have an interest in this project because of the operational effects to freight rail carriers located within the project corridor. STB does not have to accept this invitation. If STB elects not to become a participating agency, STB must decline this invitation in writing by August 25, 2014, indicating that STB has no jurisdiction or authority with respect to the project, no expertise or information relevant to the project, and does not intend to submit comments to the project. The declination may be transmitted electronically to Mr. William Wheeler of the FTA at [william.wheeler@dot.gov](mailto:william.wheeler@dot.gov); please include the title of the official responding.

Please contact me if you have questions or need additional information. Thank you for your support and expertise provided to the project.

Sincerely,



for Marisol R. Simón  
Regional Administrator

Cc: Maya Sarna, FTA HQ  
Nani Jacobson, SWLRT Project Office

Enclosures: Exhibit 1: Proposed Southwest LRT Alignment  
Exhibit 2: Freight Rail Owners and Operators in the Southwest LRT Project Area  
Exhibit 3: Proposed Freight Rail Modifications

<sup>1</sup> Removal of a portion of the northern leg of the Skunk Hollow switching wye would be required to accommodate the placement of the light rail alignment south of the freight rail alignment on the existing northern switching wye alignment. The southern leg of the Skunk Hollow switching wye would remain in place, providing the continuation of freight rail service to the Robert B. Hill Company salt facility at the west end of the switching wye.

Exhibit 1. Proposed Southwest LRT Alignment

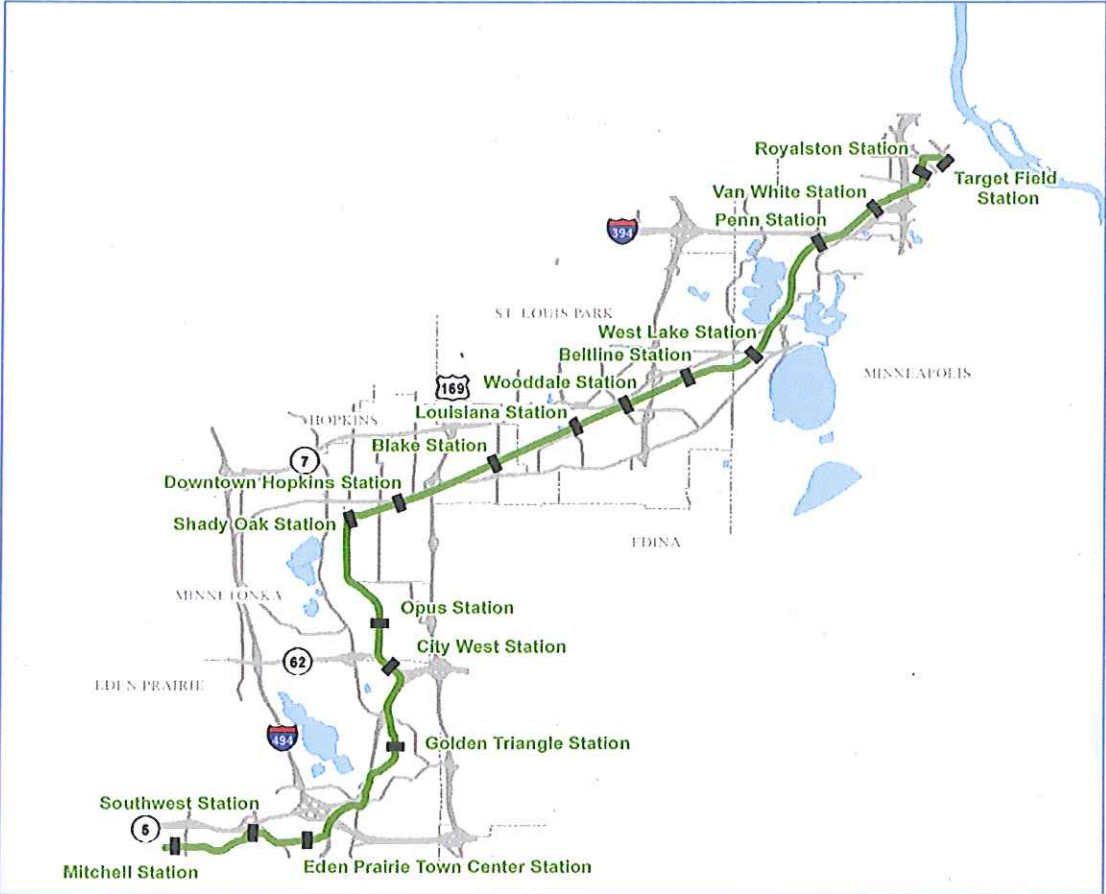
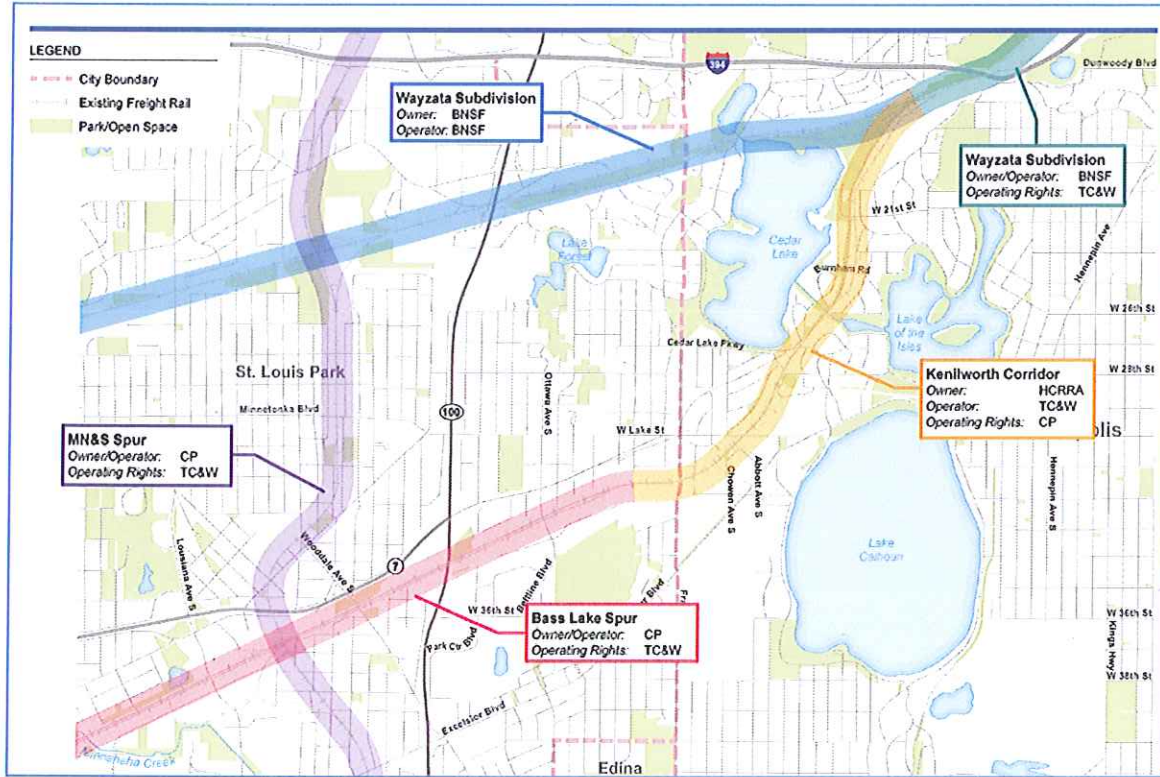


Exhibit 2. Freight Rail Owners and Operators in the Southwest LRT Project Area





-----Original Message-----

From: Vicki.Rutson@stb.dot.gov [mailto:Vicki.Rutson@stb.dot.gov]

Sent: Friday, August 22, 2014 12:09 PM

To: Sarna, Maya (FTA)

Cc: Wheeler, William (FTA)

Subject: RE: SWLRT: Rescinding of Cooperating Agency status and Invitation to Participate in Environmental Review Process

Maya, since it appears that the only potential Board licensing action would involve trackage rights (Mike Higgins will be getting back to you on that issue), there's no need for the Board to be involved in the environmental review--under the Board's environmental rules, trackage rights are categorically excluded from NEPA review by the Board.

Please call or email if this doesn't make sense.

Best, Vicki

Victoria Rutson

Director, Office of Environmental Analysis Surface Transportation Board

(202) 245-0295 (phone)

(202) 245-0454 (fax)



U.S. Department  
of Transportation

1200 New Jersey Avenue, SE.  
Washington, D.C. 20590

**Federal Railroad  
Administration**

OCT - 6 2014

Mr. Mark W. Fuhrmann  
New Starts Program Director–Metro Transit  
SWLRT Project Office  
6465 Wayzata Boulevard, Suite 500  
St. Louis Park, MN 55426

Re: Federal Railroad Administration Safety Jurisdiction–Proposed Southwest Light  
Rail Transit Line

Dear Mr. Fuhrmann:

I write in response to the Metropolitan Council’s (Met Council) request for a preliminary jurisdiction determination concerning the proposed Southwest Light Rail Transit Line (SWLRT), described as a light rail transit (LRT) extension to its METRO system in the Minneapolis-St. Paul Twin Cities region of Minnesota. Based upon the information that Met Council provided in its letters dated June 12, 2014, and August 15, 2014, the Federal Railroad Administration (FRA) has concluded that the proposed SWLRT will be an urban rapid transit (URT) operation; therefore, FRA will not exercise its safety jurisdiction over the SWLRT, except to the extent that it is necessary to ensure railroad safety at any limited shared connections between the SWLRT and other railroad carriers that operate on the general railroad system of transportation (general system),<sup>1</sup> as discussed below.

**I. General Factual Background**

Met Council’s Metro Transit operating division operates and maintains the METRO system (described by Met Council as an LRT system) that serves the Minneapolis-St. Paul Twin Cities region of Minnesota. The existing METRO system consists of three lines, the METRO Blue Line, the METRO Red Line,<sup>2</sup> and the METRO Green Line.<sup>3</sup> The Blue Line is 12 miles in length with 19 stations between Target Field in

---

<sup>1</sup> The “general railroad system of transportation” is defined as “the network of standard gage track over which goods may be transported throughout the nation and passengers may travel between cities and within metropolitan and suburban areas.” Appendix A to 49 C.F.R. Part 209. Portions of the network that lack a physical connection may still be part of the general system by virtue of the nature of the operations that occur. See id.

<sup>2</sup> The METRO Red Line is a bus rapid transit line with five stations providing service from the Mall of America to and from points to the south.

<sup>3</sup> The Green Line opened for revenue operations on June 14, 2014.



downtown Minneapolis and the Mall of America in Bloomington.<sup>4</sup> The Green Line is 11 miles in length with 18 stations offering service between Target Field and downtown St. Paul, sharing 5 stations with the Blue Line and bringing the METRO LRT system's total to 22 miles of exclusive right-of-way and 37 stations.

## **II. General Description of the SWLRT**

Based upon the written correspondence from Met Council, FRA has the following understanding of the SWLRT. The SWLRT is a proposed extension of the Green Line from downtown Minneapolis to Eden Prairie, which would add approximately 15.8 miles of standard gage revenue service track and 17 new stations to the region's METRO transit system. The SWLRT will connect to the Green Line at the Target Field/Interchange station in the central business district of downtown Minneapolis and will terminate at Mitchell Station in Eden Prairie. The SWLRT will be located completely within Hennepin County, Minnesota, extending from downtown Minneapolis and serving the communities of St. Louis Park, Hopkins, Minnetonka, and Eden Prairie.

SWLRT service is proposed to operate 22 hours per day, 7 days per week. The SWLRT will provide service every 10 minutes during peak periods<sup>5</sup> on weekdays, every 15-20 minutes in the early morning and evening hours,<sup>6</sup> and every 30-60 minutes in the late evening hours.<sup>7</sup> On weekends and holidays, the service will have 10-minute headways between 9:00 a.m. and 7:00 p.m., with 15-20 minute headways on mornings from 4:30 a.m. to 9:00 a.m. and evenings from 7:00 p.m. to 9:00 p.m., and 30-60 minute headways in the late evening hours between 11:00 p.m. and 2:00 a.m.

Seventeen new rail stations will be located on the SWLRT. Met Council chose the station locations based primarily on employment concentrations, strong connections to arterial bus service, compatibility with existing and future land uses, connectivity to walkable urban neighborhoods with multiple activity centers, as well as for the potential for transit-oriented development. Met Council estimates that the non-work-related trips<sup>8</sup> on the SWLRT will constitute approximately 15 percent of the total trips, while it

---

<sup>4</sup> In addition, the Bottineau Transitway, currently under development and expected to be operational as soon as 2019, is a proposed 13-mile extension to the Blue Line, adding approximately 10 stations, connecting at the Target Field/Interchange station in the central business district of downtown Minneapolis and terminating at 97<sup>th</sup> Avenue, the site of Target Corporation's north campus. FRA provided a jurisdiction determination on September 19, 2013, explaining that the Bottineau Transitway, as proposed, is considered a URT operation with limited connections to the general system.

<sup>5</sup> The peak period runs from 5:30 a.m. to 10:00 p.m.

<sup>6</sup> The early morning hours are between 4:00 a.m. and 5:30 a.m. The evening hours are between 9:00 p.m. and 11:00 p.m.

<sup>7</sup> The late evening hours are between 11:00 p.m. and 2:00 a.m.

<sup>8</sup> These trips will be comprised of non-home-based errands, shopping, and entertainment-related trips.

estimates that the work-related trips<sup>9</sup> will constitute the remaining 85 percent of the total trips.

Three freight railroad carriers (freight rail) own or operate lines in the area in which SWLRT will be operated: Canadian Pacific Railway (CP); BNSF Railway Company (BNSF); and Twin Cities & Western Railroad Company (TC&W). There are four active freight lines within the area: the CP-owned Bass Lake Spur; the CP-owned Minneapolis, Northfield and Southern (MN&S) Spur; the Cedar Lake Junction (Kenilworth Corridor), owned by Hennepin County Regional Railroad Authority (HCRRA); and a piece of the BNSF-owned Wayzata Subdivision.

Approximately 7.7 miles of the proposed SWLRT line, between the 5<sup>th</sup> Avenue crossing in Hopkins and Royalston Avenue in Minneapolis, will be constructed adjacent to operating freight rail tracks in the CP-owned Bass Lake Spur, HCRRA-owned Kenilworth Corridor, and BNSF-owned Wayzata Subdivision. Approximately 3.9 miles of the proposed SWLRT alignment, between the 5<sup>th</sup> Avenue crossing in Hopkins and Beltline Station, will be constructed adjacent to CP-owned tracks. Approximately 2.3 miles of the proposed SWLRT alignment, between the Beltline Station and Cedar Lake Junction near Penn Station, will be constructed adjacent to HCRRA-owned tracks. Finally, from Cedar Lake Junction near Penn Station to Royalston Avenue, the SWLRT will run adjacent to BNSF-owned tracks for approximately 1.5 miles.

The SWLRT will not share track with railroad carriers that operate on the general system. There will be no shared stations between the SWLRT and freight rail, and no shared freight rail-SWLRT rail (diamond) at-grade crossings. Rather, the SWLRT's vehicles will operate on their own double mainline tracks, which will be approximately 33.5 feet (measured from center line to center line) away from freight rail on most areas along the SWLRT.<sup>10</sup>

There are five proposed highway-rail crossings at grade through which freight rail traffic will operate in the corridor that it will share with the SWLRT. The highway-rail grade crossings that will be shared between freight rail and the SWLRT will be located at 5<sup>th</sup> Avenue South, Blake Road North, Wooddale Avenue, Beltline Boulevard, and 21<sup>st</sup> Street.<sup>11</sup> These crossings are proposed to be signalized crossings with gates.<sup>12</sup> A single set

---

<sup>9</sup> These trips will originate at the passenger's home and will terminate at the passenger's place of employment or at an institutional campus.

<sup>10</sup> The distance separating the SWLRT track from freight rail track varies from 25 feet to 110 feet on CP's Bass Lake Spur, from 20 feet to 50 feet on HCRRA's Kenilworth Corridor, and from 22.5 feet to over 50 feet on BNSF's Wayzata Subdivision. Crash walls are proposed at locations closer than 25 feet.

<sup>11</sup> Note that the crossing at 8<sup>th</sup> Avenue South is only ¼ mile west of the 5<sup>th</sup> Avenue South crossing, but the freight rail track does not cross the highway at this location.

<sup>12</sup> The existing signal control at the 5<sup>th</sup> Avenue South, Blake Road North, Wooddale Avenue, and Beltline Boulevard freight highway-rail grade crossings is composed of cantilevered flashers and gates. The existing signal control at the 21<sup>st</sup> Street freight highway-rail grade crossing is composed of crossbucks and stop signs.

of gate arms and flashing lights will be used at Blake Road North, Wooddale Avenue, Beltline Boulevard, and 21<sup>st</sup> Street<sup>13</sup> for protection of both the freight rail and the SWLRT operations. Train detection circuitry on the freight tracks will be interfaced with the SWLRT's grade crossing warning system at the shared crossings. Similarly, train detection circuitry on the SWLRT's tracks will be interfaced with the freight railroad carriers' grade crossing warning systems at the shared crossings. The 5<sup>th</sup> Avenue South highway-rail grade crossing has approximately 200 feet of separation between the SWLRT track centerline and CP's track centerline. Each crossing at 5<sup>th</sup> Avenue South will have its own active warning device consisting of flashing lights and gates. There will be an interconnection between the SWLRT bungalow and the CP bungalow to facilitate the operation of both sets of warning devices. Crossing details will be evaluated and further refined as the project progresses.<sup>14</sup> Freight railroad carriers currently have maintenance responsibilities for the highway-rail grade crossing warning systems.<sup>15</sup>

The CP-owned Bass Lake Spur<sup>16</sup> currently consists of Class 2 freight track with approximately 19-20 TC&W trains per week, operating at a maximum authorized operating speed of 25 miles per hour (mph). TC&W also operates 19-20 trains through the Kenilworth Corridor,<sup>17</sup> which is comprised of Class 2 track at a maximum speed of 10 mph. The MN&S Spur currently has Class 1 freight track and a maximum operating speed of 10 mph, with approximately 10 CP trains per week. The Wayzata Subdivision currently has Class 4 freight track with a maximum authorized operating speed of 45 mph, with approximately 19 BNSF trains per week. The maximum proposed operating speed for the SWLRT is 55 mph.

The SWLRT would also have five highway-rail grade crossings that would be grade separated from freight rail: Excelsior Boulevard, Trunk Highway 100, Oxford

---

<sup>13</sup> The 21<sup>st</sup> Street crossing is currently subject to an active 24-hour Pre-Rule Quiet Zone per 49 C.F.R. § 222.43. Met Council believes that the construction along the corridor at the 21<sup>st</sup> Street crossing would make this a Partial Pre-Rule Quiet Zone during working hours. Met Council anticipates that the 21<sup>st</sup> Street crossing would become a New Quiet Zone upon completion due to the addition of active warning devices, roadway medians, and the operation of SWLRT trains to the existing crossing.

<sup>14</sup> The City of St. Louis Park and the City of Hopkins have expressed interest in implementing new Quiet Zones at shared freight rail and SWLRT crossings in their communities.

<sup>15</sup> It is proposed that maintenance responsibilities for the highway-rail grade crossing warning systems will be shared by the SWLRT and the freight railroad carriers. It is proposed that freight railroad carriers will provide and maintain the active warning devices for freight rail tracks. Similarly, it is proposed that the SWLRT will provide and maintain the active warning devices for its tracks. Negotiations with freight carriers regarding future maintenance responsibilities on the shared crossings and which entity will provide and maintain the active warning devices will occur as the project progresses through the Federal Transit Administration (FTA) New Starts process.

<sup>16</sup> The shared freight-SWLRT highway-rail grade crossings of 5<sup>th</sup> Avenue South, Blake Road North, Wooddale Avenue, and Beltline Boulevard are located on the CP-owned Bass Lake Spur.

<sup>17</sup> The shared freight-SWLRT highway-rail grade crossing of 21<sup>st</sup> Street in Minneapolis is located on the HCRRA-owned Kenilworth Corridor.

Street, Louisiana Avenue, and Cedar Lake Parkway.<sup>18</sup> Finally, there are currently two at-grade recreational trail crossings on the corridor east of Beltline Boulevard and west of Cedar Lake Junction, but the crossings are proposed to be permanently closed.

Met Council has worked closely with FTA Region V and Headquarters staff and representatives of CP, BNSF, TC&W, and FRA to work out the details and design of the SWLRT. Per 49 C.F.R. Part 659, the Minnesota Department of Public Safety<sup>19</sup> will provide State oversight regarding the operation of the SWLRT.

### **III. The Legal Framework for FRA's Safety Jurisdiction Policy**

The Federal railroad safety laws apply to “railroad carriers.” A “railroad carrier” is defined, in pertinent part, as a person providing railroad transportation. See 49 U.S.C. § 20102(3). The term “railroad” is defined broadly and includes any form of nonhighway ground transportation that runs on rails or electromagnetic guideways. See 49 U.S.C. § 20102(2)(A). The lone exception is for rapid transit operations in an urban area that are not connected to the general system. See id. at § 20102(2)(B). Outside of this one exception, and minor exceptions related to the applicability of the safety appliance laws, see id. at § 20301(b), FRA has safety jurisdiction, delegated from the Secretary of Transportation, over any type of railroad carrier (railroad), regardless of the type of equipment that it uses or its connection to the general system. See 49 C.F.R. § 1.89. Commuter or other short-haul railroad passenger service in a metropolitan or suburban area (a commuter or short-haul railroad) is within FRA’s jurisdiction, even if it is not connected to another railroad. See 49 U.S.C. § 20102(2)(A)(i); see also Appendix A to 49 C.F.R. Part 209. Moreover, commuter and other short-haul railroads are considered to be part of the general system, regardless of their connections to the general system. See Appendix A to 49 C.F.R. Part 209.

Because Congress did not provide definitions for the statutory terms “commuter or other short-haul railroad passenger service in a metropolitan or suburban area” and “rapid transit operations in an urban area,” FRA has set forth its policy on how it will apply those terms in its “Statement of Agency Policy Concerning Jurisdiction over the Safety of Railroad Passenger Operations and Waivers Related to Shared Use of the Tracks of the General Railroad System by Light Rail and Conventional Equipment.” See 65 Fed. Reg. 42,529 (July 10, 2000) (amending Appendix A to 49 C.F.R. Part 209) (FRA’s Policy Statement).<sup>20</sup> In FRA’s Policy Statement, FRA establishes certain presumptions regarding

---

<sup>18</sup> The Cedar Lake Parkway crossing is currently subject to an active 24-hour Pre-Rule Quiet Zone per 49 C.F.R. § 222.43. Met Council believes that the construction along the corridor at this crossing would make this a Partial Pre-Rule Quiet Zone during working hours. Met Council anticipates that the 24-hour Pre-Rule Quiet Zone would be in effect following construction activities at the Cedar Lake Parkway crossing.

<sup>19</sup> The Minnesota Department of Public Safety, the State Safety Oversight Agency (SSOA) in Minnesota, oversees all fixed guideway transit systems in the State that are not part of the general system. Met Council will coordinate with the Minnesota Department of Public Safety as the project progresses.

<sup>20</sup> See also Appendix A to 49 C.F.R. Part 211, “Statement of Agency Policy Concerning Waivers Related to Shared Use of Trackage or Rights-of-Way by Light Rail and Conventional Operations.”

passenger rail operations. First, if Congress has enacted a law that describes a passenger rail system as commuter rail, FRA will follow that mandate. No such statutory mandate, however, exists with respect to the SWLRT. Second, if an operation is a subway or elevated system that has its own separate track system, has no highway-rail grade crossings, and moves passengers from station to station within an urban area, then FRA will presume that the system is URT. The SWLRT will not be a subway or elevated operation, and it will have five shared highway-rail grade crossings. Therefore, it is not presumptively URT. As a result, in situations such as this when neither presumption applies, FRA looks at “all of the facts pertinent to a particular operation to determine its proper characterization.”<sup>21</sup> Appendix A to 49 C.F.R. Part 209.

According to FRA’s Policy Statement, the proper characterization of a rail system depends upon three general factors: (1) the geographic scope of the rail operation; (2) the primary function of the rail operation; and (3) the frequency of the rail operation’s service. In general, FRA will consider an operation to be a commuter railroad if its primary function involves transporting commuters to and from their work within a metropolitan area. Moving people from point to point within a city’s boundaries is, at most, an incidental portion of a commuter railroad’s operations. A commuter railroad serves an urban area, its suburbs, and more distant outlying communities in the greater metropolitan area. A key indicator of a commuter system is that the vast majority of the system’s trains are operating in the morning and evening peak periods, with only a small number of trains operating at other hours.

By contrast, FRA will consider an operation to be URT if that operation serves an urban area (and may also serve its suburbs), and a primary function of the operation is moving people from point to point within the boundaries of the urban area, where there are multiple station stops for that purpose. Additionally, URT operations typically provide frequent train service, even outside of the morning and evening peak periods. Finally, while the type of equipment used by such a system is not determinative of its status, the equipment ordinarily associated with street railways, trolleys, subways, and elevated railways is the equipment that is most often used in URT operations.

Even if FRA determines that an operation is URT, FRA will exercise jurisdiction over the URT operation, to the extent that it is connected to the general system. See Appendix A to 49 C.F.R. Part 209. In situations in which a URT operation has a minor connection to the general system, FRA will exercise limited jurisdiction over the URT system and only to the extent necessary to ensure safety at the points of connection for that system, the general system railroad, and the public. For example, when a URT operation shares highway-rail grade crossings with a railroad that operates on the general system, FRA will exercise limited jurisdiction over the URT operation at the points of connection—the highway-rail grade crossings. This exercise of limited jurisdiction occurs because such a connection presents sufficient intermingling between the URT system and the general

---

<sup>21</sup> Of course, if a system does not clearly fall within either category, it may be “other short-haul service” and be subject to FRA’s jurisdiction. That is not the case with respect to the SWLRT because, as described below, it has the characteristics of a URT operation.

system railroad to pose hazards to either or both rail operations and to the motoring public. As a result, in those situations, FRA expects the URT system to comply with FRA's grade crossing regulations, as well as any other applicable regulations and laws that are necessary to ensure safety at the crossings, as further specified below.

#### **IV. Application of FRA's Jurisdiction Policy to the SWLRT Operation**

FRA's review of all of the relevant materials indicates that the SWLRT is intended to be, and will function as, a URT operation with limited connections to the general system. Several factors, which are discussed below, support this determination.

##### **A. Geographic Scope of the SWLRT**

One of the characteristics of a URT system is that it serves an urban area. Met Council's correspondence makes it clear that the SWLRT will provide service to a single urban area, not a sprawling metropolitan region. The SWLRT will be located completely within Hennepin County, Minnesota, extending from downtown Minneapolis and serving the communities of St. Louis Park, Hopkins, Minnetonka, and Eden Prairie. The SWLRT is a proposed extension of the existing METRO Green Line, beginning at the Target Field/Interchange station in the central business district of downtown Minneapolis and terminating at Mitchell Station in Eden Prairie. The SWLRT would add approximately 15.8 miles of standard gage revenue service track and 17 new stations to the region's METRO transit system. Stations will be spaced between 0.45 and 1.86 miles apart.

The SWLRT will service an urban area—the Twin Cities of Minneapolis-St. Paul—in which there will be multiple station stops for moving people from point to point within the cities. The SWLRT will serve the Twin Cities in a similar fashion and within the range of other transit systems that FRA considers to be URT systems. Consequently, FRA has determined that the geography of the SWLRT is consistent with the geography of a URT operation.

##### **B. Function of the SWLRT**

The second characteristic of a URT system is its function of moving passengers from station to station within an urban area. Met Council's description of the SWLRT establishes that its focus will be moving passengers from station to station within the Twin Cities region, while also connecting walkable urban neighborhoods with multiple activity centers. Based upon this description, FRA concludes that the function of the SWLRT is similar to the functions of other URT systems.

URT operations differ from commuter operations, in part, by the substantial number of trips that are made on the system for purposes other than traveling to and from places of employment. Not unlike other URT operations, the SWLRT will provide passengers with access to centers of employment. However, transporting passengers to and from work will not be the sole function of the SWLRT. The alignment is also designed to serve a large number of activity centers and neighborhoods and to facilitate the

movement of people among those activity centers and neighborhoods. Met Council has explained that those activity centers and neighborhoods include transit-supported neighborhoods with access to recreational facilities and with mixed commercial, residential, and industrial uses,<sup>22</sup> as well as connections to the north end of downtown Minneapolis.<sup>23</sup> Met Council estimates that the non-work-related trips<sup>24</sup> on the SWLRT will constitute approximately 15 percent of the total trips, while it estimates that the work-related trips<sup>25</sup> will constitute the remaining 85 percent of the total trips.<sup>26</sup>

The station environment for the SWLRT will also be oriented towards providing passengers with non-work-related service throughout the day. Met Council intends to develop stations along the alignment with limited public parking. Ten of the proposed seventeen stations will have park-and-ride lots. The other seven proposed stations will be “walk-up” stations, which will be accessed by pedestrians, bicyclists, or passengers transferring from other transit modes (primarily bus service). “Walk-up” stations are more conducive to urban environments because they facilitate the support for walkable neighborhoods, activity centers, and other future transit-oriented development opportunities. Additionally, the constraint on public parking will be consistent with a URT operation that has substantial station-to-station travel, rather than one-directional commuter travel for work-related trips. Moreover, with primarily non-motorized access to the stations, it will be less likely that suburban commuters will use the SWLRT as an intermediate or final leg of a much longer journey to and from work.

---

<sup>22</sup> Station stops include access to housing developments, city halls, cultural establishments and amenities, museums, galleries, multiple shopping centers (including retail stores and restaurants), health care providers, farmers’ markets, lakes, public parks, and land designated as future mixed office/retail/residential use.

<sup>23</sup> The SWLRT terminates at the Target Field/Interchange station (developed as part of a separate project), which provides access to multiple attractions, such as Target Field (the Minnesota Twins Major League Baseball stadium) and Target Center (a concert arena and professional basketball arena for the National Basketball Association Timberwolves and the Women’s National Basketball Association Lynx). Other destinations along the Green Line, of which the SWLRT is an extension, include the University of Minnesota and Union Depot. The SWLRT will also offer a one-seat ride to downtown St. Paul. Passengers who transfer will be able to ride the Blue Line to the Minnesota Vikings National Football League stadium, the Hennepin County Government Center, the Minneapolis City Hall, the Minneapolis-St. Paul International Airport, Veterans Administration Medical Center, and the Mall of America.

<sup>24</sup> These trips will be comprised of non-home-based errands, shopping, and entertainment-related trips.

<sup>25</sup> These trips will originate at the passenger’s home and will terminate at the passenger’s place of employment or at an institutional campus.

<sup>26</sup> The fact that Met Council projects that the percentage of work-related trips will exceed the percentage of non-work-related trips does not preclude a finding that the SWLRT’s function reflects an URT operation. This is one characteristic that FRA considers when analyzing the function of an operation; it is not determinative. Indeed, data taken from a transit on-board survey (2005-2006) of the Sacramento Regional Transit District system, an existing URT operation, revealed that 52 percent of all of its passengers made work-related trips, yet the system is still considered URT by FRA. Moreover, the overall function of the SWLRT, including the station stops and equipment, support a finding of URT.

Finally, the type of equipment that will be used on the SWLRT supports its function as a URT operation. While the type of equipment used on a system is not determinative of a rail system's characterization, it is relevant. Here, Met Council plans to operate electric light rail vehicles<sup>27</sup> to take advantage of the greater acceleration and deceleration rates and the increased ability to negotiate steeper gradients.

The overall characteristics of the SWLRT's function indicate that it has been designed primarily to ease the movement of passengers throughout the Twin Cities for a variety of reasons. In light of the percentage of non-work-related destinations located along the SWLRT, a station environment that encourages travel between stations, and the implementation of LRT technology, FRA concludes that the function of the SWLRT reflects a URT operation.

### C. Frequency of Operations for the SWLRT

The final characteristic of a URT system is the frequency of its service. The SWLRT will operate on a frequency of service that is more indicative of URT service than commuter service.

SWLRT service is proposed to operate 22 hours per day, 7 days per week. The SWLRT will provide service every 10 minutes during peak periods<sup>28</sup> on weekdays, every 15-20 minutes in the early morning and evening hours,<sup>29</sup> and every 30-60 minutes in the late evening hours.<sup>30</sup> On weekends and holidays, the service will have 10-minute headways between 9:00 a.m. and 7:00 p.m., with 15-20 minute headways on mornings from 4:30 a.m. to 9:00 a.m. and evenings from 7:00 p.m. to 9:00 p.m., and 30-60 minute headways in the late evening hours between 11:00 p.m. and 2:00 a.m. Based upon this proposed schedule, it is clear that the SWLRT will provide frequent train service, even outside of the morning and evening peak periods.

Additionally, the above intervals are similar to other transit systems in the United States that are treated by FRA as URT systems. For example, the Valley Metro in Phoenix, Arizona, the Blue Line in Charlotte, North Carolina, and Triangle Transit's URT system in Wake County, North Carolina all operate with headways of 10 minutes peak and 20 minutes off peak. Moreover, the Santa Clara Valley Transportation Authority in San Jose, California operates with headways of 15 minutes peak and 30 minutes off peak.

---

<sup>27</sup> Electric light rail vehicles would run on two new sets of tracks (eastbound and westbound) separate from freight rail tracks owned by CP, BNSF, and HCRRA. Electric light rail vehicles may include those currently in use on the Blue and Green Lines, such as Bombardier Flexity Swift and Siemens S70 vehicles.

<sup>28</sup> The peak period runs from 5:30 a.m. to 10:00 p.m.

<sup>29</sup> The early morning hours are between 4:00 a.m. and 5:30 a.m. The evening hours are between 9:00 p.m. and 11:00 p.m.

<sup>30</sup> The late evening hours are between 11:00 p.m. and 2:00 a.m.



The frequency of service of the SWLRT is consistent with the frequency of service of other URT systems. Consequently, FRA concludes that the SWLRT meets the duration and frequency-of-service characteristics of a URT operation.

#### D. The SWLRT's Connections to the General System

All of the factors described above support a conclusion that the SWLRT, if built and operated as proposed, will be a URT system. The proposed system will move its passengers within one urban area—the Minneapolis-St. Paul Twin Cities region of Minnesota. Additionally, the system will focus on moving passengers from station to station within that urban area, and there will be multiple station stops for that purpose. Finally, the SWLRT will provide frequent train service, even outside of the morning and evening peak periods.

Although the SWLRT will be a URT operation, it will have limited connections to the general system; the SWLRT will share five highway-rail grade crossings with a railroad that operates on the general system.<sup>31</sup> FRA does not, however, consider these connections sufficient to warrant a full assertion of its jurisdiction on the entirety of the SWLRT. Rather, FRA's Policy Statement provides that this type of connection simply requires an assertion of FRA's jurisdiction that will be sufficient to ensure safety at the points of connection. To that end, FRA will exercise jurisdiction only over the portion of the SWLRT that will have the connection with the general system. Moreover, the relevant FRA regulations that will apply to the SWLRT will apply only to its operations that occur at those limited connections with the general system. At all other locations on the SWLRT, FRA's regulations will not apply.

Here, the points of connection will be the five shared highway-rail grade crossings at 5<sup>th</sup> Avenue South, Blake Road North, Wooddale Avenue, Beltline Boulevard, and 21<sup>st</sup> Street. Consequently, FRA's highway-rail grade crossing regulations (49 C.F.R. Part 234) will apply to the SWLRT, as well as any regulations that would govern movements at the highway-rail grade crossings, including the following: FRA's radio communication regulations (49 C.F.R. Part 220), FRA's train horn regulations (49 C.F.R. Part 222), FRA's accident reporting regulations (49 C.F.R. Part 225), FRA's signal regulations (49 C.F.R. Parts 233, 235, and 236) and FRA's locomotive headlights and auxiliary lights regulations (49 C.F.R. § 229.125). Moreover, anyone performing maintenance, inspections, or tests on the highway-rail grade crossing warning devices must comply with the hours of service laws and regulations (49 U.S.C. chapter 211 and the hours of service recordkeeping and reporting provisions at 49 C.F.R. Part 228),<sup>32</sup> the roadway

---

<sup>31</sup> These five shared highway-rail grade crossings are the only connections that the SWLRT will have with the general system. As mentioned above, the SWLRT will not share track with a railroad that operates on the general system. In fact, at grade, the horizontal track separation between the SWLRT and the nearest freight track will be at least 20 feet (from center line to center line). Moreover, there will be no shared stations between the SWLRT and the freight operation, and there will be no rail-rail crossings at grade.

<sup>32</sup> FRA expects that SWLRT dispatchers will have direct communications (such as through a radio) with freight rail dispatchers and/or freight train crews. The SWLRT dispatchers would also be expected to comply with 49 U.S.C. chapter 211, 49 C.F.R. Part 228, and 49 C.F.R. Part 220 while at those connections to

worker protection regulations (49 C.F.R. Part 214), and the alcohol and drug regulations (49 C.F.R. Part 219).

However, as mentioned above, FRA will only apply these regulations to the SWLRT at the five shared highway-rail grade-crossings; these regulations will not apply at any other locations on the SWLRT. For example, FRA's accident reporting regulations will only apply for accidents or incidents that occur at the shared highway-rail grade crossings.<sup>33</sup> To the extent that an accident or incident occurs elsewhere on the SWLRT, Met Council would not have to comply with FRA's accident reporting regulations.

Despite FRA's limited assertion of jurisdiction over the SWLRT, Met Council may petition FRA to waive the regulations that will apply to it. Pursuant to FRA's regulations, FRA may waive regulatory requirements when a waiver is in the public interest and consistent with railroad safety. In doing so, FRA often imposes conditions designed to ensure safety. If Met Council believes that there are some requirements applicable to the SWLRT that should be waived, it may petition for a waiver under the procedures set forth in 49 C.F.R. Part 211. Any such petition should specify why Met Council believes that it should not have to comply with the regulation(s) and what alternative measures it will take to ensure safety. See 49 C.F.R. § 211.9. If FRA's Railroad Safety Board (Safety Board) determines that Met Council can provide, through alternative procedures, the same level of safety that the FRA regulations provide, then the Safety Board may grant the waiver.<sup>34</sup>

## V. Conclusion

FRA has concluded that, under the Federal railroad safety laws, if the SWLRT is built and operated as proposed, it will be a URT system with limited connections to the general system. As a result, Met Council will be subject to certain FRA regulations, including 49 C.F.R. Parts 214, 219, 220, 222, 225, 228, 233, 234, 235, and 236, and 49 C.F.R. § 229.125, as well as the hours of service laws, at the points of connection between the SWLRT and the general system. Additionally, as mentioned above, Met Council may

---

the general system.

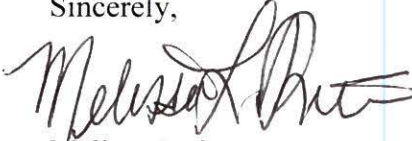
<sup>33</sup> For example, when reporting the train miles, the worker hours, and the number of passengers transported on Form FRA F 6180.55, pursuant to the section entitled "Operational Data & Accident Incident Counts for Report Month," the SWLRT should only submit data that corresponds to the highway-rail grade crossings that are shared between freight rail and the SWLRT. FRA understands that it may be difficult to determine the actual train miles, the worker hours, and the number of passengers transported through the shared highway-rail grade crossings. To minimize such difficulties, FRA requests that the SWLRT estimate the portion of the SWLRT's connection with the general system at the subject highway-rail grade crossings as a percentage of the entirety of the SWLRT, and then calculate the requisite operational data based upon this percentage.

<sup>34</sup> FRA's Safety Board's decision to restrict the exercise of FRA's regulatory authority in no way constrains the exercise of FRA's statutory emergency order authority under 49 U.S.C. § 20104. That authority was designed to address imminent hazards not dealt with by existing regulations and orders and/or so dangerous as to require immediate, *ex parte* action on the Government's part.

petition the Safety Board for a waiver of those regulations under the procedures set forth in 49 C.F.R. Part 211. Finally, if the scope, function, geography, or frequency of the SWLRT operation changes in any meaningful manner, FRA expects Met Council to advise FRA, in a timely manner, of those changes so that FRA may determine whether additional action is necessary.

We appreciate your cooperation in this dialogue. Should you have any questions, please do not hesitate to contact Trial Attorney Veronica Chittim of my office at 202-493-0273.

Sincerely,



Melissa L. Porter  
Chief Counsel



**Minnesota Department of Transportation**

**Office of Environmental Services**

Mail Stop 620  
395 John Ireland Boulevard

Office Tel: (651) 366-4292

Fax: (651) 366-3603

greg.mathis@state.mn.us

October 13, 2014

Sarah Beimers  
State Historic Preservation Office  
Minnesota Historical Society  
345 Kellogg Blvd. W.  
St. Paul, MN 55102

RE: Southwest Light Rail Transit Project, Hennepin County, Minnesota; comments received in response to April 2014 consultation on project effects, SHPO #2009-0080

Dear Ms. Beimers,

We are writing to continue our consultation regarding the Southwest Light Rail Transit (LRT) project. First, let me thank you for your participation at the Section 106 consulting parties meeting held on 30 April 2014 and for your comments of 21 May 2014 regarding this meeting and the consultation materials submitted on 18 April 2014. Subsequent to the consulting parties meeting, we received additional comments from the City of Minneapolis (City) and the Minneapolis Park and Recreation Board (MPRB), which are summarized below. Since other Section 106 consulting parties were not copied on these communications, we are submitting them to your office and copying all Section 106 consulting parties so that everyone has the same materials. No response is required.

On 16 May 2014 the City provided comments indicating that it would be premature for the City to provide separate comments under Section 106 prior to its decision as part of the municipal consent process (Attachment A). While not required by NEPA or Section 106, municipal consent is a process established by Minnesota Statute 473.3994, whereby the governing body of each statutory and home rule charter city, county, and town in which a LRT route is proposed to be located is provided an opportunity to review the preliminary design plans and either approve or disapprove the plans for the route to be located in the city, county, or town. A local unit of government that disapproves the plans must also describe specific amendments to the plans that, if adopted, would cause it to withdraw its disapproval. The City approved municipal consent for the project on 29 August 2014, but has not provided any comments under Section 106 since that time.

On 18 May 2014 the MPRB issued comments pertaining to potential effects to several National Register eligible properties in Minneapolis (Attachment B). Specific comments were provided on three properties, all of which are contributing resources to the National Register eligible Grand Rounds Historic District (XX-PRK-001):

- Lake Calhoun (HE-MPC-01811)
  - Concerned about potential impacts from changes in traffic and parking patterns related to the West Lake Station; and
  - Request for continued consultation through final design of new and/or improved access routes to the station to achieve no adverse effect from traffic and parking changes.
- Cedar Lake Parkway (HE-MPC-01833)
  - Concerned about long-term noise and visual effects at the intersection of the project and this resource;

- Impacts to adjacent park land; and
- Request for continued consultation on potential effects to this resource.
- Kenilworth Lagoon/Channel (HE-MPC-1822)
  - Concerns:
    - Size and scale of the proposed new bridge structures crossing over the lagoon/channel and their inconsistency with the design intent and historic cultural landscape of the channel;
    - Visual impacts of tunnel portals on each side of the channel
    - Noise and vibrations from LRT vehicles entering/exiting the tunnels; and
    - May not be possible to mitigate impacts of new bridges.
  - Request continued consultation to further consider potential impacts to the lagoon/channel.

The MPRB also requested continued consultation related to the potential impacts of the new bridge structures over the Kenilworth Lagoon/Channel to five National Register eligible properties:

- Cedar Lake (Grand Rounds) (HE-MPC-1820)
- Lake of the Isles (Grand Rounds) (HE-MPC-1824)
- Lake of the Isles Parkway (Grand Rounds) (HE-MPC-1825)
- Park Board Bridge No. 4 (Grand Rounds) (HE-MPC-6901)
- Lake of the Isles Residential Historic District (HE-MPC-9860)

The Federal Transit Administration (FTA) and the Minnesota Department of Transportation Cultural Resources Unit, as designated authority by FTA, will take these comments, as well as those provided by your office, into account as Project planning moves forward. We look forward to continuing to consult with your office to consider potential effects to these and other listed and eligible historic properties as Project planning moves forward.

Sincerely,



Greg Mathis  
MnDOT Cultural Resources Unit

Enclosures: Two (2)

cc (via email): Maya Sarna, Federal Transit Administration  
 Bill Wheeler, Federal Transit Administration  
 Nani Jacobson, Metropolitan Council  
 Caroline Miller, Metropolitan Council  
 Katie Walker, Hennepin County  
 Regina Rojas, City of Eden Prairie  
 Nancy Anderson, City of Hopkins  
 Brian Schaffer, City of Minneapolis  
 John Byers, City of Minneapolis  
 Elise Durbin, City of Minnetonka  
 Meg McMonigal, City of St. Louis Park  
 Kathy Low, Kenwood Isles Area Association  
 Jennifer Ringold, Minneapolis Park and Recreation Board  
 Bill Walker, Three Rivers Park District

## ATTACHMENT A

**From:** [Byers, Jack P.](#)  
**To:** [Gimmestad, Dennis \(DOT\)](#)  
**Cc:** [sarah.beimers@mnhs.org](mailto:sarah.beimers@mnhs.org); [Jacobson, Nani \(Nani.Jacobson@metrotransit.org\)](mailto:Jacobson.Nani@metrotransit.org); [Hager, Jenifer A](#); [Schaffer, Brian C.](#)  
**Subject:** Southwest LRT 106 Consultation - Your request for comments from Minneapolis by May 18th  
**Date:** Friday, May 16, 2014 11:02:32 AM

---

Dennis,

Thank you for convening all of the consulting parties on the Southwest Transitway Section 106 process on April 30<sup>th</sup>. We appreciate your presentation of the updated Potential Effects table and we appreciate the research and chronology that the 106 Group presented during that meeting. Both were illuminating and very helpful. Thank you for your hard work on this project.

As you are aware, the City of Minneapolis and the other municipalities along the proposed corridor are currently engaged the Municipal Consent process; one that includes a specific set of proposals from SPO. City of Minneapolis staff are reviewing the SPO package and preparing our comments for subsequent review and consideration by our City Council. City staff are certainly keeping matters related to historic resources in mind as we conduct our Municipal Consent review. However, given that the Municipal Consent process is formally underway, it would be premature for us to comment specifically on 106 matters separately and before our City Council's review and decision on Municipal Consent is completed.

Thank you for understanding. Please feel free to contact me if you have any questions or require further clarification.

Regards,  
Jack Byers

---

**Jack Byers, AICP**

*Long Range Planning Manager*

**City of Minneapolis – Community Planning and Economic Development**

105 Fifth Avenue South – 200  
Minneapolis, MN 55401-2534

Office: 612-673-2634

[jack.byers@minneapolismn.gov](mailto:jack.byers@minneapolismn.gov)

[www.minneapolismn.gov/cped](http://www.minneapolismn.gov/cped)





REPLY TO  
ATTENTION

**DEPARTMENT OF THE ARMY**  
ST. PAUL DISTRICT, CORPS OF ENGINEERS  
180 FIFTH STREET EAST, SUITE 700  
ST. PAUL MINNESOTA 55101-1678

**OCT 16 2014**

Operations  
Regulatory (2009-01283-MMJ)

Ms. Marisol Simon  
U.S. Department of Transportation  
Federal Transit Administration, Region V  
200 West Adams Street, Suite 320  
Chicago, Illinois 60606-5253

Dear Ms. Simon:

We have reviewed the Southwest Light Rail Transit (SWLRT) Concurrence Points package dated May 5, 2014, as well as additional materials received at the SWLRT Wetland Regulatory Coordination meetings in June and September of this year. After reviewing this additional information we can now concur with Point 3 (Identification of the Selected Alternative) for the SWLRT Project, as outlined in the National Environmental Policy Act (NEPA) / Section 404 Clean Water Act (404) merger process.

After reviewing the SWLRT Draft Environmental Impact Statement (DEIS), we concurred with Point 1 (Project Purpose and Need) and Point 2 (Array of Alternatives and Alternatives Carried Forward) of the merger process for the SWLRT project in a letter dated December 20, 2012. As stated in our 2012 letter, to comply with Clean Water Act 404(b)(1) Guidelines, the alternatives analysis for the SWLRT project must describe how you considered ways to avoid and minimize impacts to waters of the U.S. (WOUS) so that the least environmentally damaging practicable alternative (LEDPA) can be identified. Per the Guidelines, a practicable alternative is defined as available and capable of being done after taking into consideration cost, existing technology, and logistics in light of the overall project purpose.

Numerous alternatives were considered for the SWLRT project. The SWLRT DEIS included alignments LRT 3A (freight rail re-location), and LRT 3A-1 (freight rail co-location), as potential locally preferred alternatives (LPA) for this project. In our 2012 letter we stated that as proposed, alignment LRT 3A would not comply with the 404(b)(1) Guidelines because it would have resulted in greater impacts to WOUS when compared to LRT 3A-1. At that time, we suggested that alignment LRT 3A-1 (co-location) would be the LEDPA for this project.

In addition, in a letter dated July 18, 2013, after learning that the SWLRT project team was working on a Supplemental DEIS (SDEIS), we indicated that we would revisit concurrence Point 2 of the merger process to confirm that the updated SDEIS alternatives analysis would still satisfy CWA Section 404 regulatory requirements. After reviewing your Concurrence Points Package, we have determined that we still concur with Point 2 of the merger process for the SWLRT project, as referenced above.

The SWLRT SDEIS is now proceeding with the LRT 3A-1 (co-location) alignment as the LPA. After reviewing more refined wetland impact calculations, we have confirmed that alignment LRT 3A-1 will still result in fewer impacts to WOUS when compared to LRT 3A. Therefore, we have again made a preliminary determination that alignment LRT 3A-1 is the LEDPA for this project. As is typical of a NEPA/404 merger process, if substantial new information regarding alignment LRT 3A-1 is brought forward later in the project development process, we may revisit this decision and our concurrence that the selected alternative is the LEDPA.

The SWLRT project team recently provided us with an updated preliminary wetland impact figure for this project indicating that impacts to WOUS associated with the LPA have risen from approximately 8.7 acres, identified as of April 2014, to approximately 18.5 acres, as a result of further project development. Due to this significant increase in expected impacts, we anticipate greater emphasis being placed on maximizing avoidance and minimization measures as the LPA is further refined, and we work towards Concurrence Point 4 of the merger process (Design Phase Impact Minimization).

We look forward to reviewing the SDEIS for this project. For further information, please contact Melissa Jenny, the Corps project manager for Hennepin County, at 651-290-5363 or [Melissa.m.jenny@usace.army.mil](mailto:Melissa.m.jenny@usace.army.mil).

Sincerely,



Tamara E. Cameron  
Chief, Regulatory Branch

Copy furnished:  
Maya Sarna, FTA, HQ  
Bill Wheeler, FTA, Region V  
Virginia Laszewski, EPA  
Nani Jacobson, Metropolitan Council  
Ben Hodapp, Anderson Engineering



STATE HISTORIC PRESERVATION OFFICE

November 7, 2014

Greg Mathis  
MnDOT Cultural Resources Unit  
395 John Ireland Boulevard, Mail Stop 620  
St. Paul, MN 55155-1899

RE: Southwest Light Rail Transit Project  
Multiple Communities, Hennepin County  
SHPO Number: 2009-0080

Dear Mr. Mathis:

Thank you for continuing consultation on the above project. Information received in our office on 7 October 2014 has been reviewed pursuant to the responsibilities given the State Historic Preservation Officer by the National Historic Preservation Act of 1966 and implementing federal regulations at 36 CFR 800, and to the responsibilities given the Minnesota Historical Society by the Minnesota Historic Sites Act and the Minnesota Field Archaeology Act.

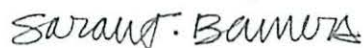
We have completed our review of additional transit project information including your correspondence dated October 3<sup>rd</sup> and the archaeological survey report entitled *Phase I Archaeological Investigation Southwest Light Rail Transit, Hennepin County, Minnesota, SDEIS Areas: Eden Prairie Segment, Archaeological Potential Area C* (CH2M Hill, September 2014).

We agree with the results of the archaeological survey which indicate that there were no archaeological resources identified and that further archaeological investigation is not warranted for Area C. We concur with your determination that there are no additional historic properties identified in this area.

It is our understanding that Phase 1 archaeological surveys will be completed for Areas A & B and the results will be submitted to our office for review and comment.

We look forward to continuing consultation on this important project. If you have any questions or concerns regarding this comment letter, please feel free to contact me at 651-259-3456 or [sarah.beimers@mnhs.org](mailto:sarah.beimers@mnhs.org).

Sincerely,



Sarah Beimers, Manager  
Government Programs & Compliance

# PRESERVATION DESIGN WORKS, LLC

November 12, 2014

Greg Mathis  
Minnesota Department of Transportation  
Office of Environmental Services-Cultural Resources Unit  
Mailstop 620  
395 John Ireland Boulevard  
St. Paul, Minnesota 55155  
greg.mathis@state.mn.us

CC: Kathy Low, Kenwood Isles Area Association, KIAA, lowmn@comcast.net

RE: Southwest Light Rail Transit Project 2014  
Kenwood Isles Area Association Comments on October 14, 2014 Comments Received in  
Response to April Consultation on Project Effects and October 17, 2014 Adjustments to the  
Area of Potential Effect

Dear Mr. Mathis,

Thank you for the opportunity to review the Section 106 materials provided to Sarah Beimers of the Minnesota State Historic Preservation Office. The October 14, 2014 Comments Received in Response to April 2014 Consultation on Project Effects, SHPO #2009-0080 and the October 17, 2014 Adjustments to the Area of Potential Effect have the potential to have a significant impact on the identified historic resources located within the Kenwood neighborhood.

- KIAA agrees with the May 18, 2014 comments issued by the Minneapolis Park and Recreation Board (MPRB) regarding the size and scale of the proposed new bridge structures crossing the Kenilworth Channel and Lagoon [HE-MPC-1822] and their inconsistency with the historic cultural landscape of the channel, the noise and vibrations caused by the light rail vehicles traveling the bridge, and the fact that it may not be possible to mitigate the impacts of the new bridge. KIAA welcomes the opportunity to continue consultation on the bridge and its impact on the Kenilworth Channel and Lagoon.
- The re-introduced light rail station at 21<sup>st</sup> Street (Station) has the potential to impact the Kenwood Parkway Residential Historic District (District). The station infrastructure and related development has the potential to change traffic and parking patterns in the neighborhood, introduce long-term visual and audible intrusion, and adversely impact the District's historic setting—potential effects that extend beyond the currently proposed APE. KIAA welcomes the opportunity to continue consultation on this station.

- The re-introduced light rail station at 21<sup>st</sup> Street (Station) has the potential to adversely impact Kenwood Parkway/Grand Rounds [HE-MPC-01796]. KIAA welcomes the opportunity to continue consultation on this station.
- KIAA agrees with MNDOT's assertion that the Kenilworth Corridor is located in a park-like setting and believes that the Kenilworth Channel is a significant feature of this setting. The proposed at-grade bridge over the Kenilworth Channel [HE-MPC-1822] has significant potential to adversely impact the historic landscape of the channel. KIAA welcomes the opportunity to continue consultation on this bridge.
- KIAA agrees that lighting and security improvements throughout the corridor in the proximity of station areas will be necessary and welcomes the opportunity to continue consultation on these improvements.
- KIAA welcomes the opportunity to continue consultation on the "high quality aesthetic design, including community engagement, of all fence and railings throughout the corridor."

Again, thank you for the opportunity to review these materials and to participate in future consultation for the Section 106 review of the Southwest Light Rail Transit Project.

Sincerely,  
PRESERVATION DESIGN WORKS



Tamara Halvorsen Ludt  
Research Associate

# PRESERVATION DESIGN WORKS, LLC

10 December 2014

Greg Mathis  
Minnesota Department of Transportation  
Office of Environmental Services  
Cultural Resources Unit  
Mailstop 620  
395 John Ireland Boulevard  
St. Paul, Minnesota 55155  
greg.mathis@state.mn.us

RE: Kenwood Isles Area Association (KIAA) Comments on November 12, 2014 Consultation on Potential Effects of Southwest Light Rail Transit Project, SHPO #2009-0080

Dear Mr. Mathis,

Thank you for the opportunity to review the materials provided to Sarah Beimers of the Minnesota State Historic Preservation Office and to participate in the 24 November 2014 consultant meeting for the Southwest Light Rail Transit Project. Your warm welcome at the meeting was greatly appreciated. The Kenwood Isles Area Association (KIAA) has the following comments on the materials:

Table of Potential Effects on Historic Properties (12 November 2014):

1. KIAA contends that the language used in the Effects Analysis and Preliminary Determination of Effect is problematic. For example, it is inconsistent to write that access routes to the stations from Kenwood Parkway may "result in potential minor effects from construction of access routes... and from visual effects of access route elements" and then reach a determination of "no adverse effect." The 106 process allows for two possible determinations of effect: no adverse effect and adverse effect (36 CFR 800.5). There are not grades of adverse effects. In accordance with the regulations, KIAA asserts that "minor effects" are adverse effects and, as such, does not agree to a determination of "no adverse effect" on Kenwood's historic resources.
2. KIAA disagrees with the preliminary determination, based on preliminary plans, of no adverse effect on the Kenwood Parkway Residential Historic District (*HE-MPC-18059*), Kenwood Parkway (*HE-MPC-01796*), Kenwood Park (*HE-MPC-01797*), the Frank & Julia Shaw House (*HE-MPC-6603*), the Frieda & Henry J. Neils House (*HE-MPC-6068*), and the Mahalia & Zacharia Saveland House (*HE-MPC-6766*). KIAA agrees that changes in traffic and parking patterns created by the 21<sup>st</sup> Street Station and Penn Station need further assessment. Further, KIAA agrees that the impact of light and noise from the trains on these historic resources also requires further study. Because these potential adverse effects require further assessment, KIAA asserts that it is premature to reach a preliminary

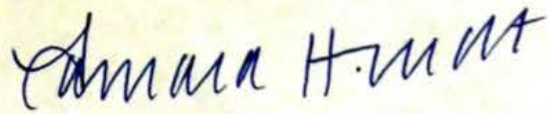
determination of "no adverse effect." If MnDOT, for the FTA, is requesting comment without a memorandum of agreement, additional documentation is required pursuant to 36 CFR 800.11. KIAA looks forward to continued consultation on all issues related to these historic resources, and requests to be a signatory to any memorandum of agreement or programmatic agreement that may be developed for this undertaking in the future.

3. KIAA believes that it is premature to reach a determination of "no adverse effect with continued consultation" because "continued consultation" is not clearly defined. At this time, plans for continued consultation have not been specified, there is not a proposed timetable, and it is not stated whether effects are going to be determined prior to, during, or after construction. While KIAA appreciates that 106 consultation is an ongoing process, it has concerns about the suggestion made during the consultant meeting that "continued consultation" could include traffic monitoring after construction as it is impossible to avoid adverse effects once stations are operational. KIAA asserts that either a memorandum of agreement pursuant to 36 CFR 800.11 or a program agreement pursuant to 36 CFR 800.14 is desirable if effects cannot be determined prior to approval of the undertaking.
4. KIAA is concerned about the impact of construction on Kenwood Parkway, the Kenwood Parkway Residential Historic District, Kenwood Park, the Frank and Julia Shaw House, the Frieda & Henry J. Neils House, and the Mahalia & Zacharia Saveland House. Do the vibration studies account for increased truck and construction equipment traffic and the resulting vibrations and potential impacts on historic resources? If not, KIAA requests preparation of a construction protection plan that incorporates guidance offered by the National Park Service in Preservation Tech Note #3: Protecting a Historic Structure during Adjacent Construction.
5. Assuming that the vibration studies account for the impact of construction and construction-related traffic, KIAA agrees with the finding of "no adverse effect" on the Kenwood Water Tower (*HE-MPC-06475*). If the vibration studies do not account for construction and related equipment, KIAA does not agree with a finding of "no adverse effect" on the Kenwood Water Tower until development of a construction protection plan that incorporates guidance offered by the National Park Service in Preservation Tech Note #3: Protecting a Historic Structure during Adjacent Construction, as well as a memorandum of agreement or a programmatic agreement that specifies how these potential impacts will be monitored following approval of the undertaking.
6. KIAA agrees with the determination of "adverse effect" on the Kenilworth Lagoon. KIAA would like to reiterate the Minneapolis Park and Recreation Board and SHPO concerns, expressed during the November 24, 2014 consultants meeting, regarding the setting and visitor experience of the lagoon. "Setting" and "feeling" are criteria of integrity that are used to determine National Register of Historic Places eligibility and KIAA is concerned that an increase in sound will adversely alter the setting and feeling of the Kenilworth Lagoon and will adversely impact how people use this historic resource. KIAA looks forward to continuing consultation on all issues related to the Kenilworth Lagoon.

Again, thank you for the opportunity to review these materials and to participate in future consultation for the Section 106 review of the Southwest Light Rail Transit Project.

Sincerely,

PRESERVATION DESIGN WORKS

A handwritten signature in blue ink that reads "Tamara Halvorsen Ludt". The signature is written in a cursive, flowing style.

Tamara Halvorsen Ludt  
Architectural Historian  
& Research Associate

cc: Kenwood Isles Area Association  
Cedar Isles Dean Neighborhood Association  
Minneapolis Park and Recreation Board  
Sarah Beimers, Minnesota State Historic Preservation Office



**Minneapolis  
Park & Recreation Board**

*Administrative Offices*  
2117 West River Road  
Minneapolis, MN 55411-2227

*Operations Center*  
3800 Bryant Avenue South  
Minneapolis, MN 55409-1000

*Phone*  
612-230-6400

*Fax:*  
612-230-6500

[www.minneapolisparcs.org](http://www.minneapolisparcs.org)

December 12, 2014

Greg Mathis  
MnDOT Cultural Resources Unit  
Office of Environmental Stewardship  
Mail Stop 620  
395 John Ireland Boulevard  
Saint Paul, MN 55155

**Re: Minneapolis Park and Recreation Board Comments on the  
Southwest LRT Section 106 Review**

Dear Greg:

The Minneapolis Park and Recreation Board (MPRB) welcomes this opportunity to comment further on the Section 106 Review for the Southwest Transitway (SWLRT) project. We remain concerned about the archaeological and architecture/historic resources on MPRB land that will be adversely affected by the SWLRT project route and construction plans.

With respect to the adverse effects to the Kenilworth channel of all bridge changes, MPRB staff have the following comments:

- Burnham Road Bridge (HE-MPC-1832) - Although the bridge is a non-contributing feature of the Grand Rounds Historic District, we feel the views from and to it of the SWLRT Project are an important component of the historic nature of the channel, and need to be considered an adverse effect overall.
- Lake Calhoun (HE-MPC-01811) – We continue to be concerned about the traffic and safety impacts of the West Lake Station on this important element of the Grand Rounds, as discussed in our May 16, 2014 comment letter.
- Cedar Lake Parkway (HE-MPC-01833) – We reiterate our comments in our May 16, 2014, comment letter of concern about the ‘quiet zone’ nature of this area and the need to be sure the construction design and documents reflect this unique designation and need.

*President*  
Liz Wielinski

*Vice President*  
Scott Vreeland

*Commissioners*  
Brad Bourm  
John Erwin  
Meg Forney  
Steffanie Musich  
Jon C. Olson  
Anita Tabb  
M. Annie Young

*Superintendent*  
Jayne Miller

*Secretary to the Board*  
Pamela French

- Kenilworth Lagoon (HE-MPC-1822) – The MPRB agrees with the determination of adverse effect of the SWLRT project on the Kenilworth Channel and Lagoon. Noise, dust and views throughout the area will be significantly impacted. We are concerned that no amount of mitigation will offset these adverse effects on the quiet, naturalistic and picturesque nature of the park experience and use.
- Cedar Lake (HE-1820) – We disagree with the preliminary determination of no adverse effect to Cedar Lake at this time. There has not been sufficient study of the sound and visual effects of the proposed project at the Kenilworth Channel nor at the westerly end of the Channel at Cedar Lake to make this conclusion at this time.
- Park Board Bridge #4 (HE-MPC-6901), Lake of the Isles Parkway (HE-MPC-1825), and Lake of the Isles (HE-MPC-1824) – For all three Grand Rounds elements, the preliminary determination remains ‘to be determined.’ All three seem to anticipate the design of the new bridges may avoid, minimize or mitigate any adverse effects. So far, we have seen no evidence that significant mitigation can be achieved.

We recognize that the project office provided potential bridge designs at the consultation meeting on November 24, 2014. Overall, it seems premature for the MPRB to provide comment on designs for the Kenilworth Channel bridges. We would appreciate knowing when the official comment period for these designs is going to begin and end. In the interim, as described above, it appears impossible to mitigate adverse effects based on the features of these designs.

Thank you for this opportunity to comment on the Section 106 review for the LRT. If you have any questions, please do not hesitate to contact Jennifer Ringold, Director of Strategic Planning, at 612-230-6464 or [jringold@minneapolisparcs.org](mailto:jringold@minneapolisparcs.org).

Sincerely,



Jennifer Ringold  
Director of Strategic Planning



STATE HISTORIC PRESERVATION OFFICE

December 12, 2014

Greg Mathis  
MnDOT Cultural Resources Unit  
395 John Ireland Boulevard, Mail Stop 620  
St. Paul, MN 55155-1899

RE: Southwest Light Rail Transit Project  
Multiple Communities, Hennepin County  
SHPO Number: 2009-0080

Dear Mr. Mathis,

Thank you for continuing consultation on the above project which is being reviewed pursuant to the responsibilities given the State Historic Preservation Officer by the National Historic Preservation Act of 1966 and implementing federal regulations at 36 CFR 800, and to the responsibilities given the Minnesota Historical Society by the Minnesota Historic Sites Act and the Minnesota Field Archaeology Act.

We have completed our review of the two (2) project consultation packages which were submitted to our office on 17 October 2014 and 12 November 2014. Our comments are provided below.

In addition to reviewing these materials, we participated in the Section 106 Consulting Parties meeting held at the Southwest Project Office on November 24, 2014. Thank you for convening all of the consulting parties and agency representatives for this meeting.

**Area of Potential Effects Revisions**

As indicated and agreed to in the project's 2010 research design for cultural resources, you have recently completed a reevaluation of the area of potential effect (APE) determinations for this project. The APE reassessment at this time is a result of completion of the 30% Preliminary Plans and several adjustments to the project scope as outlined in the memorandum of understanding (MOU) between the Metropolitan Council and the City of Minneapolis. Although there are previously identified historic properties within the revised APEs, it is our understanding that your agency will continue with identification and evaluation efforts within previously un-surveyed areas and submit these for our review upon completion. At this time, we concur with your determinations for and documentation of the revised APEs as submitted.

You have also provided documentation regarding the establishment of additional parameters for continued analysis of potential adverse effects and adjustments to the APE as project design development continues. We agree with your determination that these additional parameters will provide consistency in the applicability of APE determinations for common project elements.

### **Preliminary Project Effects Assessments**

It is our understanding that the assessments of adverse effect and preliminary determinations of effect provided in your November 12th correspondence have been determined based upon project engineering at the 30% design stage and that adverse effect determinations will be made by the Federal Transit Administration.

We acknowledge that we have previously provided concurrence with what your agency defined, and therefore we perceived, as "assessments of potential effect" which included commonly used Section 106 terminology of "no adverse effect" and "adverse effect". These are now presented in Section 1 of the table entitled *Southwest Light Rail Transit Project: Section 106 Review – Preliminary Determination of Effects on Historic Properties 11/12/2011* (Table) as effect determinations and defined as such in your correspondence. To date, the FTA has not provided final effect determinations for our review and concurrence, therefore these determinations should not be presented as final.

For the historic properties listed under Section 2 and Section 3 of the Table, we agree that the assessment of potential effects and proposed action steps are appropriate at this time. To reiterate, it is our opinion that the preliminary effect determinations provided in this Table serve only to provide a basis for continuing project design development in an effort to avoid or minimize potential adverse effects. We will defer concurrence with any "no adverse effect" or "adverse effect" determinations, preliminary or otherwise, until such time as the FTA provides these determinations to our office for review.

We took the time to review the original correspondence dated May 4, 2010 which, pursuant to 36 CFR 800.2(c)(4), designated your agency to act on behalf of the FTA to complete the following, in consultation with our office, identified consulting parties, and the public:

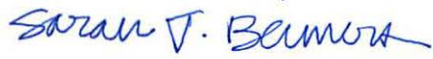
- Initiate the Section 106 process;
- Identify the area potential effect (APE);
- Conduct appropriate inventories to identify historic properties within the APE;
- Make determinations of eligibility to the National Register of Historic Places;
- Make assessments of potential effect.

The FTA indicated in this letter that they would retain authority to "make determinations of adverse effect" and negotiate the terms and conditions of a Section 106 agreement, if necessary. We respectfully request clarification from the FTA and your agency addressing our concerns and expectations for consultation regarding the results of assessment of adverse effect pursuant to 36 CFR 800.5(d).

Regarding our review of the *Kenilworth Lagoon/Channel Context, History, and Physical Description* report, we agree that this report provides critical information regarding the historic context, physical description, and identification of character-defining features of the Kenilworth Lagoon/Channel property which is a sub-segment of the Chain of Lakes Segment of the National Register-eligible Grand Rounds Historic District. While this report provides identification of the cultural landscape's character-defining features, we recommend that the final version of this report include information regarding identification and evaluation, following National Register criteria, for features in terms of those which may be considered "contributing" or "non-contributing" elements to the eligible historic district. This information will be essential as we continue to consult regarding the assessment of adverse effects and resolution of potential adverse effects.

We look forward to continuing consultation on this project. If you have any questions or concerns regarding this comment letter, please feel free to contact me at 651-259-3456 or [sarah.beimers@mnhs.org](mailto:sarah.beimers@mnhs.org).

Sincerely,

A handwritten signature in blue ink that reads "Sarah J. Beimers". The signature is written in a cursive style with a large initial "S" and a distinct "J" and "B".

Sarah Beimers, Manager  
Government Programs & Compliance



U.S. Department  
of Transportation  
**Federal Transit  
Administration**

REGION V  
Illinois, Indiana,  
Michigan, Minnesota,  
Ohio, Wisconsin

200 West Adams Street  
Suite 320  
Chicago, IL 60606  
312-353-2789  
312-886-0351 (fax)

December 16, 2014

Ms. Tamara Cameron, Chief Regulatory Branch  
Department of the Army  
St. Paul District, Corps of Engineers  
180 5<sup>th</sup> St. E., Suite 700  
St. Paul, MN 55101

RE: Section 106 compliance for the Southwest Light Rail Transit Project, Hennepin County, Minnesota, SHPO #2009-0080

Dear Ms. Cameron,

The Metropolitan Council is proposing to construct the Southwest Light Rail Transit Project (Project), an approximately 16-mile light rail transit line linking the cities of Minneapolis, St. Louis Park, Hopkins, Minnetonka, and Eden Prairie, all located in Hennepin County, Minnesota. The Project anticipates receiving Federal funding assistance from the Federal Transit Administration (FTA) and, therefore, must meet the requirements of Section 106 of the National Historic Preservation Act (Section 106), 16 U.S.C. Section 470(f), as amended. In accordance with 36 CFR Part 800, the head of the FTA, as the Agency Official, has legal responsibility for complying with the Section 106 process. As such, it is the responsibility of the Agency Official to identify and evaluate undertakings on historic properties, to resolve adverse effects, and coordinate with the Advisory Council on Historic Preservation (ACHP), if appropriate.

The FTA has initiated consultation with the Minnesota State Historic Preservation Office (MnSHPO) and consulting parties to consider effects to historic properties that are listed in and eligible for inclusion in the National Register for Historic Places (NRHP). In accordance with 36 CFR Part 800.2, the Agency Official may use the services of grantees, applicants, consultants, or designees to prepare the necessary information and analysis, but remains responsible for Section 106 compliance. FTA has delegated Minnesota Department of Transportation Cultural Resources Unit (MnDOT CRU) to act on its behalf for the Section 106 review for the Project. Under this delegation, MnDOT CRU is authorized to initiate the Section 106 process, identify the area of potential effect (APE), make determinations of eligibility for the National Register of Historic Places (NRHP), make assessments of potential effect, and conduct consultation with MnSHPO, interested parties and the public. MnDOT CRU will also work with FTA to designate consulting parties, make determinations of adverse effect, and negotiate the terms and conditions of a Section 106 agreement. FTA retains full authority in all these areas to make all final decisions and remains legally responsible for all findings and determinations charged to the Agency Official under 36 CFR Part 800. MnDOT CRU will also assist FTA in Section 106 tribal consultation, consistent with the requirements of 36 CFR Part 800. FTA will handle formal coordination with the ACHP.

Only staff employed as part of MnDOT's CRU that meet the qualifications of 36 CFR Part 61 can act on behalf of FTA. These responsibilities cannot be delegated to other MnDOT personnel or consultants acting on MnDOT's behalf.

In accordance with 36 CFR Part 800.2, which encourages Federal agencies to efficiently fulfill their obligations under Section 106, if more than one Federal agency is involved in an undertaking, some or all the agencies may designate a lead Federal agency, which shall identify the appropriate official to serve as the Agency Official who shall act on their behalf, fulfilling their collective responsibilities under section 106. Those Federal agencies that do not designate a lead Federal agency remain individually responsible for their compliance with this part.

In accordance with 36 CFR Part 800.2(a)(2), the United States Army Corps of Engineers (USACE) may choose to designate FTA as the lead Federal agency for the Project and to act on its behalf for meeting the requirements of Section 106. Under this designation, the USACE will remain a signatory party to the Section 106 Agreement for the Project. Please respond to FTA, in writing by January 15, 2015, on whether USACE will designate FTA as the lead Federal agency for purposes of meeting USACE compliance under Section 106 or if USACE will remain solely responsible for meeting its compliance on Section 106. Your response may be sent electronically to William Wheeler, Community Planner, at [William.Wheeler@dot.gov](mailto:William.Wheeler@dot.gov); please include the title of the official responding. We further request that you copy Sarah Beiners, MnSHPO Manager of Government Programs and Compliance, at [sarah.beiners@mnhs.org](mailto:sarah.beiners@mnhs.org), and Greg Mathis with MnDOT CRU at [greg.mathis@state.mn.us](mailto:greg.mathis@state.mn.us) on your response. Please contact Mr. Wheeler at (312) 353-2639, or Mr. Mathis at (651) 366-4292 if you have any questions or would like to discuss the project in more detail.

Thank you for your cooperation and interest in this project.

Sincerely,



Marisol R. Simón  
Regional Administrator

cc: Melissa Jenny, St. Paul District, Corps of Engineers  
Maya Sarna, Federal Transit Administration  
Bill Wheeler, Federal Transit Administration  
Greg Mathis, MnDOT Cultural Resources Unit  
Nani Jacobson, Metropolitan Council



Minnesota Department of Transportation

Office of Environmental Services

Mail Stop 620

395 John Ireland Boulevard

Office Tel: (651) 366-4292

Fax: (651) 366-3603

greg.mathis@state.mn.us

December 16, 2014

Ms. Debra Brisk  
Assistant County Administrator – Public Works  
Hennepin County  
A-2003 Government Center  
300 S. 6<sup>th</sup> St.  
Minneapolis, MN 55487-0233

RE: Consulting party status; Section 106 review for the Southwest Light Rail Transit Project, SHPO No. 2009-0080

Dear Ms. Brisk,

On behalf of the Federal Transit Administration (FTA), I am extending an invitation to Hennepin County to participate in the Section 106 review process for the Southwest Light Rail Transit Project (Project). As you know, the Project is an approximately 16-mile long transit facility linking the cities of Minneapolis, St. Louis Park, Hopkins, Minnetonka, and Eden Prairie, sponsored by the Metropolitan Council, with funding from the FTA. The Minnesota Department of Transportation Cultural Resources Unit (MnDOT CRU) is acting on behalf of FTA in carrying out many aspects of the Section 106 review.

Section 106 of the National Historic Preservation Act requires federal agencies to take into account the effects of their undertakings on historic properties that are listed in or eligible for the National Register of Historic Places. When there are potential adverse effects, the agency must consider ways to avoid, minimize, or mitigate those effects. The result is often a Section 106 agreement, which stipulates measures to be taken to address effects to historic properties.

Local governments are entitled to participate in the Section 106 process as consulting parties, along with the State Historic Preservation Office, Indian tribes, and other interested organizations and individuals. Consulting parties are able to share their views, receive and review pertinent information, offer ideas, and consider possible solutions together with the Federal agency and other parties. Consulting parties play an active and important role in determining how potential effects on historic properties will be avoided, minimized, or mitigated during the planning and implementation of a proposed project. For more information, see: <http://www.achp.gov/docs/CitizenGuide.pdf>.

We would welcome the involvement of Hennepin County in the Section 106 consultation for the Project. The County was involved in the consultation while the Hennepin County Regional Railroad Authority was the Project sponsor; however, this official involvement ended when the Metropolitan Council assumed Project sponsorship. If you would like to participate, please let us know of your interest in writing. If you have any questions, please contact me at (651) 366-4292.

Sincerely,

A handwritten signature in black ink, appearing to read 'Greg Mathis'.

Greg Mathis  
Minnesota Department of Transportation  
Cultural Resources Unit

cc: William Wheeler, Federal Transit Administration  
Sarah Beimers, Minnesota State Historic Preservation Office  
Nani Jacobson, Metropolitan Council  
David Jaeger, Hennepin County



**Hennepin County Public Works  
Strategic Planning & Resources Department**

701 Fourth Avenue South, Suite 700  
Minneapolis, Minnesota 55415-1842

[www.hennepin.us](http://www.hennepin.us)

Mr. Greg Mathis  
MnDOT Cultural Resources Unit  
Office of Environmental Services  
Minnesota Department of Transportation  
395 John Ireland Boulevard, Mail Stop 620  
St. Paul, MN 55155

RE: Consulting Party status: Section 106 review for the Southwest Light Rail Transit Project,  
SHPO No. 2009-0080

Dear Mr. Mathis,

We would like to accept and thank you for the invitation extended by you to Debra Brisk on December 16, 2014 to participate as consulting party in the Section 106 review process for the Southwest Light Rail Transit (LRT) project. We acknowledge that the MnDOT Cultural Resources Unit is continuing to act on behalf of the Federal Transit Administration in carrying forward the efforts of the Section 106 review for this project, and that this invitation acceptance letter formalizes Hennepin County's instatement of consulting party status in lieu of what had been the Hennepin County Regional Rail Authority.

The proposed project will utilize property both owned by and adjacent to facilities/land owned by the Hennepin County's regional railroad authority. In addition, Hennepin County through the Southwest LRT community works program will be actively pursuing development opportunities within the ½ mile radius of the proposed Southwest LRT line and would benefit from participation in the 106 review process. The following Hennepin County staff should be used as the contacts for the 106 review process; myself, Nelrae Succio and Katie Walker.

If you have questions, please contact me at 612-348-5714 or at [david.jaeger@hennepin.us](mailto:david.jaeger@hennepin.us). Thank you again for your invitation, we look forward to continuing working with you on this significant project.

Sincerely,

David Jaeger  
Environmental Coordinator

CC: William Wheeler, Federal Transit Administration  
Sarah Beimers, Minnesota State Historic Preservation Office  
Nani Jacobson, Metropolitan Council  
Debra Brisk, Hennepin County



**Minneapolis  
Park & Recreation Board**

*Administrative Offices*

2117 West River Road  
Minneapolis, MN 55411-2227

*Operations Center*

3800 Bryant Avenue South  
Minneapolis, MN 55409-1000

*Phone*

612-230-6400

*Fax*

612-230-6500

[www.minneapolisparcs.org](http://www.minneapolisparcs.org)

*President*

Liz Wielinski

*Vice President*

Scott Vreeland

*Commissioners*

Brad Bourm

John Erwin

Meg Forney

Steffanie Musich

Jon C. Olson

Anita Tabb

M. Annie Young

*Superintendent*

Jayne Miller

*Secretary to the Board*

Jennifer B. Ringold



January 2, 2015

Marisol Simon

Regional Administrator, Region 5  
Federal Transit Administration  
200 West Adams Street, Suite 2410  
Chicago, IL 6060

RE: Request for Meeting to Discuss Legal Jeopardy to the Federal Transit Administration (FTA) New Starts Program Created by the Implementation of the Program for the Southwest Light Rail Project ("SWLRT Project") in Minneapolis, Minnesota by the FTA and the Metropolitan Council

Dear Administrator Simon:

This letter is written on behalf of the Minneapolis Park and Recreation Board ("MPRB") an elected body responsible for protecting and preserving the Minneapolis park system. We, the MPRB, respectfully request a meeting with the FTA to begin the consultation and coordination required under federal law for the SWLRT Project under federal regulations. (See 23 CFR § 774.3.) The current implementation of the FTA's New Starts Program by the Metropolitan Council is in violation of federal laws including the National Environmental Policy Act (NEPA), Section 4(f) of the Federal Transportation Act (Section 4(f)), Section 106 of the National Historic Preservation Act (NHPA), as well as Minnesota statutory and administrative laws regulating the environment and the light rail system.

The Metropolitan Council's failure to follow federal laws under the guise of the FTA's New Starts projects places the SWLRT Project at a great risk for further delay. We believe the FTA's intervention is necessary to avoid delaying this project and obviate the need for proceedings in other venues.

Currently, the SWLRT Project is scheduled for conclusion of preliminary engineering (PE) and completion of the environmental review documents by the end of March 2015. Yet, despite numerous demands by the MPRB and other community stakeholders, the Metropolitan Council has refused to engage in the public notice and comment procedures required under federal and Minnesota laws.<sup>1</sup> Unless the FTA intervenes, the Metropolitan Council will complete PE, allowing the SWLRT Project to be

<sup>1</sup> For a more detailed factual and procedural history of the MPRB's actions in this respect, see attached Exhibit A.



de facto approved by the FTA<sup>2</sup> before the required environmental and Section 4(f) planning and consultation procedures have taken place.

If the FTA does not intervene now and engage in the required consultation and coordination or require the Metropolitan Council to engage in the required consultation and coordination, the SWLRT Project will continue to run afoul of Section 4(f)'s clear substantive and procedural requirements. The SWLRT Project has failed to engage in any meaningful evaluation of feasible and prudent avoidance alternatives, or make plans to ensure that the least overall harm alternative is adopted with respect to federally protected parkland. Unless the FTA acts now, a park and historic resource that receives over 5 million visits annually—serving local, regional, state-wide and national visitors—will likely be irreparably harmed. Moreover, the legal validity of FTA's New Starts Program generally will be jeopardized by its flawed implementation here in Minnesota.

The MPRB has a legitimate legal right to address any inadequacies in PE before the Section 4(f) evaluation and environmental review processes are subject to comment and completed. The current implementation of the New Starts program for the SWLRT Project is scheduled to result in the completion of PE and Section 4(f) review before the required consultation and coordination by the FTA can occur. For well over one year, the Metropolitan Council has ignored the MPRB's requests for additional review and consultation necessary to evaluate design alternatives to avoid impacts or at least minimize overall harm to the Section 4(f) resources affected by the SWLRT. As a result of this failure to consult and coordinate, the MPRB has been forced to fund engineering studies with up to \$500,000 to develop the design alternatives required by Section 4(f).<sup>3</sup> Not only that, but the Met Council has also proposed an expedited implementation schedule designed to deprive the MPRB of a fair opportunity to develop the design alternatives which Section 4(f) requires. Therefore, the FTA must intervene now, to require the Metropolitan Council to extend the PE Phase and comply with Section 4(f) and environmental review mandates, to allow the consultations, coordination and additional PE required to identify avoidance and least harm design alternatives.

Accordingly, pursuant to 23 C.F.R §§ 774.3(a), (c), (d) and 774.17 and the FTA's Section 4(f) Policy Paper § 1.2.2, the MPRB respectfully requests a meeting as soon as possible to present additional facts and information in support of the MPRB's request for consultation and

<sup>2</sup> The FTA's Office of Program Management has published a fact sheet on preliminary engineering for FTA Major Capital Transit Investment Projects which states that the transition from preliminary to advanced engineering constitutes defacto approval by the FTA of a design affecting 4(f) property: "The quality and reliability of the project information generated during the PE for New Starts projects is essential to FTA's decision to fund a project, which typically occurs shortly after the completion of preliminary engineering and once a project is approved into **final design**. (Emphasis original.) This approach requires a different perspective...than has traditionally been associated with PE for major capital investments. For example, varying definitions of preliminary engineering such as "the engineering necessary to complete NEPA" or "30% design" is supplanted—for New Starts projects—**by the expectation that the New Starts preliminary engineering phase will result in a project scope, cost estimate and financial plan that have little, if any, need for change after approval of the project into final design**. PE for New Starts projects generally takes between 15 and 30 months, **depending on...a commitment on the part of project stakeholders to not revisit past planning decisions...."** (emphasis added) [attach copy of fact sheet]

<sup>3</sup> See Attached Exhibit A.

coordination. Consistent with the mandate of *Overton Park*,<sup>4</sup> we strongly urge the FTA to engage in these meetings before it makes any de facto or actual approvals of the Project, makes a finding of Section 4(f) "use" of parkland, determines whether any feasible and prudent avoidance alternatives exist, and makes plans to ensure that the SWLRT Project adopts the least overall harm alternative.

Respectfully submitted,



Liz Wielinski  
President, Minneapolis Park & Recreation Board

cc. FTA Administrator, Washington DC

<sup>4</sup> See *Citizens to Pres. Overton Park, Inc. v. Volpe*, 401 U.S. 401 (1971)). For a recent discussion of the extensive procedural and substantive requirements of Section 4(f), see also *Defenders of Wildlife v. North Carolina Dept. of Transportation*, No. 13-2215, 2014 WL 3844086, at \*19 (4th Cir. May 13, 2014) (citations omitted) (finding that FHWA approval of a transportation project violated Section 4(f)).



U.S. Department  
of Transportation  
**Federal Transit  
Administration**

REGION V  
Illinois, Indiana,  
Michigan, Minnesota,  
Ohio, Wisconsin

200 West Adams Street  
Suite 320  
Chicago, IL 60606  
312-353-2789  
312-886-0351 (fax)

January 15, 2015

Liz Wielinski  
President  
Minneapolis Park & Recreation Board  
2117 West River Road  
Minneapolis, MN 55411-2227

RE: Southwest Light Rail Project in Minneapolis, Minnesota

Dear Ms. Wielinski:

The Federal Transit Administration (FTA) appreciates your interest in the Southwest Light Rail Transit Project in Minneapolis, MN (the "SWLRT Project"). Thank you for your letter dated January 2, 2015, regarding the Project and requesting a meeting with FTA.

FTA, in coordination with the Metropolitan Council, is preparing a Supplemental Draft Environmental Impact Statement (EIS) for the SWLRT Project in accordance with the National Environmental Policy Act (NEPA). At the current time, there have been no NEPA determinations made regarding the SWLRT Project. Thus, while FTA appreciates your desire to coordinate with FTA during the environmental review process for the SWLRT Project, it would be inappropriate for FTA to have an independent meeting with an individual stakeholder to the project during the pre-decisional phase of the process. Additionally, the New Starts process is separate and apart from the NEPA process and prior to receipt of a Full Funding Grant Agreement (FFGA), FTA does not make a commitment to fund a New Starts project. Completion of NEPA is a prerequisite for receipt of an FFGA.

FTA understands your concerns and will continue to work closely with the Metropolitan Council to complete the required consultation and coordination for the SWLRT Project under NEPA, Section 4(f) of the Federal Transportation Act, and Section 106 of the National Historic Preservation Act. I encourage the Minneapolis Park and Recreation Board (MPRB) to work with the Metropolitan Council in the coming months to further develop the Section 4(f) analysis. FTA will ensure full consideration of MPRB's concerns as part of the development of that analysis. FTA understands the importance of MPRB's role in the environmental review process, including its role as a consulting party, and is seeking MPRB's cooperation in advancing aspects of both the Section 106 consultation process towards a programmatic agreement and a comprehensive Section 4(f) analysis reviewing the areas of concern for MPRB.

SWLRT Project  
FTA Response to MPRB's Request for a Meeting  
January 15, 2015  
Page 2 of 2

If you have any questions related to the project, please contact Ms. Nani Jacobson, Assistant Director, SWLRT Project Office, at (612) 373-3800 or [nani.jacobson@metrotransit.org](mailto:nani.jacobson@metrotransit.org).

Sincerely,



Marisol R. Simón  
Regional Administrator

CC: Brian Lamb, Metropolitan Council  
Mark Fuhrmann, Metropolitan Council  
Nani Jacobson, SWLRT Project Office



**DEPARTMENT OF THE ARMY**  
ST. PAUL DISTRICT, CORPS OF ENGINEERS  
180 FIFTH STREET EAST, SUITE 700  
ST. PAUL MINNESOTA 55101-1678

REPLY TO  
ATTENTION OF

Operations - Regulatory (2009-01283-MMJ)

Ms. Marisol R. Simon  
Regional Administrator  
Federal Transit Administration  
200 West Adams Street  
Chicago, Illinois 60606

**JAN 15 2015**

Dear Ms. Simon:

The U.S. Army Corps of Engineers, St Paul District, Regulatory Branch has received your letter dated December 16, 2014, concerning the designation of lead Federal agency pursuant to 36 CFR § 800.2. for the Southwest Light Rail Project. We agree that it is appropriate for the U.S. Department of Transportation, Federal Transit Administration to act as the lead Federal agency for the purposes of fulfilling our collective responsibilities under section 106 of the National Historic Preservation Act.

We appreciate your efforts to consider potential effects to historic properties and the expertise of the MnDot Cultural Resource Unit in that regard. We would still like to remain a consulting party during the review of this project and would only become more involved in historic property issues if for example measures to avoid effects to a historic property involved regulated impacts to waters of the United States.

If you have any questions concerning our role in the section 106 review please call Brad Johnson at (651) 290-5250. If you have questions about our regulatory program, please call Melissa Jenny at (651) 290-5363.

Sincerely,

A handwritten signature in black ink, appearing to read "Cameron".

*for* Tamara E. Cameron  
Chief, Regulatory Branch

Copies furnished:  
Sarah Beimers, Mn SHPO  
Greg Mathis, MnDOT CRU  
Maya Sarna, FTA  
Bill Wheeler, FTA  
Nani Jacobson, Metropolitan Council

## **Wheeler, William (FTA)**

---

**From:** Sarah Beimers <sarah.beimers@mnhs.org>  
**Sent:** Monday, February 02, 2015 8:57 AM  
**To:** Mathis, Gregory (DOT)  
**Cc:** Wheeler, William (FTA); Sarna, Maya (FTA); Zaref, Amy CTR (FTA)  
**Subject:** Re: Southwest LRT: consulting party request

Greg,

We concur with FTA's decision to grant consulting party status to the Cedar-Isles-Dean Neighborhood Association for participation in the Section 106 review process for the Southwest Light Rail Transit Project.

-Sarah

Sarah J. Beimers  
Manager of Government Programs & Compliance | State Historic Preservation Office  
Minnesota Historical Society | 345 Kellogg Blvd W | St. Paul MN 55102  
tel: 651-259-3456 | fax: 651-282-2374 | e: [sarah.beimers@mnhs.org](mailto:sarah.beimers@mnhs.org)

On Thu, Jan 29, 2015 at 10:54 AM, Mathis, Gregory (DOT) <[greg.mathis@state.mn.us](mailto:greg.mathis@state.mn.us)> wrote:

Sarah,

Under MnDOT CRU's authority delegated by the FTA to assist it many aspects of the Section 106 process for the Southwest Light Rail Transit Project, we have received a request from the Cedar-Isles-Dean Neighborhood (CIDNA) in Minneapolis to become a consulting party for the Section 106 process for this project (attached email). The portion of the project roughly between the 21st Street and West Lake stations is within CIDNA's boundaries (attached map). Specifically, CIDNA has documented its interest in project effects on two historic properties within its boundaries: Kenilworth Lagoon and Cedar Lake Parkway, both of which are contributing elements to the National Register eligible Grand Rounds. For your reference, there are a number of other listed and eligible properties in the project APE that are within CIDNA's boundaries. These include the Neils House, Grand Rounds (Park Board Bridge No. 4 and portions of Lake of the Isles Parkway, Lake of the Isles, and Cedar Lake,), and a portion of the Lake of the Isles Residential Historic District.

FTA has reviewed and concurs with CIDNA's request. Per 36 CFR 800.2, we request your concurrence with granting consulting party status to CIDNA.

Regards,

Greg

---

**Greg Mathis**

Cultural Resources Unit

Office of Environmental Stewardship

Minnesota Department of Transportation

395 John Ireland Boulevard, Mail Stop 620

St. Paul, MN 55155

Office: [651-366-4292](tel:651-366-4292) / Fax: [651-366-3603](tel:651-366-3603)

[greg.mathis@state.mn.us](mailto:greg.mathis@state.mn.us)



U.S. Department  
of Transportation  
**Federal Transit  
Administration**

REGION V  
Illinois, Indiana,  
Michigan, Minnesota,  
Ohio, Wisconsin

200 West Adams Street  
Suite 320  
Chicago, IL 60606-5253  
312-353-2789  
312-886-0351 (fax)

February 17, 2015

Mr. Craig Westgate  
Chair  
Cedar-Isles-Dean Neighborhood Association  
3523 St. Paul Ave.  
Minneapolis, MN 55416

RE: Consulting party status; Section 106 review for the Southwest Light Rail Transit Project, SHPO No. 2009-0080

Dear Mr. Westgate,

In your email dated January 21, 2015 to the Minnesota Department of Transportation's Cultural Resources Unit (MnDOT CRU) and forwarded to the Federal Transit Administration, you requested consulting party status for the Section 106 process for the Southwest Light Rail Transit Project. After consultation with the Minnesota State Historic Preservation Office, we concur in this request and hereby offer you consulting party status to your organization.

It is our understanding that the project sponsor, the Metropolitan Council, will share with you copies of all Section 106 documents related to this project.

If you have any questions, please contact Bill Wheeler of my staff at (312) 353-2639 or [William.Wheeler@dot.gov](mailto:William.Wheeler@dot.gov), or Greg Mathis with MnDOT CRU at (651) 366-4292 or [greg.mathis@state.mn.us](mailto:greg.mathis@state.mn.us).

Sincerely,

Marisol R. Simón  
Regional Administrator

cc: Maya Sarna, FTA  
William Wheeler, FTA  
Sarah Beimers, Minnesota State Historic Preservation Office  
Greg Mathis MnDOT CRU  
Nani Jacobson, Metropolitan Council





REPLY TO  
ATTENTION OF

**DEPARTMENT OF THE ARMY**  
ST. PAUL DISTRICT, CORPS OF ENGINEERS  
180 FIFTH STREET EAST, SUITE 700  
ST. PAUL MN 55101-1678

**FEB 18 2015**

Operations  
Regulatory (2009-01283-MMJ)

Ms. Nani Jacobson  
SWLRT Project Office  
6465 Wayzata Blvd., Suite 500  
St. Louis Park, Minnesota 55416

Dear Ms. Jacobson:

This letter is in response to your request for Corps of Engineers (Corps) concurrence with the delineation of aquatic resources completed within the Southwest Light Rail Transit (SWLRT) project area. The SWLRT project area includes a 15-mile corridor through Eden Prairie, Minnetonka, Edina, Hopkins, St. Louis Park, and Minneapolis (the Corridor), in Hennepin County, Minnesota.

We have reviewed the SWLRT Delineation Report submitted on December 11, 2013, and the SWLRT Supplemental Delineation Report submitted on October 28, 2014. We have determined that the limits of the aquatic resources within the Corridor have been accurately identified in accordance with current agency guidance including the *Corps of Engineers Wetland Delineation Manual* (1987 Manual) and the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Midwest Region. This concurrence is only valid for the review area shown on the attached Figure labeled as SWLRT Delineation Concurrence and PJD (2/18/2015) - Figure 1. The boundaries shown on the attached Figures 2 – 18 accurately reflect the limits of the aquatic resources in the review area.

This concurrence may generally be relied upon for five years from the date of this letter. However, we reserve the right to review and revise our concurrence in response to changing site conditions, information that was not considered during our initial review, or off-site activities that could indirectly alter the extent of wetlands and other resources on-site. Our concurrence may be renewed at the end of this period provided you submit a written request and our staff are able to verify that the determination is still valid.

Please note that the discharge of dredged or fill material into waters of the United States without a Department of the Army permit could subject you to enforcement action. Receipt of a permit from a state or local agency does not obviate the requirement for obtaining a Department of the Army permit.

We have also completed a preliminary jurisdictional determination (JD) for the majority of wetlands identified within the Corridor. This preliminary JD presumes that all of the aquatic resources identified on the attached Preliminary JD form are subject to Corps of Engineers'

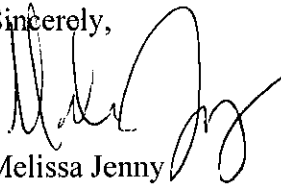
jurisdiction under the Clean Water Act. Since the determination is considered preliminary it is not appealable under our administrative appeal procedures (33 CFR 331). If you prefer an appealable approved jurisdictional determination that verifies the jurisdictional status of these aquatic resources you may request one by contacting the Corps representative identified in the final paragraph of this letter.

If this preliminary JD is acceptable, please sign and date both copies of the Preliminary Jurisdictional Determination Form and return one copy to the letterhead address within 15 days from the date of this letter.

We are in the process of completing an approved jurisdictional determination for the remaining waterbodies that were delineated within the Corridor, but not identified on the attached preliminary JD form.

Thank you for your cooperation with the U.S. Army Corps of Engineers regulatory program. If you have any questions, contact me in our St. Paul office at (651) 290-5363, or [Melissa.m.jenny@usace.army.mil](mailto:Melissa.m.jenny@usace.army.mil). In any correspondence or inquiries, please refer to the Regulatory number shown above.

Sincerely,



Melissa Jenny  
Project Manager

Copy furnished:  
Maya Sarna, FTA  
Ben Meyer, BWSR  
Stacey Lijewski, Hennepin Co.  
LGUs within SWLRT project corridor  
Anderson Engineering

## PRELIMINARY JURISDICTIONAL DETERMINATION FORM

**This preliminary JD finds that there "may be" waters of the United States on the subject project site, and identifies all aquatic features on the site that could be affected by the proposed activity, based on the following information:**

District Office St. Paul District File/ORM # 2009-01283-MMJ: SWLRT PJD Date: Feb 18, 2015

State MN City/County Multiple, Hennepin Co.  
 Nearest Waterbody: Nine Mile, Riley/Purg., Bassett, & Minnehaha Creek  
 Location: TRS, Lat/Long or UTM: 58 waterbodies - see attached table  
Center point: 45.0043930091592, -93.476658116984  
 Name/ Address of Person Requesting PJD: Ms. Nani Jacobson  
SWLRT Project Office  
6465 Wayzata Blvd., Suite 500  
St. Louis Park, Minnesota 55416

Identify (Estimate) Amount of Waters in the Review Area: Name of Any Water Bodies on the Site Identified as Section 10 Waters: Tidal: \_\_\_\_\_ Non-Tidal: \_\_\_\_\_  
 Non-Wetland Waters: Stream Flow: \_\_\_\_\_  
1000+ linear ft \_\_\_\_\_ width \_\_\_\_\_ acres \_\_\_\_\_ Perennial  
 Wetlands: ~250 acre(s) Cowardin Class: Palustrine, emergent  
 Office (Desk) Determination  
 Field Determination: Date of Field Trip: May 2014

**SUPPORTING DATA: Data reviewed for preliminary JD (check all that apply - checked items should be included in case file and, where checked and requested, appropriately reference sources below):**

- Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant: Anderson Engineering
- Data sheets prepared/submitted by or on behalf of the applicant/consultant.
  - Office concurs with data sheets/delineation report.
  - Office does not concur with data sheets/delineation report.
- Data sheets prepared by the Corps
- Corps navigable waters' study: \_\_\_\_\_
- U.S. Geological Survey Hydrologic Atlas:
  - USGS NHD data.
  - USGS 8 and 12 digit HUC maps.
- U.S. Geological Survey map(s). Cite quad name: Multiple, Hennepin Co.
- USDA Natural Resources Conservation Service Soil Survey. Citation: Hennepin Co.
- National wetlands inventory map(s). Cite name: \_\_\_\_\_
- State/Local wetland inventory map(s): \_\_\_\_\_
- FEMA/FIRM maps: \_\_\_\_\_
- 100-year Floodplain Elevation is: \_\_\_\_\_
- Photographs:  Aerial (Name & Date): 1991-2013 FSA, lidar and Google Earth
  - Other (Name & Date): \_\_\_\_\_
- Previous determination(s). File no. and date of response letter: \_\_\_\_\_
- Other information (please specify): \_\_\_\_\_

**IMPORTANT NOTE: The information recorded on this form has not necessarily been verified by the Corps and should not be relied upon for later jurisdictional determinations.**

[Signature] 2/18/15  
 Signature and Date of Regulatory Project Manager  
 (REQUIRED)

[Signature] 2/25/2015  
 Signature and Date of Person Requesting Preliminary JD  
 (REQUIRED, unless obtaining the signature is impracticable)

**EXPLANATION OF PRELIMINARY AND APPROVED JURISDICTIONAL DETERMINATIONS:**

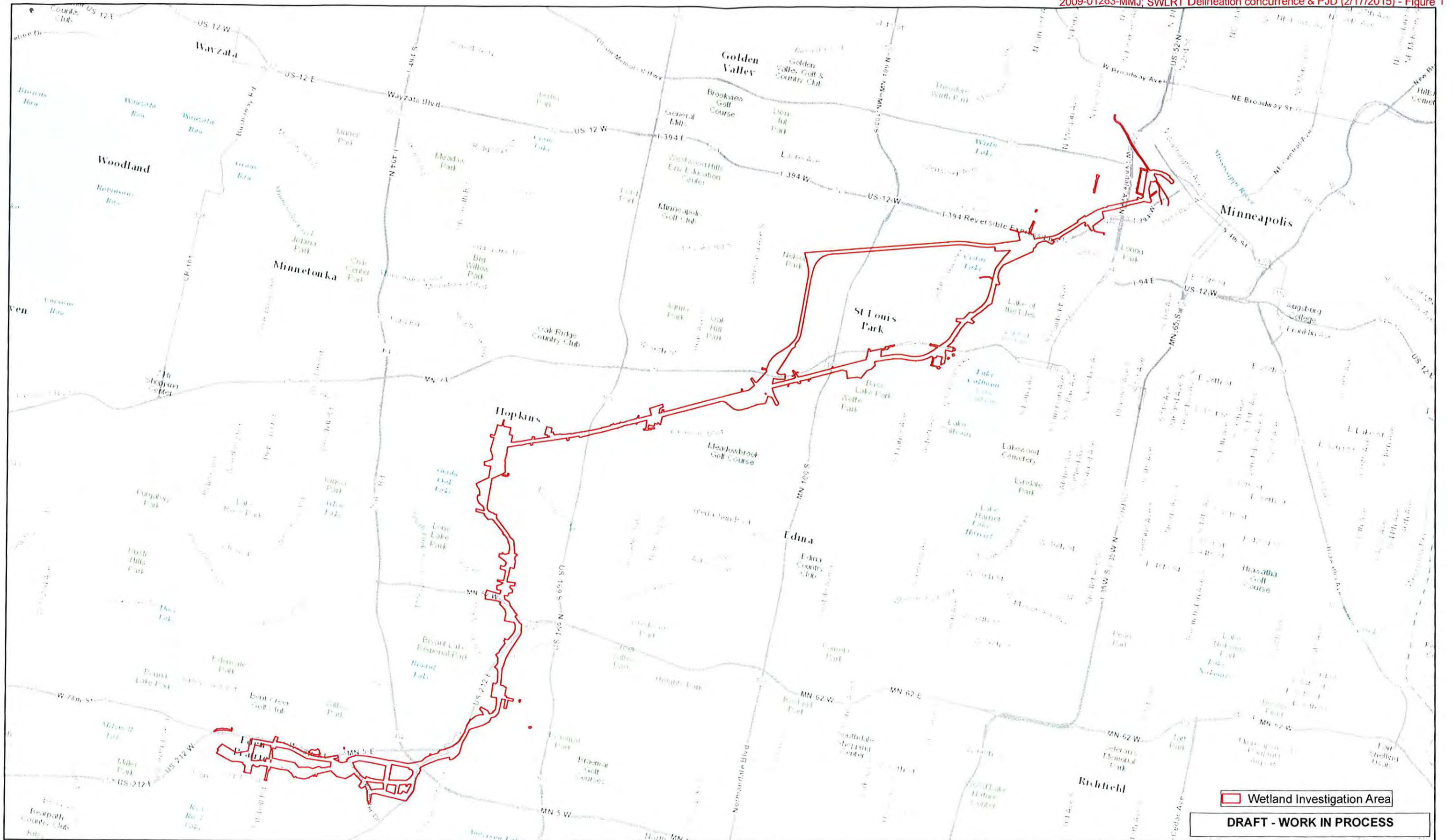
1. The Corps of Engineers believes that there may be jurisdictional waters of the United States on the subject site, and the permit applicant or other affected party who requested this preliminary JD is hereby advised of his or her option to request and obtain an approved jurisdictional determination (JD) for that site. Nevertheless, the permit applicant or other person who requested this preliminary JD has declined to exercise the option to obtain an approved JD in this instance and at this time.

2. In any circumstance where a permit applicant obtains an individual permit, or a Nationwide General Permit (NWP) or other general permit verification requiring "preconstruction notification" (PCN), or requests verification for a non-reporting NWP or other general permit, and the permit applicant has not requested an approved JD for the activity, the permit applicant is hereby made aware of the following: (1) the permit applicant has elected to seek a permit authorization based on a preliminary JD, which does not make an official determination of jurisdictional waters; (2) that the applicant has the option to request an approved JD before accepting the terms and conditions of the permit authorization, and that basing a permit authorization on an approved JD could possibly result in less compensatory mitigation being required or different special conditions; (3) that the applicant has the right to request an individual permit rather than accepting the terms and conditions of the NWP or other general permit authorization; (4) that the applicant can accept a permit authorization and thereby agree to comply with all the terms and conditions of that permit, including whatever mitigation requirements the Corps has determined to be necessary; (5) that undertaking any activity in reliance upon the subject permit authorization without requesting an approved JD constitutes the applicant's acceptance of the use of the preliminary JD, but that either form of JD will be processed as soon as is practicable; (6) accepting a permit authorization (e.g., signing a proffered individual permit) or undertaking any activity in reliance on any form of Corps permit authorization based on a preliminary JD constitutes agreement that all wetlands and other water bodies on the site affected in any way by that activity are jurisdictional waters of the United States, and precludes any challenge to such jurisdiction in any administrative or judicial compliance or enforcement action, or in any administrative appeal or in any Federal court; and (7) whether the applicant elects to use either an approved JD or a preliminary JD, that JD will be processed as soon as is practicable. Further, an approved JD, a proffered individual permit (and all terms and conditions contained therein), or individual permit denial can be administratively appealed pursuant to 33 C.F.R. Part 331, and that in any administrative appeal, jurisdictional issues can be raised (see 33 C.F.R. 331.5(a)(2)). If, during that administrative appeal, it becomes necessary to make an official determination whether CWA jurisdiction exists over a site, or to provide an official delineation of jurisdictional waters on the site, the Corps will provide an approved JD to accomplish that result, as soon as is practicable.



Wetland ID	Cowardin	HGM	Meas	Amount	Unit	Waters type	Lat	Long
DOT-EP-01	PEM	DEPRESS	Area	0.27	ACRE	RPWWD	44.86363	93.46118
DOT-EP-02	PEM	DEPRESS	Area	0.22	ACRE	RPWWD	44.86039	93.45261
DOT-EP-03	PEM	DEPRESS	Area	0.27	ACRE	RPWWD	44.8604	93.44886
DOT-EP-04	PEM	DEPRESS	Area	0.74	ACRE	RPWWD	44.86122	93.44479
DOT-EP-07	PEM	DEPRESS	Area	0.01	ACRE	RPWWD	44.86691	93.41663
DOT-EP-08	PEM	DEPRESS	Area	0.84	ACRE	RPWWD	44.88442	93.41068
DOT-EP-09	PEM	DEPRESS	Area	0.7	ACRE	RPWWD	44.88343	93.41263
DOT-SLP-10	PEM	DEPRESS	Area	0.01	ACRE	RPWWD	44.94064	93.34796
DOT-EP-12	PEM	DEPRESS	Area	0.01	ACRE	RPWWD	44.86187	93.47227
DOT-EP-13	PEM	DEPRESS	Area	0.02	ACRE	RPWWD	44.86214	93.47045
DOT-EP-14	PEM	DEPRESS	Area	0.01	ACRE	RPWWD	44.86125	93.45195
DOT-EP-15	PEM	DEPRESS	Area	0.01	ACRE	RPWWD	44.86113	93.45047
DOT-EP-16	PEM	DEPRESS	Area	0.01	ACRE	RPWWD	44.86156	93.44886
DOT-EP-17	PEM	DEPRESS	Area	2.21	ACRE	RPWWD	44.86196	93.4409
DOT-EP-18	PEM	DEPRESS	Area	0.1	ACRE	RPWWD	44.86191	93.42481
DOT-EP-19	PEM	DEPRESS	Area	0.1	ACRE	RPWWD	44.86606	93.41999
DOT-EP-20	PEM	DEPRESS	Area	0.08	ACRE	RPWWD	44.86658	93.41867
DOT-EP-21	PEM	DEPRESS	Area	0.01	ACRE	RPWWD	44.89206	93.41789
DOT-EP-22	PEM	DEPRESS	Area	0.08	ACRE	RPWWD	44.89212	93.41541
EP-EP-03	PEM	DEPRESS	Area	0.16	ACRE	RPWWD	44.86019	93.46539
EP-EP-07	PEM	DEPRESS	Area	4.36	ACRE	RPWWD	44.85743	93.4616
EP-EP-08	PEM	DEPRESS	Area	1.72	ACRE	RPWWD	44.85841	93.45883
EP-EP-09	PEM	DEPRESS	Area	0.57	ACRE	RPWWD	44.85914	93.45922
EP-EP-11	PEM	DEPRESS	Area	9.89	ACRE	RPWWD	44.85832	93.45444
EP-EP-12	PEM	DEPRESS	Area	2.75	ACRE	RPWWD	44.85727	93.45683
EP-EP-14	PUB	DEPRESS	Area	1.09	ACRE	RPWWD	44.85773	93.44919
EP-EP-15	PEM	DEPRESS	Area	90	ACRE	RPWWD	44.85835	93.44834
EP-EP-16	PEM	DEPRESS	Area	8	ACRE	RPWWD	44.85884	93.44673
EP-EP-17	PEM	DEPRESS	Area	2.23	ACRE	RPWWD	44.85907	93.44839
EP-EP-20	PUB	LACUSTRI	Area	15.86	ACRE	RPWWD	44.86142	93.43177
EP-EP-22	PEM	DEPRESS	Area	0.2	ACRE	RPWWD	44.86028	93.44542
EP-EP-23	PEM	DEPRESS	Area	3.74	ACRE	RPWWD	44.85676	93.45879
EP-EP-24	PUB	DEPRESS	Area	0.38	ACRE	RPWWD	44.85974	93.44511
DIG-EP-EP-04	PUB	DEPRESS	Area	0.65	ACRE	RPWWD	44.86085	93.44738
NM-EP-01	PEM	DEPRESS	Area	1.8	ACRE	RPWWD	44.87263	93.41123
NM-EP-02	PEM	DEPRESS	Area	6.22	ACRE	RPWWD	44.87278	93.41402
NM-EP-03	PEM	DEPRESS	Area	2.16	ACRE	RPWWD	44.87277	93.41146
NM-EP-04	PEM	DEPRESS	Area	1.17	ACRE	RPWWD	44.87263	93.41123
NM-EP-05	PUB	DEPRESS	Area	0.31	ACRE	RPWWD	44.87428	93.41362
NM-EP-06	PEM	DEPRESS	Area	4.12	ACRE	RPWWD	44.87719	93.4113
NM-EP-08	PEM	DEPRESS	Area	2.25	ACRE	RPWWD	44.878	93.41011
NM-EP-09	PEM	DEPRESS	Area	0.66	ACRE	RPWWD	44.87941	93.41117
NM-HOP-13	PEM	DEPRESS	Area	2.67	ACRE	RPWWD	44.91378	93.42063
NM-HOP-16	R1UB	DEPRESS	Linear	9	MILE	RPWWD	44.9186	93.41666
MTA-MTA-05	PUB	DEPRESS	Area	0.99	ACRE	RPWWD	44.89733	93.41472
MTA-MTA-06	PEM	DEPRESS	Area	0.01	ACRE	RPWWD	44.89894	93.41391

Wetland ID	Cowardin	HGM	Meas	Amount	Unit	Waters type	Lat	Long
MTA-MTA-07	PEM	DEPRESS	Area	0.18	ACRE	RPWWD	44.89932	93.41399
MTA-MTA-08	PEM	DEPRESS	Area	0.34	ACRE	RPWWD	44.89971	93.41361
MTA-MTA-09	PEM	DEPRESS	Area	36.2	ACRE	RPWWD	44.90153	93.41321
MTA-MTA-10	PUB	DEPRESS	Area	0.55	ACRE	RPWWD	44.90587	93.42214
MTA-MTA-11	PEM	DEPRESS	Area	11.79	ACRE	RPWWD	44.90786	93.42274
MTA-MTA-12	PUB	DEPRESS	Area	2.8	ACRE	RPWWD	44.91456	93.42308
MTA-MTA-13	PUB	DEPRESS	Area	0.25	ACRE	RPWWD	44.9115	93.42296
MC-SLP-01	R1UB	DEPRESS	Linear	22	MILE	RPWWD	44.93011	93.3805
MC-SLP-02	R1UB	DEPRESS	Linear	22	MILE	RPWWD	44.93013	93.36633
MC-SLP-03	PUB	DEPRESS	Area	0.2	ACRE	RPWWD	44.93221	93.36684
MC-SLP-05	PEM	DEPRESS	Area	1.9	ACRE	RPWWD	44.93233	93.36497
MC-MPL-13	R1UB	DEPRESS	Linear	1600	FOOT	RPWWD	44.95523	93.31603



Wetland Investigation Area

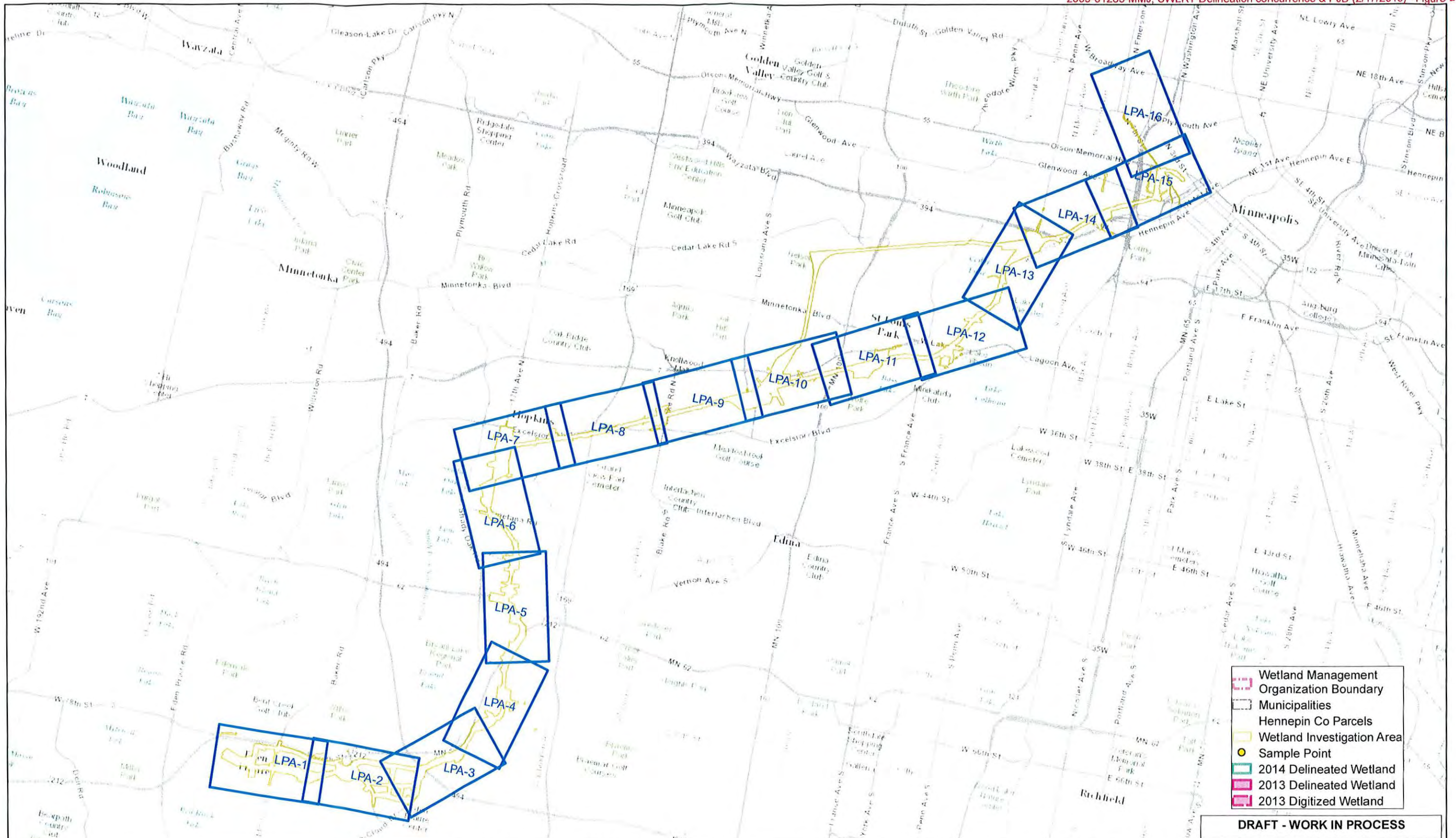
DRAFT - WORK IN PROCESS

# SOUTHWEST LRT

2014 Wetland Investigation Area

Map Index  
Rev 00.00  
2/17/2015





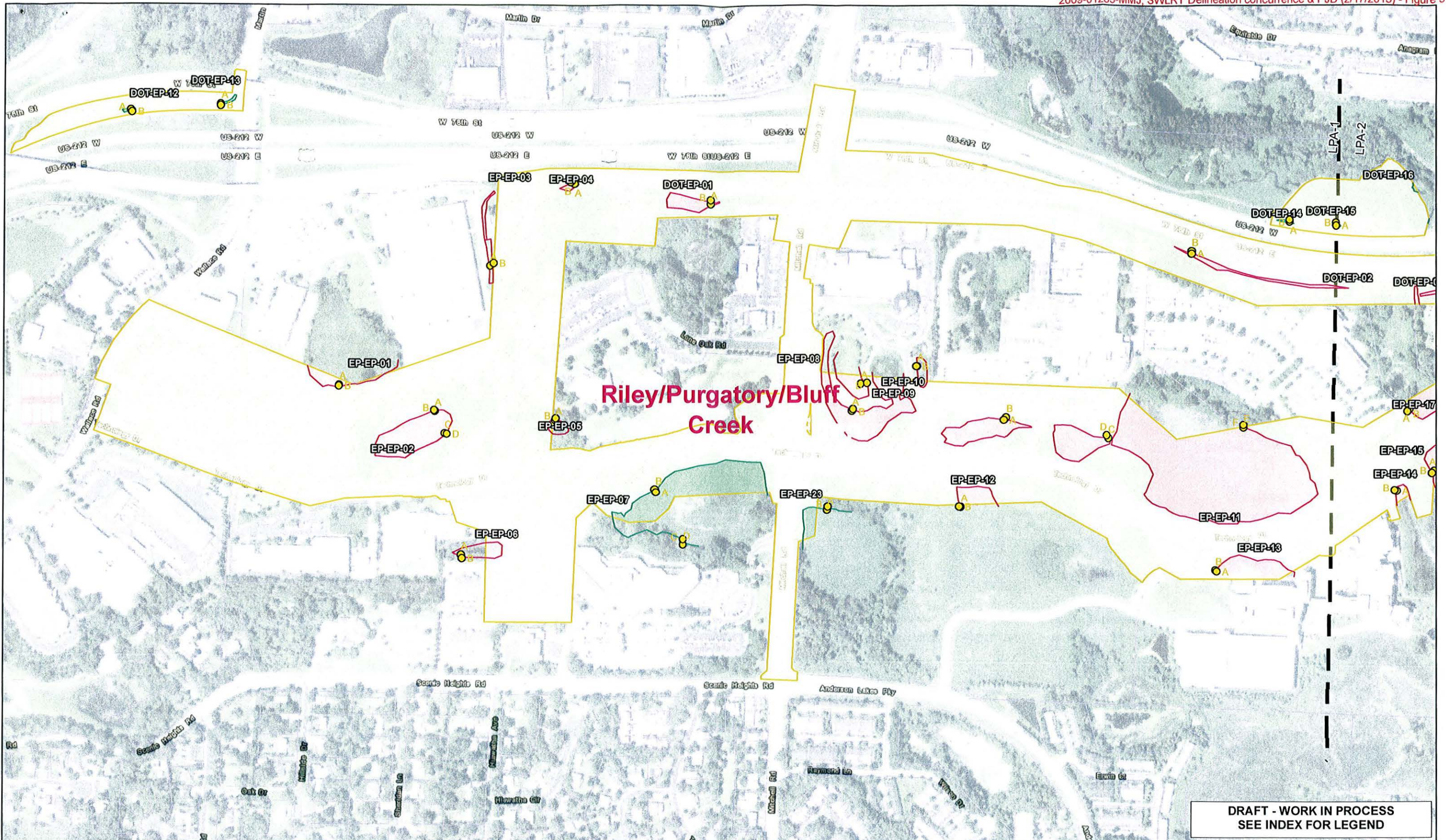
# SOUTHWEST LRT

2014 Wetland Delineation Supplement  
MapBook Index

Map Index  
Rev 00.00  
10/13/2014





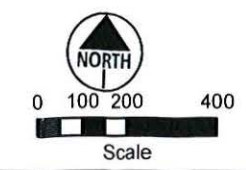


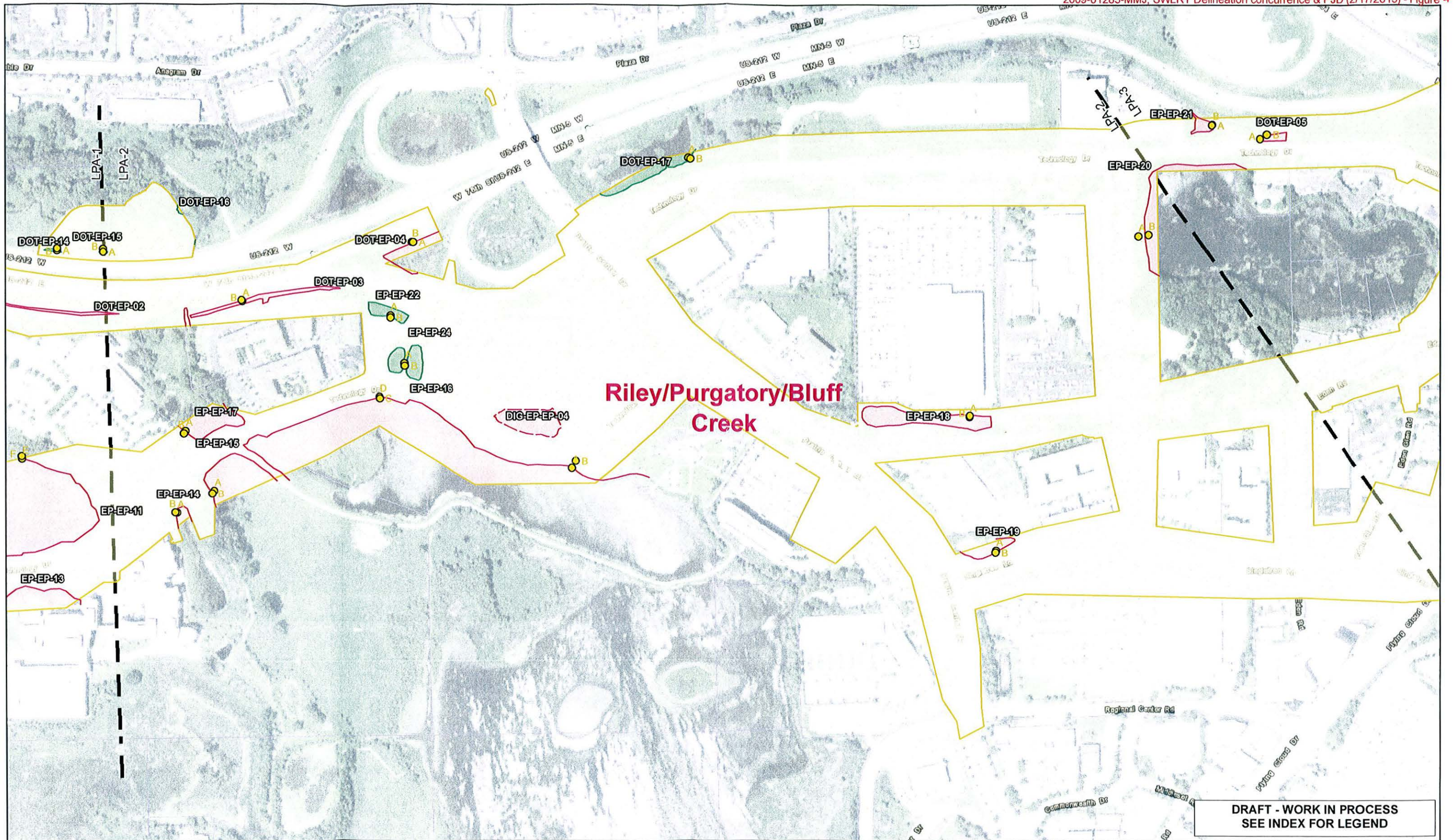
DRAFT - WORK IN PROCESS  
SEE INDEX FOR LEGEND

# SOUTHWEST LRT

2014 Wetland Delineation Supplement  
MapBook

LPA-1  
Rev 00.00  
10/2/2014  
Sheet 1 of 16



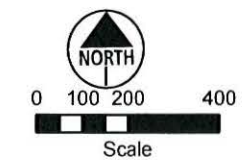


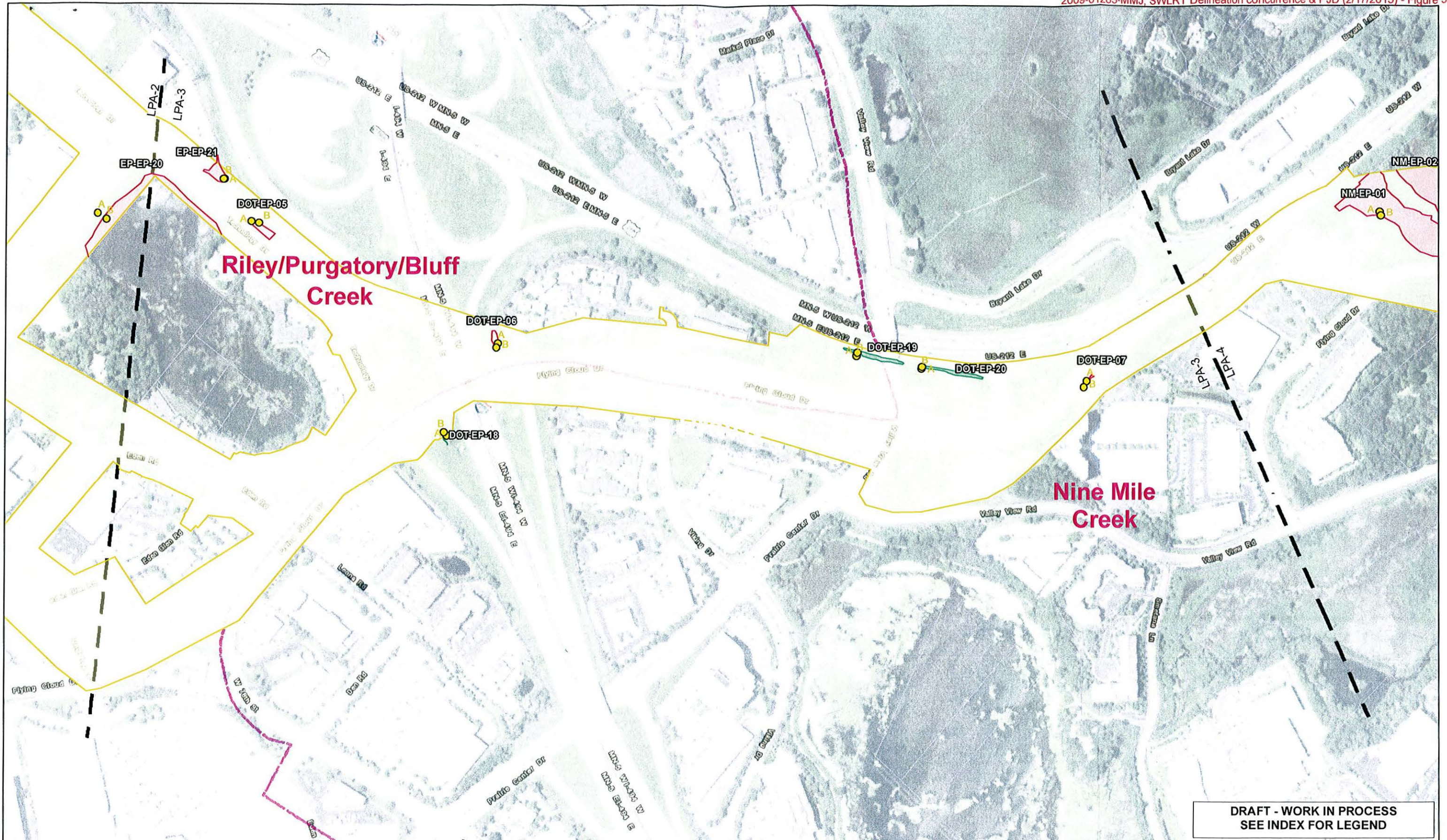
DRAFT - WORK IN PROCESS  
SEE INDEX FOR LEGEND

# SOUTHWEST LRT

2014 Wetland Delineation Supplement  
MapBook

LPA-2  
Rev 00.00  
10/2/2014  
Sheet 2 of 16



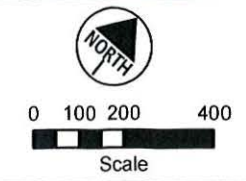


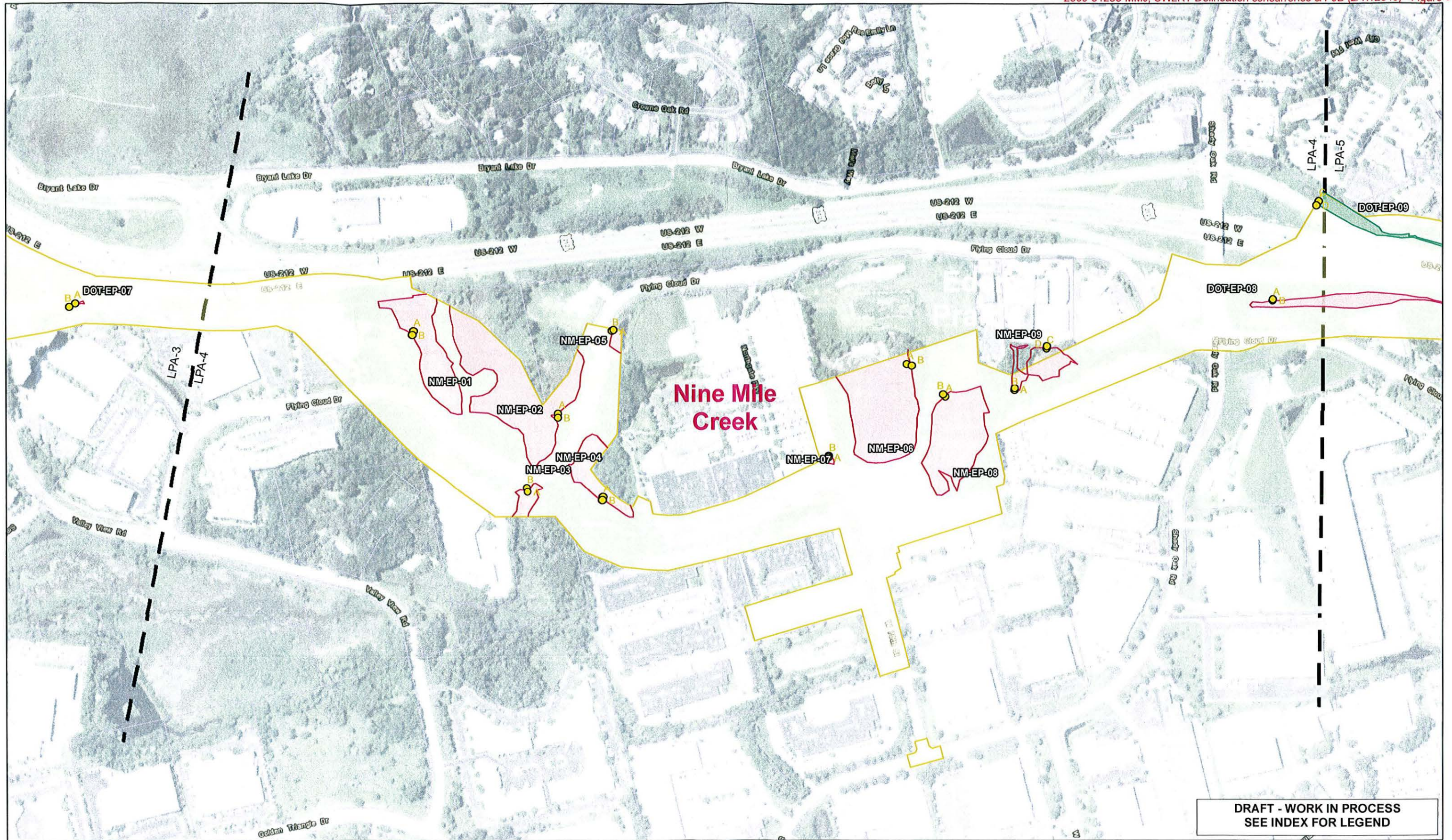
DRAFT - WORK IN PROCESS  
SEE INDEX FOR LEGEND

# SOUTHWEST LRT

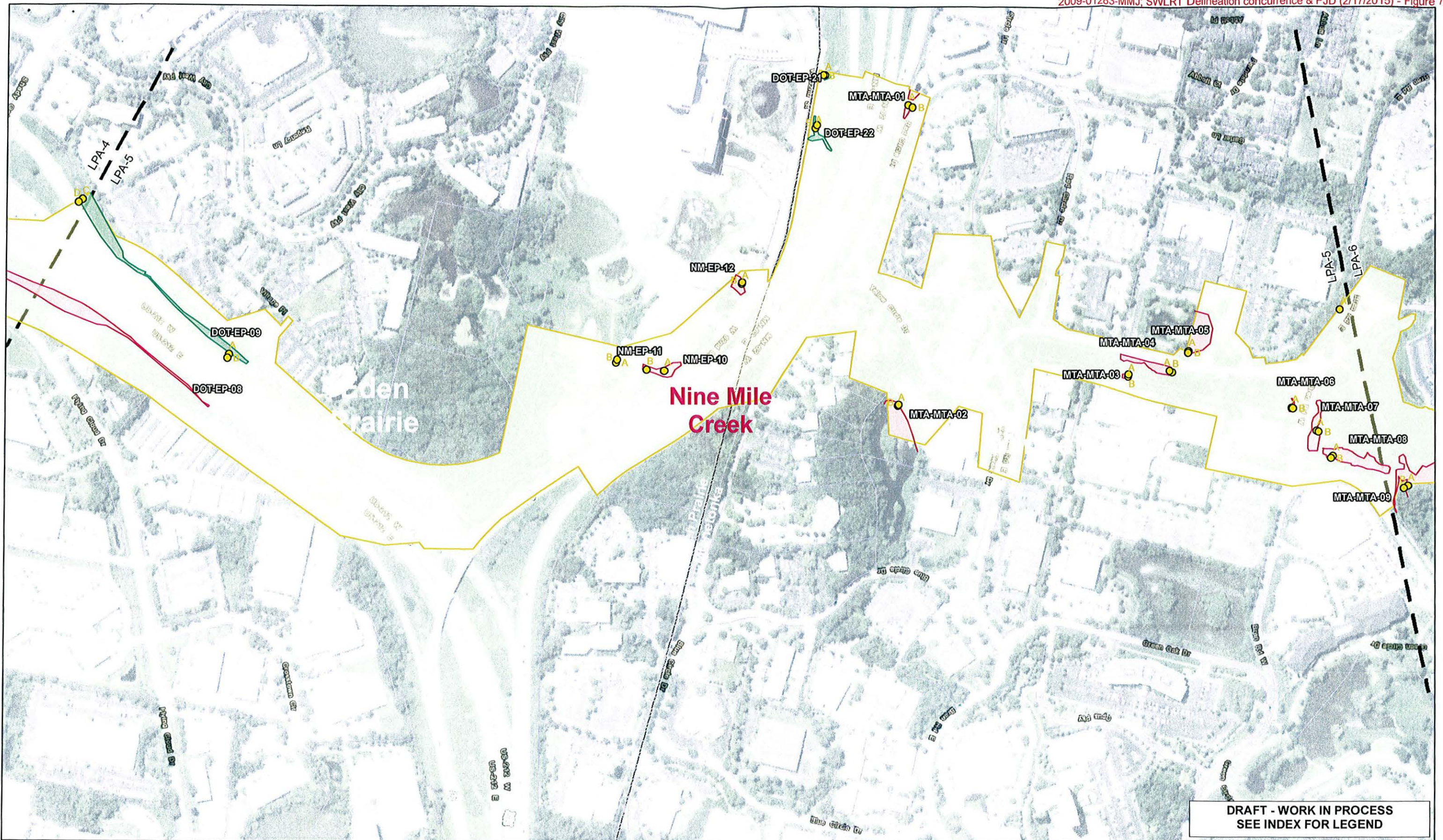
2014 Wetland Delineation Supplement  
MapBook

LPA-3  
Rev 00.00  
10/2/2014  
Sheet 3 of 16





DRAFT - WORK IN PROCESS  
SEE INDEX FOR LEGEND



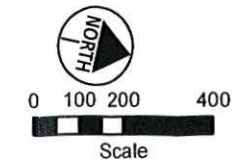
DRAFT - WORK IN PROCESS  
SEE INDEX FOR LEGEND



# SOUTHWEST LRT

2014 Wetland Delineation Supplement  
MapBook

LPA-5  
Rev 00.00  
10/2/2014  
Sheet 5 of 16



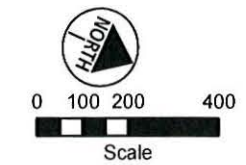


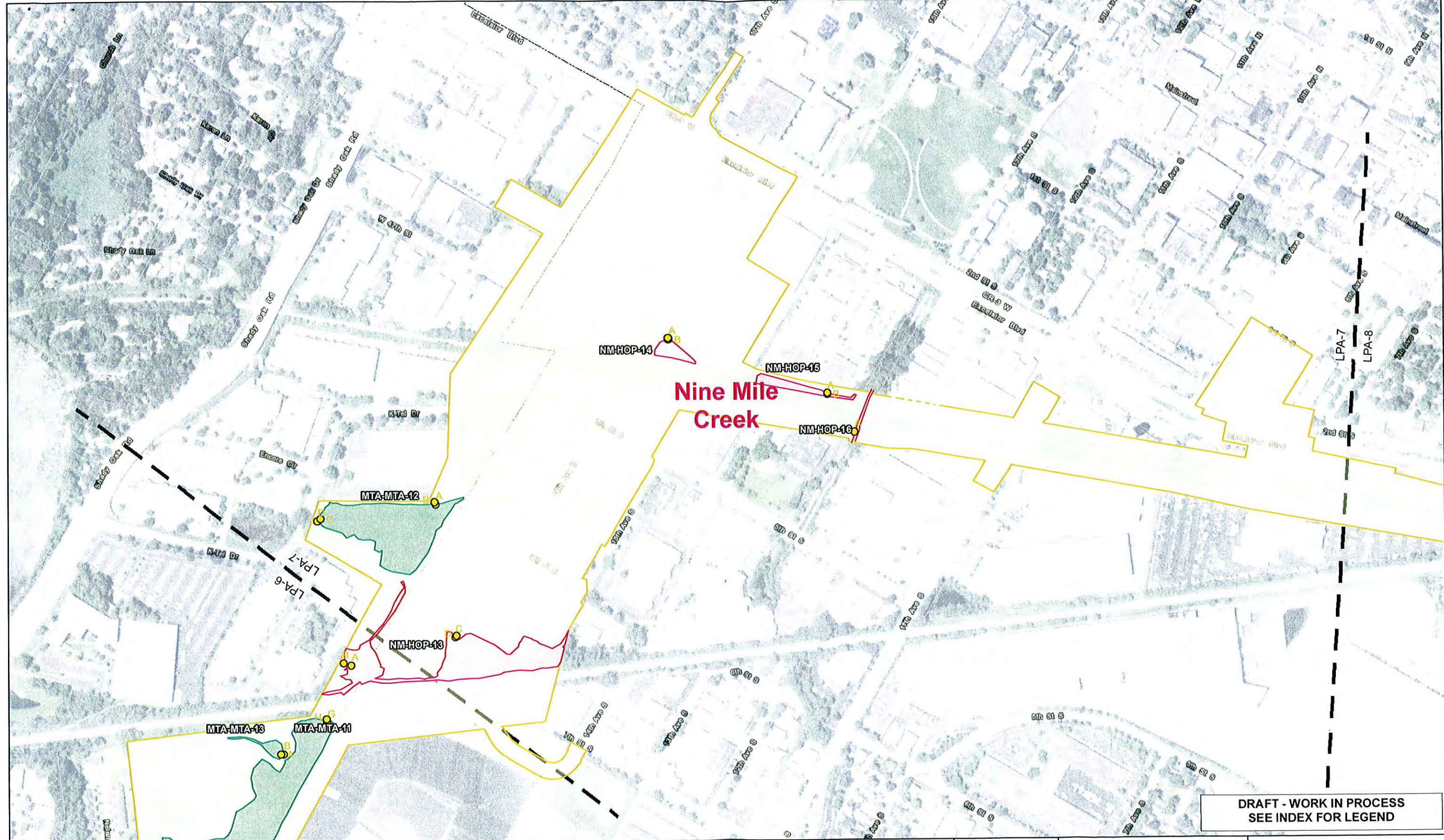
DRAFT - WORK IN PROCESS  
SEE INDEX FOR LEGEND

# SOUTHWEST LRT

2014 Wetland Delineation Supplement  
MapBook

LPA-6  
Rev 00.00  
10/2/2014  
Sheet 6 of 16



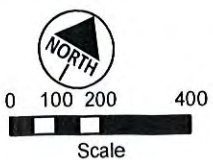


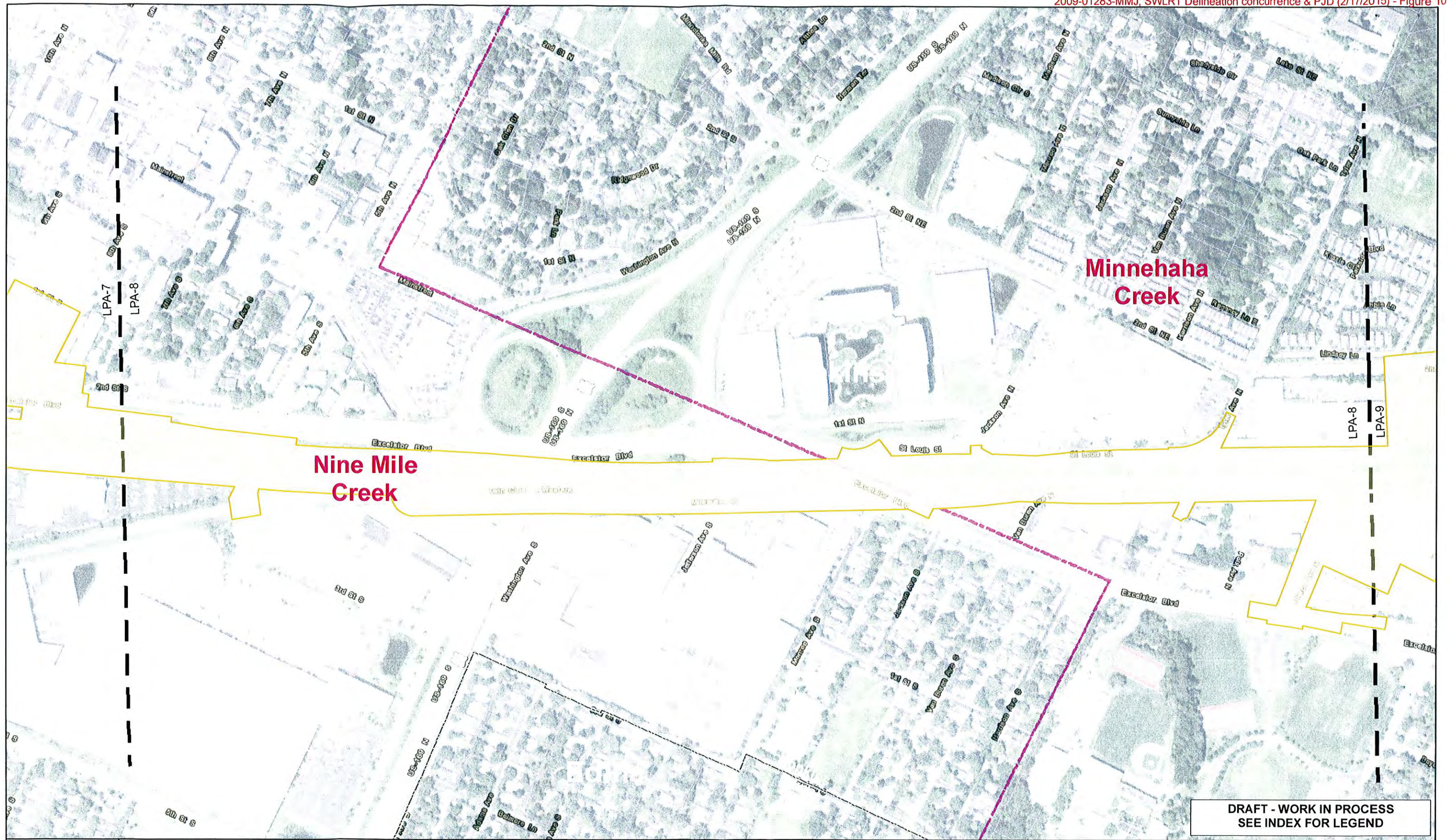
DRAFT - WORK IN PROCESS  
SEE INDEX FOR LEGEND

# SOUTHWEST LRT

2014 Wetland Delineation Supplement  
MapBook

LPA-7  
Rev 00.00  
10/2/2014  
Sheet 7 of 16





**Minnehaha  
Creek**

**Nine Mile  
Creek**

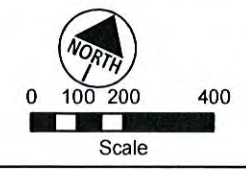
DRAFT - WORK IN PROCESS  
SEE INDEX FOR LEGEND



# SOUTHWEST LRT

2014 Wetland Delineation Supplement  
MapBook

LPA-8  
Rev 00.00  
10/2/2014  
Sheet 8 of 16





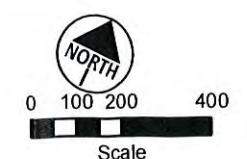


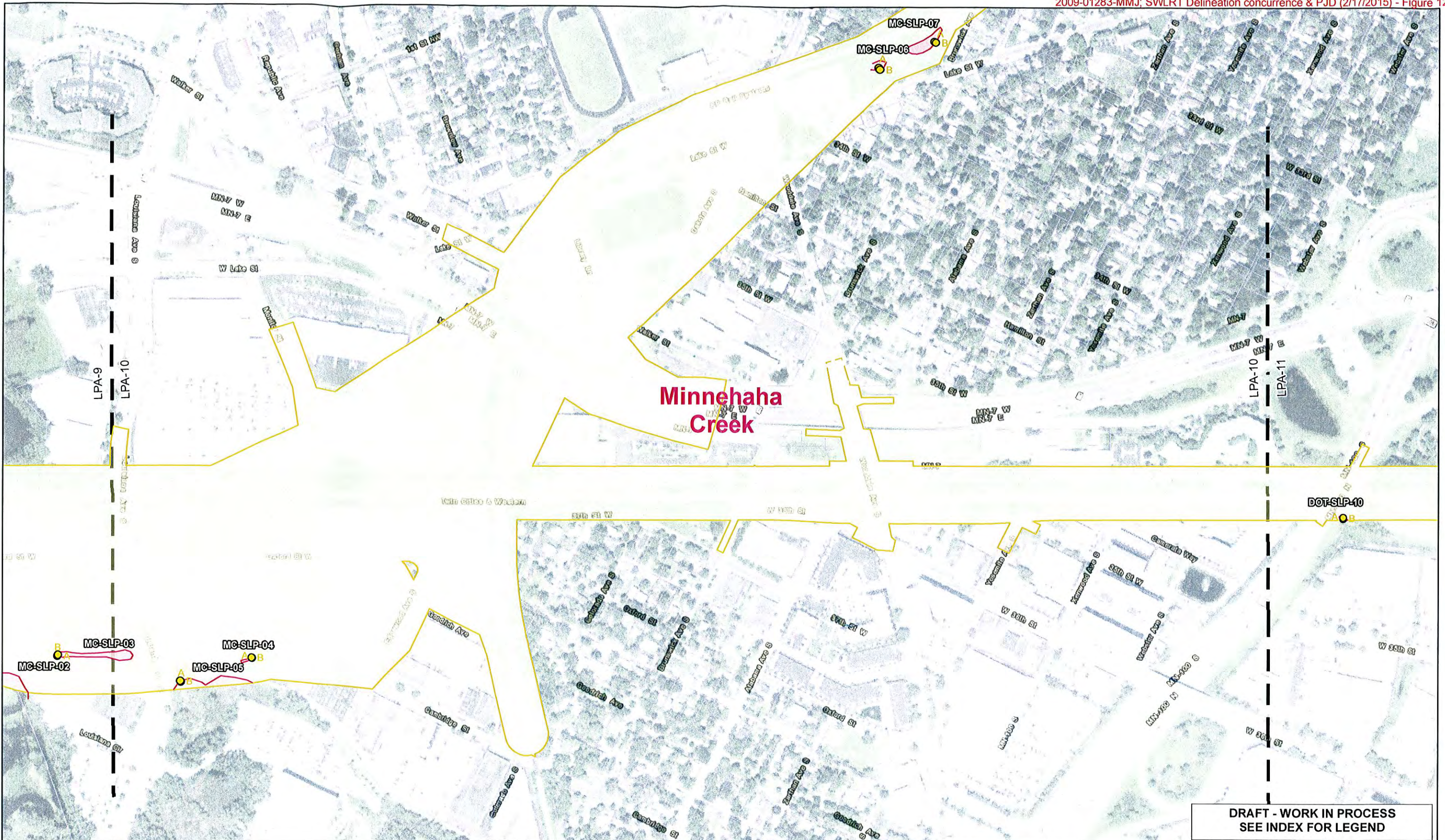
DRAFT - WORK IN PROCESS  
SEE INDEX FOR LEGEND

# SOUTHWEST LRT

2014 Wetland Delineation Supplement  
MapBook

LPA-9  
Rev 00.00  
10/2/2014  
Sheet 9 of 16



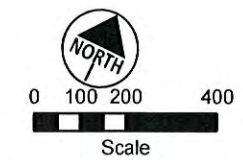


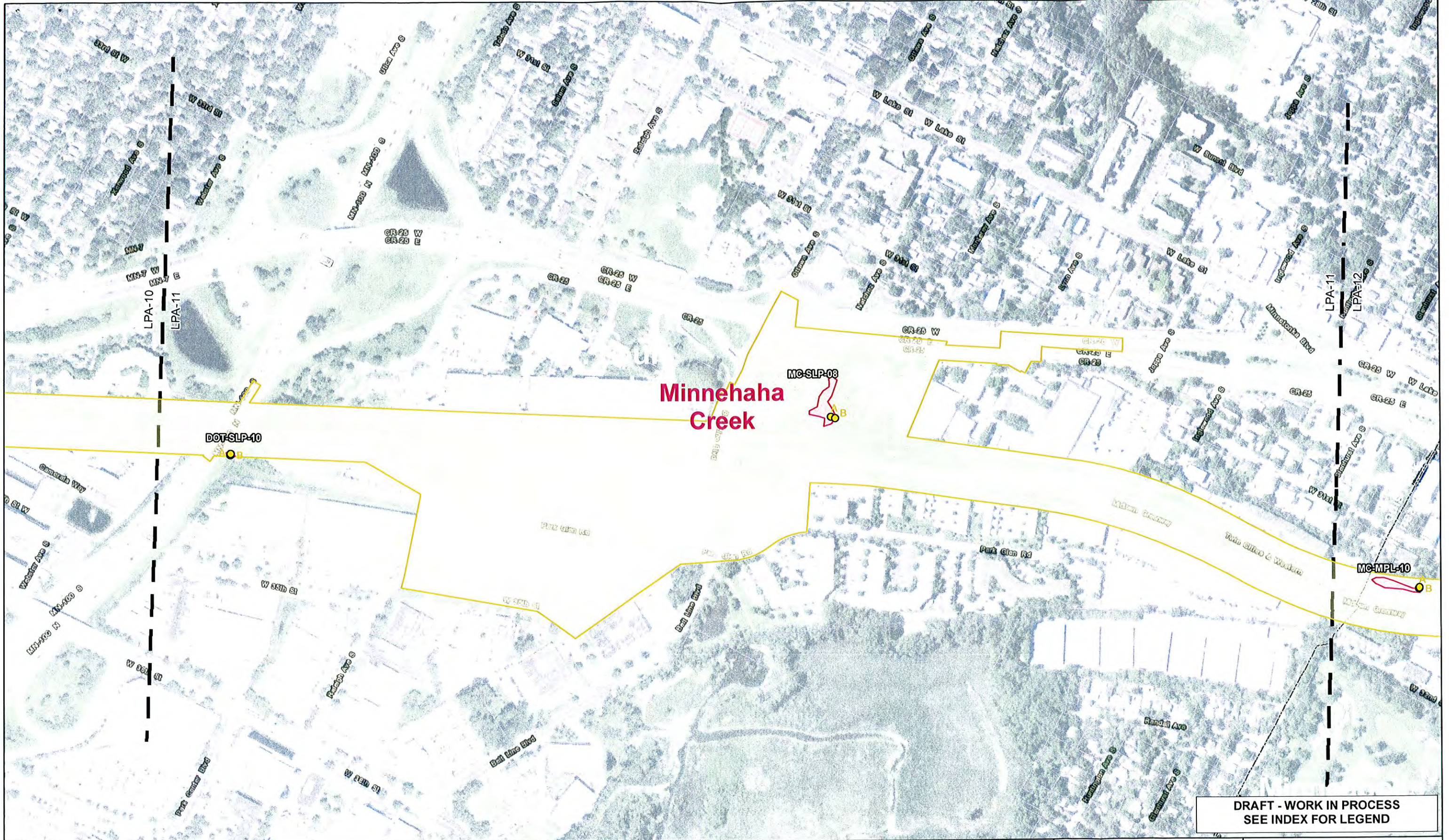
DRAFT - WORK IN PROCESS  
SEE INDEX FOR LEGEND

# SOUTHWEST LRT

2014 Wetland Delineation Supplement  
MapBook

LPA-10  
Rev 00.00  
10/2/2014  
Sheet 10 of 16





**Minnehaha  
Creek**

DOT-SLP-10

MC-SLP-03

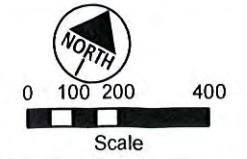
MC-MPL-10

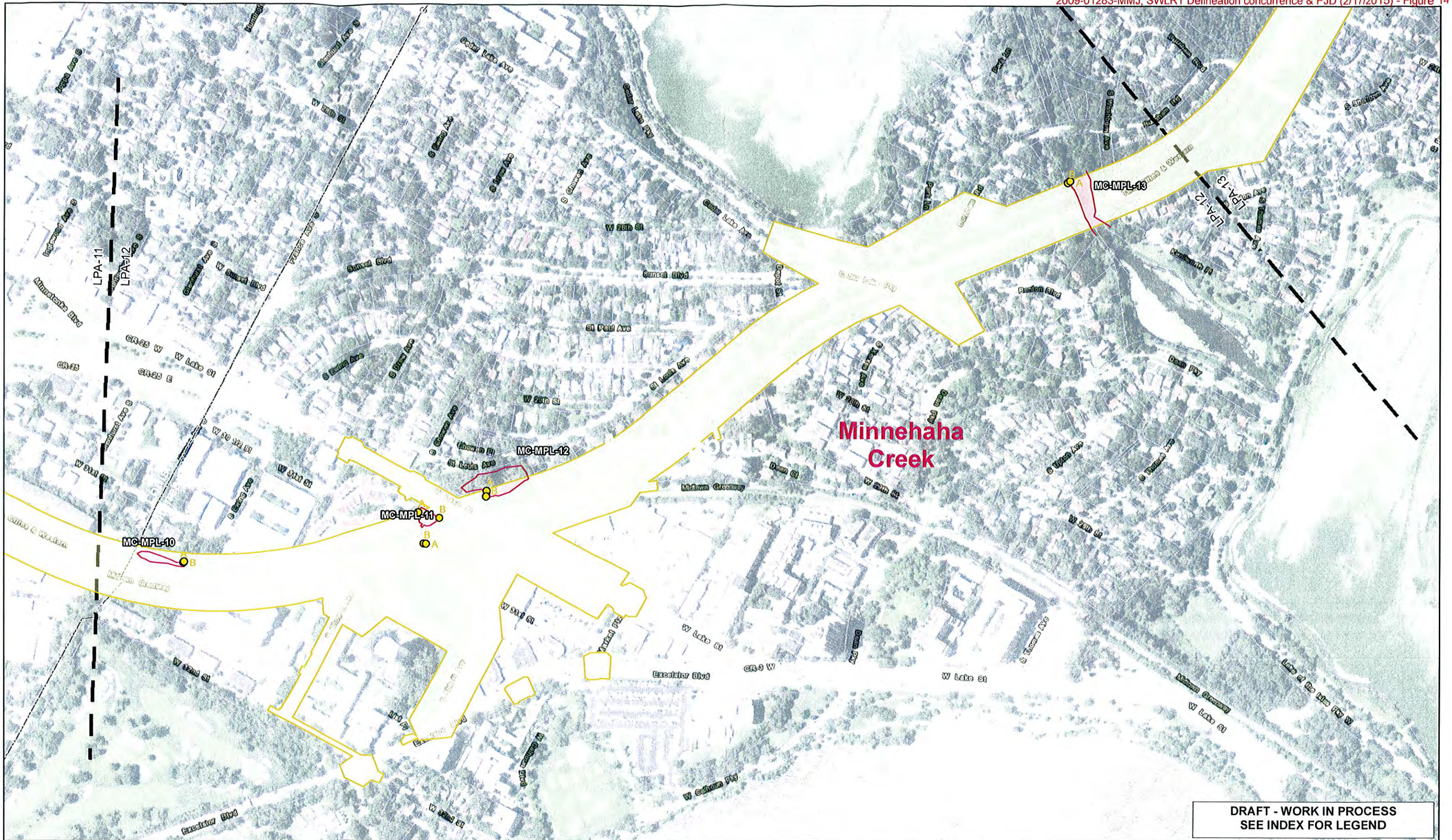
DRAFT - WORK IN PROCESS  
SEE INDEX FOR LEGEND

# SOUTHWEST LRT

2014 Wetland Delineation Supplement  
MapBook

LPA-11  
Rev 00.00  
10/2/2014  
Sheet 11 of 16





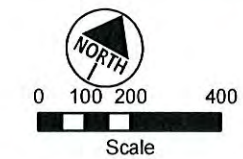
**Minnehaha  
Creek**

DRAFT - WORK IN PROCESS  
SEE INDEX FOR LEGEND

# SOUTHWEST LRT

2014 Wetland Delineation Supplement  
MapBook

LPA-12  
Rev 00.00  
10/2/2014  
Sheet 12 of 16

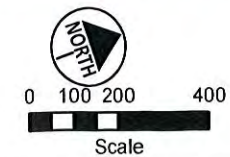


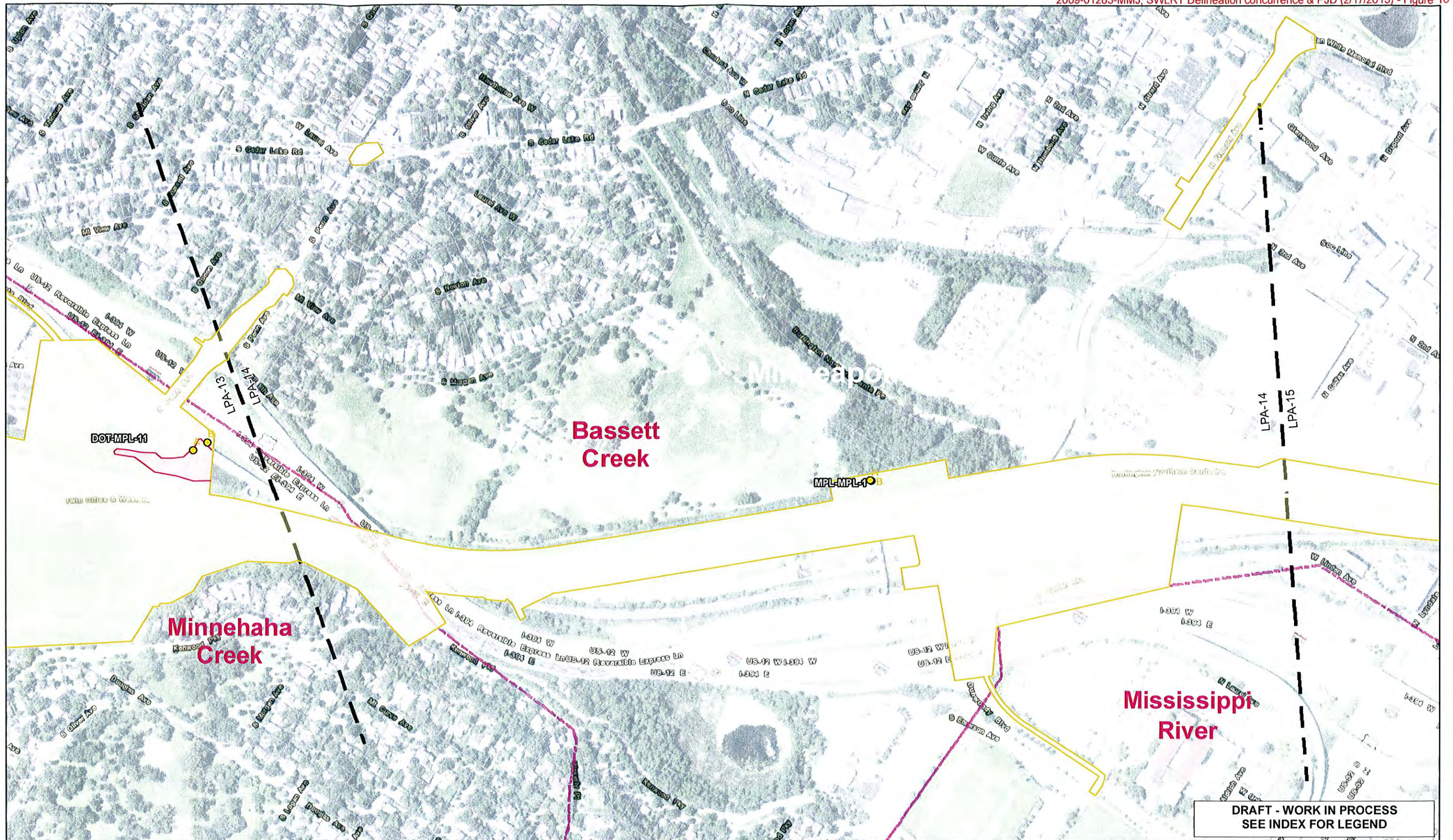


# SOUTHWEST LRT

2014 Wetland Delineation Supplement  
MapBook

LPA-13  
Rev 00.00  
10/2/2014  
Sheet 13 of 16





DRAFT - WORK IN PROCESS  
SEE INDEX FOR LEGEND







**Appendix F**  
**Development and Evaluation of Design Adjustments Since Publication of the**  
**Draft EIS**

---



## APPENDIX F

# Development and Evaluation of Design Adjustments Since Publication of the Draft EIS

---

This appendix provides a description of the development and evaluation of design adjustments to LRT 3A and LRT 3A-1 that occurred after the Draft Environmental Impact Statement (Draft EIS) was published in October 2012. In general, the design adjustment process was initiated in January 2013 after the close of the Draft EIS public comment period and concluded in April and July 2014 with the identification by the Council of the design adjustments to be incorporated into the LPA, including light rail and related design adjustments and freight rail modifications. The LPA includes double-tracked light rail line between Minneapolis and Eden Prairie with seventeen light rail stations and an Operations and Maintenance Facility (OMF). Under the LPA, the proposed light rail alignment would run through the Golden Triangle/Opus areas, to Hennepin County Regional Railroad Authority (HCRRA) property through Hopkins and St. Louis Park, then along the Kenilworth Corridor through Minneapolis to Royalston Station and connecting to Target Field Station. Two of the five build alternatives in the Draft EIS include the LPA (LRT 3A and LRT 3A-1). The transit improvements included in LRT 3A and LRT 3A-1 are coupled with the proposed relocation or co-location of TC&W freight trains currently operating along the Bass Lake Spur and Kenilworth Corridor. LRT 3A includes the proposed relocation of TC&W trains to the MN&S Spur and Wayzata Subdivision, while LRT 3A-1 includes the continued operations of TC&W freight trains currently operating along the Bass Lake Spur and Kenilworth Corridor.

This appendix provides the following: an overview of the design adjustment process to LRT 3A and LRT 3A-1, inclusive of the LPA; coordination activities that have occurred since publication of the Draft EIS; and a detailed review of the development and evaluation of light rail-related design adjustments and freight rail modifications since publication of the Draft EIS that could result in new significant impacts not addressed in the Draft EIS in the Eden Prairie Segment, for the proposed Hopkins Operations and Maintenance Facility (OMF), and in the St. Louis Park/Minneapolis Segment. This appendix includes the following sections:

- 1.0 Overview of the Design Adjustment Process
- 2.0 Coordination
- 3.0 Eden Prairie Segment
- 4.0 Potential Operations and Maintenance Facility Sites
- 5.0 St. Louis Park/Minneapolis Segment
- 6.0 Locally Requested Capital Investments

### 1.0 Overview of the Design Adjustment Process

This section summarizes the process used by the Council to identify design adjustments to the LRT 3A and LRT 3A-1 since the end of the Draft EIS public comment period on December 31, 2012. The project team developed and evaluated the design adjustments in response to comments submitted on the Draft EIS, including proposed adjustments to: accommodate local goals and objectives; improve the performance of the proposed light rail extension; reduce project costs; and avoid or minimize the project's adverse environmental impacts.

The project's ongoing engagement and communication with the affected public has been a fundamental element of planning for the Southwest LRT Project, including the design adjustment process implemented since completion of the Draft EIS public comment period. That general process and timeframe is illustrated in Exhibit F-1.

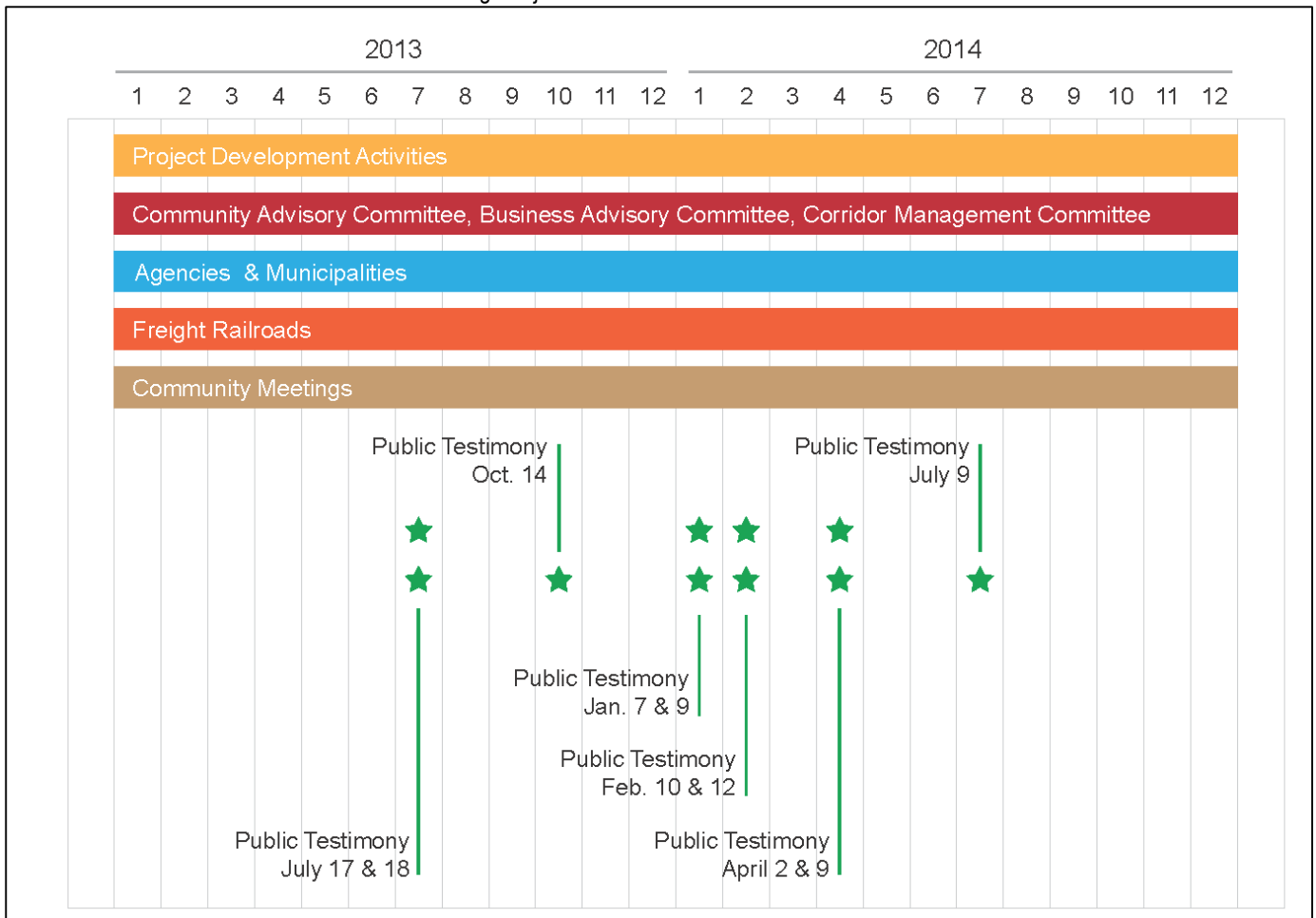
The design adjustment process implemented since completion of the Draft EIS was supported by the project's Technical Project Advisory Committee (TPAC), which is composed of staff from the Council's Southwest LRT Project Office, Hennepin County, MnDOT, the cities of Eden Prairie, Minnetonka, Hopkins, St. Louis Park, and Minneapolis, Three Rivers Park District, and the Council's Metro Transit Rail Operations

division. Community and business representatives serve on the project’s Business Advisory Committee (BAC) and Community Advisory Committee (CAC), which provide input and recommendations to the Corridor Management Committee (CMC), including design adjustments developed and evaluated since publication of the Draft EIS.

Since early 2013, the Council held approximately 20 public open houses and community meetings (see Chapter 4 of the Supplemental Draft EIS) and provided dozens of presentations at the request of various groups throughout the project corridor. Meetings with the public have been tailored to present information and solicit feedback on specific project issues. Chapter 4 of the Supplemental Draft EIS provides additional detail on the project’s public involvement process and activities since the end of the Draft EIS public comment period, and it provides additional information on the makeup of the CAC and BAC.

**EXHIBIT F-1**

Overview of Coordination Activities for SWLRT Design Adjustment Process



On March 31, 2014, Council staff released a draft recommendation of the design adjustments to be incorporated into the proposed project. Following receipt of public comment on those recommendations at its meeting on April 2, 2014, the CMC adopted a resolution recommending the design adjustments to be incorporated into the proposed project’s scope and budget. On April 9, 2014, the Council identified the adjustments to be incorporated into the proposed project. The Council’s action was based on its consideration of the technical analysis of the range of potential design adjustments to the proposed project, as summarized in Section 2.3 of this Supplemental Draft EIS. The Council also considered comments received from the public, agencies, jurisdictions, and committees within the project’s public involvement and agency coordination activities since the close of the Draft EIS public comment period, as summarized in Chapter 4 of this Supplemental Draft EIS, including public testimony received at its meeting on April 9, 2014. On July 9, 2014, the CMC considered additional design adjustments within the City of Minneapolis that were proposed

in a memorandum of understanding between the Council and the City of Minneapolis (see Appendix D, Sources and References Cited, for instructions on how to access the executed memorandum). The CMC endorsed the additional proposed design adjustments, which the Council subsequently approved on July 9, 2014.

## **2.0 Coordination**

This section provides a description of coordination activities that have occurred since publication of the Draft EIS. These activities helped to support the development and evaluation of design adjustments to LRT 3A and LRT 3A-1 described in Sections 3.0, 4.0, and 5.0 of this appendix, related to the Eden Prairie Segment, the Hopkins OMF, and the St. Louis Park/Minneapolis Segment.

### **2.1 Eden Prairie Segment**

The process used to develop and evaluate the light rail improvements described in Section 3.0 of this appendix included the following coordination activities:

- Various public involvement activities, as described in Chapter 4 of the Supplemental Draft EIS. As illustrated in Exhibit F-1, these activities spanned the entire length of the segment's design adjustment process and included the opportunity to submit comments via printed public comment cards. Opportunities to provide public testimony were also available (see Table 4.4-1 in Chapter 4 of this Supplemental Draft EIS).
- Coordination with the project's participating agencies, as described in Chapter 4 of the Supplemental Draft EIS.
- Approximately 20 project-sponsored meetings associated with the Council's technical issue resolution process described in Chapter 4 of the Supplemental Draft EIS. Those meetings included, at various times, staff and/or consultants from the Council, MnDOT, Hennepin County, the City of Eden Prairie, Riley Purgatory Bluff Creek Watershed District, and SouthWest Transit.

### **2.2 Hopkins OMF**

The process used to develop and evaluate the proposed location of the OMF described in Section 4.0 of this appendix included the following coordination activities:

- Various public involvement activities, as described in Chapter 4 of the Supplemental Draft EIS. As illustrated in Exhibit F-1, these activities spanned the entire length of the segment's design adjustment process and included the opportunity to submit comments via printed public comment cards. Opportunities to provide public testimony were also available (see Table 4.4-1 in Chapter 4 of the Supplemental Draft EIS).
- Coordination with the project's participating agencies, as described in Chapter 4 of the Supplemental Draft EIS.
- Approximately 25 project-sponsored meetings associated with the Council's technical issue resolution process described in Chapter 4 of the Supplemental Draft EIS. Those meetings included, at various times, staff and/or consultants from the Council, MnDOT, Hennepin County, and the cities of Eden Prairie, Minnetonka, Hopkins, St. Louis Park, and Minneapolis.

### **2.3 St. Louis Park/Minneapolis Segment**

The process used to develop and evaluate light rail improvements and freight rail modifications described in Section 3 of this appendix included the following coordination activities:

- Various public involvement activities, as described in Chapter 4 of the Supplemental Draft EIS. As illustrated in Exhibit F-1, these activities spanned the entire length of the segment's design adjustment process and included the opportunity to submit comments via printed public comment cards. Opportunities to provide public testimony were also available (see Table 4.4-1 in Chapter 4 of the Supplemental Draft EIS).

- Coordination with the project's participating agencies, as described in Chapter 4 of the Supplemental Draft EIS.
- Project-sponsored meetings associated with the Council's technical issue resolution process described in Chapter 4 of the Supplemental Draft EIS. Those meetings included, at various times, staff and/or consultants from the Metropolitan Council, MnDOT, Hennepin County, the cities of Hopkins, Minneapolis, St. Louis Park, the Three Rivers Parks District, the Minneapolis Park and Recreation Board, Xcel Energy, and TranSystems, and representatives from BNSF, CP, and TC&W freight railroads.
- Attendance of and, at times, public comment by representatives from one or more freight railroads and/or freight rail shippers at approximately 30 project-sponsored committee or public involvement meetings (as documented in Chapter 4 of the Supplemental Draft EIS and in Section 2.0 of this appendix, respectively) or at meetings held between project staff and consultants and freight railroad representatives.

### 3.0 Eden Prairie Segment

This section provides a summary of the design adjustments to the LPA in the Eden Prairie Segment that were developed and evaluated after publication of the Draft EIS. This section first provides background information on the light rail and related improvements in the segment that were evaluated in the Draft EIS. Second, this section provides a description of the range of design adjustments to the LPA considered by the Council within the Eden Prairie Segment and how those potential design adjustments were evaluated.

#### 3.1 Background

Four of the five light rail build alternatives evaluated in the Draft EIS (LRT 3A, LRT 3A-1, LRT 3C-1, and LRT 3C-2) included common proposed light rail and related improvements in Eden Prairie. Those alternatives, shown on Exhibit 2.2-1 and described in Section 2.2 of the Supplemental Draft EIS, included the following:

- **LRT Alignment:** The light rail alignment proposed within the Draft EIS within the Eden Prairie Segment extended east from a terminus just west of Mitchell Road, staying south of Highway 212 to the Southwest Station (cohabitated with the existing SouthWest Transit Center), and continuing east along Technology Drive to the intersection of Flying Cloud Drive and I-494.
- **LRT Stations:** The Draft EIS evaluated three proposed light rail stations in the Eden Prairie Segment, from west to east: (1) Mitchell Station, west of Mitchell Road and south of Highway 212, (2) Southwest Station, within the existing SouthWest Transit Center, and (3) Eden Prairie Town Center Station, on the south side of Technology Drive between Prairie Center and Flying Cloud drives.
- **LRT Park-and-ride Lots:** The Draft EIS proposed three park-and-ride lots within Eden Prairie: 400 surface and 400 structure spaces at Mitchell Station, 400 structured spaces at Southwest Station, and 650 structured spaces at Eden Prairie Town Center Station.

During the Draft EIS public comment period, the City of Eden Prairie asked the Council to investigate the feasibility of a more centrally located and walkable Eden Prairie Town Center Station that would provide better opportunities for transit-oriented development and redevelopment. The City noted that a station within walking distance of the Eden Prairie Center (a regional shopping mall) would help meet the City's long-term economic development goals and provide higher ridership due to its proximity to concentrations of existing and future employment and commercial activity centers. For similar reasons, the City also asked the Council to evaluate a location for the Mitchell Station that would be located south along Technology Drive, somewhere between Mitchell and Wallace Roads, additionally noting that this location for a park-and-ride lot may be better positioned to intercept automobile traffic coming from the west.

### 3.2 Design Adjustments Considered in the Eden Prairie Segment

Project staff developed a wide range of design adjustments to the LPA (see Table F.3-1 and F.3-2 and Exhibit F-2) intended to address comments received by the project from the City of Eden Prairie and others on the Draft EIS, and to help avoid or minimize adverse impacts, increase transit ridership and reduce project costs, while meeting the project's Purpose and Need (see Chapter 1 of the Supplemental Draft EIS).

**TABLE F.3-1**

Eden Prairie Segment – First- and Second-Step Adjustment Descriptions

First- and Second-Step Subsegment Adjustments	
<b>Western Terminus to Prairie Center Dr.</b>	
Draft EIS 3A	Mitchell Station would be on the west side of Mitchell Rd. and on the north side of the Eaton property. LRT alignment would follow the south side of Highway 212 east to Southwest Station.
5A	LRT alignment would be on the north side of Technology Dr. from Wallace Road to Mitchell Rd., turning south through private property bounded by Anderson Lakes Pkwy., Mitchell Rd., and Technology Dr., crossing Purgatory Creek on structure and passing between Flagship Corporate Center and Flagship Athletic Club facilities. Station on the north side of Anderson Lakes Pkwy. Could be aligned with a north-running or a center-running alignment adjustment on Singletree Ln., crossing Prairie Center Dr. on aerial structure.
8A	LRT alignment would be on the south side of Technology Drive from Wallace Road, crossing Purgatory Creek on the south side of Technology Dr. On south side of Technology Dr. adjacent to Purgatory Creek Park to Prairie Center Dr.
12A	LRT alignment would be on the north side of Technology Dr. from Wallace Rd. to future extension of Hiawatha St. then center-running along Technology Dr. to bus driveway at Southwest Station. At Purgatory Creek, the alignment would bridge over westbound Technology Dr. and remain on structure to cross the Southwest Station area just south of Southwest Transit Station parking garage. The structure would continue over to the east side of Prairie Center Dr. and connect to 21C.
18A	Same as 20A west of Purgatory Creek, turning south at Purgatory Creek (crossing on a structure) and passing between Flagship Corporate Center and Flagship Athletic Club facilities. Could be aligned with a north-running or center-running alignment on Singletree Ln., crossing Prairie Center Dr. on structure. Includes several station options along Technology Dr.
20A	Terminus station would be at Wallace Road. LRT alignment would run at-grade along north side of Technology Drive, switching to the south side of Technology Dr. at the west driveway at Eden Prairie City Center to the bus-only driveway at Southwest Station and cross Technology Dr. at-grade to Southwest Station.
23A	LRT alignment would be located on the north side of Technology Dr., from Wallace Rd. to future extension of Hiawatha St., and would turn north through privately owned commercial property to south side of Highway 212. The alignment would run along south side of Highway 212 to Southwest Station, similar to the Draft EIS.
26A	LRT alignment would be east-side-running along Wallace Rd. from Technology Dr. to Highway 212 and would turn east to follow the Draft EIS 3A alignment along south side to Highway 212 to Southwest Station.
<b>Prairie Center Dr. between Southwest Station and Singletree Ln.</b>	
2A	The alignment would be west-side-running along Prairie Center Dr., with an aerial crossing of Technology Dr. and crossing Prairie Center Drive near the Flagship Corporate Center to the bluff on the east side.
Draft EIS 3A	From Southwest Station, LRT alignment would follow the south side of Highway 212 eastbound off ramp and would cross under Prairie Center Dr. to south side of Technology Dr.
8A	LRT alignment would be west-side-running on Prairie Center Dr. (west) with either an at-grade or aerial crossing at Technology Dr. and either an at-grade or aerial crossing to the center of Singletree Ln. to connect to 24A.
8A1	Center-running LRT alignment along Prairie Center Dr. and center-running along Singletree Ln. (24A), to west-side-running along Prairie Center Dr. at new signal between Singletree Ln. and Technology Dr. At-grade crossing at Technology Dr.
21C	LRT alignment would be on the east side of Prairie Center Dr. (west) with either below-grade or aerial crossing at Technology Dr. continuing to the north side of Singletree Ln. (21C) or the center of Singletree Ln. (24A).
24A	LRT alignment would have an aerial crossing of Technology Dr. out of Southwest Station area, and be center-running on Prairie Center Dr. (west).
<b>Prairie Center Dr. to I-494</b>	
Draft EIS 3A	LRT alignment would follow the south side of Technology Dr. crossing several private driveways. The alignment would cross diagonally to north side of Technology Dr. at eastern access to Rosemount Emerson. The alignment would follow the north side of Technology Dr. to I-494 and would cross I-494 on an aerial structure.
1B	LRT alignment would cross Flying Cloud Dr. below-grade, and continue on the south side of West 78th St. and the center of Prairie Center Dr. (east). Would include a below-grade station option on east side of Flying Cloud Dr.

First- and Second-Step Subsegment Adjustments	
2A	Known as the "Comp Plan," the alignment would run between Costco and Bachman's on the bluff and between Rosemount Emerson and Brunswick Zone along Eden Rd., and would continue north along the west side of Flying Cloud Dr.
2A1	Alignment would be center-running or be on the north side of Singletree Ln. from Prairie Center Dr. (west) to an alignment following Glen Ln. Would include a connection into west-side-running on Flying Cloud Dr. north of Eden Rd.
2B	LRT alignment would follow alignment 2A between Prairie Center Dr. (west) and Flying Cloud Dr., crossing Flying Cloud Dr. at-grade and continuing along the south side of Leona Rd. and along the west side Prairie Center Dr. (east).
21C	LRT alignment on the north side of Singletree Ln., along west side of Flying Cloud Dr. Station on Singletree Ln. at Glen Ln.
24A	LRT alignment would be center-running along Singletree Ln. and either would cross to the north side at Eden Rd. intersection and would continue on the west side of Flying Cloud Dr. or continue across Flying Cloud Dr. to connect to 1B or 1A.
East of I-494	
Draft EIS 3A	From Technology Dr., LRT alignment would cross I-494, Flying Cloud Dr., and Viking Dr. on an aerial structure. To the north of Viking Dr., the alignment would follow the east side of Flying Cloud Dr. with at-grade crossing of Valley View Rd.
1A	From I-494, LRT alignment would run on the north side of Flying Cloud Dr. and would cross at-grade to south side at Viking Dr. Valley View Rd. crossing would be either at-grade or aerial.
1A2	From I-494, LRT alignment would run on the north side of Flying Cloud Dr. and would cross aerially at the intersection of Valley View Rd. and Flying Cloud Dr. to south side of Highway 212 entrance ramp.
1B	LRT alignment would be center-running along Prairie Center Dr. (east) and would cross Valley View Rd. at-grade at the intersection with Prairie Center Dr. (east) and Valley View Rd.
2B	LRT alignment would be on the west side Prairie Center Dr., crossing east at Viking Dr., crossing Valley View Rd. at-grade.
15A	LRT alignment would follow the I-494 ramp to eastbound Hwy 212 to the north of the Residence Inn and Hampton Inn along Hwy 212 right-of-way, crossing under the Valley View overpass of Highway 212 and beneath the ramps.

**TABLE F.3-2**

Eden Prairie Steps 1 and 2 Subsegments and Design Adjustments Considered

Subsegment <sup>a</sup> /Adjustment #	First Step	Second Step	Third Step Name (Supplemental Draft EIS Status)
<b>Western Terminus to Prairie Center Drive</b>			
3A	Retained	Dismissed	
12A	Dismissed		
5A	Dismissed		
20A	Retained	Retained	Technology Drive (retained)
18A	Dismissed		
8A	Dismissed		
23A	Retained	Retained	Highway 212 (dismissed)
26A	Retained	Dismissed	
<b>Prairie Center Drive between Southwest Station and Singletree Lane</b>			
3A	Retained	Dismissed	
24A	Retained	Retained	Singletree Lane <sup>b</sup> (dismissed)
21C	Dismissed		
2A	Retained	Retained	Comprehensive Plan <sup>b</sup> (retained)
8A	Retained	Dismissed	
8A1	Retained	Dismissed	
<b>Prairie Center Drive to I-494</b>			
3A	Retained	Dismissed	
2A	Retained	Retained	Comprehensive Plan <sup>b</sup> (retained)
21C	Dismissed		
24A	Retained	Retained	Singletree Lane <sup>b</sup> (dismissed)
1B	Dismissed		
2A1	Dismissed		



Subsegment <sup>a</sup> /Adjustment #	First Step	Second Step	Third Step Name (Supplemental Draft EIS Status)
2B	Dismissed		
East of I-494			
3A	Retained	Dismissed	
1A	Retained	Dismissed	
1A2	Retained	Retained	Retained
1B	Dismissed		
2B	Dismissed		
15A	Dismissed		

<sup>a</sup> The Steps 1 and 2 Western Terminus to Prairie Center Drive subsegment is equivalent to the Step 3 West subsegment. The other Steps 1 and 2 subsegments are equivalent to the Step 3 East subsegment.

<sup>b</sup> Steps 1 and 2 adjustments 2A and 24A in the Prairie Center Drive and Prairie Center Drive to I-494 subsegments were combined to form the Step 3 Comprehensive Plan and Singletree Lane alignment adjustments, respectively.

Source: The Council, January 2014. See Exhibit F-2 for an illustration of the design adjustments referenced in this table.

To meet those objectives, project staff implemented a three-step process for the Eden Prairie Segment to develop, evaluate, and receive stakeholder comment on a wide range of potential design adjustments to the LPA. Further, the stepwise process included a series of meetings with project staff, City of Eden Prairie and Hennepin County staff, and other stakeholders. The process also included presentations to and input from the TPAC, CAC, and BAC and presentations to and recommendations from the CMC (see Section 2.0 of this appendix for additional detail). In addition, the process included public meetings and open houses for the public to receive information and comment on the various design adjustments to the LPA under consideration. The results of the analysis within this three-step process, along with the committee recommendations and public comments received, informed the Council in April 2014 to identify the adjustments to this segment of the LPA that are evaluated further in the Supplemental Draft EIS.

### 3.2.1 First-Step Evaluation

In the first step of evaluating the alignment adjustment process, project staff developed, reviewed, and discussed a wide range of potential adjustments to the LPA with affected jurisdictions and the TPAC. The first step of evaluation divided the Eden Prairie Segment into four general subsegments, with each having between six and eight potential light rail alignment-related adjustments developed and evaluated (see Exhibit F-2 and Tables F.3-1 and F.3-2):<sup>1</sup>

- The western terminus to Prairie Center Drive (with eight potential adjustments)
- Prairie Center Drive between Southwest Station and Singletree Lane (with six potential adjustments)
- Prairie Center Drive to I-494 (with seven potential adjustments)
- East of I-494 (with six potential adjustments)

This range of design adjustments included consideration of an OMF site in part on the City of Eden Prairie's existing maintenance facility garage site, which is located along Technology Drive west of Mitchell Road. Some configurations of potential adjustments would have combined the OMF site in Eden Prairie with the Mitchell Station and park-and-ride lot.

During the first step of evaluation, the potential alignment adjustments were analyzed for possible impacts to right-of-way, automobile and truck traffic, on- and off-street parking supply, and wetlands and other environmental resources. This initial analysis focused on adjustments to the proposed light rail alignment, station locations, and park-and-ride lots. As a result of the first step of analysis, between three and five alignment adjustments within each subsegment advanced into the second step of the evaluation. Table F.3-3 provides a summary of the measures used to evaluate the potential first step of adjustments to the LPA. Table F.3-3 also notes which design adjustments were advanced into the second step for additional evaluation.

<sup>1</sup> Some potential design adjustments spanned two or more subsegments, while others were confined to one subsegment. The proposed light rail alignment and stations for the LPA as evaluated in LRT 3A and LRT 3A-1 of the Draft EIS were included and evaluated within each of the four subsegments and are accounted for within the number of adjustments in each subsegment.



**TABLE F.3-3**  
Eden Prairie Alignment Adjustment – First-Step Evaluation<sup>2</sup>

Subsegment	Status	Measures
<b>Western Terminus to Prairie Center Dr.</b>		
Draft EIS 3A	Retained	<ul style="list-style-type: none"> <li>EIS/LPA alignment carried into second-step evaluation without assessment in the first-step evaluation</li> </ul>
5A	Dismissed	<ul style="list-style-type: none"> <li>Parking: Property owner south of Technology Dr. not supportive of station on their property or shared parking</li> <li>Environmental: Environmental impacts and potential Section 4(f) impacts across Purgatory Creek</li> <li>Station: Would eliminate Southwest Station and replace it with a station on the north side of Anderson Lakes Pkwy just east of Mitchell Road, away from a major activity center.</li> </ul>
8A	Dismissed	<ul style="list-style-type: none"> <li>Right-of-Way: Access impacts along Technology Dr.</li> <li>Traffic: Impacts at the Prairie Center Dr./Technology Dr. intersection, and undesirable track geometry</li> <li>Environmental: Environmental impacts and potential Section 4(f) impacts across Purgatory Creek pond, Impacts on Purgatory Creek Recreational Area park</li> <li>Station: Precluded having Southwest Station and moved the station to the west on Technology Dr.</li> </ul>
12A	Dismissed	<ul style="list-style-type: none"> <li>Right-of-Way: <ul style="list-style-type: none"> <li>Property impacts on Southwest Station businesses and Southwest condos; disrupts functionality of the area</li> <li>Required roadway widening on both sides of Technology Dr.</li> <li>Deep excavation for removal and replacement of engineered fill (up to 45 feet)</li> <li>Numerous utility relocations</li> <li>Access impacts on Southwest Station condominiums</li> </ul> </li> <li>Environmental: Visual impacts on Southwest Station condominiums and Purgatory Creek Park due to elevated LRT alignment in Southwest Station area</li> </ul>
18A	Dismissed	<ul style="list-style-type: none"> <li>Right-of-Way: Requires closing the Bachman's/Watertower Apartments shared driveway</li> <li>Environmental: impacts and potential Section 4(f) impacts across Purgatory Creek</li> <li>Station: <ul style="list-style-type: none"> <li>Moves Southwest Station west on Technology Dr.</li> <li>Property owner south of Technology Dr. not supportive of station on their property or shared parking</li> <li>St. Andrews Church not supportive of a station and park-and-ride facility near its building</li> </ul> </li> </ul>
20A	Retained	<ul style="list-style-type: none"> <li>Right-of-Way: Fewer access impacts on Southwest Station condominiums than 12A</li> <li>Traffic: Less roadway reconstruction along Technology Dr. than center-running (12A)</li> <li>Environmental: Less visual impact on Southwest Station condominiums than 12A due to being at-grade through most of the Southwest Station area</li> </ul>
23A	Retained	<ul style="list-style-type: none"> <li>Station: Achieves City desire for station with improved access to Hwy 212 west based on Draft EIS alignment</li> </ul>
26A	Retained	<ul style="list-style-type: none"> <li>Right-of-Way: <ul style="list-style-type: none"> <li>Impacted property owner prefers this option over 23A</li> <li>Requires removal of one building on private property</li> </ul> </li> <li>Station: Achieves City desire for station with improved access to Hwy 212 west based on Draft EIS alignment</li> </ul>
<b>Prairie Center Dr. between Southwest Station and Singletree Ln.</b>		
Draft EIS 3A	Retained	<ul style="list-style-type: none"> <li>EIS/LPA alignment carried into second-step evaluation without assessment in the first-step evaluation</li> </ul>
2A	Retained	<ul style="list-style-type: none"> <li>Traffic: Minimum traffic impacts</li> </ul>
8A	Retained	<ul style="list-style-type: none"> <li>Traffic: Potential routing option to get to the west side of Prairie Center Dr. and to limit need for grade-separated crossing</li> </ul>
8A1	Retained	<ul style="list-style-type: none"> <li>Traffic: Potential routing option to get to the west side of Prairie Center Dr. and to limit need for grade-separated crossing</li> </ul>

<sup>2</sup> Throughout this appendix, "dismissed" means that a design adjustment was removed from further study at that time; "retained" means that a design adjustment was advanced into the next step of analysis for further study. Source for all tables is (Council, 2013/14), unless noted.

Subsegment	Status	Measures
21C	Dismissed	<ul style="list-style-type: none"> <li>Right-of-Way: Property impacts related to driveway impacts on the north side of Prairie Center Dr.</li> <li>Traffic: <ul style="list-style-type: none"> <li>Undesirable intersection and track configuration connecting to center-running on Singletree Ln.</li> <li>Traffic impacts and LRT signal delay at the Prairie Center Dr./Technology Dr. intersection</li> </ul> </li> </ul>
24A	Retained	<ul style="list-style-type: none"> <li>Traffic: Minimum traffic impacts</li> <li>Other: Requires partial reconstruction of Prairie Center Dr. (west)</li> </ul>
<b>Prairie Center Dr. to I-494</b>		
Draft EIS 3A	Retained	<ul style="list-style-type: none"> <li>EIS/LPA alignment carried into second-step evaluation without assessment in the first-step evaluation</li> </ul>
1B	Dismissed	<ul style="list-style-type: none"> <li>Right-of-Way: Property impacts</li> <li>Traffic: <ul style="list-style-type: none"> <li>Substantially higher LRT signal delays due to traffic and traffic signals on Prairie Center Dr. (east)</li> <li>Traffic impacts along Prairie Center Dr.</li> </ul> </li> <li>Station: <ul style="list-style-type: none"> <li>Below-grade station</li> <li>Eden Prairie Center owner not supportive of station on its property and sharing parking</li> </ul> </li> </ul>
2A	Retained	<ul style="list-style-type: none"> <li>Traffic: Minimum traffic impacts</li> <li>Other: Alignment as shown in City of Eden Prairie's adopted Comprehensive Plan</li> </ul>
2A1	Dismissed	<ul style="list-style-type: none"> <li>Right-of-Way: <ul style="list-style-type: none"> <li>Glen Lane-only access for businesses along Flying Cloud Dr.</li> <li>Insufficient right-of-way on Glen Lane for LRT, roadway, and pedestrian facilities</li> </ul> </li> <li>Station: Limits station location options to just in front of Brunswick</li> </ul>
2B	Dismissed	<ul style="list-style-type: none"> <li>Right-of-Way: Property impacts</li> <li>Traffic: <ul style="list-style-type: none"> <li>Substantially higher LRT signal delays from traffic and signals on Flying Cloud/Prairie Center Dr.</li> <li>Impacts on traffic crossing Flying Cloud Dr. and along Prairie Center Dr.</li> </ul> </li> </ul>
21C	Dismissed	<ul style="list-style-type: none"> <li>Right-of-Way: Access questions raised by Bachman's can be mitigated with full access from Prairie Center Dr. (west), but access concerns of the shared access with Watertower Apartments cannot be mitigated</li> <li>Other: <ul style="list-style-type: none"> <li>Maintains existing cross section of Singletree Ln. compared to 24A</li> <li>Less compatible with Eden Prairie's City Center walkability goals</li> </ul> </li> </ul>
24A	Retained	<ul style="list-style-type: none"> <li>Other: <ul style="list-style-type: none"> <li>More compatible with City's walkability goals than 21C; reduced cross section for Singletree Ln.</li> <li>Requires realignment of Glen Lane</li> </ul> </li> </ul>
<b>East of I-494</b>		
Draft EIS 3A	Retained	<ul style="list-style-type: none"> <li>EIS/LPA alignment carried into second-step evaluation without assessment in the first-step evaluation</li> </ul>
1A	Retained	<ul style="list-style-type: none"> <li>Traffic: North side of Flying Cloud Dr. has fewer impacts on utilities and traffic</li> <li>Other: More favorable crossing of I-494 than Draft EIS alignment (shorter bridge)</li> </ul>
1A2	Retained	<ul style="list-style-type: none"> <li>Traffic: <ul style="list-style-type: none"> <li>North side of Flying Cloud Dr. has fewer impacts on utilities and traffic</li> <li>Fewer traffic impacts than 1A</li> <li>Fewer LRT signal delays than 1A</li> </ul> </li> <li>Other: More favorable crossing of I-494 than Draft EIS alignment (shorter bridge)</li> </ul>
1B	Dismissed	<ul style="list-style-type: none"> <li>Right-of-Way: Property impacts</li> <li>Traffic: <ul style="list-style-type: none"> <li>Substantially higher LRT signal delays due to traffic and traffic signals on Prairie Center Dr. (east)</li> <li>Traffic impacts along Prairie Center Dr.</li> </ul> </li> <li>Environmental: Vibration impact concerns at Fox 9 Television</li> </ul>

Subsegment	Status	Measures
2B	Dismissed	<ul style="list-style-type: none"> <li>• Right-of-Way: Property impacts</li> <li>• Traffic: <ul style="list-style-type: none"> <li>— Substantially higher LRT signal delays due to traffic and traffic signals on Prairie Center Dr. (east)</li> <li>— Traffic impacts along Prairie Center Dr.</li> </ul> </li> <li>• Other: Need to lengthen the existing I-494 bridges over Prairie Center Dr. (east)</li> </ul>
15A	Dismissed	<ul style="list-style-type: none"> <li>• Traffic: Traffic impacts on the Valley View Rd. and Hwy 212 interchange during construction</li> <li>• Other: <ul style="list-style-type: none"> <li>— Need to lengthen the existing Valley View Rd. Bridge</li> <li>— Extensive retaining walls needed along Highway 212</li> </ul> </li> </ul>

### 3.2.2 Second-Step Evaluation

The second step of evaluating alignment adjustments in the Eden Prairie Segment included an in-depth traffic investigation, an assessment of property acquisitions and on- and off-street parking displacements, and input from local businesses and the public. Based on the second step of analysis and evaluation, the project team identified four proposed alignment adjustments in the Eden Prairie Segment to be further considered in the third step of evaluation. Table F.3-4 provides a summary of the measures used to evaluate the potential second-step adjustments to the LPA. Table F.3-4 also notes the four design adjustments that were advanced into the third step for additional evaluation.

**TABLE F.3-4**  
Eden Prairie Alignment Adjustment – Second-Step Evaluation

Subsegment	Status	Measures
<b>Western Terminus to Prairie Center Dr.</b>		
Draft EIS 3A	Dismissed	<ul style="list-style-type: none"> <li>• Environmental: Noise, vibration, and visual concerns at Southwest Station condominiums</li> <li>• Right-of-Way: Impacts on private property (right-of-way acquisition)</li> <li>• Traffic: Mitchell Station difficult to access from west where most park-and-ride (P&amp;R) trips would originate</li> <li>• Other: Modifications required to the Highway 5/212 ramps at Mitchell Rd.</li> <li>• Local Input: 20A preferred by stakeholders through committee process</li> </ul>
20A	Retained	<ul style="list-style-type: none"> <li>• Environmental: <ul style="list-style-type: none"> <li>— Fewer impacts on Southwest Station condos (noise, vibration, right-of-way) than 23A/26A</li> <li>— Potential floodplain concerns</li> </ul> </li> <li>• Local Input: Achieves City of Eden Prairie desire for a station with improved access to Highway 212 west</li> <li>• Traffic: LRT travel times and ridership not substantially different from other alternative segments</li> </ul>
23A	Retained	<ul style="list-style-type: none"> <li>• Environmental: <ul style="list-style-type: none"> <li>• Noise, vibration, and visual concerns to Southwest Station condominiums</li> </ul> </li> <li>• Right-of-Way: Impacts on private property (bisection of Eaton Property)</li> <li>• Other Modifications required to the Highway 5/212 ramps at Mitchell Rd.</li> <li>• Local Input: 20A preferred by stakeholders through committee process</li> </ul>
26A	Dismissed	<ul style="list-style-type: none"> <li>• Local Input: Achieves City desire for centralized station with improved access to Highway 212 west</li> <li>• Right-of-Way: Requires removal of one building on private property</li> </ul>
<b>Prairie Center Dr. Between Southwest Station and Singletree Ln.</b>		
Draft EIS 3A	Dismissed	<ul style="list-style-type: none"> <li>• Local Input: <ul style="list-style-type: none"> <li>— Located beyond the core of the Eden Prairie City Center area</li> <li>— Does not adequately serve City-identified areas of potential growth</li> </ul> </li> <li>• Other: <ul style="list-style-type: none"> <li>— Limited transit-oriented development opportunities</li> <li>— Generates least number of LRT-projected riders</li> <li>— Limited pedestrian connectivity to Eden Prairie Center</li> <li>— Conflicts with power transmission lines</li> <li>— Substantial construction impacts due to tunnel construction</li> </ul> </li> </ul>

Subsegment	Status	Measures
2A	Retained	<ul style="list-style-type: none"> <li>• Traffic: Minimal traffic impacts</li> <li>• Other: LRT travel times and ridership not substantially different from other alternative segments</li> <li>• Right-of-Way: Fewer property and roadway impacts than 24A</li> <li>• Local Input: 2A preferred by stakeholders and public through committee process</li> </ul>
8A	Dismissed	<ul style="list-style-type: none"> <li>• Traffic: Traffic/LRT delay crossing Singletree Ln./Prairie Center Dr. intersection at-grade</li> <li>• Other: Dismissed in favor of center-running on Prairie Center Dr. (8A1)</li> <li>• Right-of-Way: Driveway impacts on Flagship Athletic Club</li> </ul>
8A1	Dismissed	<ul style="list-style-type: none"> <li>• Other: Requires partial reconstruction of Prairie Center Dr. (west)</li> <li>• Traffic: Substantial traffic impacts on Prairie Center Dr. at Singletree Ln. and Technology Dr.</li> </ul>
24A	Retained	<ul style="list-style-type: none"> <li>• Traffic: More temporary/construction traffic impacts than 2A; reconstruction of Prairie Center Dr.</li> <li>• Right-of-Way: More property impacts than 2A</li> <li>• Other: Below-grade separation at Technology Dr., concerns about high groundwater level</li> <li>• Local Input: 2A preferred by stakeholders and public through committee process</li> </ul>
<b>Prairie Center Dr. to I-494</b>		
Draft EIS 3A	Dismissed	<ul style="list-style-type: none"> <li>• Local Input: <ul style="list-style-type: none"> <li>— Located beyond the core of the Eden Prairie City Center area</li> <li>— Does not adequately serve City-identified areas of potential growth</li> </ul> </li> <li>• Other: <ul style="list-style-type: none"> <li>— Limited transit-oriented development opportunities</li> <li>— Generates least number of LRT projected riders</li> <li>— Limited pedestrian connectivity to Eden Prairie Center</li> <li>— Conflicts with power transmission lines</li> <li>— Construction impacts due to tunnel construction</li> </ul> </li> </ul>
2A	Retained	<ul style="list-style-type: none"> <li>• Traffic: Minimum traffic impacts</li> <li>• Right-of-Way: Fewer property and roadway impacts than 24A</li> <li>• Other: <ul style="list-style-type: none"> <li>— Compatible with Eden Prairie's City Center walkability goals</li> <li>— LRT travel times and ridership not substantially different from other alternative segments</li> </ul> </li> <li>• Local Input: 2A preferred by stakeholders and public through committee process</li> </ul>
24A	Retained	<ul style="list-style-type: none"> <li>• Local Input: <ul style="list-style-type: none"> <li>— More compatible with Eden Prairie's City Center walkability goals than 2A but requires a reduced cross section of Singletree Ln.</li> <li>— 2A preferred by stakeholders and public through committee process</li> </ul> </li> <li>• Right-of-Way: <ul style="list-style-type: none"> <li>— Access concerns to businesses during construction</li> <li>— Requires higher number of property impacts than 2A</li> </ul> </li> <li>• Other: Requires reconstruction of Singletree Ln.</li> </ul>
Draft EIS 3A	Dismissed	<ul style="list-style-type: none"> <li>• Environment: <ul style="list-style-type: none"> <li>— Substantial structure over I-494 and Flying Cloud Dr.</li> <li>— Aerial structure has high visual impact on businesses</li> <li>— Conflicts with power transmission lines</li> </ul> </li> <li>• Traffic: <ul style="list-style-type: none"> <li>— More traffic impacts at Valley View Rd. than 1A2</li> </ul> </li> <li>• More LRT signal delay at Valley View Rd. than 1A2</li> </ul>
1A	Dismissed	<ul style="list-style-type: none"> <li>• Traffic: <ul style="list-style-type: none"> <li>— More traffic impacts than 1A2</li> <li>— More LRT signal delay than 1A2</li> </ul> </li> <li>• Environment: Aerial structure has high visual impact on businesses</li> </ul>
1A2	Retained	<ul style="list-style-type: none"> <li>• Traffic: <ul style="list-style-type: none"> <li>— Fewer traffic impacts than 1A</li> <li>— Fewer LRT signal delay than 1A</li> </ul> </li> <li>• Other: <ul style="list-style-type: none"> <li>— Aerial structure has fewer visual impacts</li> <li>— LRT ridership not substantially different from other alternative segments</li> </ul> </li> <li>• Environment: Noise and vibration concerns to existing businesses (Residence Inn and other hotels)</li> </ul>

### 3.2.3 Third-Step Evaluation

For the third-step evaluation, the Eden Prairie Segment was divided into two subsegments that were different than the subsegments used in the first two steps: West (west of the existing SouthWest Transit Center) and East (east of the existing SouthWest Transit Center) (see Exhibit F-3). Two potential alignment adjustments were evaluated in each of the two subsegments. Either West alignment could be paired with either East adjustment (resulting in four possible combinations): Technology Drive and Highway 212 alignment adjustments in the West subsegment and the Singletree Lane and Comprehensive Plan alignments in the East subsegment, shown on Exhibit F-3. Each alignment adjustment had two or more variations, addressing possible station locations, roadway treatments, park-and-ride lot locations, and accommodation of an OMF. None of the third-step alignment adjustments were evaluated in the Draft EIS, although the proposed location of the Southwest Station would be in a similar location as proposed in the Draft EIS and in the third-step evaluation of design adjustments. The third-step evaluation addressed a range of measures related to cost, transit travel times and ridership, wetland, floodplain, existing land use near proposed station areas, and various other measures (see Table F.3-5).

### 3.2.4 Conclusion

Table F.3-5 provides a summary of the criteria and measures used to evaluate the potential third step of adjustments to the LPA. Based on the analysis documented in this appendix and through the agency coordination and public involvement process described in this appendix, in April 2014 the Council identified the following adjustments to be incorporated into the LPA:

- Combined with both the Comprehensive Plan and Singletree Lane alignments. Retaining the Technology Drive alignment in the West subsegment, which moves the western terminus station from immediately south of Highway 212 west of Mitchell Road to immediately south of Technology Drive west of Mitchell Road
- Retain the Comprehensive Plan alignment adjustment in the East subsegment and dismissing the Singletree Lane alignment adjustment

In summary, in the West subsegment, the Technology Drive alignment would provide better placement of the Mitchell Station relative to existing and planned development. In the East subsegment, relative to the Singletree alignment, the Comprehensive Plan alignment adjustment would result in fewer potential traffic conflicts and fewer property acquisitions and business displacements.

The LPA, as evaluated in the Supplemental Draft EIS, reflects the inclusion of the project's western terminus at Mitchell Station by way of Technology Drive and the Comprehensive Plan alignment (see Exhibit F-3). Other potential design adjustments developed and evaluated in this section were removed from further study.

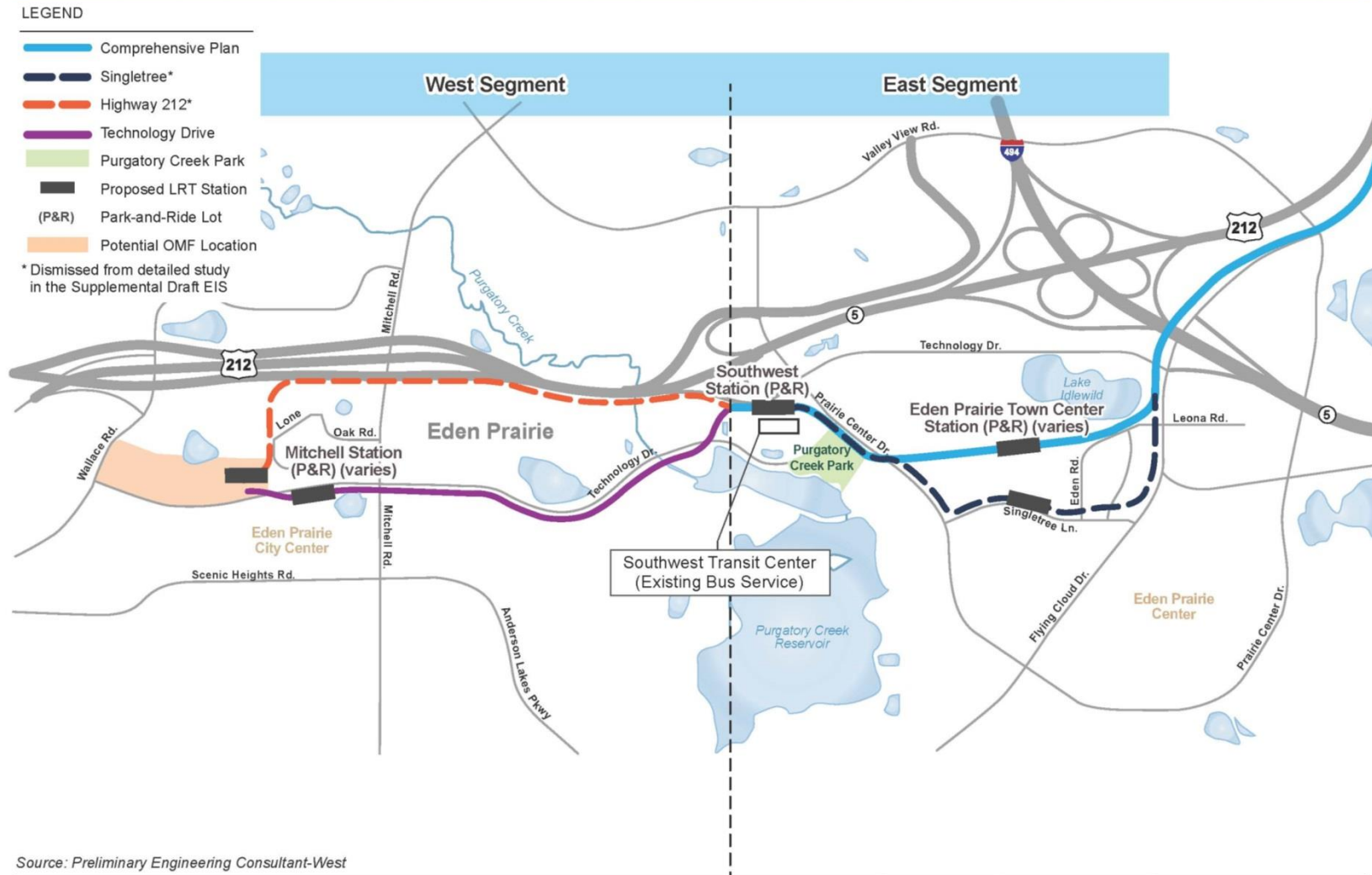
## 4.0 Potential Operations and Maintenance Facility Sites

This section provides a summary of the range of potential OMF sites that were developed and evaluated after publication of the Draft EIS. This section first provides background information on OMF sites that were addressed for the Draft EIS and provides a description of the wide range of OMF sites considered after the Draft EIS and how those potential OMF sites were evaluated. The *Draft Operations and Maintenance Facility Site Selection TI # 23* (AECOM/Kimley-Horn and Associates, 2013) provides additional detail on the evaluation of OMF sites that occurred following the Draft EIS.


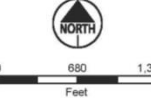

### 4.1 Background

As noted in the Draft EIS, the light rail alternatives would need an OMF for light vehicle maintenance, running repairs for the light rail vehicles, and storage of vehicles not in service. In general, light rail vehicles would be cleaned and repaired daily inside and outside and the vehicles would be inspected and serviced to ensure operational safety and reliability. Features and functions needed at the OMF are identified in Section 2.3.3.9 of the Draft EIS. The OMF would be designed and configured to store 30 light rail vehicles, sufficient to support Southwest LRT operations through 2030. Positioning an OMF in an efficient location along the proposed rail line is important in minimizing nonrevenue mileage traveled by trains, providing operator access, and providing for adjustments to train lengths during different periods of the day.

**EXHIBIT F-3**  
Third Step LRT Alignment Adjustments Evaluated in the Supplemental Draft EIS - Eden Prairie Segment



Source: Preliminary Engineering Consultant-West

	<p><b>Southwest LRT Supplemental Draft EIS</b> Third Step LRT Alignment Adjustments Evaluated in the Supplemental Draft EIS Eden Prairie Segment</p>	<p>Exhibit F-3</p>		
-------------------------------------------------------------------------------------	--------------------------------------------------------------------------------------------------------------------------------------------------------------	--------------------	---------------------------------------------------------------------------------------	---------------------------------------------------------------------------------------



**TABLE F.3-5**  
Eden Prairie Alignment Adjustment – Third-Step Evaluation

Criteria/Measures	Draft EIS <sup>a</sup>	OPTION 1	OPTION 2	OPTION 3	OPTION 4
	Draft EIS LPA - Mitchell Rd. Station Terminal	Technology Dr./ Singletree Ln.	Highway 212/ Singletree Ln.	Technology Dr./ Comprehensive Plan	Highway 212/ Comprehensive Plan
Alignment Description <sup>b</sup>	Draft EIS 3A	20A-24A-1A2	23A-24A-1A2	20A-2A-1A2	23A-2A-1A2
Western Terminus Station	Mitchell Rd.	Wallace Rd.	Wallace Rd.	Mitchell Road at City Center <sup>c</sup>	Wallace Rd.
<b>Capital Cost and Key Capital Cost Drivers</b>					
Capital Cost (millions) <sup>d</sup>	\$234.9	\$276.8	\$274.9	\$270.4	\$286.4
Total Park and Ride Spaces in Segment	1,450 structured 400 surface	950 structured 160 surface	950 structured 160 surface	1380 structured 160 surface	950 structured 160 surface
Mitchell Station	800 spaces (400 structured 400 surface)	950 structured	950 structured	900 structured	950 structured
Southwest Station	1,325 structured <sup>e</sup> (924 existing) (400 ramp)	924 structured (existing; bus + LRT); assumes sharing of existing ramp by SouthWest Transit and Southwest LRT	924 structured (existing; bus + LRT); assumes sharing of existing ramp by SouthWest Transit and Southwest LRT	480 new structured; 440 for LRT demand and 40 to replace existing impacted spaces	924 structured (existing; bus + LRT); assumes sharing of existing ramp by SouthWest Transit and Southwest LRT
Eden Prairie Town Center Station	650 structured	160 surface	160 surface	160 surface	160 surface
Right-of-way Impacts <sup>e</sup>	1 full 13 partial	2 full 28 partial	2 full 27 partial	2 full 20 partial	2 full 21 partial
Substantial Utility Impacts	Overhead high-voltage utilities near Town Center Station (east-west and north-south direction); immediately adjacent to Eden Prairie water treatment plant	None	Immediately adjacent to Eden Prairie water treatment plant	Water mains, sewer and gas mains run parallel to, beneath, or cross alignment	Immediately adjacent to Eden Prairie water treatment plant
<b>Transit Travel Time Differences</b>					
Number of Signalized Intersections LRT Runs Through (existing and new)	3	11	9	7	6
Change in LRT Travel Time from Draft EIS LPA (minutes) <sup>f</sup>	0.0	4.9 minutes	4.8 minutes	3.4 minutes	3.8 minutes
LRT Length (miles) - from 1,000 Feet East of Valley View	2.6 miles	3.3 miles	3.5 miles	2.8 miles	3.3 miles
<b>Transit Ridership Differences</b>					
Change in Daily Ridership (2030) from Draft EIS LPA	0	410	410	410	410
Change in Transit Dependent Riders (Year 2030) from Draft EIS LPA	0	90	90	90	90

Criteria/Measures	Draft EIS <sup>a</sup>	OPTION 1	OPTION 2	OPTION 3	OPTION 4
	Draft EIS LPA - Mitchell Rd. Station Terminal	Technology Dr./ Singletree Ln.	Highway 212/ Singletree Ln.	Technology Dr./ Comprehensive Plan	Highway 212/ Comprehensive Plan
<b>Environmental Considerations</b>					
Potential Wetland Impacts <sup>g</sup>	+0.7 acres	+2.2 acres	+0.7 acres	+2.2 acres	+0.7 acres
Potential FEMA Floodplain Impacts	0 cubic yards	60 – 2000 cubic yards	0 cubic yards	60 – 2000 cubic yards	0 cubic yards
<b>Other Factors</b>					
Construction Impacts	PCD/Technology Dr. intersection/tunnel, Technology Dr. businesses	Singletree Ln. businesses, Flying Cloud Dr.	Singletree Ln. businesses, Flying Cloud Dr.	Eden Rd. businesses, Flying Cloud Dr.	Eden Rd. businesses, Flying Cloud Dr.
Traffic Impacts (Year 2030) (Unmitigated)	Flying Cloud Dr./Valley View	Technology Dr./ Flying Cloud Dr.	Technology Dr./ Flying Cloud Dr.	Technology Dr./ Flying Cloud Dr.	Technology Dr./ Flying Cloud Dr.
Intersections at Level of Service E/F due to LRT (without mitigation)		Mitchell Rd./ Technology Dr.	Mitchell/TH 5 ramps	Mitchell Rd./ Technology Dr.	Mitchell Rd./ Technology Dr. Mitchell/TH 5 ramps
Walkability at Eden Prairie City Center Station	Poor	Very Good	Very Good	Good	Good
<b>Existing Land Use – Within 0.5 Mile of Eden Prairie City Center Station</b>					
Population	697	1467	1,467	1,350	1,350
Housing Units	474	887	887	841	841
Employment	4,422	7,551	7,551	6,195	6,195
<b>Existing Land Use – Within 0.5 Mile of Mitchell Station</b>					
Population	279	606	606	606	606
Housing Units	132	221	221	221	221
Employment	2,442	2,124	2,124	2,124	2,124
Status	Dismissed	Dismissed	Dismissed	Retained	Dismissed

<sup>a</sup> Dismissed from further study in the second step; characteristics are provided for comparison only.

<sup>b</sup> Options represent combinations of light rail alignments and stations illustrated on Exhibit F-2.

<sup>c</sup> Also evaluated with a Wallace Road terminus.

<sup>d</sup> Capital costs are expressed in year-of-expenditure dollars and include allocated and unallocated contingencies and design costs.

<sup>e</sup> Does not include displacements due to improvements to Mitchell Road.

<sup>f</sup> The traffic analysis in the Draft EIS was based on proposed light rail preemption at traffic signals, which would result in no delay for light rail vehicles, but that could lead to unacceptable levels of service at some local roadway intersections preempted by light rail. In the current analysis, the LRT delay will vary by treatment at each affected intersection.

<sup>g</sup> Based on initial assessment, refined at a later date.

The following OMF site characteristics were used in the Draft EIS evaluation (see Appendix H of the Draft EIS):

- Approximately 10- to 15-acre site to store at least 30 light rail vehicles through 2030, with the ability to expand to accommodate up to 36 vehicles, and to conduct maintenance activities
- Rectangular shape, generally three times longer than wide
- Ability to move trains into and out of both ends of the facility
- Adjacent to a straight and relatively flat section (a grade equal to or less than 1 percent) of mainline track to accommodate turnouts and crossovers

- Good roadway access for equipment and employees

In addition, the Draft EIS identified the following preferred characteristics of an OMF:

- Compatibility with adjacent current and planned land uses
- Land zoned industrial, light industrial, or both
- Undeveloped property to minimize acquisition and relocation costs
- Public land
- Preferred location near one end of line to minimize deadheading of empty vehicles

The Draft EIS identified 14 sites that satisfied the project's requirements for an OMF. Of those 14 sites, four were carried forward into the Draft EIS for more detailed study. Appendix H (Part 1) of the Draft EIS summarizes the evaluation of the 14 OMF sites and the identification of four sites for inclusion in the Draft EIS. Section 2.3.3.9 of the Draft EIS contains brief descriptions of the four sites evaluated; these sites are numbered west to east in the Supplemental Draft EIS: EP-1, EP-2, EP-3, and M-4. The locations of these four potential sites are illustrated on Exhibit F-4. The Draft EIS did not identify a preferred OMF site.

#### **4.2 Operations and Maintenance Facility Sites Considered after Publication of the Draft Environmental Impact Statement**

Following publication of the Draft EIS, the Council determined that selecting the proposed project's OMF site—one that accommodates its functional and spatial needs and is compatible with surrounding uses—would require additional site identification and evaluation to build upon and complement the studies conducted during the Draft EIS phase.

The project team used a four-step process to identify and evaluate the expanded range of OMF sites. The process entailed the following steps of development and evaluation:

- **First-Step Evaluation.** A preliminary site evaluation, narrowing potential sites from approximately 30 to 18.
- **Second-Step Evaluation.** A detailed assessment based on 13 criteria, narrowing from 18 to seven OMF sites.
- **Third-Step Evaluation.** An operational analysis and public and jurisdiction review and input, narrowing from seven to two sites.
- **Fourth-Step Evaluation.** A detailed assessment and public and jurisdictional review of two sites.

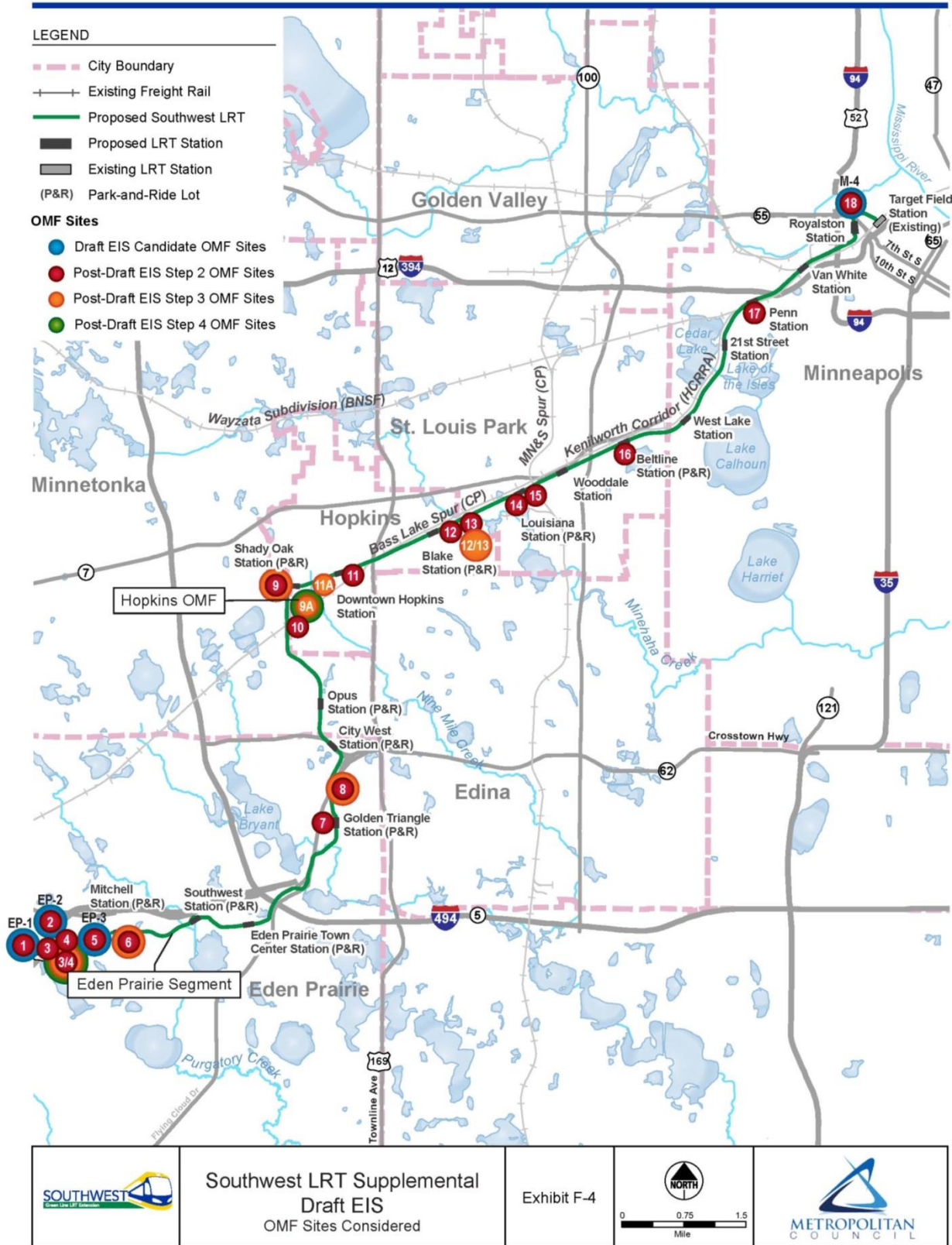
Throughout the OMF development and evaluation process, the project team coordinated with the project's business, community, and technical committees and with the general public to obtain a wide range of stakeholder views on the OMF sites (see Section 2.0 of this appendix for additional detail). Exhibit F-4 illustrates the potential OMF sites evaluated through this four-step process.

##### **4.2.1 First-Step Evaluation**

As the first step in expanding upon the OMF site search conducted for the Draft EIS, the project team conducted a preliminary site identification process. Within that process, project staff reviewed aerial photographs to understand land use patterns, parcels, the physical context, and potential environmental concerns for parcels adjacent to the proposed light rail alignments. This desktop analysis was followed by field surveys to examine candidate locations based upon parcel proximity to the proposed light rail alignment and available parcel size. As a result of this analysis, the project team identified approximately 30 first-step sites that warranted more detailed review and evaluation, including the four sites evaluated in the Draft EIS.

EXHIBIT F-4

OMF Sites Considered



Concurrent with the preliminary site identification process, the project team worked with Metro Transit rail operations staff to develop a Space Needs Program for the OMFs. The Space Needs Program, which established the approximate size of the OMF building needed to accommodate its major functions (rail operations, materials management, rail maintenance, and facilities maintenance), served as the foundation for the project team to develop the initial site selection criteria. The criteria used during the first-step evaluation were similar to those used for the Draft EIS, as follows:

- Site of 10 to 15 acres
- Regular geometric parcel shape and flat
- Efficient light rail train movement to and from the site
- Good roadway access to the site
- Compatible with adjacent land use

The first step of evaluation resulted in identification of 18 candidate sites to be developed and evaluated further in the second step, which included portions of the sites studied in the Draft EIS. The first-step sites are numbered sequentially west to east, as sites 1 to 18, and their general locations are illustrated on Exhibit F-4. Site EP-1 became site 1; a portion of EP-2 is included in site 2; a portion of EP-3 became site 5; and M-4 became site 18. The measures used to evaluate the first-step OMF sites are summarized in Table F.4-1. The process used to identify the 18 sites and the evaluation criteria were shared with the TPAC, CAC, BAC, CMC, and Metro Transit operations and maintenance staff for their review and input.

**TABLE F.4-1**  
Operations and Maintenance Facility Site Selection – First-Step Evaluation Criteria

Category	Criteria
Site Size	Site needed to have 10 to 15 acres available for development
Site Shape and Terrain	Site needed to have a regular geometric shape (rectangular) and relatively flat terrain
Connection to LRT Alignment	Site had to provide efficient light rail train movement to/from the OMF site to LRT alignment
Local Roadway Access	Site had to have access to the local roadway network
Land Use Compatibility	Site had to be compatible with adjacent land use

#### 4.2.2 Second-Step Evaluation

To further evaluate the 18 second-step candidate sites, more detailed evaluation criteria were developed addressing four operational characteristics and nine site characteristics, listed in Table F.4-2. As part of the second step of evaluation, the project team visited each site; reviewed community comprehensive plans, zoning codes, and county property records; and obtained information about onsite soils and subsurface conditions. Based on this research, the project team and Metro Transit staff used the criteria to qualitatively rate the second-step candidate sites. The evaluation of the sites was reviewed with corridor jurisdictions through the TPAC, CAC, BAC, and CMC.

Initially, the 18 second-step sites were narrowed to seven sites based on the 13 criteria and evaluation measures included in Table F.4-2. Members of the project team met with staff from the Cities of Eden Prairie, Minnetonka, Hopkins, and St. Louis Park to discuss the OMF evaluation process and the seven most highly rated sites.

**TABLE F.4-2**  
Operations and Maintenance Facility Site Selection – Second-Step Evaluation

Table Key: E = Excellent VG = Very Good G = Good M = Marginal U = Unacceptable OMF Site #	Screening Criteria													Status
	Operational Characteristics				Site Characteristics									
	Site Configuration	Alignment Proximity/Connectivity	Alignment Location	Site Access	Neighborhood Compatibility	TOD/Economic Development Impact	Zoning/Land Use	Site and Facilities Cost	Real Estate Acquisition	Relocation Cost	Environmental Impact	Cultural Resources	Stormwater Management	
1 Eden Prairie – Hwy 212 ROW	G	U	M	G	E	VG	G	U	VG	E	G	E	M	Dismissed
2 Eden Prairie – Wallace Rd	G	VG	M	VG	M	G	U	G	M	U	E	E	E	Dismissed
3 Eden Prairie – City Garage W	E	E	G	E	VG	VG	E	VG	G	G	E	E	VG	Retained <sup>a</sup>
4 Eden Prairie – City Garage E	E	E	G	E	VG	VG	E	VG	VG	VG	M	E	G	Retained <sup>a</sup>
5 Eden Prairie – Mitchell West	M	VG	G	M	G	VG	E	M	G	VG	M	E	M	Dismissed
6 Eden Prairie – Mitchell East	E	E	G	E	G	M	VG	VG	G	E	G	E	E	Retained
7 Eden Prairie – Flying Cloud/West 70th St	E	E	G	E	VG	VG	G	G	M	M	M	E	VG	Dismissed
8 Eden Prairie – Shady Oak/West 70th St	E	E	VG	E	E	VG	VG	VG	G	VG	VG	E	E	Retained
9 Minnetonka – K-Tel	E	E	E	E	E	G	VG	VG	VG	G	VG	E	E	Retained
9A Minnetonka – K-Tel East	VG	VG	E	VG	E	G	E	G	VG	G	VG	E	E	Retained
10 Hopkins – 7th St	E	VG	E	VG	VG	E	M	M	M	E	M	E	E	Dismissed
11 Hopkins – 11th Ave	G	E	E	E	VG	M	G	G	G	G	VG	E	E	Dismissed
11A Hopkins – K-Tel at 11th Ave	E	E	E	E	E	G	E	M	VG	G	E	VG	VG	Retained
12 Hopkins – Excelsior West	E	E	VG	E	VG	VG	VG	VG	VG	G	VG	E	E	Retained <sup>a</sup>
13 Hopkins/St. Louis Park – Excelsior East	E	VG	VG	E	E	E	VG	VG	VG	G	VG	E	E	Retained <sup>a</sup>
14 St. Louis Park – Louisiana West	VG	VG	VG	E	E	M	VG	VG	G	G	G	E	VG	Dismissed
15 St. Louis Park – Louisiana East	VG	G	VG	E	E	M	VG	VG	G	G	VG	E	VG	Dismissed
16 St. Louis Park – Beltline	U	U	G	E	E	U	VG	VG	VG	G	E	E	VG	Dismissed
17 Minneapolis – Penn	E	G	M	U	M	M	M	VG	E	E	U	M	E	Dismissed
18 Minneapolis – 5th St North	U	U	M	E	VG	U	M	VG	VG	VG	M	M	G	Dismissed

<sup>a</sup> Combined in third-step evaluation.

Acronym: TOD = transit-oriented development.

In April 2013, the seven OMF sites were presented to TPAC, which includes the staff from cities along the proposed light rail alignment. TPAC representatives from Hopkins and Minnetonka requested the project team evaluate two additional OMF sites that were not previously evaluated: 9A and 11A, both in Hopkins, bringing the number of OMF sites under consideration to nine. The project team evaluated the two sites proposed using the criteria outlined in Table F.4-3, and both sites ranked as high as the seven other remaining sites. Based upon more detailed analysis, the project team then combined sites 3 and 4, as well as sites 12 and 13, to better meet OMF spatial requirements and to provide more area for buffering at the edges of the site, bringing the number of sites back to seven.

**4.2.3 Third-Step Evaluation**

The project team prepared conceptual layout plans for each of the seven third-step OMF sites listed in Table F.4-3. The conceptual plans also examined the relationship to adjacent edges, setbacks, environmentally sensitive areas, and remnant space within the OMF site available for redevelopment.

The project team presented the seven OMF sites at three public open houses on May 13 (Eden Prairie), May 15 (St. Louis Park), and May 22, 2013 (Hopkins/Minnetonka).

Within the third step of evaluation, the project team analyzed the operational performance of the seven remaining OMF sites in greater detail based on conceptual site layouts, compliance with current land use planning and zoning, preliminary costing, and a preliminary assessment of potential environmental impacts. Based on the evaluation of the seven third-step sites (Table F.4-3) and on public and committee input discussed in Section 2.0 of this appendix, the project team identified OMF sites 3/4 (Eden Prairie) and 9A (Hopkins) for further detailed consideration. In summary, these two potential OMF sites had the least conflict with either existing or adjacent land uses and planned development. A few sites were eliminated due to environmental factors, limitations in operations, and higher costs of construction elements. Still other sites posed potential conflict with transit-oriented development due to existing land uses adjacent to proposed light rail stations.

#### **4.2.4 Fourth-Step Evaluation**

The project's fourth step of evaluation of potential OMF sites focused on two potential sites: Site 3/4 in Eden Prairie and Site 9A in Hopkins (see Table F.4-4).

##### **A. Eden Prairie Site 3/4**

The Eden Prairie 3/4 site is an approximately 20-acre parcel between Technology Drive on the south, Highway 5 on the north, Mitchell Road on the east, and Wallace Road to the west (see Exhibit F-5). Wallace Road and Mitchell Road would provide regional access from Highway 5. The proposed OMF site would be comprised of four parcels. On the east half of the site, a large wetland abuts a building owned by the Eaton Corporation. The west half of the site includes the city's maintenance facility, and the northeast quadrant at the intersection of Wallace Road and Technology is leased by Metro Machine & Engineering. The project team considered three conceptual site layouts for the Eden Prairie OMF, because two light rail alignment adjustments and three different access possibilities were also under consideration in the Eden Prairie Segment. Exhibits F-5 to F-7 illustrate the three conceptual site layouts for the Eden Prairie OMF.

##### **B. Hopkins Site 9A**

The Hopkins 9A site is an approximately 15-acre parcel between the CP Railroad on the south, 5th Street South (K-Tel Drive) on the north, 15th Avenue South on the east, and the proposed LRT mainline on the west (see Exhibit F-4). Sixteenth Avenue South runs through the middle of the site and connects to 15th Avenue South via 6th Street South. Regional access would be provided by 5th Street, 11th Avenue, Excelsior Boulevard to the north, and Highway 169 to the east. Two small constructed ponds and surrounding wetlands are located at the south end of the site adjacent to the railroad. The Hopkins OMF site would be located about 1,000 feet south of the proposed Shady Oak Station and closely adjacent to the proposed light rail alignment, about midway between downtown Minneapolis and Eden Prairie.

The OMF 9A site would be comprised from eight parcels: one undeveloped lot and seven properties with office/warehouse uses or light manufacturing and assembly. Development on parcels adjacent to the Hopkins site includes office/industrial to the north, the Hopkins landfill south of the CP tracks, office/industrial/distribution to the east across 15th Avenue, and industrial/distribution to the west beyond the proposed LRT mainline.

The development of conceptual layout plans led to one layout design for the Hopkins OMF site due to the shape and parcels, as well as its connection to the adjacent proposed light rail alignment. Fifth Street and 15th Avenue would remain in place, and access from the OMF to the light rail mainline would occur at 5th Street. Under the conceptual layout design, the proposed OMF would be located along the west edge of the site adjacent to the proposed light rail mainline. As a result of that layout, there would likely be a portion of the site to the east that would remain unused as part of the OMF. Because the eastern side of the site has relatively few buildings and other improvements, if there were any excess property remaining after construction that the Council and the FTA chose to dispose of, this land could potentially accommodate new industrial development (see Section 3.1.2.2 of the Supplemental Draft EIS for additional information on how the project could address the disposition of unused portions of parcels acquired by the project).

**TABLE F.4-3**  
Operations and Maintenance Facility Site Selection – Third-Step Evaluation

OMF Site #	Screening Criteria									Status	Rationale
	Operational Characteristics								Cost Comparison (millions)		
	Site Configuration	Alignment Proximity/Connectivity			Alignment Location		Site Access				
		Length of Lead Tracks (feet)	Lead Tracks At-Grade	Lead Track Redundancy	Distance from Center of Mainline (miles)	Distance from Downtown Minneapolis (miles)	Roadway Access	Walking Distance to Station (miles)			
3/4 Eden Prairie City Garage	Compatible with OMF	500	Yes	Possible	7.5	15.0	Local	0.25	\$25 – \$30m greater	Retained	<ul style="list-style-type: none"> <li>Consistent with land use/zoning</li> <li>No City objections to conditions, dependent on public works</li> <li>Opportunity to include station and park-and-ride facilities on one site</li> </ul>
6 Eden Prairie Mitchell East	Compatible with OMF	0	Yes	Yes	6.5	14.0	Local	0.33	\$25 – \$30m greater	Dismissed	<ul style="list-style-type: none"> <li>Site dependent upon Eden Prairie LRT mainline alignment</li> <li>Operator relief access is poor or not favorable due to distance to station</li> <li>Wetland impacts</li> <li>Not consistent with City and property owner development plans</li> </ul>
8 Eden Prairie Shady Oak/ West 70th St.	Compatible with OMF	500	Bridge Required	No	3.5	11.0	State	0.5	\$45 – \$50m greater	Dismissed	<ul style="list-style-type: none"> <li>Not consistent with City's redevelopment plans</li> <li>Operator relief access is poor or not favorable due to distance from station</li> <li>Require substantial lead track/structure</li> </ul>
9 Minnetonka K-Tel	Compatible with OMF	500	Yes	Possible	1.0	8.5	Local	0.25	\$50 – \$55m greater	Dismissed	<ul style="list-style-type: none"> <li>Requires sewer interceptor relocation</li> <li>Residential use west of Shady Oak Rd.</li> <li>Sensitive medical assembly facility to south</li> </ul>
9A Hopkins K-Tel East	Compatible with OMF	0	Yes	Possible	1.0	8.5	Local	0.25	\$35 – \$40m greater	Retained	<ul style="list-style-type: none"> <li>Consistent with land use and zoning</li> <li>Operator relief access/station proximity favorable</li> <li>Freight rail and LRT alignment buffer along property borders</li> <li>Redevelopment potential of remnant area</li> </ul>
11A Hopkins 11th Ave. West	Compatible with OMF	0	Yes	Possible	0.5	8.0	Local	0.25	\$40 – \$45m greater	Dismissed	<ul style="list-style-type: none"> <li>Nine Mile Creek crosses the site</li> <li>Known site contamination</li> <li>Potential development impact on Shady Oak Station area</li> </ul>
12/13 Hopkins/ St. Louis Park Excelsior	Compatible with OMF	0	Yes	Yes	1.5	7.0	Local	0.33	\$45 – \$50m greater	Dismissed	<ul style="list-style-type: none"> <li>Environmental justice concerns</li> <li>Neighborhood opposition</li> <li>Multifamily residential to the west/south</li> <li>Not consistent with land use guidance and City's redevelopment goals</li> </ul>



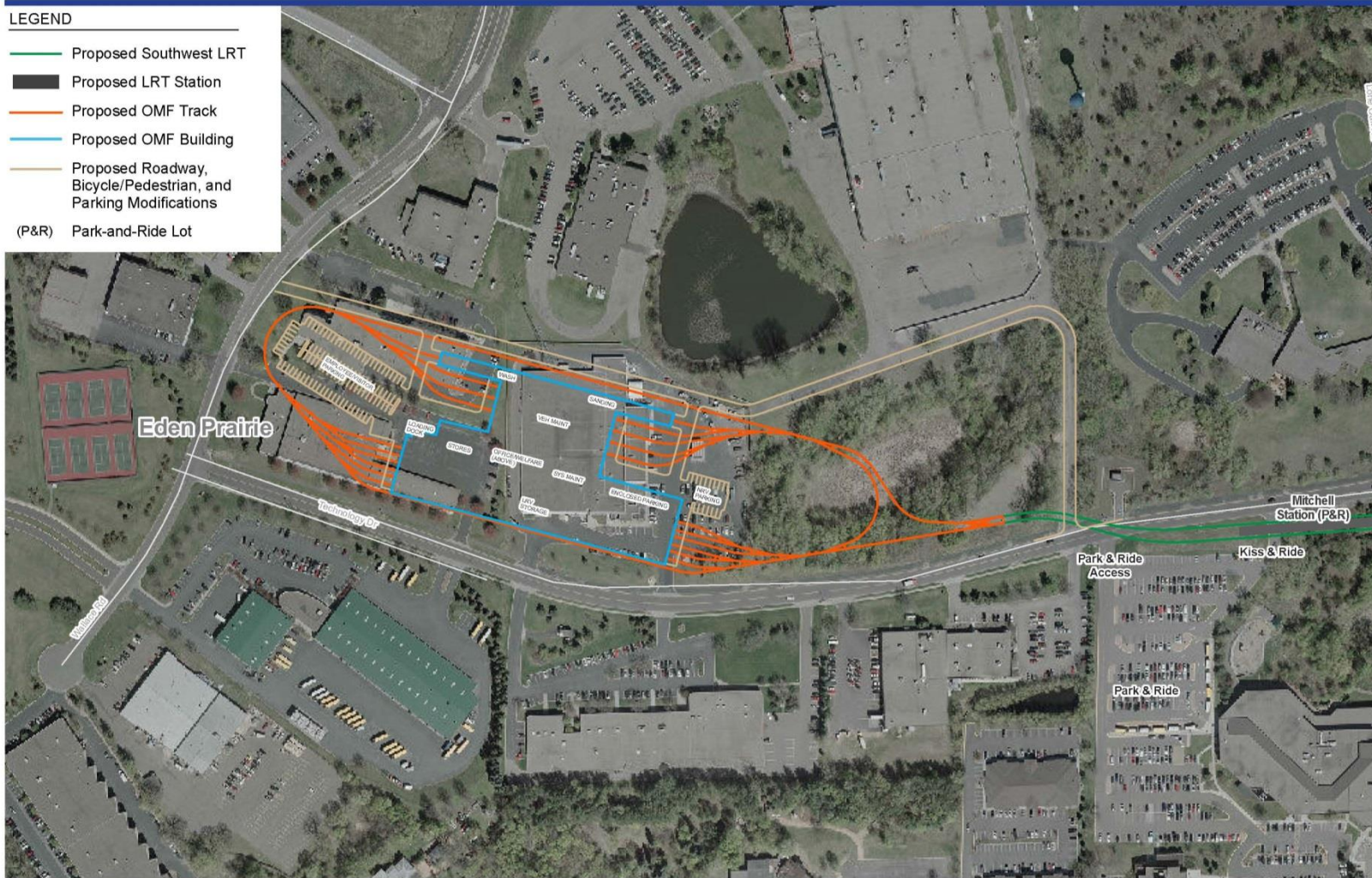
**TABLE F.4-4**  
Operations and Maintenance Facility Site Selection – Fourth-Step Evaluation


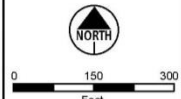
OMF Site #	Screening Criteria		Rationale	Status
	Strengths	Weaknesses		
3/4 Eden Prairie City Garage	<ul style="list-style-type: none"> <li>Use would be consistent with municipal adopted land use guiding and zoning</li> <li>Operator relief would be available given proximity to LRT station (Shady Oak)</li> <li>City presented no objection to OMF, with exception of public works building location</li> <li>Opportunity would exist to include LRT station and park-and-ride facilities on or near site</li> </ul>	<ul style="list-style-type: none"> <li>Site dependent on Eden Prairie LRT mainline alignment extending to the site</li> <li>Wetland impacts would likely require permitting and mitigation</li> <li>Noise and vibration impacts would pose concerns for Eaton industrial property</li> <li>End-of-line location would pose operational limitations</li> <li>Coordination with station and park-and-ride facilities would be required</li> </ul>	Improved out-of-service operations and operating cost savings would be realized due to its relative central location on the proposed light rail line (about midway between downtown Minneapolis and Eden Prairie) compared to the Eden Prairie OMF (3/4), which would be located west of the light rail line's western terminus. Why? Because Site 3/4 would require 6 additional operators for the system, which will increase operations cost.	Dismissed
9A Hopkins K-Tel East	<ul style="list-style-type: none"> <li>Use would be consistent with adopted municipal land use guiding and zoning</li> <li>Operator relief would be available given proximity to LRT station (Shady Oak)</li> <li>Freight rail and proposed LRT alignment would buffer south and west property borders</li> <li>Redevelopment potential remnant areas would be possible</li> </ul>	<ul style="list-style-type: none"> <li>Wetland impacts would likely require permitting and mitigation</li> <li>Flood-prone conditions would need to be addressed in the southern portion of the site</li> <li>Geotechnical considerations may be limiting in southern portion of site</li> <li>City has presented concerns regarding tax base and jobs impacts</li> </ul>		Retained

**EXHIBIT F-5**  
Eden Prairie OMF Site 3/4 – Option 1

**LEGEND**

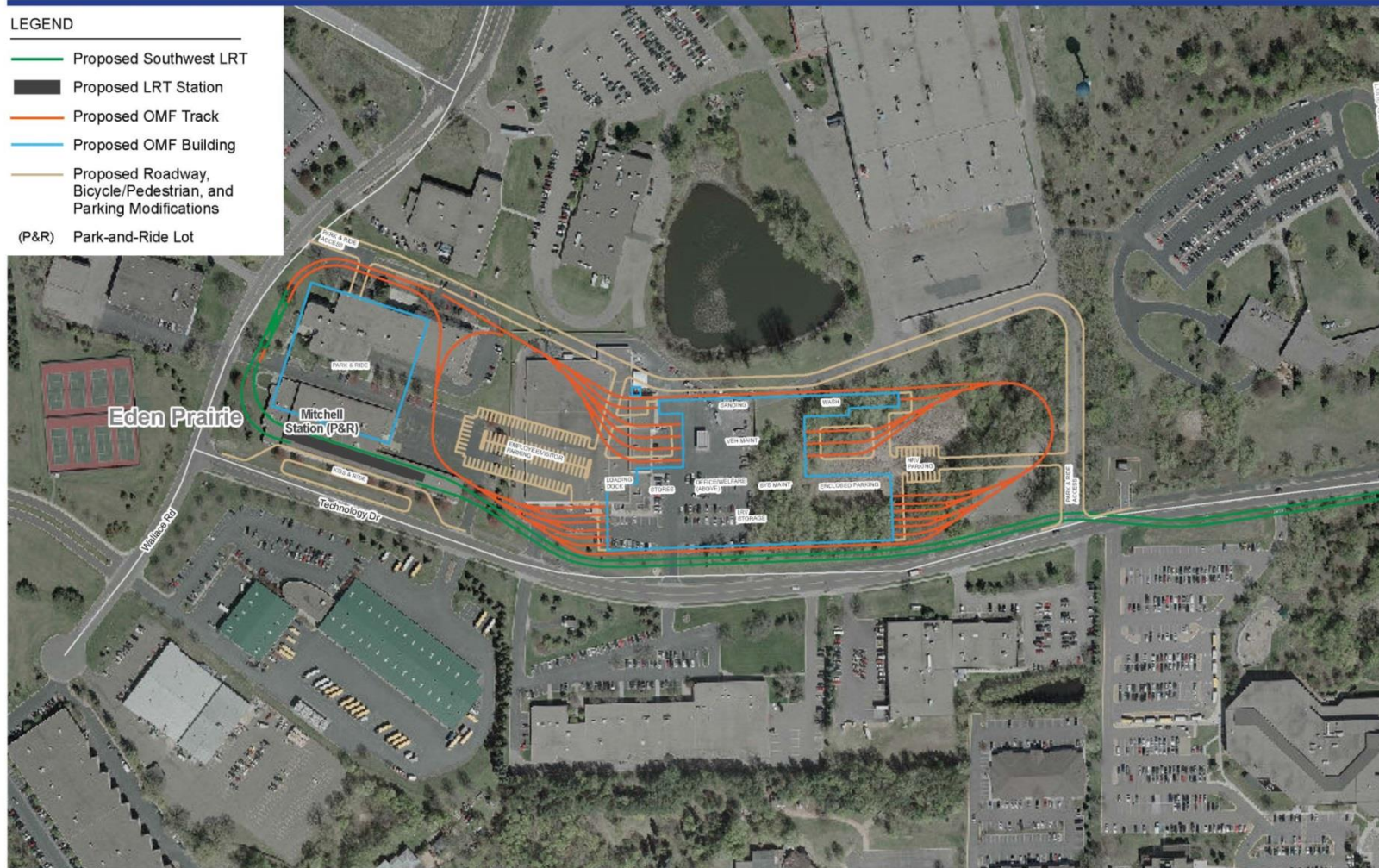
- Proposed Southwest LRT
- Proposed LRT Station
- Proposed OMF Track
- Proposed OMF Building
- Proposed Roadway, Bicycle/Pedestrian, and Parking Modifications
- (P&R) Park-and-Ride Lot



	<p><b>SOUTHWEST LRT Supplemental Draft EIS</b> Eden Prairie OMF Site 3/4 – Option 1</p>	<p>Exhibit F-5</p>		
-------------------------------------------------------------------------------------	---------------------------------------------------------------------------------------------	--------------------	---------------------------------------------------------------------------------------	---------------------------------------------------------------------------------------



**EXHIBIT F-7**  
Eden Prairie OMF Site 3/4 – Option 3



	<p>Southwest LRT Supplemental Draft EIS Eden Prairie OMF Site 3/4 – Option 3</p>	<p>Exhibit F-7</p>		
--	--------------------------------------------------------------------------------------	--------------------	--	--

#### 4.2.5 Conclusion

Based on the analysis summarized in this section and Table F.4-4, and through the process described in Sections 1.0 and 2.0 of this appendix, the Council identified the Hopkins OMF 9A as the OMF to be incorporated into the project's LPA. A key advantage of the Hopkins OMF is the improved out-of-service operations and operating cost savings due to its relatively central location on the proposed light rail line (about midway between downtown Minneapolis and Eden Prairie), compared to the Eden Prairie OMF 3/4, which would be located west of the light rail line's western terminus.

The LPA, as evaluated in the Supplemental Draft EIS, reflects the inclusion of the Hopkins OMF 9A. Other potential OMF sites developed and evaluated in this section were dismissed from further study.

### 5.0 St. Louis Park/Minneapolis Segment

This section provides a summary of the design adjustments to the LPA in the St. Louis Park/Minneapolis Segment that were developed and evaluated after publication of the Draft EIS. Section 5.1 of this appendix provides background information on the light rail-related improvements and freight rail modifications in the segment, which were addressed in the Draft EIS. Section 5.2 of this appendix provides a description of the range of design adjustments to the LPA considered by the Council within the St. Louis Park/Minneapolis Segment and a summary of how those potential design adjustments were evaluated.

#### 5.1 Background

As previously noted, the Draft EIS evaluated two alternatives that combined the LPA and freight rail modifications in the area within the St. Louis Park/Minneapolis Segment: LRT 3A and LRT 3A-1 (see Exhibit F-8). As described in the Draft EIS, both LRT 3A and LRT 3A-1 encompassed the LPA at that time, which included a proposed light rail alignment, stations, park-and-ride lots, and related roadway, bicycle and pedestrian improvements. As defined in Chapter 2 of the Draft EIS, the primary difference between LRT 3A and LRT 3A-1 is how freight rail modifications would be incorporated into the LPA.

Following is a brief summary of the common proposed light rail-related improvements and differing freight rail modifications included in the Draft EIS under LRT 3A and LRT 3A-1. Sections 2.2.1.3 and 2.2.3 of the Draft EIS provide additional information.

- **Light Rail-Related Improvements.** Within the Draft EIS, the LPA under LRT 3A and LRT 3A-1 included a proposed light rail alignment, stations, park-and-ride lots, and related roadway, bicycle and pedestrian improvements. Those improvements are described in Section 2.3 of the Draft EIS under LRT 3A and LRT 3A-1. LRT 3A and LRT 3A-1 in the Draft EIS in the St. Louis Park/Minneapolis Segment included six light rail stations and six surface park-and-ride lots, with a total capacity of 650 spaces. In general under LRT 3A, the light rail alignment would have been located primarily at-grade, north of the existing freight rail alignment and trail for the section west of the Kenilworth Corridor and north of the trail in the Kenilworth Corridor, with freight rail relocated to the MN&S Spur and Wayzata Subdivision in St. Louis Park and removed east of the MN&S Spur. Under LRT 3A-1, the light rail alignment would be located in the same location west of the MN&S Spur, with a light rail bridge over the freight tracks between the MN&S Spur and Wooddale Station, which would locate the light rail tracks south of the freight rail tracks. Within the Kenilworth Corridor, light rail would be located primarily at-grade south of the existing freight rail alignment and north of the existing trail. The trail would be located south of the light rail line, east of Wooddale Avenue South.
- **Freight Rail-Related Improvements.** The Draft EIS evaluated two ways in which freight rail modifications would be incorporated into the LPA. Under LRT 3A, TC&W freight trains currently operating along the Kenilworth Corridor would be rerouted to the MN&S Spur and Wayzata Subdivisions; or, under LRT 3A-1, the TC&W freight trains would continue to operate along the Bass Lake Spur and Kenilworth Corridor. LRT 3A and LRT 3A-1 are also referred to in the Draft EIS as "relocation" and "co-location," respectively, and are shown on Exhibit F-8.

## 5.2 Design Adjustments Considered in the St. Louis Park/Minneapolis Segment

After the Draft EIS public comment period, the development and evaluation of adjustments to the LPA in the St. Louis Park/Minneapolis Segment was undertaken by the Council using the process illustrated in Exhibit F-9 and described in detail in this section.

In this segment, the project team developed and evaluated two sets of potential adjustments to the LPA:

- **Set 1 Adjustments.** The first set of potential adjustments for the St. Louis Park/Minneapolis Segment focused on the question of whether the LPA should include: (1) the relocation of TC&W freight trains currently operating along the Bass Lake Spur and Kenilworth Corridor to sections of the MN&S Spur and Wayzata Subdivision; or (2) the continued operation of TC&W freight trains along the Bass Lake Spur and Kenilworth Corridor. See Exhibit F-10 for an illustration of the freight rail owners and operators within the project vicinity.
- **Set 2 Adjustments.** The second set of potential adjustments for the St. Louis Park/Minneapolis Segment focused on other potential adjustments to light rail-related improvements that would occur throughout the segment, which would affect freight rail modifications but would not entail relocation of freight rail service outside of the Kenilworth Corridor.

The project team closely coordinated the development and evaluation of these two sets of potential adjustments to the LPA in the St. Louis Park/Minneapolis Segment. The resulting light rail related design adjustments and freight rail modifications identified by the Council in April 2014 and July 2014 reflect a unified set of adjustments to the LPA and freight rail modifications, as described in Section 2.5 of the Supplemental Draft EIS. That unified set of adjustments forms the basis for the evaluation of potential environmental impacts addressed in Chapter 3 of the Supplemental Draft EIS.

### 5.2.1 Set 1 Design Adjustments

After the close of the Draft EIS public comment period, the Council undertook a four-step process to develop and evaluate Set 1 Adjustments to the LPA directly related to the following: (1) whether TC&W freight trains currently operating along the Kenilworth Corridor should be rerouted to sections of the MN&S Spur and Wayzata Subdivision (termed “freight rail relocation adjustments”); or (2) whether the TC&W freight trains should continue to operate along the Bass Lake Spur and Kenilworth Corridor as they currently do (termed “Kenilworth Corridor adjustments”).

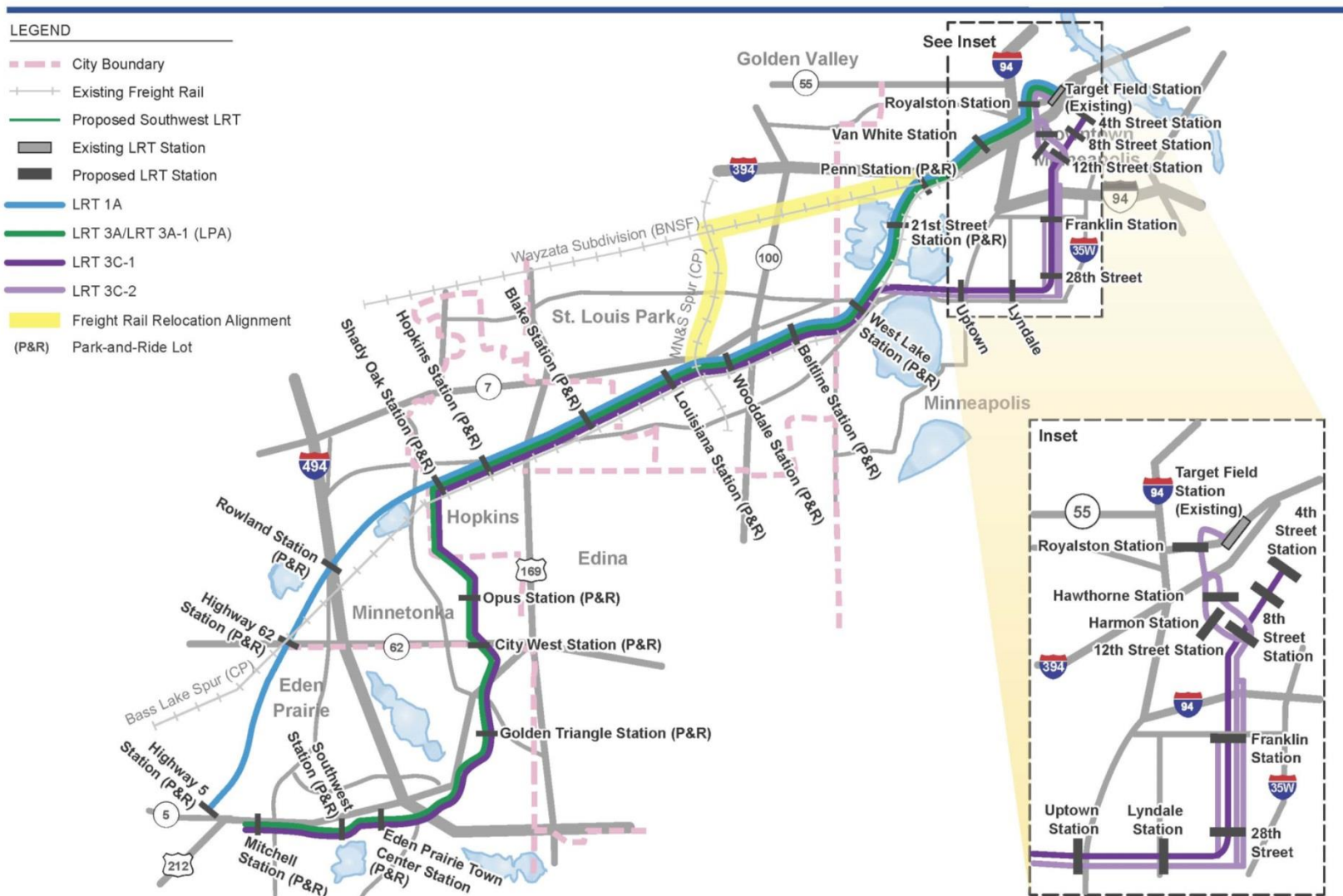
An important element of the Set 1 design adjustment evaluation was the assessment of each design adjustment’s ability to meet a key element of the project’s Purpose and Need Statement: the “need to develop and maintain a balanced and economically competitive multimodal freight system” (see Chapter 1 of the Supplemental Draft EIS). As such, the evaluation of the Set 1 Design Adjustments included an assessment of the effects of the design adjustments on freight rail operations and safety, which involved the participation of freight rail owners and operators in the development and review of potential freight rail modifications that could be incorporated into the LPA. The results of that coordination are reflected in the reporting of Set 1 Design Adjustment evaluation measures cited within this section.

The following four steps were used for evaluation of the Set 1 Design Adjustments. See Tables F.5-1 and F.5-2 for a listing of the design adjustments addressed in the Set 1 evaluation process and the results of the evaluation process, respectively.

- **First-Step Evaluation.** The development of a relatively wide range of adjustments to the light rail improvements and freight rail-related modifications under the two freight rail operating scenarios, focusing on meeting key design parameters, while avoiding or minimizing adverse impacts and minimizing project costs. The resulting adjustments were then presented to the public, stakeholders and participating agencies for review and comment. Based on comments received from the public, stakeholders, and participating agencies and on the evaluation measures summarized in Table F.5-3, the design adjustments were narrowed to one freight rail relocation and two Kenilworth Corridor adjustments.

EXHIBIT F-8

LRT Build Alternatives Evaluated in the Draft EIS

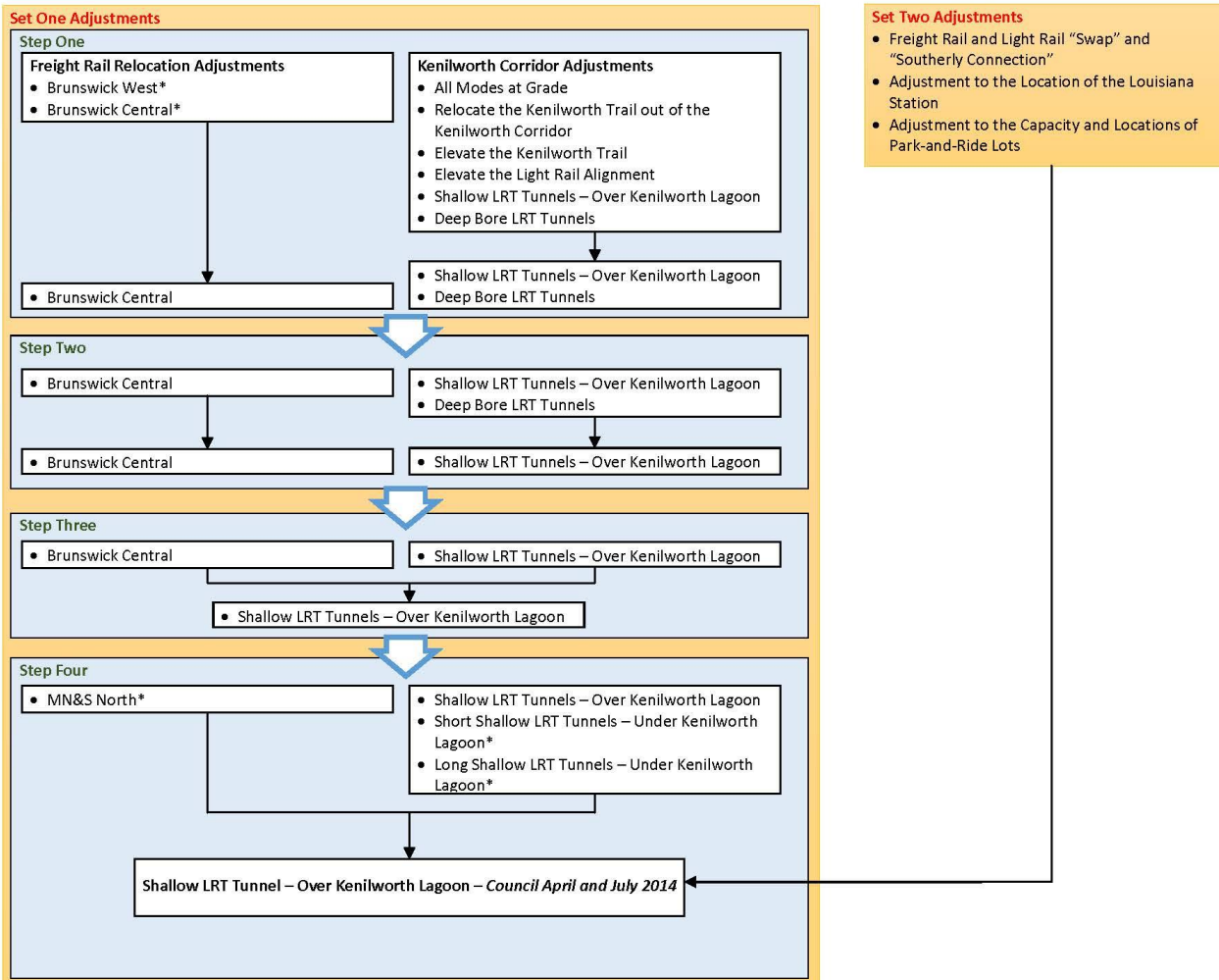


	<p>Southwest LRT Supplemental Draft EIS LRT Build Alternatives Evaluated in the Draft EIS</p>	<p>Exhibit F-8</p>		
-------------------------------------------------------------------------------------	---------------------------------------------------------------------------------------------------	--------------------	---------------------------------------------------------------------------------------	---------------------------------------------------------------------------------------

EXHIBIT F-9

St. Louis Park/Minneapolis Segment Design Adjustment Process and Adjustments Considered

**St. Louis Park/Minneapolis Segment Design Adjustment Process and Adjustments Considered**



\*Additional designs were developed, evaluated, and dismissed as described in this section.



- **Second-Step Evaluation.** A detailed analysis of the potential adjustments identified in the first-step evaluation, narrowing to one design adjustment under each of the two freight rail operating scenarios. This evaluation included public and agency review of and comment on the second-step findings (see Table F.5-5 for a summary of the second-step evaluation measures).
- **Third-Step Evaluation.** Refinement of the two second-step design adjustments, addressing public and agency comments, followed by a detailed assessment of the tradeoffs between the two potential adjustments remaining after the second-step evaluation, and identification of one design adjustment to advance into the fourth-step evaluation (see Table F.5-6 for a summary of the Third-Step evaluation measures).
- **Fourth-Step Evaluation.** The Fourth Step evaluation consisted of three components:
  - An independent engineering analysis that (1) evaluated potential freight rail relocation adjustments that were developed or identified in prior studies and (2) developed and evaluated a new design adjustment that would relocate existing freight rail service from the Kenilworth Corridor (this new design adjustment (MN&S North) was compared to the freight rail relocation design adjustment (Brunswick Central) advanced from the third-step evaluation)
  - The development and evaluation of two variations of the design adjustment advanced from the third-step evaluation (these two new designs (Short Shallow LRT Tunnel – Under Kenilworth Lagoon and Long Shallow LRT Tunnel – Under Kenilworth Lagoon), suggested by a local jurisdiction, were compared to the design adjustment advanced from the third-step evaluation) Identification by the Council of the design adjustment incorporated into the LPA and its further refinement to reflect a memorandum of understanding between the Council and the City of Minneapolis. (See Appendix D, Sources and References Cited, for instructions on how to access the executed memorandum).

Table F.5-2 identifies the design adjustments developed and evaluated within each of the four steps, including identification of their status at the completion of each step. Following is a more detailed description of each step and the design adjustments developed and evaluated within each step.

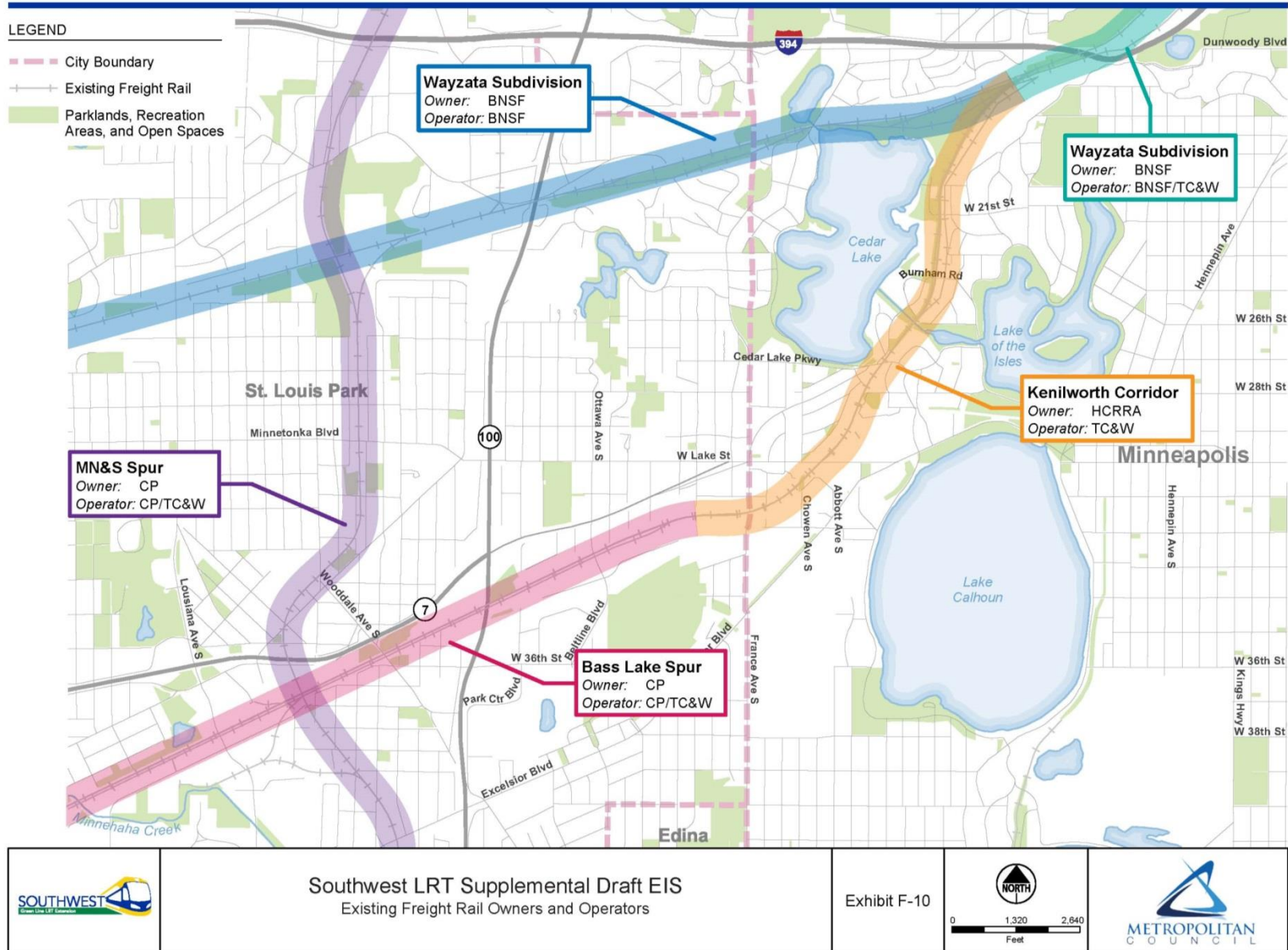
#### A. First-Step Evaluation

The first-step evaluation process for the Set 1 Design Adjustments in the St. Louis Park/Minneapolis Segment included the development and analysis of potential adjustments to both the existing freight rail lines and/or to the proposed light rail alignment and related improvements. However, the range of adjustments from the two efforts differ substantially: (1) the **freight rail relocation adjustments** focus almost exclusively on changes to the proposed freight rail alignment; and (2) the **Kenilworth Corridor adjustments** primarily focus on potential changes to the proposed light rail improvements within the Kenilworth Corridor.

In addition to ensuring that the project continues to meet its Purpose and Need, as outlined in Chapter 1 of the Supplemental Draft EIS, both of these efforts had the same overall objectives: (1) develop potential adjustments that meet the current freight rail operator's operational and safety requirements; (2) minimize adverse impacts to the project's surrounding environment, including avoiding or minimizing property acquisitions; and (3) minimize capital and operating costs.

The design adjustment process for the Set 1 Adjustments also included discussions with the affected railroad companies, including an examination of their existing operations and an assessment of freight rail alignment conditions between the Highway 169/Highway 62 interchange in the west to Cedar Lake Junction in the east. Key areas of concern expressed by affected freight rail companies on freight rail modifications developed within the Set 1 Adjustments included: freight rail safety related to the railroad's design and operating standards; and long-term freight rail operating complexities and costs. Draft designs of freight rail

**EXHIBIT F-10**  
Existing Freight Rail Owners and Operators



modifications that were developed during this process and that were evaluated by the affected railroad companies were dismissed from further study if one or more of the affected railroad companies determined that the draft modification would not meet their design or operational safety standards. The draft freight rail modifications that were dismissed from further study based on design or operational concerns raised by the affected railroad companies are noted within this section.

**TABLE F.5-1**

## St. Louis Park/Minneapolis Segment Design Adjustment Descriptions

	Option	Alignment Adjustment Description
Freight Rail Relocation <sup>a</sup>	Draft EIS LRT 3A	As presented in the Draft EIS, this adjustment would provide a new connection to the CP MN&S Spur from the CP Bass Lake Spur near Louisiana Avenue and a reconstructed connection between the MN&S Spur and the BNSF Wayzata Subdivision. Maximum horizontal curve would be 8 degrees, and maximum compensated grade would be 1.82% for the connection from the Bass Lake Spur to the MN&S Spur.
	Brunswick West	Brunswick West option would have the modified freight rail alignment to minimize the number of horizontal curves, elevated to minimize the number of vertical curves and vertical grade changes and to provide adequate grade separation to allow Dakota Ave. and Lake St. to extend under the freight tracks. The connection would be located west of the existing CP MN&S spur and cross over the Wooddale Ave./Lake St. intersection to tie into the MN&S Spur east of Brunswick Avenue South, near West 32nd Street. Maximum horizontal curve 4 degrees, maximum compensated grade 0.8.
	Brunswick Central	Brunswick Central option would have the modified freight rail alignment to minimize the number of horizontal curves, elevated to minimize the number of vertical curves and vertical grade changes and to provide grade separation of Dakota Ave. and Lake St. to extend under the freight tracks. The alignment would be located west of the existing CP MN&S Spur corridor and cross east of the Wooddale Ave./Lake St. intersection to tie into the MN&S Spur at the same location as Brunswick West. Maximum horizontal curve 4 degrees, maximum compensated grade 0.8.
	MN&S North	MN&S North Alignment was developed as part of the independent freight rail analysis performed by TranSystems. This alignment adjustment was developed to minimize both the impacts of the elevated profile and straightened alignment between Highway 7 and 34th Street and the impacts on commercial, residential, and public properties associated with the Brunswick Central Elevated alignment. Maintains the existing MN&S rail tracks south of Highway 7 including the current freight rail bridge over the Bass Lake Spur to a connection with the existing alignment between Library Lane and Dakota Avenue. The alignment begins with an elevated grade on bridge structure on the Bass Lake Spur west of Louisiana Avenue, continuing east on bridge structure over the west corner of the Xcel Substation and across Highway 7, matching existing grades at Library Lane and connecting to the existing MN&S between Library Lane and Dakota Avenue. Maximum horizontal curve 5 degrees, maximum compensated grade 0.95.
Kenilworth Corridor	Draft EIS LRT 3A-1	As presented in the Draft EIS. A preliminary typical section is assumed to be 94 feet wide. This width includes 25 feet of separation between the freight rail track and outside edge of right-of-way, 25 feet of separation between the freight rail track and LRT track (centerline to centerline), 14 feet of separation between the two LRT tracks (centerline to centerline), and 10-foot spacing between LRT track and the trail. A 16-foot minimum width would be used for the trail.
	All Modes At-Grade (81-foot-wide section)	Similar to LRT 3A-1, but based on a revised typical section that would be 81 feet wide (based on coordination with TC&W Railroad). This width would include 12 feet of separation between the freight rail track and outside edge of right-of-way, generally matching existing conditions. The remaining section would match the 94-foot-wide section of LRT 3A-1.
	Trail Relocation	The Trail Relocation option would include rerouting the trail west of the existing TC&W tracks between 21st St. and Cedar Lake Pkwy. The west segment of the relocated trail would cross Cedar Lake Pkwy. at-grade, run along the existing median on Sunset Blvd., cross France Ave. at-grade or on a structure, continue south, and cross County Rd. 25 to the County Rd. 25 service road to Inglewood Ave. From Inglewood Ave., the trail would turn south and connect to the current Cedar Lake Trail alignment. The east segment would run along Cedar Lake Pkwy., cross the parkway, and be located between Dean Pkwy. one-way pair and connect to the current Midtown Greenway trail alignment east of Dean Pkwy.
	Elevated Trail	The elevated trail structure would be approximately 3,000 feet long and would be located between the freight rail track and LRT tracks north of West Lake St. to north of Burnham Rd. The elevated trail would approach touchdown south of West Lake St. and north of Burnham Rd. The trail would be elevated approximately 30 feet high, with a 20-foot-wide trail surface supported by 7-foot-wide piers. A vertical connection at Cedar Lake Pkwy. would be provided.
	Elevated LRT	The elevated LRT structure would be approximately 3,000 feet long and would be located between the freight rail track and trail. It would run along the Kenilworth Corridor from the Midtown Greenway to Burnham Rd. with varying height of 35 to 38 feet, supported by 10-foot-

Option	Alignment Adjustment Description
Shallow Cut-and-Cover Tunnels – Over Kenilworth Lagoon <sup>b</sup>	wide piers. Would consist of two tunnels and a generally at-grade section connecting the two tunnels: The South Tunnel would be approximately 2,200 feet long and located along the Kenilworth Corridor with the south portal beginning at West Lake St. and the north portal south of the Channel Creek Crossing. Over the channel, LRT alignment would cross at-grade on a bridge 14 feet above the channel water level. The section of LRT track over the channel would be approximately 1,088 feet long (including transition zones). North of the channel, LRT alignment would drop into the North Tunnel, a 2,500-foot tunnel south of Burnham Rd. to north of 21st St. There would be 300-foot transition zones outside the tunnel portals.
Kenilworth Deep Bore LRT Tunnel	Two parallel tunnels that would be approximately 5,900 feet long and would run along the Kenilworth Corridor with the south portal at West Lake St. and the north portal north of 21st St. There would be a 1,000-foot-long cut-and-cover tunnel segment and a 500-foot-long transition section south of the southern portal. There would be a 550-foot-long cut-and-cover tunnel segment and a 500-foot transition section north of the northern portal. The twin tunnels would be about 20 feet in diameter with a minimum of 30 feet of cover. The deep tunnel would be approximately 30 feet below the Kenilworth Lagoon surface elevation.
Short Shallow Cut-and-Cover Tunnel – Under Kenilworth Lagoon <sup>c</sup>	The Short Shallow Cut-and-Cover Tunnel – Under Kenilworth Lagoon would consist of a tunnel approximately 3,100 feet in length along the Kenilworth Corridor with the south portal beginning at West Lake Street and the north portal north of the Kenilworth Channel. At the channel, the LRT crosses below-grade, in the tunnel beneath the water level. There are 300-foot transition zones outside the tunnel portals.
Long Shallow Cut-and-Cover Tunnel – Under Kenilworth Lagoon <sup>c</sup>	The Long Shallow Cut-and-Cover Tunnel – Under Kenilworth Lagoon would consist of a tunnel approximately 5,800 feet in length along the Kenilworth Corridor with the south portal beginning at West Lake Street and the north portal north of 21st Street. At the channel, the LRT crosses below-grade, in the tunnel beneath the water level. There are 300-foot transition zones outside the tunnel portals

<sup>a</sup> Additional freight rail modifications were also developed and evaluated in the first-step evaluation that were dismissed from further consideration due to safety and freight rail operating concerns expressed by one or more effected freight rail operators/owners. Those additional modifications included MN&S Modified; Brunswick East; an at-grade variation of the Brunswick West; and an at-grade variation of the Brunswick Central. This section includes additional information on these variations.

<sup>b</sup> On July 9, 2014, considering a recommendation from the Corridor Management Committee (CMC), the Metropolitan Council (Council) identified additional design adjustments to the LPA within the City of Minneapolis, which were proposed in the then-draft memoranda between the Council and the City of Minneapolis (see Appendix D, Sources and References Cited, for instructions on how to access the executed memoranda). In summary, the additional design adjustments: (1) reduced project capital costs by eliminating the northern of the two proposed light rail tunnels in the Kenilworth Corridor (including the re-establishment of the proposed at-grade light rail station at 21st Street); (2) incorporated into the LPA a variety of bicycle and pedestrian improvements associated with proposed light rail stations in the City of Minneapolis; and (3) established the Council's and the City's intent relative to aspects of long-term property ownership and freight rail operations in the Kenilworth Corridor.

<sup>c</sup> In February 2014, the Minneapolis Parks and Recreation Board requested that the Council evaluate a design adjustment that would connect the two Shallow LRT Tunnels with a cut-and-cover constructed tunnel segment under the Kenilworth Lagoon, rather than a bridge over the lagoon. In response, the Short and Long Shallow LRT Tunnel – Under Kenilworth Lagoon design adjustments were developed and evaluated as a part of the fourth-step of evaluation. In addition, project staff developed variations of the Short and Long Shallow LRT Tunnel – Under Kenilworth Lagoon design adjustments to evaluate if the northern and southern cut-and-cover LRT tunnel segments could be connected under the Kenilworth Lagoon via a bored tunnel segment, rather than via a cut-and-cover constructed tunnel segment. These variations were dismissed from further consideration due to schedule delays, complex construction techniques and cost factors. This section includes additional information on these variations.

Acronyms: CP = Canadian Pacific Railway; MN&S = Minneapolis, Northfield, and Southern Railway; TC&W = Twin Cities and Western Railway Company.

**TABLE F.5-2**

Set 1 Design Adjustments Developed and Evaluated in the St. Louis Park/Minneapolis Segment, by Step

Step	Adjustment Type	Design Adjustments	Status <sup>a</sup>
1	Freight Rail Relocation <sup>b</sup>	Brunswick West	Dismissed
		Brunswick Central	Retained
	Kenilworth Corridor	All Modes at Grade	Dismissed
		Relocate the Kenilworth Trail out of the Kenilworth Corridor	Dismissed
		Elevate the Kenilworth Trail	Dismissed
		Elevate the Light Rail Alignment	Dismissed
		Shallow LRT Tunnels – Over Kenilworth Lagoon <sup>c</sup>	Retained
Deep Bore LRT Tunnels	Retained		
2	Freight Rail Relocation	Brunswick Central	Retained
	Kenilworth Corridor	Shallow LRT Tunnels – Over Kenilworth Lagoon <sup>c</sup>	Retained
		Deep Bore LRT Tunnels	Dismissed
3	Freight Rail Relocation	Brunswick Central	Dismissed
	Kenilworth Corridor	Shallow LRT Tunnels – Over Kenilworth Lagoon <sup>c</sup>	Retained
4	Freight Rail Relocation	MN&S North <sup>d</sup>	Dismissed
	Kenilworth Corridor	Shallow LRT Tunnels – Over Kenilworth Lagoon <sup>c</sup>	Retained <sup>e</sup>
		Short Shallow LRT Tunnel – Under Kenilworth Lagoon <sup>f</sup>	Dismissed
		Long Shallow LRT Tunnel – Under Kenilworth Lagoon <sup>f</sup>	Dismissed

<sup>a</sup> Status as of completion of the step.

<sup>b</sup> Additional freight rail modifications were also developed and evaluated in the first-step evaluation that were dismissed from further consideration due to safety and freight rail operating concerns expressed by one or more effected freight rail operators/owners. Those additional modifications included Brunswick East; an at-grade variation of the Brunswick West; and an at-grade variation of the Brunswick Central. This section includes additional information on these variations.

<sup>c</sup> The shallow tunnels would be constructed using a cut-and-cover technique.

<sup>d</sup> The MN&S North design adjustment was developed and evaluated as an element of the independent engineering analysis.

<sup>e</sup> The Shallow LRT Tunnels – Over Kenilworth Lagoon option, which included two proposed light rail tunnels (one south and one north of the Kenilworth Lagoon), was modified by the Council on July 9, 2014, to eliminate the northern light rail tunnel (primarily to reduce project capital costs and to allow for an at-grade light rail W 21st Street and to make other related design modifications.

<sup>f</sup> In February 2014, the Minneapolis Parks and Recreation Board requested that the Council evaluate a design adjustment that would connect the two Shallow LRT Tunnels with a cut-and-cover-constructed tunnel segment under the Kenilworth Lagoon, rather than a bridge over the lagoon. In response, the Short and Long Shallow LRT Tunnel – Under Kenilworth Lagoon design adjustments were developed and evaluated as a part of the fourth-step of evaluation.

TABLE F.5-3

St. Louis Park/Minneapolis Segment – First-Step Evaluation – Freight Rail Relocation Adjustments<sup>a</sup>

Alignment Adjustment	Cost <sup>s</sup>	Measures	Status
Draft EIS	\$91m <sup>b</sup>	<ul style="list-style-type: none"> <li>• Rejected by railroad companies, described in comments received on the Draft EIS, due to the following concerns: <ul style="list-style-type: none"> <li>— Rejected by railroad companies, described in comments received on the Draft EIS, due to the following concerns: <ul style="list-style-type: none"> <li>— Includes reverse horizontal curves and a number of vertical curves and vertical grade changes that would compromise freight rail operational safety</li> <li>— High compensated grade</li> <li>— Higher operational cost for freight rail</li> </ul> </li> </ul> </li> <li>• Concerns from community groups, businesses, education institutions, and citizens received on the Draft EIS on the following: <ul style="list-style-type: none"> <li>— Traffic surrounding high school</li> <li>— Bus flow for schools</li> <li>— Noise and vibration</li> <li>— Safety and security</li> </ul> </li> <li>• At-Grade Freight Crossings: five at-grade freight crossings</li> <li>• Right-of-Way: Concerns surrounding loss of homes and businesses due to right-of-way acquisition</li> <li>• Environment: Additional wetland impacts in the “Iron Triangle” area at connection with BNSF Wayzata Subdivision</li> </ul>	Dismissed
Brunswick West – Elevated	\$285– \$300m <sup>c</sup>	<ul style="list-style-type: none"> <li>• Cost: higher capital cost</li> <li>• Railroad: <ul style="list-style-type: none"> <li>— Supported by railroad companies from a physics of design standpoint</li> <li>— Freight rail operators expressed concern about potential increased operating cost to be addressed later if the design progressed</li> <li>— Freight rail is elevated between Highway 7 and Brunswick Ave.</li> <li>— Freight rail profile is raised north of 33rd St.</li> <li>— Eliminates freight tracks east of MN&amp;S Spur on Bass Lake Spur/Kenilworth Corridor</li> </ul> </li> <li>• Concerns from community and educational institutions: alignment would go through high school football field (potential 4(f) impact)</li> <li>• At-Grade Freight Crossings: removes five at-grade freight crossings</li> <li>• Right-of-Way: <ul style="list-style-type: none"> <li>— Requires acquisition of a portion of the existing Xcel substation and potential impact on substation function</li> <li>— Concerns surrounding loss of homes and businesses due to right-of-way</li> </ul> </li> <li>• Pedestrian: includes two new pedestrian underpasses</li> <li>• Roadway: <ul style="list-style-type: none"> <li>— Requires lowering of south frontage road and reconfiguration of local street network</li> <li>— Improves frontage road south and north of Highway 7 by grade separation</li> </ul> </li> <li>• Environment: Additional wetland impacts in the “Iron Triangle” area at connection with BNSF Wayzata Subdivision</li> </ul>	Dismissed
Brunswick Central - Elevated	\$275– \$290m <sup>c</sup>	<ul style="list-style-type: none"> <li>• Cost: Lower capital cost</li> <li>• Railroad: <ul style="list-style-type: none"> <li>— Supported by railroad companies from a physics of design standpoint</li> <li>— Freight rail operators expressed concern about potential increased operating cost to be addressed later if the design progressed</li> <li>— Freight rail is elevated between Highway 7 and Brunswick Ave</li> <li>— Freight rail profile is raised north of 33rd St.</li> <li>— Eliminates freight tracks east of MN&amp;S Spur on Bass Lake Spur/Kenilworth Corridor</li> </ul> </li> <li>• Concerns from community and educational institutions: alignment would go through a portion of the Park Spanish Immersion School playground area (potential 4(f) impact)</li> <li>• At-Grade Freight Crossings: removes five at-grade freight crossings</li> <li>• Right-of-Way: Concerns surrounding loss of homes and businesses due to right-of-way</li> <li>• Pedestrian: includes two new pedestrian underpasses</li> <li>• Roadway: <ul style="list-style-type: none"> <li>— Requires lowering of south frontage road and reconfiguration of local street network</li> <li>— Improves frontage road south and north of Highway 7 by grade separation</li> </ul> </li> <li>• Environment: Additional wetland impacts in the “Iron Triangle” area at the connection with BNSF Wayzata Subdivision</li> </ul>	Retained

<sup>a</sup> Additional freight rail modifications were also developed and evaluated in the first-step evaluation that were dismissed from further consideration due to safety and freight rail operating concerns expressed by one or more effected freight rail operators/owners. Those additional modifications included Brunswick West; and an at-grade variation of the Brunswick Central.

<sup>b</sup> Source: *Southwest Transitway Draft EIS* (FTA, HCRRA, Council; October 2012) in 2012 dollars, which used a different cost methodology than the Brunswick West/Central estimates.

<sup>c</sup> Includes freight track and structures (Louisiana Avenue to Cedar Lake Junction), BNSF siding, freight signaling, freight track removal, pedestrian underpass and roadway relocations/upgrades near St Louis Park High School, North Cedar Lake Trail crossing, right-of-way; Includes freight Common Elements costs of approximately \$85 to \$90 million (US-169 to Louisiana, Southerly Connector).

TABLE F.5-4

## St. Louis Park/Minneapolis Segment – First-Step Evaluation – Kenilworth Corridor Adjustments

	Full Acquisitions	Costs	Measures	Status
Draft EIS or All Modes At-Grade (94-foot-wide section)	55 properties	\$160 - \$170m <sup>a</sup>	<ul style="list-style-type: none"> <li>Displacement of residences due to right-of-way acquisition</li> <li>Potential visual impacts on Kenilworth Lagoon</li> </ul>	Dismissed
All Modes At-Grade (81-foot-wide section)	26 properties	\$135 – \$145m <sup>a</sup>	<ul style="list-style-type: none"> <li>Displacement of residences due to right-of-way acquisition</li> <li>Potential visual impacts on Kenilworth Lagoon</li> </ul>	Dismissed
Relocate the Kenilworth Trail out of the Kenilworth Corridor	0 properties	\$120 – \$130m <sup>b</sup>	<ul style="list-style-type: none"> <li>Portion of the Kenilworth trail relocated from the Kenilworth Corridor between Cedar Lake Pkwy and Midtown Greenway</li> <li>Strengths include the following: <ul style="list-style-type: none"> <li>No homes impacted</li> <li>Low capital costs</li> <li>Relocated trail would be an off-road, shared-use facility</li> </ul> </li> </ul>	Dismissed
Elevate the Kenilworth Trail	0 properties	\$135 – \$145m <sup>c</sup>	<ul style="list-style-type: none"> <li>Visual impacts due to structure height and connecting ramps</li> <li>Impacts the visual quality and setting of the trail (e.g., separation from ground vegetation) and the addition of grade changes to the trail</li> <li>Potential visual impacts on Kenilworth Lagoon</li> <li>Strengths include the following: <ul style="list-style-type: none"> <li>No homes displaced</li> </ul> </li> </ul>	Dismissed
Elevate the Light Rail Alignment	0 properties	\$190 – \$200m <sup>d</sup>	<ul style="list-style-type: none"> <li>Visual impacts due to structure height and elevators at stations</li> <li>Potential visual impacts on Kenilworth Lagoon</li> <li>Strengths include the following: <ul style="list-style-type: none"> <li>No homes displaced</li> </ul> </li> </ul>	Dismissed
Place LRT in Shallow Cut-and-Cover Tunnels	0 properties	\$235 – \$250m <sup>e</sup>	<ul style="list-style-type: none"> <li>High capital cost</li> <li>Challenging construction</li> <li>Potential visual impacts on Kenilworth Lagoon</li> <li>Eliminates 21st St. Station</li> <li>Existing freight rail and trail bridges across the Kenilworth Lagoon would need to be replaced to accommodate construction of a new light rail and trail bridge and a freight rail bridge (which would be approximately 40 feet west of the existing freight rail bridge)</li> <li>Strengths include the following: <ul style="list-style-type: none"> <li>Would not require acquisition of homes and businesses in the Kenilworth Corridor</li> <li>Retains at-grade West Lake Station</li> </ul> </li> </ul>	Retained
Place LRT in Deep Bored Tunnels	0 properties	\$405 – \$420m <sup>f</sup>	<ul style="list-style-type: none"> <li>Highest capital cost</li> <li>Challenging construction</li> <li>Underground station at West Lake St.</li> <li>Reconstruction of West Lake Street bridge</li> <li>Eliminates 21st St. Station</li> <li>Existing freight rail and trail bridges across the Kenilworth Lagoon would need to be replaced to accommodate construction of the bored tunnels<sup>g</sup></li> <li>Strengths include the following: <ul style="list-style-type: none"> <li>Would not require acquisition of homes and businesses in the Kenilworth Corridor</li> </ul> </li> </ul>	Retained

<sup>a</sup> Includes freight track and structures (Louisiana Avenue to Cedar Lake Junction), trail bridges & retaining walls (east of Beltline Avenue, near Penn Station), deduct for LRT/trail underpass at Cedar Lake Parkway, right-of-way; includes freight Common Elements costs of approximately \$85 to \$90 million (US-169 to Louisiana Avenue, Southerly Connector).

<sup>b</sup> Includes trail aerial structure/retaining walls at France Avenue, connection to Cedar Lake Trail at Inglewood Avenue, freight track and structures (Louisiana Avenue to Cedar Lake Junction), trail bridges & retaining walls (east of Beltline Avenue, near Penn Station), deduct for LRT/trail underpass at Cedar Lake Parkway; includes freight Common Elements costs of approximately \$85 to \$90 million (US-169 to Louisiana Avenue, Southerly Connector).

<sup>c</sup> Includes elevated trail structure/retaining walls and retains 21<sup>st</sup> Street Station, vertical trail connection at Cedar Lake Parkway, freight track and structures (Louisiana Avenue to Cedar Lake Junction), trail bridges & retaining walls (east of Beltline Avenue, near Penn Station), deduct for LRT/trail underpass at Cedar Lake Parkway, deduct for trail bridge over Kenilworth Channel; includes freight Common Elements costs of approximately \$85 to \$90 million (US-169 to Louisiana Avenue, Southerly Connector).

<sup>d</sup> Includes elevated LRT structure/retaining walls and retains 21<sup>st</sup> Street Station, freight track and structures (Louisiana Avenue to Cedar Lake Junction), trail bridges & retaining walls (east of Beltline Avenue, near Penn Station), LRT direct fixation track, deduct for LRT/trail underpass at Cedar Lake Parkway, deduct for LRT bridge over Kenilworth Channel, right-of-way; includes freight Common Elements costs of approximately \$85 to \$90 million (US-169 to Louisiana Avenue, Southerly Connector).

<sup>e</sup> Includes north and south shallow cut-and-cover tunnels (tunnels, portals, systems/support facilities), freight track and structures (Louisiana Avenue to Cedar Lake Junction), trail bridges & retaining walls (east of Beltline Avenue, near Penn Station), LRT direct fixation track, temporary freight accommodations, Burnham Road bridge support, deduct for 21<sup>st</sup> Street Station, deduct for LRT/trail underpass at Cedar Lake Parkway; includes freight Common Elements costs of approximately \$85 to \$90 million (US-169 to Louisiana Avenue, Southerly Connector).

<sup>f</sup> Includes parallel deep bore tunnels (tunnels, bore pits, systems/support facilities), underground West Lake Station, freight track and structures (Louisiana Avenue to Cedar Lake Junction), trail bridges & retaining walls (east of Beltline Avenue, near Penn Station), removal/replacement of West Lake Bridge, LRT direct fixation track, temporary freight accommodations, deduct for LRT bridge over Kenilworth Channel, deduct for 21<sup>st</sup> Street Station, deduct for LRT/trail underpass at Cedar Lake Parkway; includes freight Common Elements costs of approximately \$85 to \$90 million (US-169 to Louisiana Avenue, Southerly Connector).

<sup>g</sup> The tunnels would be bored within the HCRRA and BNSF right-of-way at the Kenilworth Lagoon and the existing freight rail and trail bridges across the lagoon would need to be replaced because the existing wood bridge piers would likely extend into the tunneling area. Because the existing bridge piers are wood and there are no as-built construction drawings available, it would be difficult to determine precisely how deep the existing piers extend under the lagoon. However, even if they do not extend in the bored tunnel construction area, the piers would be susceptible to settlement during tunnel construction due to soil conditions at the site.

**TABLE F.5-5**  
St. Louis Park/Minneapolis Segment Alignment Adjustment – Second-Step Evaluation

Adjustment	Full Acquisitions	Costs	Measures	Status
Brunswick Central - Elevated	32 properties	\$275 - \$290m <sup>a</sup>	<ul style="list-style-type: none"> <li>• Supported by railroad companies from a physics of design standpoint</li> <li>• Cost: Second highest capital cost</li> <li>• Right-of-Way:                             <ul style="list-style-type: none"> <li>— Displacement of homes and businesses due to right-of-way acquisition</li> <li>— Displacement of the Park Spanish Immersion School playground, which is likely a Section 4(f)-protected property</li> </ul> </li> <li>• Traffic:                             <ul style="list-style-type: none"> <li>— Requires lowering of south frontage road and reconfiguration of street network</li> <li>— Improves frontage road south and north of Highway 7 by grade separation</li> </ul> </li> <li>• Freight:                             <ul style="list-style-type: none"> <li>— Freight rail would be elevated between Highway 7 and Brunswick Avenue</li> <li>— Freight rail profile would be raised north of 33rd Street</li> <li>— Eliminates freight tracks east of MN&amp;S Spur</li> <li>— Eliminates five at-grade freight rail crossings</li> </ul> </li> <li>• Environment: Fill within relatively high-quality wetlands in the “Iron Triangle” area at BNSF connection</li> <li>• Potential effects to the historic Kenilworth Lagoon and the Brownie/Cedar Lakes channel</li> <li>• Bicycle and pedestrian: Allows for two new pedestrian grade underpasses</li> <li>• Stations: Retains 21st Street Station</li> </ul>	Retained



Adjustment	Full Acquisitions	Costs	Measures	Status
Kenilworth Corridor Shallow LRT Tunnels	0 properties	\$235 - \$250m <sup>b</sup>	<ul style="list-style-type: none"> <li>• Supported by railroad companies from a physics of design standpoint</li> <li>• Cost: Lowest capital cost</li> <li>• Right-of-Way: Does not require acquisition of homes and businesses in the Kenilworth Corridor</li> <li>• Challenging construction due to various constraints in the Kenilworth Corridor</li> <li>• Environment: At-grade crossing of Kenilworth Lagoon, with potential visual impacts</li> <li>• Bicycle and pedestrian: Temporary detour of Kenilworth Trail</li> <li>• Stations: Eliminates 21st St Station</li> <li>• Existing freight rail and trail bridges across the Kenilworth Lagoon would need to be replaced and the total width of the new bridges would be approximately double the width of the existing bridges</li> <li>• Potential adverse effect to the historic Kenilworth Lagoon</li> </ul>	Retained
Kenilworth Deep Bore LRT Tunnels	0 properties	\$405 - \$420m <sup>c</sup>	<ul style="list-style-type: none"> <li>• Supported by railroad companies from a physics of design standpoint</li> <li>• Cost: Highest capital cost – likely to be financially infeasible on regional level due to lack of local funding support</li> <li>• Right-of-Way:                             <ul style="list-style-type: none"> <li>— Does not require acquisition of homes and businesses in the Kenilworth Corridor</li> <li>— Risk of potential settlement to immediately adjacent existing buildings and other structures due to construction</li> </ul> </li> <li>• Construction:                             <ul style="list-style-type: none"> <li>— Challenging construction due to various constraints in the Kenilworth Corridor</li> <li>— Reconstruction of West Lake Street due to tunneling conflicts with existing bridge piles, including demolition and replacement of the existing bridge over Kenilworth Corridor, generally located between Market Plaza and Chowen Ave S</li> <li>— Closure of West Lake Street (Market Plaza to Chowen Ave S) for approximately 12-18 months; related increases in traffic congestion; increased vehicle travel times due to out-of-direction travel and/or increased congestion</li> </ul> </li> <li>• Operations: Increased travel time (approximately one minute) for all trips that would use the below ground West Lake Street station, reducing transit ridership</li> <li>• Existing freight rail and trail bridges across the Kenilworth Lagoon would need to be replaced to accommodate construction of the bored tunnels<sup>d</sup></li> <li>• Potential effects to the historic Kenilworth Lagoon and the Brownie/Cedar Lakes channel</li> <li>• Bicycle and pedestrian: Temporary detour of Kenilworth Trail</li> <li>• Stations:                             <ul style="list-style-type: none"> <li>— Includes underground West Lake Street Station</li> <li>— Eliminates 21st Street Station</li> </ul> </li> </ul>	Dismissed

<sup>a</sup> Includes freight track and structures (Louisiana Avenue to Cedar Lake Junction), BNSF siding, freight signaling, freight track removal, pedestrian underpass and roadway relocations/upgrades near St Louis Park High School, North Cedar Lake Trail crossing, right-of-way; includes freight Common Elements costs of approximately \$85 to \$90 million (US-169 to Louisiana Avenue, Southerly Connector).

<sup>b</sup> Includes north and south shallow cut-and-cover tunnels (tunnels, portals, systems/support facilities), freight track and structures (Louisiana Avenue to Cedar Lake Junction), trail bridges & retaining walls (east of Beltline Avenue, near Penn Station), LRT direct fixation track, temporary freight accommodations, Burnham Road bridge support, deduct for 21<sup>st</sup> Street Station, deduct for LRT/trail underpass at Cedar Lake Parkway; includes freight Common Elements costs of approximately \$85 to \$90 million (US-169 to Louisiana Avenue, Southerly Connector).

<sup>c</sup> Includes parallel deep bore tunnels (tunnels, bore pits, systems/support facilities), underground West Lake Station, freight track and structures (Louisiana Avenue to Cedar Lake Junction), trail bridges & retaining walls (east of Beltline Avenue, near Penn Station), removal/replacement of West Lake Bridge, LRT direct fixation track, temporary freight accommodations, deduct for LRT bridge over Kenilworth Channel, deduct for 21<sup>st</sup> Street Station, deduct for LRT/trail underpass at Cedar Lake Parkway; includes freight Common Elements costs of approximately \$85 to \$90 million (US-169 to Louisiana Avenue, Southerly Connector).

<sup>d</sup> The tunnels would be bored within the HCRRA and BNSF right-of-way at the Kenilworth Lagoon and the existing freight rail and trail bridges across the lagoon would need to be replaced because the existing wood bridge piers would likely extend into the tunneling area. Because the existing bridge piers are wood and there are no as-build construction

drawings available, it would be difficult to determine precisely how deep the existing piers extend under the lagoon. However, even if they do not extend in the bored tunnel construction area, the piers would be susceptible to settlement during tunnel construction due to soil conditions at the site.

**TABLE F.5-6**

St. Louis Park/Minneapolis Segment Alignment Adjustment – Third-Step Evaluation

	Strengths <sup>a</sup>	Weaknesses <sup>a</sup>	Status
Brunswick Central - Elevated	<ul style="list-style-type: none"> <li>Freight rail at-grade crossings eliminated between Blake Road and 28th Street along MN&amp;S route</li> <li>Non-emergency freight train horn use eliminated between Blake Road and 28th Street</li> <li>Freight rail relocated away from St. Louis Park High School</li> <li>Freight rail track removed in the Kenilworth Corridor and a portion of the Bass Lake Spur east of the existing MN&amp;S Spur</li> </ul>	<ul style="list-style-type: none"> <li>Acquisition of 32 residential, commercial, and institutional parcels</li> <li>Elevated freight rail track through St. Louis Park and related visual impacts</li> <li>Displacement of Park Spanish Immersion School playground, which is likely a Section 4(f) protected property</li> <li>Construction challenges to accommodate ongoing freight rail traffic</li> <li>Greater amount of wetlands filled</li> <li>Community cohesion impacts</li> <li>Greater capital costs</li> <li>Additional design refinements and/or operating agreement with affected freight railroads would likely be required to address potential adverse economic impacts to the affected railroads, which would likely increase project costs</li> </ul>	Dismissed
Kenilworth Corridor Shallow LRT Tunnels	<ul style="list-style-type: none"> <li>No acquisition of homes and businesses in Kenilworth Corridor</li> <li>200-plus LRT trips per day mostly below-grade through Kenilworth Corridor</li> <li>LRT daylights between north and south tunnels for approximately 20 seconds per train</li> <li>West Lake Street bridge preserved</li> <li>Kenilworth Trail preserved within corridor for long-term</li> <li>Lower capital costs</li> <li>No adverse effects to groundwater or nearby lake levels</li> </ul>	<ul style="list-style-type: none"> <li>21st Street Station eliminated</li> <li>Council sewer relocation</li> <li>Temporary detour of Kenilworth Trail</li> </ul>	Retained

<sup>a</sup> See also Table F.5-6 for additional evaluation measures considered in the third-step evaluation.

**TABLE F.5-7**

St. Louis Park/Minneapolis Segment Alignment Adjustment – Fourth-Step Evaluation - Kenilworth Corridor Adjustments  
*Shallow LRT Cut-and-Cover Tunnels – Over Kenilworth Lagoon and MN&S North*

Alignment Adjustment	Costs	Measures	Status
Shallow LRT Cut-and-Cover Tunnels – Over Kenilworth Lagoon	\$235 - 250m <sup>a</sup>	Daily Freight Operations: Expected average of 2 freight trains daily on the MN&S corridor and 3 daily within the Kenilworth Corridor Daily LRT Operations: Expected average of 200-plus LRT trains per day in a tunnel and at-grade at the channel in the Kenilworth Corridor Safety Considerations: <ul style="list-style-type: none"> <li>4 at-grade freight crossings (existing and proposed) – Wooddale, Beltline, Cedar Lake, 21st Street</li> <li>2 LRT at-grade crossing with freight –Wooddale and Beltline</li> </ul>	Retained

Alignment Adjustment	Costs	Measures	Status
		<ul style="list-style-type: none"> <li>• Freight at station areas - Wooddale, Beltline and West Lake</li> </ul> Community (between Louisiana Ave and Cedar Lake): <ul style="list-style-type: none"> <li>• No school buildings within 150 feet of freight tracks</li> <li>• 750 residential units within 150 feet of freight tracks</li> <li>• No street closures</li> </ul> Right-of-Way: No permanent acquisitions (not including acquisitions for Louisiana Station or Southerly connection) Operating Costs: Increased operations and maintenance costs for ventilation, lighting and other tunnel systems Developable Land: Reduction of 2 acres of developable land Schedule: Lower risk of potential delays Stations: No 21st Street Station Channel Crossing: 74-feet combined width of two reconstructed bridges; total width, including space between bridges, of 82-feet Opening Year: 2019	
MN&S North	\$240 - \$265m <sup>b</sup>	Daily Freight Operations: Expected average of five freight trains daily on the MN&S corridor and zero daily within the Kenilworth Corridor Daily LRT Operations: Expected average of 200-plus LRT trains per day at-grade in the Kenilworth Corridor Safety considerations: <ul style="list-style-type: none"> <li>• 2 at-grade freight crossings - Proposed new crossings at Library and Dakota, proposed closure of existing crossings at Walker, West Lake, 28th and 29th, new grade-separation at 27th</li> <li>• 3 LRT only at-grade crossings with Wooddale, Beltline, 21st Street</li> <li>• No freight at station areas</li> <li>• Opposed by affected freight rail operators due to safety and operational concerns</li> </ul> Community (between Louisiana Ave to Cedar Lake): <ul style="list-style-type: none"> <li>• One school building within 150 feet of freight tracks</li> <li>• 240 residential units within 150 feet of freight tracks</li> <li>• No street closures</li> </ul> Right-of-Way: Permanent acquisition requiring relocations of 6 residential units, 7 private businesses and 1 school (not including acquisitions for Louisiana Station or Southerly connection) Operating Costs: Maintenance costs for an additional 5,400 linear feet of freight bridge structure and 81,000 square feet of freight retaining walls Developable Land: Addition of approximately 3 acres of developable land Schedule: Potential delay of up to two years Stations: Includes station at 21st Street Channel Crossing: 54-feet width of reconstructed single bridge over the channel Opening Year: 2021	Dismissed

<sup>a</sup> Includes north and south shallow cut-and-cover tunnels (tunnels, portals, systems/support facilities), freight track and structures (Louisiana Avenue to Cedar Lake Junction), trail bridges & retaining walls (east of Beltline Avenue, near Penn Station), LRT direct fixation track, temporary freight accommodations, Burnham Road bridge support, deduct for 21st Street Station, deduct for LRT/trail underpass at Cedar Lake Parkway; includes freight Common Elements costs of approximately \$85 to \$90 million (US-169 to Louisiana Avenue, Southerly Connector).

<sup>b</sup> TranSystems identified \$112M in costs in an estimate provided to the Southwest LRT Project Office (February 7, 2014) including freight track and structures (Blake Road to BNSF near MN&S Spur), freight track and structures (Southerly Connection), BNSF siding, freight signaling, pedestrian overpass and roadway relocations/upgrades near St Louis Park High School, engineering/contingency; Southwest LRT Project Office identified additional costs for the design including freight track (US-169 to Blake Road), North Cedar Lake Trail crossing, additional right-of-way, additional LRT retaining walls, additional freight track removal, additional soft costs (contingency, escalation, engineering, financing); cost shown does not include Xcel substation impacts; cost shown includes freight Common Elements costs of approximately \$90 to 100 million (US-169 to Louisiana Avenue, modified Southerly Connector with additional new freight rail structure length).

TABLE F.5-8

St. Louis Park/Minneapolis Segment Alignment Adjustment – Fourth-Step Evaluation - Kenilworth Corridor Adjustments

Shallow LRT Cut-and-Cover Tunnels – Over and Under Kenilworth Lagoon

Adjustment	Full Acquisitions	Costs	Measures	Status
Shallow LRT Cut-and-Cover Tunnels – Over Kenilworth Lagoon	0 properties	\$240 – \$260m <sup>a</sup>	<ul style="list-style-type: none"> <li>• Cost: Lowest capital cost</li> <li>• Construction Considerations: <ul style="list-style-type: none"> <li>— Less challenging construction (relative to other fourth-step Kenilworth Corridor adjustments)</li> <li>— Shorter construction period, 2019 opening year</li> <li>— Closure of recreational traffic on Kenilworth Lagoon of limited durations during construction of bridges</li> </ul> </li> <li>• Visual impacts on Kenilworth Lagoon</li> <li>• Stations: Eliminates 21st Street Station</li> <li>• Channel Crossing: <ul style="list-style-type: none"> <li>— At-grade LRT crossing of Kenilworth Channel</li> <li>— 74-foot combined width of two new bridges (combined pedestrian/LRT bridge and freight bridge); total width, including space between bridges, of 82-feet</li> </ul> </li> <li>• Strengths include the following: <ul style="list-style-type: none"> <li>— Would not require acquisition of homes and businesses in the Kenilworth Corridor</li> <li>— Achieves municipal goal to avoid co-locating freight rail traffic with light rail traffic at-grade along much of the length of the Kenilworth Corridor</li> <li>— Retains at-grade West Lake Station</li> </ul> </li> </ul>	Retained <sup>b</sup>
Short Shallow LRT Cut-and-Cover Tunnel – Under Kenilworth Lagoon	0 properties	\$270 - \$300m <sup>c</sup>	<ul style="list-style-type: none"> <li>• Cost: Second highest capital cost</li> <li>• Construction Considerations: <ul style="list-style-type: none"> <li>— Challenging construction due to substantially constrained construction environment</li> <li>— Existing freight rail and trail bridges across the lagoon would need to be replaced and their replacement would need to be sequenced with the tunnel construction</li> <li>— Longer construction period, 2020 opening year</li> <li>— Closure of recreational traffic on Kenilworth Lagoon for approximately one to two years during construction</li> <li>— Additional emergency ventilation and intermediate emergency egress stairways compared to two shorter tunnels</li> <li>— Volume of groundwater pumped during construction for the tunnel segment under the lagoon would increase substantially, compared to other tunnel segments</li> <li>— Challenges in developing and maintaining effective waterproofing systems around the submerged tunnel segment</li> </ul> </li> <li>• Stations: Retains the 21st Street Station</li> <li>• Channel Crossing: <ul style="list-style-type: none"> <li>— Below-grade LRT crossing of Kenilworth Channel</li> <li>— 43-foot combined width of two new bridges (pedestrian and freight); total width, including space between bridges, of 88 feet</li> </ul> </li> <li>• Strengths include the following: <ul style="list-style-type: none"> <li>— Would not require acquisition of homes and businesses in the Kenilworth Corridor</li> <li>— Achieves municipal goal to avoid co-locating freight rail traffic with light rail traffic at-grade along much of the length of the Kenilworth Corridor (but less than the other fourth-step Kenilworth Corridor adjustments)</li> <li>— Retains at-grade West Lake Station</li> </ul> </li> </ul>	Dismissed

Adjustment	Full Acquisitions	Costs	Measures	Status
Long Shallow LRT Cut-and-Cover Tunnel – Under Kenilworth Lagoon	0 properties	\$305 - \$345m <sup>d</sup>	<ul style="list-style-type: none"> <li>• Cost: Highest capital cost</li> <li>• Construction Considerations:                             <ul style="list-style-type: none"> <li>— Challenging construction due to substantially constrained construction environment</li> <li>— Existing freight rail and trail bridges across the lagoon would need to be replaced and their replacement would need to be sequenced with the tunnel construction</li> <li>— Longer construction period, 2020 opening year</li> <li>— Closure of recreational traffic on Kenilworth Lagoon for approximately one to two years during construction</li> <li>— Additional emergency ventilation and intermediate emergency egress stairways compared to two shorter tunnels</li> <li>— Volume of groundwater pumped during construction for the tunnel segment under the lagoon would increase substantially, compared to other tunnel segments</li> <li>— Challenges in developing and maintaining effective waterproofing systems around the submerged tunnel segment</li> </ul> </li> <li>• Stations: Eliminates the 21st Street Station</li> <li>• Channel Crossing:                             <ul style="list-style-type: none"> <li>— Below-grade LRT crossing of Kenilworth Channel</li> <li>— 43-foot combined width of two bridges (pedestrian and freight); total width, including space between bridges of 88 feet</li> </ul> </li> <li>• Strengths include the following:                             <ul style="list-style-type: none"> <li>— Would not require acquisition of homes and businesses in the Kenilworth Corridor</li> <li>— Achieves municipal goal to avoid co-locating freight rail traffic with light rail traffic at-grade along much of the length of the Kenilworth Corridor</li> <li>— Retains at-grade West Lake Station</li> </ul> </li> </ul>	Dismissed

<sup>a</sup> Includes north and south shallow cut-and-cover tunnels (tunnels, portals, systems/support facilities), freight track and structures (Louisiana Avenue to Cedar Lake Junction), trail bridges & retaining walls (east of Beltline Avenue, near Penn Station), LRT direct fixation track, temporary freight accommodations, Burnham Road bridge support, deduct for 21<sup>st</sup> Street Station, deduct for LRT/trail underpass at Cedar Lake Parkway; includes freight Common Elements (US-169 to Louisiana Avenue, Southerly Connector).

<sup>b</sup> On July 9, 2014, considering a recommendation from the Corridor Management Committee (CMC), the Metropolitan Council (Council) identified additional design adjustments to the LPA within the City of Minneapolis, which were proposed in the then-draft memoranda between the Council and the City of Minneapolis. (See Appendix D, Sources and References Cited, for instructions on how to access the executed memoranda.) In summary, the additional design adjustments: (1) reduced project capital costs by eliminating the northern of the two proposed light rail tunnels in the Kenilworth Corridor (including the re-establishment of the proposed at-grade light rail station at 21st Street); (2) incorporated into the LPA a variety of bicycle and pedestrian improvements associated with proposed light rail stations in the City of Minneapolis; and (3) established the Council’s and the City’s intents relative to aspects of long-term property ownership and freight rail operations in the Kenilworth Corridor.

<sup>c</sup> Includes north and south shallow cut-and-cover tunnels (tunnels, portals, systems/support facilities), freight track and structures (Louisiana Avenue to Cedar Lake Junction), trail bridges & retaining walls (east of Beltline Avenue, near Penn Station), LRT direct fixation track, temporary freight accommodations, Burnham Road bridge support, deduct for 21<sup>st</sup> Street Station, deduct for LRT/trail underpass at Cedar Lake Parkway. Includes additional tunnel segment under Kenilworth Lagoon (tunnel, systems/support facilities), additional LRT direct fixation track, deduct for LRT bridge over Kenilworth Lagoon, deduct for portion of north tunnel and LRT direct fixation track, retention of 21<sup>st</sup> Street Station; cost shown includes freight Common Elements (US-169 to Louisiana Avenue, Southerly Connector).

<sup>d</sup> Includes north and south shallow cut-and-cover tunnels (tunnels, portals, systems/support facilities), freight track and structures (Louisiana Avenue to Cedar Lake Junction), trail bridges & retaining walls (east of Beltline Avenue, near Penn Station), LRT direct fixation track, temporary freight accommodations, Burnham Road bridge support, deduct for 21<sup>st</sup> Street Station, deduct for LRT/trail underpass at Cedar Lake Parkway. Includes additional tunnel segment under Kenilworth Lagoon (tunnel, systems/support facilities), additional LRT direct fixation track, deduct for LRT bridge over Kenilworth Lagoon; cost shown includes freight Common Elements (US-169 to Louisiana Avenue, Southerly Connector).

The potential freight rail relocation adjustments developed and considered involved a range of changes to the freight rail modifications envisioned under LRT 3A (as described in Section 2.3.3 of the Draft EIS). The design adjustments developed primarily focused on changes to the potential freight rail connection between the Bass Lake and MN&S spurs and, to a lesser degree, to the potential freight rail connection between the MN&S Spur and the Wayzata Subdivision.

Conversely, the Kenilworth Corridor adjustments developed focused primarily on the development and evaluation of a range of significant changes to the proposed light rail alignment within the Kenilworth Corridor, compared to those proposed under LRT 3A-1 of the Draft EIS.

The first step of the evaluation process for Set 1 Adjustments resulted in the development and evaluation of the following potential design adjustments (see Exhibit F-11):

- **Set 1 Freight Rail Relocation Adjustments**

- Brunswick West – Elevated - the relocation of freight rail to the MN&S Spur and Wayzata Subdivision primarily above-grade and on new right-of-way between Bass Lake Spur and 33rd Street
- Brunswick Central – Elevated - the relocation of freight rail to the MN&S Spur and Wayzata Subdivision primarily above-grade, slightly east of Brunswick Central between Bass Lake Spur and 33rd Street

- **Set 1 Kenilworth Corridor Adjustments**

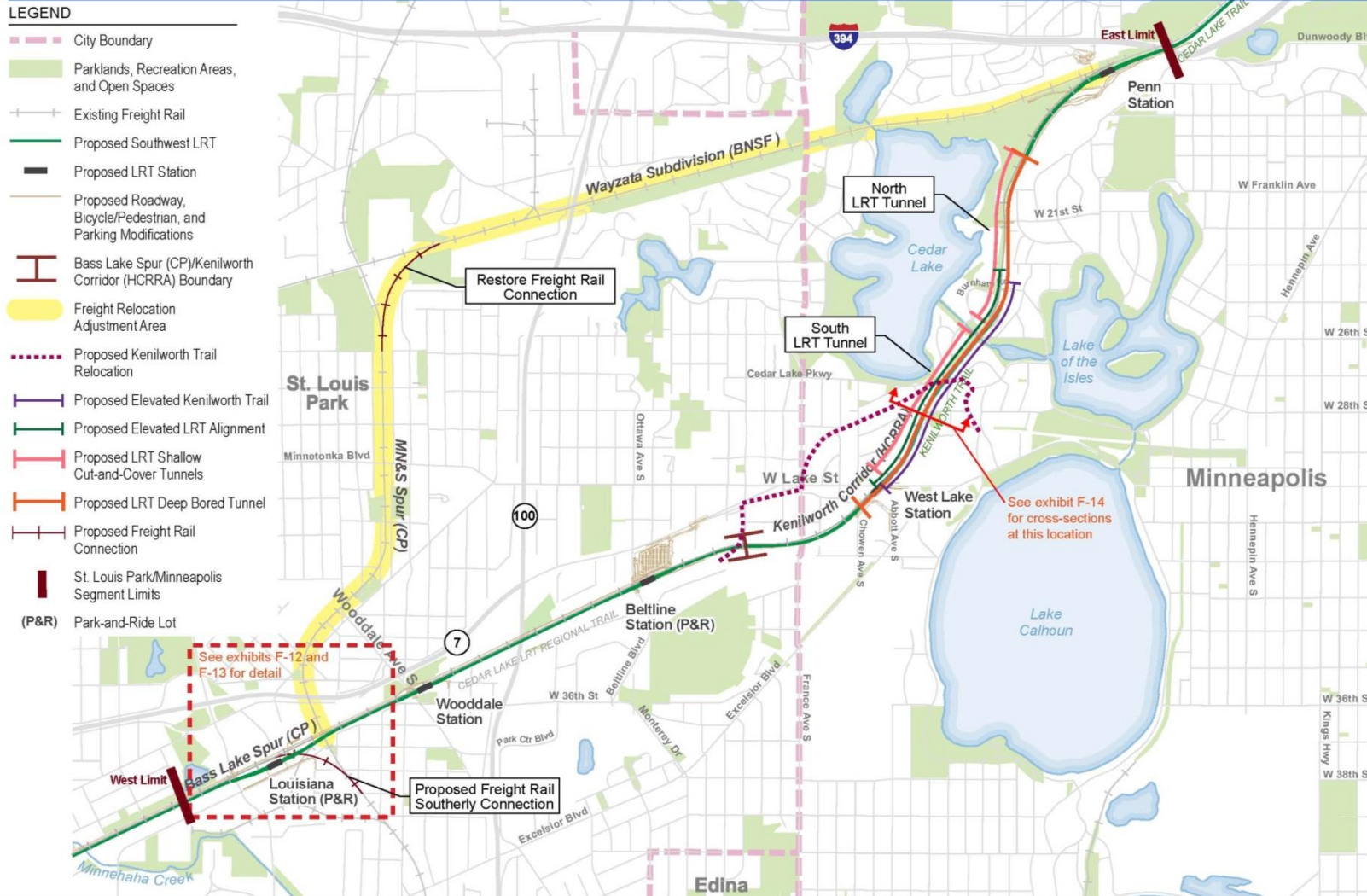
- All Modes at Grade—light rail, freight rail, and trails at-grade through Kenilworth Corridor
- Relocate the Kenilworth Trail out of the Kenilworth Corridor—the relocation of the Kenilworth Trail between the Midtown Greenway and Cedar Lake Parkway
- Elevate the Kenilworth Trail—the placement of the Kenilworth trail on structure above the light rail alignment, east of the West Lake Street bridge to north side of Burnham Road bridge
- Elevate the Light Rail Alignment—the placement of proposed light rail alignment on an elevated structure in the Kenilworth Corridor, east of the West Lake Street bridge to north side of Burnham Road bridge
- Place the Light Rail Alignment in Shallow Cut-and-Cover Tunnels—the placement of the proposed light rail alignment within two cut-and-cover tunnels (the south tunnel segment between north of the West Lake Street bridge and south of the Kenilworth Lagoon; the north tunnel segment between north of the Kenilworth Lagoon and approximately 1,000 feet north of 21st Street) and a light rail bridge over the Kenilworth Lagoon between the two tunnels
- Place the Light Rail Alignment in Deep Bore Tunnels—the placement of the proposed light rail alignment within twin bored tunnels between west of West Lake Station and approximately 1,000 feet north of 21st Street, with West Lake Station below-grade

### **Set 1 Freight Rail Relocation Adjustments Considered in the First-Step Evaluation**

During the Draft EIS public comment period, individuals, organizations, and jurisdictions expressed concerns with the proposed freight rail track connection in St. Louis Park that would allow for the relocation of freight rail out of the Kenilworth Corridor. In particular, TC&W, the existing freight rail operator in the Kenilworth Corridor, raised safety and operational concerns with the horizontal and vertical curvature of the proposed new connection between the Bass Lake Spur and the MN&S Spur, as well as insufficient lengths of straight track, based on their design standards for operating up to 120-car-unit trains. TC&W also noted that the proposed routing of their freight trains from the Bass Lake Spur and the Kenilworth Corridor to the MN&S Spur and the Wayzata Subdivision could adversely affect the railroad's operational costs due to track geometry, increased track distances, and operating environments.

EXHIBIT F-11

Areas of Potential Light Rail and Freight Rail-Related Adjustments – St. Louis Park/Minneapolis Segment



	<p>Southwest LRT Supplemental Draft EIS                  Areas of Potential Light Rail and Freight Rail-Related Adjustments                  St. Louis Park/Minneapolis Segment</p>	<p>Exhibit F-11</p>		
--	---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	---------------------	--	--

Based on those and other comments received on the Draft EIS, the project team developed a variety of design adjustments to allow for the relocation of freight rail service, while balancing two primary objectives: design the connection to meet the safety and operational design standards of the affected railroads; and maintain the adjusted freight rail alignment within the existing right-of-way as much as possible. This effort focused on adjustments to the potential freight rail connection between the Bass Lake and MN&S spurs and adjustments to the track alignment along the MN&S Spur to the reconstructed connection to the Wayzata Subdivision.

Step one of this design development and evaluation process utilized the public involvement, agency coordination, and freight rail coordination efforts described in Section 2.0 of this appendix. The process, which generally spanned from February to June 2013, used a systematic approach to the development and evaluation of design adjustments to the freight rail relocation design under LRT 3A that the Draft EIS was based on and that representatives of freight railroads objected to during the Draft EIS public comment period, specifically citing safety and railroad operations and economic concerns. The design of the adjustments that would have relocated freight rail from the Bass Lake Spur and the Kenilworth Corridor and onto the MN&S Spur and the Wayzata Subdivision changed through this systematic process of design development by project staff and review and comment on the revised design by others, including the representatives of the affected freight rails. The review of the draft designs by representatives of the affected freight railroads, especially related to design and operational safety, played a key role in the development of the freight rail relocation design adjustments. In general, that design development process for freight rail relocation adjustments went through the following steps before two potential design adjustments were identified as likely meeting the design and operational safety requirements of the affected railroads (which are described below and are termed the Brunswick West and Brunswick Central):

1. **Draft EIS MN&S.** The starting point for the freight rail relocation design adjustment process was the design of freight rail modifications described in the Draft EIS under LRT 3A. This design would have provided a northern connection between the Bass Lake Spur and the MN&S Spur via a new freight rail connection, allowing freight rail service to be rerouted from the Bass Lake Spur east of the MN&S Spur and the Kenilworth Corridor, onto the MN&S Spur and the Wayzata Subdivision. The design of that connection (see Appendix F of the Draft EIS) was found to have safety and operational concerns by representatives of the affected freight railroads. The safety concerns were based on freight rail alignment curves and grades. Out of the nine curves associated with the design, four had high compensated grades (between 1.6 and 1.8 percent) and one curve was sharper than 6 degrees. Based on the safety and operational issues raised, the Draft EIS MN&S design was dismissed from further consideration.
2. **MN&S Modified.** Project staff prepared a modified MN&S design, based on the design from the Draft EIS, with the following changes: all horizontal curves are adjusted to be less than or equal to 6 degrees, maximum compensated grades are 0.91 percent, the alignment crosses Highway 7 on a new freight rail bridge and the horizontal and vertical alignment in the vicinity of the existing Minnetonka Blvd. bridge is adjusted. Representatives from affected railroads noted that the reverse horizontal curves located immediately north of the Bass Lake Spur on the proposed relocation route would not provide sufficient tangent (i.e., straight) track length to allow for the safe operations of their trains and, while the design was an improvement over the Draft EIS MN&S design, the reverse curve would render the design unacceptable due to the potential for derailment of freight rail cars navigating the curves.
3. **Brunswick East.** Developed and evaluated concurrently with the Brunswick West – At Grade and the Brunswick Central – At Grade alignments, the Brunswick East design eliminated the reverse curves in the MN&S Modified design. Further, the design would extend the existing MN&S tangent alignment south, connecting to the Bass Lake Spur with a 4-degree curve with maximum compensated grades of 0.80 percent. The alignment would run on an earth retaining structure on the Bass Lake Spur, cross over TH 7 and Wooddale Avenue on bridge, run on earth retaining structure generally parallel to Brunswick Avenue, cross over Lake Street on bridge. This design was dismissed from further consideration for two key reasons: 1) representatives of the effected freight railroads expressed the same safety concerns expressed for the Draft EIS MN&S design, particularly the presence of reverse curves and inadequate tangent track length for the through movement on the MN&S that could lead to derailment of freight



trains; and 2) the design would potentially result in the displacement of approximately 55 residential properties, the Park Spanish Immersion School, and one commercial building.

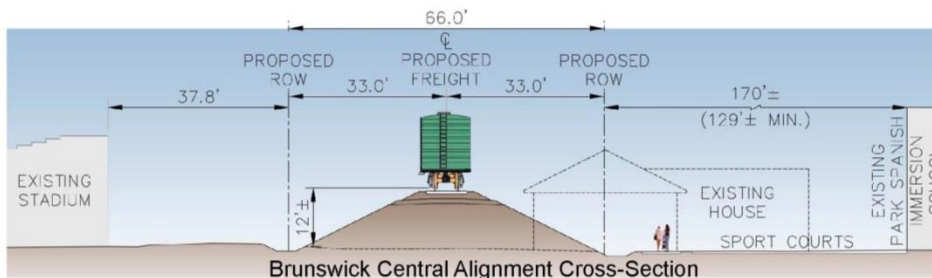
4. **Brunswick West – At-Grade.** Developed and evaluated concurrently with the Brunswick East and the Brunswick Central – At Grade designs, the Brunswick West – At Grade design would connect to the MN&S tangent alignment south of Minnetonka Boulevard, introducing a 4 degree curve. It would also place a tangent section of track through the Orioles Stadium (a Section 4(f) property) and it would cross the north west corner of the Xcel substation, tying into the Bass Lake Spur near Louisiana Avenue South with a 4 degree curve. This design would include at-grade freight rail crossings of Library Lane and West Lake Street/Dakota Avenue South. This design was dismissed from further consideration due to safety concerns raised by the affected railroads due to the associated at-grade crossings and the additional horizontal and vertical curves that could lead to rail car decoupling and/or train derailments.
5. **Brunswick Central – At-Grade.** Developed and evaluated concurrently with the Brunswick East and the Brunswick West – At Grade designs, the Brunswick Central – At Grade design would connect to the existing MN&S tangent track alignment south of Minnetonka Boulevard, introducing a 4 degree curve that would cross Brunswick Avenue at grade and that would continue on tangent track crossing West Lake Street and Wooddale Avenue South at grade. This design was dismissed from further consideration due to safety concerns raised by the affected railroads due to the associated at-grade crossings and the additional horizontal and vertical curves that could lead to rail car decoupling and/or train derailments.
6. **Brunswick West (Elevated).** The Brunswick West – At Grade design was modified to place the freight rail alignment between Highway 7 and 33rd Street on an elevated profile with bridge and earth retaining structures, thereby eliminating the at-grade crossings of Library Lane and West Lake Street/Dakota Avenue South and minimizing the vertical curves. This modified design was found acceptable to representatives from the effected freight railroads and was advanced into the first step evaluation (its more detailed description follows).
7. **Brunswick Central (Elevated).** The Brunswick Central – At Grade design was modified to place the freight rail alignment between Highway 7 and 33rd Street on an elevated profile with bridge and earth retaining structures, thereby eliminating the at-grade crossings of Brunswick Avenue, West Lake Street and Wooddale Avenue South and minimizing the vertical curves. This modified design was found acceptable to representatives from the effected freight railroads from a geometric perspective and was advanced into the first step evaluation (its more detailed description follows).

The adjustments developed for the potential freight rail connection at the conclusion of the freight rail relocation design development process were termed Brunswick Central and Brunswick West (see Exhibits F-12 and F-13, respectively) and are described as follows:

- **Brunswick Central (Elevated).** The Brunswick Central freight rail relocation adjustment was developed to minimize impacts to commercial, residential, and public properties associated with the Brunswick West alignment. This design adjustment would shift the existing MN&S rail tracks to the east, south of Highway 7, replacing the current freight rail bridge over the Bass Lake Spur and realigning the MN&S Spur between Bass Lake Spur and 33rd Street on new railroad right-of-way elevated on bridge and earth retaining structures. Under the Brunswick Central design adjustment, the potential freight rail connection would be elevated to minimize the number of vertical curves and vertical grade changes and flatten horizontal curves needed to meet the railroad operator's operational and safety requirements. This design adjustment would require full or partial acquisition of approximately 32 residential, business, or public properties; two new structures over Highway 7; and a new freight rail structure over the MN&S Spur. Both Highway 7 and the frontage road would be lowered approximately five feet to provide the required vertical bridge clearance over Highway 7. This design adjustment would result in relocating the Park Spanish Immersion School playground, a property that would likely meet the qualifications for protection under Section 4(f). Under this design adjustment, all freight rail street

**EXHIBIT F-12**

**Brunswick Central - Elevated Freight Rail Relocation Adjustments**

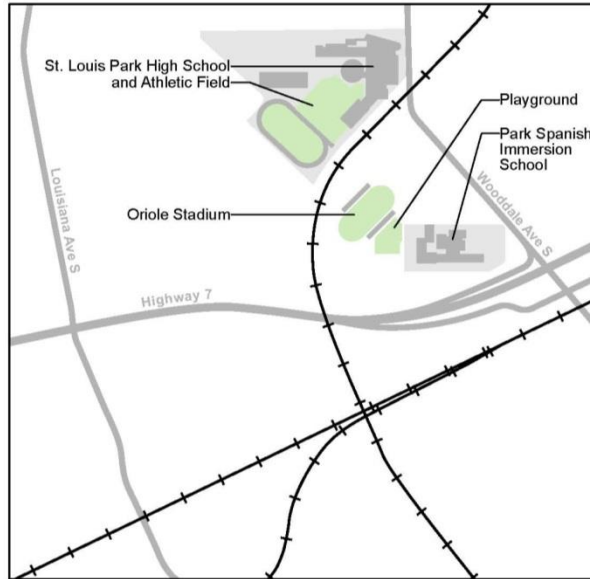


	<p>Southwest LRT Supplemental Draft EIS Brunswick Central Freight Rail Relocation Adjustments</p>	<p>Exhibit F-12</p>		
--	-------------------------------------------------------------------------------------------------------	---------------------	--	--

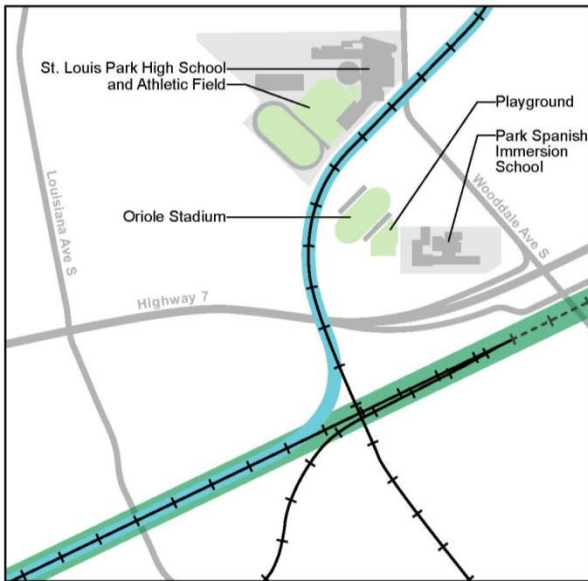
**EXHIBIT F-13**  
 Draft EIS and Brunswick West Freight Rail Relocation Adjustments

LEGEND

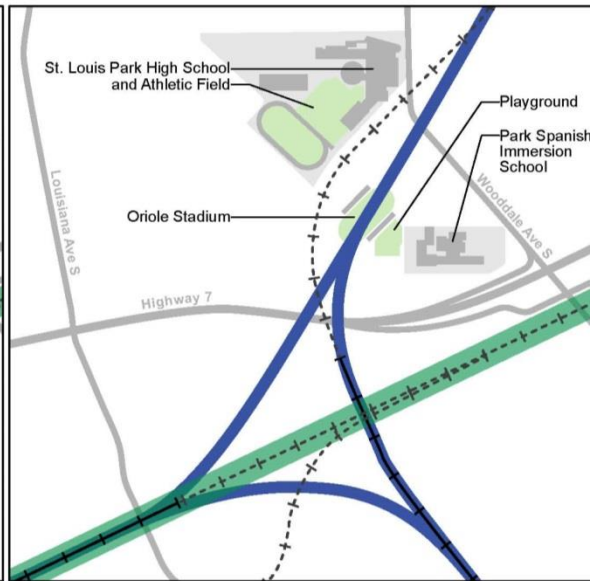
-  Proposed Draft EIS Freight Rail Relocation Alignment
-  Proposed Brunswick West Freight Rail Relocation Alignment
-  Existing Freight Rail
-  Proposed Removal of Freight Rail
-  Proposed Southwest LRT




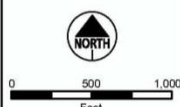

Existing Freight Rail Alignment



Draft EIS Relocation Design



Proposed Brunswick West Alignment

	<p><b>Southwest LRT Supplemental Draft EIS</b>                  Draft EIS and Brunswick West Freight Rail Relocation Adjustments</p>	<p>Exhibit F-13</p>		
-------------------------------------------------------------------------------------	------------------------------------------------------------------------------------------------------------------------------------------	---------------------	--------------------------------------------------------------------------------------	---------------------------------------------------------------------------------------

crossings would be grade-separated, except for an at-grade crossing at 28th Street. Underpasses would allow the Spanish Immersion School to retain access to Oriole Field and would provide vehicle, bicycle, and pedestrian access at other locations where the freight alignment would be elevated on retained fill (which is the construction of retaining walls to support fill where tracks are raised above existing grade). New freight rail bridges would be constructed over, Wooddale Avenue, 34th Street, and Lake Street. The modified freight rail alignment would generally meet up with the existing MN&S Spur alignment east of Brunswick Avenue South, in the vicinity of West 32nd Street, with relatively minor modifications to the existing tracks. Those modifications would be to the elevation of the existing freight rail tracks to accommodate the connection between the new and existing alignment. Finally, there would be a restored freight rail connection made between the MN&S Spur and the Wayzata Subdivision, as illustrated in Appendix G, Conceptual Engineering Drawings, of the Draft EIS.

- **Brunswick West (Elevated).** The Brunswick West freight rail relocation adjustment would provide a freight rail connection between the Bass Lake and MN&S spurs that would meet the freight rail operators' design and safety standards for horizontal and vertical track curvature. The vertical profile of this alignment would require the freight rail track to be elevated between the Bass Lake Spur and approximately 33rd Street on bridge and earth retaining structures. However, the design adjustment would require full or partial acquisition of approximately 46 residential, business, or public properties; construction of freight rail bridge structures; lowering of the south frontage road at Highway 7; and reconfiguration of several local roads that would be severed due to the adjusted freight rail alignment. The Brunswick West freight rail relocation adjustment would realign and re-establish the MN&S tracks between the Bass Lake Spur and 33rd Street on a new freight rail right-of-way. The alignment would also include realignment of the MN&S Spur to the south of the Bass Lake Spur. It also would displace Oriole Stadium, which serves as St. Louis Park High School's football field and as a community recreation facility and most likely would meet the qualifications for a Section 4(f)-protected property. The Brunswick West alignment would also close through access at Walker Street/Library Lane and would realign Lake Street from Walker Street to Dakota Avenue. It would also require additional roadway modifications to continue to provide vehicular access to the high school's athletic field. The modified freight rail alignment would generally meet up with the existing MN&S Spur alignment east of Brunswick Avenue South, in the vicinity of West 32nd Street, with relatively minor modifications to the existing tracks. Those modifications would be to the elevation of the existing freight rail tracks to accommodate the connection between the new and existing alignment. Finally, there would be a restored freight rail connection made between the MN&S Spur and the Wayzata Subdivision, as illustrated in Appendix G, Conceptual Engineering Drawings, of the Draft EIS.

### Set 1 Kenilworth Corridor Adjustments Considered in the First-Step Evaluation

Concurrent with the potential freight rail relocation adjustment process, the project team reviewed comments submitted on the Draft EIS and advanced design activities to identify adjustments that would allow freight rail to continue operations in the Kenilworth Corridor.

As described in the Draft EIS, under LRT 3A-1, TC&W trains would not have been rerouted from the Kenilworth Corridor to the MN&S Spur and Wayzata Subdivision. Instead, the proposed double-tracked light rail alignment would be located adjacent to the existing Bass Lake Spur until entering the Kenilworth Corridor, where the light rail alignment would run parallel to the current single freight rail track and the Kenilworth Trail. Based on the conceptual design at the time, the Draft EIS analysis reflected a 94-foot cross section for LRT 3A-1 in the Kenilworth Corridor. Because of the limited width of the existing HCRRA-owned Kenilworth Corridor right-of-way at several locations, LRT 3A-1 would have resulted in the acquisition of approximately 55 residential and two commercial properties. Responding to a wide variety of comments on the Draft EIS, the project team developed and evaluated a range of design adjustments to the LRT 3A-1 that would allow for freight rail service to be retained within the Kenilworth Corridor along with the proposed light rail alignment and related improvements.

The project team developed and evaluated five potential design adjustments in addition to advancing the conceptual design of LRT3A-1 from the Draft EIS that would have placed the freight rail, light rail, and trail

alignments at-grade throughout the Kenilworth Corridor.<sup>3</sup> The six potential design adjustments developed and evaluated for the Kenilworth Corridor, that would retain freight rail within the corridor, are briefly described below, and are illustrated on Exhibits F-11 and F-14 of the Supplemental Draft EIS:

- **All Modes at-Grade.** As previously noted, the conceptual design of LRT 3A-1 in the Draft EIS would have placed the existing freight rail and Kenilworth Trail alignments and the proposed light rail alignment at-grade within the Kenilworth Corridor. The cross section of this design was adjusted based on additional information from the railroad operator<sup>4</sup> and on consideration of the potential acquisition of BNSF-owned right-of-way located immediately west of the Kenilworth Corridor. The adjusted typical cross section for this placing all modes at-grade within the Kenilworth Corridor would require 81 feet of right-of-way and would have required full acquisition of approximately 26 residential properties.
- **Relocate the Kenilworth Trail out of the Kenilworth Corridor.** This potential adjustment would generally require a typical cross-section width of approximately 61 feet for the existing freight and proposed light rail alignments. In summary, this design adjustment would avoid full residential property acquisitions but would likely require some partial property acquisitions and the construction of a new trail route from Inglewood Avenue South to Cedar Lake Parkway, including at-grade crossing or trail overpass structures over Highway 25 and France Avenue.
- **Elevate the Kenilworth Trail.** This potential adjustment generally requires a typical cross-section width of approximately 61 feet. The trail structure would be south of and parallel to the existing right-of-way north of West Lake Street and south of Burnham Road. At these locations, the trail would be elevated on retained fill, transitioning to bridge structure across the freight rail and light rail alignments. The trail would be elevated approximately 30 feet above-grade, with a 20-foot-wide trail surface supported by eight-foot-wide piers. This option would not require any full residential property acquisitions, but it would require the construction of an elevated trail structure, including an ADA-accessible connection to Cedar Lake Parkway.
- **Elevate the Light Rail Alignment.** This potential adjustment would require a typical cross section of approximately 59 feet. The proposed light rail structure would be approximately 3,000 feet long with 10-foot-wide bridge piers. Generally, the light rail structure would be located between the Midtown Greenway and Burnham Road and would be approximately 35 feet high. This design adjustment would not result in any full residential property acquisitions.
- **Shallow LRT Tunnels – Over Kenilworth Lagoon.** This potential adjustment would result in a typical cross section of approximately 62 feet for the at-grade freight rail and trail alignments where the double-tracked light rail alignment would be within the two tunnels. The two light rail tunnels would generally be within the Kenilworth Corridor (with some relatively minor exceptions, illustrated in Appendix G, Conceptual Engineering Drawings). In general, the tunnels would be located under the reconstructed Kenilworth Trail (Exhibit F-14 illustrates a typical cross section), with depth of cover ranging from 6 feet to 8 feet. Exhibit F-15 A/B illustrates the general construction sequence that would be used to construct the LRT tunnels using a cut-and-cover construction technique. The south light rail tunnel would extend approximately 2,200 feet from just north of West Lake Street to approximately 400 feet south of the Kenilworth Lagoon, which is a constructed channel connecting Lake of the Isles to Cedar Lake. The light rail alignment would rise back to grade to cross the lagoon on a new bridge with approximately the same vertical clearance over the lagoon as is provided today under the existing freight rail and

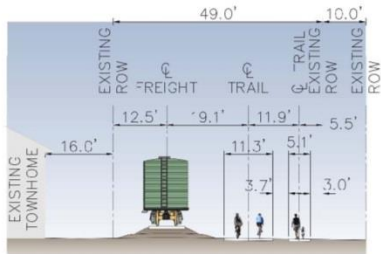
---

<sup>3</sup> A single-track light rail alignment within the most constrained sections of the Kenilworth Corridor was considered and dismissed due to unacceptable constraints that it would place on operating light rail service in the Southwest and Central corridors.

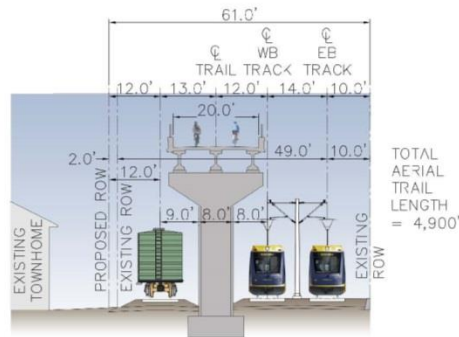
<sup>4</sup> These adjustments were unable to achieve a 25-foot clearance envelope between the centerline of the freight track and the right-of-way line. TC&W reviewed their existing operating clearance envelope within the Kenilworth Corridor, which is a minimum of 12 feet. TC&W has indicated that the existing operating clearance is acceptable.

EXHIBIT F-14

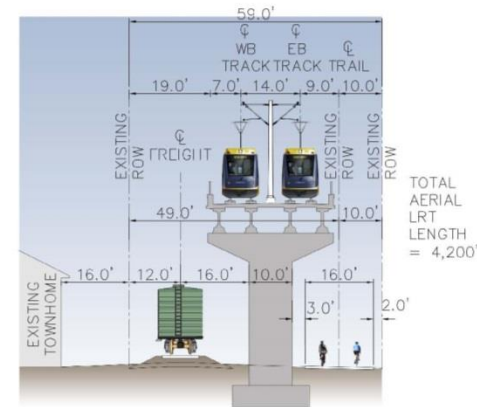
Kenilworth Corridor Adjustments Considered



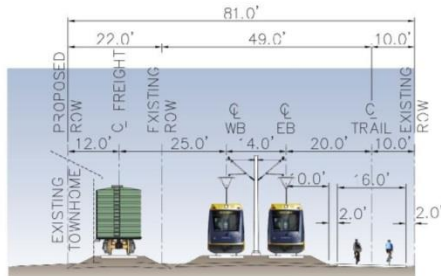
Existing



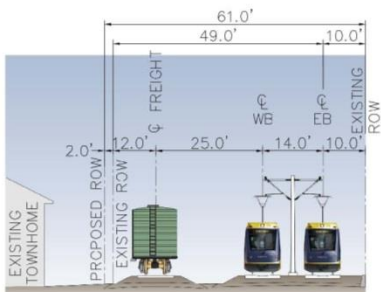
Elevate the Kenilworth Trail



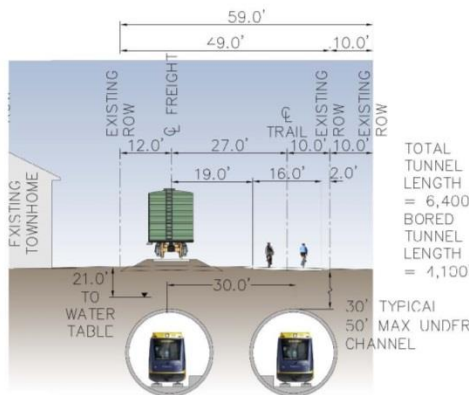
Elevate the Light Rail Alignment



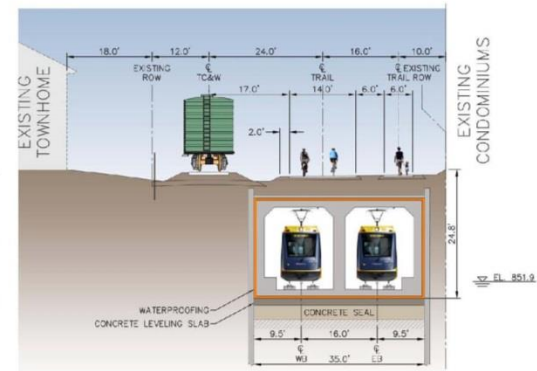
Conceptual Design from the Draft EIS (All Modes At-Grade)



Relocate the Kenilworth Trail out of the Kenilworth Corridor (see Exhibit F-11 for trail relocation route)



Place LRT in Deep Bored Tunnels

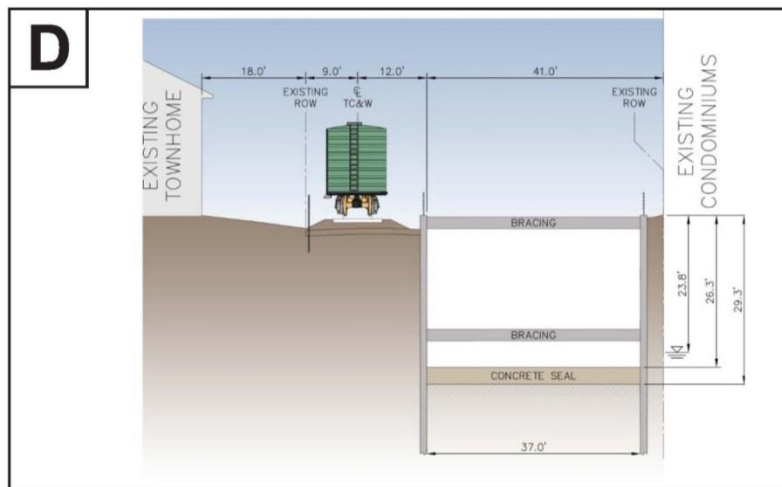
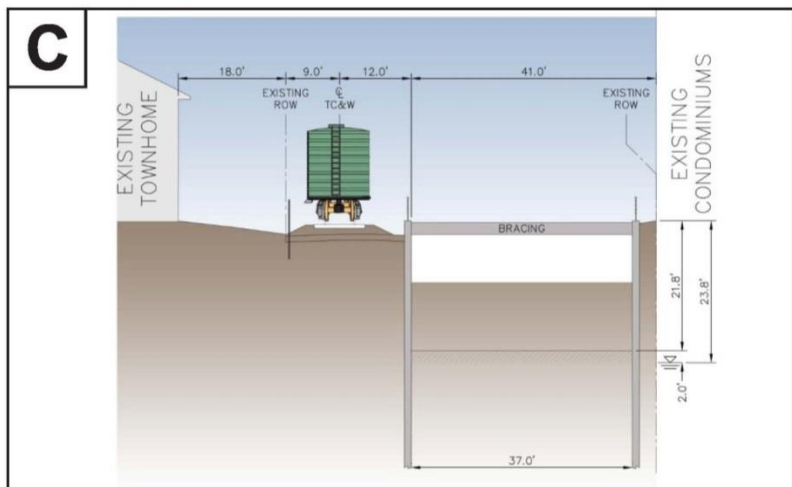
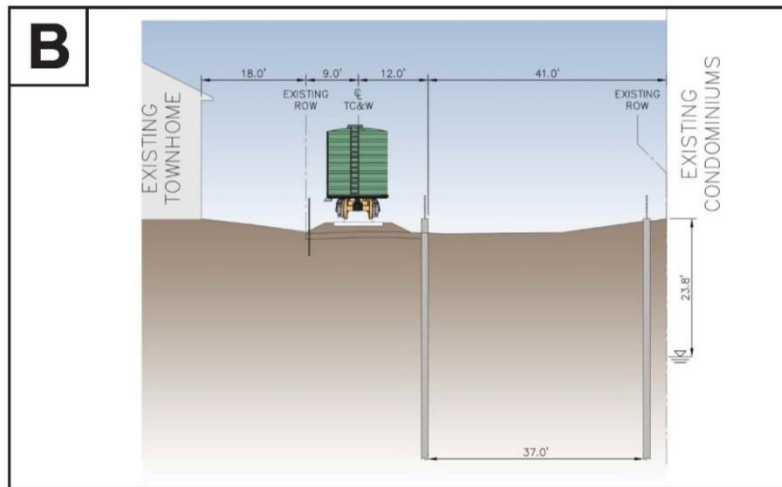
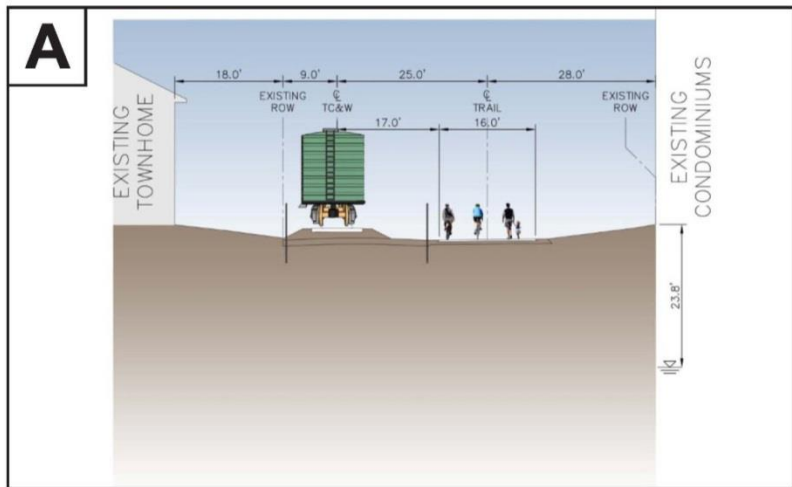


Place LRT in Shallow Cut-and-Cover Tunnel

	<p>Southwest LRT Supplemental Draft EIS Kenilworth Corridor Adjustments Considered</p>	<p>Exhibit F-14</p>	
--	--------------------------------------------------------------------------------------------	---------------------	--

EXHIBIT F-15A

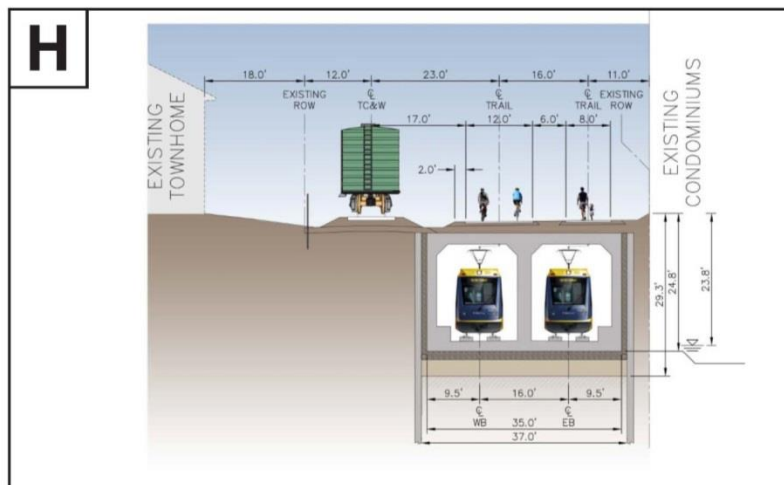
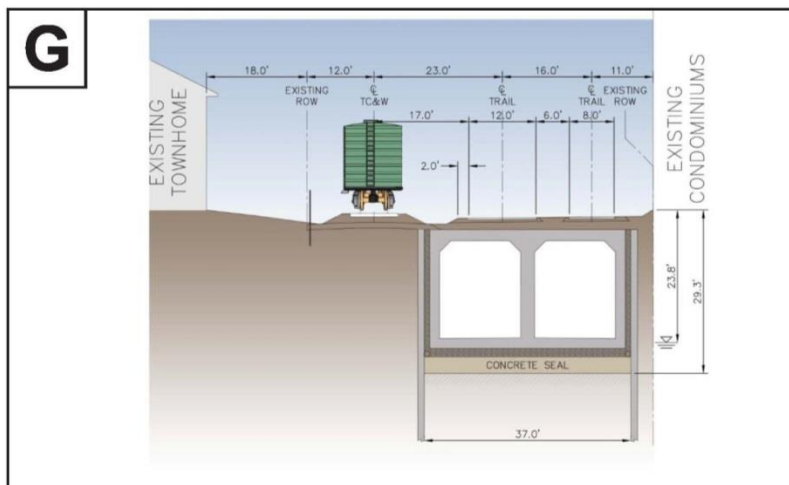
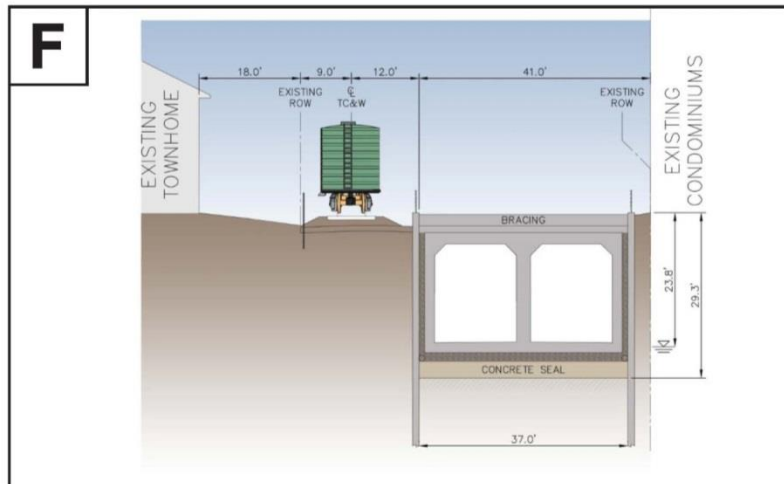
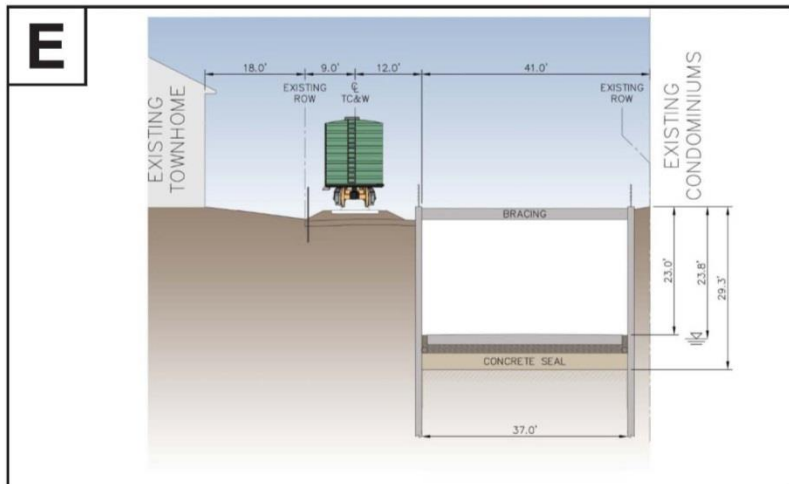
Shallow LRT Tunnel Typical Construction Sequence



	<p>Southwest LRT Supplemental Draft EIS Shallow LRT Tunnel Typical Construction Sequence St. Louis Park/Minneapolis Segment</p>	<p>Exhibit F-15A</p>	
--	-----------------------------------------------------------------------------------------------------------------------------------------	----------------------	--

EXHIBIT F-15B

Shallow LRT Tunnel Typical Construction Sequence



Southwest LRT Supplemental Draft EIS  
 Shallow LRT Tunnel Typical Construction Sequence  
 St. Louis Park/Minneapolis Segment

Exhibit F-15B





Bicycle and pedestrian trail bridges. After crossing the lagoon, the light rail alignment would descend and enter the north tunnel approximately 600 feet north of the lagoon. The north light rail tunnel would extend for approximately 2,500 feet, rising back to the surface approximately 1,000 feet north of 21st Street. Due to the relatively high cost of a tunnel station construction and the relatively low ridership projected at the proposed 21st Street Station, the design refinement eliminated the station. Each end of the two tunnels would include portal areas that would span approximately 300 to 500 feet, which would provide for the transition between the at-grade and tunnel alignments. Fencing and other facilities would protect the tunnel portals from unauthorized entry. This design adjustment would not result in any full residential property acquisitions.

- **Deep Bore LRT Tunnels.** Under this potential design adjustment, a portion of the proposed light rail alignment in the Kenilworth Corridor would be in two parallel tunnels that would be approximately 30 to 50 feet deep. The two parallel tunnels would be constructed using boring machines and each tunnel would be approximately 5,900 feet long. The tunnels' south portal would be north of West Lake Street and the north portal would be approximately 1,000 feet north of 21st Street. Each of the two light rail tunnels would be approximately 20 feet in diameter, with the depth of cover ranging from 30 feet at the West Lake Station to approximately 50 feet where the tunnels would cross under the Kenilworth Lagoon (30 feet from the Kenilworth Lagoon water surface elevation). This potential design adjustment would require a typical cross section in the Kenilworth Corridor of 59 feet to accommodate the at-grade freight rail and trail alignments where the light rail alignment would be within the two parallel tunnels. The deep bore tunnel would also require an underground station at West Lake Street,<sup>5</sup> as well as reconstruction of the existing West Lake Street bridge over the Kenilworth Corridor and the approaches to the bridge (generally between Market Plaza and Drew Avenue South).<sup>6</sup> Due to the relatively high cost of a tunnel station construction and the relatively low ridership projected at the proposed 21st Street Station, this design refinement would eliminate the 21st Street Station. This potential design adjustment would not require any full residential property acquisitions.

### Conclusion of the First-Step Evaluation

During the first step of evaluation, the Council held public open houses during July 2013 to present the design adjustments developed to date and to receive comments on those potential adjustments. Primary concerns raised through that process included noise, visual effects on adjacent residences, and narrower distances between residential properties and proposed rail or light rail tracks. The design adjustments developed during the first-step evaluation were also reviewed by the CAC and BAC and were presented to the St. Louis Park and Minneapolis city councils and to the St. Louis Park School Board.

Based on the evaluation measures prepared for the first-step evaluation, provided in Tables F.5-2 and F.5-3, the public and agency comments received and the committee recommendations made, the range of potential freight rail relocation and Kenilworth Corridor adjustments were narrowed to the following for further study in the second-step evaluation:

- Freight Rail Relocation with Brunswick Central Alignment Adjustment
- Kenilworth Corridor Shallow LRT Tunnels
- Kenilworth Corridor Deep Bore LRT Tunnel

### B. Second-Step Evaluation

Relatively minor changes were made to the potential design adjustments in the St. Louis Park/Minneapolis Segment during the second-step evaluation. For example, additional design detail was added or modified, in

---

<sup>5</sup> Under the Deep Bore LRT Tunnels adjustment, an at-grade station at West Lake Street would require the tunnel portal to be located north of the West Lake Street bridge, which would result in the acquisition and displacement of residential properties in this area.

<sup>6</sup> Due to various constraints (such as existing development on either side of the roadway and the conflict of existing bridge piers in relationship to the proposed tunnel), West Lake Street, generally between Market Plaza and Chowen Avenue South, would be closed to through traffic for approximately 12 to 18 months to allow for demolition of the existing bridge and approaches and for construction of the new bridge and approaches.

response to questions or requests from jurisdictions, to meet a specific design requirement or to avoid or minimize an identified adverse environmental impact. Additional elements were included in the designs, such as additional pedestrian access points under the Brunswick Central adjustment, and minor modifications to the location of crash walls between the proposed freight rail and light rail alignments and fencing details at the tunnel portals were added to the tunnel alignments.

The Council used the criteria and the measures reported in Table F.5-5 to evaluate the three potential freight rail-related design adjustments to the LPA. Based on the evaluation measures prepared for the second-step evaluation, the Deep Bore LRT Tunnel adjustment was dropped from the third-step evaluation, as recommended by the CMC. In summary, the Deep Bore LRT Tunnel adjustment was dismissed from further study based upon the following:

- Highest capital costs, which would likely be economically infeasible at the regional level
- Demolition and reconstruction of the existing West Lake Street bridge over the Kenilworth Corridor and approach spans to the bridge, generally between Market Plaza and Chowen Avenue South, which would require the closure of West Lake Street bridge and approach spans to the bridge for approximately 12 to 18 months, resulting in rerouting of approximately 26,500 vehicle trips per average weekday
- Walk access time to and from West Lake Station, which would be the highest ridership station, would increase by approximately one minute due to additional time to access below ground station, resulting in reduced transit ridership at that station
- Increased operating and maintenance costs associated with an underground West Lake Station
- Longer and deeper transition areas with retaining walls between the proposed at-grade light rail alignment and the two tunnel portals, which would lead to additional adverse impacts to visual quality and aesthetics in the Kenilworth Corridor
- Large construction staging areas and access pits at the two tunnel portals, which would generate noise and dust from construction equipment and trucks delivering supplies and removing spoils from the tunnel, and additional short-term adverse impacts to visual quality and aesthetics in the Kenilworth Corridor
- Reconstruction of the existing freight rail and light rail bridges across the Kenilworth Lagoon and the adverse effects of those construction activities would not be avoided
- Potential risk of settlement to existing buildings and other structures immediately adjacent to the deep bore tunnels

### **C. Third-Step Evaluation**

The third step of evaluation involved the detailed comparison of the Freight Rail Relocation Brunswick Central and the Shallow LRT Tunnels – Over Kenilworth Lagoon adjustments. Based on a recommendation adopted by the CMC in October 2013, the analysis concluded that the Shallow LRT Tunnels – Over Kenilworth Lagoon adjustments would provide the best balance of costs, benefits, and environmental impacts, compared to the Freight Rail Relocation Brunswick Central adjustments. In summary, the advantage of the Shallow LRT Tunnels – Over Kenilworth Lagoon adjustment is that it would avoid the various adverse impacts associated with the Freight Rail Relocation Brunswick Central design, including: additional capital costs; the full acquisition of approximately 32 residential, commercial, and institutional parcels; the use of the Park Spanish Immersion School playground; increased wetland impacts, and the adverse visual, neighborhood, and community cohesion impacts resulting from the construction of elevated freight rail track alignment and structures associated with the modified freight rail alignment in the vicinity of St. Louis Park High School. By comparison, the Shallow LRT Tunnels – Over Kenilworth Lagoon adjustment would not result in the full acquisition of any residential, commercial, or institutional properties or displacement of residences or commercial/institutional buildings, or uses. The third-step evaluation measures are summarized in Table F.5-6. As a result of the third-step evaluation, the Freight Rail Relocation Brunswick

Central design adjustment was dismissed from further study and the Shallow LRT Tunnels – Over Kenilworth Lagoon adjustment was advanced into the fourth-step evaluation (see Exhibit F-16).

#### **D. Fourth-Step Evaluation**

The fourth step of evaluation was initiated in October 2013 and involved three primary components: (1) preparation of the independently-prepared *SWLRT Engineering Evaluation of Freight Rail Relocation Alternatives* (TranSystems, 2014),<sup>7</sup> which identified the MN&S North design adjustment for further evaluation; (2) the development and evaluation of variations of the Shallow Cut-and-Cover Tunnels design adjustment; and (3) additional design adjustments reflected in a memorandum of understanding between the Council and the City of Minneapolis (see Appendix D, Sources and References Cited, for instructions on how to access the executed memorandum). Following is a description of the design concepts considered in the fourth-step evaluation and a summary of how they were evaluated by the Council.

##### **Independent Engineering Evaluation of Freight Rail Relocation**

The first component of the fourth step of evaluation was the independent study commissioned by the Council to provide an analysis of previously studied freight rail relocation designs that would provide for the rerouting of TC&W freight rail trains out of the Kenilworth Corridor and identification of any potential new design adjustments or concepts.<sup>8</sup> In particular, the study, which was performed by TranSystems, consisted of an analysis of the technical, safety, and operational considerations of eight options that would allow for the rerouting of TC&W freight trains that were developed in prior freight rail studies and two additional concepts developed by the Southwest LRT Project Office (SPO) during the first step of the four-step evaluation process. The scope of the analysis generally covered the following: identification of operational cost drivers; identification of community and other impacts; and assessment of possible operational adjustments.

The TranSystems analysis and report evaluated the following options for relocation of freight rail from the Kenilworth Corridor:

- Far Western Minnesota Connection – Appleton to Benson (Exhibit F-17)
- Western Minnesota Connection – Granite Falls to Willmar (Exhibit F-18)
- Chaska Cutoff (Exhibit F-19)
- Highway 169 Alignment to Burlington Northern Santa Fe (Exhibit F-20)
- Midtown Corridor (Exhibit F-21)
- United Transportation Route (Exhibit F-22)
- MN&S South Connection with Union Pacific (Exhibit F-23)
- MN&S North (Source: TranSystem’s Concept) (Exhibit F-24)

The draft *SWLRT Engineering Evaluation of Freight Rail Relocation Alternatives* was issued by independently by TranSystems on January 30, 2014, which initiated a public comment period on the draft report. The public comment period extended through March 12, 2014 and it included town hall meetings on February 10 and 12, 2014.

Exhibits F-22 and F-23 from TranSystem’s independent *SWLRT Engineering Evaluation of Freight Rail and Relocation Alternatives* report illustrate TranSystem’s evaluation of the freight rail relocation designs. As represented in the exhibits, TranSystems conducted their evaluation within a two-tiered process. In summary, TranSystem’s independent *SWLRT Engineering Evaluation of Freight Rail and Relocation Alternatives* report made the following recommendations:

---

<sup>7</sup> The report was funded by the Council and the Council submitted comments on the draft report during its public comment period. However, the report was independently prepared by TranSystems and the Council did not have editorial control over the report. See Appendix D for details on how to access the final report.

<sup>8</sup> The Council also commissioned an independent review of the project’s prior groundwater studies in the Kenilworth Corridor related to the Shallow LRT Tunnels adjustments, documented in the *Southwest Light Rail Transit: Kenilworth Shallow LRT Tunnels Water Resources Evaluation* (Burns & McDonnell, 2014). See Appendix D for a link to the final report.

EXHIBIT F-16

Shallow LRT Tunnels – Over Kenilworth Lagoon Design Adjustments St. Louis Park/Minneapolis Segment

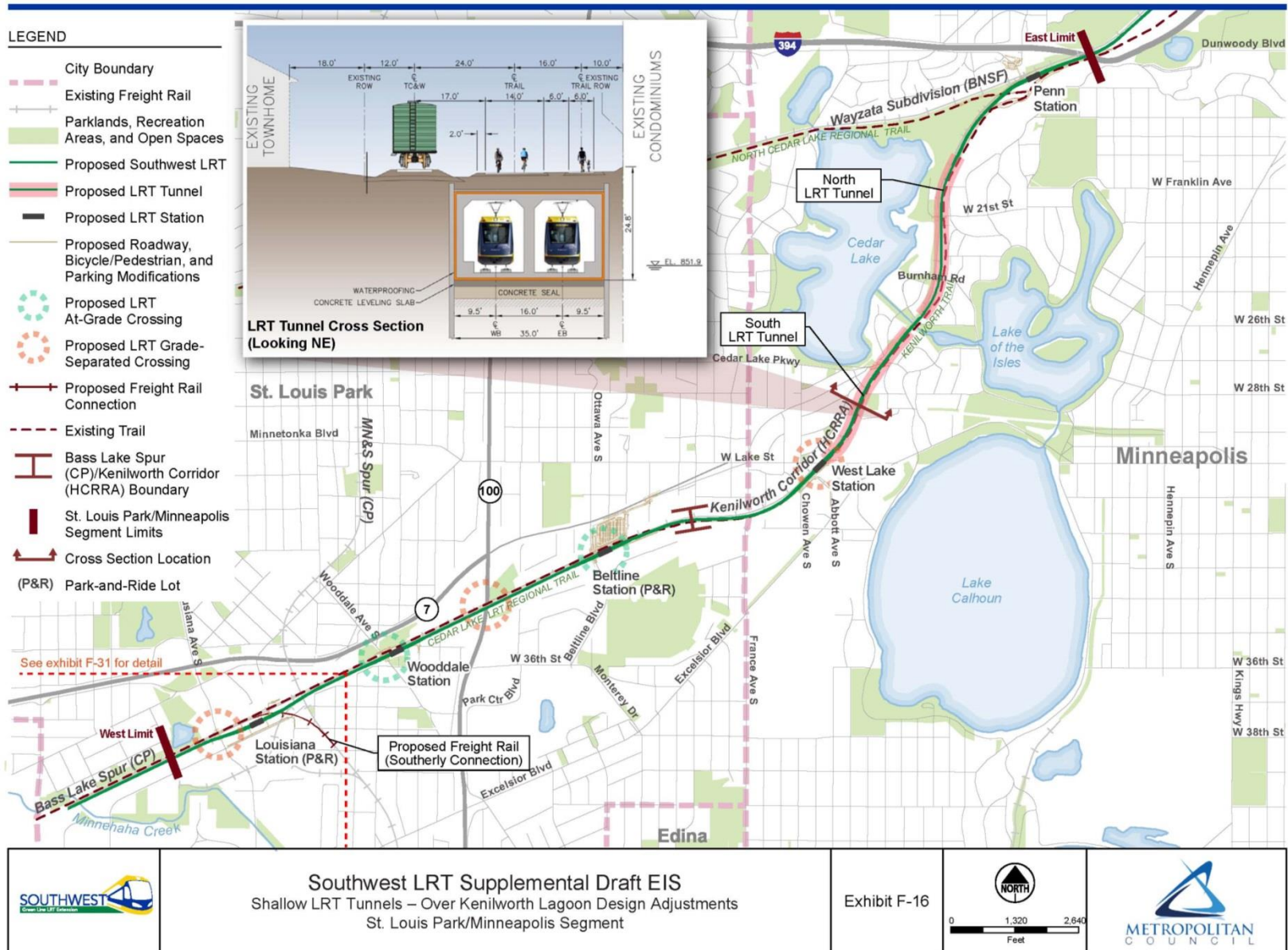


EXHIBIT F-17

Far Western Minnesota Connection – Appleton to Benson

Source: TranSystems; February 2014.

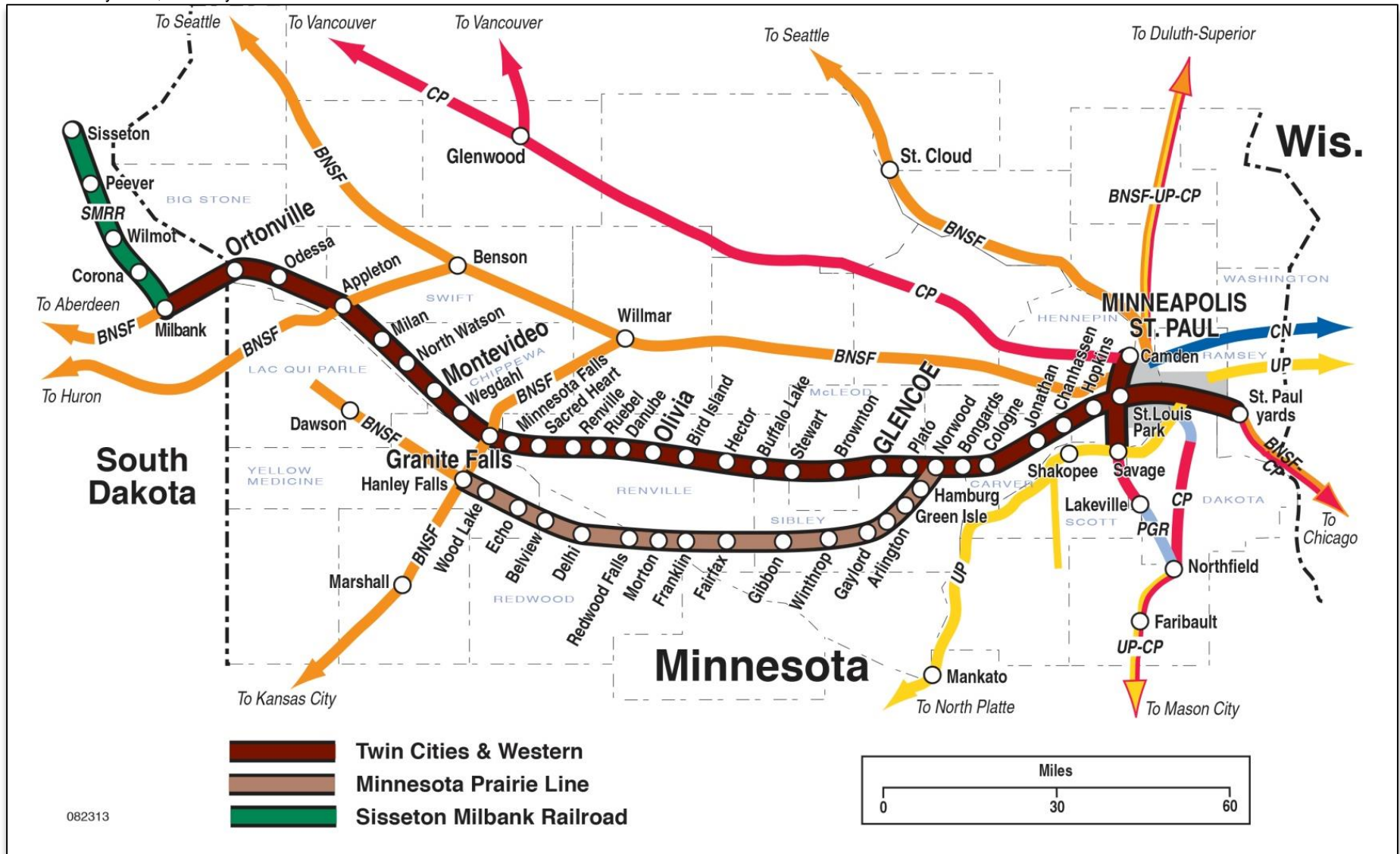
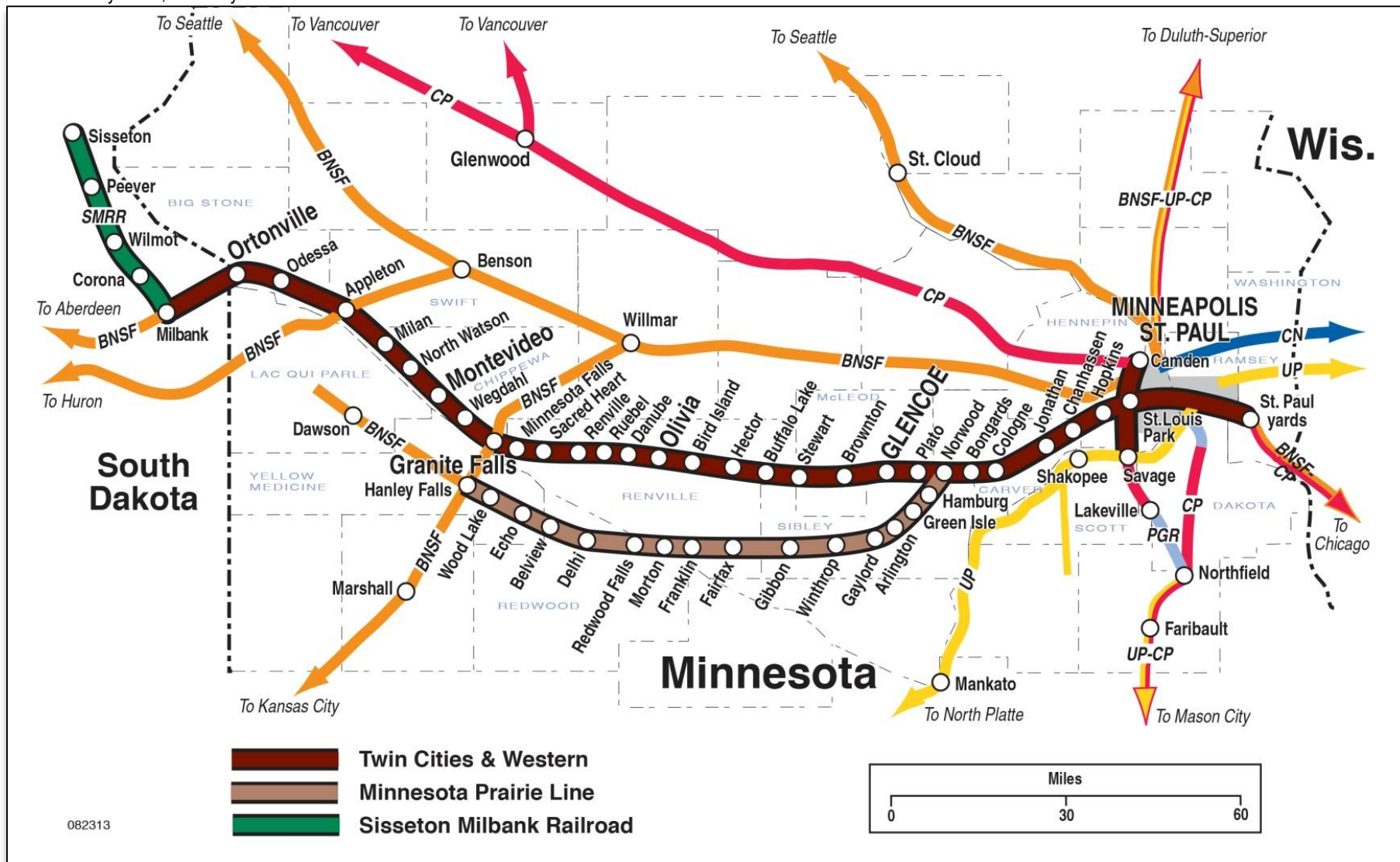


EXHIBIT F-18

Western Minnesota Connection – Granite Falls to Willmar

Source: TranSystems; February 2014.

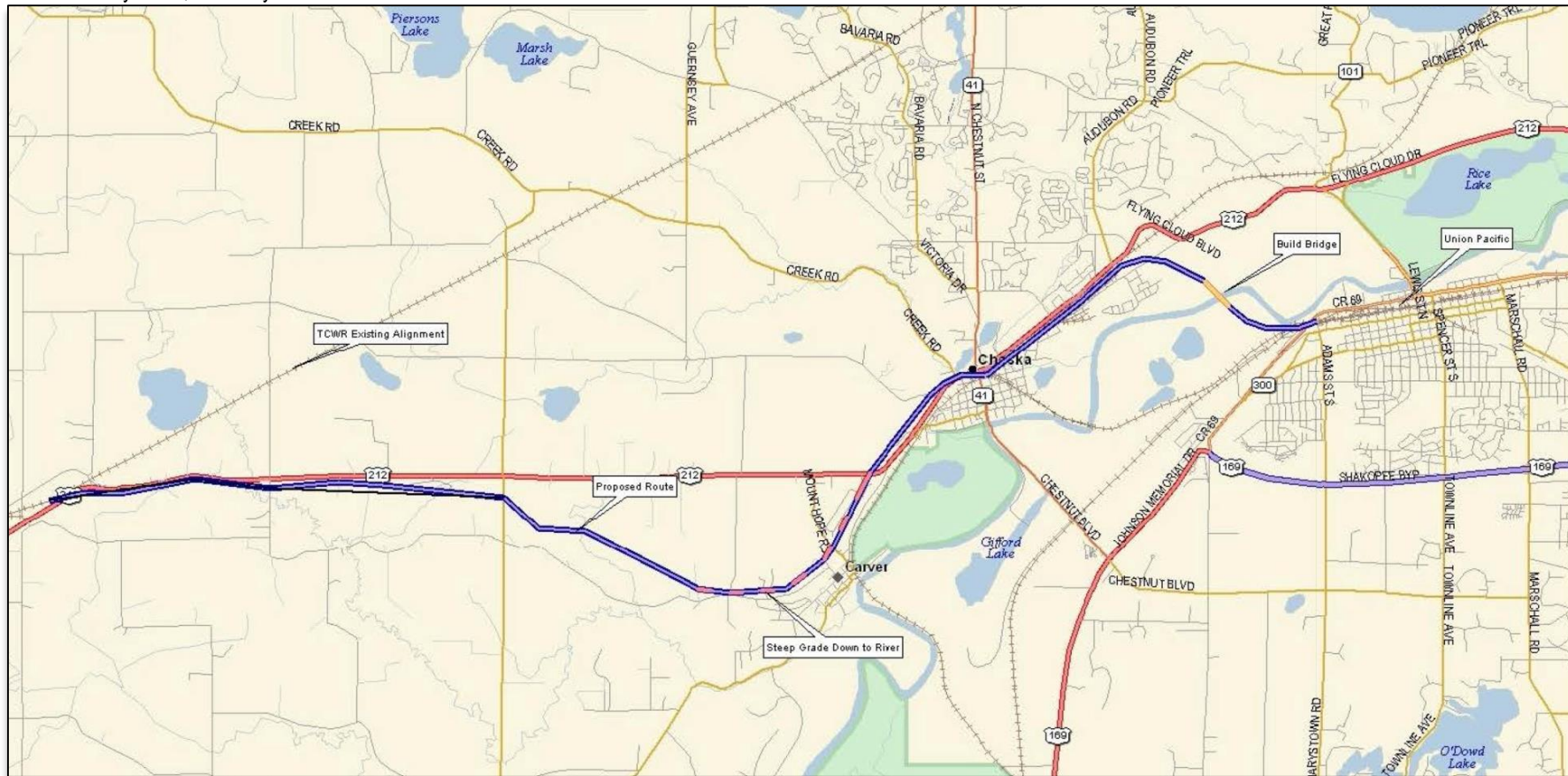


082313

EXHIBIT F-19

Chaska Cutoff

Source: TranSystems; February 2014.



**EXHIBIT F-20**

Highway 169 Alignment to Burlington Northern Santa Fe

Source: TranSystems; February 2014.

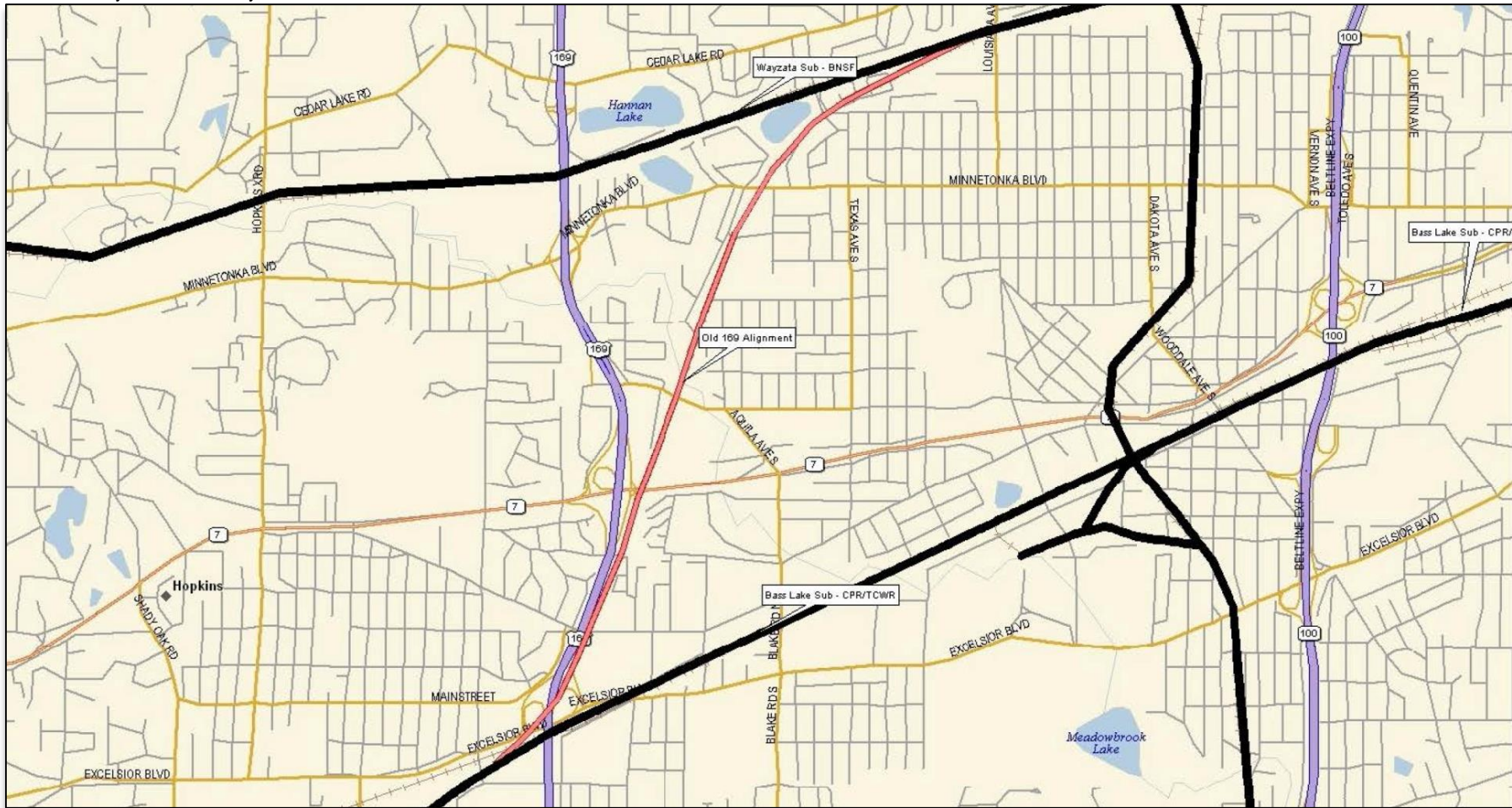




EXHIBIT F-21

Midtown Corridor

Source: TranSystems; February 2014.

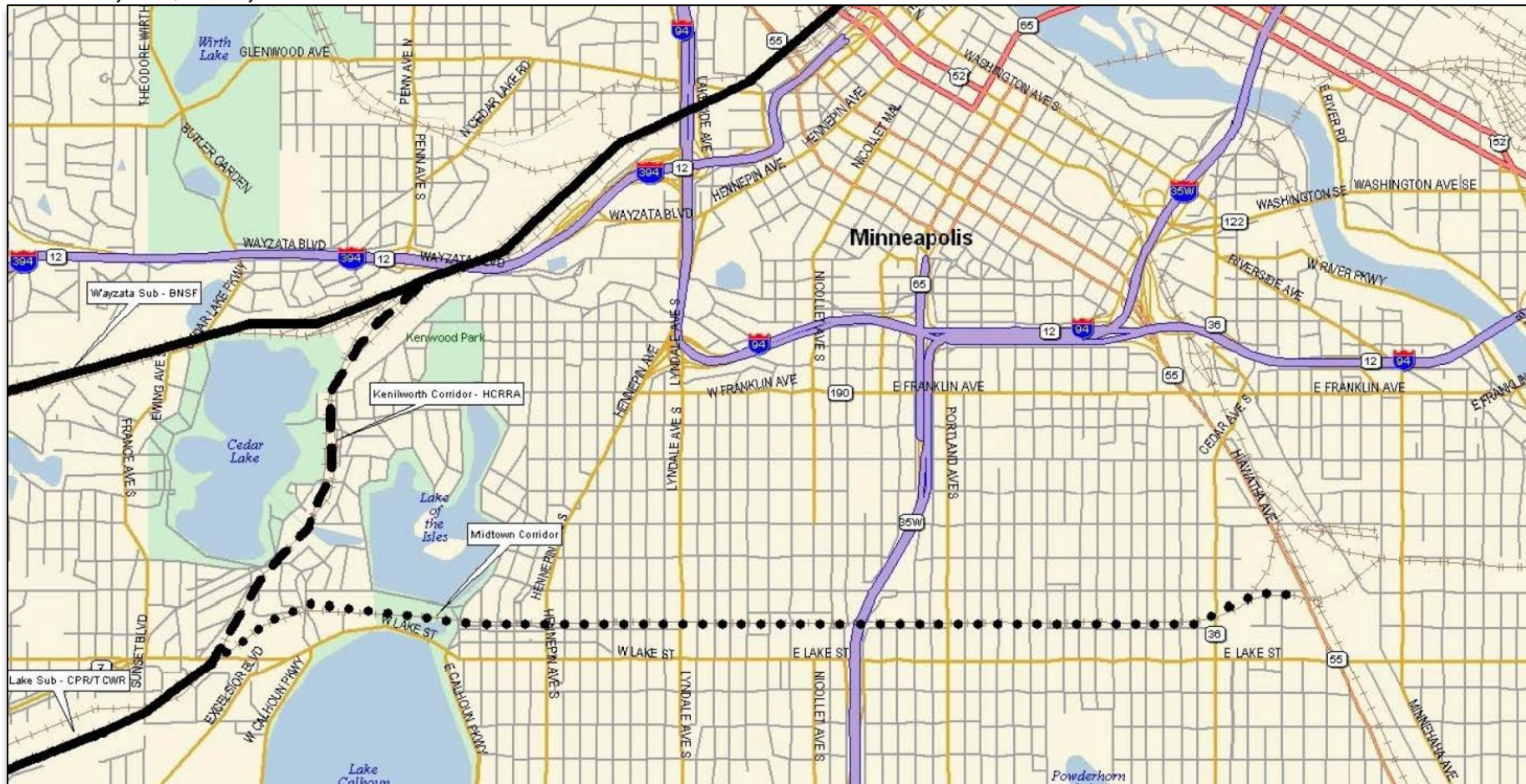


EXHIBIT F-22

United Transportation Union Route

Source: TranSystems; February 2014.

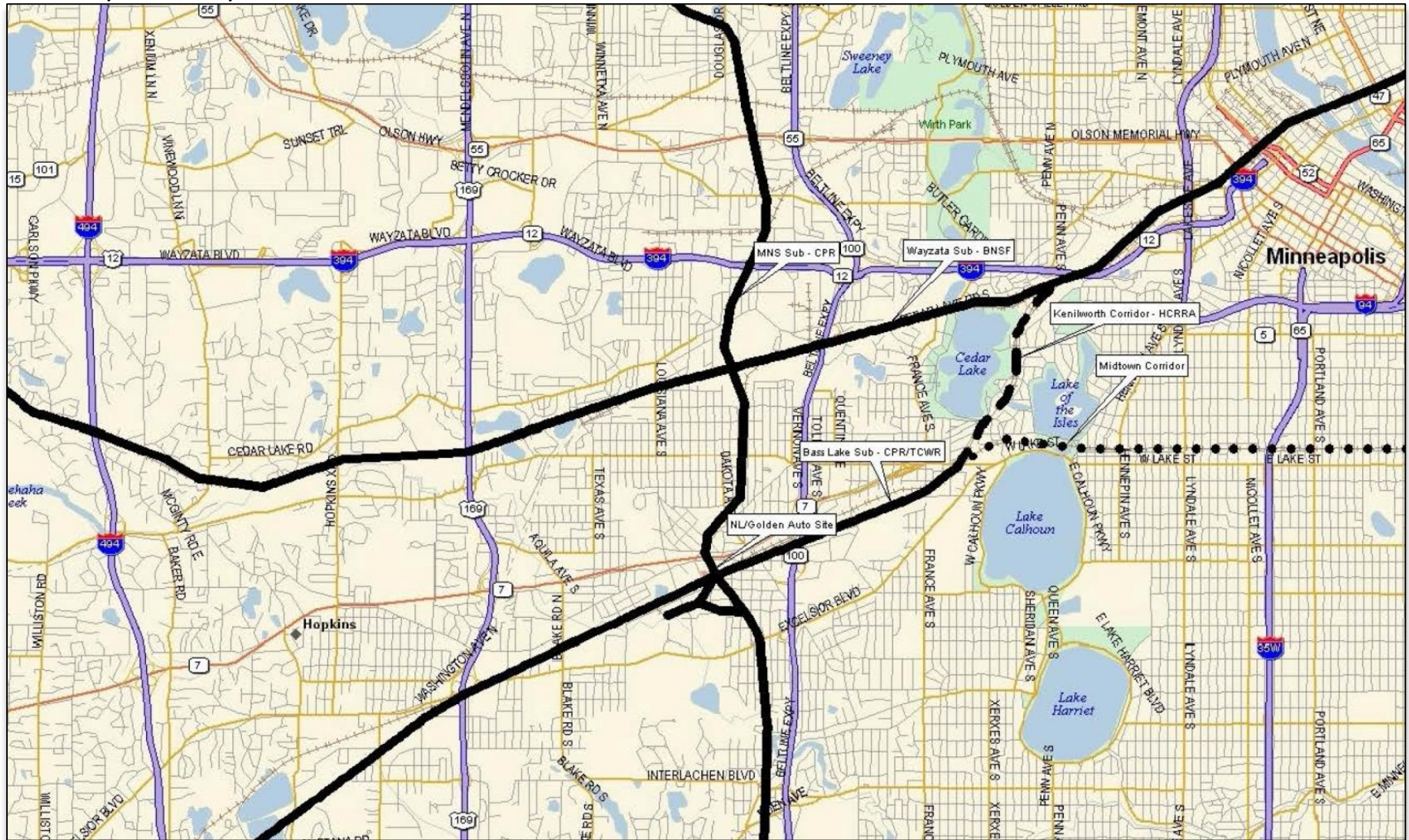


EXHIBIT F-23

MN&S South Connection with Union Pacific

Source: TranSystems; February 2014.

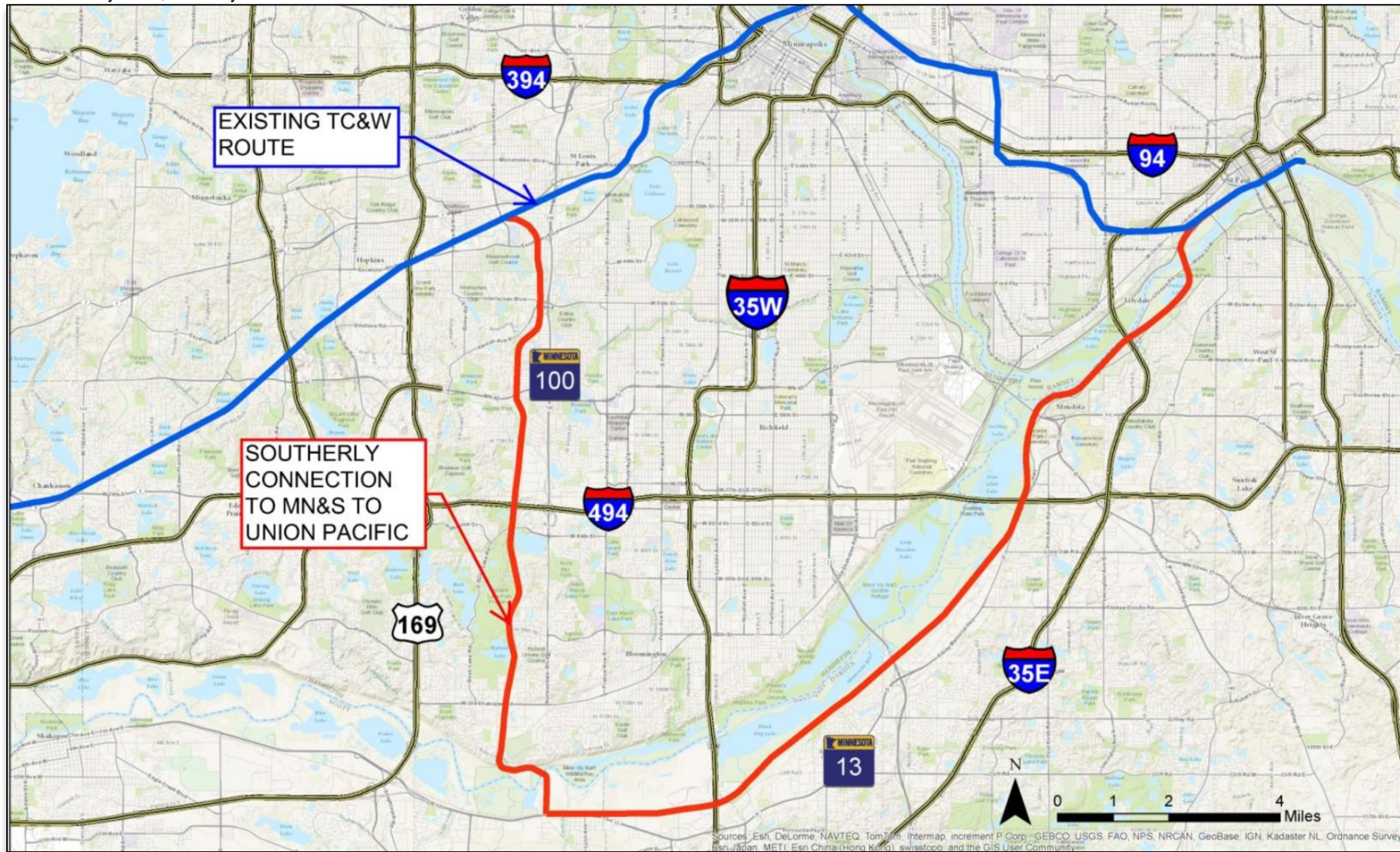
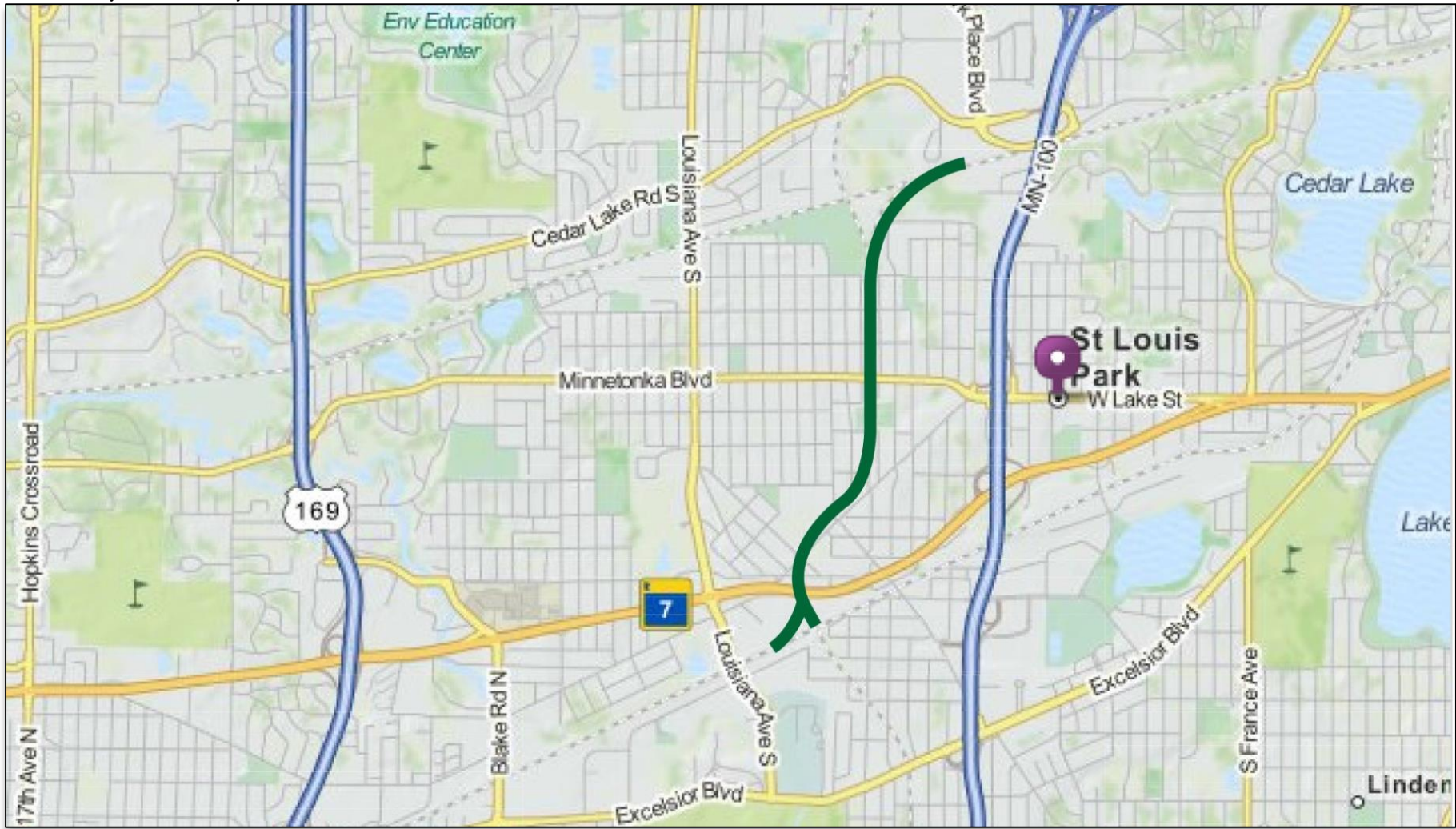


EXHIBIT F-24

MN&S North

Source: TranSystems; February 2014.



1. The study finds that five of the freight rail relocation options evaluated are “fatally flawed” for a variety of reasons, primarily related to an assessment showing that the affected freight rail operators would not find them acceptable due to economic, operations, or safety concerns. As such, the report does not recommend any additional study of those five options:
  - Far Western Minnesota Connection – Appleton to Benson (Exhibit F-17)
  - Western Minnesota Connection – Granite Falls to Willmar (Exhibit F-18)
  - Chaska Cutoff (Exhibit F-19)
  - Highway 169 Alignment to Burlington Northern Santa Fe (Exhibit F-20)
  - MN&S South Connection with Union Pacific (Exhibit F-23)
2. In addition, the independent report does not recommend further study of three other freight rail options that it evaluated, primarily due to significant impediments to their implementation. The final report finds that, while the Brunswick Central alignment was acceptable to the affected freight rail operator from an operational, economic, and safety perspective, it was dismissed from further study (in step three of the evaluation) due to its wide range of adverse impacts. The final report also finds that an option termed the MN&S South, which would connect the Bass Lake Spur south to the MN&S Spur, might be able to be designed to meet engineering standards, but that it “would face severe obstacles with respect to property acquisition and permitting...” (TranSystems, 2014; page 34). Finally, due to several identified implementation challenges, the report does not recommend further study of the Midtown Corridor. The identified challenges include: likely “significant” capital costs; the corridor is listed on the National Register of Historic Places and two bridges on the alignment are on park land; and it may “complicate or thwart plans for a streetcar in the corridor.” (TranSystems, 2014; page 19)
3. TranSystems independent report concluded that a range of designs included within what it termed the Kenilworth Corridor – Co-Location (including the Shallow LRT Tunnels – Over Kenilworth Lagoon adjustment) constituted a “viable route,” warranting further development and study.<sup>9</sup>
4. The independent study by TranSystems also resulted in the identification of an additional freight rail relocation alignment in the vicinity of St. Louis Park High School that could potentially accommodate the relocation of freight rail from the Kenilworth Corridor to the MN&S Spur and the Wayzata Subdivision. The report recommends that this design adjustment receive further consideration by the Council. This freight rail modification design adjustment, which has many similarities to other options previously developed and considered by the Council, was termed the MN&S North design adjustment (see Exhibit F-24).

---

<sup>9</sup> The independent TranSystems final report also concluded that “above-ground options [in the Kenilworth Corridor] present an insurmountable engineering challenge.” Further, the final report “defers to [others] to offer conclusions regarding the engineering for the shallow tunnel option.” (*SWLRT Engineering Evaluation of Freight Rail and Relocation Alternatives* – TranSystems; March 2014; page 24).

**EXHIBIT F-25**

TranSystems Tier1 Screening Summary

Source: SWLRT Engineering Evaluation of Freight Rail and Relocation Alternatives – TranSystems; March 2014.

Proposed Freight Route	Operations	Commercial Considerations	Implementation Considerations
Kenilworth Corridor – No-build	○	○	●
Kenilworth Corridor – Co-location	○	○	◐
Far Western MN connection with BNSF (Appleton-Benson)	●	●	●
Western MN connection with BNSF (Granite Falls-Willmar)	●	●	●
Chaska Cut-off	◐	◐	●
Hwy 169 Alignment to BNSF	◐	◐	●
MN&S Spur North	◐	○	◐
UTU route	◐	○	●
MN&S Spur South	◐	◐	●
Midtown Corridor	○	○	●

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

EXHIBIT F-26

TranSystems Tier II Screening Summary

Source: SWLRT Engineering Evaluation of Freight Rail and Relocation Alternatives – TranSystems; March 2014.

Proposed Freight Route	Tier I Screening			Tier II Screening							
	Operations	Commercial	Implementation Obstacles	Engineering	Safety	Community	Cost				
Kenilworth Corridor – Co-Location	○	○	◐	○	○	◐	\$20 to \$330 Million*				
MN&S Spur North	◐	○	◐	The MN&S Spur North has various concepts for achieving the necessary rail connections which were assessed separately in Tier 2 Screening.							
DEIS connection								●	◐	◐	N/A
Modified MN&S Spur connection								●	◐	◐	N/A
Brunswick East connection								◐	◐	●	N/A
Brunswick West connection (at-grade and elevated)								◐	◐	●	N/A
Brunswick Central connection (at-grade and elevated)								◐	◐	●	N/A
TranSystems Alternate connection								○	○	◐	\$220 to \$240 Million

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

**EXHIBIT F-27**

**MN&S North Freight Rail Relocation Adjustments**



	<p>Southwest LRT Supplemental Draft EIS MN&amp;S North Freight Rail Relocation Adjustments</p>	<p>Exhibit F-27</p>		
--	----------------------------------------------------------------------------------------------------	---------------------	--	--



Following is a description of the MN&S North design adjustment:<sup>10</sup>

**MN&S North.** The MN&S North freight rail relocation adjustment was developed to avoid or minimize the adverse impacts of the elevated and straightened freight rail alignment between Highway 7 and 34th Street and the adverse impacts to commercial, residential, and public properties associated with the Brunswick Central design adjustments. The MN&S North design adjustment would maintain the existing MN&S rail tracks south of Highway 7, including the current freight rail bridge over the Bass Lake Spur to a connection with the existing freight rail alignment between Library Lane and Dakota Avenue. Under the MN&S North design, the potential freight rail connection between the Bass Lake Spur and the MN&S Spur would begin with an elevated grade on bridge structure on the Bass Lake Spur west of Louisiana Avenue, with the freight rail alignment continuing east on bridge structure over the west corner of the Xcel Substation and across Highway 7, matching existing grades at Library Lane and connecting to the existing MN&S alignment between Library Lane and Dakota Avenue. Approximately 800 feet of tangent (i.e., straight) track would be provided between two reversing curves located between the Bass Lake Spur and the existing MN&S. This design adjustment would require full or partial acquisition of approximately 20 residential, business, or public properties and a new structure over Louisiana Avenue and Highway 7. Both Highway 7 and the south frontage road would be lowered to provide the required vertical bridge clearances under the freight rail bridge. This design adjustment would result in undetermined impacts to the Xcel Substation property and facilities. Under this design adjustment, existing at-grade freight rail street crossings would be closed at Walker Street, West Lake Street, 28th Street, and 29th Street. Existing at-grade freight rail crossings at Library Lane and Dakota Avenue would be maintained and a new freight rail bridge would be constructed over 27th Street, with 27th Street becoming a through street. In general, the modified freight rail alignment would connect to the existing MN&S Spur alignment between Library Lane and Dakota Avenue, with relatively minor modifications to the existing freight rail tracks to the north. Those modifications would be made to adjust the profile of the existing freight rail tracks to flatten grades south and north of the existing Minnetonka Boulevard freight rail bridge. Underpasses and overpasses across the freight rail alignment would provide vehicle, bicycle, and pedestrian access at locations where the freight alignment would be elevated (which would entail the construction of retaining walls to support fill where tracks would be raised above existing grade). Finally, there would be a restored freight rail connection constructed between the MN&S Spur and the Wayzata Subdivision, as illustrated in Appendix G, Conceptual Engineering Drawings, of the Draft EIS.

Preparation of the independent report and the development and evaluation of the MN&S North design adjustment utilized an extensive public involvement process that included:<sup>11</sup>

- Availability of the documents online
- Town hall meetings on January 7 and 9, 2014
- Public review and comment period for the draft report that spanned from January 30 to March 12, 2014;
- Studies discussed and reviewed by:
  - BAC (at February 26, 2014 meeting)
  - CAC (at February 27 and March 27, 2014 meetings)
  - CMC (at February 5 and 20; March 12 and 26, 2014 meetings)
- Town hall meetings on February 10 and 12, 2014, to present the findings within, discuss and take comment on the draft independent reports (see Appendix D for instructions on how to view a copy of the presentation made by the preparers of the draft independent reports)

<sup>10</sup> The *Conclusion* at the end of this section and in Table F.5-7 summarizes the Council's evaluation of the MN&S North design adjustment.

<sup>11</sup> This public review and comment process was also used for the *Kenilworth Shallow LRT Tunnels Water Resources Evaluation* (Burns & McDonnell; March 2014).

- Project-sponsored meeting as a part of the issue resolution process described in Section 2.0 of this appendix, which included participation by representatives from affected freight railroads
- Release of the final report on March 21, 2014, which addressed comments received on the draft report.

### Shallow LRT Tunnels – Over Kenilworth Lagoon – Variations

At the request of the Minneapolis Parks and Recreation Board (MPRB) in February 2014, the Council developed and evaluated two variations of the Shallow LRT Tunnels – Over Kenilworth Lagoon design adjustment as a part of the fourth step of evaluation in the St. Louis Park/Minneapolis Segment. As previously described in this section, the Shallow LRT Tunnels – Over Kenilworth Lagoon design adjustment would have the light rail alignment cross over the Kenilworth Lagoon on a new bridge, located between the freight rail and trail alignments, connecting the two light rail tunnels. The MPRB asked the Council to develop and evaluate a variation of the design adjustment that would continue the tunnels under the Kenilworth Lagoon, thus avoiding some of the project's long-term impacts to the Kenilworth Lagoon that could result from the new light rail bridge across the lagoon. In response, the Council developed and evaluated two additional design adjustments: (1) Long Shallow LRT Tunnel – Under Kenilworth Lagoon; and (2) Short Shallow LRT Tunnel – Under Kenilworth Lagoon. Under these two design adjustments, construction of the tunnel under the Kenilworth lagoon would be achieved through utilization of the cut-and-cover technique.<sup>12</sup> These designs and their evaluation were presented to MPRB staff and consultants at meetings and through correspondence following their development. Following are descriptions of those two design adjustments:

- **Short Shallow LRT Tunnel – Under Kenilworth Lagoon.** This potential design adjustment would result in a typical cross section of approximately 62 feet for the at-grade freight rail and trail alignments where the double-tracked light rail alignment would be within one tunnel. The light rail tunnel would generally be within the Kenilworth Corridor, with some relatively minor exceptions (see Exhibit F-29). Except at the two tunnel portals and in the vicinity of the Kenilworth Lagoon, the light rail tunnel would be under the reconstructed Kenilworth Trail with about 6 feet to 8 feet of cover above the tunnel measured from existing ground elevation (similar to the Shallow LRT Cut-and-Cover Tunnels adjustment illustrated on Exhibit F-16). The light rail tunnel would extend approximately 3,100 feet from just north of West Lake Street to approximately 400 feet north of the Kenilworth Lagoon. Beneath the lagoon, the tunnel would descend to a depth of cover of approximately 25 feet where the tunnels would cross under the Kenilworth Lagoon (approximately 10 feet from the Kenilworth Lagoon water surface elevation)(in part, the additional depth of the tunnel would be needed to resist long-term buoyancy forces). A portal area at each end of the tunnel would span approximately 300 feet, which would provide for the transition between the at-grade and tunnel alignment. Fencing and other facilities would protect the tunnel portals from unauthorized entry. This design adjustment would not result in any full residential property acquisitions and the proposed 21st Street Station would be retained at-grade.
- **Long Shallow LRT Tunnel – Under Kenilworth Lagoon.** This potential design adjustment would result in a typical cross section of approximately 62 feet for the at-grade freight rail and trail alignments where the double-tracked light rail alignment would be within one tunnel. The light rail tunnel would generally be within the Kenilworth Corridor, with some relatively minor exceptions (see Exhibit F-29). Except at

---

<sup>12</sup>In addition, project staff developed two variations of the Short and Long Shallow LRT Tunnel – Under Kenilworth Lagoon design adjustments to determine if the northern and southern cut-and-cover LRT tunnel segments could be connected under the Kenilworth Lagoon via a bored tunnel segment, rather than via a cut-and-cover constructed tunnel segment. In effect, these variations would be a combination of two cut-and-cover-constructed tunnel segments connected with a bored-constructed tunnel segment under the Kenilworth Lagoon. In effect, these variations would be a variation of the Kenilworth Deep Bore LRT Tunnel option, with longer cut-and-cover tunnel segments connected to a shorter bored tunnel under the Kenilworth Lagoon. These two combination variations were dismissed from further study due to: 1) complex construction considerations inherent in bored tunnel construction techniques located within a constrained physical environment; 2) additional schedule delays related to bored tunnel construction techniques located within a constrained physical environment; 3) substantially higher capital costs relative to other design adjustments under consideration; 4) potential additional property acquisitions that could be required to accommodate a southern bored-tunnel staging area and temporary freight rail alignments in the vicinity of the construction area; and 5) reconstruction of the existing freight rail and trail bridges across the lagoon and the related long-term and short-term (construction related) adverse impacts would not be avoided.

the two tunnel portals and in the vicinity of the Kenilworth Lagoon, the light rail tunnel would be under the reconstructed Kenilworth Trail with about 6 feet to 8 feet of cover above the tunnel measured from existing ground elevation (similar to the Shallow LRT Cut-and-Cover Tunnels adjustment illustrated on Exhibit F-16). The light rail tunnel would extend approximately 5,800 feet between just north of West Lake Street and approximately 1,000 feet north of 21st Street. Beneath the lagoon, the tunnel would descend to a depth of cover of approximately 25 feet where the tunnels would cross under the Kenilworth Lagoon (approximately 10 feet from the Kenilworth Lagoon water surface elevation)(in part, the additional depth of the tunnel would be needed to resist long-term buoyancy forces). A portal area at each end of the tunnel would span approximately 300 feet, which would provide for the transition between the at-grade and tunnel alignment. Fencing and other facilities would protect the tunnel portals from unauthorized entry. This design adjustment would not result in any full residential property acquisitions.

Exhibits F-30A/B illustrate the general sequence of steps that would be required to construct a light rail tunnel under the Kenilworth Lagoon using the cut-and-cover technique.

### Identified Design Adjustments – April 2014

Based on the analysis prepared, committee recommendations, and public comments received during the four-step process described in this section, the Council identified in April 2014 the design adjustments to be incorporated into the LPA: the Shallow LRT Tunnels – Over Kenilworth Lagoon (see Exhibit F-16). In doing so, the MN&S North, the Short Shallow LRT Tunnel – Under Kenilworth Lagoon and the Long Shallow LRT Tunnel – Under Kenilworth Lagoon design adjustments were dismissed from further study (see Tables F.5-2, F.5-7, and F.5-8). The Council found that, relative to the other options considered, the Shallow LRT Tunnels – Over Kenilworth Lagoon adjustment would provide the best balance of costs, benefits, and environmental impacts, and in doing so found that it would best meet the project's Purpose and Need (see Chapter 1 of the Supplemental Draft EIS).

Following is a description of the benefits of the Shallow LRT Tunnels – Over Kenilworth Lagoon design adjustment, compared to the other design adjustments developed and evaluated in the step four evaluation.

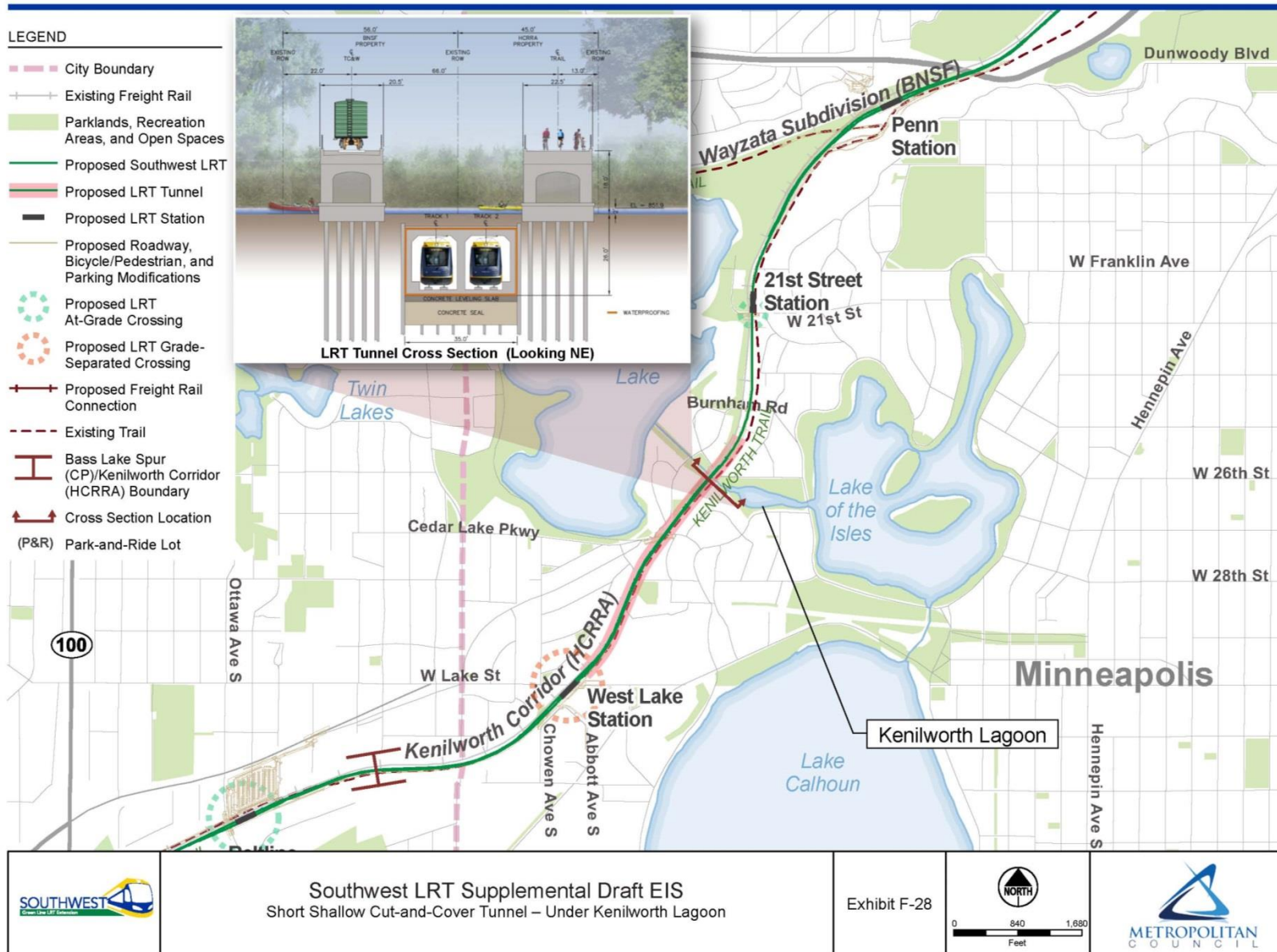
- **Shallow LRT Tunnels – Over Kenilworth Lagoon and MN&S North Adjustments.** Table F.5-7 provides a summary of the evaluation measures considered by the Council as it compared the Shallow LRT Tunnels – Over Kenilworth Lagoon adjustment to the MN&S North adjustments. First, the MN&S North adjustments were opposed by the affected freight rail operator (TC&W), primarily based on safety and operational concerns, including three reversing horizontal curves in the proposed freight rail alignment that would be especially problematic (the operator did not express similar concerns about the freight rail alignment that is part of the Shallow LRT Tunnels – Over Kenilworth Lagoon adjustment). In addition, the advantage of the Shallow LRT Tunnels – Over Kenilworth Lagoon, relative to the MN&S North adjustment, is that it would avoid: the potential displacement of approximately six residences and seven businesses and the acquisition of some St. Louis Park High School property; additional cost increases due to project delay of approximately \$45 to \$50 million; closure of local streets; and extension of the project's construction schedule by up to two years.<sup>13</sup>

---

<sup>13</sup> Approximately one year of the anticipated delay is for the pursuit of an adverse abandonment with the STB for existing freight rail service on the CP-owned Bass Lake Spur, east of the MN&S Spur, and the HCRRA-owned Kenilworth Corridor. The outcome and actual duration of this process would remain uncertain until conclusion of the process. Approval by STB could require TC&W and CP to cease freight rail operations in the Kenilworth Corridor and relocate those operations from the current location.

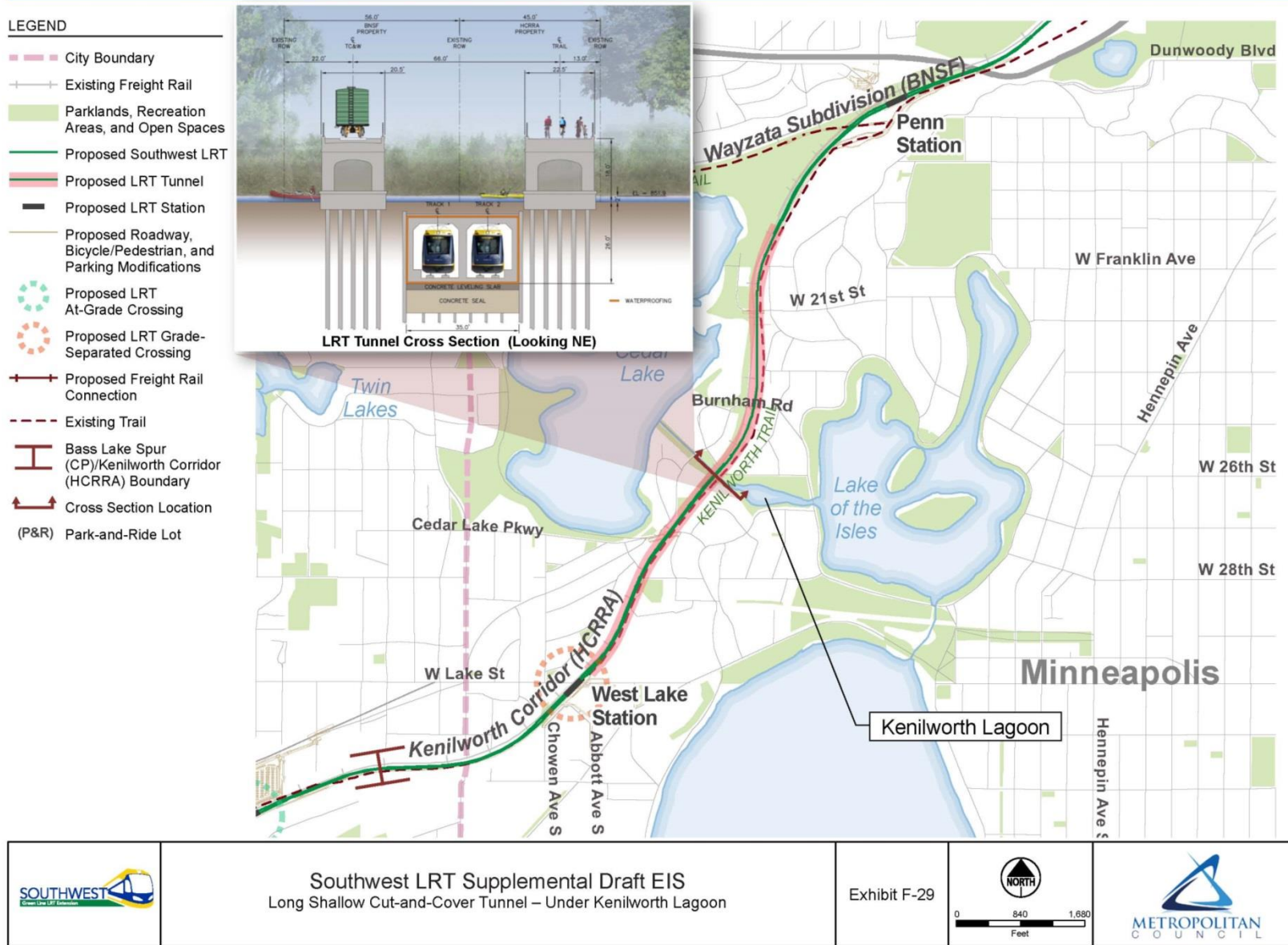
**EXHIBIT F-28**

Short Shallow Cut-and-Cover Tunnel – Under Kenilworth Lagoon



**EXHIBIT F-29**

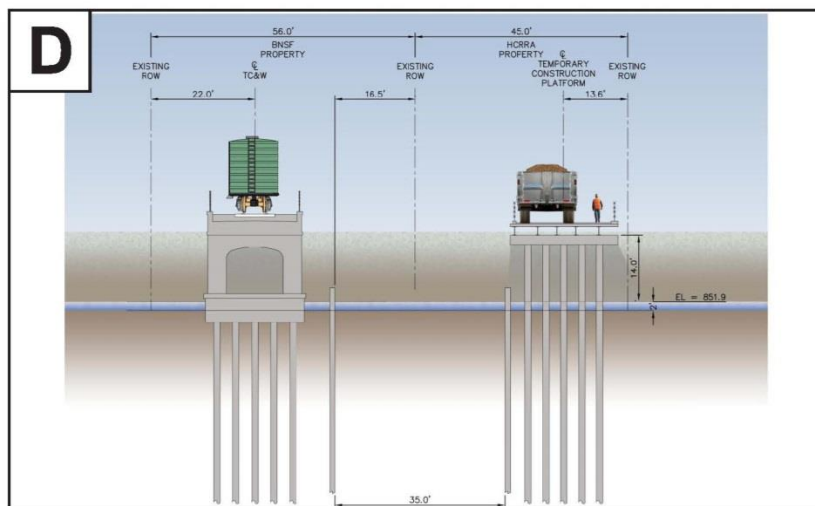
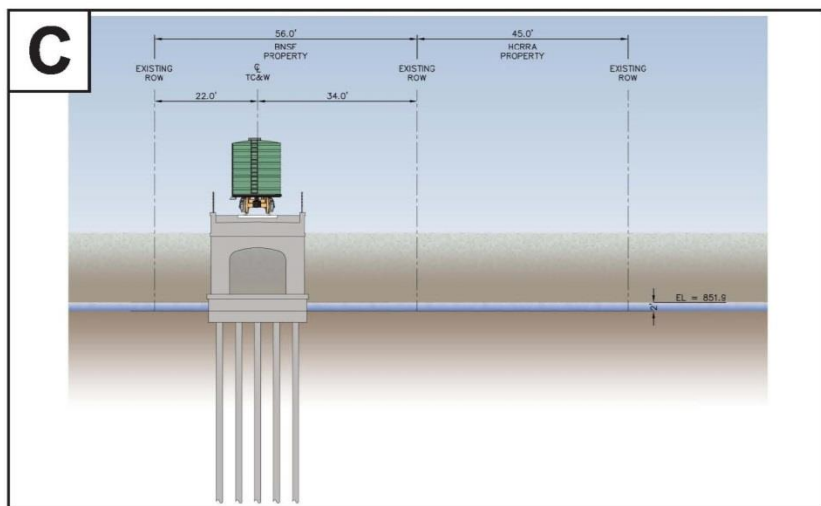
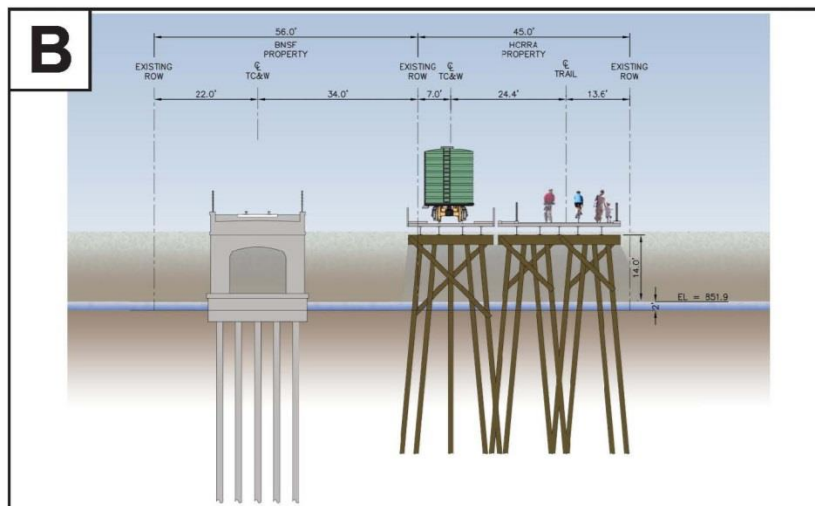
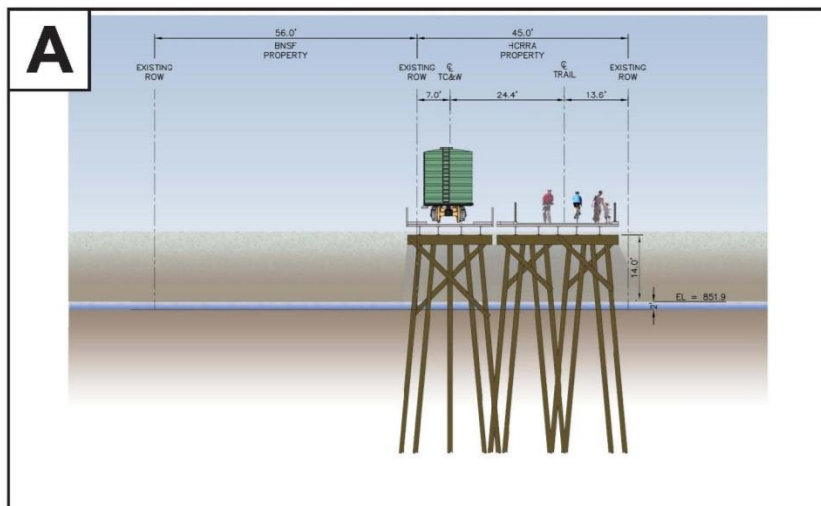
Long Shallow Cut-and-Cover Tunnel – Under Kenilworth Lagoon



	<p>Southwest LRT Supplemental Draft EIS Long Shallow Cut-and-Cover Tunnel – Under Kenilworth Lagoon</p>	<p>Exhibit F-29</p>		
-------------------------------------------------------------------------------------	-------------------------------------------------------------------------------------------------------------	---------------------	---------------------------------------------------------------------------------------	---------------------------------------------------------------------------------------

**EXHIBIT F-30A**

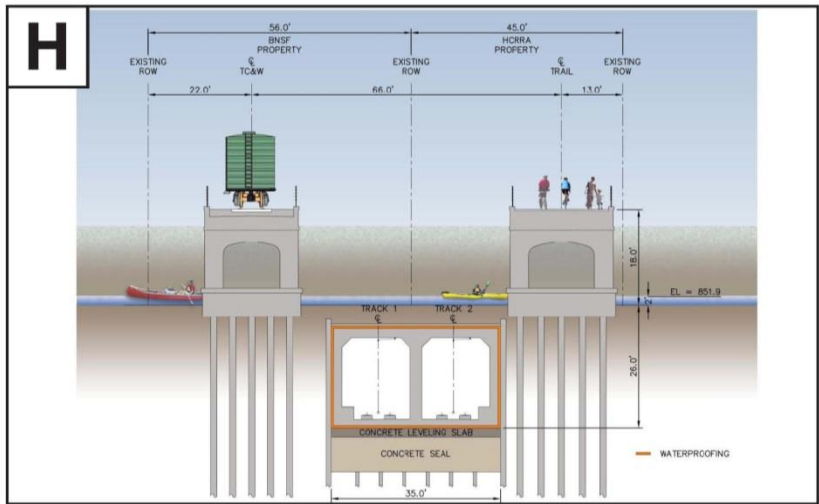
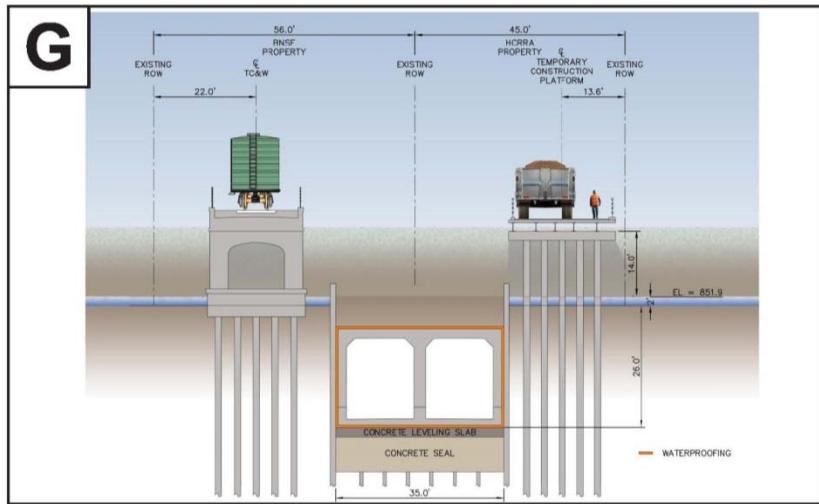
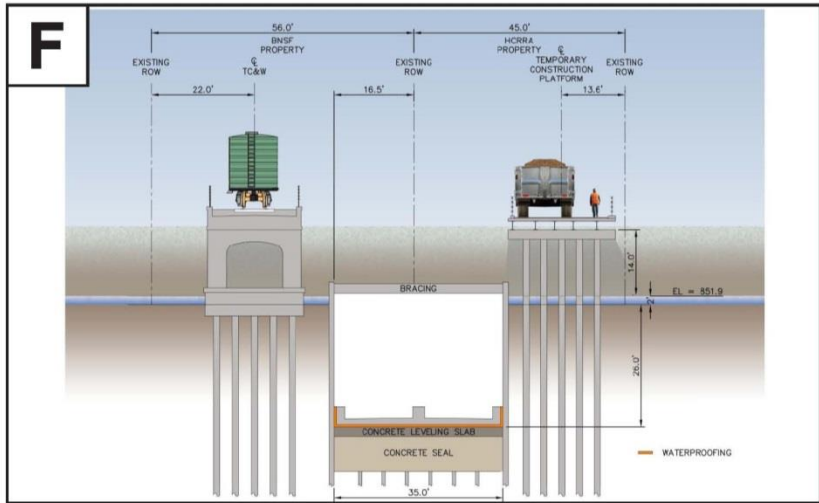
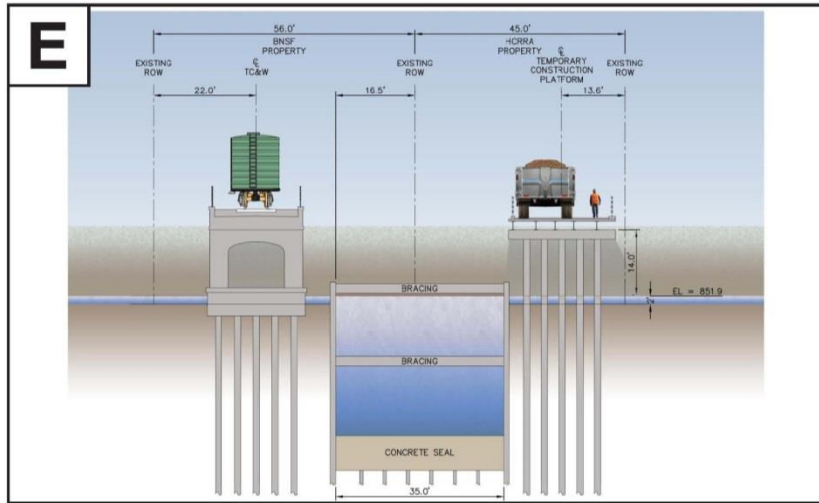
Construction Sequence for the Short/Long Shallow LRT Tunnel – Under Kenilworth Lagoon (at the Kenilworth Lagoon, looking northeast)



	<p>Southwest LRT Supplemental Draft EIS                  Construction Sequence for the Short/Long Shallow LRT Tunnel – Under Kenilworth Lagoon                  (at the Kenilworth Lagoon, looking northeast)                  St. Louis Park/Minneapolis Segment</p>	<p>Exhibit F-30A</p>	
--	-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	----------------------	--

**EXHIBIT F-30B**

Construction Sequence for the Short/Long Shallow LRT Tunnel – Under Kenilworth Lagoon (at the Kenilworth Lagoon, looking northeast)



	<p>Southwest LRT Supplemental Draft EIS                  Construction Sequence for the Short/Long Shallow LRT Tunnel – Under Kenilworth Lagoon                  (at the Kenilworth Lagoon, looking northeast)                  St. Louis Park/Minneapolis Segment</p>	<p>Exhibit F-30B</p>	
--	-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	----------------------	--

**Shallow LRT Tunnels – Over Kenilworth Lagoon; Short Shallow LRT Tunnel – Under Kenilworth Lagoon; and Long Shallow LRT Tunnel – Under Kenilworth Lagoon Adjustments.** Table F.5-8 provides a summary of the evaluation measures considered by the Council as it compared the Shallow LRT Tunnels – Over Kenilworth Lagoon adjustment to the two variations that would tunnel under the lagoon. In summary, the advantage of the Shallow LRT Tunnels – Over Kenilworth Lagoon adjustment, relative to the Short Shallow LRT Tunnel – Under Kenilworth Lagoon and the Long Shallow LRT Tunnel – Under Kenilworth Lagoon adjustments, is that it would: avoid closure of recreational traffic on the Kenilworth Lagoon for approximately one additional year; reduce short-term impacts to the Kenilworth Lagoon during construction, including the disruption of existing habitat within and adjacent to the Lagoon and closure of fish passage between Lake of the Isles and Cedar Lake during construction of the tunnel under the Lagoon; reduce long-term impacts to the Kenilworth Lagoon due to its reconstruction; avoid additional construction costs of \$30 to \$85 million and additional costs due to project delay of \$45 to \$90 million; and avoid extension of the project’s construction schedule by up to one year.

### **Additional Design Adjustments – July 2014**

In July 2014, the Council and the City of Minneapolis proposed a set of additional adjustments to the design of the Shallow LRT Tunnels – Over Kenilworth Lagoon option. The proposed additional design adjustments were outlined in a memorandum of understanding between the Council and the City. (See Appendix D, Sources and References Cited, for instructions on how to access the subsequently executed memorandum). In summary, the proposed additional design adjustments were intended to: (1) reduce project capital costs by eliminating the northern of the two proposed light rail tunnels in the Kenilworth Corridor (including the re-establishment of the proposed at-grade light rail station at West 21st Street) and (2) incorporate into the project a variety of bicycle and pedestrian access improvements associated with proposed light rail stations in the City of Minneapolis. On July 9, 2014, the CMC voted to recommend the additional design adjustments and, considering the recommendation from the CMC, the Council voted to approve the additional design adjustments proposed in the memorandum between the Council and the City of Minneapolis.

The LPA, as evaluated in the Supplemental Draft EIS, reflects the inclusion of the Shallow LRT Tunnel – Over Kenilworth Lagoon and the other light rail-related improvements described in this section as identified by the Council on April 9, 2014, and amended on July 9, 2014 (see Section 2.5, Exhibit 2.5-4, and Appendix G, Conceptual Engineering Drawings of the Supplemental Draft EIS). Other potential light rail-related improvements and freight rail modifications developed and evaluated in this section were removed from further study.

### **5.2.2 Set 2 Design Adjustments**

Following is a summary of the Set 2 Adjustments made to LRT3A. As previously noted, these design adjustments, which were approved by the Council in April 2014, were developed and evaluated in a process that paralleled the Set 1 Design Adjustment process. Further, these Set 2 Adjustments and the Set 1 Adjustments have been fully integrated into the revised LPA and they form the basis of the environmental analysis in the Supplemental Draft EIS for the St. Louis Park/Minneapolis Segment.

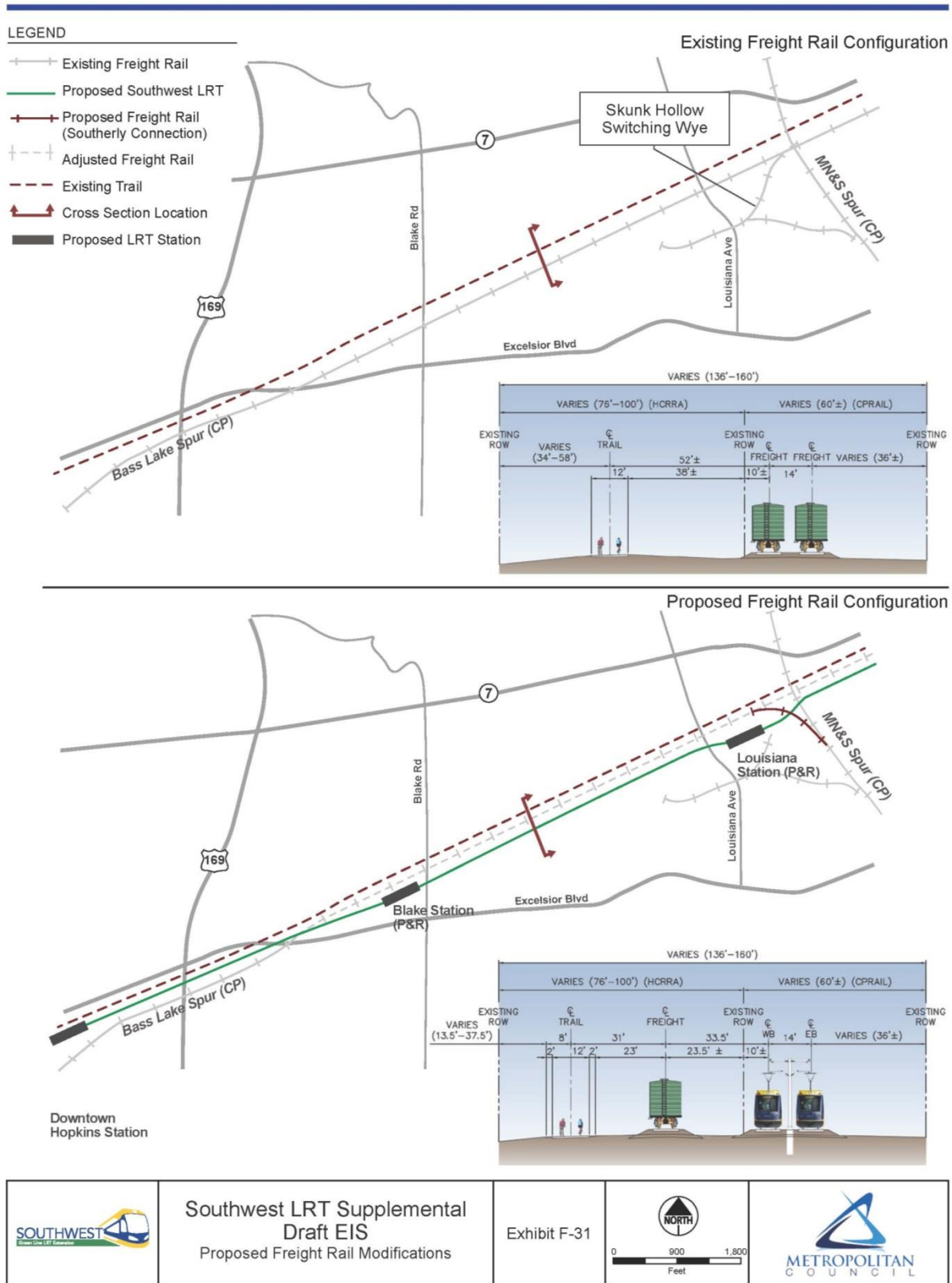
- **The Freight Rail and Light Rail “Swap” and “Southerly Connection.”** In coordination with the cities and affected railroad owners, the project developed and evaluated a design adjustment (i.e., the freight rail and light rail “Swap”) that would place the proposed Blake, Louisiana, and Wooddale stations south of a portion of the existing CP freight line (under the Draft EIS conceptual design, those stations would have been located north of the existing CP freight line). The intent of the adjustment is to situate those proposed light rail stations closer to primary existing activity centers and potential development/redevelopment sites, which are predominantly south of the existing freight line. The design adjustment would generally place the proposed light rail alignment and stations within the current freight rail right-of-way, and the freight rail alignment would be moved approximately 45 feet north onto right-of-way currently owned by HCRRA (purchased as future light rail right-of-way and where light rail would have been under the conceptual design of LRT 3A and LRT 3A-1 within Draft EIS). In addition, the Cedar Lake LRT Trail, which is a permitted temporary use within the HCRRA-owned right-of-way north of the existing freight rail alignment, would be reconstructed further north within



that same right-of-way, staying north of the repositioned freight rail alignment. The design adjustment, illustrated on Exhibit F-31, would include a grade-separated crossing of the proposed light rail alignment over the freight rail alignment immediately east of Excelsior Boulevard to permit the freight rail and light rail alignments to swap locations within the corridor. The adjustment also would require the elimination of the northern branch of the Skunk Hollow switching wye and its replacement with the “Southerly Connection” (allowing TC&W trains continued access between the Bass Lake Spur eastbound to the southbound MN&S Spur and the reverse), also illustrated on Exhibit F-31. The Swap would also require the modification of the Cedar Lake LRT Trail at several locations, although continuity of and connections to the trail would be maintained. Further, this would result in the closure of approximately 11,771 feet of freight rail siding track segments, generally between the Downtown Hopkins Station and east of Beltline Boulevard. The Council incorporated the Swap design modification into the LPA in April 2014 because the potential land use and economic development benefits and improved transit access to existing activity centers outweighed its additional cost and adverse environmental impacts, such as the additional moderate visual impacts of the new light rail overcrossing of the freight rail alignment in St. Louis Park.

- **Adjustment to the Location of Louisiana Station.** At the request of the City of St. Louis Park, the project team developed a range of potential design adjustments that would place the proposed Louisiana Station further south than it would have been under the conceptual design of LRT 3A and LRT 3A-1 in the Draft EIS, based on the freight and light rail swap previously discussed. The objective of these proposed design adjustments was to bring the light rail station further south, closer to activity centers North of Excelsior Boulevard. Two general design adjustments were developed and evaluated. The first would place the light rail station approximately halfway between the location of the existing freight rail tracks and Oxford Street. The second would use the north leg of the Skunk Hollow switching wye (to be abandoned and replaced with the Southerly Connection under the freight and light rail swap) to place the Louisiana Station approximately 300 feet north of Louisiana Circle. The second potential design adjustment would also have resulted in abandonment of the south leg of the Skunk Hollow switching wye and relocation of the Robert B. Hill Company salt facility at the end of the switching wye because it would no longer have freight rail access. The Council incorporated the first design refinement into the LPA in April 2014, because of its relatively lower costs and property acquisition needs compared to the second design refinement and because of the potential development and redevelopment benefits of placing a light rail station closer to Oxford Street.
- **Adjustment to the Capacity and Locations of Park-and-Ride Lots.** Based on the City of Minneapolis’ comments on the Draft EIS, the project team developed design adjustments that would change the proposed location and capacities of park-and-ride lots in the area included within the St. Louis Park/ Minneapolis Segment. In particular, the City asked that proposed surface park-and-ride lots be removed from the stations within the City of Minneapolis. Concurrently, to help ensure park-and-ride lot capacity to meet forecast demand in 2030, the project team also developed and evaluated options for increased capacity at the Beltline Station because of its relatively direct automobile access to and from Highway 100 (via Highway 7, Highway 25 and West Lake Street). As a result of the proposed design adjustment, the number of park-and-ride lots in the segment would be reduced from six to two, while the park-and-ride capacity would increase from 650 to 809 spaces, relative to the conceptual design of LRT 3A and LRT 3A-1 in the Draft EIS (see Section 2.3.3 of the Draft EIS). The Council incorporated the design adjustment into the LPA because of the generally improved access between regional highways and proposed park-and-ride lot locations.
- **Bicycle, Pedestrian, and Bus Access Improvements at West Lake and Penn Stations.** Based on the City of Minneapolis’ comments on the Draft EIS, the project team developed and evaluated adjustments to the proposed bicycle, pedestrian, and bus facilities at West Lake and Penn stations. The adjustments developed include the addition of vertical circulation connecting the West Lake Station and the West Lake Street bridge and on-street bus transfer facilities on West Lake Street. The adjustments also include grade-separated bicycle and pedestrian connections and improved kiss-and-ride facility at the Penn Station. The Council incorporated the design adjustment into the LPA in April and July 2014 due to the relatively high

**EXHIBIT F-31**  
Proposed Freight Rail Modifications



level of projected ridership at the two stations and the improved access that the adjustments would provide to walk-on and bus-transfer riders. See Appendix G, Conceptual Engineering Drawings, for additional detail.

## 6.0 Locally Requested Capital Investments (LRCI)

The stakeholder cities and County of the Southwest LRT project, including Eden Prairie, Minnetonka, Hopkins, St. Louis Park, and Hennepin County have each gone through their respective local planning and decision making processes to identify improvements they propose to be undertaken separate from, but contingent upon, implementation of the Southwest LRT project (hereinafter referred to as Locally Requested Capital Investments [LRCIs]). These proposed activities are not needed to support the base function of the Southwest LRT project, nor do they represent mitigation by FTA or the Council for any impact of the Southwest LRT project. These proposed activities may be implemented independently by the stakeholder cities at a future date, and are not conditions of the Southwest LRT project. If constructed by the LRT contractor, the construction documents will clearly separate out the LRCI activities and costs. This would be a requirement of the FTA to document the costs, and application of the Capital Investment Grant (CIG) Program.. Each of the proposed LRCI's would not diminish or directly enhance the performance of the Southwest LRT project.

The proposed LRCI's are currently anticipated to be funded in full by the respective local agencies. The costs of implementing the proposed LRCIs are currently not part of the CIG Program for which the Council is requesting funding from the FTA. At the time this Supplemental Draft EIS was prepared, sources of funds to finance the construction of the proposed LRCIs had not been finalized.

The Supplemental Draft EIS outlines the proposed LRCI actions identified by each of the cities and Hennepin County, through which the Southwest LRT project is proposed to operate. The preliminary LRCI list was presented to the Corridor Management Committee (CMC) in October 2014 and an updated preliminary list was presented to the Executive Change Control Board (ECCB) in December 2014. Each of the proposed LRCIs that advance through the city and county decision making processes will undergo detailed impact evaluation, with results reported in the Final EIS. The current list of proposed LRCIs are not anticipated to result in significant adverse impacts.

**TABLE F.6-1**  
Locally Requested Capital Investments

Requestor	ID#	Description
<b>Locally Requested Capital Investments: Eden Prairie and Hennepin County</b>		
Eden Prairie	1	New north-south road from Town Center Station to Singletree Lane
Eden Prairie	2	New trail from Golden Triangle Station south to connect to existing trail to Valley View Road
Eden Prairie	3	New trail from Prairie Center Drive and the Highway 212 off-ramp to Southwest Station
Eden Prairie	4	Tapered, tubular catenary poles throughout Eden Prairie
Eden Prairie	5	Decorative street lighting in Town Center area and along Technology Drive west of Prairie Center Drive

Requestor	ID#	Description
Eden Prairie	6	Upgraded fencing and bridge railings
Eden Prairie	7	Planter boxes and walls adjacent to alignment in Town Center area and from Southwest Station to Mitchell Station
Eden Prairie	8	Upgraded bridge aesthetics at Prairie Center Drive, Valley View Road, and Shady Oak Road/Highway 212
Eden Prairie	9	Embedded track from Town Center to Eden Road/Glen Road intersection
Eden Prairie	10	Public plazas at stations
Eden Prairie	11	Technology Drive extension
Hennepin Co.	26	New trail between LRT track and CSAH 61 from Technology Drive to Valley View Road
<b>Locally Requested Capital Investments: Minnetonka, Hopkins and Hennepin County</b>		
Minnetonka	12	Extension of 17 <sup>th</sup> Avenue from Shady Oak Station south to K-Tel Drive (includes necessary utility connections)
Minnetonka	13	Accommodation of potential future infill station at Smetana Road (includes platform foundation and direct fixation track)
Hopkins	14	Water main and sanitary sewer under 17 <sup>th</sup> Avenue
Hopkins	16	New pedestrian lighting along the trail alignment from Jackson Avenue to Blake Road
Hennepin Co.	28	Grade separated trail crossing at Blake Road
<b>Locally Requested Capital Investments: St. Louis Park and Hennepin County</b>		
St. Louis Park	17	Xenwood Avenue underpass near Wooddale Station
St. Louis Park	19	Circulation and access improvements at Beltline Station
St. Louis Park	32	Beltline Boulevard/CSAH 25 circulation and access improvements
St. Louis Park	33	New trail from Louisiana Station to Brunswick Ave. S
Hennepin County	29	Grade separated trail crossing at Wooddale Avenue
Hennepin County	30	Grade separated trail crossing at Beltline Boulevard

Exhibit F-32

Locations of Locally Requested Capital Investments in Eden Prairie

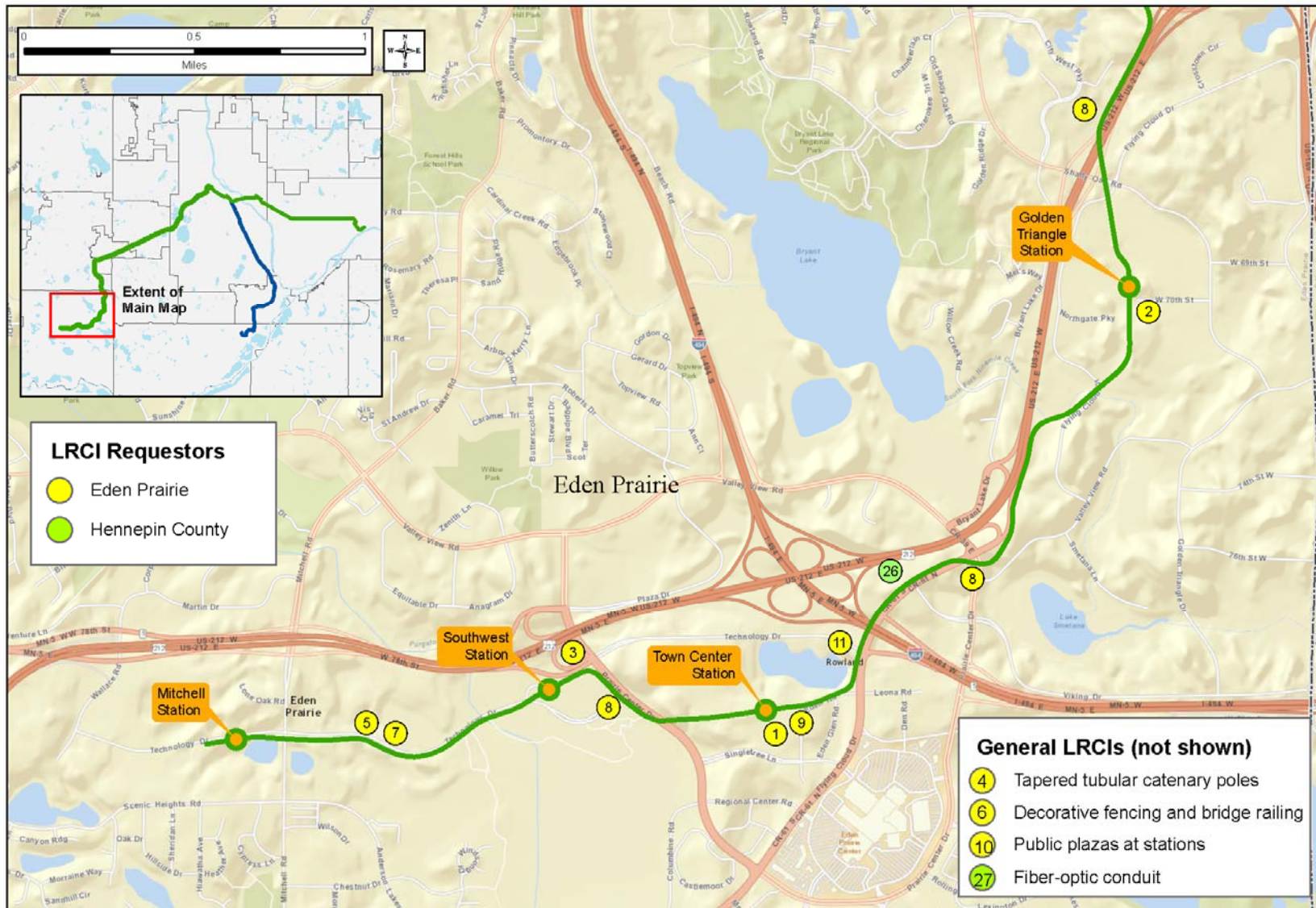
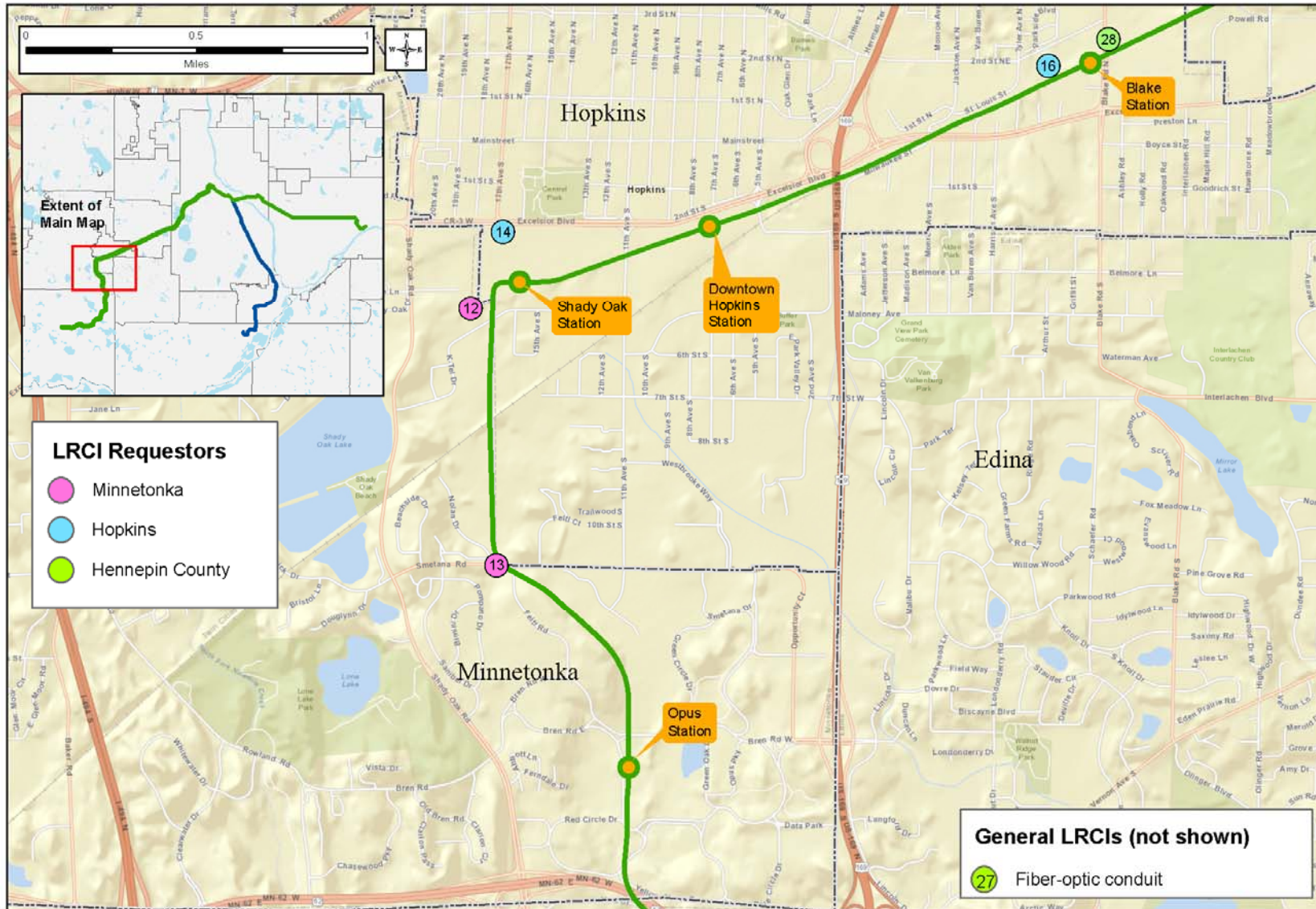


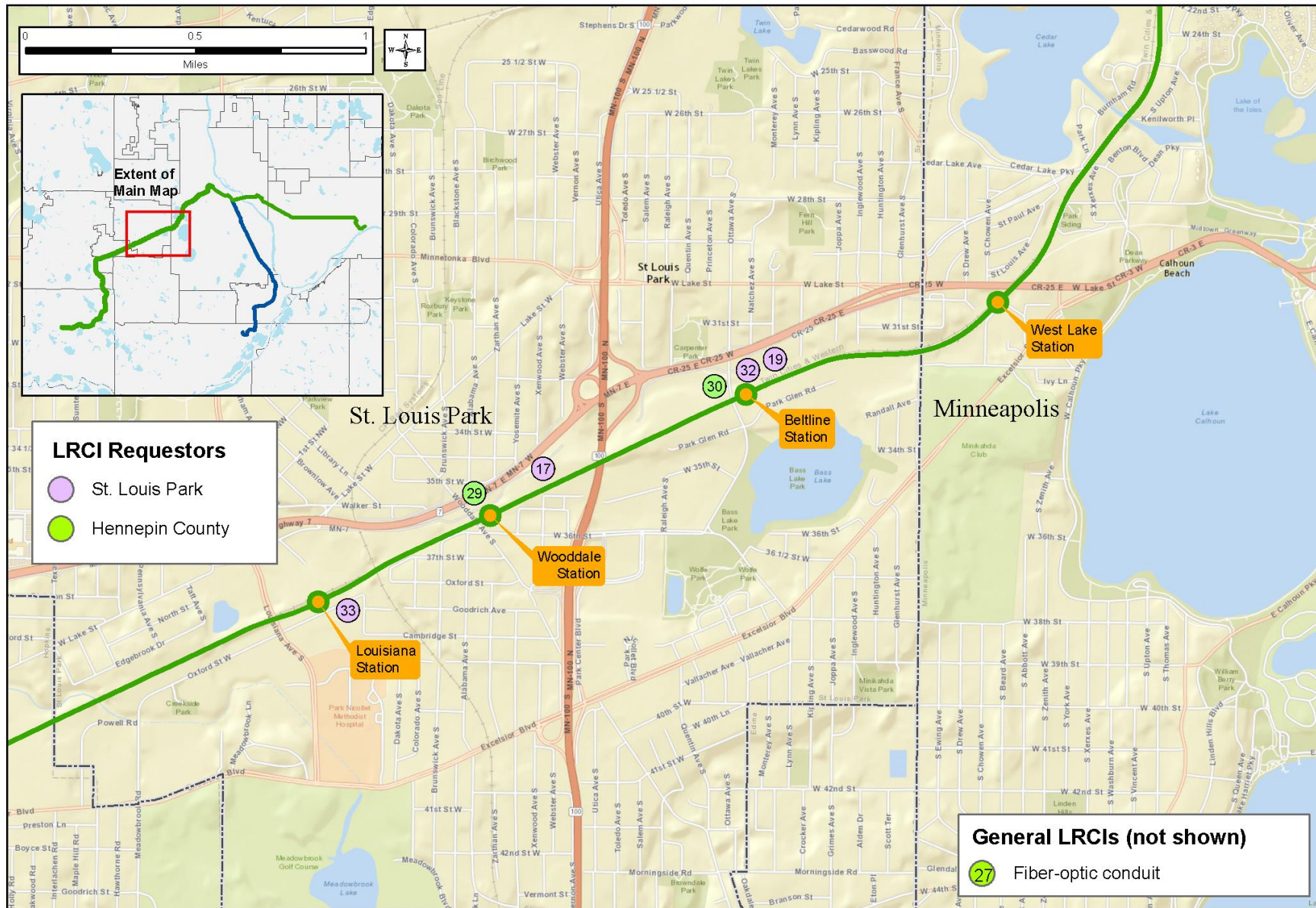
Exhibit F-33

Locations of Locally Requested Capital Investments in Minnetonka and Hopkins



**Exhibit F-34**

Locations of Locally Requested Capital Investments in St. Louis Park



**Appendix G**  
**Supplemental Draft EIS Conceptual Engineering Drawings**

---











DRAFT - WORK IN PROCESS

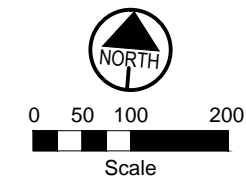


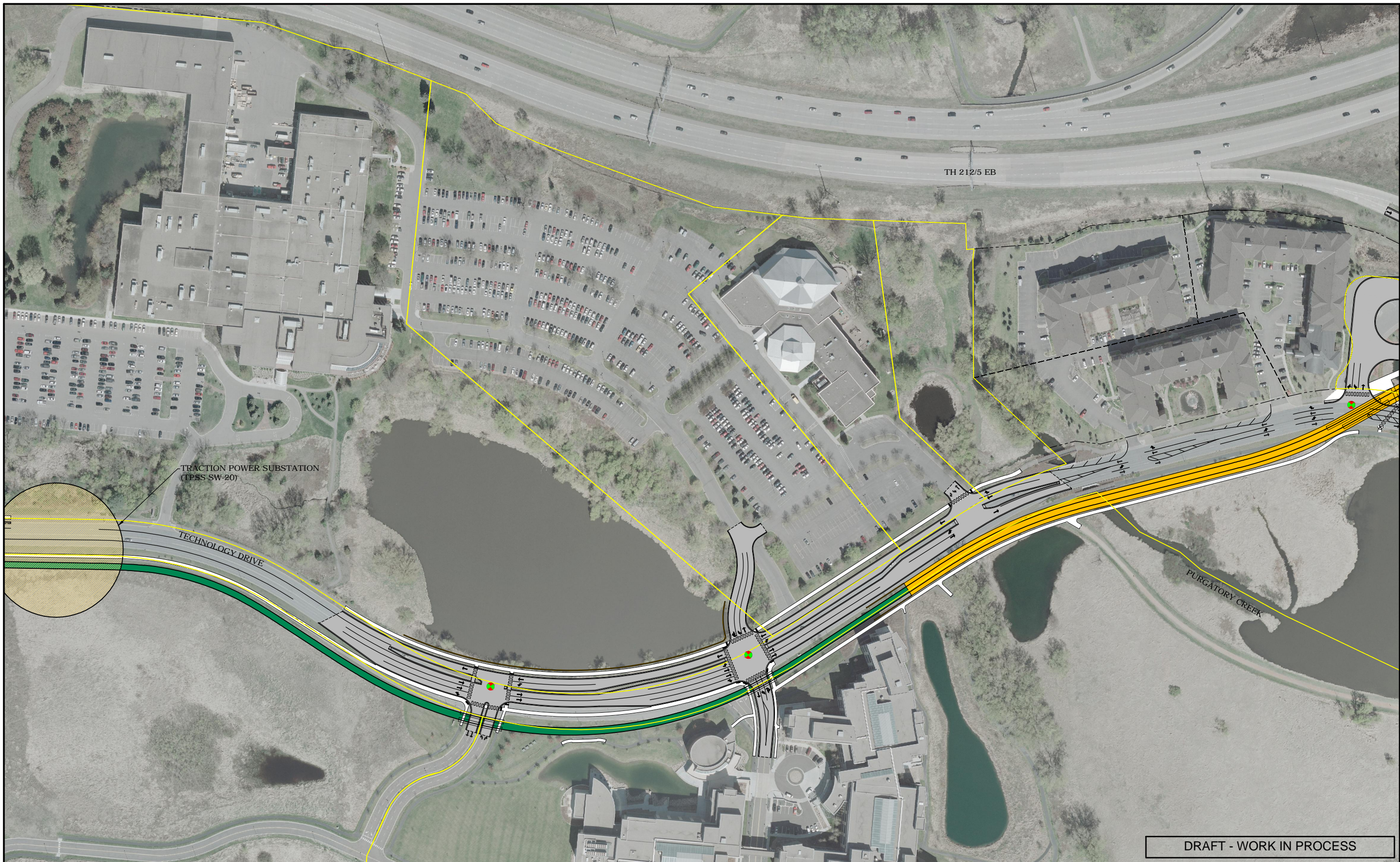
# SOUTHWEST LRT

Eden Prairie Segment  
Locally Preferred Alternative

COLOR LEGEND	
	LRT TRACK AREA
	PEDESTRIAN / SIDEWALK AREA
	STATION PLATFORM
	TUNNEL
	ROADWAY
	TRAIL / BIKEWAY
	SURFACE PARKING
	BRIDGE
	RETAINING WALL
	SIGNALIZED INTERSECTION
	TRACTION POWER SUBSTATION (GENERAL AREA)
	SIGNAL BUNGALOW (GENERAL AREA)
	GATE ARM
	TOTAL PROPERTY ACQUISITION
	PARTIAL PROPERTY ACQUISITION
	RIGHT OF WAY
	PROPERTY LINE

Rev 00.00  
1/16/2015  
Sheet 1 of 5





DRAFT - WORK IN PROCESS

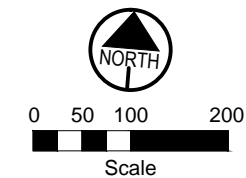


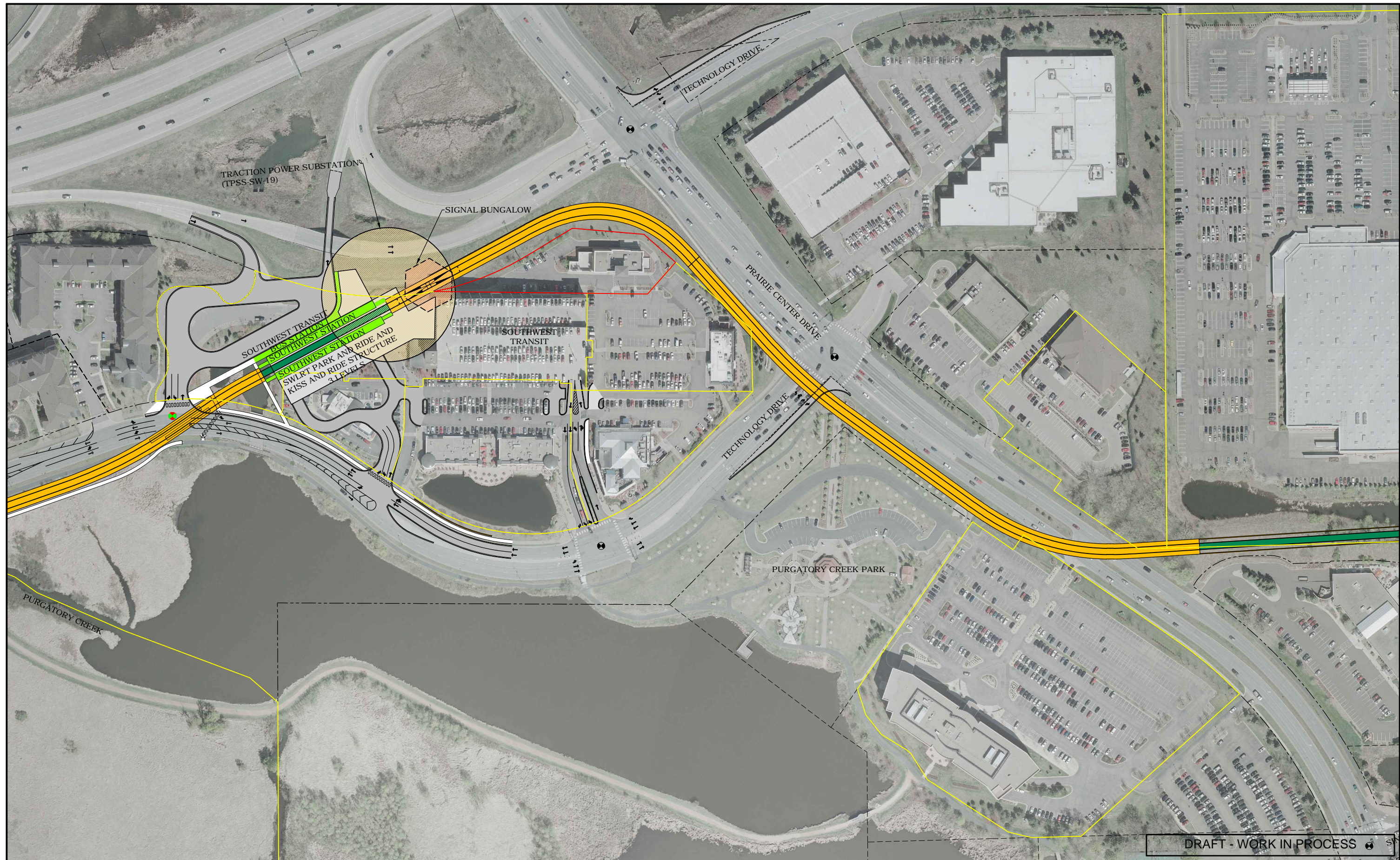
# SOUTHWEST LRT

Eden Prairie Segment  
Locally Preferred Alternative

COLOR LEGEND	
	LRT TRACK AREA
	PEDESTRIAN / SIDEWALK AREA
	STATION PLATFORM
	TUNNEL
	ROADWAY
	TRAIL / BIKEWAY
	SURFACE PARKING
	BRIDGE
	RETAINING WALL
	SIGNALIZED INTERSECTION
	TRACTION POWER SUBSTATION (GENERAL AREA)
	SIGNAL BUNGALOW (GENERAL AREA)
	GATE ARM
	TOTAL PROPERTY ACQUISITION
	PARTIAL PROPERTY ACQUISITION
	RIGHT OF WAY
	PROPERTY LINE

Rev 00.00  
1/16/2015  
Sheet 2 of 5





DRAFT - WORK IN PROCESS

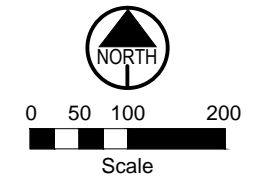


# SOUTHWEST LRT

Eden Prairie Segment  
Locally Preferred Alternative

COLOR LEGEND	
	LRT TRACK AREA
	PEDESTRIAN / SIDEWALK AREA
	STATION PLATFORM
	TUNNEL
	ROADWAY
	TRAIL / BIKEWAY
	SURFACE PARKING
	BRIDGE
	RETAINING WALL
	SIGNALIZED INTERSECTION
	TRACTION POWER SUBSTATION (GENERAL AREA)
	SIGNAL BUNGALOW (GENERAL AREA)
	GATE ARM
	TOTAL PROPERTY ACQUISITION
	PARTIAL PROPERTY ACQUISITION
	RIGHT OF WAY
	PROPERTY LINE

Rev 00.00  
3/24/2015  
Sheet 3 of 5





DRAFT - WORK IN PROCESS

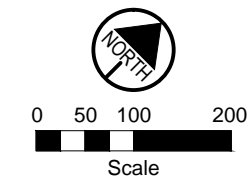


# SOUTHWEST LRT

Eden Prairie Segment  
Locally Preferred Alternative

COLOR LEGEND	
	LRT TRACK AREA
	PEDESTRIAN / SIDEWALK AREA
	STATION PLATFORM
	TUNNEL
	ROADWAY
	TRAIL / BIKEWAY
	SURFACE PARKING
	BRIDGE
	RETAINING WALL
	SIGNALIZED INTERSECTION
	TRACTION POWER SUBSTATION (GENERAL AREA)
	SIGNAL BUNGALOW (GENERAL AREA)
	GATE ARM
	TOTAL PROPERTY ACQUISITION
	PARTIAL PROPERTY ACQUISITION
	RIGHT OF WAY
	PROPERTY LINE

Rev 00.00  
1/16/2015  
Sheet 4 of 5





DRAFT - WORK IN PROCESS

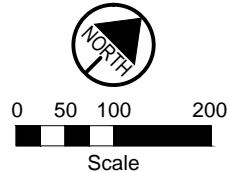


# SOUTHWEST LRT

Eden Prairie Segment  
Locally Preferred Alternative

COLOR LEGEND	
	LRT TRACK AREA
	PEDESTRIAN / SIDEWALK AREA
	STATION PLATFORM
	TUNNEL
	ROADWAY
	TRAIL / BIKEWAY
	SURFACE PARKING
	BRIDGE
	RETAINING WALL
	SIGNALIZED INTERSECTION
	TRACTION POWER SUBSTATION (GENERAL AREA)
	SIGNAL BUNGALOW (GENERAL AREA)
	GATE ARM
	TOTAL PROPERTY ACQUISITION
	PARTIAL PROPERTY ACQUISITION
	RIGHT OF WAY
	PROPERTY LINE

Rev 00.00  
1/16/2015  
Sheet 5 of 5

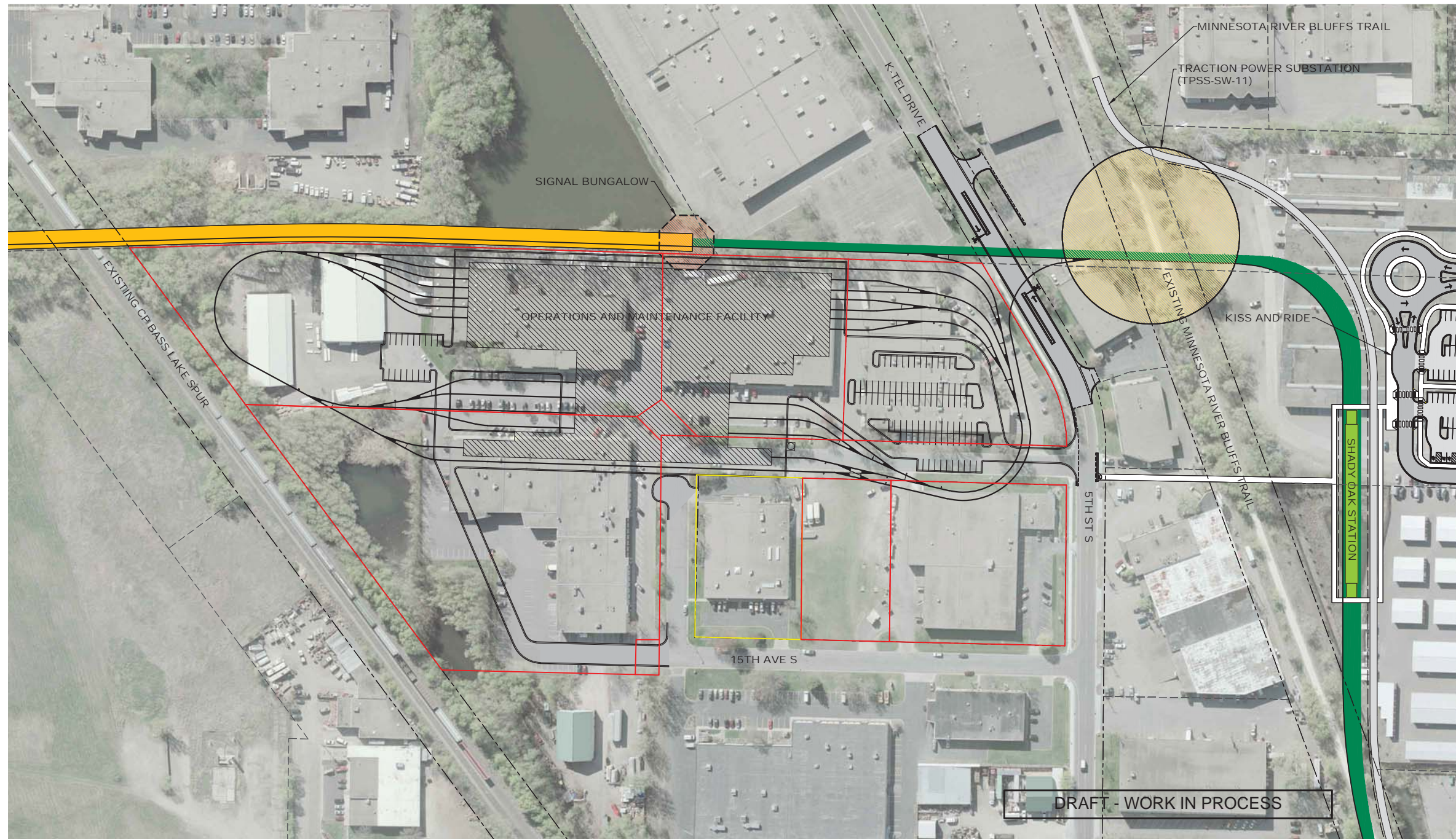










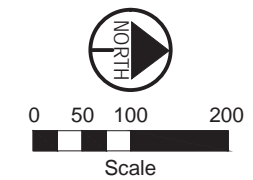


# SOUTHWEST LRT

Hopkins Operations & Maintenance Facility  
Locally Preferred Alternative

COLOR LEGEND	
	LRT TRACK AREA
	PEDESTRIAN / SIDEWALK AREA
	STATION PLATFORM
	TUNNEL
	ROADWAY
	TRAIL / BIKEWAY
	SURFACE PARKING
	BRIDGE
	RETAINING WALL
	SIGNALIZED INTERSECTION
	TRACTION POWER SUBSTATION (GENERAL AREA)
	SIGNAL BUNGALOW (GENERAL AREA)
	GATE ARM
	TOTAL PROPERTY ACQUISITION
	PARTIAL PROPERTY ACQUISITION
	RIGHT OF WAY
	PROPERTY LINE

Rev 00.00  
3/24/2015  
Sheet 1 of 1











DRAFT - WORK IN PROCESS

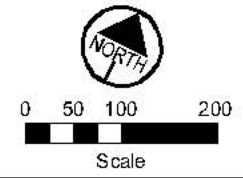


# SOUTHWEST LRT

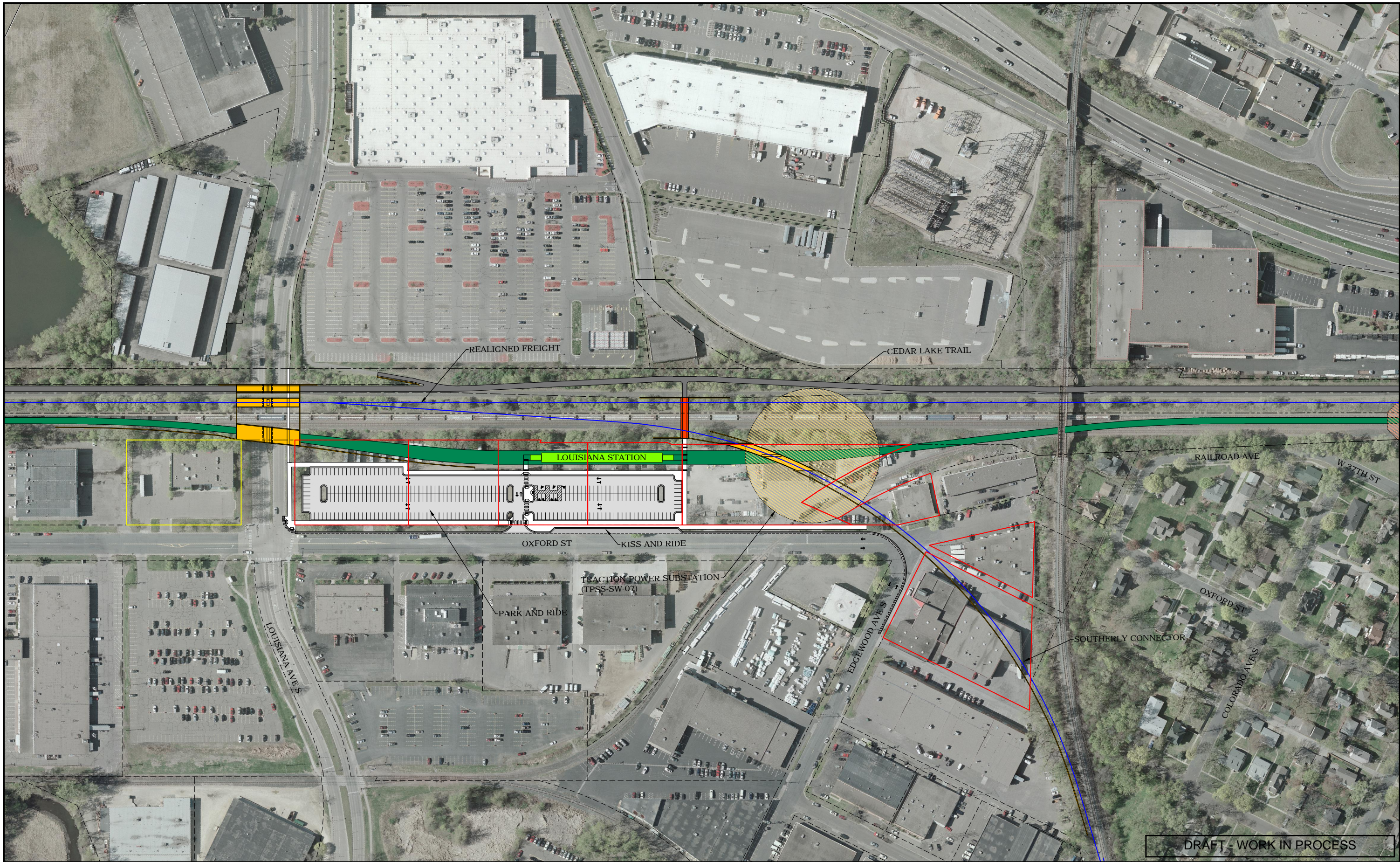
St. Louis Park/Minneapolis Segment  
Locally Preferred Alternative

COLOR LEGEND	
	LRT TRACK AREA
	STATION PLATFORM / SIDEWALK AREA
	TUNNEL
	ROADWAY
	TRAIL / BIKEWAY
	SURFACE PARKING
	BIOSOLIC
	RETAINING WALL
	EXISTING SIGNALIZED INTERSECTION
	PROPOSED SIGNALIZED INTERSECTION
	TRACTION POWER SUBSTATION (GENERAL AREA)
	SIGNAL MANDALAY (GENERAL AREA)
	DATE ARM
	TOTAL PROPERTY ACQUISITION
	PARTIAL PROPERTY ACQUISITION
	RIGHT OF WAY
	PROPERTY LINE

Rev 00.00  
4/14/2014  
Sheet 1 of 9







DRAFT - WORK IN PROCESS

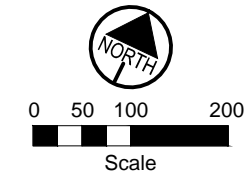


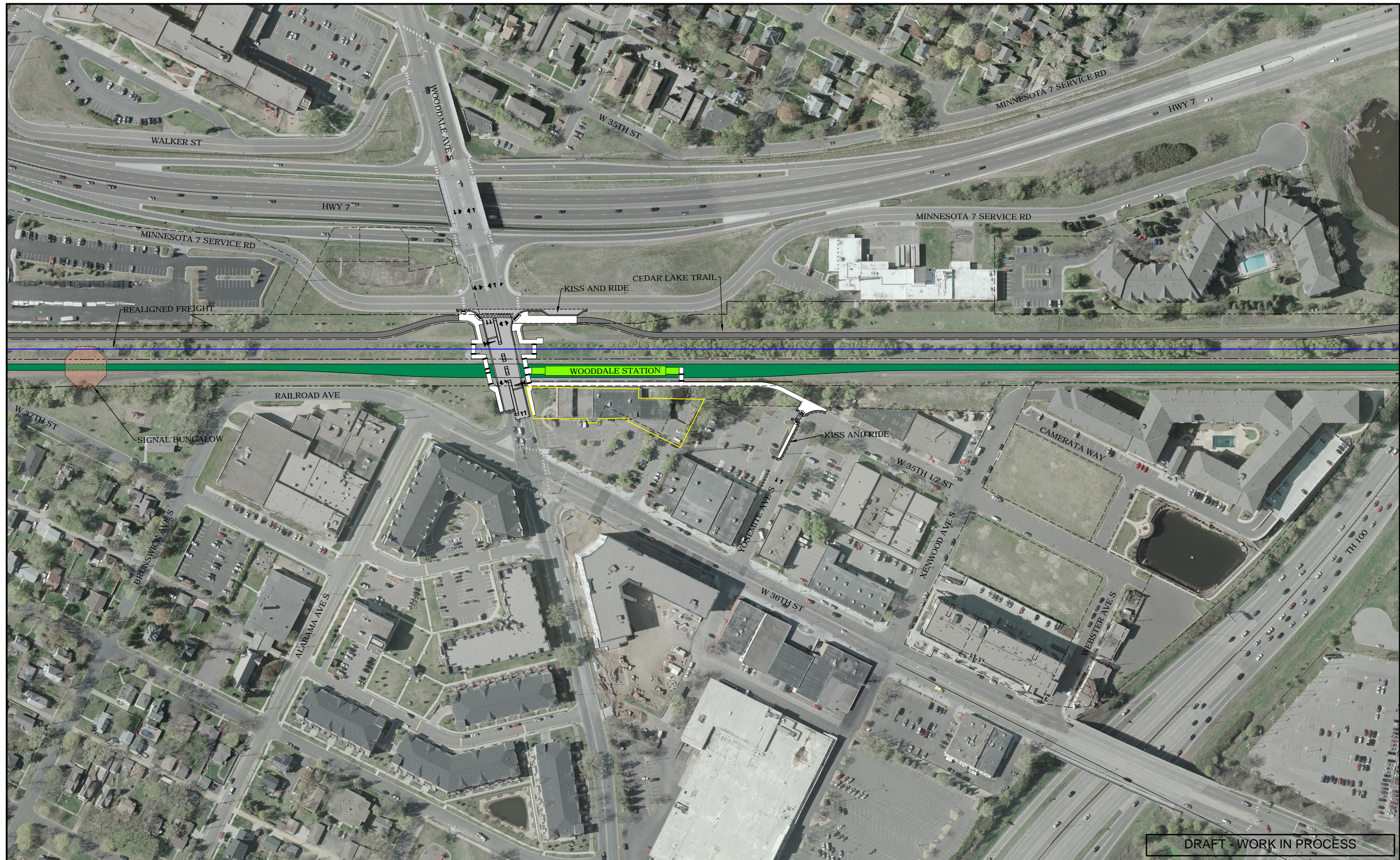
# SOUTHWEST LRT

St. Louis Park/Minneapolis Segment  
Locally Preferred Alternative

COLOR LEGEND	
	LRT TRACK AREA
	PEDESTRIAN / SIDEWALK AREA
	STATION PLATFORM
	TUNNEL
	ROADWAY
	TRAIL / BIKEWAY
	SURFACE PARKING
	BRIDGE
	RETAINING WALL
	EXISTING SIGNALIZED INTERSECTION
	PROPOSED SIGNALIZED INTERSECTION
	TRACTION POWER SUBSTATION (GENERAL AREA)
	SIGNAL BUNGALOW (GENERAL AREA)
	GATE ARM
	TOTAL PROPERTY ACQUISITION
	PARTIAL PROPERTY ACQUISITION
	RIGHT OF WAY
	PROPERTY LINE

Rev 00.00  
1/15/2015  
Sheet 2 of 9





DRAFT - WORK IN PROCESS

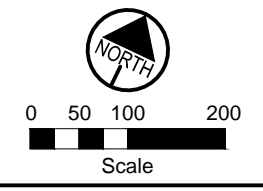


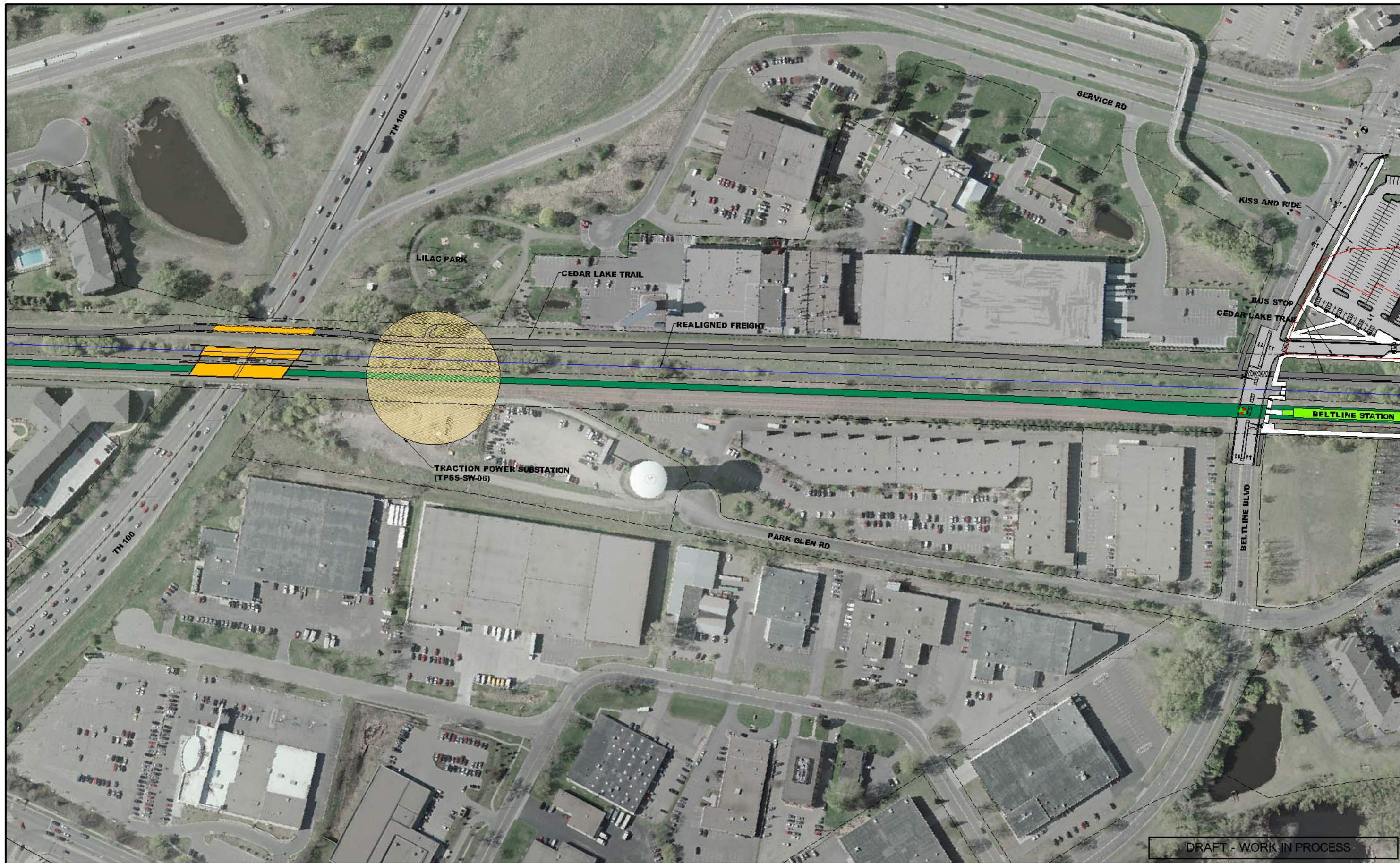
# SOUTHWEST LRT

St. Louis Park/Minneapolis Segment  
Locally Preferred Alternative

COLOR LEGEND	
	LRT TRACK AREA
	PEDESTRIAN / SIDEWALK AREA
	STATION PLATFORM
	TUNNEL
	ROADWAY
	TRAIL / BIKEWAY
	SURFACE PARKING
	BRIDGE
	RETAINING WALL
	EXISTING SIGNALIZED INTERSECTION
	PROPOSED SIGNALIZED INTERSECTION
	TRACTION POWER SUBSTATION (GENERAL AREA)
	SIGNAL BUNGALOW (GENERAL AREA)
	GATE ARM
	TOTAL PROPERTY ACQUISITION
	PARTIAL PROPERTY ACQUISITION
	RIGHT OF WAY
	PROPERTY LINE

Rev 00.00  
1/16/2015  
Sheet 3 of 9





DRAFT - WORK IN PROCESS

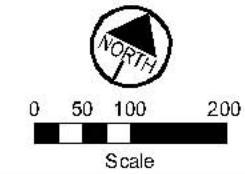


# SOUTHWEST LRT

St. Louis Park/Minneapolis Segment  
Locally Preferred Alternative

COLOR LEGEND	
	LRT TRACK AREA
	STATION PLATFORM
	TUNNEL
	ROADWAY
	TRAIL / BIKEWAY
	SURFACE PARKING
	BIOSOL
	RETAINING WALL
	EXISTING SIGNALIZED INTERSECTION
	PROPOSED SIGNALIZED INTERSECTION
	TRACTION POWER SUBSTATION (GENERAL AREA)
	SIGNAL MANDALAY (GENERAL AREA)
	DATE ARM
	TOTAL PROPERTY ACQUISITION
	PARTIAL PROPERTY ACQUISITION
	RIGHT OF WAY
	PROPERTY LINE

Rev 00.00  
4/14/2014  
Sheet 4 of 9





DRAFT - WORK IN PROCESS

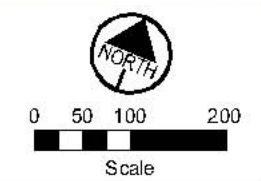


# SOUTHWEST LRT

St. Louis Park/Minneapolis Segment  
Locally Preferred Alternative

COLOR LEGEND	
	LRT TRACK AREA
	STATION PLATFORM
	TUNNEL
	ROADWAY
	TRAIL / BIKEWAY
	SURFACE PARKING
	BIOSOLIC
	RETAINING WALL
	EXISTING SIGNALIZED INTERSECTION
	PROPOSED SIGNALIZED INTERSECTION
	TRACTION POWER SUBSTATION (GENERAL AREA)
	SIGNAL BUNGALOW (GENERAL AREA)
	DATE ARM
	TOTAL PROPERTY ACQUISITION
	PARTIAL PROPERTY ACQUISITION
	RIGHT OF WAY
	PROPERTY LINE

Rev 00.00  
4/14/2014  
Sheet 5 of 9



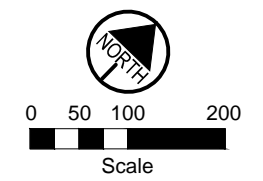


# SOUTHWEST LRT

St. Louis Park/Minneapolis Segment  
Locally Preferred Alternative

COLOR LEGEND	
	LRT TRACK AREA
	PEDESTRIAN / SIDEWALK AREA
	STATION PLATFORM
	TUNNEL
	ROADWAY
	TRAIL / BIKEWAY
	SURFACE PARKING
	BRIDGE
	RETAINING WALL
	EXISTING SIGNALIZED INTERSECTION
	PROPOSED SIGNALIZED INTERSECTION
	TRACTION POWER SUBSTATION (GENERAL AREA)
	SIGNAL BUNGALOW (GENERAL AREA)
	GATE ARM
	TOTAL PROPERTY ACQUISITION
	PARTIAL PROPERTY ACQUISITION
	RIGHT OF WAY
	PROPERTY LINE

Rev 00.00  
3/3/2015  
Sheet 6 of 9



DRAFT WORK IN PROCESS



DRAFT - WORK IN PROCESS

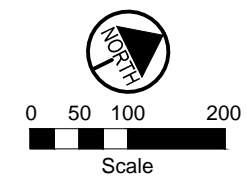


# SOUTHWEST LRT

St. Louis Park/Minneapolis Segment  
Locally Preferred Alternative

COLOR LEGEND	
	LRT TRACK AREA
	PEDESTRIAN / SIDEWALK AREA
	STATION PLATFORM
	TUNNEL
	ROADWAY
	TRAIL / BIKEWAY
	SURFACE PARKING
	BRIDGE
	RETAINING WALL
	EXISTING SIGNALIZED INTERSECTION
	PROPOSED SIGNALIZED INTERSECTION
	TRACTION POWER SUBSTATION (GENERAL AREA)
	SIGNAL BUNGALOW (GENERAL AREA)
	GATE ARM
	TOTAL PROPERTY ACQUISITION
	PARTIAL PROPERTY ACQUISITION
	RIGHT OF WAY
	PROPERTY LINE

Rev 00.00  
8/5/2014  
Sheet 7 of 9





DRAFT - WORK IN PROCESS

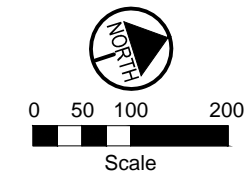


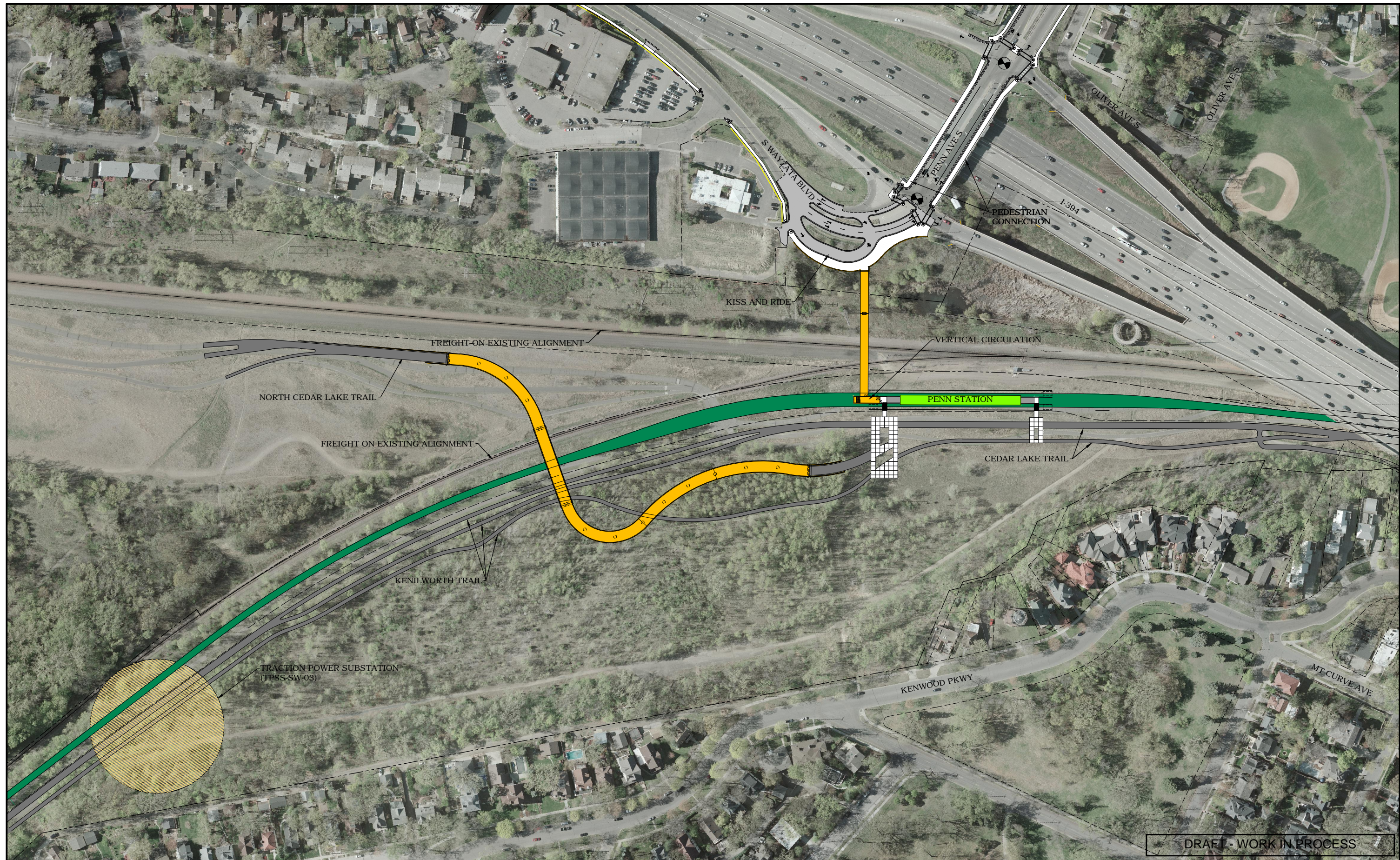
# SOUTHWEST LRT

St. Louis Park/Minneapolis Segment  
Locally Preferred Alternative

COLOR LEGEND	
	LRT TRACK AREA
	PEDESTRIAN / SIDEWALK AREA
	STATION PLATFORM
	TUNNEL
	ROADWAY
	TRAIL / BIKEWAY
	SURFACE PARKING
	BRIDGE
	RETAINING WALL
	EXISTING SIGNALIZED INTERSECTION
	PROPOSED SIGNALIZED INTERSECTION
	TRACTION POWER SUBSTATION (GENERAL AREA)
	SIGNAL BUNGALOW (GENERAL AREA)
	GATE ARM
	TOTAL PROPERTY ACQUISITION
	PARTIAL PROPERTY ACQUISITION
	RIGHT OF WAY
	PROPERTY LINE

Rev 00.00  
8/5/2014  
Sheet 8 of 9





DRAFT - WORK IN PROCESS

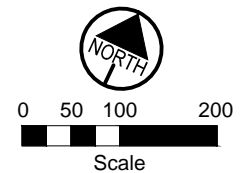


# SOUTHWEST LRT

St. Louis Park/Minneapolis Segment  
Locally Preferred Alternative

COLOR LEGEND	
	LRT TRACK AREA
	PEDESTRIAN / SIDEWALK AREA
	STATION PLATFORM
	TUNNEL
	ROADWAY
	TRAIL / BIKEWAY
	SURFACE PARKING
	BRIDGE
	RETAINING WALL
	EXISTING SIGNALIZED INTERSECTION
	PROPOSED SIGNALIZED INTERSECTION
	TRACTION POWER SUBSTATION (GENERAL AREA)
	SIGNAL BUNGALOW (GENERAL AREA)
	GATE ARM
	TOTAL PROPERTY ACQUISITION
	PARTIAL PROPERTY ACQUISITION
	RIGHT OF WAY
	PROPERTY LINE

Rev 00.00  
8/5/2014  
Sheet 9a of 9





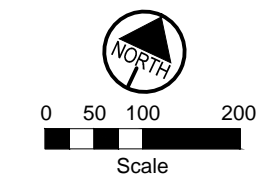


# SOUTHWEST LRT

St. Louis Park/Minneapolis Segment  
Locally Preferred Alternative

COLOR LEGEND	
	LRT TRACK AREA
	PEDESTRIAN / SIDEWALK AREA
	STATION PLATFORM
	TUNNEL
	ROADWAY
	TRAIL / BIKEWAY
	SURFACE PARKING
	BRIDGE
	RETAINING WALL
	EXISTING SIGNALIZED INTERSECTION
	PROPOSED SIGNALIZED INTERSECTION
	TRACTION POWER SUBSTATION (GENERAL AREA)
	SIGNAL BUNGALOW (GENERAL AREA)
	GATE ARM
	TOTAL PROPERTY ACQUISITION
	PARTIAL PROPERTY ACQUISITION
	RIGHT OF WAY
	PROPERTY LINE

Rev 00.00  
8/5/2014  
Sheet 9b of 9



DRAFT - WORK IN PROCESS



**Appendix H**  
**Noise and Vibration Memoranda**

---

## Index

SWLRT Supplemental Draft EIS Existing Noise and Vibration Monitoring Locations

SWLRT Supplemental Draft EIS Noise and Vibration Impact Assessment Assumptions

SWLRT Supplemental Draft EIS Noise and Vibration Impact Results

SWLRT Supplemental Draft EIS Overview of Noise and Vibration Criteria and Impacts and Effects on Historic and Cultural Resources

Southwest LRT MPCA Noise Rules

SWLRT Noise and Vibration Fact Sheets

---

**SWLRT Supplemental Draft EIS Existing Noise and Vibration Monitoring Locations**





CROSS-SPECTRUM ACOUSTICS LLC  
P.O. BOX 90842  
SPRINGFIELD MA 01139  
P.O. BOX 540609  
WALTHAM, MA 02454

## TECHNICAL MEMORANDUM

To: Nani Jacobson, Southwest LRT Project Office  
From: Lance Meister, Cross-Spectrum Acoustics  
Date: December 15, 2014  
Project Reference: SWLRT Supplemental Draft EIS Existing Noise and Vibration Monitoring Locations

This technical memorandum provides information regarding the monitoring locations for existing noise and vibration measurements shown on Exhibit 3.4-6 of the Supplemental Draft EIS and information on the noise and vibration measurements conducted during the Draft EIS, as well as how they are planned to be incorporated into the Supplemental Draft EIS analysis.

All vibration measurements and as many noise measurements as possible were conducted during the week of July 22-26, 2013. The remaining noise measurements were completed during the week of August 5, 2013.

### 1 Noise Measurements

The noise monitoring of existing conditions along the corridor is used to establish the pre-project noise levels at sensitive receptors, or locations representative of sensitive receptors. The FTA noise impact criteria (described in the Draft EIS) are based on the existing noise levels, therefore the measurements of existing noise is essential in conducting a noise impact assessment. Table 1 identifies the locations of the noise measurements for the Supplemental Draft EIS. Each location is identified as either a new measurement or a repeat of a previous measurement from the DEIS. The new measurements supplement the Draft EIS measurement locations to adequately document existing noise conditions in the corridor. The repeated measurements are updates of the Draft EIS measurements taken in the St. Louis Park/Minneapolis Segment to update existing conditions in these locations due to changes in the freight train traffic and operations since the Draft EIS measurements were conducted in 2010 and 2011.

The specific dates for the measurements in July and August are shown in Table 1, along with notes for the completed measurements.

Noise measurement locations from the Draft EIS are noted in Table 2. The site numbers in this table match those for the noise measurements in the Draft EIS, along with location information and whether or not the measurements will be used in the Supplemental Draft EIS analysis.

**Table 1. Noise Monitoring Locations for the Supplemental Draft EIS (SDEIS)**

Noise Site No.	Noise Monitoring Locations	Measure Duration (Hours)	SDEIS Area	Date	Measurement Details	Status and Notes
2	Southwest Station Condos (new)	24	EP Segment	July 25	Condos close to proposed corridor	Complete
3	Purgatory Creek Park (new)	1	EP Segment	July 25	Sensitive site along adjustment that needs a dedicated measurement	Complete
4	Apartments on Singletree Lane (new)	24	EP Segment	August 7	Residences on Singletree Lane along adjustment	Complete
14	Brunswick Ave South and West 37th Street (repeat of DEIS 29)	24	SLP/MPLS Segment	July 23	Representative of sites to south of corridor in this area and near Beltline Station	Complete
15	3427 St. Louis Ave or nearby (repeat of DEIS 31)	24	SLP/MPLS Segment	July 23	Representative of sites in southern portion of the Kenilworth Corridor	Complete – Measurement adjacent to tracks at the Calhoun Isle Condos
16	Kenilworth Place and South Upton Ave (repeat of DEIS 30)	24	SLP/MPLS Segment	July 23	Representative of sites in middle portion of the Kenilworth Corridor	Complete
17	21st Street Station Area near Thomas Ave S and Sheridan Ave S (new)	24	SLP/MPLS Segment	July 23	Representative of sites in northern portion of the Kenilworth Corridor	Complete

Notes: Noise Site Numbers are not sequential because noise monitoring was performed at other locations not listed in the table. Those sites will either be addressed in the forthcoming Final EIS or no longer fall within the area where they would potentially be impacted by project noise due to design refinements during Project Development. There are no noise sensitive receptors identified at the proposed Hopkins OMF site.

**Table 2. Draft EIS Noise Monitoring Locations**

Noise Site No.	Noise Monitoring Locations	Meas. Duration (Hours)	Date	Notes
25	11905 Technology Drive	24	3/2010	Used for SDEIS assessment
7	Fox News Studio	1	3/2010	Outside SDEIS assessment area
26	Nine Mile Creek Apartments 7475 Flying Cloud Drive	24	3/2010	Outside SDEIS assessment area
27	Smetana Road and Nolan Drive	24	3/2010	Outside SDEIS assessment area
28	6th Avenue and Excelsior Blvd	24	3/2010	Outside SDEIS assessment area
9	Monroe Ave and 2nd Street North	24	3/2010	Outside SDEIS assessment area
29	Brunswick Ave South and West 37th Street	24	3/2010	Outside SDEIS assessment area
31	3427 St. Louis Ave	24	4/2010	Repeated DEIS measurement on freight for new volumes and operations (#15 in Table 1)
30	Kenilworth Place and South Upton Ave	24	3/2010	Repeated DEIS measurement on freight for new volumes and operations (#16 in Table 1)
14	Cedar Lake Park	1	3/2010	
15	Kenwood Park	1	3/2010	

## 2 Vibration Measurements

The vibration propagation testing is conducted to determine the response of the soil to an input force. The information gathered during this testing is combined with the input force of the vehicle (taken from previous work by other consultants on the Central Corridor LRT (METRO Green Line) project, not from the Draft EIS) to determine the projected vibration levels from transit operations in locations with no current trains in operation. The vibration propagation testing is conducted where there are no current LRT trains in operation. The four sites in Table 3 were



---

SWLRT SDEIS EXISTING NOISE AND VIBRATION MONITORING LOCATIONS

---

selected to cover the areas included within the Supplemental Draft EIS (no sensitive vibration receptors are located at the proposed OMF location in Hopkins). Typically a vibration propagation test is conducted at one location, and the results are used for a larger portion of the alignment. An example of this is the Southwest Station Condos site (Site 2) below. The results at this site can be applied to the entire Eden Prairie Segment, including the apartments on Singletree Lane and other sites. Typically, fewer vibration propagation measurements are conducted on a project, as compared with the noise measurements. The exact location of each vibration measurement site (aside from the site specific locations) was determined in the field.

There were no vibration measurements taken for the Draft EIS. All vibration measurements for the Supplemental Draft EIS were completed in July, 2013. Specific notes, where needed, are shown in Table 3.

**Table 3. Vibration Monitoring Locations for the Supplemental Draft EIS**

Vib Site No.	Vibration Monitoring Locations	Measure Duration (Hours)	SDEIS Area	Measurement Details	Notes
2	Southwest Station Condos	3	EP Segment	Testing for Eden Prairie Segment	
7	Edgebrook Drive/West 37th Avenue	3	SLP/MPLS Segment	Testing for residences near Louisiana and Wooddale Stations	
8	West Lake Station	3	SLP/MPLS Segment	Testing for the southern portion of the Kenilworth Corridor	Measurement site near Calhoun Isle Condos
9	21st Street area	3	SLP/MPLS Segment	Testing for the northern portion of the Kenilworth Corridor	

Notes: Vibration Site Numbers are not sequential because vibration monitoring was performed at other locations not listed in the table. Those sites will either be addressed in the forthcoming Final EIS or no longer fall within the area where they would potentially be impacted by project vibration due to design refinements during Project Developments. There are no vibration sensitive receptors identified at the proposed Hopkins OMF site.

**SWLRT Supplemental Draft EIS Noise and Vibration Impact Assessment Assumptions**

---



## TECHNICAL MEMORANDUM

To: Nani Jacobson, Southwest LRT Project Office  
From: Lance Meister, Cross-Spectrum Acoustics  
Date: December 15, 2014  
Project Reference: SWLRT Supplemental Draft EIS Noise and Vibration Impact Assessment Assumptions

This technical memorandum provides an outline of the assumptions used and information/mapping acquired that will be used for the noise and vibration analysis for the Supplemental Draft EIS study areas. Specific assumptions used in the noise impact assessment include:

- Light Rail Transit (LRT) speeds were provided by the Southwest LRT Project Office Engineering team. Speeds range from 20 mph to 55 mph for LRT revenue operations within the areas studied in the Supplemental Draft EIS. A speed of 10 mph was assumed for vehicle movements inside the proposed Hopkins Operation and Maintenance Facility (OMF). LRT speed in a tunnel was assumed to be a maximum of 45 mph.
- For freight operations, speeds were assumed to be 25 mph along the Bass Lake Spur until the City of St. Louis Park/City of Minneapolis boundary (at France Avenue). From this point north and east, the freight speed was assumed to be 10 mph in the Kenilworth Corridor.
- Distances to sensitive receptors were based on maps provided by the Engineering team (see below for details).
- Shallow tunnel depth, retained cut wall heights and other project features were based on plan sheets, found in Appendix G, supplemented with profile and typical section information provided by the Engineering team.
- LRT tracks were assumed to be ballast and tie at all locations studied in the Supplemental Draft EIS, except for the shallow tunnel segment, where the tracks were assumed to be direct fixation on slab, except at the channel crossing (see Appendix G), where the tracks are ballast and tie.
- The retaining walls and crash walls were included in the impact assessment and evaluated as noise barriers.
- LRT vehicles were assumed to use 3-car trains during all hours of operation.
- The operating hours and headways were assumed to be the same as for the Central Corridor LRT (METRO Green Line), and included the following:
  - Early morning hours (4:00 AM to 5:30 AM) – 15 minute headways
  - Peak operating hours (5:30 AM to 9:00 PM) - 10 minute headways
  - Evening hours (9:00 PM to 11 PM) - 15 minute headways
  - Late evening hours (11:00 PM to 2:00 AM) - 30 minute headways
- Vehicle reference noise levels used in the SWLRT Draft EIS (p. 4-84) are based on measurements conducted for the Draft EIS on the METRO Blue Line (Hiawatha LRT) and are shown in Table 1.

**Table 1. Blue Line Reference Noise Levels**

Noise Source	Sound Exposure Level, (dBA)
LRT on embedded/direct fixation track	84
LRT on ballast and tie track	81
Crossing bells	106
LRT Bells	88
LRT Horn	99

The sound exposure level or SEL is the cumulative noise from a single noise event taking into account both the level and duration of the sound.

- Vehicle force density levels (reference vehicle input force) are based on measurements conducted for the METRO Green Line project for both ballast and tie and embedded track. (*Vibration Measurements and Predictions for Central Corridor LRT Project*, ATS Consulting, July 2008. Pages 28 and 45).
- Noise at tunnel portals was assumed to increase noise levels by 1 dB for locations within 100 feet of a tunnel portal to account for reverberation inside a tunnel. Modeled using "Terrain 1.4.3.0" Olive Tree Labs sound propagation modeling software. A comparison was made between noise levels from LRT vehicles in a free field condition and LRT in a tunnel with portals. The results indicated a small (1 dB) increase in noise levels very close to the portals due to reverberation in the tunnel. This result is consistent with findings presented in the literature.
- Crossovers and turnouts increase noise levels by 6 dB and vibration levels by 10 dB in the immediate vicinity of the crossover. (Industry standards.)
- Ventilation in the light rail tunnel is only required during emergency operations and will be tested on a monthly basis, and is therefore not included in the analysis.
- Noise from bells and horns devices was based on the following assumptions:
  - LRT bells are sounded for five seconds as vehicles approach grade crossings.
  - Bells are sounded twice when entering and exiting station platforms.
  - LRT horns are sounded at grade crossings where speeds exceed 45 mph.
  - Grade crossing bells are used at grade crossings for 20 seconds for each train.
  - No horn/bell sounding assumed at tunnel portals. This was included as part of the project’s operation assumptions to limit noise levels in potentially sensitive areas, such as near residences.







## TECHNICAL MEMORANDUM

To: Nani Jacobson, Southwest LRT Project Office  
From: Lance Meister, Cross-Spectrum Acoustics  
Date: March 5, 2015  
Project Reference: SWLRT Supplemental Draft EIS Noise and Vibration Impact Results

This technical memorandum provides an outline of the impact results for the noise and vibration analysis for each of the Supplemental Draft EIS study areas. The date and location of noise monitoring and vibration testing sites is documented in the SWLRT Supplemental Draft EIS Existing Noise and Vibration Monitoring Locations (August 21, 2013). Existing noise levels and results from the vibration testing sites will be summarized in Chapter 3 of the Supplemental Draft EIS.

### **Proposed Operation and Maintenance Facility (OMF), Hopkins**

There are no noise or vibration sensitive receptors located near the proposed site.

### **Eden Prairie Segment**

#### **Noise**

There are moderate and severe noise impacts at the Baymont Inn and Residence Inn located on Flying Cloud Drive between Interstate 494, Highway 212, and Prairie Center Drive, due primarily to grade crossing noise.

Additionally, the auditorium at the Optum facility on Technology Drive has been identified as a noise sensitive receptor. Supplemental, site-specific measurements will be conducted at this site during the Final EIS to determine the potential for impacts and the corresponding need for any mitigation.

Based on the projected noise impacts identified in the Eden Prairie Segment and in compliance with FTA guidance, final determinations of noise mitigation measures to be incorporated into the project will be made in a noise mitigation plan and documented in the project's Final EIS and Record of Decision. The contents of that plan will include: additional noise monitoring and/or testing where appropriate; documentation of the evaluation of mitigation measures relative to their feasibility, practicability, and project-specific factors used to identify the committed noise mitigation measures; and identification of committed long-term and short-term (construction) noise mitigation measures and their effectiveness. See Section 3.1.2.8 of the Supplemental Draft EIS for additional detail on FTA noise mitigation guidance and on the contents of a noise mitigation plan.

#### **Vibration**

There are no vibration impacts in this segment. However, the auditorium at the Optum facility on Technology Drive has been identified as a vibration and ground-borne noise sensitive receptor. Assessment of the facility will be conducted during the Final EIS to determine the potential for impacts and the corresponding need for any mitigation. Based on the projected short-term vibration impacts identified in the Eden Prairie Segment and in compliance with FTA guidance, final determinations of short-term vibration mitigation measures to be incorporated into the project for this segment will be made in a vibration mitigation plan and documented in the project's Final EIS and Record of Decision. The contents of that plan will include: additional testing where appropriate; documentation of the evaluation of mitigation measures relative to their feasibility, practicability, and project-specific factors used to identify the committed mitigation measures; and identification of committed long-term and short-term (construction) mitigation measures and their effectiveness. See Section 3.1.2.9 of the Supplemental Draft EIS for additional detail on FTA noise mitigation guidance and on the contents of a vibration mitigation plan.



## St. Louis Park/Minneapolis Segment

### Noise

There are a total of three severe and 66 moderate Category 2 noise impacts in the St. Louis Park/Minneapolis Segment. There is also one moderate Category 3 noise impact in the St. Louis Park/Minneapolis Segment. The impact results incorporate existing conditions in the area, as well as project design elements such as LRT vehicles running on ballast and tie track when not in the tunnel (which is quieter than slab track) and the presence of the retained cut walls of the portals, which act as noise barriers. A small adjustment in the noise level was made to account for the tunnel portal, as described in the impact assumptions memorandum, but it has a minimal effect.

#### *Category 2 Impacts*

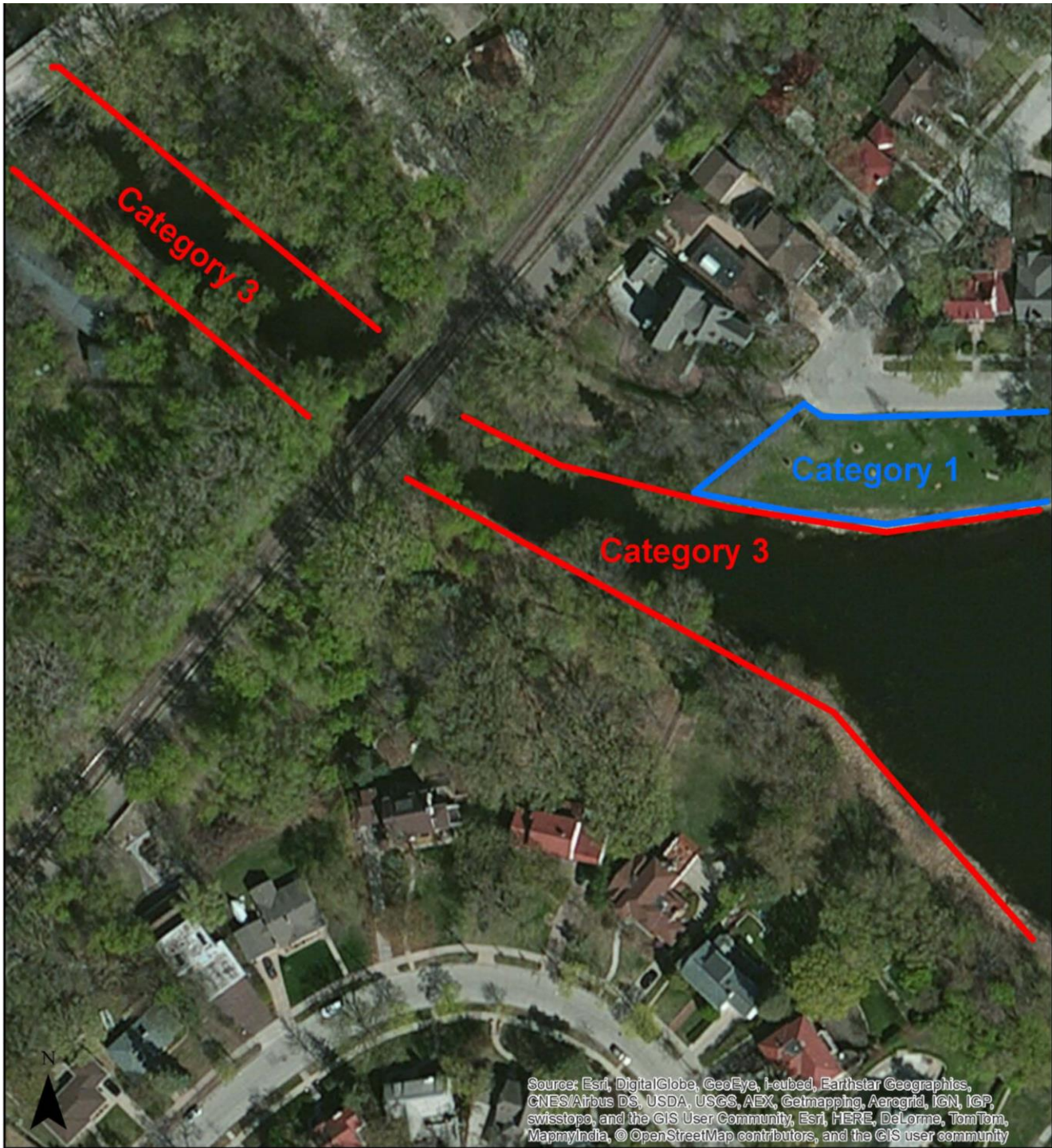
One severe noise impact and 38 moderate noise impacts are between the proposed Louisiana Station and Highway 100 on the south side of the corridor. Thirty-two of the moderate impacts are at the Hoigaard Village apartment complex near Highway 100 and the rest are at single-family residences near Railroad Avenue and W 37th Street.

The remaining noise impacts are in the at-grade section of the Kenilworth Corridor, north of the channel. There are one severe impact and six moderate noise impacts at Burnham Road, just to the north of the channel crossing. The other severe noise impact and remaining 22 moderate noise impacts are in the vicinity of the 21<sup>st</sup> Street Station and grade-crossing. The impacts are due to a combination of LRT noise, grade-crossing noise, and noise at the station. Because of the location adjacent to the grade-crossing, operations, engineering, and safety concerns will be considered in determining the mitigation options available at this location.

#### *Category 3 Impacts*

One moderate noise impact has been identified at the Kenilworth Channel crossing for the channel itself. The channel is considered a Category 3 sensitive noise receptor due to the presence of noise-sensitive activities that occur on the channel (see the graphic on the next page, which shows land use categories at the Kenilworth Channel). There would be a moderate noise impact within 40 feet of the tracks on both sides of the channel relative to the tracks. The grassy area on the banks of the lagoon is considered Category 1 land use due to the passive and noise-sensitive recreational activities that occur there (where quietude is essential feature of the park), however there would be no impact to this area because of the distance from the tracks to the sensitive location. These two sensitive noise receptors are also included within the Kenilworth Lagoon and Grand Rounds Historic District, which are Section 106 historic properties (see Section 3.4.1.3 for additional detail on the historic resources).

**Exhibit 1. Kenilworth Channel/Lagoon Noise Categorization**



The banks of the lagoon are considered Category 1.  
The channel and lagoon are active use parks and are considered Category 3.

Based on the projected noise impacts identified in the St. Louis Park/Minneapolis Segment and in compliance with FTA guidance, final determinations of noise mitigation measures to be incorporated into the project will be made in a noise mitigation plan and documented in the project's Final EIS and Record of Decision. The contents of that plan will include: additional noise monitoring and/or testing where appropriate; documentation of the evaluation of mitigation measures relative to their feasibility, practicability, and project-specific factors used to identify the

committed noise mitigation measures; and identification of committed long-term and short-term (construction) noise mitigation measures and their effectiveness. See Section 3.1.2.8 of the Supplemental Draft EIS for additional detail on FTA noise mitigation guidance and on the contents of a noise mitigation plan.

### **Vibration**

There are no vibration impacts in this segment.

There are 54 ground-borne noise (GBN) impacts where the LRT tracks are in the tunnel; mostly within about 100 feet of the tracks on both sides. The GBN impacts are due to the distance to the tracks and the vehicle characteristics, which include high-frequency vibration. The vibration impact discussion for the St. Louis Park/Minneapolis Segment is found in Section 3.4.2.4 B of the Supplemental Draft EIS.

Based on the projected vibration impacts identified in the St. Louis Park/Minneapolis Segment and in compliance with FTA guidance, final determinations of vibration mitigation measures to be incorporated into the project will be made in a vibration mitigation plan and documented in the project's Final EIS and Record of Decision. The contents of that plan will include: additional testing where appropriate; documentation of the evaluation of mitigation measures relative to their feasibility, practicability, and project-specific factors used to identify the committed mitigation measures; and identification of committed long-term and short-term (construction) mitigation measures and their effectiveness. See Section 3.1.2.9 of the Supplemental Draft EIS for additional detail on FTA noise mitigation guidance and on the contents of a vibration mitigation plan.

**SWLRT Supplemental Draft EIS Overview of Noise and Vibration Criteria and Impacts and Effects on  
Historic and Cultural Resources**

---





CROSS-SPECTRUM ACOUSTICS LLC

P.O. BOX 90842  
SPRINGFIELD MA 01139

P.O. BOX 540609  
WALTHAM, MA 02454

## TECHNICAL MEMORANDUM

To: Nani Jacobson, Southwest LRT Project Office

From: Lance Meister, Cross-Spectrum Acoustics

Date: December 15, 2014

Project Reference: SWLRT Supplemental Draft EIS Overview of Noise and Vibration Criteria, Impacts and Effects on Historic and Cultural Resources

This technical memorandum provides a summary of the Federal Transit Administration’s (FTA) noise and vibration criteria and mitigation policy, and FTA’s policy regarding effects of noise and vibration on historic and cultural resources. The last section of the memo provides information on the resources identified in the Supplemental Draft EIS segments: Eden Prairie Segment, the proposed Operations & Maintenance Facility (OMF), and the St. Louis Park/Minneapolis segment, and the potential noise or vibration effects for each resource.

### 1 FTA Noise Criteria

The noise impact criteria used for transit projects are based on the information contained in Chapter 3 of the FTA noise and vibration guidance manual<sup>1</sup>. The FTA noise impact criteria are based on well-documented research on community response to noise and are based on both the existing level of noise and the change in noise exposure due to a project. The FTA noise criteria compare the existing noise with the project noise.

The FTA noise criteria are based on the land use category of the sensitive receptor, and use the day-night sound level (Ldn) for locations where people sleep (Category 2) and the hourly equivalent sound level (Leq) for locations with daytime and/or evening use (Category 1 or 3), as shown in Table 1.

**Table 1. Land Use Categories and Metrics for Transit Noise Impact Criteria**

Land Use Category	Noise Metric (dBA)	Description of Land Use Category
1	Outdoor Leq(h)*	Tracts of land where quiet is an essential element in their intended purpose. This category includes lands set aside for serenity and quiet, and such land uses as outdoor amphitheaters and concert pavilions, as well as National Historic Landmarks with significant outdoor use. Also included are recording studios and concert halls.
2	Outdoor Ldn	Residences and buildings where people normally sleep. This category includes homes, hospitals and hotels where a nighttime sensitivity to noise is assumed to be of utmost importance.
3	Outdoor Leq(h)*	Institutional land uses with primarily daytime and evening use. This category includes schools, libraries, theaters, and churches where it is important to avoid interference with such activities as speech, meditation and concentration on reading material. Places for meditation or study associated with cemeteries, monuments, museums, campgrounds and recreational facilities can also be considered to be in this category. Certain historical sites and parks are also included.

\* Leq for the noisiest hour of transit-related activity during hours of noise sensitivity.

Source: FTA Guidance Manual (2006)

<sup>1</sup> U.S. Federal Transit Administration, “Transit Noise and Vibration Impact Assessment.” Report FTA-VA-90-1003-06, May 2006.

Category 1 includes uses where quiet is an essential element in the intended purpose, such as indoor concert halls, outdoor concert pavilions or National Historic Landmarks where outdoor interpretation routinely takes place. Category 2 includes residences and buildings where people sleep, while Category 3 includes institutional land uses with primarily daytime and evening use such as schools, places of worship and libraries. The criteria do not apply to most commercial or industrial uses because, in general, the activities within these buildings are compatible with higher noise or vibration levels. They do apply to business uses which depend on quiet as an important part of operations, such as sound and motion picture recording studios or vibration sensitive manufacturing or research facilities.

The noise impact criteria are defined by the two curves shown in Figure 1, which allow increasing project noise as existing noise levels increase, up to a point at which impact is determined based on project noise alone. The FTA noise impact criteria include three levels of impact, as shown in Figure 1. The three levels of impact include:

- **No Impact:** In this range, the proposed project is considered to have no impact since, on average, the introduction of the project will result in an insignificant increase in the number of people highly annoyed by the new project noise.
- **Moderate Impact:** At the moderate impact range, changes in the cumulative noise level are noticeable to most people, but may not be sufficient to cause strong, adverse reactions from the community. In this transitional area, other project-specific factors must be considered to determine the magnitude of the impact and the need for mitigation, such as the existing level, predicted level of increase over existing noise levels and the types and numbers of noise-sensitive land uses affected.
- **Severe Impact:** At the severe impact range, a significant percentage of people would be highly annoyed by the new project noise. Severe noise impacts are considered to be “significant” under NEPA, and should be avoided if possible. Noise mitigation should be applied for severe impacts where feasible.

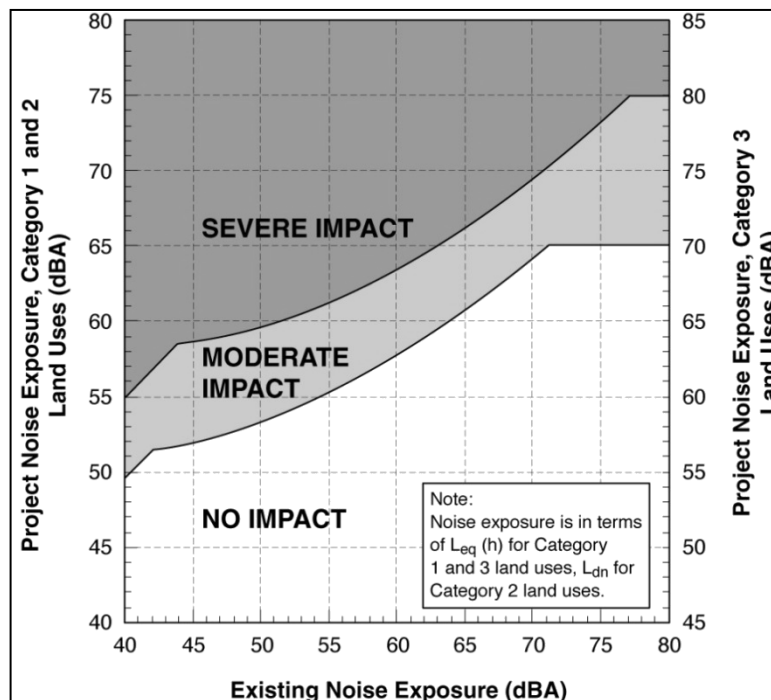


Figure 1. FTA Noise Impact Criteria

## 2 FTA Vibration Criteria

The vibration impact criteria used for transit projects are based on the information contained in Chapter 8 of the FTA noise and vibration guidance manual. The criteria for a general vibration assessment are based on land use and train frequency, as shown in Table 2. Some buildings, such as concert halls, recording studios and theaters, can be very

sensitive to vibration (or ground-borne noise) but do not fit into the three categories listed in Table 2. Because of the sensitivity, special attention is paid to these buildings during the environmental assessment of a project. Table 3 shows the FTA criteria for acceptable levels of vibration for several types of special buildings.

Table 2 and Table 3 include additional criteria for ground-borne noise, which is a low-frequency noise that is radiated from the motion of room surfaces, such as walls and ceilings in buildings due to ground-borne vibration. Ground-borne noise is defined in terms of dBA, which emphasizes middle and high frequencies, which are more audible to human ears.

**Table 2. Ground-Borne Vibration (GBV) and Ground-Borne Noise (GBN) Impact Criteria**

Land Use Category	GBV Impact Levels (VdB re 1 micro-inch /sec)			GBN Impact Levels (dBA re 20 micro Pascals)		
	Frequent Events <sup>1</sup>	Occasional Events <sup>2</sup>	Infrequent Events <sup>3</sup>	Frequent Events <sup>1</sup>	Occasional Events <sup>2</sup>	Infrequent Events <sup>3</sup>
<b>Category 1:</b> Buildings where vibration would interfere with interior operations.	65 <sup>4</sup>	65 <sup>4</sup>	65 <sup>4</sup>	N/A <sup>4</sup>	N/A <sup>4</sup>	N/A <sup>4</sup>
<b>Category 2:</b> Residences and buildings where people normally sleep.	72	75	80	35	38	43
<b>Category 3:</b> Institutional land uses with primarily daytime use.	75	78	83	40	43	48

**Notes:**

1. "Frequent Events" is defined as more than 70 vibration events of the same source per day. Most rapid transit projects fall into this category.
2. "Occasional Events" is defined as between 30 and 70 vibration events of the same source per day. Most commuter trunk lines have this many operations.
3. "Infrequent Events" is defined as fewer than 30 vibration events of the same kind per day. This category includes most commuter rail branch lines.
4. This criterion limit is based on levels that are acceptable for most moderately sensitive equipment such as optical microscopes. Vibration-sensitive manufacturing or research will require detailed evaluation to define the acceptable vibration levels. Ensuring lower vibration levels in a building often requires special design of the HVAC systems and stiffened floors.
5. Vibration-sensitive equipment is generally not sensitive to ground-borne noise.

Source: FTA Guidance Manual (2006)

**Table 3. Ground-Borne Vibration and Ground-Borne Noise Impact Criteria for Special Buildings**

Type of Building or Room	GBV Impact Levels (VdB re 1 micro-inch /sec)		GBN Impact Levels (dBA re 20 micro Pascals)	
	Frequent Events <sup>1</sup>	Occasional or Infrequent Events <sup>2</sup>	Frequent Events <sup>1</sup>	Occasional or Infrequent Events <sup>2</sup>
Concert Halls	65	65	25	25
TV Studios	65	65	25	25
Recording Studios	65	65	25	25
Auditoriums	72	80	30	38
Theaters	72	80	35	43

**Notes:**

1. "Frequent Events" is defined as more than 70 vibration events per day. Most rapid transit projects fall into this category.
2. "Occasional or Infrequent Events" is defined as fewer than 70 vibration events per day. This category includes most commuter rail systems.
3. If the building will rarely be occupied when the trains are operating, there is no need to consider impact. As an example, consider locating a commuter rail line next to a concert hall. If no commuter trains will operate after 7 pm, it should be rare that the trains interfere with the use of the hall.

Source: FTA Guidance Manual (2006)



The criteria for ground-borne noise are much lower than for airborne noise to account for the low-frequency character of ground-borne noise. However, because airborne noise typically masks ground-borne noise for above ground (at-grade or elevated) transit systems, ground-borne noise is only assessed for operations in tunnels, such as in the tunnel south of the channel in the Kenilworth Corridor area, where airborne noise is not a factor, or at locations such as recording studios, which are well insulated from airborne noise.

Category 1 includes buildings where vibration would interfere with interior operations, Category 2 includes residences and buildings where people normally sleep and Category 3 includes institutional land uses with primarily daytime use. The criteria do not apply to most commercial or industrial uses because, in general, the activities within these buildings are compatible with higher noise or vibration levels. They do apply to business uses which depend on quiet as an important part of operations, such as sound and motion picture recording studios or vibration sensitive manufacturing or research facilities.

In addition to the criteria for annoyance and activity interference from vibration, there are additional criteria for damage to buildings. The criteria are based on the building type, as shown in Table 4. The allowable vibration levels, even for the most stringent category, are well above the typical vibration levels generated by transit operations, even at very close distances.

**Table 4. Construction Vibration Damage Criteria**

Building Category	PPV (in/sec)	Approx Lv
I. Reinforced-concrete, steel or timber (no plaster)	0.5	102
II. Engineered concrete and masonry (no plaster)	0.3	98
III. Non-engineered timber and masonry buildings	0.2	94
IV. Buildings extremely susceptible to vibration damage	0.12	90
RMS velocity in decibels (VdB) re 1 micro-inch/second.		

### 3 FTA Mitigation Policy

For noise, project generated noise in the No Impact category is not likely to be found annoying. Noise projections in this category are considered acceptable by FTA and mitigation is not required. At the other extreme, noise projections in the Severe Impact category represent the most compelling need for mitigation. However, before mitigation measures are considered, the project sponsor should first evaluate alternative locations/alignments to determine whether it is feasible to avoid Severe impacts altogether.

If it is not practical to avoid severe impacts by changing the location of the project, mitigation measures must be considered. Impacts in this category have the greatest adverse effect on the community; thus there is a presumption by FTA that mitigation will be incorporated in the project unless there are truly extenuating circumstances which prevent it. The goal is to gain substantial noise reduction through the use of mitigation measures, not simply to reduce the predicted levels to just below the Severe Impact threshold.

Projected noise levels in the Moderate Impact category will also require consideration and adoption of mitigation measures when it is considered reasonable. The Moderate Impact category delineates an area where there is the potential for adverse impacts and complaints from the community, which must then be carefully considered in conjunctions with project specific requirements, as well as details concerning the affected properties, in determining the need for mitigation. While impacts in this range are not of the same magnitude as severe impacts, there can be circumstances where mitigation may be identified as necessary for the project.

### 4 FTA Policy on Noise and Vibration Impacts to and Mitigation for Historic and Cultural Resources

Under FTA guidance, historic sites are designated as noise or vibration sensitive depending on the land use of the site, not their designation as historic. Sites of national significance with considerable outdoor use required for site

interpretation would be in Category 1<sup>2</sup>. Historical sites that are currently used as residences would be in Category 2. Historic buildings with indoor use of an interpretive nature involving meditation and study would be in Category 3. These include museums, significant birthplaces and buildings in which significant historical events occurred.

Most downtown areas have buildings which are historically significant because they represent a particular architectural style or are prime examples of the work of a historically significant designer. If the buildings or structures are used for commercial or industrial purposes and are located in busy commercial areas, they are not considered noise or vibration sensitive and the impact criteria do not apply.

Similarly, historical transportation structures, such as terminals and railroad depots, are not considered noise or vibration sensitive land uses. These buildings or structures may however be afforded special protection under Section 4(f) of the DOT Act and Section 106 of the National Historic Preservation Act.

In the Section 106 process protecting historic and cultural properties, noise may or may not be considered an “adverse effect” depending on the individual circumstances and whether or not the use is noise sensitive, because, as previously noted, historic and cultural properties are only noise sensitive based on how they are used. The regulatory processes stemming from these statutes require coordination and consultation with agencies and organizations having jurisdiction over these resources. Their views on the project's impact on protected resources are given careful consideration by FTA and the project sponsor, and their recommendations may influence the decision to adopt noise reduction measures<sup>3</sup>.

For vibration, there is only one impact category. Vibration impacts are considered to be significant, and should be mitigated, unless it is not reasonable or feasible to provide mitigation. The need for mitigation is based on the vibration sensitivity of the land use, as with noise. One difference between noise and vibration is that outdoor land uses are not considered vibration sensitive. Only indoor land uses are considered vibration sensitive. The determination of whether or not a historic or cultural site is vibration sensitive and any additional need for mitigation is similar to that described above for noise.

## 5 Historic and Cultural Resources within the Supplemental Draft EIS Segments

Based on data provided by MnDOT CRU of listed and eligible historic properties within the Supplemental Draft EIS study areas, an assessment of the historic and cultural resources was conducted for the Southwest LRT Project. The assessment was conducted to determine the noise and/or vibration sensitivity of the resources along the corridor. For each resource site, a determination was made regarding the noise or vibration sensitivity of the use and the FTA category it would fall under based on FTA guidance. The result of the assessment, which is summarized in Table 5, is that the Kenilworth Lagoon/Channel is a historic resource that is potentially noise and vibration sensitive and close enough to the proposed Southwest LRT project to warrant a noise and vibration impact assessment.

In addition to the operational (long-term) assessment described above, the potential for vibration-related construction (short-term) impacts also was conducted. The criteria for construction vibration impacts to damage buildings is based on the building category and fragility of the building, not its designation or use as a historic resource. In most cases, vibration generated by construction activities does approach levels high enough to cause damage, even for very fragile buildings. The exceptions to this can be for activities such as vibratory rolling and impact pile driving. At

---

<sup>2</sup> Transit Noise and Vibration Impact Assessment, Chapter 3 (FTA, 2006)

<sup>3</sup> For historic or cultural resources, the following two circumstances in assessing impacts and mitigation measures: **1) The noise sensitivity of the property.** While Table 1 gives a comprehensive list of noise sensitive land uses, there can be differences in noise sensitivity depending on individual circumstances. For example, an historic park or recreational area could vary in its sensitivity to noise depending on the type of use of the park (active versus passive recreation) and the settings in which it is located. **2) Special protection provided by law.** Section 106 of the National Historic Preservation Act and Section 4(f) of the Department of Transportation (DOT) Act (which protects historic sites, as well as publically-owned parks, recreation areas, wildlife and waterfowl refuges) come into play frequently during the environmental review of transit projects. See pages 3-12 and 3-13 of the FTA *Transit Noise and Vibration Impact Assessment* for additional information on considerations given to resources that have special protection provided by law.

SWLRT SDEIS OVERVIEW OF NOISE AND VIBRATION CRITERIA AND IMPACTS AND EFFECTS ON HISTORIC AND CULTURAL RESOURCES

distances within approximately 50 feet, these activities have the potential for damage to the most sensitive structures. Based on the list of the structures contained in Table 5, they would either not be included in the most stringent category or would not be close enough for there to be any potential for damage. Therefore additional assessment is not warranted.

**Table 5. Supplemental Draft EIS SWLRT Historic Properties**

Inventory #	Property Name	Address	FTA Cat. <sup>1</sup>	Notes
<b>Historic Districts</b>				
XX-PRK-001	Grand Rounds Historic District (E)	Minneapolis	N/A	
HE-MPC-9860	Lake of the Isles Residential Historic District	Vicinity of E/W Lake of the Isles Parkway, Minneapolis	2	Outside the limits of noise impact
HE-MPC-18059	Kenwood Parkway Residential Historic District	1805-2216 Kenwood Pkwy, Minneapolis	2	Most of this district is outside the limits of noise impacts. A few residences near the northern end will be assessed for noise impact as a part of the standard assessment in the Final EIS.
HE-MPC-16387	StPM&M RR Historic District (E)	Minneapolis	N/A	
<b>Individual Resources<sup>2</sup></b>				
HE-SLC-0008	CM&StP RR Depot (L)	6210 W. 37 <sup>th</sup> St, St. Louis Park	N/A	
HE-SLC-0009	Peavey-Haglin Concrete Grain Elevator (L, NHL)	Hwys 7 and 100, St. Louis Park	N/A	
HE-SLC-0055	Hoffman Callan Building (E)	3907 Hwy 7, St. Louis Park	N/A	
HE-MPC-17102	Minikahda Club (E)	3205 Excelsior Blvd, Minneapolis	N/A	
HE-MPC-1811	Lake Calhoun (E) <sup>3</sup>	Minneapolis	N/A	
HE-MPC-1833	Cedar Lake Parkway (E) <sup>3</sup>	Minneapolis	N/A	
HE-MPC-1820	Cedar Lake (E) <sup>3</sup>	Minneapolis	N/A	
HE-MPC-1822	Kenilworth Lagoon/Channel (E) <sup>3,4</sup>	Minneapolis	1 & 3	The banks of the lagoon are considered Category 1 land use. The channel and lagoon are active use parks and are considered Category 3.(see Exhibit 1. Kenilworth Lagoon/Channel Noise Categorization)
HE-MPC-6901	Park Bridge No. 4 (E) <sup>3</sup>	Minneapolis	N/A	
HE-MPC-1825	Lake of the Isles Parkway (E) <sup>3,4</sup>	Minneapolis	N/A	
HE-MPC-1824	Lake of the Isles (E) <sup>3,4</sup>	Minneapolis	N/A	
HE-MPC-6068	Frieda & J. Neils House (L)	2801 Burnham Blvd, Minneapolis	2	Outside the limits of noise impact
HE-MPC-6766	Mahalia & Zachariah Saveland House (aka Benjamin & Cora Franklin Residence) (E)	2405 W 22 <sup>nd</sup> St, Minneapolis	2	Outside the limits of noise impact
HE-MPC-1796	Kenwood Parkway (E) <sup>3,5</sup>	Minneapolis	N/A	
HE-MPC-6603	Frank & Julia Shaw House (E)	2036 Queen Ave S, Minneapolis	2	Outside the limits of noise impact
HE-MPC-1797	Kenwood Park (E) <sup>3</sup>	Minneapolis	N/A	
HE-MPC-6475	Kenwood Water Tower (E) <sup>3</sup>	Minneapolis	N/A	
HE-MPC-8763	Mac Martin House (E)	1828 Mt. Curve Ave,	2	Outside the limits of noise impact

SWLRT SUPPLEMENTAL DRAFT EIS OVERVIEW OF NOISE AND VIBRATION CRITERIA AND IMPACTS  
AND EFFECTS ON HISTORIC AND CULTURAL RESOURCES

Inventory #	Property Name	Address	FTA Cat. <sup>1</sup>	Notes
		Minneapolis		
21HE0409 <sup>6</sup>	(E)	Minneapolis	N/A	Not noise sensitive resource

(notes for Table 5)

Note: L = Listed; E = Eligible; NHL= National Historic Landmark; N/A = Not Applicable; Cat. = Category.

<sup>1</sup> Under FTA guidance, historic sites are designated as noise or vibration sensitive depending on the land use of the site, not their designation as historic. Sites of national significance with considerable outdoor use required for site interpretation would be in Category 1. Historical sites that are currently used as residences would be in Category 2. Historic buildings with indoor use of an interpretive nature involving meditation and study would be in Category 3. These include museums, significant birthplaces and buildings in which significant historical events occurred. N/A notes those resources that are not noise sensitive and thus do not fall within any of the FTA categories.

<sup>2</sup> Two existing wood pile bridges spanning the Kenilworth Lagoon were evaluated for eligibility to the NRHP as Section 106 historic resources (HE-MPC-1850, HE-MPC-1851). The Burnham Road Bridge (HE-MPC-1832), a two-lane automobile bridge with a steel beam span, was also evaluated for eligibility to the NRHP as a Section 106 historic property. The three bridges were found to be non-contributing features to the Grand Rounds Historic District and were not found to be eligible for listing on the NRHP as individual properties.

<sup>3</sup> Eligible as a contributing feature to the Grand Rounds Historic District.

<sup>4</sup> Eligible as a contributing feature to the Lake of the Isles Residential Historic District.

<sup>e</sup> Eligible as a contributing feature to the Kenwood Parkway Residential Historic District.

<sup>5</sup> This property is considered a sensitive historic resource under Section 304 of the National Historic Preservation Act of 1966, as amended. In accordance with Section 304, locational information on this sensitive historic resource may cause a significant invasion of privacy and/or put the resource at risk to harm and is not included in this document.



**Southwest LRT Minnesota Pollution Control Agency Noise Rules**

---



CROSS-SPECTRUM ACOUSTICS LLC

P.O. BOX 90842  
SPRINGFIELD MA 01139

358 SOUTH 700 EAST, SUITE B214  
SALT LAKE CITY, UT 84102

## TECHNICAL MEMORANDUM

To: Nani Jacobson, Metro Transit  
From: Lance Meister, Cross-Spectrum Acoustics  
Date: April 13, 2015  
Project Reference: Southwest LRT MPCA Noise Rules

The purpose of this technical memorandum is to document 1) the Metropolitan Council's (Council) Southwest LRT Project team's understanding of the Minnesota noise rules and statute, 2) recent coordination between Southwest LRT, Minnesota Pollution Control Agency (MPCA) and Federal Transit Administration (FTA) staff on this topic, and 3) the agreed-upon approach to addressing this issue in the Supplemental Draft EIS and the Final EIS.

### Background

The Draft EIS and Supplemental Draft EIS noise assessment is based on FTA criteria and guidance for assessing and mitigating project impacts<sup>4</sup>. Using FTA criteria for the noise analysis provides the highest standard of measurement and mitigation and most accurately reflects how humans respond to and are affected by transit noise. Additionally, Metro Transit is developing a noise mitigation approach which is based on the FTA impact criteria and guidance and will be used to apply mitigation in a reasonable and feasible manner for project noise impacts, as defined by FTA.

### Southwest LRT Project Team Understanding of Minnesota Noise Rules and Statute

Within the state, the MPCA is empowered to enforce the state of Minnesota noise rules (§7030 Noise Pollution) and statute (§116.07 Powers and Duties). Minnesota's noise limits are set by "noise area classifications" based on the land use at the location of the person that hears the noise. They are also based on the sound level in decibels (dBA) over ten percent (L10) or six minutes and fifty percent (L50) or thirty minutes of an hour.

The Minnesota noise rules and statute work well if there is one dominant continuous noise source (e.g., a highway or an industrial facility). However, the Minnesota noise pollution rules and statute are not well suited to evaluate noise impacts from a transit project. They are based on L10 and L50 noise descriptors, which are the noise level exceeded 10 percent (6 minutes per hour) or 50 percent (30 minutes per hour) of the time, respectively. If these standards are applied to the Southwest LRT project only, there would never be an exceedance of these standards, as there are only two minutes of transit activity per hour, based on the current Southwest LRT operating plan. However, the Minnesota rules and statute consider all sources of noise in assessing whether an exceedance occurs.

Predicting the effects of adding a noise source to measured existing noise to assess the L10 and L50 for all noise sources can be an issue with statistical measurements such as L10 and L50. Using the L10 as an example, this is the loudest 360 seconds (6 minutes) out of 3600 seconds (60 minutes) in an hour. If measurements of existing noise levels are made, and the 120 seconds of transit operations (2 total minutes of train pass-byes<sup>5</sup>) are added in, the

---

<sup>4</sup> U. S. Federal Transit Administration, "Transit Noise and Vibration Impact Assessment." Report FTA-VA-90-1003-06, May 2006.

<sup>5</sup> The maximum proposed hourly operations are headways of ten minutes in each direction. The headway is the amount of time between trains. This would result in six trains per hour in each direction, for a total of twelve trains per hour. Assuming each

question becomes, which of the 120 seconds from the existing measured noise levels are replaced by the 120 seconds of transit operations (i.e., the 120 loudest seconds, the 120 quietest seconds, or a random selection)?

This becomes a subjective issue, which can have a significant effect on the L10 calculation with the future noise source added. Additionally, the choice of the hour to be used for the statistical calculation could have a large effect. There are 15 daytime and nine nighttime hours that could be used for the statistical calculation at any location, each of which would likely have different L10 values to compound the potential subjective nature of the addition of a future noise source.

## **Recent Coordination between the Council, MPCA and FTA**

The Southwest LRT project team contacted the MPCA in March 2015 to discuss how the Minnesota noise rules would apply to the Southwest LRT project. MPCA, FTA and Southwest LRT Project staff met on April 8, 2015 to discuss the relationship between the Southwest LRT project and the Minnesota noise rules administered by MPCA. Southwest LRT staff referenced the FTA Transit Noise and Vibration Impact Assessment guidance manual and how it is applied to transit projects, including the Southwest LRT project. MPCA noted that the noise rule is not well suited to transit projects.

The three agencies agreed to continue coordination to determine the appropriate method for applying the Minnesota noise rules and statute to the Southwest LRT project. The agencies further agreed that this approach would be documented in the Southwest LRT project's Final EIS, which is expected to be completed in 2016.

## **Incorporation in the Supplemental Draft EIS and the Final EIS**

The Supplemental Draft EIS and Final EIS will continue to use the FTA methodology and criteria for assessing and mitigating noise caused by the Southwest LRT project. Using the FTA methodology and criteria would result in impacts, as shown in both the results in the Draft EIS and Supplemental Draft EIS. These impacts are based on the well-documented FTA noise impact assessment methodology, which reflect how humans respond to noise and changes in noise in their environment. There is also a procedure within the FTA guidance for applying mitigation. Mitigation would be applied at the appropriate locations and would be based on FTA guidelines and the Metro Transit noise mitigation procedures, which utilize the FTA impact criteria and guidance for noise impacts from transit projects. This approach provides for mitigation of all severe impacts, where reasonable and feasible, and mitigation at locations with moderate impacts, based on the criteria contained in the FTA guidance manual.

The Supplemental Draft EIS acknowledges that certain areas in the vicinity of the project may already approach or exceed the L10 and/or L50 noise levels and that adding operation of the light rail vehicles in those areas may contribute to an exceedance of the statutory noise levels. These locations are likely in areas near existing highways and other roadways within the corridor in areas such as Eden Prairie, as well as areas in downtown Minneapolis. These highways and roadways are typically exempt from the noise standards (116.07 Subd. 2a). In cases where existing noise levels within the project area corridor are at or near the MPCA standards, the project may or may not contribute to an exceedance of the MPCA standards. Further, because of the way the L10 and L50 are calculated, the Project would not be able to determine if there is an exceedance of the standards, using a predictive model, prior to Southwest LRT operation, however the Council and FTA will work with MPCA to ensure that the analysis adequately considers the state standard.

The Supplemental Draft EIS also notes that the Southwest LRT project team is working with MPCA and FTA to determine the best approach to addressing Minnesota noise pollution rules and statute for those areas of the project that are subject to them. This approach and its results will be documented in the Final EIS in the project's noise analysis.

---

LRT vehicle takes 10 seconds to pass (a conservative estimate), there would only be 2 minutes (120 seconds) of transit operations noise per hour.







# Noise Fact Sheet



## How is Noise Defined?

**Level:** Sound level is expressed in decibels (dB). Typical sounds fall between 0 and 120 dB. A 3dB change in sound level represents a barely noticeable change outdoors; a 10 dB change is perceived as a doubling (or halving) of the sound level.

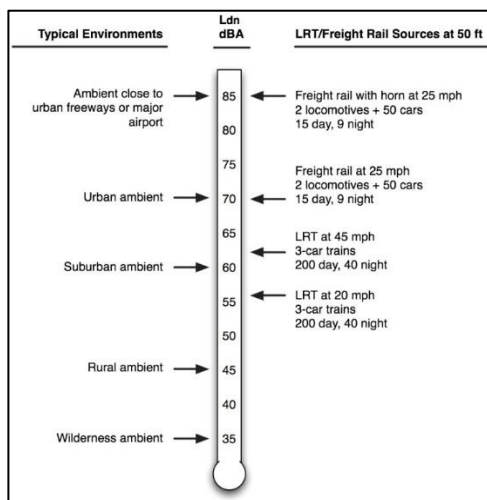
**Frequency:** The tone or pitch of a sound is expressed in Hertz (Hz). Human ears can detect a wide range of frequencies from about 20 Hz to 20,000 Hz. However, human hearing is not effective at high and low frequencies; we use a measure called an A-weighted level (dBA) to correlate with human response.

**Time Pattern:** Because environmental noise changes all the time, it is common to condense all of this information into a single number, called the “equivalent” sound level. It represents the changing sound level over a period of time.

For light rail transit (LRT) and freight rail projects, the Day-Night Sound Level (Ldn) is the common noise descriptor adopted by most agencies as the best way to describe how people respond to noise in their environment.

The Ldn is a **24-hour cumulative noise level** that includes all noises that happen within a day, with a penalty for nighttime noise (10 PM to 7 AM). This nighttime penalty means that any noise events at night are equal to ten events during the daytime.

## Cumulative Noise Levels from LRT and Freight Rail



## How Loud are LRT and Freight Rail?

Noise levels (in Ldn) from LRT and freight rail depend on the type of vehicle, how loud each individual vehicle could be (see table below), the number of trains per day, and train length and speed. In addition, noise levels decrease with increasing distance from the tracks.

### Typical Maximum Noise Levels (dBA)

Distance	LRT @ 45 mph	Freight Rail @ 20 mph	Other Sources
50 feet	76	88	Lawnmower: 72
100 feet	71	83	Bus Idling: 66
200 feet	66	78	Diesel Generator: 67

## Light Rail Transit (LRT) Vehicle



## How is Noise Impact Assessed?

Noise impact from LRT and freight rail projects are assessed by comparing the existing (ambient) noise with the noise predicted to be generated by the project.

The Federal Transit Administration’s (FTA) noise criteria take into account the noise sensitivity of the receiver by land use category, including:

- Category 1:** Highly noise sensitive, such as recording studios
- Category 2:** Residences and other places where people sleep
- Category 3:** Schools, churches and other places with daytime use

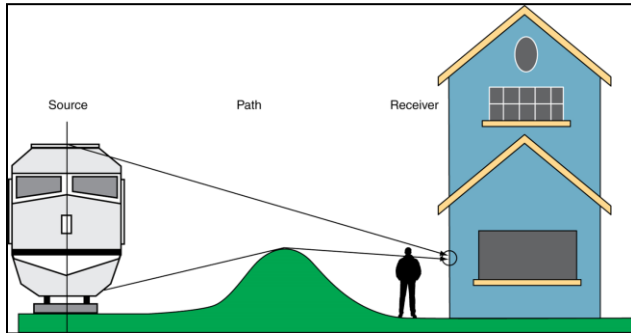
A noise assessment is broken down into three pieces:

**Source:** What is generating the noise (such as an LRT vehicle or freight train)?

**Path:** How far and over what type of ground does the noise travel?

**Receiver:** Who or what is experiencing the noise, such as a residence or a school?

### The Source – Path – Receiver Concept



Noise impact assessments are based on applicable FTA and Federal Railroad Administration (FRA) models, and are assessed using the source-path-receiver framework. Some of the key components of a noise impact assessment include:

#### Source

- Noise levels of transit and freight trains
- Number, length, and speed of LRT and freight trains
- Time of day of train passing by
- Grade crossings, including horns and bells
- Track type, including elevated tracks, a tunnel, or at-grade track
- Special trackwork including crossovers

#### Path

- Distance to noise sensitive locations
- Rows of buildings
- Ground type

#### Receiver

- Type of land use (Category 1, Category 2 or Category 3)
- Sensitivity of the land use, including highly sensitive locations such as recording studios, residences or parks

Noise impact assessments also address the potential for impacts from maintenance facilities and stations.

### Typical Output of a Noise Impact Assessment



The output of a noise impact assessment includes locations with Severe Impact (yellow) and Moderate Impact (orange). This information is used to determine the location and extent of any potential noise mitigation.

### How is Noise Mitigated?

Noise mitigation is applied at locations where impact is identified. Severe impacts generally require noise mitigation. At the moderate impact level, noise mitigation is also addressed. Mitigation can be applied at the source of the noise, along the path, or at the receiver. Examples of typical LRT and freight rail noise mitigation include:

#### Typical Mitigation Measures

Mitigation measures can be applied to the source, the path and/or the receiver:

**Source:** Wheel damping, rail grinding, wheel truing, wheel skirts, quiet zones

**Path:** Noise barriers, berms, buffer zones

**Receiver:** Sound insulation

# Vibration Fact Sheet



## How is Vibration Defined?

Vibration is the motion of the ground transmitted into a building that can be described in terms of displacement, velocity or acceleration. Vibration velocity is used in light rail transit (LRT) and freight rail and is defined by the following:

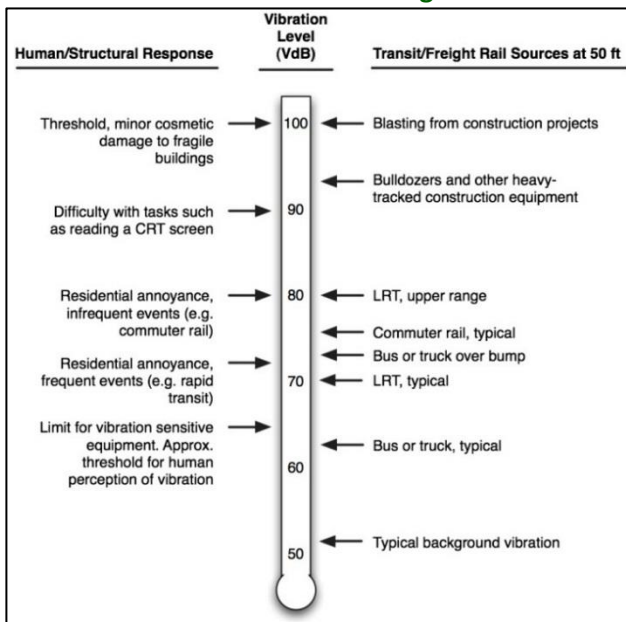
**Level:** Vibration is expressed in vibration decibels (VdB). The level of vibration represents how much the ground is moving. The threshold of human perception to LRT and freight rail vibration is approximately 65 VdB and annoyance begins to occur for frequent events at vibration levels over 70 VdB.

**Frequency:** Vibration frequency is expressed in Hertz (Hz). Human response to vibration is typically from about 6 Hz to 200 Hz.

**Time Pattern:** Environmental vibration changes all the time and human response is correlated to the number of vibration events during the day.

Vibration velocity (VdB) is used to describe LRT and freight rail vibration because it corresponds well to human response to environmental vibration. Vibration is defined by the maximum vibration level during a transit or freight rail event. Human sensitivity to vibration increases with increasing numbers of events during the day.

## Vibration Levels from LRT and Freight Rail



Ground-borne noise (GBN) is also assessed. GBN is a form of low-frequency noise that radiates from

building walls and ceilings due to vibration caused by LRT or freight rail operation. Because airborne noise typically masks GBN for above ground (at-grade or elevated) transit systems, GBN is only assessed for operations in a tunnel (where airborne noise is not a factor) or near locations such as recording studios that are well insulated from airborne noise.

## How much Vibration is Created by LRT and Freight Rail?

Vibration levels from LRT and freight rail depend on the type of vehicle, track conditions, soil type, and train speed. Vibration levels also decrease with increasing distance from the tracks. Vibration levels based on typical LRT and freight rail operations and speeds are shown below.

### Vibration and GBN Levels (VdB) at 45 mph

Distance	LRT		Freight Rail
	Vib	GBN	
50 feet	71	39	88
100 feet	66	34	82
200 feet	58	26	76

## Light Rail Transit (LRT) Vehicle



## How is Vibration Impact Assessed?

Vibration and GBN impact from LRT and freight rail projects are assessed by comparing the levels predicted to be generated by the project with the appropriate criteria.

The vibration and GBN criteria use by the Federal Transit Administration (FTA) take into account the sensitivity of the receiver by land use category, including:

**Category 1:** Highly vibration sensitive, such as manufacturing facilities

**Category 2:** Residences and other places where people sleep

**Category 3:** Schools, churches and other places with daytime use

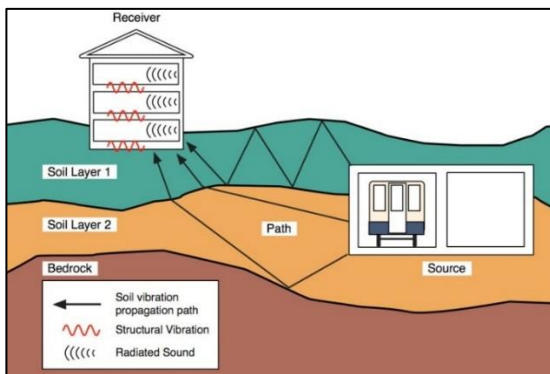
A vibration and GBN assessment is broken down into three pieces:

**Source:** What is generating the vibration or GBN (such as a transit vehicle or freight train)?

**Path:** How far and over what type of ground does the vibration or GBN travel?

**Receiver:** Who or what is experiencing the vibration, such as a residence or a school?

### The Source – Path – Receiver Concept



Vibration and GBN impact assessments are based on applicable FTA and Federal Railroad Administration (FRA) models, and are assessed using the source-path-receiver framework. Some of the key components of a vibration impact assessment include:

#### Source

- Vibration levels of LRT and freight trains
- Number and speed of LRT and freight trains
- Track type, including elevated tracks, a tunnel, or at-grade track
- Special trackwork including crossovers

#### Path

- Distance to vibration sensitive locations
- Soil and bedrock characteristics
- Building foundations

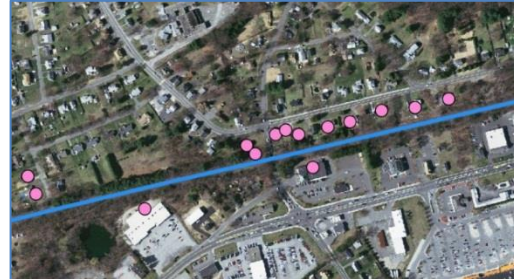
#### Receiver

- Type of land use (Category 1, Category 2, or Category 3)
- Sensitivity of the land use, including highly sensitive locations such as manufacturing facilities, residences or parks

Vibration and GBN impact is primarily assessed to determine the potential for human annoyance. However, vibration is also assessed for activity

interference at highly sensitive sites, and in very rare cases, damage to fragile structures, usually during construction. Vibration assessments also address the potential for impacts from maintenance facilities and stations.

### Typical Output of a Vibration Impact Assessment



The output of a vibration or GBN impact assessment includes locations with vibration or GBN impact (purple). This information is used to determine the location and extent of any potential vibration mitigation.

### How is Vibration Mitigated?

Vibration or GBN mitigation is applied at locations where impact is identified. Vibration impacts generally require mitigation where reasonable and feasible. Because mitigation is highly dependent on engineering details, specific mitigation measures are usually identified during the design of a project.

Vibration or GBN mitigation is most commonly applied at the source (in the tracks), but can also be applied along the path or at the receiver. Examples include:

**Source:** Rail grinding, wheel truing, resilient fasteners, ballast mats, floating track slabs

**Path:** Trenches, buffer zones

**Receiver:** Building modifications, isolated tables, floating floors

### Example Vibration Mitigation: Resilient Fasteners



**Appendix I**

**Responses to Comments Received on the Supplemental Draft EIS Scope**

---

## **Index**

Responses to Comments Received on the Supplemental Draft EIS Scope

Comments from the General Public

Comments from Businesses, Community Groups, and Non-Profit Organizations

Comments from Agencies and Other Public Entities





**APPENDIX I****Responses to Comments Received on the Supplemental Draft EIS Scope**

---

On July 22, 2013, the Metropolitan Council (Council) issued notice in the Environmental Quality Board *EQB Monitor* and the *Federal Register* of its intent to publish a Supplemental Draft Environmental Impact Statement (EIS) for the Southwest Light Rail Transit (LRT) Project, which was formerly referred to as the Southwest Transitway Project (see Appendix K for copies of those notices). As part of the EQB notice, the public was invited to comment on the proposed scope of the Supplemental Draft EIS. The Council accepted comments on the scope of the Supplemental Draft EIS through August 12, 2013.

As noted in the EQB and *Federal Register* notices, the purpose of the Supplemental Draft EIS is to supplement the evaluation of impacts included in the project's Draft EIS where there have been adjustments to the design of the light rail and freight rail stations, park-and-ride lots, and an operations and maintenance facility that would likely result in impacts not documented in the project's Draft EIS.

This appendix first provides a summary of the comments received during the comment period on the proposed scope of the Supplemental Draft EIS, followed by the Council's responses to those comments based on common themes among the comments. Finally, this appendix includes copies of the comments received during the comment period on the proposed scope of the Supplemental Draft EIS.

**A. Summary of Scope Comments Received**

The Council received 59 letters and emails during the comment period offering a variety of comments on the scope of the Supplemental Draft EIS and other topics. Of the letters and emails received: 43 were sent by private individuals; nine by businesses, interest groups, or organizations; and seven by agencies or jurisdictions.<sup>1</sup>

The following businesses, community groups, and non-profit organizations submitted comments:

- Safety in the Park
- Liberty Property Trust
- SPS Companies, Inc.
- Eaton Corporation – Hydraulics Group
- Sorensen Neighborhood Association Steering Committee
- Transit for Livable Communities
- SFI Ltd. Partnership 54, Claremont Apartments
- West Calhoun Neighborhood Council and the Edge Business Association

The following agencies and jurisdictions submitted comments:

- City of Minneapolis
- City of St. Louis Park
- City of Eden Prairie
- U.S. Department of Interior
- Hennepin County

---

<sup>1</sup> Note that multiple comments from individuals and entities, even if they are identical in their content, are accounted for in the total numbers of comments received.

## B. Comment Themes and Responses

This section outlines the general themes of comments that the Council received on the proposed scope of the Supplemental Draft EIS. Under each theme, this section summarizes one or more comments received and it provides a response to each comment. The comments itemized in this section were taken from one or more of the comments documented in Section C of this appendix. The comments received generally fell within the following themes:

- Tunnel options, including a deep tunnel option
- LRT grade-separation options
- Different freight rail alignment options
- Other light rail alignments, features, connections, or lengths of alignment
- The location of proposed light rail stations, park-and-ride lots, and Operations and Maintenance Facility (OMF)
- Cedar Lake Trail options
- Comments of Scope Concerning Analysis of Social, Economic, Environmental, and Transportation Effects

### Theme 1: Tunnel Options/Deep Tunnel

**Comment:** *Construct a deep tunnel through the Kenilworth Corridor; tunnel below the Kenilworth Channel; extend a deep tunnel back to Lake Street*

**Response:** Chapter 2 of this Supplemental Draft Environmental Impact Statement (EIS) describes alternative adjustments considered for the Kenilworth Corridor, including a deep tunnel option. Public testimony was received on the proposed Project scope and budget at the Corridor Management Committee (CMC) on April 2, 2014 and the Council meeting on April 9, 2014. The Council took action on April 9, 2014 on the project scope and budget including incorporating shallow LRT tunnels in the Kenilworth Corridor, after considering recommendations from the CMC, input from other project committees, public comments, and the analysis and findings prepared by the project team. Please refer to Section 2.5.3 of the Supplemental Draft EIS for additional information on the Kenilworth Deep Bore LRT Tunnels.

### Theme 2: Light Rail Grade Separations

**Comment:** *Evaluate grade separations of light rail tracks with freight rail and streets at Yosemite Avenue, Xenwood Avenue, Beltline Boulevard, Wooddale Avenue, and 28th Street*

**Response:** The Supplemental Draft EIS identifies grade separations at roadway intersections where traffic analysis conducted for the Supplemental Draft EIS indicated operational conditions would not meet acceptable level of service and safety standards following construction of the project. Grade separations of light rail are proposed at Louisiana, Highway 100, West Lake Street, Cedar Lake Parkway, Burnham Road, and 21st Street. See Section 3.4.4.2 for additional information on proposed light rail grade separations and at-grade crossings.

### Theme 3: Different Freight Rail Alignment

**Comment:** *Evaluate other freight alignments, including near Highway 169, modified MN&S to moderate grades and curves on wider berm; separate freight rail issue from LRT and start LPA process over; remove relocation alternatives*

**Response 3A: Evaluate Other Freight Rail Alignments.** In October 2013, the Council initiated an independent engineering analysis that re-evaluated freight rail relocation adjustments that were developed in prior studies and prior project phases. The results of that independent analysis are summarized in Section 2.5.3.2.A of the Supplemental Draft EIS.

**Response 3B: Modify MN&S.** Several options that would modify the existing MN&S spur to allow TC&W freight trains to be relocated out of the Kenilworth Corridor were developed and evaluated following the

close of the Draft EIS comment period in communication with the owning railroad (Canadian Pacific Railway), the primary operating railroad (TC&W Railway), and the City of St. Louis Park. In addition, in October 2013, the Council initiated an independent engineering analysis that identified and evaluated a new variation on the option to modify connections the MN&S Spur, known as the MN&S North freight rail adjustment. See Section 2.5.3.2.A of the Supplemental Draft EIS for additional information on freight rail modifications to the MN&S Spur that were developed and evaluated after publication of the Draft EIS.

**Response 3C: Separate Freight Rail and LRT.** During the Draft EIS, the Federal Transit Administration (FTA) determined that the issue of freight rail location must be addressed as a component of the Southwest LRT (METRO Green Line Extension) Project and directed Hennepin County Regional Railroad Authority (HCRRA), the local lead agency at the time, to evaluate the issue within the Southwest Transitway Draft EIS. The Council, transitioning to lead local agency in January 2013, continues to follow that direction from FTA. The Supplemental Draft EIS reflects the continued evaluation of freight rail location options relevant to the locally preferred LRT alternative consistent with FTA direction. See Section 2.3 of the Supplemental Draft EIS for additional information.

**Response 3D: Remove Relocation Alternatives.** On April 9, 2014, the Council, considering recommendations from the CMC, input from other project committees, public comments, and the analysis and findings prepared by the project team, determined that the Kenilworth Shallow LRT Tunnels should be incorporated into the LPA, which would allow TC&W to continue to operate freight rail train service in the Kenilworth Corridor. See Section 2.3.5 of the Supplemental Draft EIS for additional information.

#### **Theme 4: Other LRT Alignments/Features/Connections/Length**

***Comment:** Evaluate LRT improvements that include: a revised alignment along Highway 100 north to I-394, then east; a route other than through the Cedar Lake area; single track LRT through the Kenilworth from West Lake Street to Penn Avenue; minimum operating segment; connectivity to other modes such as streetcars; elevated LRT structure with bike trail on paved "roof"; renewed consideration of the non-tunnel co-location options.*

**Response:** Section 2.3 of the Supplemental Draft EIS provides a summary description of the scoping process for the project's EIS, which included the development and evaluation of a wide range of alternatives and options. In addition, Sections 2.4 and 2.5 of the Supplemental Draft EIS provide a detailed description of the process used by the Council to identify a wide range of adjustments to the LPA that were developed and considered following publication of the Draft EIS.

#### **Theme 5: Location of LRT Stations, Park-and-Ride Lots, and Operations and Maintenance Facility**

***Comment:** Remove park-and-ride lots not proposed by the Council; remove the OMF in Eden Prairie; add an LRT station and park and ride in northwest corner of Eden Prairie City Center property.*

**Response:** Section 2.2 of the Supplemental Draft EIS provides a summary of the park-and-ride lots included within the LPA in the Eden Prairie and St. Louis Park/Minneapolis Segments, as well as the proposed Hopkins OMF. Section 2.5 provides a summary of the range of adjustments to the LPA developed and evaluated following publication of the Draft EIS for those segments and the OMF.

#### **Theme 6: Cedar Lake Trail Options**

***Comment:** Evaluate alternative locations for the Cedar Lake Trail, including tunnel under the MN&S at 27<sup>th</sup> Street West; bridge over the "iron triangle" wye; reroute south of 21<sup>st</sup> Street; reroute through Kenilworth corridor (suggested route provided on map)*

**Response:** Section 2.5.3.2 of the Supplemental Draft EIS summarizes design adjustments to the LPA considered in the Kenilworth Corridor, including one design that would have relocated the Cedar Lake Trail out of the corridor and one that would have placed the trail on a structure over the at-grade light rail line. These and other options were presented, along with other ideas from attendees, at public open houses on July 17 and 18, 2013.

## Theme 7: Comments of Scope Concerning Analysis of Social, Economic, Environmental, and Transportation Effects

**Comment 7A:** *Social Effects—Include analysis of redevelopment/reuse of properties that consider development-friendly configurations; include relocation analysis for displaced public facilities, businesses, and residents (including affordable business locations); evaluate and compare residential and business impacts by alternative; analyze community services and community cohesion; analyze parklands, trails, and visual quality impacts.*

**Response 7A:** Chapter 3 of the Supplemental Draft EIS includes the analysis of effects of the LPA on potential development/redevelopment of land, potential property acquisitions and displacements/relocations (by residential, commercial, and public use), community cohesion, parks, recreation areas and trails, and visual resources in the Eden Prairie and St. Louis Park/Minneapolis Segments and the Hopkins OMF.

**Comment 7B:** *Address freight rail impacts, including the following: define and evaluate methods to mitigate impacts and the costs of mitigation for the Brunswick Central freight rail relocation and Minneapolis segment; analyze freight operations during construction; use a computer analysis of freight trains on re-routes at 25 mph.*

**Response 7B:** Section 3.5.3 of the Supplemental Draft EIS provides background on the range of potential adjustments to the LPA considered for the freight rail relocation and Kenilworth Corridor options, including cost elements that were considered among other evaluation measures. Section 3.4 provides analysis of freight operations during construction, focusing on the freight rail operations in the Kenilworth Corridor. Detailed computer-based analyses of freight train operations were not necessary to prepare an adequate analysis.

**Comment 7C:** *Environmental Effects—Evaluate impacts to the environment including the following: noise, vibration, air quality, water quality, wetlands, wildlife, trees/vegetation, and flood analysis; Section 106 Compliance (historic/archaeological resources); Section 4(f) compliance (park and recreation areas, wildlife/waterfowl refuges, historic/archaeological resources); lake water analysis in Cedar Lake and Lake of the Isles; and ground water movement between the lakes.*

**Response 7C:** Chapter 3 of the Supplemental Draft EIS assesses the environmental effects of the LPA in the Eden Prairie and St. Louis Park/Minneapolis Segments and for the Hopkins OMF. Section 3.1 provides a summary of the environmental categories addressed in Section 3.2, Section 3.3, and Section 3.4. In particular, Section 3.4 addresses the groundwater and water resources in the Kenilworth Corridor related to Cedar Lake and Lake of the Isles. Chapter 3 updates the project's documentation related to Section 106 compliance, including preliminary Section 106 findings of effects throughout the project corridor. Section 3.5 provides a Draft Section 4(f) Evaluation Update, including preliminary Section 4(f) determinations throughout the project corridor. Section 2.5 of the Supplemental Draft EIS identifies how environmental evaluation measures were considered in the development and evaluation of design adjustments to the LPA since publication of the Draft EIS.

**Comment 7D:** *Transportation Effects—Comments concerning the impact to transportation and safety issues that include the following: analysis of safety concerning construction of the project, emergency response times, and freight rail derailments; general safety of pedestrians, bicyclist and vehicles with the trail and roadway changes; analysis of traffic circulation and vehicle parking; analysis of the effects that each alternative would have on the full implementation of Met Council's regional transitways including ridership impacts from an underground West Lake Street station, elimination of the 21st Street station and the connection between SWLRT and the Midtown Corridor; rerouted freight trains in close proximity to the Xcel electric substation.*

**Response 7D:** Chapter 3 of the Supplemental Draft EIS includes an assessment of transportation and safety related impacts of the LPA in the Eden Prairie and St. Louis Park/Minneapolis Segments and for the Hopkins OMF. Section 3.1 provides a summary of the sub-categories under transportation and safety that are addressed for the two segments and OMF. Section 2.5 of the Supplemental Draft EIS identifies how transportation and safety-related evaluation measures were considered in the development and evaluation of design adjustments to the LPA since publication of the Draft EIS.

### **C. Comments Received on the Proposed Scope of the Supplemental Draft EIS**

Following are copies of the letters and emails received by the Council proving comments on the proposed scope of the Supplemental Draft EIS. The letters and emails were received between issuance of the notice of intent to publish a Supplemental Draft EIS (July 22, 2013) and close of the comment period (August 12, 2013).

The letters and emails are listed in order of their receipt by the Council, under the following categories: 1) the general public; 2) businesses, interest groups, or organizations; and 3) agencies or jurisdictions. Responses to the general themes of comments received are included in Section B of this appendix.

**Comments from the General Public**

---

**From:** [Curt Rahman](#)  
**To:** [Jacobson, Nani](#)  
**Subject:** SWLRT SDEIS comments  
**Date:** Monday, July 22, 2013 1:03:27 PM

---

I attended the "Minneapolis" SWLRT open house which presented cost estimates and the recommended 3 options from the project office which are:

1. Shallow cut and cover tunnel- \$150 million
2. Deep Bore tunnel- \$300 million
3. Relocation of Freight to St. Louis Park- Brunswick Central- \$200 million

It was clear that Minneapolis residents do not want more train traffic in Kenwood. Both tunnel options try to solve this by keeping 5 freight trains per day in Kenilworth and moving the 220 light rail trains per day underground.

Relocation moves 5 freight trains per day to St. Louis Park and then moves **220 trains per day** through Kenilworth **above ground**.

**With relocation, Minneapolis gets massively increased above ground traffic in Kenilworth and St. Louis Park endures all the issues of relocation. Both cities lose with relocation.**

Curt Rahman, Business Advisor to the SWLRT  
612-207-5411



**From:** [Curt Rahman](#)  
**To:** [Jacobson, Nani](#)  
**Subject:** More SWLRT SDEIS comments  
**Date:** Monday, July 22, 2013 1:06:28 PM

---

As a Business Advisory Committee Representative to the SWLRT and as a business owner in Saint Louis Park I have learned a great deal about the various options and I have tried to keep an open mind on the re-route. The two latest proposals that do not require co-location, however, are not acceptable solutions no matter the amount of mitigation provided given the attendant costs, both actual and intangible. These proposals displace businesses and hundreds of jobs, cut off roads, eliminate parking and they literally build a "Great Wall of Freight" that cuts the city in half.

**Re-Route- Brunswick West:** In this proposal, there are 42 properties affected, but most of them are commercial. I happen to own three buildings with 10 business tenants that will have to be moved. How many businesses are affected? 80? Will those businesses stay in St. Louis Park? Are there locations available for them to move to? Does the new artificial turf Athletic Field count as one owner? Hundreds of teams use the new athletic field; school teams, associations and club teams.

**Re-Route- Brunswick Central:** In this proposal, there are 30 properties affected, but most of them are commercial. I own one affected building with 5 business tenants that will have to be moved. How many businesses are affected? 60?

Affordable business locations: Like affordable housing, not all businesses can afford the \$25 to \$50 per SF costs of rental space at new developments along 36<sup>th</sup> St, Excelsior and Grand or The West End. If you want "main street" businesses (versus chain and big box stores), you need "main street" business zones. These reroute options gut those "main street" business zones of commercial property.

All cost estimates need to include:

-loss of commercial tax revenue to the city, county, state and school districts

-loss of jobs in the community

-Relocation expenses for owners and tenants such as:

- Tenant improvements
- Moving costs
- New signs

- Assistance with closing costs and move logistics
- Any other compensable items under the law

I also must echo Anne Mavity's comments at the St. Louis Park Study Session. There are at least 40 personal residences on the North part of the reroute that are too close to the tracks. They need to be acquired as part of the re-route process because noise and vibration will exceed federal guidelines with the current planned right-of-way. Purchase and demolition of these 40 residences needs to be added to the cost estimates of this project.

Building a 20 foot and larger berm across the center of the city (16 feet high at Wooddale so trucks can get under it) harms the environment, road access, parking and is a visual eyesore. In the event of a derailment or accident, rail cars tumbling down the berm will certainly exacerbate the damage to the community as a result of the derailment. This "Great Wall of Freight" will severely offset any benefits light rail brings to the community.

If either re-route option is built, as few streets as possible should be cut off to retain traffic flow for the neighborhood and the businesses. This will mean building bridges. In addition, eliminating streets eliminates "on street" parking that is heavily used in these business districts and neighborhoods. Excess land taken by the project that is not being used should become parking. This includes:

- Central alignment: North and East of the Athletic field. Dakota should not be closed on the North side of the Athletic field as stated on the plans.
- Central alignment: The abandoned Canadian Pacific rail bed should all become parking to replace on street parking removed. With the new athletic field, the High School and the businesses on West Lake, this area has a parking problem today.
- West alignment: Parking is a problem near PSI, Central Community and 3540-50 Dakota. People often park on the dead end that fronts on the north side of Highway 7 (south of 3540-50 Dakota). This dead end is proposed to become a North HWY 7 frontage road on the plans. This will further reduce parking in the area. Walker Street is slated to dead end into a Cul de Sac. This should be made as large as possible and become all parking. 3540 Dakota also has two 16 foot loading doors on the northwest corner that become inaccessible for trucks if this is a dead end.

When all of the real costs, actual and intangible, are included I believe the co-location options will turn out to be most cost effective. The disproportionate impact on businesses and our schools, combined with effectively cutting the city in half, significantly and negatively impacts the City of St. Louis Park. Many other business owners in the area agree with my assessment. My vote is for **Co-Location**. Do not build the "Great Wall of Freight".

If you have any questions, please call me to discuss.

Curtis Rahman, Business Advisory Committee Representative to the SWLRT

612-207-5411

[curtrahman@gmail.com](mailto:curtrahman@gmail.com)

**From:** [Bill James](#)  
**To:** [Susan Sanger](#)  
**Cc:** [Anne Mavity SLP](#); [jjacobs1956@yahoo.com](mailto:jjacobs1956@yahoo.com) Jacobs; [Tom Harmening](#); [Jake Spano](#); [Susan Santa](#); [Julia Ross](#); [Steve Hallfin](#); [Kevin Locke](#); [Jacobson, Nani](#)  
**Subject:** Re: PDF of SDEIS Notice of Intent  
**Date:** Tuesday, July 23, 2013 4:11:27 PM

---

Hi all,

All of these suggestions and any other documentation which the City chooses to include into a submittal for the SDEIS have to be submitted directly to Ms. Nani Jacobson, Project Manager, Southwest Light Rail Transit Project Office, 6465 Wayzata Boulevard, Suite 500, St. Louis Park, MN 55426, Telephone: 612-373-3808; E-mail: [nani.jacobson@metrotransit.org](mailto:nani.jacobson@metrotransit.org) by August 12, 2013.

She is the record keeper for your recommendations being entered into the official record for comment there at SWLRT SPO.

Thanks much,  
Bill

**Bill James**  
**SWLRT CAC and CMC Rep**  
[billjames@q.com](mailto:billjames@q.com)  
**612.281.1089**

On Jul 23, 2013, at 3:51 PM, Susan Sanger <[suesanger@comcast.net](mailto:suesanger@comcast.net)> wrote:

Regarding point #2 of Anne's note, we specifically requested in our recent letter to Met Council that Beltline Blvd be made into a tunnel under the trail and freight and LRT tracks.

Sue

On Jul 23, 2013, at 3:16 PM, Anne Mavity SLP wrote:

Hi Bill,

I couldn't open the doc that Jami sent regarding talking points. But I would add these as well:

1. The trains are not moving FROM SLP to MPLS. Those trains (freight and LRT) will be co-located through SLP, and have co-location mitigation needs throughout, but especially at Wooddale and Beltline.
2. Key mitigation for co-location at Wooddale and Beltline is grade separation of some fashion. We have renderings of what that might look like at Beltline (trail goes over, traffic goes under, all trains at-grade) but are still exploring options

at Wooddale (trail under, traffic under but maybe a block EAST of Wooddale, etc). Grade separation is not currently a part of the Met Council's proposal or, I assume, their budget, but it should be. This is probably the most important point of all, in terms of minimizing the impact of traffic congestion under the co-location scenario in SLP.

3. Noise mitigation will be a big issue at Wooddale particularly, since I believe freight trains MUST blow their horns at the crossing.

Thanks.

Anne

On Jul 22, 2013, at 2:21 PM, Bill James  
<[bjames@seeonic.com](mailto:bjames@seeonic.com)> wrote:

<2013-17506.pdf>

**Bill James | Seeonic Inc.** | Vice President Business Development |  
(c) 612-281-1089 | (o) 763-383-9360 | [bjames@seeonic.com](mailto:bjames@seeonic.com) | 1848  
Berkshire Lane North Plymouth, MN 55441

Ü **SAVE PAPER - THINK BEFORE YOU PRINT**

**CONFIDENTIALITY NOTICE: The information in this message, and any files transmitted with it, is confidential, may be legally privileged, and intended only for the use of the individual(s) named above. Be aware that the use of any confidential or personal information may be restricted by state and federal privacy laws. If you are not the intended recipient, do not further disseminate this message. If this message was received in error, please notify the sender and delete it.**

**From:** [Michael Krogan](#)  
**To:** [Jacobson, Nani](#)  
**Subject:** SWLRT  
**Date:** Sunday, July 28, 2013 6:43:08 AM

---

**This project is a not needed and is a tremendous waste of taxpayer money. It is no wonder the Federal govt is 17 trillion dollars in debt and has an approval rating of about 10%.**

**Forget the re-routes and berms and tunnels, etc. Don't destroy the Kenilworth trails. Shut down the whole operation now.**

**Most people I know do not go to downtown Mpls., and will not go downtown Mpls., EVER.**

**Mike Krogan  
Eliot View Neighborhood**

**From:** [Douglas Peterson](#)  
**To:** [swlrt](#)  
**Subject:** KENILWORTH DEEP TUNNEL  
**Date:** Monday, July 29, 2013 4:01:15 PM

---

## Southwest Corridor LRT Must Include Deep Tunnel

A deep tunnel in the Kenilworth Corridor for the Southwest LRT is absolutely necessary to avoid lawsuits by parties affected by the proposed light rail line and the probable loss of federal funding incident to the commencement of any such lawsuit. My wife, Linda, and I own and reside in a townhome in the Cedar Lake Shores town homes. We both bike extensively – 1,000 to 2,000 miles a year. We generally bike on the Kenilworth Trail and the Minneapolis and Hennepin Parks bike trails at least two or three times a week. We also use the Kenilworth Trail three or four times a week to walk to the coffee shops, stores and restaurants located in Calhoun Village.

The City of Minneapolis will not consent to co-locating freight train and light rail train (LRT) traffic on the Kenilworth Corridor. Doing so would force 30 to 60 families to lose their homes, take away more than one and one half acres of parkland and, while destroying the public's enjoyment of much additional parkland, eliminate the Kenilworth pedestrian/bike trail. The City of St. Louis Park will not consent to relocating the freight rail traffic to run through that city along a new right of way that includes putting the railroad on a berm that runs as high as 20 feet higher than the surrounding property. Minneapolis reluctantly agreed, for purposes of the Southwest LRT Draft Environmental Impact Statement, to have the light rail run along the Kenilworth Corridor only on the condition that the freight traffic would be re-located, as had been planned for nearly 30 years by all parties concerned, through St. Louis Park along presently existing right of way.

The freight trains now stop traffic on Cedar Lake Parkway at least one half hour each day. The LRT will send at least 220 trains a day through the corridor. According to light rail experts, the amount of time it takes a light rail train to clear a street crossing, including the time it takes for the signal arms to operate, depending on the length of the train, is between 32 and 43 seconds. This means that each day Cedar Lake Parkway will be closed for a minimum of one hour and 45 minutes for light rail and at least a half hour for freight trains. In other words, Cedar Lake Parkway will be closed to rail traffic for at least two hours and fifteen minutes each day in the event of co-location. The Grand Rounds Scenic Byway, of which Cedar Lake Parkway and the Cedar Lake Regional Bike Trail are a part, could lose its national designation of "Grand Rounds Scenic Byway" because of the change in character of the parkway and bike trail. Loss of such designation could result in loss of federal funding to help with improvements to the Byway.

Twin Cities and Western Railroad, the railroad company that currently leases the tracks and right of way from the Hennepin County Regional Railway Authority, decided within the last few months that it would not relocate its rail traffic to St. Louis Park onto the currently existing right of way. It now wants the right of way to be reconfigured to run on a 20-foot high berm through the area in which the local high school football stadium is located. The Metropolitan Council is in charge of working with the various cities, governmental agencies, citizens groups, public and private companies and the county, state and federal governments to facilitate, if possible, the construction and operation of a Southwest Corridor LRT. Because of the impasse created by the railroad, the Met Council has suggested that either a deep tunnel or a shallow covered tunnel could be constructed in the Kenilworth Corridor. A

deep tunnel is the only practical solution.

A shallow tunnel would, at best, require at least one family to lose their home in the neighborhood and would destroy many acres of parkland. It would, according to the Met Council, require three years of construction, leaving an ugly scar through Minneapolis parkland. A deep tunnel, with the freight trains continuing to run through the corridor (with an upgrade in the rail bed to eliminate the horribly squealing train wheels), while not an ideal solution, would satisfy nearly all of the concerns of the Minneapolis and St. Louis Park residents and of the residents in the greater metropolitan region who use the Kenilworth pedestrian/bike path nearly one million times each year.. The Met Council suggests that a deep tunnel would add \$420 million dollars to the originally estimated \$1.25 billion dollar cost of the entire LRT project. If LRT is constructed in the Kenilworth Corridor and the freight trains remain in the corridor, it is money that must be spent. Otherwise, the project must either be modified at the southwest end or scrapped completely.

It makes absolutely no sense to take away homes and destroy a major part of the nationally acclaimed Minneapolis park and trail system to accommodate a poorly conceived and designed LRT project. If there is not enough money to build it responsibly and correctly from Target Field to the last proposed station in Eden Prairie, the LRT, including a deep tunnel in the Kenilworth Corridor, should be built with the money available only to the proposed Hopkins or possibly the proposed Golden Triangle station in Eden Prairie. Park and ride bus accommodations could be provided for the potential LRT users farther to the southwest until additional money is found to extend the service. This should not be a problem with the Met Council as it has not to date expressed any reservations about changes desired by the railroad, St. Louis Park or Eden Prairie from the "locally favored" LRT route and design originally agreed to in the Southwest LRT Draft Environmental Impact Statement.

The numerous meetings that I have attended in both Minneapolis and St. Louis Park have made it evident that there is a complete lack of trust by virtually everyone who has attended those meetings of nearly all of the individuals pushing for this light rail project. We are all aware that Met Council led everyone to believe that a tunnel would be constructed through the University of Minnesota campus. At the last minute, the Met Council determined that its "plans" for a tunnel were too expensive. The project was at that time too far along to stop. A deep tunnel must be constructed through the Kenilworth Corridor. The Met Council will be watched closely to make sure it completes this project correctly or perhaps not at all.

Douglas J. Peterson

3315 Saint Paul Ave.

Minneapolis, MN 55416





**From:** [Pierrobill@aol.com](mailto:Pierrobill@aol.com)  
**To:** [swlrt](#)  
**Subject:** Southwest LRT  
**Date:** Monday, July 29, 2013 11:11:43 PM

---

Hello,

I have been reading recently about Minneapolis and the western suburbs and that they are looking at adding light rail, and the current options are going deep beneath the existing heavy rail or a shallow tunnel next to the heavy rail.

What are some options for a system that would be sleek & modern and above the heavy trains?

Less digging, less environmental impact, better views for the travelers etc?

The thought of displacing 32 homes, business and other properties and taking them off the tax rolls seems unnecessary.

What is available or in the mind's eye of some high tech architectural visionaries?

Something in between the very cool roller coasters that are popping up around the world and the heavy concrete structures that are used in some of the elevated systems developed in the past 20 years.

A sleek bridge over the current rail lines could be very architecturally pleasing.

Thank you  
Bill Pierro  
6324 Waterman Ave.  
Edina, MN 55343  
952-935-9922 Home  
[pierrobill@aol.com](mailto:pierrobill@aol.com)

**From:** [Sarai Brenner](#)  
**To:** [Jacobson, Nani](#)  
**Subject:** Kennilworth corridor comments for supplemental DEIS  
**Date:** Sunday, August 04, 2013 12:36:15 AM

---

I do not support freight and LRT colocation. Freight was to be temporary through this corridor and continues to be so. It was put along Kennilworth when Hiawatha was modified for light rail, but at the time, the kenwood neighborhood was told that the kennilworth corridor was not ideal for freight, and that as soon as the superfund site was cleaned up in St. Louis Park, it would be moved there. What makes kennilworth ideal now, especially if two additional tracks for LRT are added? Additionally, why would the southwest transit project spend an additional 250 - 450 million dollars on tunnelling light rail to accommodate a temporary train? Kennilworth was promised that if LRT was to go through, the freight would be moved. It is clear that the issue of where freight should go was not considered in the original LPA. I believe that the only fair thing to do is to scrap the original LPA, and first resolve a permanent home for freight and then go back to the LPA process to pick the best route for transit.

Sincerely,  
Sarai Brenner

Sent from my iPad

**From:** [arthur higinbotham](#)  
**To:** [Jacobson, Nani](#)  
**Cc:** [Stuart A Chazin](#); [julieannsabo](#); [Nancy Green](#); [Tom Johnson](#); [info cidna](#); [lisa goodman](#)  
**Subject:** Comments on Supplemental DEIS for SWLRT Transitway  
**Date:** Sunday, August 04, 2013 5:11:22 PM  
**Attachments:** [THE PROBLEMS OF SWLRT IN A SHALLOW TUNNEL IN KENILWORTH.docx](#)

---

I am attaching a statement showing the shortcomings of a shallow tunnel for the SWLRT in the Kenilworth corridor; I would like to add that a shallow tunnel will be a major safety hazard for children using Park Siding during tunnel construction and for residents who live along the corridor.

I would like to object to the ridership being increased from 29,000 to 34,000-36,000 without any further ridership study when the 2030 basis for ridership should now show a decline due to the Great Recession of 2008-12.

Art Higinbotham  
SWLRT CAC Representative

# THE PROBLEMS OF SWLRT IN A SHALLOW TUNNEL IN KENILWORTH

---

1. Construction will close the bike and pedestrian trails for the length of the corridor for 2 years, diverting trail users to dangerous city streets
2. Excavation will close Cedar Lake Parkway, backing up vehicle and pedestrian traffic onto Dean Parkway and W. Lake of the Isles Parkway to the east and Sunset Boulevard to the west
3. Returning to grade to cross the Cedar Lake-Lake of the Isles boat channel will result in 3 bridges over the channel, violating the serenity for users. It will also be counter to the channel designation for the National Historic Register and the environmental requirements of Section 4F
4. During construction, excavation will result in visibility, noise, vibration, and exhaust fume issues for the adjacent residential properties and Park Siding Park
5. After completion, the tunnel will still result in vibration issues for the adjacent residential properties and Park Siding Park
6. During construction, access of emergency fire, medical and police vehicles to the Burnham Boulevard/Park Lane neighborhoods will be restricted and require longer response times
7. The failure of the proposed safety wall between the freight rail line and the LRT tunnel excavation could cause collapse of the 14 story Calhoun Isles condominium tower or a freight train pulling 80 tank cars carrying ethanol or other flammable liquids
8. These issues may cause the SWLRT Project Office to revert to previous plans to take up to 57 residences north of Lake St. and another 20 south of Lake St.
9. The shallow tunnel will still require accommodation of two tracks of light rail, a freight rail track, a trolley connection to Uptown and the Midtown Greenway trails at the W. Lake St. station
10. The shallow LRT tunnel will be subject to periodic flooding during storm incidents if not properly sealed, resulting in interruption of service and a safety hazard to LRT passengers

**From:** [Douglas Peterson](mailto:Douglas.Peterson)  
**To:** [Jacobson, Nani](mailto:Jacobson.Nani)  
**Cc:** [mnrealtors@aol.com](mailto:mnrealtors@aol.com); [eldonjohn@hotmail.com](mailto:eldonjohn@hotmail.com); [docsafari@hotmail.com](mailto:docsafari@hotmail.com);  
[kenilworthpreservationgroup@gmail.com](mailto:kenilworthpreservationgroup@gmail.com); [ahiginbotham@msn.com](mailto:ahiginbotham@msn.com); [bobbemel@mnmicro.net](mailto:bobbemel@mnmicro.net);  
[michaelwilsonmpls@gmail.com](mailto:michaelwilsonmpls@gmail.com); [gail.dorfman@co.hennepin.mn.us](mailto:gail.dorfman@co.hennepin.mn.us); [jmcolby@earthlink.net](mailto:jmcolby@earthlink.net)  
**Subject:** Comments - SW Light Rail Transit Extension Project  
**Date:** Sunday, August 04, 2013 9:33:12 PM

---

Ms. Nani Jacobson, Project Manager  
Southwest Light Rail Transit Project Office  
6465 Wayzata Boulevard, Suite 500  
St. Louis Park, MN 55426

Dear Ms. Jacobson:

Below are my written comments under the National Environmental Policy Act (NEPA) on the scope of the Supplemental Draft Environmental Impact Statement for the Southwest Light Rail Transit Extension Project (Formerly Referred to as the Southwest Transitway) (the SDEIS). These comments are submitted on August 4, 2013, within the 20 day period for submitting comments which ends on August 12, 2013. In accordance with the Minnesota Environmental Policy Act (MEPA) these comments, and the responses to them, will be included in the SDEIS.

8-

4-2013

### Southwest Corridor Light Rail Transit Extension Project Must Include Deep Tunnel in Kenilworth Corridor or Be Rerouted

A deep tunnel in the Kenilworth Corridor for the Southwest LRT is absolutely necessary to avoid lawsuits by parties affected by the proposed light rail line and the probable loss of federal funding incident to the commencement of any such lawsuit. My wife, Linda, and I own and reside in a townhome in the Cedar Lake Shores town homes. We both bike extensively – 1,000 to 2,000 miles a year. We generally bike on the Kenilworth Trail and the Minneapolis and Hennepin Parks bike trails at least two or three times a week. We also use the Kenilworth Trail three or four times a week to walk to the coffee shops, stores and restaurants located in Calhoun Village and Calhoun Commons.

The City of Minneapolis will not consent to co-locating freight train and light rail train (LRT) traffic on the Kenilworth Corridor. Doing so

would force 30 to 60 families to lose their homes, take away more than one and one half acres of parkland and, while destroying the public's enjoyment of much additional parkland, eliminate the Kenilworth pedestrian/bike trail. The City of St. Louis Park will not consent to relocating the freight rail traffic to run through that city along a new right of way that includes putting the railroad on a berm that runs as high as 20 feet higher than the surrounding property. Minneapolis reluctantly agreed, for purposes of the Southwest LRT Draft Environmental Impact Statement, to have the light rail run along the Kenilworth Corridor only on the condition that the freight traffic would be re-located through St. Louis Park along presently existing right of way.

The freight trains now stop traffic on Cedar Lake Parkway at least one half hour each day. The LRT will send at least 220 trains a day through the corridor. According to light rail experts, the amount of time it takes a light rail train to clear a street crossing, depending on the length of the train, is between 32 and 43 seconds including the time it takes for the signal arms to operate. This means that each day Cedar Lake Parkway will be closed for a minimum of one hour and 45 minutes for light rail and at least a half hour for freight trains. In other words, Cedar Lake Parkway will be closed to rail traffic for at least two hours and fifteen minutes each day in the event of co-location. The Grand Rounds Scenic Byway, of which Cedar Lake Parkway and the Cedar Lake Regional Bike Trail are a part, could lose its national designation of "Grand Rounds Scenic Byway" because of the change in character of the parkway and bike trail. Loss of such designation could result in loss of federal funding to help with future improvements to the Byway.

Twin Cities and Western Railroad, the railroad company that currently leases the tracks and right of way from the Hennepin County Regional Railway Authority, has declared that it would not relocate its rail traffic to St. Louis Park onto the currently existing right of way. It demands that the right of way be reconfigured to run on a 20-foot high berm through the area in which the local high school football stadium is located. The Metropolitan Council is in charge of working with the various cities, governmental agencies, citizens groups, public and private companies and the county, state and federal governments to facilitate, if possible, the construction and operation of a Southwest

Corridor LRT. Because of the impasse created by the railroad, the Met Council has suggested that either a deep tunnel or a shallow covered tunnel could be constructed in the Kenilworth Corridor. A deep tunnel is the only practical solution if the LRT is run through the Kenilworth Corridor.

A shallow tunnel would, at best, require at least one family to lose their home in the neighborhood and would destroy many acres of parkland. Both a shallow tunnel and co-location would create tremendous pedestrian and vehicle safety issues as well as nearly constant noise from LRT bells ringing as the trains approach the West Lake Street station at grade in a heavily residential area. The failure of the Met Council to agree to run the LRT down the Midtown Greenway Corridor, a decision that continues to make less and less sense, has resulted in the City of Minneapolis to plan a trolley service from a point east on that corridor, terminating at the West Lake Street station, to serve the transportation needs of the residents of South Minneapolis that the Met Council refuses to serve. The individuals transferring from the trolleys to light rail would create additional safety problems. A shallow tunnel would also, according to the Met Council, require three years of construction, leaving an ugly scar through Minneapolis parkland.

A deep tunnel, with the freight trains continuing to run through the Kenilworth Corridor (with an upgrade in the rail bed to eliminate the horribly squealing train wheels), while not an ideal solution, would satisfy nearly all of the concerns of the Minneapolis and St. Louis Park residents and of the residents in the greater metropolitan region who use the Kenilworth pedestrian/bike path nearly one million times each year. The Met Council suggests that a deep tunnel would add \$420 million dollars to the originally estimated \$1.25 billion dollar cost of the entire LRT project. If LRT is constructed in the Kenilworth Corridor and the freight trains remain in the corridor, it is money that must be spent. Otherwise, the project must be rerouted, modified at the southwest end or scrapped completely.

The Star Tribune newspaper, in an editorial on August 4, 2013, stated in part:

“The Met Council needs to get it right. Given the high stakes, it should not limit its consideration set to the [eight options](#) that have been developed to address the dispute. Instead, the metro planning agency should consider rethinking the route altogether.

....

“Rising costs may make an alternative route more cost-efficient, especially considering the increasing population density in Uptown and other Minneapolis neighborhoods that could be an alternative to the Kenilworth corridor. This is especially true because under some of the scenarios, the planned 21st Street station in Minneapolis would be eliminated. And the FTA’s cost-effectiveness index has changed under the Obama administration, so what was once considered a less-efficient option may now be looked at more favorably by federal funders....”

A “Counterpoint” article in the Star Tribune newspaper by Mark Wegner, president of Twin Cities & Western Railroad (“Railroad is neutral in LRT dispute,” August 3) confirms the statement in the Draft Environmental Impact Statement (DEIS) that federal regulators consider that the issue of freight-rail location is a separate issue that needs to be resolved by local planners (Metropolitan Council, cities of Minneapolis and St. Louis Park, etc.) before seeking federal funds for LRT. Costs for the resolution of the freight-rail relocation/co-location issue should not be included as a cost for the LRT construction project, but rather as a cost to resolve the freight-rail relocation/co-location issue. Cost of the deep tunnel through the Kenilworth Corridor that resolves the freight issue may be included in the funding for resolving both the LRT rail corridor site and the site for freight-rail location issues, but must not be considered a roadblock to a common sense, responsible plan for construction of LRT through the Kenilworth Corridor.

The Met Council has yet to release its estimates of what must be enormous costs for the huge LRT bridges and two LRT tunnels in Eden



Prairie and Minnetonka. Nor has it released the costs for the three LRT stations and tracks that are planned to extend the LRT southwest of the Golden Triangle station in Eden Prairie. If money is short for a deep tunnel in the Kenilworth Corridor, those three stations, and possibly more, should be eliminated and built at a later date.

It makes absolutely no sense to take away homes and destroy a major part of the nationally acclaimed Minneapolis park and trail system to accommodate a poorly conceived and designed LRT project. If there is not enough money to build it responsibly and correctly from Target Field to the last proposed station in Eden Prairie, the LRT, including a deep tunnel in the Kenilworth Corridor, should be built with the money available only to the proposed Hopkins or possibly the proposed Golden Triangle station in Eden Prairie. Park and ride bus accommodations could be provided for the potential LRT users farther to the southwest until additional money is found to extend the service. Alternatively, the LRT could run down the Midtown Greenway Corridor from the West Lake Street Bridge. This should not be a problem with the Met Council as it has not to date expressed any reservations about changes desired by the railroad, St. Louis Park or Eden Prairie from the “locally preferred” LRT route and design originally agreed to in the Southwest LRT Draft Environmental Impact Statement.

The numerous meetings that I have attended in both Minneapolis and St. Louis Park have made it evident that there is a complete lack of trust by virtually everyone who has attended those meetings of nearly all of the individuals pushing for this light rail project. We are all aware that Met Council led everyone to believe that a tunnel would be constructed through the University of Minnesota campus. At the last minute, the Met Council determined that its “plans” for a tunnel were too expensive. The project was at that time too far along to stop.

If both freight-rail and LRT rails are located within the Kenilworth Corridor, a deep tunnel must be constructed through the Corridor for LRT. If the Met Council does in fact agree to the construction of a deep tunnel in the Kenilworth Corridor, then all relevant planning and construction documents must include binding provisions to the effect that construction of the 1.4 mile deep tunnel and renovation and/or demolition and reconstruction of the West Lake Street Bridge shall be

adequately budgeted and planned for and construction of the tunnel together with work and construction relating to the present or reconstructed West Lake Street Bridge must be substantially completed prior to the time construction begins on any other bridge in the Southwest Light Rail Transit Extension Project. The documentation must also provide that in the event of a violation of such provision, any interested party, including any resident of the state of Minnesota, shall have standing in federal and Minnesota courts of competent jurisdiction to commence and prosecute, without the requirement of posting a bond, an action to restrain construction of any of such other bridges. The Met Council will be watched closely to make sure it completes this project correctly, or perhaps not at all.

Douglas J. Peterson

3315 Saint Paul Ave.

Minneapolis, MN 55416

**From:** [Raz, Rachel \(WVR, GC\)](#)  
**To:** [Jacobson, Nani](#)  
**Subject:** SitP SDEIS - Scoping comment.docx  
**Date:** Monday, August 05, 2013 10:16:10 PM

---

August 06, 2013

Ms. Nani Jacobson, Project Manager  
Southwest Light Rail Transit Project Office  
6465 Wayzata Boulevard, Suite 500, St. Louis Park, MN 55426

Dear Ms. Jacobsen,

The below constitutes a comment in response to the announcement of the Supplemental Draft Environmental Impact Statement for the Southwest Light Rail Transit Project published in the Minnesota EQB dated July 22, 2013. Note that this comment is post-marked before the published comment deadline of August 12, 2013.

This comment is officially from the neighborhood advocacy group, Safety in the Park, which while led by a steering committee of 7 residents represents perhaps thousands of residents in St. Louis Park MN as evidenced by over 1500 signed petitions supporting our stated cause, an email/blog recipient list of over 1000 individuals, and a Facebook page with over 325 participants. Safety in the Park is not-for-profit, volunteer neighborhood advocacy group based in St. Louis Park, MN.

Safety in the Park supports the SWLRT project as a whole, but rejects the SWLRT proposal to relocate freight rail traffic onto newly built tracks and tracks that were never built for such a purpose. As a group, we have worked on this issue for over three years holding numerous public meetings, meetings with elected officials, and other stakeholders. We know our understanding of the issues and impacts of this project are strong.

Our comments are summarized as follows. The relocation plans named by the SPO (SWLRT Project office) as Brunswick West and Brunswick Central affect St. Louis Park in numerous ways. Before commenting on these effects, Safety in the Park challenges the very nature of the Met Council's decision-making process

**Lack of Public Process:** For approximately three years, Hennepin County and MNDOT took responsibility for the re-routing of freight trains. During that time, there were numerous opportunities for public process including consultancy led public input meetings, City of St. Louis Park sponsored listening sessions, Hennepin County initiated hearings, a MNDOT EAW (eventually vacated) and a full DEIS. All of the above process featured a re-route option that planned for freight traffic to travel on the original MN&S track in St. Louis Park.

As of approximately two months ago a completely new plan was established, essentially discarding all of the public process that took place for the last three years. (A delay that could have been avoided had Hennepin County reached out to the railroad that would be re-routed earlier.) Since these new plans were introduced no meaningful public process has occurred. On Jun 13 and July 17 and 18 the Met Council held public meetings. The format for public input was inappropriate to the issue presented. At each of these meetings residents were given file cards and sticky notes on which to write comments.

Sticky notes and comment cards do not lend themselves to substantive comments. Comments received in this format cannot be anything but superficial and therefore easily dismissed. Also, without a longer period for comment many in the community could be left out just because they were unavailable at the times designated for comment.

Conspicuous by absence are any public hearings and most importantly any detailed environmental impact study on these new plans. This is particularly disturbing since the decision on these routes is to be made by the Met Council within 30 days of this comment period on the **scope** of this SDEIS and before the SDEIS is complete. It is beyond our understanding how state appointees on the Met Council can make such a decision with no environmental impact study and no hearings from the public. In addition, we do not understand how the FTA, State of Minnesota, and Hennepin County can allow such an impact to be even considered under these circumstances.

**Inappropriate consideration of options:** In just the last three weeks, the SPO has officially made comments that of all eight options for freight rail relocation/co-location, only three remain as viable--two co-location options and one relocation. The SPO has commented that the following criteria were applied to their culling of the other five alternatives--the taking of property, cost, above ground structures, and community opposition. The remaining reroute option, Brunswick Central ranks higher on this scale of negative impacts than co-location options that have already been removed from consideration. This arbitrary and capricious choice by the SPO does not align with their self-declared criteria.

**St. Louis Park City Council/State Legislator/St. Louis Park School Board opposition to re-route options:** The St. Louis Park City Council, School Board and Minnesota State Legislators have all sent letters to the Met Council rejecting the Brunswick Reroute options. The continuation of the SPO to consider these re-route options directly challenges a partner municipality and those who represent it.

Therefore, the scope and timeline of this SDEIS should be broad enough and long enough to completely halt the decision-making process underway by the Met Council on the collocate/relocate decision. Anything other than completion of a similar process to the one completed for the original DEIS before these decisions are made is illogical and violates the public's input on this very public project. Furthermore, the following is a list of impacts that will be felt by the City of St. Louis Park should a relocation decision be made. Regardless of the above concerns on public process, the impacts of a St. Louis Park re-route are disconcerting at least, disastrous at most.

**Safety:** The number one concern of this community is safety. To our point above, no derailment studies have been enacted by the SPO. However, it is common sense that placing a 20 - foot high railroad berm and bridge above an elementary school playground is not a safe choice. There is empirical evidence showing disaster can strike when a train tumbles over an embankment onto structures and people below. This reason alone is enough to remove the re-route option from consideration.

**Livability:** An elevated structure of the sort planned by the SPO in combination with grade changes and nature of this freight being hauled

will undoubtedly create noise and visual pollution that will make educating and living near the structure near impossible. Again, no studies have been completed on this topic because the SPO has decided not to conduct them before the Met Council makes its decision.

**Community Cohesion:** This planned elevated structure will create a very permanent physical division in our community.

**Mitigation:** No mitigation plans have been shared with the public. No funding source has been identified.

For these reasons and more, the SDEIS scope should be changed to include the following:

**A detailed analysis of the relocation options that includes:** noise and vibration studies, derailments studies, full environmental impacts to all buildings and people within the same geographic scope as the actual LRT path that was studied in the original DEIS.

**A robust public process that allows for public hearings and input after the SDEIS is published **BEFORE** any decision is made or even considered by the Met Council.** In particular, the specific concerns of the City of St. Louis Park need addressing.

**A fair and equal comparison of co-location and relocation must be possible.**

Therefore, the four co-location options with property acquisitions and above grade structures must be returned to consideration and evaluated as part of the SDEIS.

Rachel Raz  
St Louis Park

**From:** [julie\\_sabo](#)  
**To:** [arthur higinbotham](#); [Jacobson, Nani](#)  
**Cc:** [Stuart A Chazin](#); [Nancy Green](#); [Tom Johnson](#); [info cidna](#); [lisa goodman](#)  
**Subject:** Re: Comments on Supplemental DEIS for SWLRT Transitway  
**Date:** Monday, August 05, 2013 9:04:21 AM

---

Hi Art,

We need to point those things out. The modeling is illusionary, 1,000 a day at 21st Street? When they need more, change the model and wall-a! more riders. It's all crazy.

Julie

---

**From:** arthur higinbotham <ahiginbotham@msn.com>  
**To:** nani.jacobson@metrotransit.org  
**Cc:** Stuart A Chazin <Stuart@chazingroup.com>; julieannsabo <julieannsabo@yahoo.com>; Nancy Green <nancygreen1@comcast.net>; Tom Johnson <tom.johnson@co.hennepin.mn.us>; info cidna <info@cidna.org>; lisa goodman <lisa.goodman@ci.minneapolis.mn.us>  
**Sent:** Sunday, August 4, 2013 5:11 PM  
**Subject:** Comments on Supplemental DEIS for SWLRT Transitway

I am attaching a statement showing the shortcomings of a shallow tunnel for the SWLRT in the Kenilworth corridor; I would like to add that a shallow tunnel will be a major safety hazard for children using Park Siding during tunnel construction and for residents who live along the corridor.

I would like to object to the ridership being increased from 29,000 to 34,000-36,000 without any further ridership study when the 2030 basis for ridership should now show a decline due to the Great Recession of 2008-12.

Art Higinbotham  
SWLRT CAC Representative

**From:** [Sean Gilbertson](#)  
**To:** [Jacobson, Nani](#); [Safety In the Park](#); [newsroom@mpr.org](mailto:newsroom@mpr.org); [stories@minnpost.com](mailto:stories@minnpost.com)  
**Subject:** Re: SDEIS for southwest LRT proposals  
**Date:** Tuesday, August 06, 2013 10:50:36 AM

---

Any St. Louis Park location should be ruled out before or during the SDEIS because it's a mathematical certitude that any of those options would result in significant negative environmental impacts to the local population.

One of the proposals has an elevated train line passing so close to two large schools that one of the \*playgrounds\* would have to be destroyed. This is a perfect metaphor for what this proposal would do to our city: effect a deep laceration to our quality of life. We're not going to stand for our houses, our schools, our businesses, and our safety being destroyed or devastated because a few entitled rich people who live hundreds of feet above and away from an existing safe location stamp their feet and demand to get their way. There's nothing different here from what an environmental disaster would do to our neighborhood, except for the fact that we can prevent this disaster.

The people of Kenwood have no stake in this LRT project: they would not be affected by its location in the Kenilworth corridor, and they won't be using it for commuting. This is our project; those of us in the real world could benefit from LRT, but if we damage our communities and our quality of life, we've lost the very thing we're meant to be serving.

Thank you,  
Sean Gilbertson  
55426

**DOUGLAS J. PETERSON**  
3315 SAINT PAUL AVENUE  
MINNEAPOLIS, MN 55416-4317

August 6, 2013



Ms. Nani Jacobson, Project Manager  
Southwest Light Rail Transit Project Office  
6465 Wayzata Boulevard, Suite 500  
St. Louis Park, MN 55426

CERTIFIED MAIL  
RETURN RECEIPT REQUESTED

Dear Ms. Jacobson:

Below are my written comments under the National Environmental Policy Act (NEPA) on the scope of the Supplemental Draft Environmental Impact Statement for the Southwest Light Rail Transit Extension Project (Formerly Referred to as the Southwest Transitway) (the SDEIS). These comments are submitted on August 6, 2013, within the 20-day period for submitting comments, which ends on August 12, 2013. In accordance with the Minnesota Environmental Policy Act (MEPA) these comments, and the responses to them, will be included in the SDEIS.

### Southwest Corridor Light Rail Transit Extension Project Must Include Deep Tunnel in Kenilworth Corridor or Be Rerouted

A deep tunnel in the Kenilworth Corridor for the Southwest LRT is absolutely necessary to avoid lawsuits by parties affected by the proposed light rail line and the probable loss of federal funding incident to the commencement of any such lawsuit. My wife, Linda, and I own and reside in a townhome in the Cedar Lake Shores town homes. We both bike extensively – 1,000 to 2,000 miles a year. We generally bike on the Kenilworth Trail and the Minneapolis and Hennepin Parks bike trails at least two or three times a week. We also use the Kenilworth Trail three or four times a week to walk to the coffee shops, stores and restaurants located in Calhoun Village and Calhoun Commons.

The City of Minneapolis will not consent to co-locating freight train and light rail train (LRT) traffic on the Kenilworth Corridor. Doing so would force 30 to 60 families to lose their homes, take away more than one and one half acres of parkland and, while destroying the public's enjoyment of much additional parkland, eliminate the



Kenilworth pedestrian/bike trail. The City of St. Louis Park will not consent to relocating the freight rail traffic to run through that city along a new right of way that includes putting the railroad on a berm that runs as high as 20 feet higher than the surrounding property. Minneapolis reluctantly agreed, for purposes of the Southwest LRT Draft Environmental Impact Statement, to have the light rail run along the Kenilworth Corridor only on the condition that the freight traffic would be re-located through St. Louis Park along presently existing right of way.

The freight trains now stop traffic on Cedar Lake Parkway at least one half hour each day. The LRT will send at least 220 trains a day through the corridor. According to light rail experts, the amount of time it takes a light rail train to clear a street crossing, depending on the length of the train, is between 32 and 43 seconds including the time it takes for the signal arms to operate. This means that each day Cedar Lake Parkway will be closed for a minimum of one hour and 45 minutes for light rail and at least a half hour for freight trains. In other words, Cedar Lake Parkway will be closed to rail traffic for at least two hours and fifteen minutes each day in the event of co-location. The Grand Rounds Scenic Byway, of which Cedar Lake Parkway and the Cedar Lake Regional Bike Trail are a part, could lose its national designation of "Grand Rounds Scenic Byway" because of the change in character of the parkway and bike trail. Loss of such designation could result in loss of federal funding to help with future improvements to the Byway.

Twin Cities and Western Railroad, the railroad company that currently leases the tracks and right of way from the Hennepin County Regional Railway Authority, has declared that it would not relocate its rail traffic to St. Louis Park onto the currently existing right of way. It demands that the right of way be reconfigured to run on a 20-foot high berm through the area in which the local high school football stadium is located. The Metropolitan Council is in charge of working with the various cities, governmental agencies, citizens groups, public and private companies and the county, state and federal governments to facilitate, if possible, the construction and operation of a Southwest Corridor LRT. Because of the impasse created by the railroad, the Met Council has suggested that either a deep tunnel or a shallow covered tunnel could be constructed in the Kenilworth Corridor. A deep tunnel is the only practical solution if the LRT is run through the Kenilworth Corridor.

A shallow tunnel would, at best, require at least one family to lose their home in the neighborhood and would destroy many acres of parkland. Both a shallow tunnel and co-location would create tremendous pedestrian and vehicle safety issues as well as nearly constant noise from LRT bells ringing as the trains approach the West Lake Street station at grade in a heavily residential area. The failure of the Met Council to agree to run the LRT down the Midtown Greenway Corridor, a decision that continues to make less and less sense, has resulted in the City of Minneapolis to plan a trolley service from a point east on that corridor, terminating at the West Lake Street station, to serve the transportation needs of the

residents of South Minneapolis that the Met Council refuses to serve. The individuals transferring from the trolleys to light rail would create additional safety problems. A shallow tunnel would also, according to the Met Council, require three years of construction, leaving an ugly scar through Minneapolis parkland.

A deep tunnel, with the freight trains continuing to run through the Kenilworth Corridor (with an upgrade in the rail bed to eliminate the horribly squealing train wheels), while not an ideal solution, would satisfy nearly all of the concerns of the Minneapolis and St. Louis Park residents and of the residents in the greater metropolitan region who use the Kenilworth pedestrian/bike path nearly one million times each year. The Met Council suggests that a deep tunnel would add \$420 million dollars to the originally estimated \$1.25 billion dollar cost of the entire LRT project. If LRT is constructed in the Kenilworth Corridor and the freight trains remain in the corridor, it is money that must be spent. Otherwise, the project must be rerouted, modified at the southwest end or scrapped completely.

The Star Tribune newspaper, in an editorial on August 4, 2013, stated in part:

“The Met Council needs to get it right. Given the high stakes, it should not limit its consideration set to the eight options that have been developed to address the dispute. Instead, the metro planning agency should consider rethinking the route altogether.

....

“Rising costs may make an alternative route more cost-efficient, especially considering the increasing population density in Uptown and other Minneapolis neighborhoods that could be an alternative to the Kenilworth corridor. This is especially true because under some of the scenarios, the planned 21st Street station in Minneapolis would be eliminated. And the FTA’s cost-effectiveness index has changed under the Obama administration, so what was once considered a less-efficient option may now be looked at more favorably by federal funders....”

A “Counterpoint” article in the Star Tribune newspaper by Mark Wegner, president of Twin Cities & Western Railroad (“Railroad is neutral in LRT dispute,” August 3) confirms the statement in the Draft Environmental Impact Statement (DEIS) that federal regulators consider that the issue of freight-rail location is a separate issue that needs to be resolved by local planners (Metropolitan Council, cities of Minneapolis and St. Louis Park, etc.) before seeking federal funds for LRT. Costs for the resolution of the freight-rail relocation/co-location issue should not be included as a cost for the LRT construction project, but rather as a cost to resolve the freight-rail relocation/co-location issue. Cost of the deep tunnel through the Kenilworth Corridor that resolves the freight issue may be included in the funding for resolving both the LRT rail corridor site and the site for freight-rail

location issues, but must not be considered a roadblock to a common sense, responsible plan for construction of LRT through the Kenilworth Corridor.

The Met Council has yet to release its estimates of what must be enormous costs for the huge LRT bridges and two LRT tunnels in Eden Prairie and Minnetonka. Nor has it released the costs for the three LRT stations and tracks that are planned to extend the LRT southwest of the Golden Triangle station in Eden Prairie. If money is short for a deep tunnel in the Kenilworth Corridor, those three stations, and possibly more, should be eliminated and built at a later date.

It makes absolutely no sense to take away homes and destroy a major part of the nationally acclaimed Minneapolis park and trail system to accommodate a poorly conceived and designed LRT project. If there is not enough money to build it responsibly and correctly from Target Field to the last proposed station in Eden Prairie, the LRT, including a deep tunnel in the Kenilworth Corridor, should be built with the money available only to the proposed Hopkins or possibly the proposed Golden Triangle station in Eden Prairie. Park and ride bus accommodations could be provided for the potential LRT users farther to the southwest until additional money is found to extend the service. Alternatively, the LRT could run down the Midtown Greenway Corridor from the West Lake Street Bridge. This should not be a problem with the Met Council as it has not to date expressed any reservations about changes desired by the railroad, St. Louis Park or Eden Prairie from the "locally preferred" LRT route and design originally agreed to in the Southwest LRT Draft Environmental Impact Statement.

The numerous meetings that I have attended in both Minneapolis and St. Louis Park have made it evident that there is a complete lack of trust by virtually everyone who has attended those meetings of nearly all of the individuals pushing for this light rail project. We are all aware that Met Council led everyone to believe that a tunnel would be constructed through the University of Minnesota campus. At the last minute, the Met Council determined that its "plans" for a tunnel were too expensive. The project was at that time too far along to stop.

If both freight-rail and LRT rails are located within the Kenilworth Corridor, a deep tunnel must be constructed through the Corridor for LRT. If the Met Council does in fact agree to the construction of a deep tunnel in the Kenilworth Corridor, then all relevant planning and construction documents must include binding provisions to the effect that construction of the 1.4 mile deep tunnel and renovation and/or demolition and reconstruction of the West Lake Street Bridge shall be adequately budgeted and planned for and construction of the tunnel together with work and construction relating to the present or reconstructed West Lake Street Bridge must be substantially completed prior to the time construction begins on any other bridge in the Southwest Light Rail Transit Extension Project. The documentation must also provide that in the event of a violation of such provision,

any interested party, including any resident of the state of Minnesota, shall have standing in federal and Minnesota courts of competent jurisdiction to commence and prosecute, without the requirement of posting a bond, an action to restrain construction of any of such other bridges. The Met Council will be watched closely to make sure it completes this project correctly, or perhaps not at all.

Yours truly,

A handwritten signature in black ink, appearing to read "Douglas J. Peterson". The signature is fluid and cursive, with a long horizontal stroke extending to the right.

Douglas J. Peterson

**From:** [bjschmitt89@aol.com](mailto:bjschmitt89@aol.com)  
**To:** [Jacobson, Nani](#)  
**Subject:** Supplemental Draft Environmental Impact Statement for SWLRT  
**Date:** Tuesday, August 06, 2013 12:17:52 PM

---

August 6, 2013

Ms. Nani Jacobson, Project Manager  
Southwest Light Rail Transit Project Office  
6465 Wayzata Boulevard, Suite 500  
St. Louis Park, MN 55426

Dear Ms. Jacobson:

I am in complete agreement with the statement sent to you by Safety in the Park dated August 6, 2013.

That the Brunswick Central remains as an option remains a mystery to me as it ranks higher on the scale of negative impacts than other co-location options that have already been removed from consideration.

Safety concerns, livability in an area of elevated rail (noise, vibration, nature of freight being hauled) as well as the lack of any mitigation plan or funding source for one makes me request that the SDEIS study should include the following:

1. A detailed analysis of relocation options that includes: noise and vibration studies, derailments studies, full environmental impacts to all buildings and people within the same geographic scope as the actual LRT path that was studied in the original DEIS.
2. A robust public process that allows for public hearings and input after the SDEIS is published **BEFORE** any decision is made or even considered by the Met Council. In particular, the specific concerns of the City of St. Louis Park need addressing.
3. A fair and equal comparison of co-location and relocation must be possible. Therefore, the four co-location options with property acquisitions and above grade structures must be returned to consideration and evaluated as part of the SDEIS.

Bert & Beverly Schmitt  
2833 Brunswick Avenue South  
St. Louis Park, MN 55416

**From:** [Karen J. Scott](#)  
**To:** [Jacobson, Nani](#)  
**Subject:** SLP Resident opposes Freight Rail Reroute  
**Date:** Tuesday, August 06, 2013 11:29:02 AM

---

Hi Ms. Jacobson, I hope you have received numerous emails/ letters Opposing Freight Rail in SLP. I am not as eloquent a writer as those who organized SafetyinthePark! Or Lightraildoneright.org.

Both of these organizations have presented strong arguments for and against re- route and co- location and over the years have essentially opposed each other.

Now these neighborhoods are coming together and stating that if Light Rail happens, then the deep bore tunnel option is the best choice.

We cannot allow the unpredictable number of future riders to outweigh the predictability of events that will occur to St. Louis Park and the environment.

I am, overall, opposed to the entire Light Rail Line as it is stated. I do not stand alone in my concerns. Seriously, if the re-route/colocation is Technical issue #21 then what does that say about this entire plan?

I encourage you to please take into thoughtful consideration the future of St. Louis Park, the community, school district and children and allow that to take precedence over all other decisions. Then secondly, preserve the chain of lakes area and protect our environment. If SWLRT has to happen with the current line proposal, then you have an ethical civic responsibility to oppose any option that creates the most harm. You must protect St. Louis Park's community and the Environment.

Thank you for your time and serious attention to this matter.

Karen Scott  
Proud St. Louis Park Community Member



August 7, 2013

Ms. Nani Jacobson, Project Manager  
Southwest Light Rail Transit Project Office  
6465 Wayzata Boulevard, Suite 500, St. Louis Park, MN 55426

Dear Ms. Jacobsen,

This letter constitutes a comment in response to the announcement of the Supplemental Draft Environmental Impact Statement for the Southwest Light Rail Transit (SWLRT) Project published in the Minnesota EQB dated July 22, 2013. As required, this comment is post-marked before the published comment deadline of August 12, 2013.

I have the following concerns regarding the proposed relocation plans (named by the SWLRT Project Office as Brunswick West and Brunswick Central):

- **Decision Process and Criteria:** The Met Council and SWLRT project team appear to be using arbitrary inconsistent decision criteria for choosing freight route options. They have not published their criteria, yet they approve a tunnel option for Kenwood stating above ground structures would be unsightly, yet an above ground structure is a key part of the St Louis Park options. Also, many years ago discussions started about light rail, and when asked about where freight trains would go, citizens were told those discussions would come later and we would be part of those discussions/decisions. Yet that never happened. Similarly, there are locally preferred alternatives to the location of the light rail itself. Again, the Met Council is choosing to put the trains where ridership is the least, in complete violation of their stated goal to attract young people to the twin cities. Uptown is where ridership is stronger.
- **Safety:** The St Louis Park options are not a safe alternative, give the other options that are or have been on the table. Running long freight trains hauling ethanol, coal and agricultural products at 25mph on an up to 18+foot high berm/bridge through our neighborhood is one thing, but to have it run next to an elementary school, removing that school's playground, within 100 feet of that school building (where babies and toddlers attend ECFE classes 100s of preschoolers attend preschool, and within 500 feet of our High School is not the best choice given there are other options that do not affect babies and children. This should be reason enough to remove the freight re-route option from consideration.
- **Community:** An elevated structure through the heart of St Louis Park is unsightly, and puts a 18+ foot wall in the middle of cohesive, safe, neighborhoods. At a time when the president is asking for neighbors to come together, help each other, and create safe places to work and live, the Met Council is proposing to destroy where that situation actually exists. Our own MN Governor is quoted as saying St Louis Park is one of the safest cities in MN. Our schools are in the top in the nation, and we can boast some of

the strongest neighborhood associations in the state. Our chief of police has been quoted saying neighboring cities have come to them to find out how to replicate what St Louis Park has in terms of its active, involved neighborhood associations. The re-route option would destroy what others hope to replicate, and should be removed from consideration.

- Mitigation: No mitigation plans have been shared with the public to address the above concerns. In fact, at the May 28 unveiling, it was stated that there would be no mitigation.
- Reroute opposition: The St Louis Park City Council, the State Legislator, The St Louis Park School Board have all sent letters to the Met Council rejecting the St Louis Park re-route options. The continuation of the SWLRT Project Office to consider these re-route options directly challenges a partner community municipality and those who represent it.

For these reasons, the SDEIS scope should be changed to include, the following:

A detailed analysis of the full environmental impacts to all buildings and people using the same geographic scope as the actual LRT path that was studied in the original DEIS

The analysis should include, but not be limited to, the following:

- o noise and vibration studies
- o air pollution studies
- o derailment studies
- o visual impact studies

A robust public process that allows for public hearings and INPUT (not just comment cards) BEFORE any decision is made or even considered by the Met Council. The decision made on SWLRT will impact the face of the Twin Cities for generations. It seems prudent to take a thoughtful community involved approach when affecting peoples' homes, lives, schools and tax dollars.



Thank you for your consideration.

Mary Beth Gaines

5740 W Lake Street

St Louis Park, MN 55416



**From:** [Thatcher Imboden](#)  
**To:** [Gail Dorfman](#); [swlrl](#)  
**Subject:** SW LRT: Trail reroute  
**Date:** Wednesday, August 07, 2013 5:38:31 PM  
**Attachments:** [kenilworth.pdf](#)

---

Commissioner Dorfman and project planners,

In reviewing a few of the documents pertaining to the Kenilworth corridor and various scenarios where the existing trail may be relocated, I wanted to inquire about another trail reroute option.

I've attached a quick plan I put together outlining a much shorter and potentially more enjoyable reroute than the reroute option that contemplated crossing Lake Street near France Avenue. I biked the route the other day and, while not as nice as the existing Kenilworth, it may be more politically viable and cost effective.

It essentially relocates the trail from just north of the Lake Street bridge then going west along the northwest bridge abutment. Today there is a cow path there and the area is generally sloped perhaps at a 2 to 4% incline in a wooded section. Near the end of the bridge abutment, the path would turn north through a grassy section and proceed onto Chowen Place.

I am assuming that it would cross the freight and light rail tracks at grade with some sort of signaling. Assuming that no laws prevent this type of crossing, I don't see it as any different than bikers having to cross both freight and light rail at grade at Cedar Lake Pkwy or any other number of LRT or freight tracks across this region.

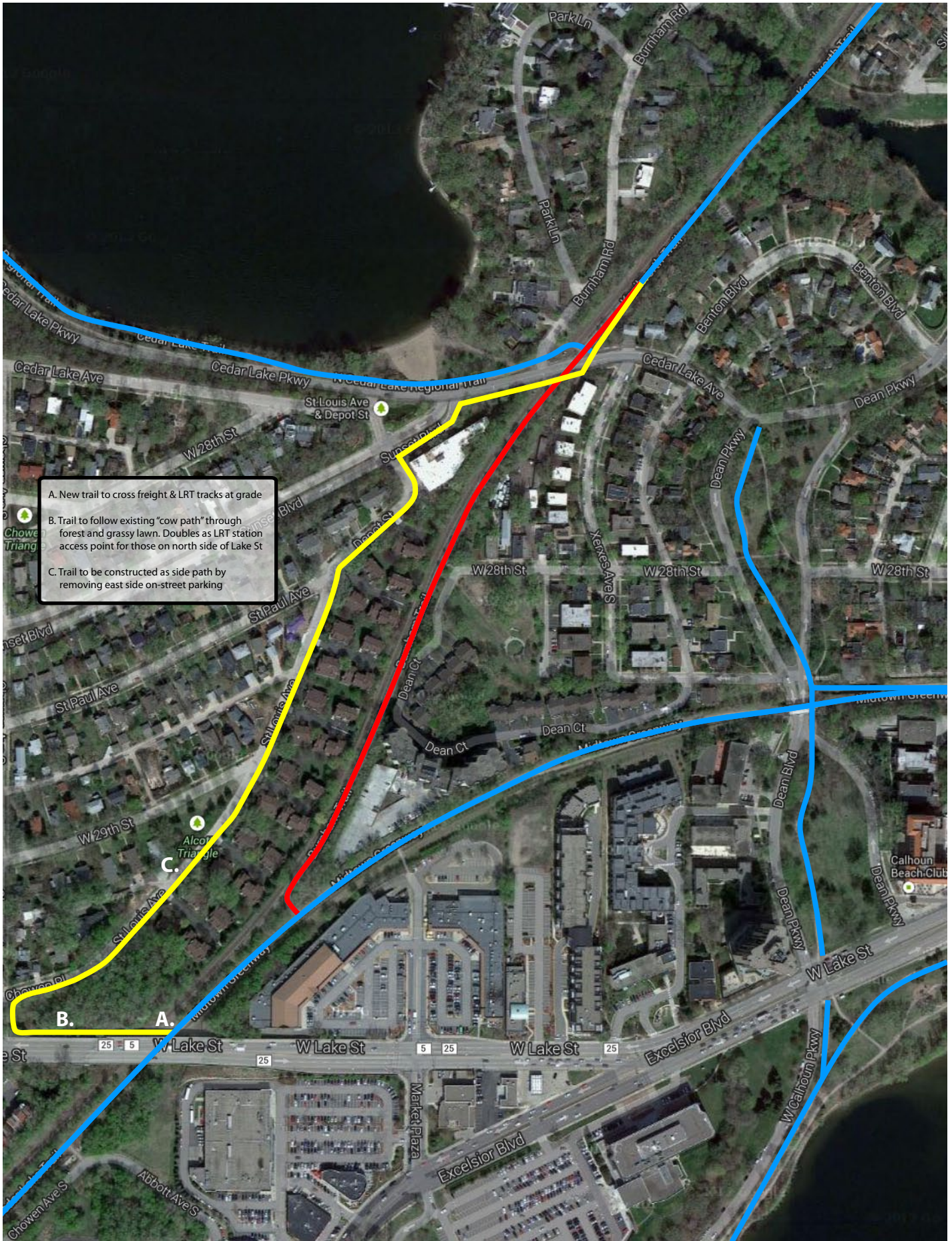
I would assume that the community preference would be to have the street section as a dedicated side path at the top-of-curb height adjacent the street. I would assume that one lane of parking from the east side would need to be removed. Given existing conditions, this may not be that big of a deal relative to other neighborhoods.

It would run along Chowen Place to St. Louis Avenue to Depot Street to Sunrise Blvd. At Sunrise, there is a grassy strip adjacent the apartment building except at the building's entryway. It would then cross at grade across Cedar Lake Pkwy, perhaps on the east side of the RR tracks.

I'm sure this has been considered but hadn't seen it out there, so I thought I'd pass it along just in case. I would love to hear your thoughts.

I'm not sure if I favor this solution or not, but as a biker, it would be far preferable than the other relocation plan.

Thanks,  
Thatcher Imboden  
[thatcher@ouruptown.com](mailto:thatcher@ouruptown.com)  
612-810-6642



A. New trail to cross freight & LRT tracks at grade  
 B. Trail to follow existing "cow path" through forest and grassy lawn. Doubles as LRT station access point for those on north side of Lake St  
 C. Trail to be constructed as side path by removing east side on-street parking

— Existing Trails   
 — Removed Bike Trails   
 — New Bike Trails

**From:** [Joe King](#)  
**To:** [Jacobson, Nani](#)  
**Subject:** freight trains by SLP school  
**Date:** Wednesday, August 07, 2013 9:30:01 PM  
**Attachments:** [SitP SDEIS - Scoping comment \(1\).docx](#)

---

I do not support the idea of the freight trains running through SLP by the elementary school. Attached is a letter in regards to this point. I'd be happy to show further support to reconsider or change these plans.

--

[joe king](#)  
group account director

[mono](#)  
612-454-4909 direct  
612-454-4900 main  
[mono-1.com](#)

August 06, 2013

Ms. Nani Jacobson, Project Manager  
Southwest Light Rail Transit Project Office  
6465 Wayzata Boulevard, Suite 500, St. Louis Park, MN 55426

Dear Ms. Jacobsen,

The below constitutes a comment in response to the announcement of the Supplemental Draft Environmental Impact Statement for the Southwest Light Rail Transit Project published in the Minnesota EQB dated July 22, 2013. Note that this comment is post-marked before the published comment deadline of August 12, 2013.

This comment is officially from the neighborhood advocacy group, Safety in the Park, which while led by a steering committee of 7 residents represents perhaps thousands of residents in St. Louis Park MN as evidenced by over 1500 signed petitions supporting our stated cause, an email/blog recipient list of over 1000 individuals, and a Facebook page with over 325 participants. Safety in the Park is not-for-profit, volunteer neighborhood advocacy group based in St. Louis Park, MN. Safety in the Park supports the SWLRT project as a whole, but rejects the SWLRT proposal to relocate freight rail traffic onto newly built tracks and tracks that were never built for such a purpose. As a group, we have worked on this issue for over three years holding numerous public meetings, meetings with elected officials, and other stakeholders. We know our understanding of the issues and impacts of this project are strong.

Our comments are summarized as follows. The relocation plans named by the SPO (SWLRT Project office) as Brunswick West and Brunswick Central affect St. Louis Park in numerous ways. Before commenting on these effects, Safety in the Park challenges the very nature of the Met Council's decision-making process

- **Lack of Public Process:** For approximately three years, Hennepin County and MNDOT took responsibility for the re-routing of freight trains. During that time, there were numerous opportunities for public process including consultancy led public input meetings, City of St. Louis Park sponsored listening sessions, Hennepin County initiated hearings, a MNDOT EAW (eventually vacated) and a full DEIS. All of the above process featured a re-route option that planned for freight traffic to travel on the original MN&S track in St. Louis Park.
- As of approximately two months ago a completely new plan was established, essentially discarding all of the public process that took place for the last three years. (A delay that could have been avoided had Hennepin County reached out to the railroad that would be re-routed earlier.) Since these new plans were introduced no meaningful public process has occurred. On Jun13 and July 17 and 18 the Met Council held public meetings. The format for public input was inappropriate to the issue presented. At each of these meetings residents were given file cards

and sticky notes on which to write comments. Sticky notes and comment cards do not lend themselves to substantive comments. Comments received in this format cannot be anything but superficial and therefore easily dismissed. Also, without a longer period for comment many in the community could be left out just because they were unavailable at the times designated for comment.

Conspicuous by absence are any public hearings and most importantly any detailed environmental impact study on these new plans. This is particularly disturbing since the decision on these routes is to be made by the Met Council within 30 days of this comment period on the **scope** of this SDEIS and before the SDEIS is complete. It is beyond our understanding how state appointees on the Met Council can make such a decision with no environmental impact study and no hearings from the public. In addition, we do not understand how the FTA, State of Minnesota, and Hennepin County can allow such an impact to be even considered under these circumstances.

- **Inappropriate consideration of options:** In just the last three weeks, the SPO has officially made comments that of all eight options for freight rail relocation/co-location, only three remain as viable—two co-location options and one relocation. The SPO has commented that the following criteria were applied to their culling of the other five alternatives—the taking of property, cost, above ground structures, and community opposition. The remaining reroute option, Brunswick Central ranks higher on this scale of negative impacts than co-location options that have already been removed from consideration. This arbitrary and capricious choice by the SPO does not align with their self-declared criteria.
- **St. Louis Park City Council/State Legislator/St. Louis Park School Board opposition to re-route options:** The St. Louis Park City Council, School Board and Minnesota State Legislators have all sent letters to the Met Council rejecting the Brunswick Reroute options. The continuation of the SPO to consider these re-route options directly challenges a partner municipality and those who represent it.

Therefore, the scope and timeline of this SDEIS should be broad enough and long enough to completely halt the decision-making process underway by the Met Council on the collocate/relocate decision. Anything other than completion of a similar process to the one completed for the original DEIS before these decisions are made is illogical and violates the public's input on this very public project.

Furthermore, the following is a list of impacts that will be felt by the City of St. Louis Park should a relocation decision be made. Regardless of the above concerns on public process, the impacts of a St. Louis Park re-route are disconcerting at least, disastrous at most.

- **Safety:** The number one concern of this community is safety. To our point above, no derailment studies have been enacted by the SPO. However, it is common sense that placing a 20 - foot

high railroad berm and bridge above an elementary school playground is not a safe choice. There is empirical evidence showing disaster can strike when a train tumbles over an embankment onto structures and people below. This reason alone is enough to remove the re-route option from consideration.

- **Livability:** An elevated structure of the sort planned by the SPO in combination with grade changes and nature of this freight being hauled will undoubtedly create noise and visual pollution that will make educating and living near the structure near impossible. Again, no studies have been completed on this topic because the SPO has decided not to conduct them before the Met Council makes its decision.
- **Community Cohesion:** This planned elevated structure will create a very permanent physical division in our community.
- **Mitigation:** No mitigation plans have been shared with the public. No funding source has been identified.

For these reasons and more, the SDEIS scope should be changed to include the following:

- A detailed analysis of the relocation options that includes: noise and vibration studies, derailments studies, full environmental impacts to all buildings and people within the same geographic scope as the actual LRT path that was studied in the original DEIS.
- A robust public process that allows for public hearings and input after the SDEIS is published **BEFORE** any decision is made or even considered by the Met Council. In particular, the specific concerns of the City of St. Louis Park need addressing.
- A fair and equal comparison of co-location and relocation must be possible. Therefore, the four co-location options with property acquisitions and above grade structures must be returned to consideration and evaluated as part of the SDEIS.

**From:** [ggday@aol.com](mailto:ggday@aol.com)  
**To:** [Jacobson, Nani](#)  
**Subject:** SWLRT comment  
**Date:** Wednesday, August 07, 2013 4:49:21 PM

---

Dear Ms. Jacobson:

**Please put me down as one more person who opposes co-location of freight rail and LRT in the Kenilworth Greenway.**

The proposed co-location of freight and LRT (even with the supposed "win-win" of the shallow tunnel which is nothing more than at grade co-location) will permanently damage the unique and valuable regional asset that is the Greenway. There will be safety issues as well as negative environmental impact on the area. (water and air quality, noise and light pollution, wildlife and tree destruction)

The Metropolitan Council must re-consider the alignment of the LRT through the Kenilworth Greenway. It is NOT the only wa

Sincerely,

**From:** [O'Connell, Pat](#) on behalf of [PublicInfo](#)  
**To:** [Jacobson, Nani](#)  
**Subject:** FW: Letter to Governor Dayton re SW LRT  
**Date:** Wednesday, August 07, 2013 7:14:38 AM  
**Attachments:** [Ltr to Gov Dayton 8-6-2013.docx](#)

---

**From:** Douglas Peterson [mailto:douglasjpeterson.djp@gmail.com]  
**Sent:** Tuesday, August 06, 2013 10:35 PM  
**To:** rep.frank.hornstein; Senator Scott Dibble; anita; lisa Goodman; Haigh, Susan; Gail.Dorfman; MNRealtors; jeanette Colby; Munt, Jennifer; EldonJohn; meg forney; peter.rogoff fta; cwreg w; Stuart A Chazin; peter.wagenius; julieannsabo; Shelley; mikeerlandson; Nancy Green; David Lilly; docsafari; kenilworthpreservationgroup; bobbemel; michaelwilsonmpls; thomas.johnson@gpmlaw.com; ahiginbotham@msn.com; abbyruben@earthlink.net; angie\_sandeep@yahoo.com; Duininck, Adam; Zachary.Farley@minneapolismn.gov; PublicInfo; O'Connell, Sam; courtneyck@comcast.net  
**Subject:** Letter to Governor Dayton re SW LRT

Attached is a copy of my letter dated 8-6-2013 to Gov. Mark Dayton. The last day to submit comments relating to the proposed Supplemental Draft Environmental Impact Statement (SDEIS) is August 12, 2013. If you have not already sent your written comments, we need to get them in immediately. At least as important, please immediately write to all of the federal, state, county and local politicians and officials who represent Minneapolis and express your views. The possibility of losing "free" federal funds must not be used as an excuse to construct an ill conceived and poorly designed light rail project.

The Federal Transit Administration, has mandated that the Southwest Project Office prepare a supplemental DEIS report. FTA called for this primarily due to three items/changes that were not fully assessed in the original DEIS document related to location of the Operations and Maintenance Facility, Eden Prairie LRT alignments, and freight rail options. If you haven't already, you may want to take advantage of this opportunity to comment on the scope of the Supplemental DEIS. Particularly in regard to both shallow and deep tunnel options, this is an opportunity to make sure the supplemental document studies and responds to the many environmental concerns raised by community members over the past few weeks.

>  
> The notice of intent to prepare a Supplemental Draft Environmental Impact Statement was released on July 22 and gave a 20 day period for public comment. [REDACTED]

. Ways to submit public comment:

>  
> 1. Send a comment to Ms. Nani Jacobson, Project Manager, Southwest Light Rail Transit Project Office, 6465 Wayzata Boulevard, Suite 500, St. Louis Park, MN 55426, Telephone: [612-373-3808](tel:612-373-3808);  
Email: [nani.jacobson@metrotransit.org](mailto:nani.jacobson@metrotransit.org).

>  
> 2. Comment are also being accepted online. Post comments via the link below:



>  
> <https://www.federalregister.gov/articles/2013/07/22/2013-17506/intent-to-prepare-a-supplemental-draft-environmental-impact-statement-for-the-southwest-light-rail>  
>  
>

Douglas J Peterson  
3315 Saint Paul Ave.  
Minneapolis, MN 55416

--

CONFIDENTIALITY NOTICE: This electronic mail is confidential. It may contain or transmit a legally privileged communication. It was not intended to be sent to, or received by, any unauthorized person. If you have received this email in error, please delete it from your system without copying it. Please also notify me by reply email or a telephone call, so that I may correct my address records. Thank you.

ELECTRONIC TRANSACTIONS DISCLAIMER: If this communication concerns negotiation of a contract or agreement, this communication does not indicate agreement to conduct transactions by electronic means under Minn. Stat. § 325L.05 or other applicable electronic transactions law.

TAX NOTICE: To comply with certain U. S. Treasury regulations, we inform you that any federal tax advice contained in the preceding message, or in attachments to the message, is not a covered opinion as described in Treasury Department Circular 230 and therefore cannot be relied upon to avoid any tax penalties or to support the promotion or marketing of any federal tax transaction.

**DOUGLAS J. PETERSON**  
**3315 SAINT PAUL AVENUE**  
**MINNEAPOLIS, MN 55416-4317**

August 7, 2013

The Honorable Mark Dayton  
Governor of Minnesota  
Office of the Governor  
130 State Capitol  
75 Rev. Dr. Martin Luther King Jr. Blvd.  
St. Paul, MN 55155

Re: Southwest LRT - Southwest Corridor Light Rail Transit Extension Project Must Include  
Deep Tunnel in Kenilworth Corridor, Be Rerouted or Not Built

Dear Governor Dayton:

A deep tunnel in the Kenilworth Corridor for the Southwest LRT is absolutely necessary to avoid lawsuits by parties affected by the proposed light rail line and the probable loss of federal funding incident to the commencement of any such lawsuit. My wife, Linda, and I own and reside in a townhome in the Cedar Lake Shores town homes. We both bike extensively – 1,000 to 2,000 miles a year. We generally bike on the Kenilworth Trail and the Minneapolis and Hennepin Parks bike trails at least two or three times a week. We also use the Kenilworth Trail three or four times a week to walk to the coffee shops, stores and restaurants located in Calhoun Village and Calhoun Commons.

The City of Minneapolis will not consent to co-locating freight train and light rail train (LRT) traffic on the Kenilworth Corridor. Doing so would force 30 to 60 families to lose their homes, take away more than one and one half acres of parkland and, while destroying the public's enjoyment of much additional parkland, eliminate the Kenilworth pedestrian/bike trail. The City of St. Louis Park will not consent to relocating the freight rail traffic to run through that city along a new right of way that includes putting the railroad on a berm that runs as high as 20 feet higher than the surrounding property. Minneapolis reluctantly agreed, for purposes of the Southwest LRT Draft Environmental Impact Statement, to have the light rail run along the Kenilworth Corridor only on the condition that the freight traffic would be re-located through St. Louis Park along presently existing right of way.

The freight trains now stop traffic on Cedar Lake Parkway at least one half hour each day. The LRT will send at least 220 trains a day through the corridor. According to light rail experts, the amount of time it takes a light rail train to clear a street crossing,

depending on the length of the train, is between 32 and 43 seconds including the time it takes for the signal arms to operate. This means that each day Cedar Lake Parkway will be closed for a minimum of one hour and 45 minutes for light rail and at least a half hour for freight trains. In other words, Cedar Lake Parkway will be closed to rail traffic for at least two hours and fifteen minutes each day in the event of co-location. The Grand Rounds Scenic Byway, of which Cedar Lake Parkway and the Cedar Lake Regional Bike Trail are a part, could lose its national designation of "Grand Rounds Scenic Byway" because of the change in character of the parkway and bike trail. Loss of such designation could result in loss of federal funding to help with future improvements to the Byway.

Twin Cities and Western Railroad, the railroad company that currently leases the tracks and right of way from the Hennepin County Regional Railway Authority, has declared that it would not relocate its rail traffic to St. Louis Park onto the currently existing right of way. It demands that the right of way be reconfigured to run on a 20-foot high berm through the area in which the local high school football stadium is located. The Metropolitan Council is in charge of working with the various cities, governmental agencies, citizens groups, public and private companies and the county, state and federal governments to facilitate, if possible, the construction and operation of a Southwest Corridor LRT. Because of the impasse created by the railroad, the Met Council has suggested that either a deep tunnel or a shallow covered tunnel could be constructed in the Kenilworth Corridor. A deep tunnel is the only practical solution if the LRT is run through the Kenilworth Corridor.

A shallow tunnel would, at best, require at least one family to lose their home in the neighborhood and would destroy many acres of parkland. Both a shallow tunnel and co-location would create tremendous pedestrian and vehicle safety issues as well as nearly constant noise from LRT bells ringing as the trains approach the West Lake Street station at grade in a heavily residential area. The failure of the Met Council to agree to run the LRT down the Midtown Greenway Corridor, a decision that continues to make less and less sense, has resulted in the City of Minneapolis to plan a trolley service from a point east on that corridor, terminating at the West Lake Street station, to serve the transportation needs of the residents of South Minneapolis that the Met Council refuses to serve. The individuals transferring from the trolleys to light rail would create additional safety problems. A shallow tunnel would also, according to the Met Council, require three years of construction, leaving an ugly scar through Minneapolis parkland.

A deep tunnel, with the freight trains continuing to run through the Kenilworth Corridor (with an upgrade in the rail bed to eliminate the horribly squealing train wheels), while not an ideal solution, would satisfy nearly all of the concerns of the Minneapolis and St. Louis Park residents and of the residents in the greater metropolitan region who use the Kenilworth pedestrian/bike path nearly one million times each year. The Met Council suggests that a deep tunnel would add \$420 million dollars to the originally estimated \$1.25 billion dollar cost of the entire LRT project. If LRT is constructed in the Kenilworth Corridor and the freight trains remain in the corridor, it is money that must be spent. Otherwise, the project must be rerouted, modified at the southwest end or scrapped completely.

The Star Tribune newspaper, in an editorial on August 4, 2013, stated in part:

The Met Council needs to get it right. Given the high stakes, it should not limit its consideration set to the [eight options](#) that have been developed to address the dispute. Instead, the metro planning agency should consider rethinking the route altogether.

....

Rising costs may make an alternative route more cost-efficient, especially considering the increasing population density in Uptown and other Minneapolis neighborhoods that could be an alternative to the Kenilworth corridor. This is especially true because under some of the scenarios, the planned 21st Street station in Minneapolis would be eliminated. And the FTA's cost-effectiveness index has changed under the Obama administration, so what was once considered a less-efficient option may now be looked at more favorably by federal funders....

A "Counterpoint" article in the Star Tribune newspaper by Mark Wegner, president of Twin Cities & Western Railroad ("Railroad is neutral in LRT dispute," August 3) confirms the statement in the Draft Environmental Impact Statement (DEIS) that federal regulators consider that the issue of freight-rail location is a separate issue that needs to be resolved by local planners (Metropolitan Council, cities of Minneapolis and St. Louis Park, etc.) before seeking federal funds for LRT. Costs for the resolution of the freight-rail relocation/co-location issue should not be included as a cost for the LRT construction project, but rather as a cost to resolve the freight-rail relocation/co-location issue. Cost of the deep tunnel through the Kenilworth Corridor that resolves the freight issue may be included in the funding for resolving both the LRT rail corridor site and the site for freight-rail location issues, but must not be considered a roadblock to a common sense, responsible plan for construction of LRT through the Kenilworth Corridor.

The Met Council has yet to release its estimates of what must be enormous costs for the huge LRT bridges and two LRT tunnels in Eden Prairie and Minnetonka. Nor has it released the costs for the three LRT stations and tracks that are planned to extend the LRT southwest of the Golden Triangle station in Eden Prairie. If money is short for a deep tunnel in the Kenilworth Corridor, those three stations, and possibly more, should be eliminated and built at a later date.

It makes absolutely no sense to take away homes and destroy a major part of the nationally acclaimed Minneapolis park and trail system to accommodate a poorly conceived and designed LRT project. If there is not enough money to build it responsibly and correctly from Target Field to the last proposed station in Eden Prairie, the LRT, including a deep tunnel in the Kenilworth Corridor, should be built with the money available only to the proposed Hopkins or possibly the proposed Golden Triangle station in Eden Prairie. Park and ride bus accommodations could be provided for the potential LRT users farther to the southwest until additional money is found to extend the service. Alternatively, the LRT could run down the Midtown Greenway Corridor from the West Lake Street Bridge. This should not be a problem with the Met Council as it has not to date expressed any reservations about changes desired by the railroad, St. Louis Park or Eden Prairie from the "locally preferred" LRT route and design originally agreed to in the Southwest LRT Draft Environmental Impact Statement.

The numerous meetings that I have attended in both Minneapolis and St. Louis Park have made it evident that there is a complete lack of trust by virtually everyone who has attended those meetings of nearly all of the individuals pushing for this light rail project. We are all aware that Met Council led everyone to believe that a tunnel would be constructed through the University of Minnesota campus. At the last minute, the Met Council determined that its "plans" for a tunnel were too expensive. The project was at that time too far along to stop.

If both freight-rail and LRT rails are located within the Kenilworth Corridor, a deep tunnel must be constructed through the Corridor for LRT. If the Met Council does in fact

agree to the construction of a deep tunnel in the Kenilworth Corridor, then all relevant planning and construction documents must include binding provisions to the effect that construction of the 1.4 mile deep tunnel and renovation and/or demolition and reconstruction of the West Lake Street Bridge shall be adequately budgeted and planned for and construction of the tunnel together with work and construction relating to the present or reconstructed West Lake Street Bridge must be substantially completed prior to the time construction begins on any other bridge in the Southwest Light Rail Transit Extension Project. The documentation must also provide that in the event of a violation of such provision, any interested party, including any resident of the state of Minnesota, shall have standing in federal and Minnesota courts of competent jurisdiction to commence and prosecute, without the requirement of posting a bond, an action to restrain construction of any of such other bridges. The Met Council will be watched closely to make sure it completes this project correctly, or perhaps not at all.

Yours truly,

Douglas J. Peterson

CC: arthur higinbotham <[ahiginbotham@msn.com](mailto:ahiginbotham@msn.com)>  
rep.frank.hornstein <[rep.frank.hornstein@house.mn](mailto:rep.frank.hornstein@house.mn)>; Senator Scott Dibble  
<[sen.scott.dibble@senate.mn](mailto:sen.scott.dibble@senate.mn)>; anita <[anita@robtabb.com](mailto:anita@robtabb.com)>; lisa Goodman  
<[lisa.goodman@ci.minneapolis.mn.us](mailto:lisa.goodman@ci.minneapolis.mn.us)>; susan.haigh <[susan.haigh@metc.state.mn.us](mailto:susan.haigh@metc.state.mn.us)>;  
Gail.Dorfman <[gail.dorfman@co.hennepin.mn.us](mailto:gail.dorfman@co.hennepin.mn.us)>; MNRealtors <[mnrealtors@aol.com](mailto:mnrealtors@aol.com)>;  
jeanette Colby <[jmcolby@earthlink.net](mailto:jmcolby@earthlink.net)>; jennifer.munt <[jennifer.munt@metc.state.mn.us](mailto:jennifer.munt@metc.state.mn.us)>;  
EldonJohn <[eldonjohn@hotmail.com](mailto:eldonjohn@hotmail.com)>; meg forney <[megf@visi.com](mailto:megf@visi.com)>; peter.rogoff fta  
<[peter.rogoff@dot.gov](mailto:peter.rogoff@dot.gov)>; cwreg w <[cwreg@msn.com](mailto:cwreg@msn.com)>; Stuart A Chazin  
<[stuart@chazingroup.com](mailto:stuart@chazingroup.com)>; Tom Johnson <[tom.johnson@co.hennepin.mn.us](mailto:tom.johnson@co.hennepin.mn.us)>;  
peter.wagenius <[peter.wagenius@ci.minneapolis.mn.us](mailto:peter.wagenius@ci.minneapolis.mn.us)>; julieannsabo  
<[julieannsabo@yahoo.com](mailto:julieannsabo@yahoo.com)>; Fitzmaurice, Shelley <[sfitzmau@tcfbank.com](mailto:sfitzmau@tcfbank.com)>;  
mikeerlandson <[mikeerlandson@gmail.com](mailto:mikeerlandson@gmail.com)>; Nancy Green <[nancygreen1@comcast.net](mailto:nancygreen1@comcast.net)>;  
David Lilly <[dlilly@danburygroup.com](mailto:dlilly@danburygroup.com)>;  
mnrealtors <[mnrealtors@aol.com](mailto:mnrealtors@aol.com)>; docsafari <[docsafari@hotmail.com](mailto:docsafari@hotmail.com)>;  
kenilworthpreservationgroup <[kenilworthpreservationgroup@gmail.com](mailto:kenilworthpreservationgroup@gmail.com)>; bobbemel  
<[bobbemel@mnmicro.net](mailto:bobbemel@mnmicro.net)>; michaelwilsonmpls <[michaelwilsonmpls@gmail.com](mailto:michaelwilsonmpls@gmail.com)>;

**From:** [Aimee Saloka](#)  
**To:** [Jacobson, Nani](#)  
**Subject:** Opposed to Freight trains by SLP school  
**Date:** Wednesday, August 07, 2013 9:47:44 PM  
**Attachments:** [ATT00001.gif](#)  
[SitP SDEIS - Scoping comment .docx](#)

---

Dear Ms. Jacobsen,

I do not support the idea of the freight trains running through SLP by the elementary school. Attached is a letter in regards to this point. I'd be happy to show further support to reconsider or change these plans.

Thank you,

**Aimee Saloka**  
Project Manager

---

**Phone:** 612-217-5074  
**E-mail:** [asaloka@us.ibm.com](mailto:asaloka@us.ibm.com)



901 Marquette Avenue  
Minneapolis, MN 55402  
United States

August 06, 2013

Ms. Nani Jacobson, Project Manager  
Southwest Light Rail Transit Project Office  
6465 Wayzata Boulevard, Suite 500, St. Louis Park, MN 55426

Dear Ms. Jacobsen,

The below constitutes a comment in response to the announcement of the Supplemental Draft Environmental Impact Statement for the Southwest Light Rail Transit Project published in the Minnesota EQB dated July 22, 2013. Note that this comment is post-marked before the published comment deadline of August 12, 2013.

This comment is officially from the neighborhood advocacy group, Safety in the Park, which while led by a steering committee of 7 residents represents perhaps thousands of residents in St. Louis Park MN as evidenced by over 1500 signed petitions supporting our stated cause, an email/blog recipient list of over 1000 individuals, and a Facebook page with over 325 participants. Safety in the Park is not-for-profit, volunteer neighborhood advocacy group based in St. Louis Park, MN. Safety in the Park supports the SWLRT project as a whole, but rejects the SWLRT proposal to relocate freight rail traffic onto newly built tracks and tracks that were never built for such a purpose. As a group, we have worked on this issue for over three years holding numerous public meetings, meetings with elected officials, and other stakeholders. We know our understanding of the issues and impacts of this project are strong.

Our comments are summarized as follows. The relocation plans named by the SPO (SWLRT Project office) as Brunswick West and Brunswick Central affect St. Louis Park in numerous ways. Before commenting on these effects, Safety in the Park challenges the very nature of the Met Council's decision-making process

- **Lack of Public Process:** For approximately three years, Hennepin County and MNDOT took responsibility for the re-routing of freight trains. During that time, there were numerous opportunities for public process including consultancy led public input meetings, City of St. Louis Park sponsored listening sessions, Hennepin County initiated hearings, a MNDOT EAW (eventually vacated) and a full DEIS. All of the above process featured a re-route option that planned for freight traffic to travel on the original MN&S track in St. Louis Park.
- As of approximately two months ago a completely new plan was established, essentially discarding all of the public process that took place for the last three years. (A delay that could have been avoided had Hennepin County reached out to the railroad that would be re-routed earlier.) Since these new plans were introduced no meaningful public process has occurred. On Jun13 and July 17 and 18 the Met Council held public meetings. The format for public input was inappropriate to the issue presented. At each of these meetings residents were given file cards

and sticky notes on which to write comments. Sticky notes and comment cards do not lend themselves to substantive comments. Comments received in this format cannot be anything but superficial and therefore easily dismissed. Also, without a longer period for comment many in the community could be left out just because they were unavailable at the times designated for comment.

Conspicuous by absence are any public hearings and most importantly any detailed environmental impact study on these new plans. This is particularly disturbing since the decision on these routes is to be made by the Met Council within 30 days of this comment period on the **scope** of this SDEIS and before the SDEIS is complete. It is beyond our understanding how state appointees on the Met Council can make such a decision with no environmental impact study and no hearings from the public. In addition, we do not understand how the FTA, State of Minnesota, and Hennepin County can allow such an impact to be even considered under these circumstances.

- **Inappropriate consideration of options:** In just the last three weeks, the SPO has officially made comments that of all eight options for freight rail relocation/co-location, only three remain as viable—two co-location options and one relocation. The SPO has commented that the following criteria were applied to their culling of the other five alternatives—the taking of property, cost, above ground structures, and community opposition. The remaining reroute option, Brunswick Central ranks higher on this scale of negative impacts than co-location options that have already been removed from consideration. This arbitrary and capricious choice by the SPO does not align with their self-declared criteria.
- **St. Louis Park City Council/State Legislator/St. Louis Park School Board opposition to re-route options:** The St. Louis Park City Council, School Board and Minnesota State Legislators have all sent letters to the Met Council rejecting the Brunswick Reroute options. The continuation of the SPO to consider these re-route options directly challenges a partner municipality and those who represent it.

Therefore, the scope and timeline of this SDEIS should be broad enough and long enough to completely halt the decision-making process underway by the Met Council on the collocate/relocate decision. Anything other than completion of a similar process to the one completed for the original DEIS before these decisions are made is illogical and violates the public's input on this very public project.

Furthermore, the following is a list of impacts that will be felt by the City of St. Louis Park should a relocation decision be made. Regardless of the above concerns on public process, the impacts of a St. Louis Park re-route are disconcerting at least, disastrous at most.

- **Safety:** The number one concern of this community is safety. To our point above, no derailment studies have been enacted by the SPO. However, it is common sense that placing a 20 - foot



high railroad berm and bridge above an elementary school playground is not a safe choice. There is empirical evidence showing disaster can strike when a train tumbles over an embankment onto structures and people below. This reason alone is enough to remove the re-route option from consideration.

- **Livability:** An elevated structure of the sort planned by the SPO in combination with grade changes and nature of this freight being hauled will undoubtedly create noise and visual pollution that will make educating and living near the structure near impossible. Again, no studies have been completed on this topic because the SPO has decided not to conduct them before the Met Council makes its decision.
- **Community Cohesion:** This planned elevated structure will create a very permanent physical division in our community.
- **Mitigation:** No mitigation plans have been shared with the public. No funding source has been identified.

For these reasons and more, the SDEIS scope should be changed to include the following:

- A detailed analysis of the relocation options that includes: noise and vibration studies, derailments studies, full environmental impacts to all buildings and people within the same geographic scope as the actual LRT path that was studied in the original DEIS.
- A robust public process that allows for public hearings and input after the SDEIS is published **BEFORE** any decision is made or even considered by the Met Council. In particular, the specific concerns of the City of St. Louis Park need addressing.
- A fair and equal comparison of co-location and relocation must be possible. Therefore, the four co-location options with property acquisitions and above grade structures must be returned to consideration and evaluated as part of the SDEIS.

**From:** [Joel Schou](#)  
**To:** [swlrt](#)  
**Subject:** Some thoughts on the freight rail issue for the Green Line Extension  
**Date:** Wednesday, August 07, 2013 12:49:11 PM

---

Good afternoon,

My name is Joel Schou. I'm a resident of the Field neighborhood in South Minneapolis, so while the Green Line Extension currently under discussion does not immediately affect or benefit me, I have a general interest in Metro-area transportation policy and execution. That, and I'm a huge train nut who finds LRT fascinating and interesting. I've been following the developments in planning the new line from afar and just have a few small thoughts to share regarding the Kenilworth corridor issues.

First of all, I am not going to harp on the 3A vs. 3C choice. I trust that the original plan made a sufficient case for why the particular alignment was chosen. That said, I think freight relocation is the proper choice, but not in the way that the Met Council is currently studying. I think neither of the considered alignments through St. Louis Park are the right choice; there's too much property taking, street disruption, and splitting of the community due to the huge embankments necessary to accommodate safe curves and grades.

So what do I suggest? I came across a document on the SLP web site discussing the freight reroute ([http://www.stlouispark.org/pdf/freight\\_rail\\_realignment\\_study.pdf](http://www.stlouispark.org/pdf/freight_rail_realignment_study.pdf)), with which you are certainly familiar. I realize that the study is >4 years old and the cost estimates have certainly changed, but the former ROW that runs along/near TH 169 (page 16 and Exhibit 8) seems to me to make a tremendous amount of sense. I realize that the cost estimate of \$120MM in 2008 put it far behind the routes currently being studied. However, we've now learned that the MNS sub is far more expensive than the original \$48MM estimate. Given that the current estimates for that alignment are anywhere from \$190MM to \$210MM, the TH 169 route strikes me as awfully competitive even if were to come in as much as 50% higher than its 2008 numbers.

I realize that it has some complications with property taking, road bridges, a freeway, and the new office development at Excelsior and TH 169, but these all seem solvable with less friction than we're experiencing currently. Obviously, there would be a whole new group of people (and a new city) to engage in the discussion, as there is currently nothing but a bike trail running through this corridor. However, the friendlier curves and grades of this route would allow trains to glide silently (relatively, of course) through the neighborhood. The ROW even appears to have enough room to preserve the bike trail next to the freight line, but it's tough for me to estimate that using just satellite imagery.

Thank you for taking the time to read my thoughts on the project. I think that high-quality transit lines are vital to the entire Metro region and I don't want to see this particular line discarded. For that reason, I think that reconsidering the TH 169 freight realignment has the potential to be a great solution. I hope those of you involved in

the decision-making process are willing and able to take another look at the option.  
This is a solvable problem. I'll be cheering for you.

Sincerely,  
Joel Schou

From: [Brian Z.](#)  
To: [Jacobson, Nani](#)  
Subject: Response to Supplemental Draft Environmental Impact Statement for the Southwest Light Rail Transit Project published in the Minnesota EQB dated July 22, 2013  
Date: Wednesday, August 07, 2013 8:32:58 PM

---

August 7th, 2013

Ms. Nani Jacobson, Project Manager  
Southwest Light Rail Transit Project Office  
6465 Wayzata Boulevard, Suite 500, St. Louis Park, MN 55426

Dear Ms. Jacobsen,

The below constitutes a comment in response to the announcement of the Supplemental Draft Environmental Impact Statement for the Southwest Light Rail Transit Project published in the Minnesota EQB dated July 22, 2013. Note that this comment is post-marked before the published comment deadline of August 12, 2013.

My family owns and lives in the home closest to the MN&S Railroad tracks. The distance of the tracks to our home is 34 feet. In addition, the tracks are on a berm which is approximately 21 feet high. This puts me in the unfortunate position of having the most intimate knowledge of the physical danger, constant disturbance and extreme ugliness and unlivability which would be forced on hundreds of families in the city I love and would quite literally divide the city in half. Perhaps even more offensive, indefensible and disgusting is the Brunswick Central freight re-route plan's blatant disregard for the physical safety and educational needs of pre-schoolers and primary school students at our Spanish Immersion School.

As I have been deeply involved in the fight to stop the re-route for over 4 years, I can vouch for the truth and thoroughness of the SDEIS reply written by the neighborhood advocacy group Safety in the Park. I include their response below for your consideration.

\*\*\*\*\*

This comment is officially from the neighborhood advocacy group, Safety in the Park, which while led by a steering committee of 7 residents represents perhaps thousands of residents in St. Louis Park MN as evidenced by over 1500 signed petitions supporting our stated cause, an email/blog recipient list of over 1000 individuals, and a Facebook page with over 325 participants. Safety in the Park is not-for-profit, volunteer neighborhood advocacy group based in St. Louis Park, MN. Safety in the Park supports the SWLRT project as a whole, but rejects the SWLRT proposal to relocate freight rail traffic onto newly built tracks and tracks that were never built for such a purpose. As a group, we have worked on this issue for over three years holding numerous public meetings, meetings with elected officials, and other stakeholders. We know our understanding of the issues and impacts of this project are strong.

Our comments are summarized as follows. The relocation plans named by the SPO (SWLRT Project office) as Brunswick West and Brunswick Central affect St. Louis Park in numerous ways. Before commenting on these effects, Safety in the Park challenges the very nature of the Met Council's decision-making process

- **Lack of Public Process:** For approximately three years, Hennepin County and MNDOT took responsibility for the re-routing of freight trains. During that time, there were numerous opportunities for public process including consultancy led public input meetings, City of St. Louis Park sponsored listening sessions, Hennepin County initiated hearings, a MNDOT EAW (eventually vacated) and a full DEIS. All of the above process featured a re-route option that planned for freight traffic to travel on the original MN&S track in St. Louis Park.

- **As of approximately two months ago a completely new plan was established, essentially discarding all of the public process that took place for the last three years.** (A delay that could have been avoided had Hennepin County reached out to the railroad that would be re-routed earlier.) Since these new plans were introduced no meaningful public process has occurred. On Jun13 and July 17 and 18 the Met Council held public meetings. The format for public input was inappropriate to the issue presented. At each of these meetings residents were given file cards and sticky notes on which to write comments. Sticky notes and comment cards do not lend themselves to substantive comments. Comments received in this format cannot be anything but superficial and therefore easily dismissed. Also, without a longer period for comment many in the community could be left out just because they were unavailable at the times designated for comment.

**Conspicuous by absence are any public hearings and most importantly any detailed environmental impact study on these new plans.** This is particularly disturbing since the decision on these routes is to be made by the Met Council within 30 days of this comment period on the scope of this SDEIS and before the SDEIS is complete. It is beyond our understanding how state appointees on the Met Council can make such a decision with no environmental impact study and no hearings from the public. In addition, we do not understand how the FTA, State of Minnesota, and Hennepin County can allow such an impact to be even considered under these circumstances.

- **Inappropriate consideration of options:** In just the last three weeks, the SPO has officially made comments that of all eight options for freight rail relocation/co-location, only three remain as viable-two co-location options and one relocation. The SPO has commented that the following criteria were applied to their culling of the other five alternatives--the taking of property, cost, above ground structures, and community opposition. The remaining reroute option, Brunswick Central ranks higher on this scale of negative impacts than co-location options that have already been removed from consideration. This arbitrary and capricious choice by the SPO does not align with their self-declared criteria.

- **St. Louis Park City Council/State Legislator/St. Louis Park School Board opposition to re-route options:** The St. Louis Park City Council, School Board and Minnesota State Legislators have all sent letters to the Met Council rejecting the Brunswick Reroute options. The continuation of the SPO to consider these re-route options directly challenges a partner municipality and those who represent it.

Therefore, the scope and timeline of this SDEIS should be broad enough and long enough to completely halt the decision-making process underway by the Met Council on the collocate/relocate decision. Anything other than completion of a similar process to the one completed for the original DEIS before these decisions are made is illogical and violates the public's input on this very public project.

Furthermore, the following is a list of impacts that will be felt by the City of St. Louis Park should a relocation decision be made. Regardless of the above concerns on public process, the impacts of a St. Louis Park re-route are disconcerting at least, disastrous at most.

- **Safety:** The number one concern of this community is safety. To our point above, no derailment studies have been enacted by the SPO. However, it is common sense that placing a 20 - foot high railroad berm and bridge above an elementary school playground is not a safe choice. There is empirical evidence showing disaster can strike when a train tumbles over an embankment onto structures and people below. This reason alone is enough to remove the re-route option from consideration.

- **Livability:** An elevated structure of the sort planned by the SPO in combination with grade changes and nature of this freight being hauled will undoubtedly create noise and visual pollution that will make educating and living near the structure near impossible. Again, no studies have been completed on this topic because the SPO has decided not to conduct them before the Met Council makes its decision.

- **Community Cohesion:** This planned elevated structure will create a very permanent physical division in our community.

- **Mitigation:** No mitigation plans have been shared with the public. No funding source has been identified.

For these reasons and more, the SDEIS scope should be changed to include the following:

- **A detailed analysis of the relocation options that includes:** noise and vibration studies, derailments studies, full environmental impacts to all buildings and people within the same geographic scope as the actual LRT path that was studied in the original DEIS.

- **A robust public process that allows for public hearings and input after the SDEIS is published BEFORE any decision is made or even considered by the Met Council.** In particular, the specific concerns of the City of St. Louis Park need addressing.

- **A fair and equal comparison of co-location and relocation must be possible.** Therefore, the four co-location options with property acquisitions and above grade structures must be returned to consideration and evaluated as part of the SDEIS.

Thank you for your careful consideration of this most important issue of physical safety, community and civil engineering.

Sincerely,

Brian, Wing and Zoey Zachek  
6108 Minnetonka Blvd.  
Saint Louis Park, MN 55438  
952-922-9165

Ms Nini Jacobson  
Project Manager SWLRT  
Suite 500  
6465 Wayzata Blvd  
St Louis Park, MN 55426



Robert M. Brockway  
3145 Dean Court #904  
Minneapolis, MN 55416

rmbrockway@comcast.net  
August 8, 2013

**Reference:** Supplemental DEIS Freight rail options for the LRT on the Kenilworth.

**There are no good freight rail options unless the LRT is buried under ground.**

**If the LRT were buried:**

- The present freight rail could stay where it is for now.
- There would be no need to try to relocate the freight to St Louis Park.

**If the LRT were at grade:**

- There is not enough space for the freight, the LRT, and the bike and walking trails unless many homes are removed.
- There would be an effort to move the freight to St Louis Park, over their strong objections.
- The environment of the Kenilworth Trail would be completely destroyed.
  - Two hundred and fifty trains a day.
  - The ugly posts and suspended wiring.
  - The complete separation of the communities on either side of the LRT.
  - The vibration, wheel screech (it's on a curve), station warning bells.
  - The environment at the Cedar Lake South Beach would be destroyed.
  - The environment of the beautiful channel between Cedar Lake and Lake of the Isles would be destroyed. If a tunnel were the ditch and cover type and go over the channel rather than under the channel, the results would be equally as bad.
- Car traffic at Cedar Lake Pkwy would be greatly reduced, forcing more cars to Lake Street.
- Condos and town homes on the south east side would be within 35 feet of the right of way, well less than the FTA minimum standard of 50 feet. The patios of some condos in the high rise building are at the very edge of the right of way, no space at all.

**From:** [ggday@aol.com](mailto:ggday@aol.com)  
**To:** [Jacobson, Nani](#)  
**Subject:** SWLRT - supplemental DEIS comment  
**Date:** Thursday, August 08, 2013 11:08:12 AM

---

Dear Ms. Jacobson:

With the newly announced fact that there will be a supplement added to the previous DEIS I would like to see these issues covered:

- \* What would the effect of the shallow or deep tunnel be on water quality of the channel and lakes ?
- \* How many trees would be destroyed in putting a shallow or deep tunnel in the Kenilworth Greenway?
- \* How would wildlife be affected?
- \* What will the noise level be--not simply at grade-- but at greater heights (affecting the condo's on the Greenway)?
- \* What will the vibration level be on the surrounding town homes, high-rise condo's, and experienced by bikers and walkers?
- \* What would the effect be on air quality during and after construction?
- \* If freight rail did not move: ditto all above questions as it relates to co-location.

If any of these were not covered in the original DEIS (before a shallow and deep tunnel and co-location were being considered) they should be added now.

Thank you. I hope citizen input is valued and used to make a more thorough investigation of the environmental impact of this project.

Georgianna Day Ludcke



August 8, 2013

Ms. Nani Jacobson, Project Manager  
Southwest Light Rail Transit Project Office  
6465 Wayzata Boulevard, Suite 500  
St. Louis Park, MN 55426

Dear Ms. Jacobsen,

I wish to comment in response to the announcement of the Supplemental Draft Environmental Impact Statement for the Southwest Light Rail Transit Project published in the Minnesota EQB dated July 22, 2013. I support the opinion that the scope and timeline of this SDEIS should be broad enough and long enough to completely halt the decision-making process underway by the Met Council on the collocate/relocate decision.

I am 100% opposed to the SWLRT proposal to relocate freight rail traffic to St. Louis Park onto newly built tracks and tracks that were never built for such a purpose. The St. Louis Park City Council, School Board and Minnesota State Legislators share my opposition. The relocation plans named by the SPO (SWLRT Project office) as Brunswick West and Brunswick Central affect St. Louis Park in extremely negative, unsafe and unjust ways. For example:

- **Safety:** I understand that no derailment studies have been enacted by the SPO. Placing freight trains on tracks on a 20 foot high berm and close to schools/playgrounds is by any logical way of thinking less safe than having the trains at grade or in tunnels, as in some of the co-location options. A criterion for the co-location options is having trains at grade which makes sense – yet that same standard is not being applied to the re-location options. This is UNJUST and reason enough to remove the re-route option from consideration.
- **Livability:** I live within 500 feet of where these elevated freight trains would be traveling in the re-location plans. I fear that the noise and visual pollution will make living in my home of over 20 years nearly impossible. I understand that no studies have been completed on this topic because the SPO has decided not to conduct them at this time which seems unfair to St. Louis Park residents.
- **Community:** Re-routed freight traffic would divide my award-winning community in two. Doing this would be unjust and unfair to my community.
- **Mitigation:** No mitigation plans have been shared with the public. No funding source has been identified.

Therefore, the SDEIS scope should be changed to include the following:

- A detailed analysis of the relocation options that includes: noise and vibration studies, derailments studies, full environmental impacts to all buildings and people within the same geographic scope as the actual LRT path that was studied in the original DEIS.



- A robust public process that allows for public hearings and input after the SDEIS is published **BEFORE** any decision is made or even considered by the Met Council. In particular, the specific concerns of the City of St. Louis Park need addressing.
- A fair and equal comparison of co-location and relocation must be possible. Therefore, the four co-location options with property acquisitions and above grade structures must be returned to consideration and evaluated as part of the SDEIS.

In addition, I have serious concerns about the integrity of the Met Council's decision-making process to date. On June 13 and July 17 and 18 the Met Council held public meetings. I was at the July 18 hearing. This public process was inadequate for sufficient public input and comment on these re-route plans that were established about 2 months ago. There have been no detailed environmental impact studies on these new plans. **How is the Met Council supposed make a wise and informed decision without this fair public process and environmental information? This is irresponsible.** As I alluded to above, the SPO does not seem to be applying its criteria fairly to all plans (co-location and re-location) – that is: the taking of property, cost, above ground structures, and community opposition. The Brunswick Central option ranks higher on this scale of negative impacts than co-location options that have already been removed from consideration. The SPO should be held to a fair process – across the board - using its own self-declared criteria.

Thank you in advance for taking my concerns into consideration.



Mary Weddle  
2667 Alabama Ave South  
St. Louis Park, MN 55416

**From:** [weddleml@aol.com](mailto:weddleml@aol.com)  
**To:** [Jacobson, Nani](#)  
**Subject:** scope of SDEIS comment  
**Date:** Thursday, August 08, 2013 11:12:02 AM  
**Attachments:** [8.8.13.to.N.Jacobson.docx](#)

---

August 8, 2013

Dear Ms. Jacobson,

Please see the attached for my comments on the scope of the SDEIS for SWLRT published in the MN EQB on July 22, 2013. I have serious concerns to share with you. I am also sending you a hard copy of this letter.

Thank you in advance for your careful reading of my input.

Mary Weddle

2667 Alabama Ave So

St. Louis Park, MN 55416

August 8, 2013

Ms. Nani Jacobson, Project Manager  
Southwest Light Rail Transit Project Office  
6465 Wayzata Boulevard, Suite 500  
St. Louis Park, MN 55426

Dear Ms. Jacobsen,

I wish to comment in response to the announcement of the Supplemental Draft Environmental Impact Statement for the Southwest Light Rail Transit Project published in the Minnesota EQB dated July 22, 2013. I support the opinion that the scope and timeline of this SDEIS should be broad enough and long enough to completely halt the decision-making process underway by the Met Council on the collocate/relocate decision.

I am 100% opposed to the SWLRT proposal to relocate freight rail traffic to St. Louis Park onto newly built tracks and tracks that were never built for such a purpose. The St. Louis Park City Council, School Board and Minnesota State Legislators share my opposition. The relocation plans named by the SPO (SWLRT Project office) as Brunswick West and Brunswick Central affect St. Louis Park in extremely negative, unsafe and unjust ways. For example:

- Safety: I understand that no derailment studies have been enacted by the SPO. Placing freight trains on tracks on a 20 foot high berm and close to schools/playgrounds is by any logical way of thinking less safe than having the trains at grade or in tunnels, as in some of the co-location options. A criterion for the co-location options is having trains at grade which makes sense – yet that same standard is not being applied to the re-location options. This is UNJUST and reason enough to remove the re-route option from consideration.
- Livability: I live within 500 feet of where these elevated freight trains would be traveling in the re-location plans. I fear that the noise and visual pollution will make living in my home of over 20 years nearly impossible. I understand that no studies have been completed on this topic because the SPO has decided not to conduct them at this time which seems unfair to St. Louis Park residents.
- Community: Re-routed freight traffic would divide my award-winning community in two. Doing this would be unjust and unfair to my community.
- Mitigation: No mitigation plans have been shared with the public. No funding source has been identified.

Therefore, the SDEIS scope should be changed to include the following:

- A detailed analysis of the relocation options that includes: noise and vibration studies, derailments studies, full environmental impacts to all buildings and people within the same geographic scope as the actual LRT path that was studied in the original DEIS.

- A robust public process that allows for public hearings and input after the SDEIS is published **BEFORE** any decision is made or even considered by the Met Council. In particular, the specific concerns of the City of St. Louis Park need addressing.
- A fair and equal comparison of co-location and relocation must be possible. Therefore, the four co-location options with property acquisitions and above grade structures must be returned to consideration and evaluated as part of the SDEIS.

In addition, I have serious concerns about the integrity of the Met Council's decision-making process to date. On June 13 and July 17 and 18 the Met Council held public meetings. I was at the July 18 hearing. This public process was inadequate for sufficient public input and comment on these re-route plans that were established about 2 months ago. There have been no detailed environmental impact studies on these new plans. **How is the Met Council supposed make a wise and informed decision without this fair public process and environmental information? This is irresponsible.** As I alluded to above, the SPO does not seem to be applying its criteria fairly to all plans (co-location and re-location) – that is: the taking of property, cost, above ground structures, and community opposition. The Brunswick Central option ranks higher on this scale of negative impacts than co-location options that have already been removed from consideration. The SPO should be held to a fair process – across the board - using its own self-declared criteria.

Thank you in advance for taking my concerns into consideration.

Mary Weddle  
2667 Alabama Ave South  
St. Louis Park, MN 55416

**From:** [lewquin@comcast.net](mailto:lewquin@comcast.net)  
**To:** [Jacobson, Nani](#)  
**Cc:** [Stephen Quinlivan](#); [Lori Quinlivan](#)  
**Subject:** Supplemental Draft Environmental Impact Statement - Comments  
**Date:** Friday, August 09, 2013 6:59:38 AM

---

August 9, 2013

Ms. Nani Jacobson

Project Manager, Southwest Light Rail Transit Project Office

6465 Wayzata Boulevard, Suite 500

St. Louis Park, MN 55426

Via Email: [nani.jacobson@metrotransit.org](mailto:nani.jacobson@metrotransit.org).

Dear Ms. Jacobson:

We are homeowners at Calhoun Isles, a large condominium and townhouse association that will be adjacent to the proposed Southwest Light Rail Transit Extension (SWLRT) Project. The purpose of this letter is to submit comments under the National Environmental Policy Act and related state and federal laws on the scope of the Supplemental Draft Environmental Impact Statement.

We believe at grade co-location of freight traffic and light rail along the Kenilworth Corridor will have adverse impacts on the environment and the quality of life of near-by residents.

Some of the reasons include:

- Loss of homes by residents
- Impairment and elimination of parkland and trails along the Kenilworth trail
- Constant noise and vibration
- Traffic congestion at the crossing at Cedar Lake Parkway
- Safety concerns for vehicles and pedestrians

The only responsible solution to mitigate the adverse impacts of Light Rail is a deep tunnel. It is the only solution that accommodates the needs of SWLRT, the current freight train operator; Twin Cities and Western Railroad, and the interests of residents.

Other solutions do not properly mitigate the adverse impact of the project. A shallow tunnel still results in noise and vibration and will create pedestrian and vehicle safety issues.

Because of its close proximity, Light Rail will have a disproportionate impact on Calhoun Isles.

This solution is important for the residents of the Calhoun Isles community. Thank you for the opportunity to submit these comments.

Very truly yours,

Steve and Lori Quinlivan

3141 Dean Court #704

Minneapolis, MN 55416

Email: [lewquin@comcast.net](mailto:lewquin@comcast.net)



August 9, 2013  
Ms. Nani Jacobson  
Project Manager, Southwest Light Rail Transit Project Office  
6465 Wayzata Boulevard, Suite 500  
St. Louis Park, MN 55426

Dear Ms. Jacobson:

We feel the Metropolitan Council's Design Option for a deep bore tunnel through the Kenilworth Corridor with an underground West Lake Street Station best meets these three objectives for light rail:

- Preserving the Kenilworth Corridor as a "Natural Regional Resource"
- Insuring pedestrian, bicyclist, and vehicle safety
- Maintaining the area's quality of life

Respectfully yours,  
Dr. & Mrs. Nicholas Shuraleff  
3134 Dean Court  
Minneapolis, MN 55416  
Email: [shuraleff@gmail.com](mailto:shuraleff@gmail.com)

**From:** [Bob Bemel](#)  
**To:** [Jacobson, Nani](#)  
**Cc:** [jennifer.orourke@minneapolismn.gov](mailto:jennifer.orourke@minneapolismn.gov); [peter.wagenius@minneapolismn.gov](mailto:peter.wagenius@minneapolismn.gov); [seantordibble@gmail.com](mailto:seantordibble@gmail.com); [Ginis, Sophia](#); [betsy@betsyhodges.org](mailto:betsy@betsyhodges.org); [swcorridor@hennepin.mn.us](mailto:swcorridor@hennepin.mn.us)  
**Subject:** SW LRT comments  
**Date:** Saturday, August 10, 2013 12:27:50 PM

---

Dear Ms Jacobson. I have been following the SW LRT planning and recent public communication about this significant project with great interest. Living within feet of the current freight rail tracks and proposed light rail line gives me direct and heightened interest. As Gail Dorman stated in her article in the Tribune last week, there "are losers, and winners" in projects of this magnitude, with so many interested parties affected. I am one. Living so close to the tracks, within "feet", I fear I will be one of the losers. Can you, or do you think any of your planners, engineers, administrators, imagine, having your bedroom window, your deck, your living room window, within very close proximity, to over 200 trains passing each day. Every 3 minutes during rush hour twice per day, and, running for 20 hours per day. With my home being directly opposite the proposed W. Lake Street station I would be with easy earshot/hearing, of the bells required of the trains as they enter and exit the station. Auditory, and visual pollution is what I imagine, in what is now a pastoral setting in the city. I am directly also on the greenway, and enjoy walking the trails daily and watching the bikers and walkers pass by. I wondered how it could be possible that the distance now determined allowable between the center of the tracks, and dwellings could have been reduced from 24 to 15 feet? 15 FEET!!!! This is some kind of cruel joke. Just a month ago when I learned at the most recent meetings that my building was identified for a possible buy out, this, seemed reasonable! It appeared that my quality of life was being considered, even though I would prefer NOT to leave my home. I have loved living there. So, please, please, seriously consider, and choose, a deep bore tunnel. If this route continues to be the chosen route, to preserve a quality of life that has given the city of Minneapolis, and residents like me a quality of life that is nationally recognized, and, individually appreciated, by myself, and thousands of others! Thank you in advance for taking my opinions into consideration. My fear though, that you and the other decision makers are heading off a cliff. That will negatively impact the quality of life in Mpls. You should know that I am a believer in the needs for mass transit, to efficiently move people in cities. I have traveled the world extensively and have ridden such transit. From subways in New York, Mexico City, Tokyo and London. Implementing such transit in our area is your challenge. I know you must balance quality of "living", with transit needs. Please do this with wisdom!

If decisions are made that I do not consider "wise" I will oppose them. Including lawsuits, if that is my only resort. And I would work politically to defeat politicians who would make adverse decisions. With time, and money.

I feel that strongly about what is transpiring.

Bob Bemel  
3066 Lake Shore Drive  
Mpls 55416  
Lakes CitiHomes

\_\_\_\_\_ Information from ESET NOD32 Antivirus, version of virus signature database 7403 (20120820) \_\_\_\_\_

The message was checked by ESET NOD32 Antivirus.

<http://www.eset.com>

**From:** [Zack Ellsworth](#)  
**To:** [swlrt](#)  
**Subject:** Comment on the SW LRT  
**Date:** Sunday, August 11, 2013 11:10:21 PM

---

Hello,

I am currently an urban planning grad student at MSU Mankato and as such will soon be joining the ranks of professional planners as a planner or consultant. A recent article in Twin Cities Daily Planet has brought to my attention how off track, pardon the pun, the current alignment for the SW Light Rail favored by the Met Council is. I have detailed my criticisms here on my blog, which can be found here <http://daydreamemporium.wordpress.com/2013/08/11/the-daydream-alignment-what-the-southwest-corridor-light-rail-should-be/> , as well as provided my alternative alignment which I feel would be much more successful and better serve the people of the southwest Metro.

Thank you for taking the time to read what I have to say and consider the points I raise.

Sincerely,  
Zack Ellsworth



**From:** [horizongreen@comcast.net](mailto:horizongreen@comcast.net)  
**To:** [Jacobson, Nani](#)  
**Subject:** Comment Submitted fo SDEIS  
**Date:** Sunday, August 11, 2013 10:27:18 PM  
**Attachments:** [SDEID Submission Shannon Green.docx](#)

---

Dear Nani:

Please include my attached comment in the Supplemental DEIS for the SWLRT. I am submitting this comment prior to the August 12, 2013 deadline. Please let me know by return email if you need any additional information from me or if this needs to be in any different format.

Thank you.

Sincerely,

Shannon Green  
3429 St. Louis Avenue  
Minneapolis, MN 55416  
612-928-4871 Home  
[horizongreen@comcast.net](mailto:horizongreen@comcast.net)

Related to Technical Issue #21, the SWLRT Shallow Tunnel option is portrayed deceptively—it is co-location of freight rail and LRT lines, with significant safety and livability issues for Minneapolis. Two LRT lines and the freight line would be co-located north of the Lake Street Bridge, to the juncture of the Kenilworth and Midtown Corridors, at the tightest point in the entire SWLRT, with only feet to the closest residences. Bells would be sounded for safety each time a train enters or leaves the tunnels, every 3-1/2 minutes, with noise echoing into the surrounding Cedar-Isles-Dean neighborhood, increasing the number of homes impacted. There is no room at this narrowest of pinch points for adequate noise mitigation for the sound of the bells.

With this option, freight rail is proposed to continue in the Kenilworth Corridor, despite not complying with the federal standard of 25 feet from center of the rail to nearest structure. The President of TC&W Railroad has asked for “shared liability,” indicating his awareness that this option is not safe and limiting TC&W liability if people are killed or homes destroyed. It is clearly in TC&W’s best financial interests not to have to relocate.

Without changes, the Shallow Tunnel is not an option. The Shallow Tunnel option could work for our area if livability and safety are addressed: extend the tunnel back to Lake Street, eliminating the need for extra neighborhood bells in addition to nearby station bells, and implement freight safety solutions such as an inner rail guides and frequent third-party inspections of rails and railcars to increase safety and prevent derailments. Similar ideas should be explored for crossing the Kenilworth Channel to address noise issues at that end of the tunnels. With changes, the Met Council could offer a medium-cost option, with improved neighborhood and bike/walking trail aesthetics, which would provide a better solution than running the LRT at grade and relocating the freight rail into neighboring St. Louis Park. While costs need to be managed to allow funding for other transit priorities, a counterpoint is that we need to do fewer projects and do each one right.

**From:** [Robert Corrick](#)  
**To:** [Jacobson, Nani](#)  
**Subject:** Comments for Supplemental DEIS  
**Date:** Monday, August 12, 2013 4:28:43 PM

---

To: Metropolitan Council

[Nani.jacobson@metrotransit.org](mailto:Nani.jacobson@metrotransit.org)

Ms. Nani Jacobson, Project Manager

Southwest Light Rail Transit Project Office

6465 Wayzata Boulevard, Suite 500

St. Louis Park, MN 55426

I have the following comments on the supplemental DEIS for SW LRT:

(1) Some sort of shallow tunnel or similar mitigation seems essential if freight is to stay in the corridor. The proposal at Jones Harrison in July fell short of the city's mitigation requirements. To keep freight in the corridor, LRT should be underground or covered. This means that the channel crossing could be covered and sound insulated. The bike trail could proceed on top of the cover if there is not room at the channel; i.e., the trail could rise gradually on the "roof" of the cover as the LRT proceeds over the channel. The bike trail might proceed to the side of a covered crossing if there was enough room. Any covered crossing should be treated aesthetically with attractive design and vines, etc. Of course, the LRT might proceed under the channel to solve this problem and meet the co-lo objections of the city, but I am sure that you have already considered this option. A covered bridge (old fashioned) is another possibility, but it seems that it would be a very long one (1000 feet or so).

2) In the July Jones Harrison presentation, you proposed the shallow tunnel emerging 1000 feet north of 21<sup>st</sup> St. It should be noted that the bike trail could be routed to the south at this point to preserve tranquility of the trail. The Kenilworth Corridor is quite wide at this point. So it seems co-lo at grade could happen in this section of the Kenilworth. Perhaps at-grade co-lo should happen a little beyond 1000 feet because there are still homes to be seen on the south side of the corridor at this point.

3) I would strongly encourage solution for the Cedar Lake Trail bike crossing (the

“confluence”). Some sort of bridge seems to be in order for the bike crossing.

I would strongly recommend a solution for the dangerous bike trail crossing at Cedar Lake Parkway.

4) To the extent that the LRT emerges from the shallow tunnel to the north of the Lake Street Bridge, I would strongly recommend a solution to the co-lo that would happen there. Perhaps another cover would be in order.

5) Provision must be made for connection with the Midtown Greenway Streetcar somewhere around the West Lake Street Station. Much has been made of this issue, but it seems that there must be a solution.

6) A wilder idea, which might solve de-watering problems, and cost less, is a “High Line” type of structure (à la New York City High Line) from the West Lake Street station to somewhere north of 21<sup>st</sup> St. The bike trail could proceed on an attractively designed trail on a “roof” of an LRT cover, which would sound insulated. This structure could be partially buried most of the way except of course for the channel crossing.

7) When the LRT emerges from a shallow tunnel or “High Line” type of structure north of 21<sup>st</sup> St., consider placing the LRT in a depression (like the Midtown Greenway) so that the 250 daily trains are heard less by trail users, homes, etc. Surround by landscaping.

8) Of course, we would not be talking about a lot of this mitigation if it were not for co-lo. Met Council is asking a lot to put both in the same corridor.

As a side comment, Met Council should be more proactive in proposing solutions that would be acceptable to the City and neighbors. Public relations is pretty terrible at the moment. I would also recommend a more direct connection with some trusted neighborhood representatives through this final process. But perhaps this is just not possible considering the negative campaigning that it going on.

Please feel free to contact me with questions. Let's make this deal happen.

Robert Corrick

2816 West Lake of the Isles Parkway

Minneapolis, MN 55416

612.927.5599

[robertcorrick@mentorplanet.com](mailto:robertcorrick@mentorplanet.com)

**From:** [O'Connell, Sam](#)  
**To:** ["Robert Corrick"](#); [Loring, Deborah](#); [Eiler, Stephanie](#); [Ginis, Sophia](#)  
**Cc:** [SPODMC](#); [Jacobson, Nani](#)  
**Subject:** RE: SW LRT Supplement DEIS Comment  
**Date:** Monday, August 12, 2013 4:49:38 PM  
**Attachments:** [image001.png](#)  
[image002.gif](#)  
[image003.png](#)  
[image004.png](#)  
[image005.png](#)  
[image006.gif](#)

---

Thank you. Nani is receiving all e-mails regarding the SDEIS and yours has been received by the project office.

EMAILLOGO.png



**Sam O'Connell, AICP**

Manager | Public Involvement  
sam.oconnell@metrotransit.org  
P. 612.373.3815 | F. 612.373.3899  
Southwest LRT Project Office  
6465 Wayzata Blvd., Suite 500 | St. Louis Park, MN | 55426 | swlrt.org



---

**From:** Robert Corrick [mailto:robertcorrick@mentorplanet.com]  
**Sent:** Monday, August 12, 2013 4:35 PM  
**To:** Loring, Deborah; Eiler, Stephanie; O'Connell, Sam  
**Subject:** SW LRT Supplement DEIS Comment

My email to Nani Jacobson stated that she was out of the office even though Supplement DEIS Comments are due today, so I am sending my comments to you as well.

Thank you.

To: Metropolitan Council

[Nani.jacobson@metrotransit.org](mailto:Nani.jacobson@metrotransit.org)

Ms. Nani Jacobson, Project Manager  
Southwest Light Rail Transit Project Office  
6465 Wayzata Boulevard, Suite 500  
St. Louis Park, MN 55426

I have the following comments on the supplemental DEIS for SW LRT:

(1) Some sort of shallow tunnel or similar mitigation seems essential if freight is to stay in

the corridor. The proposal at Jones Harrison in July fell short of the city's mitigation requirements. To keep freight in the corridor, LRT should be underground or covered. This means that the channel crossing could be covered and sound insulated. The bike trail could proceed on top of the cover if there is not room at the channel; i.e., the trail could rise gradually on the "roof" of the cover as the LRT proceeds over the channel. The bike trail might proceed to the side of a covered crossing if there was enough room. Any covered crossing should be treated aesthetically with attractive design and vines, etc. Of course, the LRT might proceed under the channel to solve this problem and meet the co-lo objections of the city, but I am sure that you have already considered this option. A covered bridge (old fashioned) is another possibility, but it seems that it would be a very long one (1000 feet or so).

2) In the July Jones Harrison presentation, you proposed the shallow tunnel emerging 1000 feet north of 21<sup>st</sup> St. It should be noted that the bike trail could be routed to the south at this point to preserve tranquility of the trail. The Kenilworth Corridor is quite wide at this point. So it seems co-lo at grade could happen in this section of the Kenilworth. Perhaps at-grade co-lo should happen a little beyond 1000 feet because there are still homes to be seen on the south side of the corridor at this point.

3) I would strongly encourage solution for the Cedar Lake Trail bike crossing (the "confluence"). Some sort of bridge seems to be in order for the bike crossing. I would strongly recommend a solution for the dangerous bike trail crossing at Cedar Lake Parkway.

4) To the extent that the LRT emerges from the shallow tunnel to the north of the Lake Street Bridge, I would strongly recommend a solution to the co-lo that would happen there. Perhaps another cover would be in order.

5) Provision must be made for connection with the Midtown Greenway Streetcar somewhere around the West Lake Street Station. Much as been made of this issue, but it seems that there must be a solution.

6) A wilder idea, which might solve de-watering problems, and cost less, is a "High Line" type of structure (à la New York City High Line) from the West Lake Street station to somewhere north of 21<sup>st</sup> St. The bike trail could proceed on an attractively designed trail on a "roof" of an LRT cover, which would sound insulated. This structure could be partially buried most of the way except of course for the channel crossing.

7) When the LRT emerges from a shallow tunnel or "High Line" type of structure north of 21<sup>st</sup> St., consider placing the LRT in a depression (like the Midtown Greenway) so that the 250 daily trains are heard less by trail users, homes, etc. Surround by landscaping.

8) Of course, we would not be talking about a lot of this mitigation if it were not for co-lo. Met Council is asking a lot to put both in the same corridor.

As a side comment, Met Council should be more proactive in proposing solutions that would be acceptable to the City and neighbors. Public relations is pretty terrible at the moment. I would also recommend a more direct connection with a trusted neighborhood representative through this final process. But perhaps this is just not possible.

Please feel free to contact me with questions. Let's make this deal happen.

Robert Corrick  
2816 West Lake of the Isles Parkway  
Minneapolis, MN 55416  
612.927.5599  
[robertcorrick@mentorplanet.com](mailto:robertcorrick@mentorplanet.com)



**From:** [John Doe](#)  
**To:** [Jacobson, Nani](#); [Jacobson, Nani](#)  
**Date:** Monday, August 12, 2013 11:57:11 PM

---

I would like to include in the scope of the SDEIS the removal of park and ride lots that are now not being proposed by Met Council. It is my understanding that the engineers do not want to have a park ride at the 21st station which my neighborhoods wants to see.

I also wanted to say that it was nearly impossible to find where to send this comment. There is no notice on the Met Council website. It is as if you do NOT want anyone to find out how to comment. I commented on teh scope of the DEIS and could find everythign really easy.....JD

**From:** [dougildner@aol.com](mailto:dougildner@aol.com)  
**To:** [Jacobson, Nani](#)  
**Subject:** Comments on SDEIS SWLRT  
**Date:** Monday, August 12, 2013 12:01:15 AM

---

Dear Ms. Jacobson,

Because significant changes have occurred since the publication of the DEIS and the selection of the Kenilworth Corridor as the LPA (May 2010) I am writing with several questions and comments.

It would appear that the Project Goals are not being met, even with the solutions offered. The cost increase over budget, the unsatisfactory answers as to how to protect the quality of life, protect the environment and provide a cost effective travel option would indicate that the project needs more work.

If indeed, the Kenilworth Corridor is the best alternative, then the only acceptable solution is a Deep Bore Tunnel. How can this be accomplished without massive budget increases? Are the numbers presented in the Cost Estimate Summary correct? Are the comparisons of all solutions being presented fairly...ie: contingency budget, cost of stations, mitigation, groundwater systems cost etc. included in all design option costs? Why must the West Lake Street Bridge be demolished in this plan? Has the option of a single LRT track through the corridor option been explored? What about introducing a Minimum Operating Segment within the DEIS, thus allowing the best alternative, the deep tunnel, to be built?

Perhaps the project, which recently the Met Council Chair, Susan Haigh acknowledged appeared rushed, needs to re-open Scoping. The choice of the LPA might have been different had the relocation of the freight line been included as part of the project (see Scoping Summary Report "Issues outside of the DEIS.") This would also address the critique that the LPA ignores the transit needs of denser areas and could open the opportunity to explore an alignment running N. along HW 100 and E along HW 394, which was not considered in the earlier preferred alternatives.

There are many issues that have not been fully addressed and many questions that have not been answered. Most constituencies agree that all modes at grade, would be unsafe and negatively impact the neighborhoods, parks, and Grand Rounds Historic District that are part of or adjacent to the Kenilworth Corridor. It would also result in many many homes being taken. The Deep Bore Tunnel option would solve these problems and eliminate the Freight Rail re-location issue. It would also positively impact the construction process, causing less disruption to neighborhoods and traffic during this phase of the project. However, the engineers have not adequately addressed the levels of noise and vibration or the risk of potential settlement of adjacent buildings should the Deep Bore Tunnel be used. These are but a few of the issues that require further study.

I recognize the importance of keeping the project on schedule. However, in order to fully present the options and impacts of the various alternatives, I believe more time is needed. It is also possible, that on closer inspection the LPA will prove to be less acceptable and a new and much better alternative will emerge.

Thank you,  
Gretchen Gildner

**From:** [mnrealtors@aol.com](mailto:mnrealtors@aol.com)  
**To:** [Jacobson, Nani](#)  
**Subject:** What the supplemental DEIS should cover  
**Date:** Monday, August 12, 2013 4:57:33 PM

---

To whom it may concern:

I invite you all to re-read Chapter 1 of the DEIS...Purpose and Need...in particular 1.4 (pages 13 and 14) and ask **you (in the S-DEIS) to hold yourselves accountable to your Project Goals and Objectives**, in particular the following items:

#### 1.4 Project Goals and Objectives

- 3) Protect the environment
- 4) Preserve the quality of life in the study area and the region

##### Goal 1: Improve mobility

- *Provide a travel option that enhances pedestrian and bicycle activity...* Running LRT and/or both LRT and freight along the Cedar Lake Trail/Kenilworth Trails, per the DEIS, has severe negative environmental impacts ( "added negative visual and noise impacts where previously there were none", taking the area from that of "sounds of birds and recreation" to that of "constant noise levels over the HUD unacceptable livability level", removing the existing developed greenery and trees with no planned mitigation). Hopefully you are aware that nearly \$1m bicyclists and pedestrians use the Cedar Lake Trail/Kenilworth Trail annually...with 30 % of the bicyclists using these trails as their preferred means of transportation year round. In addition, the Cedar Lake Trail is the first Federally designated Bicycle Highway. That designation draws not only tourists from around the world, but bicyclists from other regions of the twin cities. The Kenilworth section of the Cedar Lake Trail is THE connective trail for Regional Trails to the Grand Rounds...another major tourist and suburbanite draw. Consistent with your Goal #1, address in the S-DEIS how the Cedar Lake Trail/Kenilworth Trail will not only remain as they are currently environmentally, but ENHANCED to ENSURE bicycle and pedestrian transit use and activity.

##### Goal 3: Protect the environment

- *Provide a travel option that protects natural resources including fish, wildlife habitat and water quality.* Per Goal #3, address in the S-DEIS a plan for mitigation to ENSURE protection of natural resources along the Cedar Lake Trail/Kenilworth Trail, the Grand Rounds, and Cedar Lake. Address guidelines which include consultation with affected neighborhoods, communities, the Park Board, and the City of Minneapolis for acceptable mitigation.

##### Goal 4: Preserve and protect the quality of life in the study area and the region

- *Provide a travel option that ensures fair distribution of benefits and (ensures fair distribution of) adverse effects of the project for the region, communities, and neighborhoods adjacent to the project area.*

Per the DEIS, the section of LRT between the West Lake Station and 21st Station had the most severely impacted property of the entire SWLRT line. However, as the SWLRT budget grows, the \$\$\$ portion for Mpls is under debate and scrutiny, and even has been suggested to drop lower. Mitigation of co-location or LRT at grade for this area is unacceptable and goes completely against Goal #4. Address in the S-DEIS how you will achieve Goal #4 for the section of SWLRT between West Lake Station and 21st Station without co-location or LRT at grade.

Finally, as the DEIS quotes numerous times "connecting the Southwest Suburbs and downtown"; documents the need for "rail transit from the Southwest Suburbs to downtown" because of the declining mobility in the southwest suburbs"; expresses that the jobs are 1) downtown Mpls, 2) Golden Triangle,

3) Opus, 4) Eden Prairie Center, 5) Excelsior Grand. However, the same "connection" or "need" or "job growth areas" are NOT made in relation to Minneapolis and downtown or the Southwest Suburbs. As the SWLRT need seems to be Southwest suburbs to downtown Minneapolis, please address the obvious in the S-DEIS. Address a different LRT route other than going through Minneapolis/Cedar Lake. Address the possibility of a streetcar connecting LRT in St. Louis Park to Uptown, and then on to the Hiawatha Line.

Thank you for your considerations,

Cheryl LaRue  
LRT Done Right  
Kenilworth Alliance

**From:** [ggday@aol.com](mailto:ggday@aol.com)  
**To:** [Jacobson, Nani](#)  
**Subject:** Supplemental DEIS questions  
**Date:** Monday, August 12, 2013 4:00:25 PM

---

Dear Ms. Jacobson:

As this is the last day to get in comments/questions for the supplemental DEIS I am sending you the following:

1. In 2010 MnDOT issued a "negative declaration" in response to whether a full blown EIS would be needed for the freight rail re-route to St. Louis Park meaning that they did not feel it was necessary to analyze the environmental impact because there would be nothing significant to report. Why is the re-route now considered to be a problem? What changed?
2. Previously in the DEIS process the RR said the Kenilworth Greenway did not meet safety standards for the industry. What happened to the results of those studies?
3. What safety standards were referenced by the RR that indicated it could not agree to heavy freight in Kenilworth Greenway?
4. There will clearly be significant impact if heavy freight and LRT are both allowed to go through Kenilworth Greenway:
  - a. Parkland will be not just disrupted but destroyed (trees removed, wildlife habitats destroyed)
  - b. Quality of life will be significantly downgraded (noise, air, light pollution).
  - c. Safety on trails and crossings will become a serious issue.
  - d. Traffic patterns around Dean Parkway and on Cedar Lake Parkway where there are already problems will be made chaotic.
  - e. Hazardous materials being carried by heavy rail through this neighborhood already pose potential danger.
  - f. Crossing accidents are more likely to occur with three rails carrying trains of different weight and speed.

The effect of co-location must be more thoroughly investigated in light of these factors.

5. Hennepin County purchased the Kenilworth Greenway for transit but not for heavy rail. Heavy rail was always meant to be a temporary solution. What has changed?
6. With co-location there would be times when both heavy and light rail would pass each other. When heavy rail is carrying toxic material how can assurance be made that any kind of potential accident would not be significantly dangerous to a large number of people traveling by LRT?

I look forward to seeing the answers to these questions among others included in any

supplement to the DEIS.

Georgianna Day Ludcke

**From:** [Judy Meath](#)  
**To:** [Jacobson, Nani](#)  
**Subject:** Comment on scope of supplemental DEIS  
**Date:** Monday, August 12, 2013 8:19:32 PM

---

Dear Ms. Jacobson,

I recommend that the supplemental DEIS for the SWLRT answer the following questions:

1. Concerning the social and economic impact of shallow tunnel in Kenilworth corridor: Will potential future transit projects such as streetcars on the Midtown Greenway be able to connect to a shallow tunnel, where the Midtown Greenway meets the Kenilworth corridor? Transit experts tell me a shallow tunnel will create serious problems for future transit connections.
2. Please also investigate the impact of construction of a shallow tunnel on flora and fauna in the area, and on the water table.
3. Will light rail in the Kenilworth corridor create a barrier between St. Louis Park and Minneapolis?
4. Since a majority of people who work in downtown Minneapolis live in Minneapolis, and since the SWLRT is not going to serve the heavily populated Uptown neighborhoods, how will the SWLRT make economic sense?

Thank you for the opportunity to contribute my ideas to the scope of the supplemental DEIS for the SW LRT alignment.

Sincerely,

Judy

Judy L. Meath  
2700 Kenilworth Place  
Minneapolis, MN 55405  
Home: 612-925-1771  
Cell: 612-360-3445

**From:** [Douglas Peterson](#)  
**To:** [Haigh, Susan](#)  
**Cc:** [MNRealtors](#); [EldonJohn](#); [Richard Logan](#); [STUART CHAZIN](#); [ahiginbotham@msn.com](#); [Bob Bemel](#); [michaelwilsonmpls](#); [gail.dorfman@co.hennepin.mn.us](#); [courtney Kiernat](#); [Sara Gurwitch](#); [hdevoto@hotmail.com](#); [crannon4@gmail.com](#); [odajos@hotmail.com](#); [burke-john.e@gmail.com](#); [Heid Erdrich](#); [info@cidna.org](#); [ltruckenbrod@gmail.com](#); [campbellindeke@comcast.net](#); [jalcarroll@msn.com](#); [appleman.michael@gmail.com](#); [Sandeep Patel](#); [borgessi@hotmail.com](#); [anne.graham@caryacademy.org](#); [clindeke@rrtlarchitects.com](#); [Marya Morstad](#); [Julie Darst](#); [loudesjardins@aol.com](#); [farra005@umn.edu](#); [smfstan@gmail.com](#); [larrymoran1955@gmail.com](#); [marshajf@gmail.com](#); [sarahkennedy63@gmail.com](#); [mmc.1963@hotmail.com](#); [Sara Brenner](#); [Jennifer & Mark Labovitz](#); [mark.labovitz@comcast.net](#); [esthermullen@gmail.com](#); [mickman@stolaf.edu](#); [annikagutzke@gmail.com](#); [cherdesign@aol.com](#); [haleyking@gmail.com](#); [pj.guernsey@comcast.net](#); [Bill Lewis](#); [dgutzke@earthlink.net](#); [ruthjones73@gmail.com](#); [cwreg w](#); [docgarden@comcast.net](#); [mtelfer@keyindicators.com](#); [cburkefl@yahoo.com](#); [emcconaghay@keyindicators.com](#); [jmcommerford@hotmail.com](#); [joel.tyler.carlson@gmail.com](#); [graham.francors@gmail.com](#); [Zoe & Gram Francois](#); [Jim & Cindie Smart](#); [Bryce Hamilton](#); [Donna Hamilton](#); [zookeeper@thelocalbar.com](#); [betsyrhowe@gmail.com](#); [kristi.granacher@gmail.com](#); [laurel@betsyhodges.org](#); [Jim & Cindie Smart](#); [kreidkel@att.net](#); [elarsson@att.net](#); [ryan@ryanfox.com](#); [kbcram@yahoo.com](#); [Nancy Crocker](#); [cindy.marsh2588@gmail.com](#); [bjmmurphy@msn.com](#); [smurphy612@gmail.com](#); [volleyballstar306@gmail.com](#); [agreen4@comcast.net](#); [Sally Rouse](#); [cindacollins@comcast.net](#); [jan.nielsen61@gmail.com](#); [bjrasmus@comcast.net](#); [dgporter2@comcast.net](#); [docaloo@aol.com](#); [bsdprg@hotmail.com](#); [Dorothy Childers](#); [bjwillette@hotmail.com](#); [rsdye20@hotmail.com](#); [jel@dpu.dk](#); [luckylashlarue@gmail.com](#); [meixi@hotmail.com](#); [lorielizabeths@gmail.com](#); [scott.harris@leonard.com](#); [gail@mighty-fine.com](#); [ypolydorow@gmail.com](#); [rnoel@varde.com](#); [lisanoel67@gmail.com](#); [robertcorrich@motorplanet.com](#); [rhudedg@yahoo.com](#); [duffyfitz@mac.com](#); [kendall@umn.edu](#); [Lara.miklaseurs@gmail.com](#); [doug@limonfineart.com](#); [Dan & Barb Schmiechen](#); [thomas.johnson@gpmlaw.com](#); [hccra@co.hennepin.mn.us](#); [Kozlak, Connie](#); [Elmer, Steven](#); [PublicInfo](#); [swlrlt](#); [Brimeyer, James](#); [sen.terri.bonoff@senate.mn](#); [rep.steve.simon@house.mn](#); [peter.wagenius@minneapolis.mn.gov](#); [Duininck, Adam](#); [Senator Scott Dibble](#); [rep.frank.hornstein](#); [Munt, Jennifer](#); [Schreiber, Lona](#); [kevin.reich@minneapolis.mn.gov](#); [diane.hofstede@minneapolis.mn.gov](#); [Sandra.Colvin.Roy@ci.minneapolis.mn.us](#); [admin@minnehahacreek.org](#)  
**Subject:** Southwest LRT Kenilworth Corridor  
**Date:** Friday, August 16, 2013 2:35:06 PM

---

Metropolitan Council Chair Susan Haigh;

There is a serious issue that might have been swept under the rug relating to the quality of water in Lake Calhoun, Lake Harriet, Lake of the Isles, Cedar Lake and Brownie Lake resulting from the construction of LRT in the Kenilworth Corridor. There is a large section of land east of the West Lake Street bridge bordered by the corridor, West Lake Street, Chowen Ave., and Chowen Place that is owned by the Cedar Lake Shores Townhome Association (Association) that is designated as "protected wetland". There is also an adjacent section of land west of the bridge on the north side of the corridor that is also wetland. Although Chapter 4 of the DEIS extensively addressed wetlands throughout the entire proposed LRT route, it failed to address the wetland west of the bridge or the wetland owned by the Association in spite of the fact that there are signs on the Association property stating its presence.

If the Metropolitan Council elects to choose the co-location alternative or the shallow tunnel suggestion, it likely will require the taking for railroad purposes of a significant part of both wetlands. The wetlands are located within the Minnehaha Creek Watershed District and are located close to the northern shore of Lake Calhoun. As you know, various governmental organizations, which include the City of Minneapolis, the watershed district, Minnesota Department of Natural Resources, Minnesota Pollution Control Agency and the U.S. Army Corps of Engineers,\* all have an interest in protecting wetlands.

The City of Minneapolis is extremely concerned about how the construction and operation of the LRT project might affect the quality of water in the lakes. Partial destruction of the wetlands could adversely affect the filtration of surface ground water pollution which in turn would adversely affect the water quality of the lakes. It would be impossible to mitigate the destruction of the wetlands because there is no



other land near the chain of lakes that is available to create a wetland or holding pond for mitigation.

Any argument that it is premature to be concerned about the wetland permitting process just won't hold water. Ever since the Metropolitan Council decided to seriously entertain ignoring the railroad relocation agreement in the DEIS, the process has become poisoned. Issues that had been resolved in the DEIS have been reopened; each time, the City of Minneapolis and its residents living near the corridor have been further disenfranchised by the Council's actions. Delay in consideration of environmental pollution caused by the project will, tragically, result in it being ignored until it is too late and could be further grounds for a law suit.

Consequences of the destruction of the wetlands should be considered now, before any further action is taken by the Metropolitan Council or any of its committees. Destruction of the wetlands could, of course, be avoided by the construction of a deep tunnel in the Kenilworth Corridor.

\* "Draft Guidance on Identifying Waters Protected by the Clean Water Act"  
[http://water.epa.gov/lawsregs/guidance/wetlands/upload/wous\\_guidance\\_4-2011.pdf](http://water.epa.gov/lawsregs/guidance/wetlands/upload/wous_guidance_4-2011.pdf)

Douglas J. Peterson  
3315 Saint Paul Ave.  
Minneapolis, MN 55416

--

CONFIDENTIALITY NOTICE: This electronic mail is confidential. It may contain or transmit a legally privileged communication. It was not intended to be sent to, or received by, any unauthorized person. If you have received this email in error, please delete it from your system without copying it. Please also notify me by reply email or a telephone call, so that I may correct my address records. Thank you.

ELECTRONIC TRANSACTIONS DISCLAIMER: If this communication concerns negotiation of a contract or agreement, this communication does not indicate agreement to conduct transactions by electronic means under Minn. Stat. § 325L.05 or other applicable electronic transactions law.

TAX NOTICE: To comply with certain U. S. Treasury regulations, we inform you that any federal tax advice contained in the preceding message, or in attachments to the message, is not a covered opinion as described in Treasury Department Circular 230 and therefore cannot be relied upon to avoid any tax penalties or to support the promotion or marketing of any federal tax transaction.

**From:** [benjamin@marth.benkay.net](mailto:benjamin@marth.benkay.net)  
**To:** [swlrt](#)  
**Subject:** kennilworth trail bottleneck  
**Date:** Sunday, August 18, 2013 3:21:28 PM

---

I was reading about the planned Southwest Light Rail extension in the news and learned that there is some disagreement about part of the alignment along the Kenilworth corridor. It seems that there is a "bottleneck" along this corridor where addition of the light rail line has the potential to disrupt an existing freight line and a pedestrian/bicycle trail. The proposed workarounds have been to either reroute the freight traffic or tunnel the light rail, both very expensive proposals! (Apparently changing the SWLRT alignment isn't an option.) Has anyone considered elevating the pedestrian/bicycle trail along the bottleneck to make room for the light rail? It seems this would be way less expensive than the alternatives, not to mention the bonus of a nicer view for trail users!



**From:** [Miles Lindberg](#)  
**To:** [Jacobson, Nani](#)  
**Cc:** [Richard Weiblen \(rweiblen@libertyproperty.com\)](mailto:rweiblen@libertyproperty.com)  
**Subject:** Southwest Light Rail Transit Project SDEIS  
**Date:** Monday, August 05, 2013 3:42:44 PM

---

Ms Jacobson:

I have been asked to follow up on the preparation of the SDEIS as announced in the July 22, 2013 copy of the EQB Monitor. I am working with Liberty Property Trust, the owner of several land parcels adjacent to, and affected by the alignments of the LRT through the City of Eden Prairie. It is my understanding that the notice was to allow for input into the scope of the SDEIS, which I believe has been previously communicated through comments on the original DEIS and in subsequent meetings with Liberty Property Trust representatives. What is not included in the notice, and is of critical interest to Liberty Property Trust is the timing for the SDEIS preparation and the expected publication date and public comment period.

If you could provide a schedule for these events, even if it is subject to future changes based on how the study progresses, it would be very helpful to us.

Thanks in advance,

Miles Lindberg, ASLA  
Senior Project Planner

**Westwood Professional Services**  
*Serving clients across the Nation*

**DIRECT** 952-906-7454  
**TOLL-FREE** 888-937-5150  
**FAX** 952-937-5822  
**EMAIL** [miles.lindberg@westwoodps.com](mailto:miles.lindberg@westwoodps.com)  
**WEB** [www.westwoodps.com](http://www.westwoodps.com)

**Confidentiality Statement:**

This message and any attachments may contain confidential, proprietary or legally privileged information. Any unauthorized dissemination, use, or disclosure of this information, either in whole or in part, is strictly prohibited. The contents of this e-mail are for the intended recipient and are not meant to be relied upon by anyone else. If you have received this message in error, please advise the sender by reply e-mail, and delete this message and any attachments. Thank you.

**From:** [Safety In the Park](#)  
**To:** [Jacobson, Nani](#)  
**Cc:** [Thom Miller](#); [Ginis, Sophia](#)  
**Subject:** SDEIS Scoping comment  
**Date:** Monday, August 05, 2013 8:59:53 PM  
**Attachments:** [SitP SDEIS - Scoping comment.docx](#)

---

Hello Nani,

Please see the attached letter. It is the Safety in the Park comment to the SDEIS scoping.

Thank you,

Jami LaPray

August 06, 2013

Ms. Nani Jacobson, Project Manager  
Southwest Light Rail Transit Project Office  
6465 Wayzata Boulevard, Suite 500, St. Louis Park, MN 55426

Dear Ms. Jacobsen,

The below constitutes a comment in response to the announcement of the Supplemental Draft Environmental Impact Statement for the Southwest Light Rail Transit Project published in the Minnesota EQB dated July 22, 2013. Note that this comment is post-marked before the published comment deadline of August 12, 2013.

This comment is officially from the neighborhood advocacy group, Safety in the Park, which while led by a steering committee of 7 residents represents perhaps thousands of residents in St. Louis Park MN as evidenced by over 1500 signed petitions supporting our stated cause, an email/blog recipient list of over 1000 individuals, and a Facebook page with over 325 participants. Safety in the Park is not-for-profit, volunteer neighborhood advocacy group based in St. Louis Park, MN. Safety in the Park supports the SWLRT project as a whole, but rejects the SWLRT proposal to relocate freight rail traffic onto newly built tracks and tracks that were never built for such a purpose. As a group, we have worked on this issue for over three years holding numerous public meetings, meetings with elected officials, and other stakeholders. We know our understanding of the issues and impacts of this project are strong.

Our comments are summarized as follows. The relocation plans named by the SPO (SWLRT Project office) as Brunswick West and Brunswick Central affect St. Louis Park in numerous ways. Before commenting on these effects, Safety in the Park challenges the very nature of the Met Council's decision-making process

- **Lack of Public Process:** For approximately three years, Hennepin County and MNDOT took responsibility for the re-routing of freight trains. During that time, there were numerous opportunities for public process including consultancy led public input meetings, City of St. Louis Park sponsored listening sessions, Hennepin County initiated hearings, a MNDOT EAW (eventually vacated) and a full DEIS. All of the above process featured a re-route option that planned for freight traffic to travel on the original MN&S track in St. Louis Park.
- As of approximately two months ago a completely new plan was established, essentially discarding all of the public process that took place for the last three years. (A delay that could have been avoided had Hennepin County reached out to the railroad that would be re-routed earlier.) Since these new plans were introduced no meaningful public process has occurred. On Jun13 and July 17 and 18 the Met Council held public meetings. The format for public input was inappropriate to the issue presented. At each of these meetings residents were given file cards

and sticky notes on which to write comments. Sticky notes and comment cards do not lend themselves to substantive comments. Comments received in this format cannot be anything but superficial and therefore easily dismissed. Also, without a longer period for comment many in the community could be left out just because they were unavailable at the times designated for comment.

Conspicuous by absence are any public hearings and most importantly any detailed environmental impact study on these new plans. This is particularly disturbing since the decision on these routes is to be made by the Met Council within 30 days of this comment period on the **scope** of this SDEIS and before the SDEIS is complete. It is beyond our understanding how state appointees on the Met Council can make such a decision with no environmental impact study and no hearings from the public. In addition, we do not understand how the FTA, State of Minnesota, and Hennepin County can allow such an impact to be even considered under these circumstances.

- **Inappropriate consideration of options:** In just the last three weeks, the SPO has officially made comments that of all eight options for freight rail relocation/co-location, only three remain as viable—two co-location options and one relocation. The SPO has commented that the following criteria were applied to their culling of the other five alternatives—the taking of property, cost, above ground structures, and community opposition. The remaining reroute option, Brunswick Central ranks higher on this scale of negative impacts than co-location options that have already been removed from consideration. This arbitrary and capricious choice by the SPO does not align with their self-declared criteria.
- **St. Louis Park City Council/State Legislator/St. Louis Park School Board opposition to re-route options:** The St. Louis Park City Council, School Board and Minnesota State Legislators have all sent letters to the Met Council rejecting the Brunswick Reroute options. The continuation of the SPO to consider these re-route options directly challenges a partner municipality and those who represent it.

Therefore, the scope and timeline of this SDEIS should be broad enough and long enough to completely halt the decision-making process underway by the Met Council on the collocate/relocate decision. Anything other than completion of a similar process to the one completed for the original DEIS before these decisions are made is illogical and violates the public's input on this very public project.

Furthermore, the following is a list of impacts that will be felt by the City of St. Louis Park should a relocation decision be made. Regardless of the above concerns on public process, the impacts of a St. Louis Park re-route are disconcerting at least, disastrous at most.

- **Safety:** The number one concern of this community is safety. To our point above, no derailment studies have been enacted by the SPO. However, it is common sense that placing a 20 - foot

high railroad berm and bridge above an elementary school playground is not a safe choice. There is empirical evidence showing disaster can strike when a train tumbles over an embankment onto structures and people below. This reason alone is enough to remove the re-route option from consideration.

- **Livability:** An elevated structure of the sort planned by the SPO in combination with grade changes and nature of this freight being hauled will undoubtedly create noise and visual pollution that will make educating and living near the structure near impossible. Again, no studies have been completed on this topic because the SPO has decided not to conduct them before the Met Council makes its decision.
- **Community Cohesion:** This planned elevated structure will create a very permanent physical division in our community.
- **Mitigation:** No mitigation plans have been shared with the public. No funding source has been identified.

For these reasons and more, the SDEIS scope should be changed to include the following:

- A detailed analysis of the relocation options that includes: noise and vibration studies, derailments studies, full environmental impacts to all buildings and people within the same geographic scope as the actual LRT path that was studied in the original DEIS.
- A robust public process that allows for public hearings and input after the SDEIS is published **BEFORE** any decision is made or even considered by the Met Council. In particular, the specific concerns of the City of St. Louis Park need addressing.
- A fair and equal comparison of co-location and relocation must be possible. Therefore, the four co-location options with property acquisitions and above grade structures must be returned to consideration and evaluated as part of the SDEIS.



**From:** [Bill Weber](#)  
**To:** [Jacobson, Nani](#)  
**Subject:** Comments Regarding the Light Rail Project - Southwest Corridor  
**Date:** Tuesday, August 06, 2013 8:26:22 AM

---

Ms. Nani Jacobson, Project Manager, Southwest Light Rail Transit Project:

I am the President of SPS Companies, Inc. located at 6363 Highway 7 in St. Louis Park, MN. At least a portion of our property would be taken if the freight re-route (Brunswick Central and Brunswick West) is chosen so SPS does have a stake in the outcome in the SWLRT freight re-reroute issue. The light rail has been proposed for a number of years and was assumed to follow the existing freight train corridor. However, the freight train re-route plans were introduced in May of 2013 to move the freight trains off the light rail route leaving little time to consider the issue. The re-routes, while I understand were required to be engineered and considered, cannot be a real possibility.

To move large freight trains through new areas, areas that are currently residential and light industrial, would significantly alter the City of St. Louis Park especially with large berms located throughout the City. The freight trains run next to our building now and from personal experience I can tell you they do create significant noise and vibrations. From a commercial standpoint, this is okay, but from a residential standpoint I cannot imagine what the thought process would be to even consider this alternative. A similar situation is the airport. How many years has the Metropolitan Airport Commission dealt with the noise issues and soundproofing required in homes? My guess is you would be in a similar situation in St. Louis Park if a re-route option is chosen. I have not even addressed the safety issues, but others will deal with that far better than me.

What I am asking is to take the re-route options off the table. The Star Tribune editorial a few days ago even suggested that the SWLRT go back and consider other routes rather than have St. Louis Park and Minneapolis compete as adversaries.

Thank you for your consideration,

Bill Weber

Thomas J. Radio  
Attorney DIRECT 612.349.5680  
tradio@bestlaw.com



BEST & FLANAGAN LLP  
225 South Sixth Street, Suite 4000 Minneapolis, Minnesota 55402  
TEL 612.339.7121 FAX 612.339.5897 BESTLAW.COM

BEST & FLANAGAN

August 9, 2013

VIA EMAIL AND U.S. MAIL

Ms. Nani Jacobson  
Project Manager  
Southwest Light Rail Transit Project Office  
6465 Wayzata Boulevard, Suite 500  
St. Louis Park, MN 55426  
[nani.jacobsonW@metrotransit.org](mailto:nani.jacobsonW@metrotransit.org)

Re: Comments on Supplemental Draft Environmental Impact Statement for the Southwest Light Rail Transit Extension Project

Dear Ms. Jacobson:

Please find for inclusion in the official record the comments of Eaton Corporation-Hydraulics Group on issues raised in the Supplemental Draft Environmental Impact Statement for the Southwest Light Rail Transit Extension Project. These comments are set forth in the attached letter from Mr. William VanArsdale, dated July 22, 2013.

Thank you.

Sincerely,

A handwritten signature in black ink that reads "Thomas J. Radio".

Thomas J. Radio  
Attorney

TJR/cmc  
Enclosure

cc:



Hydraulics Group

14615 Lone Oak Road  
Eden Prairie, MN, 55344  
tel: 952-937-9800

July 22, 2013

*VIA U.S. Mail and email*

James Alexander  
Project Manager  
Southwest Project Office  
Park Place West Building, Suite 500  
6465 Wayzata Boulevard  
St. Louis Park, MN 55426

Re: Southwest LRT: Siting of OMF

Dear Mr. Alexander:

Eaton Corporation-Hydraulics Group ("Eaton") wishes to state its deep and abiding concern over the locating of the Operations and Maintenance Facility ("OMF") near the Eaton campus in Eden Prairie. The siting of the OMF on the current Eden Prairie Public Works site would have a devastating effect on the Eaton's operations and property, which would cost millions of dollars to either correct or compensate Eaton.

In Eaton's written comments on the Draft EIS and repeated submitted comments at the various public forums, Eaton's position has been clear and consistent:

- Eaton supports the efforts to construct the Southwest LRT.
- Eaton will work with the City of Eden Prairie and the Southwest LRT planning agency on the siting of the Mitchell Road/Technology Drive station and the parking facility.
- Eaton is concerned that concentrating the OMF, the Mitchell Road/Technology Drive station, and the parking facility will create a situation that will severely damage the value and operational viability of the Eaton campus.

Eaton relies upon and incorporates its prior comments submitted in response to the Draft EIS. Those comments were based upon and supported by the independent analysis of a property valuation firm that concluded that locating the station and associated parking facility on Eaton's northern border will significantly impact Eaton, resulting in the loss of the manufacturing building and the loss of land for future expansion. The valuation consultant also noted the adverse impact of the resulting traffic congestion. The consultant concluded that the decision to locate

the station and parking facility will result in a significant cost of relocation and the potential loss of 650 jobs. Those conclusions are only strengthened and further supported if the OMF facility is located on the Eden Prairie Public Works site.

The OMF would exacerbate an already complicated and adverse impact on the Eaton campus. As Eaton representatives have explained at public forums and the recent tour of its facility, locating the OMF adjacent to the Eaton campus will create a "perfect storm" of impacts that will severely diminish the value and efficiency of the Eaton operation. The chief impacts are as follows:

- **NOISE AND VIBRATION**—Eaton maintains substantial and sensitive testing facilities on its site that will be adversely affected by noise and vibration generated by the OMF and its operations. These testing facilities are critical to Eaton's operations. The loss of them places in jeopardy the viability of the entire site.
- **SECURITY**—The OMF could present a direct threat to protection of Eaton's property and personnel.
- **SAFETY**—If the station is located on the northeast portion of Eaton's property, the connecting tracks between the station and the OMF will have to either run through the heart of the Eaton campus or require the acquisition of one of its testing facilities, with a resulting threat to the safety of Eaton employees, guests, consultants, and customers as they attempt to negotiate safe passage between Eaton's buildings and the tracks.
- **LOSS OF EXPANSION POTENTIAL**—In a similar fashion, the combined impact of the OMF, the Mitchell Road/Technology station, and the parking facility will likely result in the direct taking by acquisition or condemnation of part of Eaton's property, thereby limiting Eaton's ability to expand its operations on this site.
- **COST**—The cost to the public to address, correct, or compensate Eaton for the impacts will be considerable and certainly in the tens of millions of dollars.

In light of these factors and associated costs, Eaton urges the Southwest LRT and all associated decision-makers to weigh carefully the cost and adverse impact of locating the OMF on the Eden Prairie Public Works site, and, in light of those costs, to select an alternative site.

Thank you for your consideration of these comments.

Sincerely,



William VanArsdale  
Group President  
Hydraulics, Filtration, and Golf Grip  
Eaton Corporation

August 10, 2013



Ms. Nani Jacobson, Project Manager  
Southwest Light Rail Transit Project Office  
6465 Wayzata Boulevard, Suite 500, St. Louis Park, MN 55426

Dear Ms. Jacobsen,

This letter constitutes a comment in response to the announcement of the Supplemental Draft Environmental Impact Statement for the Southwest Light Rail Transit Project published in the Minnesota EQB dated July 22, 2013. As required, this comment is post-marked before the published comment deadline of August 12, 2013.

This comment comes from the Sorensen Neighborhood Association Steering Committee. We represent the 763 households and 51 businesses of the neighborhood that would be most dramatically impacted by the relocation proposals.

We have the following concerns regarding the proposed relocation plans (named by the SWLRT Project office as Brunswick West and Brunswick Central):

The number one concern of this neighborhood is safety. Derailments do happen - we have seen multiple examples in the news over the past year. Running long freight trains hauling ethanol, coal and agricultural products at 25mph on an up to 20-foot high berm/bridge through our neighborhood is one thing, but to have it run next to and/or through the Park Spanish Immersion Elementary school playground, within 100 feet of that school building, which also houses an Early Childhood Family Education program and a pre-school, and within 500 feet of our High School is just asking for something to go wrong. This should be reason enough to remove the re-route option from consideration.

An elevated structure of the sort planned by the SPO, in combination with grade changes and the nature of the freight being hauled, will create noise, air and visual pollution that will have an impact on not only those people who live and work in this neighborhood, but especially on the schools it passes.

This planned elevated berm/bridge structure will create a very permanent physical and visual barrier within our neighborhood and between us and the surrounding neighborhoods.

No mitigation plans have been shared with the public to address the above concerns. In fact, at the May 28 unveiling of the new proposals, it was stated that there would be no mitigation. At the very least, there needs to be mitigation to protect the children and maintain an environment conducive to learning.

For these reasons, we ask that the scope of the Supplemental Draft Environmental Impact Statement be changed to include the following:

- A detailed analysis of the full environmental impacts to all buildings and people using the same geographic scope as the path that was studied in the original DEIS
- The analysis should include, but not be limited to, the following:
  - vibration studies
  - noise studies
  - air pollution studies
  - derailment studies
  - visual impact studies
  - the mitigations required to thoroughly address the results of each of the studies

We thank you for your consideration.

The Sorensen Neighborhood Association Steering Committee

Lois Zander, Meghan Phimister, Mary Beth Gaines, Bette Garske, Daniel Kriete, Jeff Persigehi

Cc: Marisol Simon

Gov. Mark Dayton

**From:** [Kulsrud, Geri M.](#)  
**To:** [Jacobson, Nani](#)  
**Cc:** "[mark.furhmann@metrotransit.org](mailto:mark.furhmann@metrotransit.org)"; [Haigh, Susan](#); "[roxanne.smith@metc.state.mn.us](mailto:roxanne.smith@metc.state.mn.us)"; [Schreiber, Lona](#); [Munt, Jennifer](#); [Vaneyll, Gary](#); [Elkins, Steve](#); "[mes.brimeyer@metc.state.mn.us](mailto:mes.brimeyer@metc.state.mn.us)"; [Cunningham, Gary](#); [Duininck, Adam](#); [Reynoso, Edward](#); [Doan, John](#); [Rummel, Sandy](#); [Melander, Harry](#); [Kramer, Richard](#); [Commers, Jon](#); [Chavez, Steven](#); [Wulff, Wendy](#); "[tschneider@eminnetonka.com](mailto:tschneider@eminnetonka.com)"; "[dallendorf@eminnetonka.com](mailto:dallendorf@eminnetonka.com)"; "[pacomb@eminnetonka.com](mailto:pacomb@eminnetonka.com)"; "[bellingson@eminnetonka.com](mailto:bellingson@eminnetonka.com)"; "[twagner@eminnetonka.com](mailto:twagner@eminnetonka.com)"; "[bwiersum@eminnetonka.com](mailto:bwiersum@eminnetonka.com)"; "[jhiller@eminnetonka.com](mailto:jhiller@eminnetonka.com)"; "[edurbin@eminnetonka.com](mailto:edurbin@eminnetonka.com)"  
**Subject:** Comments on the Supplemental Draft Environmental Impact Statement for the Southwest LRT Line  
**Date:** Monday, August 12, 2013 4:59:30 PM  
**Attachments:** [Document.pdf](#)

---

Good afternoon,

I am emailing the attached at the request of Bill Griffith on behalf of SFI Ltd. Partnership 54 the owner of Claremont Apartments located at 10745 Smetana Road, in Minnetonka MN.

Thank you.

Geri Kulsrud  
Legal Secretary  
p | 952-896-3285  
f | 952-896-3333  
[www.larkinhoffman.com](http://www.larkinhoffman.com) Larkin Hoffman Attorneys

**CONFIDENTIALITY NOTICE:**

INFORMATION IN THIS MESSAGE, INCLUDING ANY ATTACHMENTS, IS INTENDED ONLY FOR THE PERSONAL AND CONFIDENTIAL USE OF THE RECIPIENT(S) NAMED ABOVE. This message may be an Attorney-Client communication from the law firm of Larkin Hoffman Daly & Lindgren Ltd., and as such is privileged and confidential. If you are not an intended recipient of this message, or an agent responsible for delivering it to an intended recipient, you are hereby notified that you have received this message in error, and that any review, dissemination, distribution, or copying of this message is strictly prohibited. If you received this message in error, please notify the sender immediately, delete the message, and return any hard copy print-outs. No legal advice is being provided or implied via this communication unless you are (1) a client of Larkin Hoffman Daly & Lindgren Ltd., and (2) an intended recipient of this message.

CIRCULAR 230 DISCLOSURE: Any advice contained in this email (including any attachments unless expressly stated otherwise) is not intended or written to be used, and cannot be used, for purposes of avoiding tax penalties that may be imposed on any taxpayer.



Larkin Hoffman Daly & Lindgren Ltd.

1500 Wells Fargo Plaza  
7900 Xerxes Avenue South  
Minneapolis, Minnesota 55431-1194

GENERAL: 952-835-3800  
FAX: 952-896-3333  
WEB: [www.larkinhoffman.com](http://www.larkinhoffman.com)

August 12, 2013

Ms. Nani Jacobson  
Project Manager  
Southwest Light Rail Transit Project Office  
St. Louis Park, Minnesota 55426

Via Email and U.S. Mail

Re: Comments on the Supplemental Draft Environmental Impact Statement (SDEIS) for the Southwest LRT Line ("SW LRT") on behalf of SFI Ltd. Partnership 54 ("Owner") of the Claremont Apartments located 10745 Smetana Road, Minnetonka, Minnesota ("Claremont Apartments") - Failure to Consider Impact to Section 4(f) Property  
Our File # 36,292-00

Dear Ms. Jacobson:

This letter supplements our comment letter, dated December 28, 2012, on behalf of SFI Partnership 54, the owner of the Claremont Apartments. In our meeting with project management staff, including Mark Fuhrmann, Metro Transit, we expressed strong concerns that Segment 3 of the SW LRT-LPA severely and negatively impacts the Claremont Apartments and the public recreational trail (the "Public Trail"). The Public Trail travels through Opus Hill and is part of a citywide recreational trail system maintained and operated by the City of Minnetonka. (Please see the graphic depiction of the alternative under discussion by the Southwest Corridor Management Committee, identified as "TI #7 Opus Hill".)

It is important to note that the location of either the LPA or the proposed alternative will remove at least 50 percent of the existing vegetation through a densely wooded conservation area. In addition, the retaining wall design places a long wall a few feet from the trains causing noise from train operations to reflect back against the Public Trail and the Claremont Apartments, while removing the mitigating effect of the existing vegetation. This creates a significant negative environmental impact on both the Public Trail and the Claremont Apartments.

Further, Chapter 7 of the DEIS addresses the impact of the SW LRT-LPA on Section 4(f) property. (See 23 CFR Part 774.) The Public Trail is located in Segment 3 of the LPA, but the only potentially impacted Section 4(f) property identified by the DEIS in Segment 3 is 0.227 acres of land in the Nine Mile Creek Conservation Area. We believe the Public Trail must also be classified as Section 4(f) property. As a result, we ask if the project addressed whether the Public Trail was considered for Section 4(f) purposes? If so, what were the findings and results? If the Public Trail was not considered for Section 4(f) purposes, why was it excluded from Section 4(f) consideration?



If a Section 4(f) analysis has not been conducted for the Public Trail, then at a minimum, we expect a written determination of the applicability of Section 4(f) to the Public Trail before a final decision is made as to the alignment of LRT through the Opus Hill adjacent to the Claremont Apartments.

The Public Trail is located within a permanent public easement in favor of the City of Minnetonka for use as a public recreational trail within a large city wide trail system. In sum, the Public Trail is publicly owned through permanent easements, and it will be directly affected by the LPA or the alternatives under consideration. Therefore, a determination of applicability and Section 4(f) analysis must be performed for the Public Trail in the Opus Hill area.

Please address this analysis as part of the Supplemental DEIS and the FEIS and advise us of any actions or analysis regarding Section 4(f) that may have been conducted through the course of the project for the Opus Hill area and specifically the Public Trail. If no actions or analysis have been conducted then we fully expect a Section 4(f) determination of applicability to be initiated and a subsequent Section 4(f) analysis to be completed. The Southwest LRT project cannot go forward until its proposers fully satisfy the requirements of NEPA and applicable federal law.

Sincerely,



William C. Griffith, for  
Larkin Hoffman Daly & Lindgren Ltd.

Direct Dial: 952-896-3290  
Direct Fax: 952-842-1729  
Email: [wgriffith@larkinhoffman.com](mailto:wgriffith@larkinhoffman.com)

cc: Mark Fuhrmann, Metro Transit  
Members of the Metropolitan Council (via email with enclosures)  
Members of the Minnetonka City Council (via email with enclosures)  
Elise Durbin, Community Development Supervisor, City of Minnetonka (via email with enclosures)



August 12, 2013



Ms. Nani Jacobson  
Project Manager  
Southwest Light Rail Transit Project Office  
St. Louis Park, Minnesota 55426

Via Email and U.S. Mail

Re: Comments on the Supplemental Draft Environmental Impact Statement (SDEIS) for the Southwest LRT Line ("SW LRT") on behalf of SFI Ltd. Partnership 54 ("Owner") of the Claremont Apartments located 10745 Smetana Road, Minnetonka, Minnesota ("Claremont Apartments") - Failure to Consider Impact to Section 4(f) Property  
Our File # 36,292-00

Dear Ms. Jacobson:

This letter supplements our comment letter, dated December 28, 2012, on behalf of SFI Partnership 54, the owner of the Claremont Apartments. In our meeting with project management staff, including Mark Fuhrmann, Metro Transit, we expressed strong concerns that Segment 3 of the SW LRT-LPA severely and negatively impacts the Claremont Apartments and the public recreational trail (the "Public Trail"). The Public Trail travels through Opus Hill and is part of a citywide recreational trail system maintained and operated by the City of Minnetonka. (Please see the graphic depiction of the alternative under discussion by the Southwest Corridor Management Committee, identified as "TI #7 Opus Hill".)

It is important to note that the location of either the LPA or the proposed alternative will remove at least 50 percent of the existing vegetation through a densely wooded conservation area. In addition, the retaining wall design places a long wall a few feet from the trains causing noise from train operations to reflect back against the Public Trail and the Claremont Apartments, while removing the mitigating effect of the existing vegetation. This creates a significant negative environmental impact on both the Public Trail and the Claremont Apartments.

Further, Chapter 7 of the DEIS addresses the impact of the SW LRT-LPA on Section 4(f) property. (See 23 CFR Part 774.) The Public Trail is located in Segment 3 of the LPA, but the only potentially impacted Section 4(f) property identified by the DEIS in Segment 3 is 0.227 acres of land in the Nine Mile Creek Conservation Area. We believe the Public Trail must also be classified as Section 4(f) property. As a result, we ask if the project addressed whether the Public Trail was considered for Section 4(f) purposes? If so, what were the findings and results? If the Public Trail was not considered for Section 4(f) purposes, why was it excluded from Section 4(f) consideration?

Ms. Nani Jacobson  
August 12, 2013  
Page 2

---

If a Section 4(f) analysis has not been conducted for the Public Trail, then at a minimum, we expect a written determination of the applicability of Section 4(f) to the Public Trail before a final decision is made as to the alignment of LRT through the Opus Hill adjacent to the Claremont Apartments.

The Public Trail is located within a permanent public easement in favor of the City of Minnetonka for use as a public recreational trail within a large city wide trail system. In sum, the Public Trail is publicly owned through permanent easements, and it will be directly affected by the LPA or the alternatives under consideration. Therefore, a determination of applicability and Section 4(f) analysis must be performed for the Public Trail in the Opus Hill area.

Please address this analysis as part of the Supplemental DEIS and the FEIS and advise us of any actions or analysis regarding Section 4(f) that may have been conducted through the course of the project for the Opus Hill area and specifically the Public Trail. If no actions or analysis have been conducted then we fully expect a Section 4(f) determination of applicability to be initiated and a subsequent Section 4(f) analysis to be completed. The Southwest LRT project cannot go forward until its proposers fully satisfy the requirements of NEPA and applicable federal law.

Sincerely,

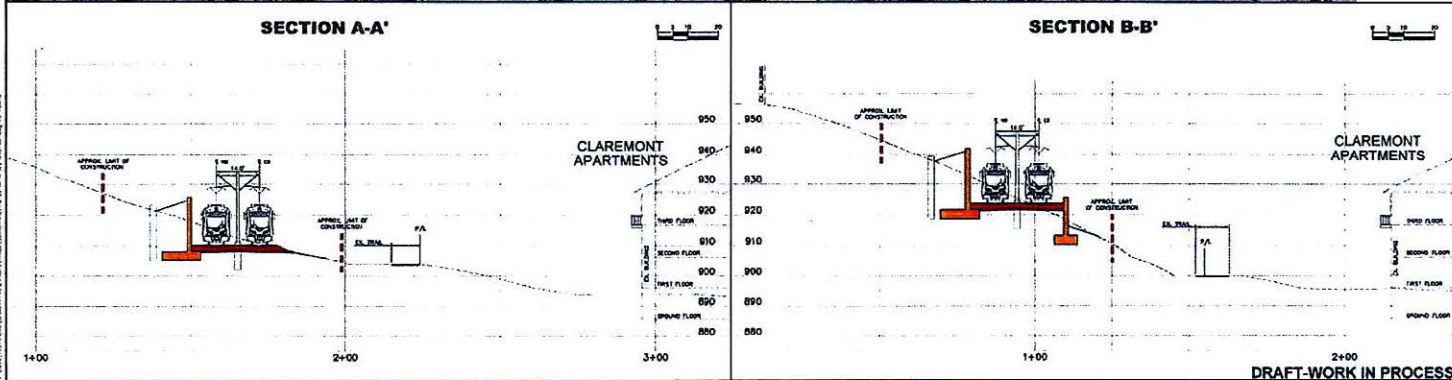
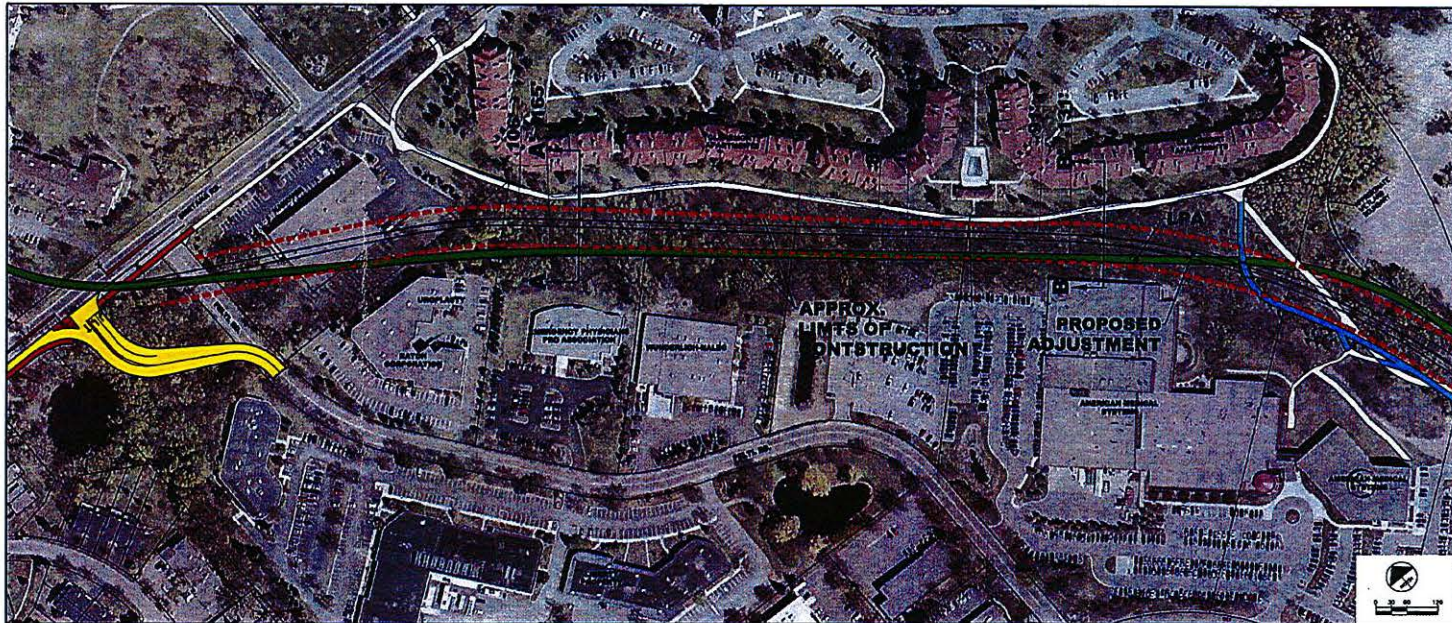


William C. Griffith, for  
Larkin Hoffman Daly & Lindgren Ltd.

Direct Dial: 952-896-3290  
Direct Fax: 952-842-1729  
Email: [wgriffith@larkinhoffman.com](mailto:wgriffith@larkinhoffman.com)

cc: Mark Fuhrmann, Metro Transit  
Members of the Metropolitan Council (via email with enclosures)  
Members of the Minnetonka City Council (via email with enclosures)  
Elise Durbin, Community Development Supervisor, City of Minnetonka (via email with enclosures)

# TI #7: Opus Hill



SOUTHWEST LRT  
TI-7: OPUS HILL

DRAFT-WORK IN PROCESS

IRT: 97  
REV: 0  
DATE: 04/24/2013

**AECOM** **SRM**

METROPOLITAN

**From:** [Barb Thoman](#)  
**To:** [Jacobson, Nani](#)  
**Subject:** Comments on SDEIS  
**Date:** Monday, August 12, 2013 9:26:30 PM  
**Attachments:** [SW LRT SDEIS 2013 TLC comments.pdf](#)

---

Hello Ms. Jacobson:

TLC's comments are attached. Would you please confirm that you received my e-mail?

Thank you.

Barb Thoman

**Barb Thoman, Executive Director**

Transit for Livable Communities | Bike Walk Twin Cities

2356 University Avenue West, Suite 403

Saint Paul, MN 55114

Desk: 651-789-1405 | Cell: 651-500-5958

[barbt@tlcminnesota.org](mailto:barbt@tlcminnesota.org)

[www.tlcminnesota.org](http://www.tlcminnesota.org) | [www.bikewalktwincities.org](http://www.bikewalktwincities.org)

# TRANSIT for Livable Communities



2356 University Avenue West, Suite 403, Saint Paul, MN 55114  
Phone: 651-767-0298 E-mail: [tlc@tlcminnesota.org](mailto:tlc@tlcminnesota.org) Web site: [www.tlcminnesota.org](http://www.tlcminnesota.org)

August 12, 2013

Ms. Nani Jacobson, Project Manager  
Southwest Light Rail Transit Project Office  
6465 Wayzata Boulevard, Suite 500  
St. Louis Park, MN 55426

Via e-mail: [Nani.jacobson@metrotransit.org](mailto:Nani.jacobson@metrotransit.org)

Re: Comments on Scope of Southwest Light Rail SDEIS

Dear Ms. Jacobson:

Transit for Livable Communities strongly supports the implementation of Southwest Light Rail Transit (SWLRT) as a key part of a growing transit system in the Twin Cities region. This corridor already has solid bus ridership and a strong employment base. New light rail will provide attractive opportunities for future transit-oriented development and for the establishment and expansion of transit hubs along the corridor. When it opens, SWLRT is projected to carry 23,000 riders daily, traveling to work, school, and other destinations. [Ridership estimate is from July 2011 for a 2017 opening.]

## Eden Prairie Alignment and Stations

TLC's interest is in ensuring that the routing of SWLRT is reasonably direct from a rider's point of view and the stations are spaced far enough apart so that travel time will be attractive and convenient. We hope that the Twin Cities region can avoid the outcome of light rail to Hunt Valley in Baltimore and light rail to Golden in Denver. In these cases, alignments and station spacing resulted in long ride times that are burdensome for transit riders and not an attractive alternative to people who drive.

## Location of Operations and Maintenance Facility

The evaluation of the site location for an Operations and Maintenance Facility (OMF) should include a full exploration of the pros and cons of the Hopkins and Eden Prairie locations (including payment in lieu of property taxes if necessary) to secure the best location for the facility from an operations standpoint and from the perspective of access to potential future OMF employees.

### Potential Increases in Cost Due to Freight Rail Relocation or Co-location

TLC is mindful of the need for adequate revenue to provide for the build-out of the Metropolitan Council's Transit System Plan of expanded bus and rail. In addition we seek a full build out of safe and convenient connecting networks for bicycling and walking. For that reason, we urge project planners to keep total capital costs for the SWLRT project within a budget target (that assumes new future state/local funding) that will not delay the implementation of the Bottineau Corridor, an east metro rail corridor, the proposed arterial rapid bus system, and the expansion of regular and express bus service.

Please consider identification of a Minimum Operating Segment within the DEIS tied to the original budget. Upgrades were made to the Hiawatha Line after project opening as funds became available (e.g., for structured parking, for additional stations, for longer station platforms). An additional station was added to the Northstar line after the line opened.

In addition to the study of relocation and co-location of freight rail, TLC recommends that the SDEIS include study of the feasibility of a single track LRT segment in the Kenilworth Corridor (West Lake Station to Penn Avenue Station). What would be the operational issues, including travel time impacts, of this option? The new west side light rail from Denver to Golden in Colorado includes several miles of single track.

### Other issues

We ask that bicycle and pedestrian connections be carefully assessed including: 1) design of proposed LRT and freight rail alignments; 2) stations and park-and-ride lots; and 3) OMF site. Station locations along the line must allow for safe and convenient access by walking and bicycling and for people using a mobility assistive device.

We believe that the cost, feasibility, and impacts of elevating the bicycle/pedestrian trail in the Kenilworth Corridor should be examined. Based on a count made in September 2009, the trail carried approximately 2,300 daily bicyclists/pedestrians (More recent data is not available, but is likely substantially higher). An elevated trail could be landscaped, aesthetically pleasing, and in keeping with the corridors period housing and natural environment.

Land aquisition at stations for development and redevelopment should be identified in the SDEIS, in addition to the land needed for the purposes of access by trains, buses, cars, bicycles and pedestrians. This would be consistent with the Metropolitan Council TOD Strategic Action Plan.

Sincerely,



Barb Thoman  
Executive Director



**From:** [Margret Forney](#)  
**To:** [Jacobson, Nani](#)  
**Subject:** Supplemental Draft Environmental Impact Statement Comments  
**Date:** Thursday, August 15, 2013 9:22:47 AM

---

NANI -

I just realized the due date was the 12th and not the 15th. I hope these comments from West Calhoun Neighborhood Council and The Edge Business Association will be taken into consideration.

## MEG FORNEY

C:612-926-7707/W:612-924-4343/F:612-920-4706

[www.megforney.com](http://www.megforney.com)

<https://www.facebook.com/meg.forney>

Realtor, Coldwell Banker Burnet

Minneapolis Lakes Office



Think green. Please consider the environment before you print this email.

Dear Ms. Jacobson

Following the meetings and open houses of the past few weeks, West Calhoun Neighborhood Council (WCNC) feels compelled to make some points regarding the options for SWLRT that have been presented.

While WCNC is eager to welcome the SWLRT West Lake Street Station, we are concerned that the Project Office understand the careful planning that will be required to keep traffic flowing--pedestrian, auto, bus, bicycle--to, from and around the station. Without adding a bus lane on the Lake St. bridge, or taking the bus stops off the bridge entirely, traffic congestion will surely increase to a gridlock level. The current plan shows pick-up and drop off in the traffic lane.

WCNC does not support any co-location of freight rail. And we do not believe either tunnel plan is the solution. It is clear to us that freight rail has to be relocated. Given the high cost of both tunnel options--and the fact that the freight rail route was always considered to be temporary--WCNC strongly encourages the Project Office to seek a better route than the one through the middle of St. Louis Park.

WCNC does not want to derail federal support for this project; however, the current plans are unacceptable to both South Minneapolis and St. Louis Park residents who would be affected. We urge the Met Council to seek some fresh alternatives to the plans as they have been presented, and to do it soon. WCNC is also concerned that the controversy and contentious debate will sink what is truly an exciting project that will enliven cities along the route and serve the residents and businesses of all the communities involved.

We thank you for all your hard work, but please don't consider the planning finished yet.

West Calhoun Neighborhood Council and The Edge Business Association for West  
Calhoun  
August 15, 2013



**From:** [Darby, Valincia](#)  
**To:** [Jacobson, Nani](#)  
**Cc:** [Lindy Nelson](#)  
**Subject:** Southwest Light Rail Transit Extension  
**Date:** Monday, August 12, 2013 9:47:02 AM  
**Attachments:** [er\\_13-0513.pdf](#)

---

Good Morning,

U.S. Department of the Interior correspondence on the subject project is attached.  
If there are questions please contact this office at (215) 597-5378.

Regards,

Valincia Darby

--

Valincia Darby

Regional Environmental Protection Assistant

Department of the Interior, OEPC

200 Chestnut Street, Rm. 244

Philadelphia, PA 19106

Phone: (215) 597-5378 Fax: (215) 597-9845

[Valincia\\_Darby@ios.doi.gov](mailto:Valincia_Darby@ios.doi.gov)



IN REPLY REFER TO:

# United States Department of the Interior

OFFICE OF THE SECRETARY  
Office of Environmental Policy and Compliance  
Custom House, Room 244  
200 Chestnut Street  
Philadelphia, Pennsylvania 19106-2904



August 12, 2013

9043.1  
ER 13/0513

Ms. Nani Jacobson, Project Manager  
Southwest Light Rail Transit Project Office  
6465 Wayzata Boulevard, Suite 500  
St. Louis Park, MN 55426

Dear Ms. Jacobson:

The U. S. Department of the Interior (Department) has no comment on Notice of Intent to prepare a Supplemental Draft Environmental Impact Statement for the Southwest Light Rail Transit Extension Project (Formerly referred to as the Southwest Transitway) located in Hennepin County, Minnesota.

Thank you for the opportunity to comment.

Sincerely,

Lindy Nelson  
Regional Environmental Officer

**From:** [Gail Dorfman](#)  
**To:** [Jacobson, Nani](#)  
**Subject:** Thank you for the opportunity to comment on the scope of the SDEIS.docx  
**Date:** Monday, August 12, 2013 4:58:59 PM  
**Attachments:** [Thank you for the opportunity to comment on the scope of the SDEIS.docx](#)

---

Hi Nani,

Here is the final version. I don't know why two versions were sent through before.

Please find attached a comment I'm submitting to the scope of the SDEIS. Thank you.

Gail Dorfman  
Hennepin County Commissioner  
District 3

**Disclaimer:** Information in this message or an attachment may be government data and thereby subject to the Minnesota Government Data Practices Act, Minnesota Statutes, Chapter 13, may be subject to attorney-client or work product privilege, may be confidential, privileged, proprietary, or otherwise protected, and the unauthorized review, copying, retransmission, or other use or disclosure of the information is strictly prohibited. If you are not the intended recipient of this message, please immediately notify the sender of the transmission error and then promptly delete this message from your computer system.

Thank you for the opportunity to comment on the defined scope of the Supplemental Draft Environmental Impact Statement (SDEIS) for the Southwest Light Rail Transit (LRT) Extension project.

The Southwest LRT Project is a critical link in the development of a comprehensive transit system for our Twin Cities region. More than a decade of planning and analysis went into studying more than 30 LRT alignments and building the community consensus and technical basis to support the approval of the Locally Preferred Alignment (LPA) by the Cities, County and Metropolitan Council in 2010.

As the County Commissioner representing the two cities impacted by both the LRT and freight alignments, and as the Chair of the Southwest Policy Advisory Committee that managed the Alternatives Analysis process and LPA recommendation, I am pleased to see that the Southwest Project Office, through the SDEIS, will thoroughly evaluate the environmental impacts associated with proposed adjustments to the LPA and to the freight alignment options. It is important that the public fully understands the environmental impacts and costs of all reasonable adjustments to the LPA and freight alternatives.

I ask that the scope of the SDEIS includes a thorough assessment of the following:

- For the Minneapolis Segment, all environmental impacts associated with the shallow and deep tunnel options and co-location of the freight should be identified, analyzed and shared with the public. Methods to mitigate those impacts and the costs of mitigation should be defined and evaluated. The impacts on economic development, affordable housing and community connections should also be identified, analyzed and shared with the public.
- For the St. Louis Park Segment, all environmental impacts associated with the Brunswick Central freight rail relocation option should be identified, analyzed and shared with the public. Methods to mitigate those impacts and the costs of mitigation should be defined and evaluated. The impacts of freight co-location on economic development, affordable housing and community connections at the Wooddale and Beltline Stations should also be identified, analyzed and shared with the public.
- For the St. Louis Park Segment, an analysis of a modified MN&S freight relocation alternative should be evaluated – one that would moderate grade increases and curves combined with property acquisition to widen the berm and the MN&S rail bed to address the safety, noise and vibration concerns expressed by TC&W, the City of St. Louis Park and members of the St. Louis Park community. This expanded scope and additional evaluation need not extend the time needed for SDEIS analysis as it calls for refining alternatives previously studied.

**From:** [Janet Jeremiah](#)  
**To:** [Jacobson, Nani](#)  
**Cc:** [Robert Ellis](#); [David Lindahl](#); [Rick Getschow](#)  
**Subject:** SDEIS Scope Comments  
**Date:** Monday, August 12, 2013 4:22:42 PM  
**Attachments:** [SDEIS Comments EP 2013-08-12 signed.pdf](#)

---

Hi Nani – Attached are Eden Prairie’s comments on the SDEIS scope for SW LRT. Thank you! –  
Janet

Janet Jeremiah, AICP  
Community Development Director  
City of Eden Prairie  
952-949-8529  
[jjeremiah@edenprairie.org](mailto:jjeremiah@edenprairie.org)



August 12, 2013

Ms. Nani Jacobson, Project Manager  
Southwest Light Rail Transit Project Office  
6465 Wayzata Boulevard, Suite 500, St. Louis Park, MN 55426

SUBJECT: SWLRT SDEIS Comments

Ms. Jacobson:

The City of Eden Prairie appreciates the opportunity to provide input on the SDEIS and respectfully submit the following comments:

- 1) The Eden Prairie LRT alignment contemplates a station with a large Park and Ride facility west of Mitchell Road. The scope of the SDEIS analysis should include a station with a Park and Ride facility located on the northwest corner of the City Center property. The scope should review impacts and potential mitigation steps needed to address any potential degradation to emergency service response times of Hennepin County Ambulance, Eden Prairie Police and Eden Prairie Fire. Mitigation of unacceptable traffic impacts caused by an at-grade rail crossing at Mitchell Road should also be reviewed. If acceptable mitigation of Mitchell Road impacts cannot be accomplished, sites east of Mitchell Road and west of SW Station should be reviewed as alternate sites for a westernmost station with a Park and Ride facility.
- 2) The Eden Prairie Maintenance Facility property is a potential site for the SWLRT Operations and Maintenance Facility. If that location is selected as the preferred alternative, then the scope of the detailed analysis should further explore the impacts on the city's ability to provide reliable, timely and economical essential city services should a centralized location in Eden Prairie not be available for relocation.
- 3) The Town Center station alternatives analysis (including the modified LPA, Comp Plan, and Singletree alignments) should include analysis of the need for a new north-south roadway and/or pedestrian/bicycle connections between Singletree Lane and Technology Drive. A roadway connection would improve vehicular access during and after construction, while pedestrian/bicycle connections would serve transit dependent riders in the area and help reduce the need for others to drive to the station. The analysis should also include alternatives for providing park and ride facilities for each station alternative.

Thank you for your consideration.

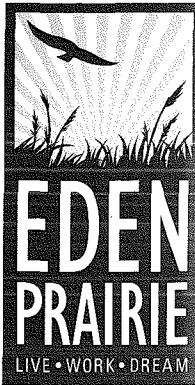
Sincerely,



Janet Jeremiah, Community Development Director  
City of Eden Prairie



Robert Ellis, Public Works Director  
City of Eden Prairie



OFC 952 949 8300  
FAX 952 949 8390  
TDD 952 949 8399

8080 Mitchell Rd  
Eden Prairie, MN  
55344-4485

[edenprairie.org](http://edenprairie.org)



**Minneapolis**  
City of Lakes

**Department of  
Public Works**

Steven A. Kotke, P.E.  
City Engineer  
Director

350 South 5th Street - Room 203  
Minneapolis MN 55415

Office 612 673-3000  
Fax 612 673-3565  
TTY 612 673-2157

**Community Planning &  
Economic Development**

105 5th Avenue South - Suite 200  
Minneapolis MN 55401-2534

Office 612 673-5095  
Fax 612 673-5100  
TTY 612 673-5154

August 12, 2013

Nani Jacobson, Project Manager  
Southwest Light Rail Transit Project Office  
6465 Wayzata Boulevard, Suite 500  
St. Louis Park, MN 55426



Dear Ms. Jacobson:

The City of Minneapolis appreciates the opportunity to comment on the scope of the Supplemental Draft Environmental Impact Statement (SDEIS) for the Southwest Light Rail Transit Extension Project (formerly referred to as the Southwest Transitway). As indicated in the Federal Register notice, "the SDEIS scope will include, but not be limited to, the following areas: Eden Prairie LRT alignment and stations; LRT OMF site; freight rail alignments (i.e. Relocation and Co-location); and other areas where FTA and the Council determine that there is a need to be supplemented with additional information which was not included in the Project's October 2012 DEIS."

At the time of this writing, our understanding from the Southwest LRT Project Office is that the Metropolitan Council is carrying forward three options for freight rail alignments, all of which differ substantially from the alternatives considered in the October 2012 Draft Environmental Impact Statement. Two of the alignments involve LRT tunnels through the Kenilworth corridor in Minneapolis, with freight rail remaining in the corridor.

When documenting the environmental effects of the tunnel options in the SDEIS, the City of Minneapolis requests that the Metropolitan Council and the Federal Transit Administration include consideration of the following:

- The effect that a tunnel may have on lake levels in Cedar Lake and Lake of the Isles and the effect that a tunnel may have on groundwater movement between the lakes.
- The effect that tunnel dewatering may have on the aquatic environment of the lakes, including but not limited to the water temperature in Cedar Lake and Lake of the Isles, any effect on the lakes' current freeze-thaw cycle, and any effects on aquatic ecology.
- An analysis of the capacity of the sanitary and storm sewer systems and their ability to handle the additional load from tunnel dewatering.
- Documentation of the loss of vegetation in the Kenilworth corridor that results from each option, with an analysis of the degree to which vegetation would be re-established following construction.
- Documentation of the effects that each option would have on full implementation of regional transitways as shown in the Regional 2030 Transportation Policy Plan, including but not limited to the ridership effects of building the West Lake Street station underground, the ridership effects of eliminating the 21<sup>st</sup> Street

station, and the connection between Southwest LRT and the Midtown Corridor.

- Documentation of noise and vibration for all elements of the options that differ from the locally-preferred alternative, including the effect of freight and LRT noise resulting from the construction of crash walls, retaining walls, and other infrastructure that was not previously analyzed.
- Documentation of the environmental effects of any proposed changes to the layout of freight tracks in the Kenilworth corridor.

While it is important to understand and document the above environmental effects, there are likely other potential effects that have not been anticipated at this time but should be considered in your analysis and documentation. As you know, these alternatives are relatively new in the history of Southwest Transitway project development, and it is incumbent on the Metropolitan Council and the FTA to develop a comprehensive scope for the SDEIS.

Thank you for the opportunity to submit suggestions for scoping.

Sincerely,



Steven A. Kotke  
City Engineer - Director of Public Works



Jeremy Hanson-Willis  
Director of Community Planning and Economic Development

CC: Mayor Rybak  
Council Member Colvin Roy, Chair Transportation & Public  
Works Committee  
Jenifer Hager  
Jack Byers

**From:** [Pflaum, Donald C.](#)  
**To:** [Jacobson, Nani](#)  
**Cc:** [Rybak, R.T.](#); [Colvin Roy, Sandra K.](#); [Kotke, Steven A.](#); [Hanson Willis, Jeremy J.](#); [Hager, Jenifer A](#); [Byers, Jack P.](#)  
**Subject:** SW Corridor: SDEIS Scope  
**Date:** Monday, August 12, 2013 2:35:26 PM  
**Attachments:** [Minneapolis SDEIS NOI Comments.pdf](#)

---

Nani,

Please see the attached letter, which includes the City of Minneapolis Comments on the SW Corridor SDEIS Notice of Intent. You will receive a copy of the signed letter in the mail.

Thank you.

Donald Pflaum, P.E., PTOE  
City of Minneapolis Public Works  
309 2<sup>nd</sup> Avenue South – Room 300  
Minneapolis, MN 55401-2268  
612-673-2129



**Minneapolis**  
City of Lakes

**Department of  
Public Works**

Steven A. Kotke, P.E.  
City Engineer  
Director

350 South 5th Street - Room 203  
Minneapolis MN 55415

Office 612 673-3000  
Fax 612 673-3585  
TTY 612 673-2157

**Community Planning &  
Economic Development**

105 5th Avenue South - Suite 200  
Minneapolis MN 55401-2534

Office 612 673-5085  
Fax 612 673-5100  
TTY 612 673-5154

August 12, 2013

Nani Jacobson, Project Manager  
Southwest Light Rail Transit Project Office  
6465 Wayzata Boulevard, Suite 500  
St. Louis Park, MN 55426

Dear Ms. Jacobson:

The City of Minneapolis appreciates the opportunity to comment on the scope of the Supplemental Draft Environmental Impact Statement (SDEIS) for the Southwest Light Rail Transit Extension Project (formerly referred to as the Southwest Transitway). As indicated in the Federal Register notice, "the SDEIS scope will include, but not be limited to, the following areas: Eden Prairie LRT alignment and stations; LRT OMF site; freight rail alignments (i.e. Relocation and Co-location); and other areas where FTA and the Council determine that there is a need to be supplemented with additional information which was not included in the Project's October 2012 DEIS."

At the time of this writing, our understanding from the Southwest LRT Project Office is that the Metropolitan Council is carrying forward three options for freight rail alignments, all of which differ substantially from the alternatives considered in the October 2012 Draft Environmental Impact Statement. Two of the alignments involve LRT tunnels through the Kenilworth corridor in Minneapolis, with freight rail remaining in the corridor.

When documenting the environmental effects of the tunnel options in the SDEIS, the City of Minneapolis requests that the Metropolitan Council and the Federal Transit Administration include consideration of the following:

- The effect that a tunnel may have on lake levels in Cedar Lake and Lake of the Isles and the effect that a tunnel may have on groundwater movement between the lakes.
- The effect that tunnel dewatering may have on the aquatic environment of the lakes, including but not limited to the water temperature in Cedar Lake and Lake of the Isles, any effect on the lakes' current freeze-thaw cycle, and any effects on aquatic ecology.
- An analysis of the capacity of the sanitary and storm sewer systems and their ability to handle the additional load from tunnel dewatering.
- Documentation of the loss of vegetation in the Kenilworth corridor that results from each option, with an analysis of the degree to which vegetation would be re-established following construction.
- Documentation of the effects that each option would have on full implementation of regional transitways as shown in the Regional 2030 Transportation Policy Plan, including but not limited to the ridership effects of building the West Lake Street station underground, the ridership effects of eliminating the 21<sup>st</sup> Street

station, and the connection between Southwest LRT and the Midtown Corridor.

- Documentation of noise and vibration for all elements of the options that differ from the locally-preferred alternative, including the effect of freight and LRT noise resulting from the construction of crash walls, retaining walls, and other infrastructure that was not previously analyzed.
- Documentation of the environmental effects of any proposed changes to the layout of freight tracks in the Kenilworth corridor.

While it is important to understand and document the above environmental effects, there are likely other potential effects that have not been anticipated at this time but should be considered in your analysis and documentation. As you know, these alternatives are relatively new in the history of Southwest Transitway project development, and it is incumbent on the Metropolitan Council and the FTA to develop a comprehensive scope for the SDEIS.

Thank you for the opportunity to submit suggestions for scoping.

Sincerely,



Steven A. Kotke  
City Engineer - Director of Public Works



Jeremy Hanson-Willis  
Director of Community Planning and Economic Development

CC: Mayor Rybak  
Council Member Colvin Roy, Chair Transportation & Public  
Works Committee  
Jenifer Hager  
Jack Byers

August 12, 2013



Ms. Nani Jacobson  
Project Manager  
Southwest LRT Project Office  
Park Place West, 6465 Wayzata Boulevard, Suite 500  
St. Louis Park, MN 55426

Dear Nani,

This letter is in response to the July 22, 2013 Notice of Intent to prepare a Supplemental Draft Environmental Impact Statement (SDEIS) for the Southwest Light Rail Transit Extension Project.

The City of St. Louis Park submits the attached list of “Key Issues and Comments on Freight Rail Alternatives” that was originally submitted to Mark Fuhrmann on July 9, 2013. This document specifies the issues that are of primary importance to St. Louis Park, especially related to the impacts of the new freight rail routing alternatives. The City of St. Louis Park requests that these issues and impacts, as well mitigation measures for each alternative route be addressed in the SDEIS.

In addition we request all of the standard and required Environmental Assessment Worksheet and Environmental Assessment Impact items and topics be addressed for to the new alignment options.

Thank you for this opportunity to comment.

Sincerely,



Tom Harmening  
City Manager

## City of St. Louis Park

### Key Issues and Comments on Freight Rail Alternatives

July 8, 2013

The City of St. Louis Park has reviewed the eight (8) alternative freight rail routing alignments and provides the following comments and requests for further information for evaluating the alternatives. *It is important to note that any comment, question or suggestion relating to the Re-Location Alternatives should not in any way be construed that the City supports the re-location options.*

#### **Key Issues to address for freight rail routing to be successful:**

##### **Co-location Alternatives**

1. Presence of freight rail and trains potentially interferes with access to LRT station platforms by foot, bike, bus and auto. Significant traffic impacts will occur at Wooddale Avenue and Beltline Boulevard; these impacts must be assessed and addressed. A circulation study for the areas around the stations is needed to evaluate and mitigate traffic impacts in the area.
2. Grade separation of freight rail at Wooddale Avenue is not practical; however grade separating LRT and the Cedar Lake Regional Trail is feasible and would reduce traffic conflicts. The search for ways to eliminate the negative traffic and access impacts from freight rail and LRT crossing Wooddale Avenue needs to continue. This is a vital north-south route for the community and the Elmwood and Sorensen neighborhoods specifically, and long delays due to LRT and freight trains are not acceptable or safe. Alternative grade separated vehicular crossings or routes under or over the rail/trail corridor are needed at either Yosemite or Xenwood Avenues.
3. Beltline Boulevard must be grade separated from LRT, freight rail and the regional trail by putting Beltline with sidewalks below the rail/trail corridor. Beltline is the only north-south crossing of the rail/trail corridor between the W. Lake Street Bridge and Highway 100. It is critical for circulation in the community and emergency vehicles that traffic movements not be unduly delayed by the presence of freight trains or LRT. Only grade separation will ensure that no matter when freight trains and LRT trains arrive, or whether they are on schedule or not, traffic and emergency vehicles will be able to move where they need to go. The accumulative effects of at grade crossings at both Wooddale and Beltline are particularly troubling, since a train that creates traffic problems at one street crossing will move on to create crossing problems at the next street; and in some cases a single train will be long enough to block both intersections at once. Grade separation at Beltline would mean traffic could at least continue to flow there, and if the Wooddale crossing is blocked, traffic could divert to either Beltline on the east or Louisiana Avenue on the west if needed.



4. Presence of freight rail and LRT at station areas affects development opportunities; design must consider development-friendly configurations.
5. Emergency vehicle delays will occur when freight trains are present at Wooddale Avenue and Beltline Boulevard. Grade separation or other means of maintaining emergency vehicle accessibility in the community must be provided.
6. The Midtown trolley station/platform may be located at the West Lake Station and requires additional property takings; these costs must not be attributed to the SWLRT project.

### **Re-Location Alternatives**

#### **A. Community Cohesion and Aesthetic Impacts**

1. Both relocation options create a completely new freight rail right-of-way where one has never existed before. The elevated freight rail right-of-way creates a major visual and physical barrier through the middle of St. Louis Park (SLP), the SLP school district campus, and the Sorensen/Lenox and Bronx Park/Birchwood neighborhoods. Community cohesion is compromised. Physical connections, such as walkways and roadways through the barrier must be created in order to provide needed community connections and reduce the barrier effect. These should include attractive, safe pedestrian underpasses or bridges at street crossings like Dakota Avenue, Wooddale Avenue, Lake Street and 27<sup>th</sup> Street, as well as facilities to connect portions of the community split by the elevated train tracks, including the Central Community Center with the football field, Roxbury Park with Keystone Park, and Birchwood neighborhood with Bronx Park neighborhood, Dakota Park, Peter Hobart School and Cedar Lake Regional Trail access.
2. Dramatic negative visual impacts will be created by the elevated trains and the structures that support them. A MNDOT Visual Quality Manual type of process must be undertaken to establish the visual treatments and mitigation needed to reduce the impact of the elevated trains. It should guide the aesthetics and appearance of the structure as it crosses through different areas of the city, each with its own characteristics and needs, such as the school campuses, residential areas, commercial areas, the overpass of Highway 7, etc. This process must be conducted with citizens and other stakeholders and must include much more than a bare minimum treatment. It should incorporate public art and other elements designed to minimize the negative aesthetic impacts on the City and use the structures where possible to build community cohesion, identity and sense of place. Specific mitigation items need to be incorporated as a part of the reroute cost.
3. The project budget must include not only the cost of preparing the Visual Quality Manual but also the cost of constructing the aesthetic and community cohesion improvements.

## B. Safety impacts

1. Elimination of reverse curves, reductions in grade changes, upgrading of tracks and elimination of at grade freight rail crossings of streets inherently improves safety of freight traffic in St. Louis Park. These improvements reduce the potential for accidents and derailments. Elevating trains on bridges and earthen berms especially in sensitive environments, creates special safety risks and concerns. The impacts of spills and derailments can be more severe on elevated tracks. The proposed freight rail re-location routes elevate tracks significantly and introduce freight rail tracks to areas that have not had tracks before. Measures to improve the safety and eliminate potential negative impacts associated with elevated tracks need to be included in the SWLRT project. They should include:

- a. Softening of side-slopes. The proposed side-slopes are far too steep at 2:1 grades; they should be at 3:1 or flatter for safety, and to maintain proper vegetation.
- b. Inner guard rail should be used. A special extra rail should be placed on tracks to reduce the potential severity of derailments.
- c. Widening the MN&S right-of-way width to a minimum 100 ft. or possibly more in some areas depending on the height of the tracks relative to adjacent property. The current right-of-way is 66 feet or less. This is inadequate especially for elevated tracks. A wider right-of-way must be provided to:
  - i. provide an appropriate area for buffering single-family homes and yards from trains,
  - ii. provide safe, maintainable side-slopes for the tracks elevated by earthen berms; and,
  - iii. allow adequate space to access the tracks for maintenance.

The homes along the west side of Blackstone Avenue between Minnetonka Blvd and 27<sup>th</sup> Street need to be acquired to create an adequate corridor for train operations and buffer nearby residents from trains. Similarly, four homes on Minnetonka Blvd; and, four homes near Lake Street, one home on Brunswick and three homes on Blackstone, also must be acquired to create adequate right-of-way. The locations of the homes that must be acquired are shown on the attached map.

- d. Align freight tracks in the right-of-way to provide adequate protection for residents and uses on both sides of the freight rail tracks. In general, this means locating the tracks in the middle of a 100 foot right-of-way, but in some cases more buffer area may be needed on one side or both sides of the freight rail tracks. An evaluation of the potential consequences of a train derailment may lead to the conclusion that more than a 50 foot buffer is needed between the center line of the tracks and the nearest property line on one or both sides of a portion of the tracks. Tracks elevated more than 13 feet above adjacent properties will require more than 100 feet of right-of-way to accommodate side-slopes and the freight tracks.
- e. Fencing and signage are needed to minimize railroad right-of-way trespassing.

- f. A derailment study must be done to assess the risks due to the proposed elevated tracks and identify any actions needed to mitigate these risks including potentially widening of the freight rail right-of-way. The cost of the study and any mitigation items identified in the study must be funded by the project.
2. Retaining walls on raised sections of MN&S can be an attractive nuisance and present a dangerous situation for kids; tall retaining walls should be avoided.
3. Both relocation options pass by or through the Xcel electric substation on Hwy 7. The relocation concept plans provide no indication as to what the impacts of trains in close proximity to the electric substation will be, or how any negative impacts will be avoided and/or mitigated. A thorough evaluation of the risks and how those risks will be mitigated must be provided, as well as how the mitigation will be funded must be provided to ensure the safety of the electric substation and the residents, businesses and visitors to St. Louis Park.

### **C. Property Impacts**

1. The information provided by the SPO to date does not fully describe the number and type of properties and acreage and costs of acquisition needed for each alternative. This information must be provided in order to accurately compare alternatives.
2. The height of tracks in relation to surrounding uses must be shown.
3. The property impacts for each alternative (besides takings), i.e. people and operations impacted at the football field, Park Spanish Immersion School, Central Community Center, etc. must be considered and evaluated. These facilities are used by a broad spectrum of the community. Any degradation of the quality, functionality or accessibility of these community wide facilities must be considered as part of the evaluation of the freight rail routing options.
4. The relocation alternatives place elevated freight rail close to Central Community Center and Park Spanish Immersion Elementary school and the young children that use this facility. There are inherent risks with trains in close proximity to young children and there is nothing provided in the proposed re-route plans for how this risk will be addressed and how children will be protected. A plan for how to mitigate any negative impacts and safety risks must be prepared along with a plan for funding the mitigation and safety improvements.
5. It is not shown how the SLP High School football stadium would be replaced. It would not appear to fit north of the proposed relocated Lake Street especially if the power lines are not also relocated and additional properties are not acquired. The football stadium must be replaced. Finding a nearby location will be very difficult. Relocating the football stadium comes with many challenges that go beyond simply obtaining property. They include how to effectively address potential negative neighborhood impacts of noise, lights, and traffic. Selecting a new location for the football stadium will require an

extensive public process of its own that will be time consuming and expensive. This process needs to be funded and completed before a freight rail routing decision is made, if the Brunswick West re-routing alternative is to be seriously considered. The future location and funding for replacing the football stadium must be resolved by the SWLRT project.

6. How the playground serving the Central Community Center (Central) will be replaced and funded must be established before freight rail decisions are finalized. The playground is critical to the operation of the Central facility. Access from Central to the football stadium must be addressed through a pedestrian tunnel or other measure. The connection between these facilities is important for the operation of Central and the commitments made by the SLP School District in the funding of the turf field. Access must be maintained.
7. Freight rail relocation options show a large loss of commercial properties that house many businesses that would have to move but may not be able to be relocated in SLP. The potential loss of locally owned businesses is of particular concern. Every effort to retain locally owned businesses and the jobs they provide must be utilized.
8. The loss of tax base, jobs, and businesses must be minimized.
9. There are significant impacts on commercial/industrial businesses and properties which need to be addressed. In some cases, through streets are turned into cul de sacs or re-routed. In other cases, existing streets are eliminated or re-aligned. All of these changes have impacts on the accessibility and visibility of existing businesses. The plans to date are rudimentary at best and only begin to scratch the surface of identifying issues, much less resolving them. The consequences of the changes to the street system, elimination of existing commercial buildings and the future of the remnant parcels created within the proposed changes in the Lake Street/Wooddale/Walker/Library Lane area must be fully evaluated and mitigation actions identified. Access issues for businesses and uses at Dakota and Walker St. where a cul-de-sac is proposed must be addressed and solutions acceptable to the businesses involved created.
10. How freight trains and the trail will operate during construction must be clearly identified. The massive nature of a freight rail reroute project raises concerns about the constructability of the re-route options. The proposed routes cut through the center of the City of St. Louis Park. How the new rail route can be constructed while the current trains continue to operate is not apparent. A plan for how freight rail service will be maintained during construction and how any negative impacts on the community, its residents, businesses, schools, parks and property owners from the actions needed to maintain freight rail operations will be mitigated must be prepared and approved by St. Louis Park before a decision to re-route freight trains is made.
11. The construction of either of the freight rail re-route options will entail significant disruption to all aspects of the community; residents' daily lives, schools, parks and businesses will all be dramatically affected. Construction will entail hauling massive amounts of fill material through single-family neighborhoods, school campuses, parks

and commercial areas. Today more than 100 single-family homes abut the MN&S corridor. The construction project will literally be happening in their backyards. Local residential streets will be impacted by the heavy equipment traffic and no doubt periodic street closures during the construction process. Noise, vibration, dust, disruption of accessibility, congestion and safety issues are all likely consequences of the construction activity needed for a freight rail reroute. A detailed plan for how construction will be accomplished and how the impacts on the property owners, residents, schools and parks will be mitigated must be prepared and shared with the community before a freight rail routing decision entailing the re-routing options is made.

12. Construction will have major business interruption issues. How access will be maintained and how businesses will continue to operate successfully during construction must be identified and prescribed in a plan prior to consideration of re-routing freight rail traffic. All impacts on businesses need to be identified, addressed and mitigated.
13. Wooddale Avenue and Lake Street alignments and the location of new streets will need much more evaluation. The options shown need to be much more thoroughly considered in order for a road system in the area to work and a specific design established. Roadwork and reconfiguration of streets is necessary for the rerouting alternatives: SW LRT's cost estimates need to include the engineering, design and capital cost of this work. Extensive public involvement would be needed to plan and complete this work.
14. Who would own and maintain the new bridges and tracks is not determined and is an issue of importance to the City. If this new infrastructure is built in SLP it is of great importance that it be well maintained and that the lines of responsibility for it are clear.
15. The SWLRT plans all call for the removal of the freight rail storage tracks along the Bass Lake Spur in St. Louis Park. A commitment and agreement to the removal of the storage track must be in place prior to approval of the SWLRT plans.
16. A pedestrian connection at 27th Street West under the MN&S as discussed in the DEIS is not shown in the proposed re-route plans. This is a needed and important connection between the Birchwood and Bronx Park neighborhoods and as an access point for the neighborhood to Dakota Park, Hobart School and the Cedar Lake Regional Trail access point.
17. The 28<sup>th</sup> Street options should be evaluated to see if the roadway could be grade separated instead of an at-grade crossing. If it is an at-grade crossing it must include crossing controls needed for a Whistle Quiet Zone (WQZ).
18. A circulation study for the area north of Minnetonka Boulevard is needed to evaluate traffic impacts from street closures in the area. It must identify the appropriate improvements and funding that will be provided to mitigate impacts.
19. The re-route options reduce the viability of reuse of the currently unused portion of Nat'l Lead site; compensation for this loss is needed.

20. South of Bass Lake Spur, the MN&S tracks move east, potentially impacting adjacent residential property and reducing the setbacks to less than 25 ft.; these properties must be acquired.
21. The Cedar Lake Trail Bridge at the Iron Triangle wye is not shown on plans; this must be included on the plans and funded as part of the project.
22. The future of the CP right-of-way in the vicinity of the SLP High School needs to be addressed as the re-route options eliminate the freight rail tracks in this area. No further railroad use of this property must be allowed; the use and ownership of the property needs to be established. The first priority for the use of the property should be the SLP School District or some other public use such as a trail, followed by providing some opportunities for economic development. The potential reuse of the property will be hampered by the on-going presence of overhead power lines that currently follow the MN&S right-of-way.
23. More information on properties shown as "partial acquisition" must be provided to understand if they are usable and if they will have access to a public street or not. Some of these parcels may need to be full acquisitions.
24. The future of the land caught between the MN&S tracks and the wyes connecting the Bass Lake Spur to the MN&S tracks south of Hwy 7 is not explained in the proposed relocation plans. Who will own and maintain these properties and how will they be used must be known in order to evaluate the relocation options.

#### **D. Environmental Impacts**

1. Environmental impacts including noise, vibration, safety, wetlands, woodlands, traffic/road systems and all other standard environmental review items must be evaluated. No information on the potential environmental impacts has been provided. This is a critical component in the evaluation of the freight rail options and the design of the project, and must include mitigation measures. It is anticipated that the increased elevation of the tracks and trains will increase the potential for noise impacts on the surrounding neighborhoods. No indication has been provided for how these impacts will be addressed. Mitigation measures must be identified and funding for those measures included in the SWLRT project.
2. The football stadium, Central Community Center playgrounds, Roxbury/Keystone Park, Dakota Park, Birchwood Park and other properties present potential 4f parcel impacts; these must be evaluated, addressed and mitigated.
3. Several potentially historic homes and buildings may be taken and this situation needs to be evaluated. 106 reviews may be required for older buildings now potentially impacted by new re-location routes.

4. The loss of a major swath of trees and vegetation along Iron Triangle eliminates the existing screening of trains and tracks to the residents; this needs to be addressed and landscaping must be replaced.
5. The Brunswick Pond was constructed for flood mitigation and cannot be filled in without replacement in the immediate area to address area flooding issues. How and where this storm water storage is replaced is a critical issue. It must be resolved along with identifying funding of mitigation of any negative impacts created from the relocation of the storm water pond before a freight rail decision is made.
6. The Iron Triangle wye to BNSF moves west into wetland; wetland impacts need to be evaluated and mitigation plans prepared before the freight rail routing decision is made.
7. Stormwater drainage for a new rail route must be carefully studied and evaluated. There is no indication as to where or how the storm water from the freight rail infrastructure would be handled. How this ponding is to be provided and where it will be located must be resolved before a re-routing decision is made. Likewise any negative impacts from the ponding plan and needed mitigation must be identified and funding established. These plans must be approved by the City of St. Louis Park.
8. A new storm water plan for the larger area must be created at the expense of the SWLRT project because the reroute options will alter the overall storm water drainage system and change the direction of surface water drainage for a large portion of the community.
9. The Brunswick Central re-routing alternative entails lowering Hwy 7 by 4.5 feet. This will have an impact on the City's storm water system and that has not been evaluated. Any new infrastructure needed in St. Louis Park as a result of the lowering of Hwy 7 must be included in the SWLRT project.
10. Construction of a new two mile siding along BNSF tracks will result in additional noise and vibration to surrounding properties; these must be addressed and mitigated.
11. Full topographic information from surveys must be completed prior to any decision to re-route freight trains to the MN&S routes to ensure freight trains can operate on the re-location routes as anticipated, and to ensure the heights of bridges, berms and tracks shown in the current proposals are accurate.
12. Computer analysis of operating freight trains on the re-location routes must be completed prior to any decision to re-relocate freight trains to the proposed routes to ensure that trains can operate at the proposed speed of 25 mph. Any change in the operating speeds will change the potential freight train impacts including traffic, noise and vibrations impacts, in turn potentially changing the mitigation measures needed for the project.
13. The location of underground utilities near the proposed heavy earth berms need to be identified and the potential impacts of those berms on underground utilities evaluated. Mitigation must be provided to protect or relocate the underground utilities at the SWLRT's cost.

**From:** [Meg McMonigal](#)  
**To:** [Jacobson, Nani](#)  
**Subject:** SDEIS  
**Date:** Monday, August 12, 2013 4:01:42 PM  
**Attachments:** [SDEIS letter and comments.pdf](#)

---

Letter and comments attached.

Thanks

Meg

[Meg J. McMonigal](#)  
[Planning and Zoning Supervisor](#)  
[City of St. Louis Park](#)  
[5005 Minnetonka Boulevard](#)  
[St. Louis Park, MN 55416](#)  
[952-924-2573](#)  
[mmcmonigal@stlouispark.org](mailto:mmcmonigal@stlouispark.org)



August 12, 2013

Ms. Nani Jacobson  
Project Manager  
Southwest LRT Project Office  
Park Place West, 6465 Wayzata Boulevard, Suite 500  
St. Louis Park, MN 55426

Dear Nani,

This letter is in response to the July 22, 2013 Notice of Intent to prepare a Supplemental Draft Environmental Impact Statement (SDEIS) for the Southwest Light Rail Transit Extension Project.

The City of St. Louis Park submits the attached list of "Key Issues and Comments on Freight Rail Alternatives" that was originally submitted to Mark Fuhrmann on July 9, 2013. This document specifies the issues that are of primary importance to St. Louis Park, especially related to the impacts of the new freight rail routing alternatives. The City of St. Louis Park requests that these issues and impacts, as well mitigation measures for each alternative route be addressed in the SDEIS.

In addition we request all of the standard and required Environmental Assessment Worksheet and Environmental Assessment Impact items and topics be addressed for to the new alignment options.

Thank you for this opportunity to comment.

Sincerely,



Tom Harmening  
City Manager

## **City of St. Louis Park**

### **Key Issues and Comments on Freight Rail Alternatives      July 8, 2013**

The City of St. Louis Park has reviewed the eight (8) alternative freight rail routing alignments and provides the following comments and requests for further information for evaluating the alternatives. *It is important to note that any comment, question or suggestion relating to the Re-Location Alternatives should not in any way be construed that the City supports the re-location options.*

#### **Key Issues to address for freight rail routing to be successful:**

##### **Co-location Alternatives**

1. Presence of freight rail and trains potentially interferes with access to LRT station platforms by foot, bike, bus and auto. Significant traffic impacts will occur at Wooddale Avenue and Beltline Boulevard; these impacts must be assessed and addressed. A circulation study for the areas around the stations is needed to evaluate and mitigate traffic impacts in the area.
2. Grade separation of freight rail at Wooddale Avenue is not practical; however grade separating LRT and the Cedar Lake Regional Trail is feasible and would reduce traffic conflicts. The search for ways to eliminate the negative traffic and access impacts from freight rail and LRT crossing Wooddale Avenue needs to continue. This is a vital north-south route for the community and the Elmwood and Sorensen neighborhoods specifically, and long delays due to LRT and freight trains are not acceptable or safe. Alternative grade separated vehicular crossings or routes under or over the rail/trail corridor are needed at either Yosemite or Xenwood Avenues.
3. Beltline Boulevard must be grade separated from LRT, freight rail and the regional trail by putting Beltline with sidewalks below the rail/trail corridor. Beltline is the only north-south crossing of the rail/trail corridor between the W. Lake Street Bridge and Highway 100. It is critical for circulation in the community and emergency vehicles that traffic movements not be unduly delayed by the presence of freight trains or LRT. Only grade separation will ensure that no matter when freight trains and LRT trains arrive, or whether they are on schedule or not, traffic and emergency vehicles will be able to move where they need to go. The accumulative effects of at grade crossings at both Wooddale and Beltline are particularly troubling, since a train that creates traffic problems at one street crossing will move on to create crossing problems at the next street; and in some cases a single train will be long enough to block both intersections at once. Grade separation at Beltline would mean traffic could at least continue to flow there, and if the Wooddale crossing is blocked, traffic could divert to either Beltline on the east or Louisiana Avenue on the west if needed.

4. Presence of freight rail and LRT at station areas affects development opportunities; design must consider development-friendly configurations.
5. Emergency vehicle delays will occur when freight trains are present at Wooddale Avenue and Beltline Boulevard. Grade separation or other means of maintaining emergency vehicle accessibility in the community must be provided.
6. The Midtown trolley station/platform may be located at the West Lake Station and requires additional property takings; these costs must not be attributed to the SWLRT project.

## **Re-Location Alternatives**

### **A. Community Cohesion and Aesthetic Impacts**

1. Both relocation options create a completely new freight rail right-of-way where one has never existed before. The elevated freight rail right-of-way creates a major visual and physical barrier through the middle of St. Louis Park (SLP), the SLP school district campus, and the Sorensen/Lenox and Bronx Park/Birchwood neighborhoods. Community cohesion is compromised. Physical connections, such as walkways and roadways through the barrier must be created in order to provide needed community connections and reduce the barrier effect. These should include attractive, safe pedestrian underpasses or bridges at street crossings like Dakota Avenue, Wooddale Avenue, Lake Street and 27<sup>th</sup> Street, as well as facilities to connect portions of the community split by the elevated train tracks, including the Central Community Center with the football field, Roxbury Park with Keystone Park, and Birchwood neighborhood with Bronx Park neighborhood, Dakota Park, Peter Hobart School and Cedar Lake Regional Trail access.
2. Dramatic negative visual impacts will be created by the elevated trains and the structures that support them. A MNDOT Visual Quality Manual type of process must be undertaken to establish the visual treatments and mitigation needed to reduce the impact of the elevated trains. It should guide the aesthetics and appearance of the structure as it crosses through different areas of the city, each with its own characteristics and needs, such as the school campuses, residential areas, commercial areas, the overpass of Highway 7, etc. This process must be conducted with citizens and other stakeholders and must include much more than a bare minimum treatment. It should incorporate public art and other elements designed to minimize the negative aesthetic impacts on the City and use the structures where possible to build community cohesion, identity and sense of place. Specific mitigation items need to be incorporated as a part of the reroute cost.
3. The project budget must include not only the cost of preparing the Visual Quality Manual but also the cost of constructing the aesthetic and community cohesion improvements.

## B. Safety impacts

1. Elimination of reverse curves, reductions in grade changes, upgrading of tracks and elimination of at grade freight rail crossings of streets inherently improves safety of freight traffic in St. Louis Park. These improvements reduce the potential for accidents and derailments. Elevating trains on bridges and earthen berms especially in sensitive environments, creates special safety risks and concerns. The impacts of spills and derailments can be more severe on elevated tracks. The proposed freight rail re-location routes elevate tracks significantly and introduce freight rail tracks to areas that have not had tracks before. Measures to improve the safety and eliminate potential negative impacts associated with elevated tracks need to be included in the SWLRT project. They should include:

- a. Softening of side-slopes. The proposed side-slopes are far too steep at 2:1 grades; they should be at 3:1 or flatter for safety, and to maintain proper vegetation.
- b. Inner guard rail should be used. A special extra rail should be placed on tracks to reduce the potential severity of derailments.
- c. Widening the MN&S right-of-way width to a minimum 100 ft. or possibly more in some areas depending on the height of the tracks relative to adjacent property. The current right-of-way is 66 feet or less. This is inadequate especially for elevated tracks. A wider right-of-way must be provided to:
  - i. provide an appropriate area for buffering single-family homes and yards from trains,
  - ii. provide safe, maintainable side-slopes for the tracks elevated by earthen berms; and,
  - iii. allow adequate space to access the tracks for maintenance.

The homes along the west side of Blackstone Avenue between Minnetonka Blvd and 27<sup>th</sup> Street need to be acquired to create an adequate corridor for train operations and buffer nearby residents from trains. Similarly, four homes on Minnetonka Blvd; and, four homes near Lake Street, one home on Brunswick and three homes on Blackstone, also must be acquired to create adequate right-of-way. The locations of the homes that must be acquired are shown on the attached map.

- d. Align freight tracks in the right-of-way to provide adequate protection for residents and uses on both sides of the freight rail tracks. In general, this means locating the tracks in the middle of a 100 foot right-of-way, but in some cases more buffer area may be needed on one side or both sides of the freight rail tracks. An evaluation of the potential consequences of a train derailment may lead to the conclusion that more than a 50 foot buffer is needed between the center line of the tracks and the nearest property line on one or both sides of a portion of the tracks. Tracks elevated more than 13 feet above adjacent properties will require more than 100 feet of right-of-way to accommodate side-slopes and the freight tracks.
- e. Fencing and signage are needed to minimize railroad right-of-way trespassing.

- f. A derailment study must be done to assess the risks due to the proposed elevated tracks and identify any actions needed to mitigate these risks including potentially widening of the freight rail right-of-way. The cost of the study and any mitigation items identified in the study must be funded by the project.
2. Retaining walls on raised sections of MN&S can be an attractive nuisance and present a dangerous situation for kids; tall retaining walls should be avoided.
3. Both relocation options pass by or through the Xcel electric substation on Hwy 7. The relocation concept plans provide no indication as to what the impacts of trains in close proximity to the electric substation will be, or how any negative impacts will be avoided and/or mitigated. A thorough evaluation of the risks and how those risks will be mitigated must be provided, as well as how the mitigation will be funded must be provided to ensure the safety of the electric substation and the residents, businesses and visitors to St. Louis Park.

### **C. Property Impacts**

1. The information provided by the SPO to date does not fully describe the number and type of properties and acreage and costs of acquisition needed for each alternative. This information must be provided in order to accurately compare alternatives.
2. The height of tracks in relation to surrounding uses must be shown.
3. The property impacts for each alternative (besides takings), i.e. people and operations impacted at the football field, Park Spanish Immersion School, Central Community Center, etc. must be considered and evaluated. These facilities are used by a broad spectrum of the community. Any degradation of the quality, functionality or accessibility of these community wide facilities must be considered as part of the evaluation of the freight rail routing options.
4. The relocation alternatives place elevated freight rail close to Central Community Center and Park Spanish Immersion Elementary school and the young children that use this facility. There are inherent risks with trains in close proximity to young children and there is nothing provided in the proposed re-route plans for how this risk will be addressed and how children will be protected. A plan for how to mitigate any negative impacts and safety risks must be prepared along with a plan for funding the mitigation and safety improvements.
5. It is not shown how the SLP High School football stadium would be replaced. It would not appear to fit north of the proposed relocated Lake Street especially if the power lines are not also relocated and additional properties are not acquired. The football stadium must be replaced. Finding a nearby location will be very difficult. Relocating the football stadium comes with many challenges that go beyond simply obtaining property. They include how to effectively address potential negative neighborhood impacts of noise, lights, and traffic. Selecting a new location for the football stadium will require an

extensive public process of its own that will be time consuming and expensive. This process needs to be funded and completed before a freight rail routing decision is made, if the Brunswick West re-routing alternative is to be seriously considered. The future location and funding for replacing the football stadium must be resolved by the SWLRT project.

6. How the playground serving the Central Community Center (Central) will be replaced and funded must be established before freight rail decisions are finalized. The playground is critical to the operation of the Central facility. Access from Central to the football stadium must be addressed through a pedestrian tunnel or other measure. The connection between these facilities is important for the operation of Central and the commitments made by the SLP School District in the funding of the turf field. Access must be maintained.
7. Freight rail relocation options show a large loss of commercial properties that house many businesses that would have to move but may not be able to be relocated in SLP. The potential loss of locally owned businesses is of particular concern. Every effort to retain locally owned businesses and the jobs they provide must be utilized.
8. The loss of tax base, jobs, and businesses must be minimized.
9. There are significant impacts on commercial/industrial businesses and properties which need to be addressed. In some cases, through streets are turned into cul de sacs or re-routed. In other cases, existing streets are eliminated or re-aligned. All of these changes have impacts on the accessibility and visibility of existing businesses. The plans to date are rudimentary at best and only begin to scratch the surface of identifying issues, much less resolving them. The consequences of the changes to the street system, elimination of existing commercial buildings and the future of the remnant parcels created within the proposed changes in the Lake Street/Wooddale/Walker/Library Lane area must be fully evaluated and mitigation actions identified. Access issues for businesses and uses at Dakota and Walker St. where a cul-de-sac is proposed must be addressed and solutions acceptable to the businesses involved created.
10. How freight trains and the trail will operate during construction must be clearly identified. The massive nature of a freight rail reroute project raises concerns about the constructability of the re-route options. The proposed routes cut through the center of the City of St. Louis Park. How the new rail route can be constructed while the current trains continue to operate is not apparent. A plan for how freight rail service will be maintained during construction and how any negative impacts on the community, its residents, businesses, schools, parks and property owners from the actions needed to maintain freight rail operations will be mitigated must be prepared and approved by St. Louis Park before a decision to re-route freight trains is made.
11. The construction of either of the freight rail re-route options will entail significant disruption to all aspects of the community; residents' daily lives, schools, parks and businesses will all be dramatically affected. Construction will entail hauling massive amounts of fill material through single-family neighborhoods, school campuses, parks

and commercial areas. Today more than 100 single-family homes abut the MN&S corridor. The construction project will literally be happening in their backyards. Local residential streets will be impacted by the heavy equipment traffic and no doubt periodic street closures during the construction process. Noise, vibration, dust, disruption of accessibility, congestion and safety issues are all likely consequences of the construction activity needed for a freight rail reroute. A detailed plan for how construction will be accomplished and how the impacts on the property owners, residents, schools and parks will be mitigated must be prepared and shared with the community before a freight rail routing decision entailing the re-routing options is made.

12. Construction will have major business interruption issues. How access will be maintained and how businesses will continue to operate successfully during construction must be identified and prescribed in a plan prior to consideration of re-routing freight rail traffic. All impacts on businesses need to be identified, addressed and mitigated.
13. Wooddale Avenue and Lake Street alignments and the location of new streets will need much more evaluation. The options shown need to be much more thoroughly considered in order for a road system in the area to work and a specific design established. Roadwork and reconfiguration of streets is necessary for the rerouting alternatives: SW LRT's cost estimates need to include the engineering, design and capital cost of this work. Extensive public involvement would be needed to plan and complete this work.
14. Who would own and maintain the new bridges and tracks is not determined and is an issue of importance to the City. If this new infrastructure is built in SLP it is of great importance that it be well maintained and that the lines of responsibility for it are clear.
15. The SWLRT plans all call for the removal of the freight rail storage tracks along the Bass Lake Spur in St. Louis Park. A commitment and agreement to the removal of the storage track must be in place prior to approval of the SWLRT plans.
16. A pedestrian connection at 27th Street West under the MN&S as discussed in the DEIS is not shown in the proposed re-route plans. This is a needed and important connection between the Birchwood and Bronx Park neighborhoods and as an access point for the neighborhood to Dakota Park, Hobart School and the Cedar Lake Regional Trail access point.
17. The 28<sup>th</sup> Street options should be evaluated to see if the roadway could be grade separated instead of an at-grade crossing. If it is an at-grade crossing it must include crossing controls needed for a Whistle Quiet Zone (WQZ).
18. A circulation study for the area north of Minnetonka Boulevard is needed to evaluate traffic impacts from street closures in the area. It must identify the appropriate improvements and funding that will be provided to mitigate impacts.
19. The re-route options reduce the viability of reuse of the currently unused portion of Nat'l Lead site; compensation for this loss is needed.

20. South of Bass Lake Spur, the MN&S tracks move east, potentially impacting adjacent residential property and reducing the setbacks to less than 25 ft.; these properties must be acquired.
21. The Cedar Lake Trail Bridge at the Iron Triangle wye is not shown on plans; this must be included on the plans and funded as part of the project.
22. The future of the CP right-of-way in the vicinity of the SLP High School needs to be addressed as the re-route options eliminate the freight rail tracks in this area. No further railroad use of this property must be allowed; the use and ownership of the property needs to be established. The first priority for the use of the property should be the SLP School District or some other public use such as a trail, followed by providing some opportunities for economic development. The potential reuse of the property will be hampered by the on-going presence of overhead power lines that currently follow the MN&S right-of-way.
23. More information on properties shown as “partial acquisition” must be provided to understand if they are usable and if they will have access to a public street or not. Some of these parcels may need to be full acquisitions.
24. The future of the land caught between the MN&S tracks and the wyes connecting the Bass Lake Spur to the MN&S tracks south of Hwy 7 is not explained in the proposed relocation plans. Who will own and maintain these properties and how will they be used must be known in order to evaluate the relocation options.

#### **D. Environmental Impacts**

1. Environmental impacts including noise, vibration, safety, wetlands, woodlands, traffic/road systems and all other standard environmental review items must be evaluated. No information on the potential environmental impacts has been provided. This is a critical component in the evaluation of the freight rail options and the design of the project, and must include mitigation measures. It is anticipated that the increased elevation of the tracks and trains will increase the potential for noise impacts on the surrounding neighborhoods. No indication has been provided for how these impacts will be addressed. Mitigation measures must be identified and funding for those measures included in the SWLRT project.
2. The football stadium, Central Community Center playgrounds, Roxbury/Keystone Park, Dakota Park, Birchwood Park and other properties present potential 4f parcel impacts; these must be evaluated, addressed and mitigated.
3. Several potentially historic homes and buildings may be taken and this situation needs to be evaluated. 106 reviews may be required for older buildings now potentially impacted by new re-location routes.



4. The loss of a major swath of trees and vegetation along Iron Triangle eliminates the existing screening of trains and tracks to the residents; this needs to be addressed and landscaping must be replaced.
5. The Brunswick Pond was constructed for flood mitigation and cannot be filled in without replacement in the immediate area to address area flooding issues. How and where this storm water storage is replaced is a critical issue. It must be resolved along with identifying funding of mitigation of any negative impacts created from the relocation of the storm water pond before a freight rail decision is made.
6. The Iron Triangle wye to BNSF moves west into wetland; wetland impacts need to be evaluated and mitigation plans prepared before the freight rail routing decision is made.
7. Stormwater drainage for a new rail route must be carefully studied and evaluated. There is no indication as to where or how the storm water from the freight rail infrastructure would be handled. How this ponding is to be provided and where it will be located must be resolved before a re-routing decision is made. Likewise any negative impacts from the ponding plan and needed mitigation must be identified and funding established. These plans must be approved by the City of St. Louis Park.
8. A new storm water plan for the larger area must be created at the expense of the SWLRT project because the reroute options will alter the overall storm water drainage system and change the direction of surface water drainage for a large portion of the community.
9. The Brunswick Central re-routing alternative entails lowering Hwy 7 by 4.5 feet. This will have an impact on the City's storm water system and that has not been evaluated. Any new infrastructure needed in St. Louis Park as a result of the lowering of Hwy 7 must be included in the SWLRT project.
10. Construction of a new two mile siding along BNSF tracks will result in additional noise and vibration to surrounding properties; these must be addressed and mitigated.
11. Full topographic information from surveys must be completed prior to any decision to re-route freight trains to the MN&S routes to ensure freight trains can operate on the re-location routes as anticipated, and to ensure the heights of bridges, berms and tracks shown in the current proposals are accurate.
12. Computer analysis of operating freight trains on the re-location routes must be completed prior to any decision to re-relocate freight trains to the proposed routes to ensure that trains can operate at the proposed speed of 25 mph. Any change in the operating speeds will change the potential freight train impacts including traffic, noise and vibrations impacts, in turn potentially changing the mitigation measures needed for the project.
13. The location of underground utilities near the proposed heavy earth berms need to be identified and the potential impacts of those berms on underground utilities evaluated. Mitigation must be provided to protect or relocate the underground utilities at the SWLRT's cost.

**Appendix J**  
**Visual Resources Technical Report**

---

---

**Southwest Light Rail Transit (Metro Green  
Line Extension) Supplemental Draft  
Environmental Impact Statement  
Visual Resources Technical Report**

November 2014

Prepared by

**CH2MHILL**



# Contents

---

Section	Page
<b>Contents</b> .....	<b>J-i</b>
<b>1. Introduction</b> .....	<b>J-1</b>
<b>2. Analysis Approach</b> .....	<b>J-1</b>
<b>3. Project Description</b> .....	<b>J-3</b>
<b>4. Affected Environment</b> .....	<b>J-4</b>
Eden Prairie .....	J-4
Overview .....	J-4
St. Louis Park/Minneapolis.....	J-7
Overview .....	J-7
<b>5. Potential Environmental Impacts</b> .....	<b>J-10</b>
Eden Prairie .....	J-10
Introduction.....	J-10
Long-term Direct and Indirect Visual Quality and Aesthetic Impacts .....	J-10
St. Louis Park/Minneapolis.....	J-17
Introduction.....	J-17
Long-term Direct and Indirect Visual Quality and Aesthetic Impacts.....	J-17
<b>6. Potential Mitigation Measures</b> .....	<b>J-21</b>
Eden Prairie and St. Louis Park/Minneapolis .....	J-21
<b>7. References</b> .....	<b>J-21</b>

## Tables

J-1	Existing Visual Quality and Aesthetics by Viewpoint in the Eden Prairie Segment [Rating Range 1 (very low) to 7 (very high)] .....	5
J-2	Existing Visual Quality and Aesthetics by Viewpoint in the St. Louis Park/Minneapolis Segment [Rating Range 1 (very low) to 7 (very high)].....	9
J-3	Anticipated Direct Change and Impact in Visual Quality and Aesthetics from Eden Prairie Segment Viewpoints .....	11
J-4	Anticipated Direct Change and Impact in Visual Quality and Aesthetics from St. Louis Park/Minneapolis Segment Viewpoints .....	18

## Attachment J-1.1. Visual Resources Exhibits

### *Eden Prairie Segment*

J-1	Key View Point Locations, Eden Prairie Segment
J-2	Viewpoint 1, View Looking Southwest from Technology Drive at Mitchell Road, Eden Prairie Segment
J-3	Viewpoint 2, View Looking Southwest along Technology Drive in front of the Optum Health Services headquarters, Eden Prairie Segment
J-4	Viewpoint 3, View from the Purgatory Creek Trail Looking North, Eden Prairie Segment
J-5	Viewpoint 4, View from Technology Drive West of the Southwest Transit Center, Eden Prairie Segment
J-6	Viewpoint 5, View Looking South along Prairie Center Drive at Technology Drive, Eden Prairie Segment

- J-7 Viewpoint 6, View from East Side of Prairie Center Drive toward Purgatory Creek Park, Eden Prairie Segment
- J-8 Viewpoint 7, View From Purgatory Creek Park Looking East, Eden Prairie Segment
- J-9 Viewpoint 8, View North Along Prairie Center Drive South of Proposed Elevated Crossing of Roadway, Eden Prairie Segment
- J-10 Viewpoint 9, View from Eden Road Looking West, Eden Prairie Segment
- J-11 Viewpoint 10, Valley View Drive, View Looking South toward Intersection with Flying Cloud Drive, Eden Prairie Segment

***St. Louis Park/Minneapolis Segment***

- J-12 Key View Point Locations, St. Louis Park/Minneapolis Segment
- J-13 Viewpoint 1, View Northeast from South Chowen Avenue toward the existing rail and trail corridor, St. Louis Park/Minneapolis Segment
- J-14 Viewpoint 2, View Looking North Near Lake Street, St. Louis Park/Minneapolis Segment
- J-15 Viewpoint 3, View From a Point North of Cedar Lake Parkway Looking North toward the Tunnel Portal South of the Canal Crossing, St. Louis Park/Minneapolis Segment
- J-16 Viewpoint 4, View From the Bike Trail at the South Side of the Channel Crossing, St. Louis Park/Minneapolis Segment
- J-17 Viewpoint 5, View from the Channel Looking Northwest toward the Channel Crossing, St. Louis Park/Minneapolis Segment
- J-18 Viewpoint 6, View Northwest From West 21st Street at Thomas Avenue toward the existing rail and trail corridor.

**Attachment J-2. Federal Highway Administration - Visual Impact Assessment for Highway Projects**

## APPENDIX J

### 1. Introduction

---

A Draft Environmental Impact Study (EIS) for the Southwest Light Rail Transit (METRO Green Line Extension) (referred to herein as Southwest LRT or the project) was published in October 2012. Since then, some substantial modifications have been made in the proposed light rail-related improvements and freight rail modifications that are a part of the Locally Preferred Alternative (LPA). In the Eden Prairie study area, adjustments have been made to the locations of two proposed light rail stations and the light rail alignments that would connect to them. In the St. Louis Park/Minneapolis study area, a segment of the LPA that was originally proposed for development at-grade would be placed in a light rail tunnel located in the area between the proposed West Lake Station and the Kenilworth Lagoon. This technical report documents the existing visual conditions and the project-related visual impacts within the Eden Prairie and St. Louis Park/Minneapolis Segments of the route.

The proposed location of the Operations and Maintenance Facility (OMF) has also been proposed to be located in an industrial area in Hopkins. Because this facility is located in an industrial area where there are no sensitive views, the visual impacts in this area would be generally not substantial. Consequently, the proposed OMF area was not evaluated as a part of this analysis.

In addition to the light rail-related improvements and freight rail modifications described above, the LPA will also include TPSS facilities. The specific locations for TPSS's have not been defined; however, siting of these facilities will be determined by utilizing fully developed areas, including surface parking lots, existing roadway right-of-way, and vacant parcels where feasible. The potential mitigation strategies referenced below to minimize adverse visual impacts would also apply to the TPSS facilities.

This visual resources analysis was prepared using the systematic procedure described in Section 2, Analysis Approach. It identifies both long-term and short-term (construction-related) impacts that the LPA would have on visual quality, including potential impacts to sensitive user groups in the Eden Prairie and St. Louis Park/Minneapolis areas. This analysis also identifies potential mitigation strategies to minimize impacts.

### 2. Analysis Approach

---

#### A. Background

The visual quality and aesthetics assessment in Section 3.6 of the Draft EIS was based on a project-specific methodology that considered visual and aesthetic resources contributing to visual quality, sensitive viewers or receptors, and changes to the character of the area, resulting in potential visual impacts categorized as: generally not substantial, potentially substantial, or substantial. The categories used in this analysis to evaluate impacts are the same as those used in the Draft EIS. The methodology used to assess the visual impacts in this analysis differ from the Draft EIS. Because the Draft EIS evaluated a large number of alternatives, it used a qualitative analysis to reach its conclusions. Because the Supplemental Draft EIS evaluated a single alternative for which more design information was available than at the Draft EIS phase, it was possible to use a standard visual impact assessment method that made extensive use of drawings and photo simulations and employed a systematic evaluation protocol

The analysis of the project's visual quality and aesthetics effects in this Supplemental Draft EIS applies the principles of the standardized approach for visual impact assessment developed by the Federal Highway Administration (FHWA) (FHWA, 1988). This method has been widely adopted by state highway departments and other agencies responsible for development of transportation facilities as the standard for evaluation of project visual effects. For reference, a copy of the FHWA Visual Impact Assessment manual has been included as Attachment J-2 at the end of this appendix to provide complete documentation of the FHWA methodology.

The FHWA developed its visual impact assessment methodology in response to the National Environmental Policy Act of 1969 (NEPA), which requires that consideration be given to the impacts that proposed federal actions or projects are likely to have on the environment's visual quality. The method was designed to provide a systematic approach to the evaluation of visual changes. Since its inception in the late 1980s, this method has been successfully applied by the FHWA and state highway departments, as well as by other visual resource specialists, to evaluate highway and other transportation projects. It is now the standard approach for evaluating the aesthetic impacts of proposed transportation projects. The method applied in preparing this supplemental analysis is based on the principles of the FHWA methodology, and was selected because it is a standardized, widely recognized approach that is highly systematic. In addition, there is a reliance on representative view photographs of the project alignment, and on visualizations of the project's appearance, which provide a tangible sense of the visual character and quality of the areas that the project would affect, as well as an idea of how the project would affect these visual attributes. The discussion below provides a brief summary of how the FHWA assessment methodology was applied to prepare this section of the Supplemental Draft EIS.

## **B. Identifying and Assessing Viewpoints**

The visual impact assessment process began with a review of Google Earth™ air imagery. KMZ files of the revised project layout were superimposed on this imagery to identify areas along the Eden Prairie and St. Louis Park/Minneapolis Segments where revised elements of the project would potentially have a substantial impact on views, particularly those of sensitive viewer groups. A representative subset of views in those areas was photographically documented and used as the basis for the analysis.

Once identified, the existing visual quality of these views was evaluated using a systematic procedure that entails application of numerical ratings. Under the FHWA methodology, the visual quality of a view was evaluated in terms of its vividness, intactness, and unity (which are defined below) and each of these dimensions were scored on a scale of from 1 to 7 for each of these three attributes, where a low score (1) represents low visual quality and a higher score (7) represents high visual quality. The scores for these three dimensions are then added up and divided by three, to produce a summary rating of the view's overall level of visual quality. This assessment considers whether this particular view is common or dramatic. Is it a pleasing composition (a mix of elements that seem to belong together) or not (a mix of elements that either do not belong together or contrast with the other elements in the surroundings)? The resulting metrics supported the overall visual impact determinations.

The visual quality of the identified viewpoints was evaluated and discussed using these terms:

- Vividness is the degree of drama, memorability, or distinctiveness of the landscape components. Overall vividness is an aggregated assessment of landform, vegetation, water features, and human-made components in a view.
- Intactness is a measure of the visual integrity of the natural and human-built landscape, and its freedom from encroaching elements. This factor can be present in well-kept urban and rural landscapes, as well as in natural settings. High intactness means that the landscape is free of unattractive features and is not segmented by features and elements that appear out of place. Low intactness means that visual elements that are unattractive and/or detract from the quality of the view can be seen.
- Unity is the degree of visual coherence and compositional harmony of the landscape, considered as a whole. High unity can be found with an undisturbed natural landscape or in developed environments where individual components of a landscape are well designed and "fit" well in the landscape.

In summary, the visual quality analysis for this Supplemental Draft EIS was initiated by reviewing the viewpoints identified in the Draft EIS and identifying any additional viewpoints that would be warranted due to changes in the definition of the project (i.e., new visually-sensitive areas affected or new major visual changes would occur). In this analysis, an assessment was then made of the visual quality of each of the representative viewpoints as they now exist and of the views as they would appear with the project in place.



### C. Assessing Visual Change

For many of the views evaluated in the Supplemental Draft EIS, images were prepared to provide an understanding of how the project features would relate to the view. These visualizations provided the basis for assessing the project-related changes in the visual quality. The assessment of the visual changes for which simulations were not created was based instead on reviews of project plans and drawings, and on the visualizations that were prepared for other views in which similar changes were proposed. The visual conditions under the LPA were evaluated using the same numerical rating system that was used for evaluating the existing view. The numerical ratings of the existing views and views under the LPA were compared to determine the degree of visual change. In evaluating the numerical changes in visual quality between the existing and with-project conditions, a change in visual quality score in the range of 0.1 through 0.5 point was considered to indicate a low level of visual change; a change from 0.6 through 1.0 point as moderately low; a change from 1.1 through 2.0 points as medium; and a change of more than 2.0 points as high.

To identify the overall degree of impact, the assessment of the level of visual change was then related to the sensitivity of the view to the viewer. In assessing the sensitivity of the view, factors taken into account included the following:

- The number and kinds of people who see the view.
- The length of time the view is observed. An assumption was made that residents and recreationists generally have views of long duration, whereas motorists often experience views short duration.
- Potential levels of viewer concern about the visual character and quality of the view. Level of concern is a subjective response that is affected by factors such as the visual character of the surrounding landscape, the activity a viewer is engaged in, and the viewer's values, expectations, and interests. Some of the assumptions about level of concern are that residents and recreationists are likely to be highly sensitive viewers, while commuters and employees in industrial areas may be less sensitive.
- Low viewer sensitivity would occur in situations where there are few viewers who experience a defined view, or when viewers may not be particularly concerned about the view. High viewer sensitivity would occur when there are many viewers who have a view frequently or for a long duration, as well as viewers who are likely to be very aware of and concerned about the view, such as viewers in a residential neighborhood.

The overall levels of visual impact identified in the Supplemental Draft EIS are expressed in terms of the three impact levels (not substantial, possibly substantial, and substantial) used in the Draft EIS. In all situations in which the degree of visual change is low (a change in visual quality score in the range of 0.1 through 0.5 point), the impacts were assumed to be generally not substantial. Impacts were assumed to be potentially substantial in situations with moderately low to medium levels of visual change (i.e., a change from 0.6 through 1.0 point [moderately low] or a change from 1.1 through 2.0 points [medium] and high levels of sensitivity, and substantial impacts were assumed to occur in situations with high levels of visual change (i.e. a change of more than 2.0 points) and moderate to high levels of sensitivity.

## 3. Project Description

---

The proposed project, the Southwest Light Rail Transit (METRO Green Line Extension) is an approximately 16 mile proposed extension of the METRO Green Line (Central Corridor LRT) which would operate from downtown Minneapolis through the communities of St. Louis Park, Hopkins, Minnetonka, and Eden Prairie, passing in close proximity to the city of Edina. The proposed alignment includes 17 new stations, approximately 3,800 additional park-and-ride spaces, accommodations for kiss-and-ride facilities, bicycle and pedestrian access, as well as new or restructured local bus routes connecting stations to nearby residential, commercial and educational destinations. Major activity centers from Eden Prairie to St. Paul, including the Eden Prairie Center regional mall, United Health Group campuses, the Opus/Golden Triangle employment area, Park Nicollet Methodist Hospital, the Minneapolis chain of Lakes, downtowns Minneapolis

and St. Paul, the University of Minnesota, and the State Capital area, will be accessible by a one-seat ride. Passengers will be able to connect to the greater METRO system, including METRO Blue Line (Hiawatha LRT), METRO Orange Line (I-35WBRT), Northstar Commuter Rail, METRO Red Line (Cedar Ave BRT) via Blue Line, and the planned METRO Blue Line Extension (Bottineau LRT) as well as future commuter rail, planned Bus Rapid Transit systems and intercity passenger rail line at one of more of the five downtown Minneapolis stations.

## 4. Affected Environment

---

### Eden Prairie

#### Overview

This section describes the existing visual quality at 10 viewpoints in the Eden Prairie Segment not evaluated in the Draft EIS where changes to visual quality are possible.

A general description of visual elements within the Eden Prairie Segment was provided in Section 3.6.2.2 of the Draft EIS. As indicated in Table 3.6-2 of the Draft EIS, the environment in this area offers a moderate to low visual quality experience. The visual environment in the Eden Prairie Segment is dominated by relatively recent urban and suburban development. Prominent features include roadways, mid- to low-rise office building campuses, multifamily residential buildings, commercial buildings, water retention ponds, and Purgatory Creek Park. These elements exist in the foreground, the middle ground, and the background of the study area.

Many of the commercial developments and office parks in the segment have landscaping, including lawns and trees. Gently rolling hills toward the north of the segment provide topographical relief. The individual developments have architectural treatments on their façades and other specific design elements, but there are no consistent visual or design elements that link all of the developments together to create a visually integrated whole.

Ten viewpoints represent areas where changes to the visual environment (not discussed in the Draft EIS) could potentially occur as a result of the LPA. The locations of these viewpoints are shown on the key map, Exhibit J-1 in Attachment J-1.1. Photographs depicting the existing conditions seen in the views from these locations are presented in Attachment J-1.1 on the exhibits indicated in the following list. A project overview of the segment is shown on Exhibit 2.5-2 and is described in Section 2.5.1 of the Supplemental Draft EIS.

- **Viewpoint 1** is the view looking southwest from Technology Drive at Mitchell Road (Exhibit J-2).
- **Viewpoint 2** is the view looking southwest along Technology Drive in front of the Optum Health Services headquarters (Exhibit J-3).
- **Viewpoint 3** is the view from Purgatory Creek Trail looking north (Exhibit J-4).
- **Viewpoint 4** is the view from Technology Drive west of the Southwest Transit Center (Exhibit J-5).
- **Viewpoint 5** is the view looking south along Prairie Center Drive at Technology Drive. (Exhibit J-6).
- **Viewpoint 6** is the view from east side of Prairie Center Drive toward Purgatory Creek Park (Exhibit J-7).
- **Viewpoint 7** is the view from Purgatory Creek Park, looking east (Exhibit J-8).
- **Viewpoint 8** is the view north along Prairie Center Drive south of proposed elevated crossing of roadway (Exhibit J-9).
- **Viewpoint 9** is the view from Eden Road looking west (Exhibit J-10).
- **Viewpoint 10** is the Valley View Drive, view looking south toward the intersection with Flying Cloud Drive (Exhibit J-11).

**Existing Visual Quality and Aesthetics**

Table J-1 summarizes the existing visual quality and aesthetics of the views seen from these viewpoints, using the visual assessment criteria and rating system the FHWA developed. As described in detail in Section 3.1.2.5 of the Supplemental Draft EIS, the existing conditions in these views have been evaluated on a numerical scale from one to seven, where one indicates very low visual quality, four indicates medium or average visual quality, and seven indicates very high visual quality.

**TABLE J-1**  
Existing Visual Quality and Aesthetics by Viewpoint in the Eden Prairie Segment  
[Rating Range 1 (very low) to 7 (very high)]

View Point	Viewpoint Description	Elements of the Visual Environment	Vividness		Existing Visual Quality and Aesthetics		Unity		Overall Visual Quality and Aesthetics Rating (Scale of 1-7; 7=very high and 1=very low) <sup>a</sup>
			Description	Rating	Description	Rating	Description	Rating	
1	View looking southwest from Technology Drive at Mitchell Road	Arterial roadways, asphalt jogging path, and landscaping to the north; natural vegetation and wetlands to the south. Buildings are set back with low visibility.	The overall level of vividness is moderately low.	3.5	With the presence of natural and landscaped vegetation, the visual intactness is medium.	4	Landscaping compatible with natural areas, but no unifying features. Medium overall visual unity.	4	3.8 Moderately Low
2	View looking southwest along Technology Drive in front of the Optum Health Services headquarters	The dominant element is a three-story building in a landscaped business park setting. There are trails and park-like landscaping rather than sidewalks along the arterial.	The overall level of vividness is moderate due to degree of extra landscaping and compatible construction design.	4.3	Components consistent with business park: setbacks, distance between buildings, parking and landscaping. Moderately low visual intactness.	3.8	While relatively new developments, there are no unifying features. Moderately low overall visual unity.	3	3.7 Moderately Low
3	View from the Purgatory Creek Trail looking north	The trail is raised from the natural terrain level with the road. The north side of the trail parallels Purgatory Creek, which is crossed by a rustic pedestrian bridge just south of Technology Drive. There is low vegetation cover and a few trees.	The overall level of vividness is moderate, with a glimpse of the water in the adjacent creek and views of the natural vegetation adjacent to the trail.	4.2	The balance between the natural and landscaped vegetation and the small-scale infrastructure elements results in a medium level of visual intactness.	4	The trail, the adjacent creek, the vegetation, and the low-scale infrastructure features combine to create a visual composition with a medium level of visual unity.	4	4.1 Medium

View Point	Viewpoint Description	Elements of the Visual Environment	Vividness		Existing Visual Quality and Aesthetics		Unity		Overall Visual Quality and Aesthetics Rating (Scale of 1-7; 7=very high and 1=very low) <sup>a</sup>
			Description	Rating	Description	Rating	Description	Rating	
4	View from Technology Drive west of the SouthWest Transit Center	View of multifamily residential and commercial buildings with landscaping and roadways. Architecture combines similar colors, textures. Views of Purgatory Creek Reservoir and a trail.	The commercial architecture and water features provide a moderate level of vividness.	4	The buildings and landscaping create a moderate level of intactness.	4.5	The surroundings and generally consistent architectural scale and materials create a moderately low level of unity.	3.6	4.2 Medium
5	View looking south along Prairie Center Drive at Technology Drive	View of divided arterial boulevard with large structures supporting traffic signals and road lighting. Dense landscape trees are present along the east side of the road. Purgatory Creek Park is to the west of the boulevard, with trees and lawn. A large office building is in the background.	Flat landform with low vividness. Lawns and planted trees with average level of vividness. Human-made features include roadway, support structures for signals/lighting, large, boxy office buildings. Moderately low level of vividness.	3.3	Given the presence of the visually dominant roadway and associated equipment, the visual intactness of this view is medium.	4.0	Given the somewhat visually disparate set of elements visible in this view, the overall level of visual unity is medium.	4.0	3.8 Moderately Low
6	View from east side of Prairie Center Drive toward Purgatory Creek Park	The view is a divided arterial boulevard and a landscaped park with a large decorative picnic pavilion structure. A large brick-faced parking ramp is present at Southwest Station.	The landform is flat, low level of vividness. Lawns and planted trees with an average level of vividness. Roadway, large parking ramp, the roof of the picnic pavilion, average level of vividness. Moderately low overall vividness.	3.6	Except for the visually dominant roadway, this view is relatively free of intrusive visual elements, creating a moderately high level of visual intactness.	5	The consistent scale and material of the structures and the dense mass of landscape trees across the middle of the view create a moderately high level of visual unity.	5.5	4.7 Medium
7	View from Purgatory Creek Park looking east	A parking lot is in the foreground, with lawns and dense plantings of evergreen and deciduous landscape trees. Dense tree plantings screen much of the commercial development located in the area east of Prairie Center Drive.	Landform is flat, low vividness. Lawns, planted trees with moderately high vividness. Human-made features have average level vividness. Moderately low overall vividness.	3.6	This view is relatively free of significant encroaching elements and has a moderately high degree of intactness.	5	The dense mass of landscape trees across the middle of the view creates a high level of visual unity.	6	4.9 Medium

View Point	Viewpoint Description	Elements of the Visual Environment	Vividness		Existing Visual Quality and Aesthetics		Unity		Overall Visual Quality and Aesthetics Rating (Scale of 1-7; 7=very high and 1=very low) <sup>a</sup>
			Description	Rating	Description	Rating	Description	Rating	
8	View north along Prairie Center Drive south of proposed elevated crossing of roadway	The view is a divided arterial boulevard, a large parking ramp at Southwest Station, lawns and landscape trees, and an asphalt trail.	Landform is flat, low vividness. Lawns, planted trees, average level of vividness. Roadway, large parking ramp, roof of picnic pavilion with average vividness. Moderately low overall vividness.	3.5	Except for the visually dominant roadway, this view is relatively free of intrusive visual elements, creating a moderately high level of visual intactness.	5	The consistent scale and material of the structures and the presence of landscape trees across the view create a moderately high level of visual unity.	5	4.5 Medium
9	View from Eden Road looking west	The view includes a portion of a parking lot for existing commercial establishments to the north and south of Eden Road. The view forward is of a natural, undeveloped area with deciduous trees with a large, white water tower over the horizon.	There is a moderately low level of vividness due to a mixture of commercial and natural elements, and a large water tower in view.	3.2	There is moderately low intactness since there is a mixture of development features, natural areas, and parking areas.	3	The unity is low to moderate. Unifying features are the grass and trees along the roadway, softening the asphalt parking areas in the view. The water tower breaks up the unity of the landscaping and natural areas.	3	3.1 Moderately Low
10	Valley View Drive, view looking south toward the intersection with Flying Cloud Drive	The view is of a major arterial intersection with multiple office complexes in the background.	The level of vividness is moderately low due to a dominant office park that does not provide any outstanding features.	3.2	Moderately low intactness because the large, dominant arterials intrude and contrast with the visual pattern of landscaped office parks.	3.4	There is low unity among the office buildings' architectural styles and the dominant transportation features.	2.8	3.1 Moderately Low

<sup>a</sup> Scale is from *Visual Impact Assessment for Highway Projects* (FHWA, 1988).

**Viewer Groups and Viewer Sensitivity**

Viewer groups in the Eden Prairie Segment include park users, drivers, pedestrians, workers, shoppers, and cyclists on the existing street network. Residents and park users are assumed to be more sensitive to change than the other viewer groups; this is assumed to be particularly true for any visual changes that might affect their enjoyment of Purgatory Creek Park.

**St. Louis Park/Minneapolis**

**Overview**

This section describes the existing visual quality at six viewpoints in the St. Louis Park/Minneapolis Segment not evaluated in the Draft EIS where changes to visual quality are possible. The visual environment in the St. Louis Park/Minneapolis Segment generally falls within Hennepin County Regional Railroad Authority - owned right-of-way. This environment includes existing trails throughout the length of the segment (i.e., Cedar Lake LRT Regional Trail, Kenilworth Trail, Midtown Greenway, and Cedar Lake Trail; see Exhibit 3.4-4 in the Supplemental Draft EIS) and directly adjacent properties. Views of the right-of-way

and adjacent properties are primarily provided from the existing trails. Views within the segment are dominated by the existing trails themselves and adjacent active freight rail track. The trails and freight rail alignment are generally surrounded by overstory and understory deciduous vegetation. There are some areas of clearing at several locations along the right-of-way that open up the bicycle and pedestrian trail to views of its surrounding urban environment. For example, at locations where the trail crosses roads, areas have been cleared adjacent to residential developments, and at the open, maintained trail corridor north of Burnham Pond. The trails include occasional views of adjacent residential development and occasional views of the distant Minneapolis skyline in the background. A further general description of visual elements along this portion of the segment is provided in Section 3.6.2.4 of the Draft EIS.

Six key viewpoints represent areas where major changes to the visual environment (not discussed in the Draft EIS) could potentially occur as a result of the LPA, suggesting design adjustments since publication of the Draft EIS. Attachment J-1.1 of this technical report presents exhibits with viewpoint locations (see Exhibit J-12), as well as photographs and renderings (see Exhibits J-13 through J-18) for each viewpoint. A project overview of the segment is shown on Exhibit 2.5-4 and is described in Section 2.5.3 of the Supplemental Draft EIS.

- **Viewpoint 1** (Exhibit J-13) is the view northeast from South Chowen Avenue toward the existing rail and trail corridor.
- **Viewpoint 2** (Exhibit J-14) is the view looking north near Lake Street.
- **Viewpoint 3** (Exhibit J-15) is the view from a point north of Cedar Lake Parkway looking north toward the tunnel portal south of the channel crossing.
- **Viewpoint 4** (Exhibit J-16) is the view from the bike trail at the south side of the channel crossing.
- **Viewpoint 5** (Exhibit J-17) is the view from the channel looking northwest toward the channel crossing.
- **Viewpoint 6** (Exhibit J-18) is the view northwest from West 21st Street at Thomas Avenue toward the existing rail and trail corridor.

### Existing Visual Quality and Aesthetics

Table J-2 summarizes the existing visual quality and aesthetics of the views seen from these viewpoints, using the visual assessment criteria and rating system the FHWA developed. As described in more detail in Section 3.1.2.5 of the Supplemental Draft EIS, the existing conditions in these views have been evaluated on a numerical scale from one to seven, where one indicates very low visual quality, four indicates medium or average visual quality, and seven indicates very high visual quality.

**TABLE J-2**

Existing Visual Quality and Aesthetics by Viewpoint in the St. Louis Park/Minneapolis Segment  
 [Rating Range 1 (very low) to 7 (very high)]

View Point	Viewpoint Description	Elements of the Visual Environment	Existing Visual Quality and Aesthetics						Overall Rating <sup>a</sup>
			Vividness		Intactness		Unity		
			Description	Rating	Description	Rating	Description	Rating	
1	View northeast from South Chowen Avenue toward the existing rail and trail corridor	Paved city street, on-street parking and no sidewalks bordered by low vegetation and dense rows of overhanging trees. Break in trees provides partial view into rail and trail corridor bordered at the far side by a dense mass of tall trees.	No topographic variation. The paved street is the only visible human-made element. The tree canopy over the street and the mass of trees bordering the far side of the rail and trail corridor are the most memorable elements.	3.8	View is relatively free of visual encroachment. The most visually intrusive elements are the cars parked along the street.	5	The parallel street and rail/trail corridors enframed by dense walls of trees create a degree of visual cohesion, but the view does not have focal point or a high level of visual organization.	4	4.3 Medium
2	View looking north near Lake Street	Paved bike and pedestrian trails paralleled by a narrow, at-grade freight rail line behind a rustic split rail fence. Corridor bordered by trees of a variety of species. Glimpses through trees of nearby low-rise and high-rise residential structures.	No topographic variation. Human-made features mostly utilitarian. Trees bordering corridor the most memorable element.	3.5	View is relatively free of visual encroachment. Visual intrusiveness of the rail line is reduced by its small scale and location behind the split rail fence.	5	Unity of the view is slightly reduced by the curving alignment of the corridor and the contrasting appearance of the trees of widely varying species planted along this segment.	5	4.5 Medium
3	View from a point north of Cedar Lake Parkway looking north toward the tunnel portal south of the channel crossing	Wide, paved bike trail paralleled by a narrow, at-grade freight rail line, cutting through an area of overstory and understory deciduous vegetation. Rustic split rail fence separates trail from rail line.	No topographic variation. Human-made features mostly utilitarian. Dense regular mass of trees bordering corridor create a highly memorable element.	4	View is relatively free of visual encroachment. Visual intrusiveness of the rail line is reduced by its small scale and location behind the split rail fence.	5	Parallel trail and rail corridors enframed by dense wall of trees create a cohesive visual pattern.	6	5.0 Moderately High
4	View from the bike trail at the south side of the channel crossing	Wide, paved trail paralleled by a narrow, at-grade freight rail line, cutting through an area of overstory and understory deciduous vegetation. Rustic split rail fence separates trail from rail line. View includes at-grade bridges that cross over channels.	No topographic variation. Human-made features mostly utilitarian. Most vivid feature is dense massing of trees bordering corridor.	4	View is relatively free of visual encroachment. Visual intrusiveness of freight rail line is reduced by its small scale and location behind the split rail fence.	5	Parallel trail and rail corridors enframed by dense wall of trees create a cohesive visual pattern.	6	5.0 Moderately High

View Point	Viewpoint Description	Elements of the Visual Environment	Existing Visual Quality and Aesthetics						Overall Rating <sup>a</sup>
			Vividness		Intactness		Unity		
			Description	Rating	Description	Rating	Description	Rating	
5	View from the channel looking northwest toward the channel crossing	Waterway framed by banks with a dense cover of understory and overstory deciduous trees. Rustic and massive appearing trestle constructed of heavy timber is the focal point of the view.	Water and sloped banks add to vividness of view, along with dense massing of trees, and distinctive-looking trestle.	4.6	View is relatively free of visual encroachment. Heavy construction of trestle that partially blocks view down the channel creates an element of encroachment.	5	The view's elements generally combine to create a coherent composition.	5.5	5.0 Moderately High
6	View northwest from West 21st Street at Thomas Avenue toward the existing rail and trail corridor.	Street intersection bordered by tall thick trees. View toward point where rail/trail corridor through heavily forested area crosses a two-lane street	No topographic variation. The human-made elements include the paved streets, the bike trail, and rail lines as they cross the streets. The tree masses that border the streets, and the glimpse of the cleared rail/trail corridor through the thick trees create a moderate degree of memorability	4	View is relatively free of visual encroachment.	5	The view up the tree-bordered road provides a focal point for the view, and the hint of the rail/trail corridor cut through the forest provides a point of visual interest.	5.5	4.8 Medium

<sup>a</sup> Scale is from Publication FHWA-HI-88-054, *Visual Impact Assessment for Highway Projects* (FHWA, 1988).

Source: CH2M HILL, 2013.

### Viewer Sensitivity

The sensitive viewer groups present in the St. Louis Park/Minneapolis Segment include adjacent residents and recreational users of the trails and the channel connecting the lakes, who have a high level of visual sensitivity.

## 5. Potential Environmental Impacts

### Eden Prairie

#### Introduction

This section identifies the potential long-term and short-term visual and aesthetic impacts of the visual changes that the project would bring about in the area along the Eden Prairie Segment. This analysis focuses on the changes that would occur in the views seen from each of the 10 representative viewpoints. Based on the predicted impacts, an identification is made of appropriate measures to mitigate the project's aesthetic impacts.

#### Long-term Direct and Indirect Visual Quality and Aesthetics Impacts

New elements introduced with the LPA in the Eden Prairie Segment would consist of light rail guideway (some at-grade and some structured), including tracks, signal systems, and overhead wires, stations, structured and surface park-and-ride lots, and traction power and signal substations. Viewpoints were selected in areas of potential change to the visual and aesthetic environment. Exhibits J-2 through J-11 in



Attachment J-1.1 present photographs of the existing view from each viewpoint, and below some of the photographs is a preliminary rendering that depicts the view as it would appear with the project elements in place. The rendering of the view with the project in place was compared with the photograph of the existing view. This comparison provided a basis for making a determination of the visual change the project would bring about and the nature and level of any visual impacts that would be created. Because visualizations were not prepared for all views evaluated in the Eden Prairie Segment, the assessments of the visual changes were made based on review of project plans and drawings and of the visualizations that had been prepared for other views in which similar changes were proposed.

Table J-3 summarizes the anticipated visual quality and aesthetics changes that would occur within each of the 10 Eden Prairie Segment viewpoints, and evaluates the changes to visual quality through application of the FHWA visual impact assessment system to assess the view as it would appear with the project in place. An assessment was made of each of the three landscape dimensions (vividness, intactness, and unity), rating each dimension using the seven-point evaluation scale. Comparison of these scores and the overall score versus the scores for the view’s existing condition provided a basis for pinpointing the nature and degree of the changes to the view’s level of visual quality. A brief narrative following the table summarizes the visual changes and the nature and degree of visual impact to each of the views.

**TABLE J-3**  
Anticipated Direct Change and Impact in Visual Quality and Aesthetics from Eden Prairie Segment Viewpoints

Viewpoint Number, Viewpoint Description, and Identification of New Visual Elements	Vividness		Intactness		Unity		Overall Rating <sup>a</sup>	Visual Quality and Aesthetics Change <sup>a</sup> and Impact (Scale of 1-7; 7=very high and 1=very low)
	Description of Change	Rating <sup>a</sup>	Description of Change	Rating <sup>a</sup>	Description of Change	Rating <sup>a</sup>		
1. View looking southwest from Technology Drive at Mitchell Road At-grade LRT would require removing vegetation and adding fill on the south side of the road in a corridor that extends to Mitchell Station.	The overall level of vividness of this view, which is currently moderately low, would remain the same.	3.5	The intactness of this view would be reduced by the removal of vegetation and widening the infrastructure corridor.	3.5	The level of visual unity would remain about the same, because the LRT would be a consistent element along this roadway.	3.5	3.5	From 3.8 to 3.5 Low
2. View looking southwest along Technology Drive in front of the Optum Health Services headquarters The at-grade LRT alignment would locate along the south side of Technology Road and require relocating the trail and landscaping.	The overall level of vividness would remain moderate because the LRT would be integrated into the landscaping.	4.1	While there would be a noticeable change, the visual intactness would remain moderate because landscaping and park-like features would remain.	3.7	The overall level of visual unity is medium to low and may be enhanced through integrating the LRT to unify the infrastructure with the landscaping.	3.4	3.7	From 3.7 to 3.7 Low

Viewpoint Number, Viewpoint Description, and Identification of New Visual Elements	Vividness		Intactness		Unity		Overall Rating <sup>a</sup>	Visual Quality and Aesthetics Change <sup>a</sup> and Impact (Scale of 1-7; 7=very high and 1=very low)
	Description of Change	Rating <sup>a</sup>	Description of Change	Rating <sup>a</sup>	Description of Change	Rating <sup>a</sup>		
3. View from the Purgatory Creek Trail looking north at The trail would be relocated to the south of the LRT. The LRT guideway would cross Purgatory Creek in front of the existing pedestrian bridge.	The overall level of vividness may be lowered; signs and crossing arms visible among the natural setting nearest the trail. LRT facilities may be dominant in view from trail.	3.2	Visual intactness level would remain about the same. Although elements would be added to the view, they would be designed to be compatible with the existing landscape features.	3.5	The moderate unity would remain, because sensitive design features would accommodate the trail into the design. Native landscaping and detouring the trail would avoid an unsafe crossing of the LRT tracks.	4	3.6	From 4.1 to 3.6 Low
4. View from Technology Drive west of the Southwest Transit Center <sup>b</sup> The at-grade light rail would travel from the south side of Technology Drive, adjacent to Purgatory Creek Reservoir, and cross the road diagonally to access the Southwest Transit Center. A parking ramp would extend diagonally from the west side of the Southwest Transit Center, following the alignment of the light rail line, and the area between this parking ramp and Technology Drive would be converted to access drives.	The overall level of vividness of this view, which is currently moderate, would remain the same.	4	The intactness of this view would be slightly reduced by the LRT corridor, removing some natural areas along the Purgatory Creek Reservoir and some of the landscaping currently visible in front of the Transit Center.	4.0	The level of visual unity would be increased to some degree because the linear LRT features would visually tie together the disparate elements in the view.	4	4.0	From 4.2 to 4.0 Low
5. View looking south along Prairie Center Drive at Technology Drive A concrete elevated light rail structure would travel along the western edge of the roadway, adding a visually prominent structure to the setting that would split the view.	The overall level of vividness of this view, which is currently moderately low, would remain the same.	3.3	The intactness of this view would be substantially reduced by addition of the large, visually dominant LRT structure in the immediate foreground.	2.0	The level of visual unity would remain about the same because of the consistency of the elevated light rail structure's alignment with the other linear features in the view, and because the structure would serve as a visually unifying view element.	4.5	3.3	From 3.8 to 3.3 Low

Viewpoint Number, Viewpoint Description, and Identification of New Visual Elements	Vividness		Intactness		Unity		Overall Rating <sup>a</sup>	Visual Quality and Aesthetics Change <sup>a</sup> and Impact (Scale of 1-7; 7=very high and 1=very low)
	Description of Change	Rating <sup>a</sup>	Description of Change	Rating <sup>a</sup>	Description of Change	Rating <sup>a</sup>		
<p>6. View from east side of Prairie Center Drive toward Purgatory Creek Park</p> <p>A concrete elevated light rail structure would pass along the opposite side of the road, adjacent to the park, adding a visually prominent structure to the setting. Because of the structure's height and widely spaced supports, views into the park would be maintained.</p>	The vividness of this view would be slightly increased by the addition of the visually striking LRT structure.	4.0	Introduction of a new and visually dominant element into the view would reduce visual intactness.	2.0	The level of visual unity would remain about the same, because of consistency of the elevated light rail structure's alignment with the other linear features in the view; the structure would serve as a visually unifying element.	5.5	3.8	From 4.7 to 3.8 Moderately Low
<p>7. View from Purgatory Creek Park looking east</p> <p>A concrete elevated light rail structure along eastern edge of park, adding prominent structure to setting. Densely planted landscape trees between the park's primary use areas and the elevated structure would reduce the structure's visibility and integrate it into the view. Over time, with tree growth, the degree of visual integration would increase.</p>	The addition of the elevated LRT structure would create a slight increase in the overall vividness of this view.	4.3	The overhead LRT structure would contrast with the visual character of the other elements in the view, reducing the overall level of visual intactness.	3.0	The level of visual unity would remain about the same because of the consistency of the elevated light rail structure's alignment with the other linear features in the view.	6.0	4.4	From 4.9 to 4.4 Low
<p>8. View north along Prairie Center Drive south of proposed elevated crossing of roadway</p> <p>A large, concrete elevated light rail structure would cross the boulevard at this viewpoint and travel northwest along the opposite edge of the roadway, adding a visually prominent structure to the setting.</p>	The vividness of this view would be slightly increased by the addition of the visually striking LRT structure.	4.0	The LRT structure would dominate and intrude on what is now an open view with a suburban character, substantially decreasing the level of intactness.	2.0	Visually dominant element would be present, but level of visual unity would remain due to consistency of elevated structure's alignment with other linear features; the structure would be a unifying element.	5.0	3.6	From 4.5 to 3.6 Moderately Low

Viewpoint Number, Viewpoint Description, and Identification of New Visual Elements	Vividness		Intactness		Unity		Overall Rating <sup>a</sup>	Visual Quality and Aesthetics Change <sup>a</sup> and Impact (Scale of 1-7; 7=very high and 1=very low)
	Description of Change	Rating <sup>a</sup>	Description of Change	Rating <sup>a</sup>	Description of Change	Rating <sup>a</sup>		
9. View from Eden Road looking west The LPA includes a Town Center Station, which would extend Eden Road, replace some parking areas, and remove the natural vegetation north of Market Place Shopping Center.	The LPA may enhance the low to moderate vividness with the addition of modern transportation features.	3.6	The intactness of the view may be slightly reduced with the addition of rails and catenaries, which are likely to contrast with their surroundings.	2.5	Unless appropriate design and landscape measures are taken the new project elements may have the potential to reduce the visual unity of the view.	2.5	2.9	From 3.1 to 2.9 Low
10. Valley View Drive, view looking south toward the intersection with Flying Cloud Drive LRT alignment would be elevated east from Viking Drive to Prairie Center Drive. The guideway would block views from office building in southwest corner of this intersection.	The elevated guideway would not reduce the low to moderate vividness, because the area is dominated by large infrastructure features.	3.2	The elevated guideway may lower the already moderately low level of intactness, since it may increase the views of concrete transportation features to this area.	2.5	The LRT would slightly lower the already low unity, because the structure may block views of the office park; but this change is not significant, because the view is dominated by arterial roadways and access to the highway.	2.8	2.8	From 3.1 to 2.8 Low

<sup>a</sup> Scale is from *Visual Impact Assessment for Highway Projects* (FHWA, 1988). This rating is an assessment of the visual quality change. The overall level of impact is described in the text below.

<sup>b</sup> The scope of the LPA as identified by the Metropolitan Council (Council) includes a proposed western terminus at the Mitchell Station south of Technology Drive and west of Mitchell Road. As part of the design and engineering process, the Council also developed a design adjustment that would implement a western terminus of the proposed light rail line at the Southwest Station. Under this adjustment, the proposed structured park-and-ride lot at the Southwest Station would increase by approximately 600 spaces (from 450 spaces with the western terminus at Mitchell Station to 1,050 spaces under the western terminus at Southwest Station). With the western terminus at the Southwest Station, the height of proposed structured park-and-ride lot at the Southwest Station would increase by two floors and its footprint would approximately double (generally extending further to the south). Because of the nature of the potential improvements and the existing visual environment, there would be little change in the level of visual impacts at this viewpoint.

**Viewpoint 1 – View Looking Southwest from Technology Drive at Mitchell Road (Exhibit J-2)**

**Overall Level of Impact: Not Substantial**

Development of the at-grade LRT would require removing vegetation and adding fill on the south side of the road, in a corridor that extends to Mitchell Station. Although the visual character of this view would change somewhat (the view would appear more developed), the overall change to the visual quality of the view would be low, especially with attention to careful design, placement of LRT elements, and installation of appropriate landscaping.

**Viewpoint 2 – View Looking Southwest along Technology Drive in front of the Optum Health Services Headquarters (Exhibit J-3)**

**Overall Level of Impact: Not Substantial**

The at-grade LRT alignment would be located along the south side of Technology Drive, and would require relocation of the trail and landscaping. The visual character of the view would change with installation of the tracks and catenaries in the area in front of the buildings, but overall change to the visual quality would be

low, especially with careful design and placement of LRT elements and installation of appropriate landscaping to tie all of the elements of this view together.

### **Viewpoint 3 - View from the Purgatory Creek Trail Looking North (Exhibit J-4)**

#### **Overall Level of Impact: Not Substantial**

The trail would be relocated to the south of the LRT alignment. The LRT guideway would cross Purgatory Creek in front of the existing pedestrian bridge. Project features visible in this view would include a new bridge structure located in front of the existing bridge, tracks, catenaries, and a fence along the LRT right-of-way. These features would be readily visible from this view and would create a moderate level of increase in the intensity of development seen in the view. However, the impact to the overall visual quality of the view would be low in that the project features will be similar in form and in their linear alignment to the other features along Technology Drive, and as a consequence, the effects on the visual intactness and unity of the view will be low. The new LRT bridge across Purgatory Creek is likely to result in a small increase in the vividness of the view. Taking these factors into account, overall, the change in the visual quality of the view will be low.

### **Viewpoint 4 - View from Technology Drive West of the Southwest Transit Center (Exhibit J-5)**

#### **Overall Level of Impact: Not Substantial**

The at-grade light rail would travel from the south side of Technology Drive, adjacent to Purgatory Creek Reservoir and cross the road diagonally to access the Southwest Transit Center. A structured park-and-ride lot would extend diagonally from the west side of the Southwest Transit Center, following the light rail alignment, and the area between this parking ramp and Technology Drive would be converted to access drives. As a result of the project's development, there will be some removal of natural areas along Purgatory Creek Reservoir and the view will appear more intensively developed. The view's level of vividness will remain about the same, and there will be a moderate decrease in the level of visual intactness. The level of visual unity will increase because the LRT's tracks, catenaries, and fencing will create a linear feature that visually ties together the disparate visual elements now seen on the left and right sides of Technology Drive.

### **Viewpoint 5 - View Looking South along Prairie Center Drive at Technology Drive (Exhibit J-6)**

#### **Overall Level of Impact: Not Substantial**

A concrete elevated light rail structure would travel along the western edge of the roadway, adding a visually prominent structure to the setting that would split the view. With the addition of the overhead structure, the visual character of this view would be changed by the enclosure of the view and the greatly increased level of development. The overall level of vividness of this view, which is currently moderately low, would remain the same. The intactness of this view would be substantially reduced by addition of the large, visually dominant LRT structure in the immediate foreground. The level of visual unity would remain about the same because of the consistency of the elevated light rail structure's alignment with the other linear features in the view, and because the structure would serve as a visually unifying view element. The overall change to the level of visual quality of this view would be low.

### **Viewpoint 6 - View from East Side of Prairie Center Drive toward Purgatory Creek Park (Exhibit J-7)**

#### **Overall Level of Impact: Substantial**

A concrete elevated light rail structure would pass along the opposite side of the road, adjacent to the park, adding a visually prominent structure to the setting. Because of the structure's height and widely spaced supports, views into the park would be maintained. The overhead structure would become a visually dominant element in the view, and would change the visual character of this view, specifically the area seen in the view will appear to be more intensively developed and creating a sense of enclosure. The overall change to visual quality would be moderately low. The sensitivity of this view is moderate to high because of its visibility to high numbers of roadway users and pedestrians. Even though the change to visual quality will be moderate, given the view's visual sensitivity, the visual impact will be potentially substantial.

### **Viewpoint 7 - View From Purgatory Creek Park Looking East (Exhibit J-8)**

**Overall Level of Impact: Not Substantial**

A concrete elevated light rail structure would be built along the eastern boundary of the park, adding a visually dominant linear element to the setting that would frame the park's eastern edge. Densely planted landscape trees between the park's primary use areas and the elevated structure would have high potential to reduce the structure's visibility and integrate it into the view. Over time, with tree growth, the degree of visual integration would increase. Even though this view is highly sensitive because it is seen by recreational viewers, because of the visual screening provided by the trees in the park, the LRT's overall impact on the visual quality of this view would be low.

**Viewpoint 8 - View Looking North along Prairie Center Drive South of Proposed Elevated Crossing of Roadway (Exhibit J-9)****Overall Level of Impact: Substantial**

A concrete elevated light rail structure would cross the boulevard at this viewpoint and travel northwest along the opposite edge of the roadway, adding a visually dominating structure to the setting. Although the presence of this structure would make this view feel more enclosed and intensively developed, the change to overall visual quality would be moderately low. This view is moderately sensitive because it is seen by large numbers of roadway users at close range. Even though the change to visual quality will be moderately low, given the view's visual sensitivity, the visual impact will be substantial.

**Viewpoint 9 - View Looking from Eden Road Looking West (Exhibit J-10)****Overall Level of Impact: Not Substantial**

The LPA includes a Town Center Station, which would include construction of a short segment of local roadway extending west from Eden Road, replace some parking areas, and remove the natural vegetation north of Market Place Shopping Center. The visual character of this view would be substantially changed, with replacement of the lower density development, now hidden by trees, with the LRT and LRT station. The visual quality of the view would be reduced because of the removal of vegetation and the introduction of the tracks and catenaries, which could reduce the visual intactness and visual unity of this view.

**Viewpoint 10 - Valley View Drive, View Looking South Toward Intersection with Flying Cloud Drive (Exhibit J-11)****Overall Level of Impact: Not Substantial**

An elevated LRT structure would pass across this view from left to right and then continue along the north side of Flying Cloud Drive, seen on the right side of the photo. With the addition of the elevated structure, the visual character would be substantially changed, and there is likely to be obstruction of views from the upper stories of the office building seen in the center of the photo. The visual quality of this view is already moderately low. With the visual changes brought about by the project, the level of vividness of the view remain the same, but the presence of the contrasting overhead LRT structure would contribute to small decreases in the intactness and unity of the view. Overall, there would be a low level of change in the visual quality of the view.

**Short-Term Visual Quality and Aesthetics Impacts**

Potential short-term impacts on the 10 key viewpoints while constructing the LPA may occur because of the placement of staging areas, the presence of equipment, and materials storage in areas visible to sensitive users such as those in residences and recreational areas abutting the alignment.

The contractor would comply with appropriate federal, state, and local regulations concerning the removal of existing vegetation. Prior to construction, a plan for protecting existing trees and vegetation that could be injured during construction activities would be developed. Because any construction period visual changes would be limited in nature and short-term, they would be generally not substantial.

## St. Louis Park/Minneapolis

### Introduction

This section identifies the potential long-term and short-term visual and aesthetic impacts of the visual changes that the project would bring about in the area along the St. Louis Park/Minneapolis Segment. This analysis focuses on the changes that would occur in the views seen from each of the six representative viewpoints. Based on the predicted impacts, an identification is made of appropriate measures to mitigate the project's aesthetic impacts.

### Long-term Direct and Indirect Visual Quality and Aesthetics Impacts

This section describes the potential long-term direct and indirect impacts to the six key viewpoints within the St. Louis Park/Minneapolis Segment where there would be a mix of at-grade and below-grade LRT infrastructure. Visual changes associated with the LPA in all areas of this segment would include those associated with vegetation removal, relocation of the existing freight rail tracks, relocation of trails, and the addition of station facilities. In the at-grade sections, there would also be impacts associated with the LRT tracks, signal systems, catenary wires, safety fencing, and sound walls. The at-grade crossing of the Kenilworth Channel would require construction of new bridge structures. In the transition areas between the at-grade and below-grade segments, there would be impacts associated with portal structures. The viewpoints selected to assess the visual changes created by the light rail-related improvements and freight rail modifications in the St. Louis Park/Minneapolis Segment are located primarily in areas where the highest levels of visual change would take place. Exhibits J-13 through J-18 present photographs of the existing view from each viewpoint, and below some of the photographs is a preliminary rendering that depicts the view as it would appear with the project elements in place. The rendering of the view with the project in place was compared with the photograph of the existing view. This comparison provided a basis for making a determination of the visual change the project would bring and the nature and level of any visual impacts that would be created. Because visualizations were not prepared for all views, the assessments of the visual changes were made based on review of project plans, drawings, and visualizations that had been prepared for other views in which similar changes were proposed.

Table J-4 summarizes the anticipated visual quality and aesthetics changes that would occur within each of the six St. Louis Park/Minneapolis Segment viewpoints, and evaluates the changes to visual quality through application of the FHWA visual impact assessment system to assess the view as it would appear with the project in place. An assessment was made of each of the three landscape dimensions (vividness, intactness, and unity), rating each dimension using the seven-point evaluation scale. Comparison of these scores and the overall score for the view with the scores for the view's existing condition provided a basis for pinpointing the nature and degree of the changes to the view's level of visual quality. A brief narrative following the table summarizes the visual changes and the nature and degree of visual impact to each of the views.

TABLE J-4

Anticipated Direct Change and Impact in Visual Quality and Aesthetics from St. Louis Park/Minneapolis Segment Viewpoints

VPN, Viewpoint Description, and Identification of New Visual Elements	Vividness		Intactness		Unity		Overall Rating <sup>a</sup>	Visual Quality and Aesthetics Change <sup>a</sup> (Scale of 1-7; 7=very high and 1=very low)
	Description of Change	Rating <sup>a</sup>	Description of Change	Rating <sup>a</sup>	Description of Change	Rating <sup>a</sup>		
1. View northwest from South Chowen Avenue toward the existing rail and trail corridor Addition of LRT right-of-way in corridor with catenaries and perimeter fencing on left side of view. Bike and pedestrian trails pushed closer to the street. Addition of West Lake Station with waiting platform, catenaries, and perimeter fencing.	Removal of trees along north side of street and along the northern perimeter of the rail/trail corridor would decrease the vividness of the vegetation. The addition of the station structures would make a positive contribution to the level of vividness that counterbalances the loss of vividness due to vegetation removal.	3.8	Intactness reduced by the removal of trees, the addition of the station infrastructure, and the overhead equipment required by the LRT.	4.5	The visual unity of this view is likely to be increased by the tree clearing that would open the view corridor along the road and open up a view toward the station, which would provide the visual focal point of a well-ordered rail/trail/transit corridor.	5	4.4	From 4.3 to 4.4 Low (positive increase)
2. View looking north near Lake Street LRT would be out of sight, buried under bike and pedestrian trail. Substantial removal of existing vegetation along the east side of the corridor.	Removal of trees along south side of corridor decreases vividness of vegetation. Exposure of distinctive residential tower structures increases vividness of human-made elements.	3.5	Intactness reduced by removal of trees along southern edge of corridor and the exposure of the tall, visually-intrusive residential towers.	3.5	Removal of trees and visibility of the residential towers combine to create a substantial decrease in the visual unity of the view.	3.5	3.5	From 4.5 to 3.5 Moderate
3. View from a point north of Cedar Lake Parkway looking north toward the tunnel portal south of the channel crossing Addition of LRT right-of-way to north of bike and pedestrian trail, with shift of freight line into a widened area along the northern edge of the corridor. Addition of a fenced transition to the tunnel portal next to the bike trail.	Removal of large trees along the edges of the corridor that now contribute substantially to the vividness of the view would reduce the vividness of the view.	3.3	Intactness reduced by reduction in the tree canopy and by addition of fencing and overhead equipment required by the LRT.	4.0	Unity reduced by reduction of the extent of the tree canopy that currently frames the view and gives it a high level of visual unity.	4.5	3.9	From 5.0 to 3.9 Moderate



VPN, Viewpoint Description, and Identification of New Visual Elements	Vividness		Intactness		Unity		Overall Rating <sup>a</sup>	Visual Quality and Aesthetics Change <sup>a</sup> (Scale of 1-7; 7=very high and 1=very low)
	Description of Change	Rating <sup>a</sup>	Description of Change	Rating <sup>a</sup>	Description of Change	Rating <sup>a</sup>		
4. View from the bike trail at the south side of the channel crossing Trail corridor would be widened to accommodate aboveground segment of the LRT as it approaches the channel crossing. Freight line moved north up to 4 feet. Installation of fencing on both sides of the bike/pedestrian trail corridor.	Reduction in tree masses immediately adjacent to the trail and elimination of the fencing along the trail would reduce the vividness of the view.	3.3	Fencing located immediately adjacent to the trail corridor and presence of new rail corridor with overhead infrastructure would intrude on the view, reducing intactness.	3.5	View's current high level of unity would be reduced by reduction in the tree masses that now enframe the view and by the addition of disparate built elements.	4.5	3.8	From 5.0 to 3.8 Moderate
5. View from the channel looking northwest toward the channel crossing Vegetation on the banks at the channel crossing would be cleared to accommodate constructing a bridge across the channel to carry the LRT, bike and pedestrian trails, and freight.	The clearing would slightly decrease the vividness of the vegetation. The new bridge would include a careful design that would add to the vividness of the view.	5.0	The intactness of the view would be reduced by the creation of the cleared area adjacent to the bridge and the addition of more built elements to the view.	3.5	The attractive design of the bridge to carry bike and pedestrian trails, light rail, and freight rail would serve as a visually unifying element. The increased clearance and openness under the bridge would create a visual connection between the segments of the lagoon north/south of the new bridges.	5.5	4.6	From 5.0 to 4.6 Low
6. View northwest from West 21st Street at Thomas Avenue toward the existing rail and trail corridor. Substantial clearing of vegetation currently screens views into station site. Station and associated catenaries and fencing would be visible. Wide sidewalks installed along edges of streets in views.	Removal of trees on left side of view would decrease the vividness of the vegetation. The addition of the station structures would make a positive contribution to the level of vividness that counterbalances the loss of vividness due to vegetation removal.	4	Intactness reduced by the removal of trees and the addition of the station infrastructure and the overhead equipment required by the LRT.	4.5	. Intactness reduced by the removal of trees and the addition of the station infrastructure and the overhead equipment required by the LRT.	6	4.7	From 4.8 to 4.7 Low

<sup>a</sup> Scale is taken from Publication FHWA-HI-88-054, *Visual Impact Assessment for Highway Projects* (FHWA, 1988). This rating is an assessment of the visual quality change. The overall level of impact is described in the text below.

Acronym:

VPN = viewpoint number

Source: CH2M HILL, 2013.

**Viewpoint 1 – View Northeast from South Chowen Avenue toward the Existing Rail and Trail Corridor**  
**Overall Level of Impact: Not Substantial (Exhibit J-13)**

In this view, clearance of the trees and other vegetation along the left side of the street would open up the views into to the rail/trail/transit corridor. The corridor would have a more developed appearance, with the

addition of the LRT, its catenaries, and its perimeter fences; the addition of the West Lake Station, its waiting platform, catenaries, fencing, and surrounding paved circulation area would also contribute to a more developed appearance. The existing pedestrian and bike trails would be pushed closer to the street, where they would be more visible. After these changes, the overall visual effects of the project would be slightly positive. The removal of the dense trees along South Chowen Avenue would make the view more expansive, and the West Lake Station would provide a visual focal point, making the view more interesting and memorable than it is at present. The lines of the linear features in the rail/trail/transit corridor would be consistent with each other and with the lines of the street, contributing to the creation of a visually unified composition. Because this view is seen by the residents of the high-density buildings along South Chowen Avenue and Abbott Avenue, there is a high level of sensitivity; therefore, while the project's visual effects would be slightly positive, careful design of the project in this area would be required.

#### **Viewpoint 2 – View Looking North Near Lake Street (Exhibit J-14)**

##### **Overall Level of Impact: Substantial**

The LRT alignment would be out of sight, located under the bike and pedestrian trail. The primary visual impact would consist of removal of existing vegetation along the east side of the corridor. This tree removal would decrease the mass of the existing vegetation that is an important contributor to this area's visual quality, and would reveal the tall, visually intrusive residential tower structures located south of the trail corridor. The overall level of change to the visual quality of this view would be moderate. Given the high visual sensitivity of views in this area to recreational and nearby residential viewers, this moderate level of change to visual quality is considered substantial.

#### **Viewpoint 3 – View from a Point North of Cedar Lake Parkway Looking North toward the Tunnel Portal South of the Channel Crossing (Exhibit J-15)**

##### **Overall Level of Impact: Substantial**

In this view, a number of new elements would give the corridor a more highly developed character, including the insertion of the LRT tunnel portal, an alignment shift into right-of-way in the area to the north of the bike and pedestrian trail, and shifting of the freight line into a widened area along the northern edge of the corridor. In addition, these changes would require removal of many large trees along the edges of the corridor that now contribute substantially to visual quality. As a result, there would be a moderate level of change in the view's level of visual quality. As in other areas along the Kenilworth Corridor, the level of visual sensitivity is high. The result would be a moderate level of change to visual quality that is potentially substantial.

#### **Viewpoint 4 – View from the Bike Trail at the South Side of the Channel Crossing (Exhibit J-16)**

##### **Overall Level of Impact: Substantial**

The trail corridor seen in this view would be widened to accommodate the aboveground segment of the LRT alignment as it approaches the channel crossing. The freight line would be shifted slightly to the north. Fencing would be installed on both sides of the bike/pedestrian trail corridor. Reduction in the tree masses immediately adjacent to the trail and elimination of the existing split rail fencing along the trail would further reduce the visual quality of the view. The overall reduction in the visual quality of this view would be moderate. As in other areas along the Kenilworth Corridor, the level of visual sensitivity is high. Consequently, this moderate level of change to visual quality is substantial.

#### **Viewpoint 5 - View from the Channel Looking Northwest towards the Channel Crossing (Exhibit J-17)**

##### **Overall Level of Impact: Not Substantial**

Vegetation on the banks at the channel crossing would be cleared to accommodate construction of a bridge across the channel to carry the LRT alignment, bike and pedestrian trails, and freight. The vegetative clearing would cause some reduction in the visual quality of the view. However, the bridge, as currently conceived, would include a careful design that would become a positive focal point in the view. The overall change to the view's level of visual quality would be low. Because of the recreational activity in the channel, this view is

visually sensitive. However, because the potential level of change to visual quality would be low the potential visual impact would be generally not substantial

### **Viewpoint 6 – View Northwest from West 21st Street at Thomas Avenue toward the Existing Rail and Trail Corridor (Exhibit J-18)**

#### **Overall Level of Impact: Not Substantial**

Removal and thinning of the vegetation on the left side of the view would open the view up, making it more expansive. The tree removal would permit views into the rail/trail/transit corridor, and would make the new 21st Street Station a focal point in the view. The addition of the light rail infrastructure would cause a moderate reduction in the visual intactness. Overall, though, the change in the visual quality of this view would be low. Because this view is seen by the occupants of homes in the nearby residential areas and those traveling to the recreational facilities on Cedar Lake, the level of visual sensitivity is high. Although the sensitivity of the viewers in this area is high, because the change to the level of visual quality will be low, the overall level of visual impact will not be substantial.

#### **Short-Term Visual Quality and Aesthetics Impacts**

Potential short-term impacts on the six key viewpoints while constructing the LPA would be consistent with those described in Section 3.6.4 of the Draft EIS. Such impacts would be associated with construction staging areas; concrete and form installation; removal of some of the existing vegetation along the trail; lights and glare from construction areas; and dust and debris.

## **6. Potential Mitigation Measures**

---

### **Eden Prairie and St. Louis Park/Minneapolis**

Based on FHWA guidelines the Council will consider mitigation measures for visual quality impacts that are deemed substantial and will identify in the Final EIS the mitigation measures to be incorporated into the project. The Council will develop aesthetic guidelines for the design of the project. These guidelines will address mitigation measures for visual impacts identified in the Final EIS and will address input from the affected communities. Mitigation measures for substantial adverse impacts resulting from the light rail elements will be identified during advanced engineering and could include measure such as landscaping, visual treatments and continuity with the elevated light rail structure design, lighting, and signage. As also indicated in the Cultural Resources analysis, for the Kenilworth Lagoon, the visual impacts caused by the project's design and the measures appropriate to mitigate them will be detailed in the 106 agreement.

Where appropriate, construction related mitigation measures will include elements such as locating staging areas in places not viewable by trail users or by otherwise incorporating visually screening, preservation of existing vegetation to the extent possible, implementation of dust suppression efforts, shielding of nighttime construction lights, continuous cleanup of trash and debris, and timely restoration of areas disturbed during construction.

## **7. References**









---

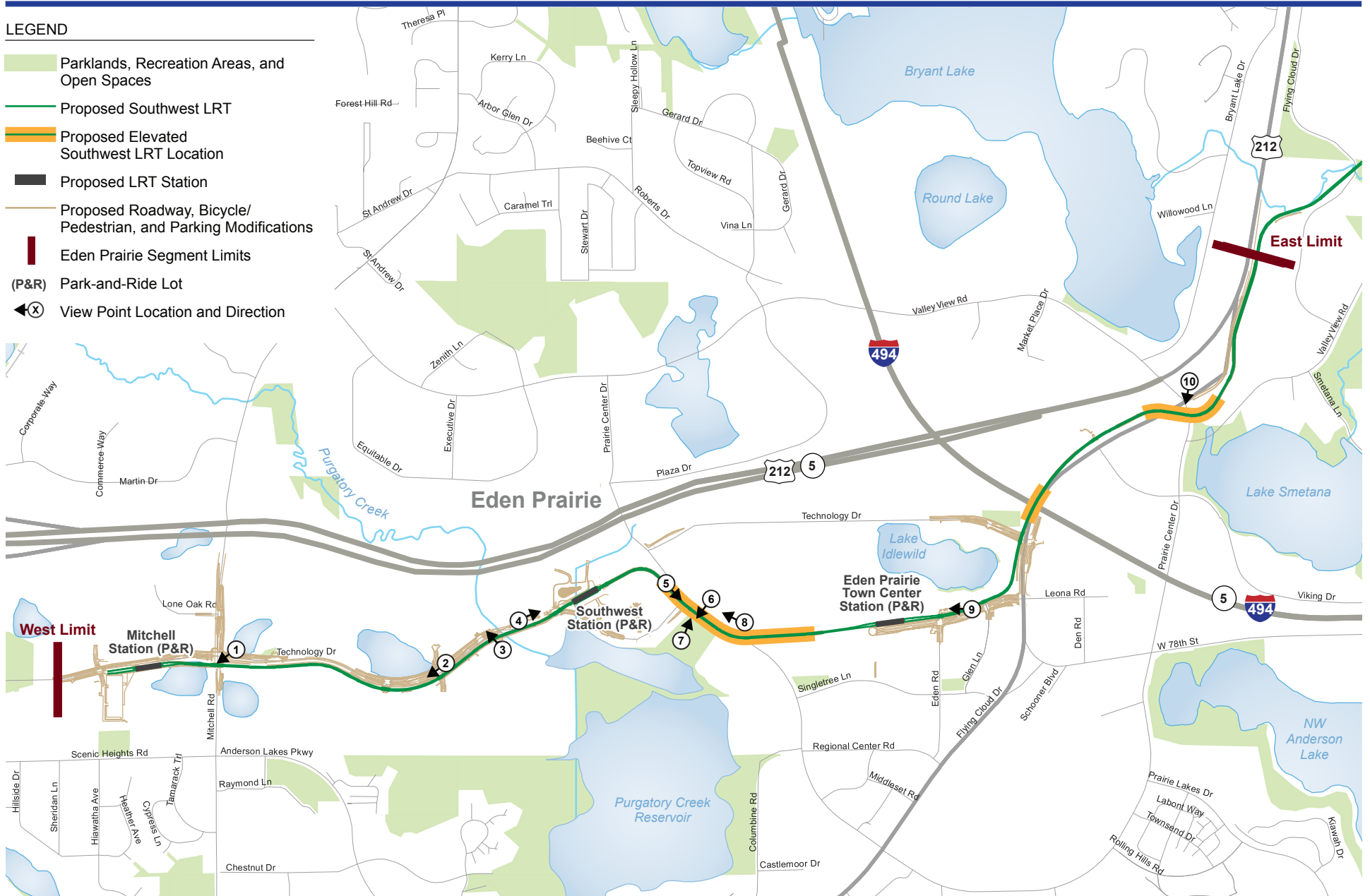
U.S. Department of Transportation, Federal Highway Administration (FHWA). 1988. *Visual Impact Assessment for Highway Projects* (FHWA-HI-88-054).





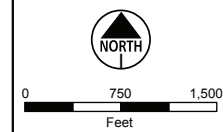
**LEGEND**

-  Parklands, Recreation Areas, and Open Spaces
-  Proposed Southwest LRT
-  Proposed Elevated Southwest LRT Location
-  Proposed LRT Station
-  Proposed Roadway, Bicycle/ Pedestrian, and Parking Modifications
-  Eden Prairie Segment Limits
-  (P&R) Park-and-Ride Lot
-  View Point Location and Direction



**Southwest LRT Supplemental Draft EIS**  
 Key View Point Locations  
 Eden Prairie Segment

Exhibit J-1







View looking southwest from Technology Drive at Mitchell Road toward proposed right of way along southern edge of Technology Drive.



View looking southwest from Technology Drive toward the proposed right of way on the southern edge of Technology Drive where it would pass in front of the Optum Health Services Headquarters.

	<p style="text-align: center;"><b>Southwest LRT Supplemental Draft EIS</b> <b>Viewpoint 2</b> View Looking Southwest along Technology Drive in front of the Optum Health Services headquarters Eden Prairie Segment</p>	<p style="text-align: center;">Exhibit J-3</p>	
-------------------------------------------------------------------------------------	-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	------------------------------------------------	---------------------------------------------------------------------------------------





View looking north from the Purgatory Creek Trail toward the proposed right of way on the southern edge of Technology Drive.



View looking east from Technology Drive toward the proposed right of way where it would pass along the southern edge of Technology Drive, cross Technology Drive, and then pass along the west side of the SouthWest Transit Center. A new parking ramp and the station platform will extend from the existing Transit Center structures into the landscaped area now visible just beyond the driveway located between the condominium complex and the Transit Center.





a. Photograph of the existing view looking south along Prairie Center Drive at Technology Drive toward the proposed alignment of elevated LRT structure.



b. Preliminary rendering of the view showing a possible design for the elevated LRT structure that would be developed as part of the LRT project.

Note: This image has been prepared to illustrate the alignment for the Supplemental Draft EIS and is based on preliminary engineering designs that are subject to change. See Chapter 2 of this Supplemental Draft EIS for a description of the alignment illustrated in this image.

	<p><b>Southwest LRT Supplemental Draft EIS</b>  <b>Viewpoint 5</b>          View Looking South along Prairie Center          Drive at Technology Drive          Eden Prairie Segment</p>	<p>Exhibit J-6</p>	
-------------------------------------------------------------------------------------	----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	--------------------	---------------------------------------------------------------------------------------





a. Photograph of the existing view from the east side of Prairie Center Drive looking west toward the proposed alignment of elevated LRT structure and Purgatory Creek Park.



b. Preliminary rendering of the view showing a possible design for the elevated LRT structure that would be developed as part of the LRT project.

Note: This image has been prepared to illustrate the alignment for the Supplemental Draft EIS and is based on preliminary engineering designs that are subject to change. See Chapter 2 of this Supplemental Draft EIS for a description of the alignment illustrated in this image.

	<p>Southwest LRT Supplemental Draft EIS  <b>Viewpoint 6</b>          View From East Side of Prairie Center Drive          Toward Purgatory Creek Park          Eden Prairie Segment</p>	<p>Exhibit J-7</p>	
-------------------------------------------------------------------------------------	---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	--------------------	---------------------------------------------------------------------------------------



a. Photograph of the existing view from the parking lot in front of the picnic pavilion in Purgatory Creek Park looking east toward the proposed alignment of elevated LRT structure.



b. Preliminary rendering of the view showing a possible design for the elevated LRT structure that would be developed as part of the LRT project.

Note: This image has been prepared to illustrate the alignment for the Supplemental Draft EIS and is based on preliminary engineering designs that are subject to change. See Chapter 2 of this Supplemental Draft EIS for a description of the alignment illustrated in this image.

	<p><b>Southwest LRT Supplemental Draft EIS</b>  <b>Viewpoint 7</b>        View From Purgatory Creek Park Looking East        Eden Prairie Segment</p>	<p>Exhibit J-8</p>	
--	-------------------------------------------------------------------------------------------------------------------------------------------------------------------	--------------------	--





a. Photograph of the existing view looking north along Prairie Center Drive just south of the proposed location of the elevated LRT structure's crossing of the roadway.



b. Preliminary rendering of the view showing a possible design for the elevated LRT structure that would be developed as part of the LRT project.

Note: This image has been prepared to illustrate the alignment for the Supplemental Draft EIS and is based on preliminary engineering designs that are subject to change. See Chapter 2 of this Supplemental Draft EIS for a description of the alignment illustrated in this image.



	<p><b>Southwest LRT Supplemental Draft EIS</b>  <b>Viewpoint 8</b>          View North Along Prairie Center Drive          South of Proposed Elevated Crossing of Roadway          Eden Prairie Segment</p>	<p>Exhibit J-9</p>	
-------------------------------------------------------------------------------------	-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	--------------------	---------------------------------------------------------------------------------------



View from Eden Road looking west toward the proposed right of way that would pass along the north side of the road and into the undeveloped area by the water tower north of the Town Center Market Place.















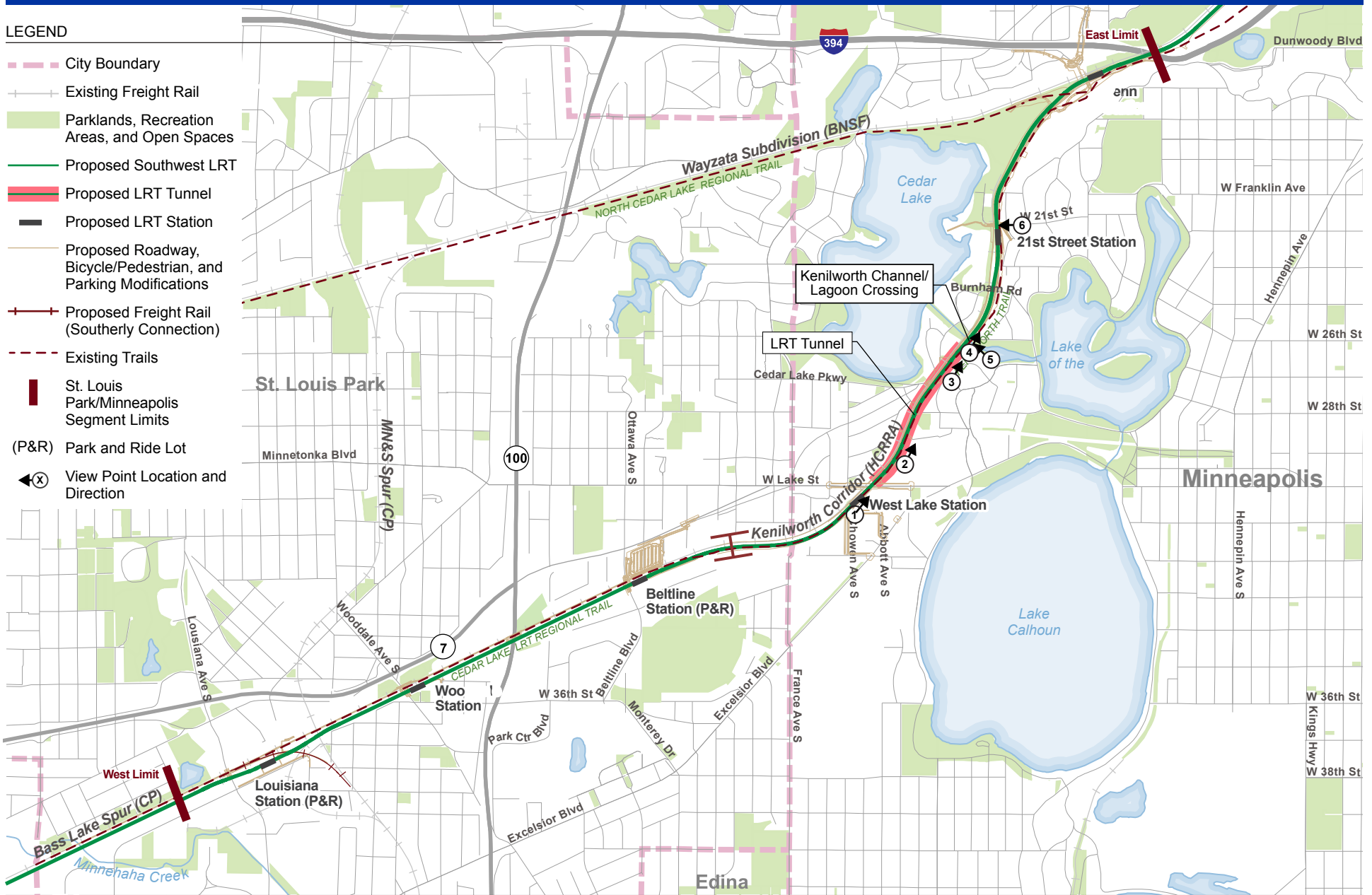
View looking south from Valley View Drive toward proposed route of elevated segment of the LRT that would cross Valley View Drive and continue along the north side of Flying Cloud Drive

	<p style="text-align: center;">Southwest LRT Supplemental Draft EIS <b>Viewpoint 10</b> Valley View Drive, View Looking South Toward Intersection with Flying Cloud Drive Eden Prairie Segment</p>	<p style="text-align: center;">Exhibit J-11</p>	
-------------------------------------------------------------------------------------	----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	-------------------------------------------------	---------------------------------------------------------------------------------------



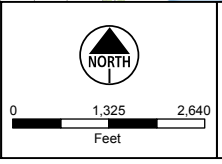
**LEGEND**

-  City Boundary
-  Existing Freight Rail
-  Parklands, Recreation Areas, and Open Spaces
-  Proposed Southwest LRT
-  Proposed LRT Tunnel
-  Proposed LRT Station
-  Proposed Roadway, Bicycle/Pedestrian, and Parking Modifications
-  Proposed Freight Rail (Southerly Connection)
-  Existing Trails
-  St. Louis Park/Minneapolis Segment Limits
-  (P&R) Park and Ride Lot
-  View Point Location and Direction



**Southwest LRT Supplemental Draft EIS**  
 Key View Point Locations  
 St. Louis Park/Minneapolis Segment

Exhibit J-12





View northeast from South Chowen Avenue toward the existing rail and trail corridor and the proposed alignment of the LRT and the location of the West Lake Station.



a. Photograph of the existing view looking north along the trails and freight line at a point just north of West Lake Street.



b. Preliminary rendering of the view after project construction. The LRT is not visible because it would be underground. Excavation during construction could require clearing of trees along the right side of the trails, initially opening up the view toward the apartment tower complex.

Note: This image has been prepared to illustrate the alignment for the Supplemental Draft EIS and is based on preliminary engineering designs that are subject to change. See Chapter 2 of this Supplemental Draft EIS for a description of the alignment illustrated in this image.



**Southwest LRT Supplemental Draft EIS  
Viewpoint 2**

View Looking North Near Lake Street  
St. Louis Park/Minneapolis Segment

Exhibit J-14







a. Photograph of the existing view from the trails at a point just north of Cedar Lake Parkway looking north toward the proposed tunnel portal south of the Kenilworth Channel/Lagoon Crossing.



b. Preliminary rendering of the view depicting the proposed light rail at the portal transition from the tunnel to the surface and the channel crossing.

Note: This image has been prepared to illustrate the alignment for the Supplemental Draft EIS and is based on preliminary engineering designs that are subject to change. See Chapter 2 of this Supplemental Draft EIS for a description of the alignment illustrated in this image.

	<p><b>Southwest LRT Supplemental Draft EIS</b>  <b>Viewpoint 3</b>        View From a Point North of Cedar Lake Parkway Looking North        Toward the Tunnel Portal South of the Canal Crossing        St. Louis Park/Minneapolis Segment</p>	<p>Exhibit J-15</p>	
-------------------------------------------------------------------------------------	-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	---------------------	---------------------------------------------------------------------------------------



a. Photograph of the existing view looking north from the trails at a point just south of the Kenilworth Channel/Lagoon Crossing.



b. Preliminary rendering of the view with the addition of the proposed crossing of the channel, which would include light rail tracks, freight rail tracks (partially obscured by safety and deterrent fences), as well as bicycle and pedestrian trails.

Note: This image has been prepared to illustrate the alignment for the Supplemental Draft EIS and is based on preliminary engineering designs that are subject to change. See Chapter 2 of this Supplemental Draft EIS for a description of the alignment illustrated in this image.

	<p><b>Southwest LRT Supplemental Draft EIS</b>  <b>Viewpoint 4</b>          View From the Bike Trail at the South Side          of the Channel Crossing          St. Louis Park/Minneapolis Segment</p>	<p>Exhibit J-16</p>	
--	-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	---------------------	--





a. Photograph of the existing view looking northwest from the Kenilworth Channel/ Lagoon toward the freight rail and trail trestle bridges.





b. Preliminary rendering of the view with the addition of the proposed crossing structure that could be developed as a part of the LRT project.

Note: This image has been prepared to illustrate the alignment for the Supplemental Draft EIS and is based on preliminary engineering designs that are subject to change. See Chapter 2 of this Supplemental Draft EIS for a description of the alignment illustrated in this image.

	<p><b>Southwest LRT Supplemental Draft EIS</b>  <b>Viewpoint 5</b>          View from the Channel Looking Northwest          Toward the Channel Crossing          St. Louis Park/Minneapolis Segment</p>	<p>Exhibit J-17</p>	
-------------------------------------------------------------------------------------	--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	---------------------	---------------------------------------------------------------------------------------



View northwest of West 21st Street at Thomas Avenue, looking west toward the Kenilworth Corridor, which includes an existing freight rail and trail alignment and which would include the proposed light rail alignment and 21st Street Station.

	<p style="text-align: center;"><b>Southwest LRT Supplemental Draft EIS</b> <b>Viewpoint 6</b> View northwest from West 21st at Thomas Avenue toward the existing rail and trail corridor St. Louis Park/Minneapolis Segment</p>	<p style="text-align: center;">Exhibit J-18</p>	
-------------------------------------------------------------------------------------	---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	-------------------------------------------------	---------------------------------------------------------------------------------------

**Attachment J-2**

**Federal Highway Administration - Visual Impact Assessment for Highway Projects**

---







U.S. Department  
of Transportation

**Federal Highway  
Administration**

Office of Environmental Policy

# Visual Impact Assessment for Highway Projects





U.S. Department  
of Transportation  
**Federal Highway  
Administration**

# Visual Impact Assessment for Highway Projects

---

Office of Environmental Policy  
Washington, D.C.

---

(FHWA-HI-88-054)

# TABLE OF CONTENTS

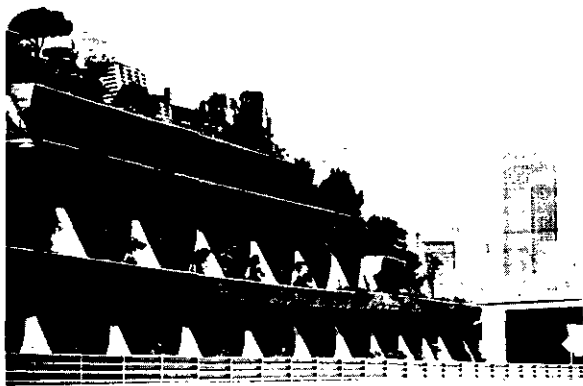
<b>1. Introduction</b> .....	1
—Documenting and Reviewing Visual Impacts .....	1
—Why Visual Considerations Are Important .....	2
—Federal Laws and Regulations .....	3
<b>2. Esthetics and Visual Impact Assessment</b> .....	5
—Esthetics and the Quality of Visual Experience .....	5
—Levels of Project Esthetics .....	6
—Visual Assessment Process .....	6
<b>3. Scoping the Visual Impact Assessment</b> .....	9
—Project Characteristics .....	9
—Visual Environment .....	9
—Significant Visual Resource Issues .....	9
—Significant Viewer Response Issues .....	9
—Visual Impacts and Impact Management .....	10
<b>4. The Visual Environment</b> .....	21
—Regional Landscape .....	21
—Landscape Units .....	21
—Landscape Classification .....	21
—Project Viewshed .....	26
—Visual Resources—Inventory .....	34
—Visual Character—Inventory .....	37
—Visual Pattern—Inventory .....	37
—Visual Quality—Evaluation .....	46
<b>5. Viewer Characteristics</b> .....	63
—Viewer Groups .....	63
—Viewer Exposure .....	63
—Viewer Sensitivity .....	63
<b>6. Visual Effects of Highway Projects</b> .....	75
—Characteristics .....	75
Roadway, Roadside, Right-of-Way .....	75
Structures and Appurtenances .....	76
Related Facilities .....	78
—Measuring Impact .....	79
Visual Information .....	80
Visual Character .....	80
Visual Compatibility .....	82
Visual Quality .....	86
Visual Impact .....	88
Predicting Impact .....	89
—Viewer Response .....	97
Exposure .....	97
Sensitivity .....	97

<b>7. Visual Impact Mitigation</b> .....	101
—Mitigation Planning .....	102
—Mitigation Objectives .....	103
—Mitigation Options .....	104
<b>8. Management by Visual Objectives</b> .....	105
—Process .....	106
—Principles .....	107
—Actions .....	108
—Objectives .....	109
—Visual Resource Management Outline .....	110
Summary .....	113
Glossary .....	115

# 1 INTRODUCTION

This field guide is intended to help those who prepare or review the coverage of visual impacts in environmental assessments or impact statements for highway projects. This guide will discuss how to develop such coverage and how to review its adequacy.

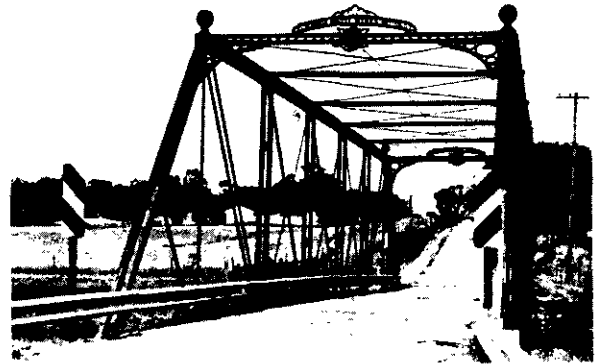
Many State highway agencies have been changing the emphasis of their programs from Interstate construction to the rehabilitation and upgrading of existing roads. It is usually obvious that constructing a new urban freeway will have a significant visual effect, positive or negative, on surrounding areas. It may be less clear whether visual considerations will be important in widening a road or reconstructing a bridge. In fact, experience has shown that visual considerations can sometimes be critical on such projects. This field guide will present an approach to identifying the potential importance of visual effects and then assessing the nature of these effects. Within the framework of this approach, the choice of specific assessment techniques should be tailored to the project in terms of appropriate detail and level of effort. It appears neither necessary nor desirable to apply the elaborate assessment process that is appropriate for a large project to a small project that will have only modest visual effect.



*Visual considerations can be a strong influence in the design of major urban highway structures such as this retaining wall.*

## DOCUMENTING AND REVIEWING VISUAL IMPACTS

A visual impact assessment for a large and controversial highway project may be a considerable undertaking and may require a sizable report to explain the approach and its results. While this report may be a necessary and useful element of the environmental studies for a highway project, it will be too detailed for the Environmental Impact Statement (EIS) itself. The project EIS should be strictly limited in length and should cover only those environmental issues which have a significant bearing on project decisions.



*Visual considerations may also be important in deciding how to repair or replace a minor bridge that has historic value.*

While the full visual impact assessment report might be included in an EIS appendix, the EIS itself should contain only the findings on significant visual issues and the evidence sufficient to substantiate the findings. Given the limit of 150 pages for a typical EIS, coverage of visual impacts will be limited to a few pages on all but the most controversial projects. The visual assessment information for a finding of no significant impact (FONSI) must also be concise. In both cases, the narrative text should briefly describe the principal visual characteristics of the project, the visual resources and viewers affected, the significance of the main visual issues, the

effects of the project alternatives, and any mitigation measures. The scoping procedure suggested in this guide can be useful in the development of this assessment.

Much of the coverage of visual impacts should be graphic; visual effects are best conveyed visually. Graphic exhibits that are particularly helpful include the project viewshed, photographs of key views, and illustrations of the project's effect on these views. Techniques for developing these exhibits are discussed in this field guide.

From a reviewer's perspective, visual impact coverage should contain enough information about the visual characteristics of the project, the people who will view the project, and the visual resources of the project area to support the findings of significance and effect. Evaluations should be supported by factual descriptions and illustrations; for example, an assertion that existing visual resources in the project area are "low in visual quality" should be preceded by a short description of these resources and representative photographs. Proposed mitigation measures should be logically related to adverse visual impacts or offsetting beneficial effects.

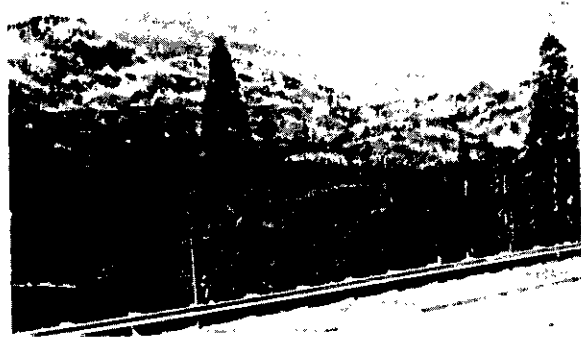
The terminology of esthetics is not uniform and reviewers should not insist on the exact words used in this guide (alternative terms in current use are given in the glossary). Rather than look for specific words, reviewers should seek evidence that all the major potential areas of visual impact have been considered. Again, the scoping questionnaire discussed in Chapter Three provides an outline of these areas and may be used as a starting point for review.

## WHY VISUAL CONSIDERATIONS ARE IMPORTANT FOR HIGHWAY PROJECTS

The public nature and visual importance of our highways require that visual impacts—positive as well as negative—be adequately assessed and considered when a highway project is developed. Community acceptance of the project may also be strongly influenced by its visual effects.

Project visual impacts are seen both in the view *from* the road and the view *of* the road. The importance of the first has long been recognized. In recreation surveys, Americans

have repeatedly ranked pleasure driving on scenic roads as one of their favorite activities. Researchers have also shown that the view from the road is the basis for much of what we know about our everyday environment and for our mental image of the city. For this reason, community groups are rightly concerned with the visual character of the highways entering their town or city; first impressions count.



*Americans often drive for the sheer pleasure of the view from the road.*



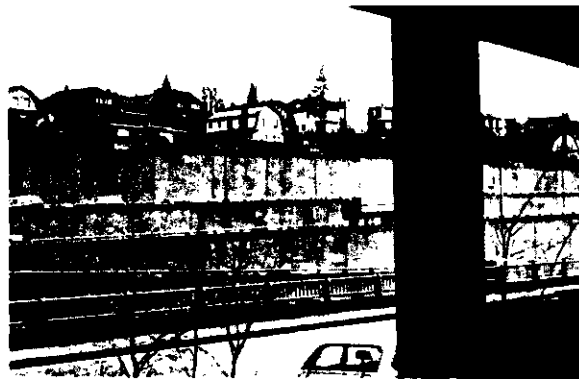
*On the other hand, the visual experience of entering our cities can be far from pleasant.*

Systematic consideration of the view of the road is more recent. Particularly in urban or suburban areas, there may be many "eyes per mile" along the right-of-way of a proposed project. If existing views are very high in quality or are valued by large numbers of people, the visual costs borne by highway neighbors could outweigh the visual benefits accrued by highway users. In such cases, projects must be carefully planned to ensure that pleasing vistas for travelers are not developed at the expense of views from surrounding areas.

Public concern over adverse visual impacts can be a major source of project opposition. This is frequently true of urban viaducts and roadways in scenic areas, but other project types also generate controversy over their visual effects. Highway planners can help to resolve these controversies by assessing visual impacts and the effectiveness of mitigation measures in a clear and objective manner. This type of assessment can also help determine when actions that create positive visual impacts may reasonably be used to offset other adverse project effects.



*Upgrading the highway to four lanes could have a significant effect on views of this outstanding scenic landscape.*



*Although many views of urban highways are not scenic, they may be important because of the number of "eyes per mile" that will see the road.*

National policies direct that we carefully consider existing visual resources which are high in quality and that we enhance the built environment by good project planning and design. A systematic approach to visual impact assessment will help transportation agencies comply with these policies and achieve attractive highway projects that are appropriate to their viewers and visual settings.

## WHAT FEDERAL LAWS AND REGULATIONS SAY ABOUT VISUAL CONSIDERATIONS

Federal legislation took its first notice of highway esthetics by protecting scenic road and parkway views. Billboards and junkyards along interstate and primary highways next drew attention. The initial funding for clean-up was followed by limited funding for roadside beautification. Up to this point, the mid-60's, the view from the road received all the attention.

The significance of the view of the road began to emerge with the Historic Preservation Act of 1966. This Act directs all federal agencies to account for the effects of proposed projects on historic resources; the "criteria of adverse effect" include "the introduction of visual . . . elements that are out of character with the property or alter its setting." Coverage of the visual effects of highway projects was also recognized in 1966 by Section 4(f) of the Department of Transportation Act. It declares the national beauty of the countryside and public park and recreation lands, wildlife and waterfowl refuges, and historic sites." Highway projects can only cross these special lands if there is no feasible and prudent alternative and the sponsoring agency demonstrates that all possible planning to minimize harm has been accomplished. Visual resource mitigation may be required in certain instances as a part of this planning.

The National Environmental Policy Act of 1969 (NEPA) applied environmental awareness policies to all types of federally supported projects and all types of project settings. The Act declares that it is the "continuous responsibility" of the federal government to "use all practicable means" to "assure for all Americans safe, healthful, productive, and esthetically and culturally pleasing surroundings." The Act, of course, requires Environmental Impact Statements for major Federal actions which significantly affect the environment. It also directs agencies to use an interdisciplinary approach to "identify and develop methods and procedures . . . which will insure that presently unquantified environmental amenities and values may be given appropriate consideration in decision-making along with economic and technical considerations." It further



directs agencies to identify the means by which they will comply with NEPA.

The coverage of highway esthetics in Title 23 of the U.S. Code, which governs the Federal Highway Administration, was augmented to reflect NEPA's directives. Section 109(h) states that the project/environment balance point is the "best overall public interest." The costs of minimizing or eliminating the "destruction or disruption of manmade and natural resources," specifically including "esthetic values," must be considered in striking this balance. To further implement NEPA, Section 109(h) and Section 4(f), the Department of Transportation inaugurated its Design, Arts and Architecture in Transportation program in 1978. This program, outlined in DOT order 5610.1C, revised attachment 2, goes beyond the conservation of existing scenic resources and requires that environmental impact statements document the consideration of design quality in projects which involve public use areas or sensitive locations, such as parks or historic districts.

The Council on Environmental Quality (CEQ) published its final regulations for implementing the procedural provisions of NEPA in the same year. Lest esthetic values be construed as occurring only in wildlands or rural areas, the regulations direct that EIS discussion include "urban quality, historic and cultural resources, and the design of the built environment." To strengthen the relationship of the NEPA process to agency decision-making, the regulations encourage an early determination of EIS scope and of the environmental issues that are most significantly related to a decision among project alternatives. This important determination, called "scoping," can identify the potential significance of visual issues on a project, the nature of the particular visual issues, and the level of effort required for their resolution.

## HOW THIS GUIDE CAN HELP IMPROVE HIGHWAY PROJECTS

The Federal Highway Administration has published this guide to help increase the responsiveness of highway planning and design to the national commitment to esthetic quality in federal projects. The guide attempts to achieve this goal by providing *technical assistance to people who prepare or review the coverage of visual effects in environmental assessments or impact statements. It is therefore oriented toward NEPA requirements, but the approach is also appropriate to Section 4(f) statements and to the determination of project visual effects on historic and archeological resources.*

More specifically, the objectives of this guide are to help readers:

- develop a basic understanding of the principles of esthetics and how they apply to highway planning and location;
- develop an ability to identify and evaluate location and design alternatives which minimize or eliminate adverse impacts on existing views and viewers, and which enhance the potential visual benefits of highway projects;
- develop an ability to prepare the coverage of positive and negative visual impacts in environmental assessments and impact statements, and/or to review the adequacy of such coverage.

The potential significance of visual effects depends not only on project type, but also on project setting. Moreover, federal laws and regulations require special consideration for the visual resources of certain settings. As we have already seen, these settings include parks, historic districts, and public use areas. The guide discusses how project visual impact assessments can respond to the issues posed by these special settings.

# 2 ESTHETICS AND VISUAL IMPACT ASSESSMENT

This chapter discusses the principles of esthetics that apply to visual impact assessment. It places esthetics and visual experience in the context of the National Environmental Policy Act, discusses how to identify the visual environment of a project, and examines the viewers and visual resources in that environment, including the highway itself.

The chapter outlines the principal esthetic considerations that should be addressed in a visual impact assessment. It also discusses each of these considerations in some detail. Readers examining this guide for the first time may wish to skim this chapter for basic concepts and return later to the detailed discussion of those concepts most at issue on a particular project.

## ESTHETICS AND THE QUALITY OF VISUAL EXPERIENCE

The National Environmental Policy Act establishes the ground rules for the preparation of environmental impact statements. Visual effects are included within NEPA under the heading of esthetics. Therefore, we must understand what esthetics means within the context of NEPA before we can discuss how to adequately assess visual impacts.

### Esthetics and NEPA

Esthetics is the *science or philosophy concerned with the quality of visual experience*. We cannot meaningfully assess project impacts on visual experience unless we consider both the stimulus and the response aspects of that experience. We will discuss these aspects separately, under the headings of "visual resources" and "viewers," to help keep the distinction clear.

We can use the word *quality* to refer simply to an attribute or characteristic of a subject. However, quality also can mean *excellence* or superiority in kind. Quality is used with this

second meaning repeatedly in NEPA. The initial statement of need recognizes "the critical importance of restoring and maintaining environmental quality." To help meet this need, the Act declares a national goal to "enhance the quality of renewable resources" and directs the establishment of programs "to foster and promote the improvement of environmental quality." This NEPA language implies that esthetic assessments must not only describe the visual attributes of projects, but must also evaluate their effects on the relative excellence of visual experience.



*The quality of visual experience depends in part on the characteristics of the visual resources that stimulate the experience.*



*The quality of visual experience also depends on the nature of the viewers: their location, number, activity, and values.*

### Three Levels of Project Esthetics

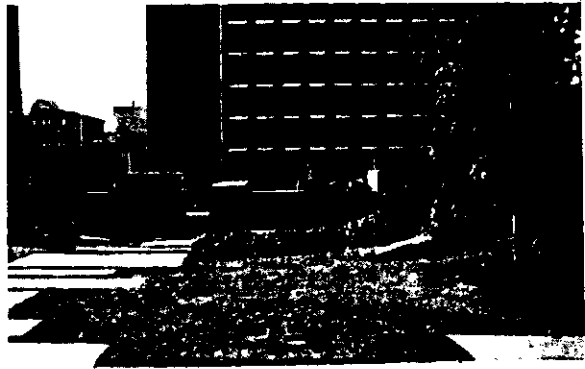
NEPA's emphasis on the quality of the overall environment has expanded the context in which we must assess project esthetics. Traditionally, visual design theory has followed the lead of the fine arts by looking at an individual project as a self-contained object, apart from its surroundings. Project esthetics have been judged by considerations like these: does the design visually express the project's functions? are the details visually consistent? do they support the total visual effect? We might summarize these and similar considerations as the *internal esthetics* of a project. This is the first level of project esthetics and is essential to a high-quality visual environment. It is also a principal focus of the Design, Art and Architecture in Transportation program that the U.S. Department of Transportation has instituted.



*Internal esthetics: Seattle's Freeway Park is a well-detailed and internally consistent design with many delightful, self-contained spaces.*

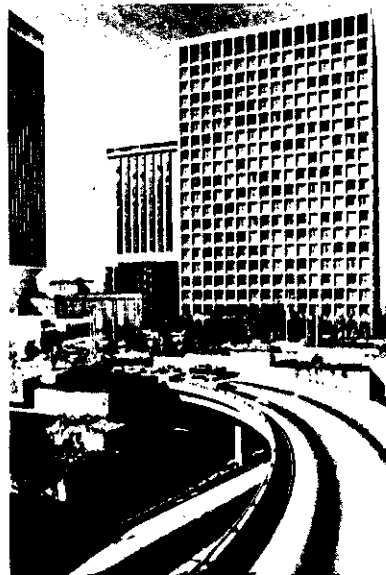
A second level of project esthetics considers the visual relationships between a project and specific elements of its surroundings: does the project contrast strongly? does it block existing views? We might call such considerations *relational esthetics*. They are the visual equivalent of good manners and can be very important to community acceptance of a project.

At the third and broadest level is *environmental esthetics*, to which NEPA particularly directs our attention. Here we must examine the esthetics of the total affected environment, of which any project is only a part: do project visual characteristics, however carefully designed and well mannered, enhance the quality of the environment? decrease it? or even affect it at all?



*Relational esthetics: the forms and materials used in Freeway Park are also well-related to the rectilinear urban geometry of the city core.*

In the past, much more attention has been given to the first level of esthetics than to the second and third levels. For this reason as well as the thrust of NEPA requirements, this guide will emphasize *how to assess visual relationships between highway projects and their surroundings and how to evaluate project effects on the quality of visual experience in the project environment*, as well as the internal esthetics of projects.

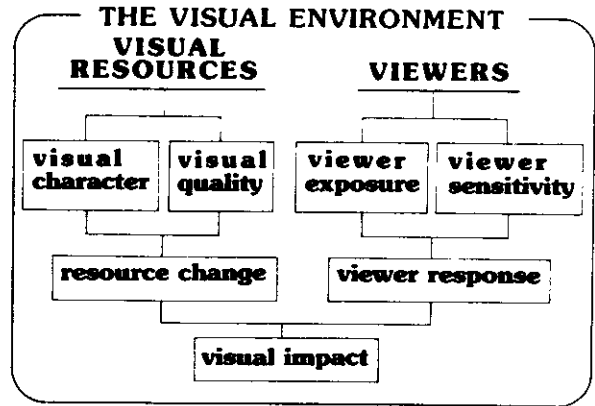


*Environmental esthetics: the park is also an oasis of green that enhances the quality of the visual environment. It provides a handsome downtown entry and reconciles the differing visual orders of the freeway and the city center.*

### Visual Assessment Process

A generalized visual impact assessment process is illustrated in the accompanying diagram. This assessment process is similar in broad outline to the visual resource management (VRM) systems employed by

several major federal agencies. The major components of this process include establishing the visual environment of the project, assessing the visual resources of the project area, and identifying viewer response to those resources. These components define the existing or baseline conditions. We can then assess the resource change that would be introduced by the project and the associated viewer response; these allow us to determine the degree of visual impact.



*These are the principal issues that a visual impact assessment should address; the relative importance of these issues will change from project to project.*

## HIGHWAY DECISIONS WITH ESTHETIC IMPLICATIONS

### *System Planning*

- Design speed
- Capacity
- Access Control

### *Corridor/Location*

- Alignment
  - horizontal
  - vertical
- Frontage roads
- Zoning
- Utility crossings
- Interchange location
- Intersections
- Joint development
- Urban vs. rural

### *Design*

- Standards
- ROW width
- Sidewalks
- Pedestrian crossings
- Bikeways
- Erosion control
- Clearing limits
- Median width
- Signing
- Pavement surface
- Slope treatment
- Culverts
- Ditching
- Noise barriers
- Rest areas
- Stream relocation
- Structures
  - bridges
  - walls

### Shoulder treatment

- Sight distance
- Guardrail
- Median barriers
- Landscaping
- Fencing
- Grading
- Lighting
- Billboard control
- Junkyard screening

### *Maintenance*

- Standards
- Mowing practices
- Litter pickup
- Painting
- De-icing practices
- Pavement maintenance
- Maintenance yards

### *Construction*

- Temporary erosion control
- Clearing practices
- Borrow pit operation
- Clean up
- Waste areas

### *Operations*

- Signing
- Pavement markings
- Lighting
- Traffic markings/lights
- Impact attenuators
- Delineators

# 3 SCOPING THE VISUAL IMPACT ASSESSMENT

## SCOPING VISUAL IMPACTS

This guide has already shown that there are many different types of visual issues. For a few major projects, we may have to address all of them, but we need not adopt an “all or nothing” approach to visual impact assessment. Instead, we can apply the scoping concept to visual impacts and identify which visual issues, if any, require analysis for a given project. This chapter presents an “open question” approach for identifying significant visual issues. The questionnaire presented here can be used to help scope an EIS; it can also be used to guide the preparation of environmental assessments or to help identify the “extraordinary circumstances” under which environmental review is advisable for an otherwise excluded action. The questions, when properly analyzed, can serve as the primary basis upon which an esthetic or visual impact analysis can be written. They address those factors and esthetic considerations which are necessary in the development of an acceptable visual impact analysis. Although the questions can be self-serving in the visual impact assessment process, the remaining chapters in this field guide provide an explanation of the principles, evaluation techniques, and basic concerns which should be followed in analyzing the questions.

The questions are grouped under five main headings, discussed in the following paragraphs.

### *1 Project Characteristics*

The first set of questions calls attention to project characteristics that may have a significant effect on project appearance. Alternatives may involve changes in these characteristics. For instance, a viaduct structure may be an alternative to a massive fill section across a low-lying area.

### *2 Visual Environment of Project*

The next set of questions helps to identify and differentiate the visual environment of the project within the meaning of “affected environment” and “human environment” defined in NEPA regulations. The questions are intended to clarify the need for detailed analysis such as viewshed mapping.

### *3 Significant Visual Resource Issues*

We can often identify the nature and likelihood of significant visual resource effects before we perform a detailed visual impact assessment. Sometimes visual resource effects are significant in themselves. For example, high visual quality is generally worth conserving wherever it exists. In most cases, however, the significance of these resource effects must be interpreted in combination with viewer response (the next set of questions).

For instance, the visual quality of an urban residential district may not be very high, but local residents may still value its visual character. On the other hand, highway projects are often related to urban improvement and redevelopment proposals; in these cases, community groups may be very concerned about improving the visual quality of urban travel routes by facility design and even the appropriate incorporation of art.

### *4 Significant Viewer Response Issues*

Often, we can also identify the general nature of viewer response to a project before we undertake a detailed visual assessment, although the values and goals of local viewer groups may not become fully apparent until later in the process. For example, we can safely predict that residential and recreational viewer groups will be concerned about the appearance of their visual environment. We also know that various federal laws and regulations impose what we may call the test

of visual compatibility on projects located close to visual resources that are recognized for their cultural significance. Where this recognition is based on "scenic values," effects on visual quality will be equally important.

### ***5 Visual Impacts and Impact Management***

The last group of questions is intended to summarize the major visual effects—adverse or beneficial—that are likely to be associated

with project alternatives. It is also intended to help identify potential visual mitigation measures for study in the assessment process. Mitigation can include avoiding, minimizing, and reducing impacts, as well as rectifying them or compensating for them. A mitigation measure should be related to a specific impact, or it may not only be ineffective, but may also compound the problem. For example, a color chosen to enhance the appearance of a bridge may prove incompatible with the surroundings of the bridge.

# SCOPING QUESTIONNAIRE FOR VISUAL ASSESSMENTS

## *1. Project Characteristics*

- A. What are the major project design standards (capacity, access, speed, geometry)? Alternatives?
- D. What secondary effects (such as development at interchanges or conversion of land from rural to urban uses) may result from the project?

- B. What is the typical highway cross-section (roadway, roadside slopes and drainage, right-of-way)? What major structures and appurtenances will be required? Alternatives?

## *2. Visual Environment of Project*

- A. What landscape components (landform, water, vegetation, and manmade development) are characteristic of the regional landscape and the immediate project area?
- C. Are any highway-related facilities (such as rest areas or maintenance yards) part of the project? What construction areas (borrow pits, spoil areas) will be needed? Alternatives?
- B. Where is the project likely to be seen from?



C. What visually distinct landscape units can be identified within the immediate project area?

C. What levels of visual quality now exist (evaluated by criteria such as vividness, intactness, and unity or by other indicators) and how much would project alternatives affect these?

**3. Significant Visual Resource Issues**

A. How would the project alternative affect the landscape components which are present within the visual environment?

**4. Significant Viewer Response Issues**

A. What major viewer groups are likely to see the project?

B. What is the existing visual character of the project environment (e.g., form, line, color, texture and dominance, scale, diversity, continuity) and how compatible would project alternatives be with this character?

B. What is the viewer exposure to project alternatives for different groups (numbers, distance, duration and speed of view, etc.) and how would each alternative affect important existing views?

C. How are viewer activity and awareness likely to affect the attention that different groups pay to the project and its visual environment? Include both viewers from the road and of the road.

**5. *Visual Impacts and Impact Management***

A. In summary, what significant visual impacts, if any, appear likely? Include both adverse and beneficial impacts.

D. Are there any visual resources in the project environment that are particularly important to local viewers? Are there any districts, sites, or features that are regionally or nationally recognized for their cultural significance?

B. What alternatives might avoid, minimize, or reduce any adverse visual impacts and by how much?

E. Is the project thought to threaten or support expectations for the future appearance of any areas it traverses?

C. What actions might rectify or compensate for adverse visual impacts and by how much?

---

---

# **SAMPLE SCOPING QUESTIONNAIRE**

To help illustrate the use of the scoping questionnaire, we have completed an example for an urban freeway on new location.

## **Project Introduction**

The project is a freeway spur that would provide access to the downtown core of a medium-sized western coastal city, as well as a bypass route for traffic bound to the north and east of the core. It includes a 1.3 mile link between a major interstate freeway to the south and limited access parkway to the north, with two interchanges in the core

itself. The north-south leg would be located along a waterway that is the eastern boundary of the urban core. The project also includes a 2.3 mile east-west connection across the waterway, leading to industrial port lands. Project alternatives include alignment options to reduce adverse effects on a redevelopment area along the waterway and on an historic rail station.

---

---

# SCOPING QUESTIONNAIRE FOR VISUAL ASSESSMENTS

## 1. Project Characteristics

- A. What are the major project design standards (capacity, access, speed, geometry)? Alternatives?
- o Two travel lanes in each direction, with up to 50,000 total ADT
  - o Fully controlled access
  - o 50 miles per hour design speed on mainline, 35 on ramps
  - o Minimum radius curves can be used
- B. What is the typical highway cross-section (roadway, roadside slopes and drainage, right-of-way)? What major structures and appurtenances will be required? Alternatives?
- o Mainline (2-lane) roadways = 42 feet
  - o Ramp (1-lane) roadways = 28 feet
  - o Right-of-way = 120 to 400 feet
  - o Waterway and river crossings: 340 feet (45 feet clear) and 400 feet (52 feet clear)
  - o All of N-S roadways, much of E-W roadways elevated on structure over railroad tracks (23 feet clear)
  - o Balance of roadway elevated on fill, 1½:1 side slopes
  - o Lighting and sign bridges required
- C. Are any highway-related facilities (such as rest areas or maintenance yards) part of the project? What construction areas (borrow pits, spoil areas) will be needed? Alternatives?
- o Possible joint-use beneath structures
  - o Potential uses include parking, outdoor storage, industrial use, and parks
- D. What secondary effects (such as development at interchanges or conversion of land from rural to urban uses) may result from the project?
- o Increased potential for redevelopment of downtown and adjacent waterway
  - o Possible urban deterioration immediately next to right-of-way

## 2. Visual Environment of Project

- A. What landscape components (landform, water, vegetation, and manmade development) are characteristic of the regional landscape and the immediate project area?
- o Landform: glacial terraces and small bluffs; estuarine deposits and landfill on valley floor
  - o Water: stream (partially culverted), river, waterway, sound
  - o Vegetation: weedy species on disturbed uplands, including blackberry and Scotch broom; lowland vegetation includes stands of red alder and black cottonwood;
  - o Manmade development: highrise office core, brick warehouse and railroad district, port industry, recreational marinas, hillside residential neighborhoods
- B. Where is the project likely to be seen from?
- o Existing city streets, existing freeway and parkway, and new highway itself
  - o Downtown core, historic warehouse and rail station district
  - o Waterway, new parks, new marinas
  - o Residential areas
  - o Industrial areas

- C. What visually distinct landscape units can be identified within the immediate project area?

- o Downtown core, warehouse and rail station district, waterway district, port industry area

## 3. Significant Visual Resource Issues

- A. How would the project alternative affect the landscape components which are present within the visual environment?
- o Landform: heavily modified hillside terraces and estuarine lowlands; little additional modification
  - o Water: stream valley at south end of corridor may be further disturbed; waterway and river would be crossed by bridges

- o Vegetation: stands of trees in stream valley and on lowland floor may be reduced in size
- o Manmade development: highway would require clearing some industrial buildings; brick warehouses would not be removed

**B. What is the existing visual character of the project environment (e.g., form, line, color, texture and dominance, scale, diversity, continuity) and how compatible would project alternatives be with this character?**

Prominent aspects of existing character include:

- o Form: hillside terraces and bluffs; buildings generally rectilinear, except rail station dome
- o Line: horizontal bluff edges, rail lines, waterway shore, roofs of warehouses
- o Diversity: very great, because of close juxtaposition of districts, and profusion of industrial structures and equipment
- o Continuity: relatively low, due to demolition and high proportion of vacant land

Project alternatives may or may not visually interrupt rail station dome, bluff and shore edges; may further increase diversity and decrease continuity

**C. What levels of visual quality now exist (evaluated by criteria such as vividness, intactness, and unity or by other indicators) and how much would project alternatives affect these?**

Existing visual quality is low in foreground, moderated by good background views of sound and mountains

- o Vividness: moderate due to rail station dome, waterway, towers in downtown core
- o Intactness: low, due to demolition, vacant land, and lack of maintenance
- o Unity: low, due to high diversity of development and lack of continuity

Project could adversely affect waterway and rail station; it could also improve intactness and unity, and thus improve overall visual quality significantly.

**4. Significant Viewer Response Issues**

**A. What major viewer groups are likely to see the project?**

- o Commuters, office workers and shoppers, recreational boaters, neighborhood residents, industrial workers

**B. What is the viewer exposure to project alternatives for different groups (numbers, distance, duration and speed of view, etc.) and how would each alternative affect important existing views?**

View from road: improved visibility of downtown for entering drivers (up to 50,000 daily) view duration approximately 30 seconds

View of road:

- o Neighborhood residents--several thousand, middleground to background, permanent view
- o Recreational boaters--several hundred (may increase significantly in future), foreground, intermittent view
- o Office workers and shoppers--several tens of thousands, foreground, intermittent view
- o Industrial workers--several thousand, middleground to background, intermittent view

Project may block views between rail station and waterway, downtown and waterway

**C. How are viewer activity and awareness likely to affect the attention that different groups pay to the project and its visual environment? Include both viewers from the road and of the road.**

View from the road: drivers will have clearer orientation, limited ability to focus on foreground

View of the road:

- o Residents may have high concern about effect of road on views
- o Recreational boaters and users of waterway, redevelopment area may also have high concern
- o Office workers and shoppers probably will have moderate to low concern
- o Industrial workers may be expected to have low concern

**D. Are there any visual resources in the project environment that are particularly important to local viewers? Are there any districts, sites, or features that are regionally or nationally recognized for their cultural significance?**

- o Rail station is on National Register and is important to community
- o Warehouse district around it is also important to community and may be eligible for Register
- o Waterway views are valued, where available
- o Tree stands in lowlands and in stream valley at south end of north-south leg are important to environmental groups

**E. Is the project thought to threaten or support expectations for the future appearance of any areas it traverses?**

Community is divided:

- o Businessmen and most city officials anticipate project improving visibility of downtown and contributing to revitalization; project design could enhance downtown
- o Widespread community concern over possible adverse visual effects on historic rail station and warehouse district; compatible design could reduce concerns
- o Additional concern over possible adverse visual effects on redevelopment of waterway for commercial and recreation use

**5. Visual Impacts and Impact Management**

**A. In summary, what significant visual impacts, if any, appear likely? Include both adverse and beneficial impacts.**

Beneficial effects (potential):

- o Improved visibility of downtown core
- o Improved visual quality of city entry

Adverse effects (potential):

- o Lower visibility of rail station and waterway

- o Visual incompatibility between elevated road, rail station area, and waterway redevelopment
- o Decreased visual quality of expected views of rail station area and waterway redevelopment (present views are low in visual quality)

**B. What alternatives might avoid, minimize, or reduce any adverse visual impacts and by how much?**

- o Minimum profile elevated road could considerably decrease obstruction of views from rail station and waterway areas
- o Lower profile could enhance compatibility of elevated road by making it appear continuous with bluff edge of first terrace

**C. What actions might rectify or compensate for adverse visual impacts and by how much?**

- o Structural concepts, landscape development, and joint-use alternatives may enhance visual compatibility of elevated road somewhat and greatly improve general visual quality over present condition



---

---

# 4 THE VISUAL ENVIRONMENT

The NEPA requirement to consider the environmental effects of a project implies that we must first determine the environment that is affected. NEPA also requires us to compare the relative effects of project alternatives. Therefore, two related steps are necessary before we can assess the effects of a project on its visual environment:

- we must develop a framework for visual assessment that will help us compare project alternatives;
- we must define the physical limits of the visual environment that each alternative may affect.

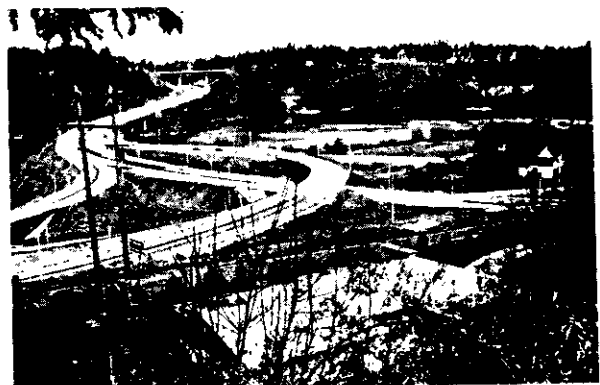
The concept of landscape classification enables us to establish the general visual environment of a project and its place in the regional landscape. Within this frame of reference, an analysis of project visibility can help us determine the limits of the actual or potential visual environment of the project.

## The Landscape of the Geographic Region

The regional landscape can help us establish a frame of reference for comparing the visual effects of alternatives and determining the significance of these effects. In other words, we cannot assess the visual effects of a project unless we understand how the project's immediate visual environment is related to the visual environment of the geographic region. Characteristic combinations of *landscape components* distinguish one regional landscape from the next. Direct visual comparisons are only valid between landscapes with similar landscape components. The components of the regional landscape are its landform (or topography) and landcover; landcover components include water, vegetation, and manmade development.

*Landscape types* are relatively homogeneous combinations of landform and landcover that recur throughout a region. In the Puget Sound region, common landscape types include forested glacial plateaus, valley bottom farmlands, and the wooded but unstable bluffs between these two. Manmade landscape types can also be distinguished, such as the brick warehouse districts in the historic cores of many U.S. cities and the strip development along older urban highways. These natural and manmade landscape types may have visual implications for highway development. For instance, it may be considerably more difficult to fit a highway project unobtrusively into one landscape type than another. Roads that run across the grain of the landscape are particularly likely to cause visual problems.

To provide a framework for comparing the visual effects of highway project alternatives, we can divide the regional landscape (or specific portions of it) into distinct *landscape units*. These landscape units may be thought of as "outdoor rooms"; they will often correspond to places or districts that are already named. Units are usually enclosed by clear landform or landcover boundaries and



*This highway route runs across the grain of landscape types: a deep cut scars the bluff and a massive fill blockades the valley floor.*

many of the views within a landscape unit are inward-looking. Landscape units are usually characterized by diverse visual resources, too: several landscape types may be in view at any one time, just as we may see several walls of a room from one position. In other words, a landscape unit is perceived as a complete

visual environment, while its landscape types are generally perceived as parts of that environment. The visual resources of project landscape units can be assessed and compared; the units can then be assigned priorities for planning, siting, and design decisions.

# **LANDSCAPE COMPONENTS**

---

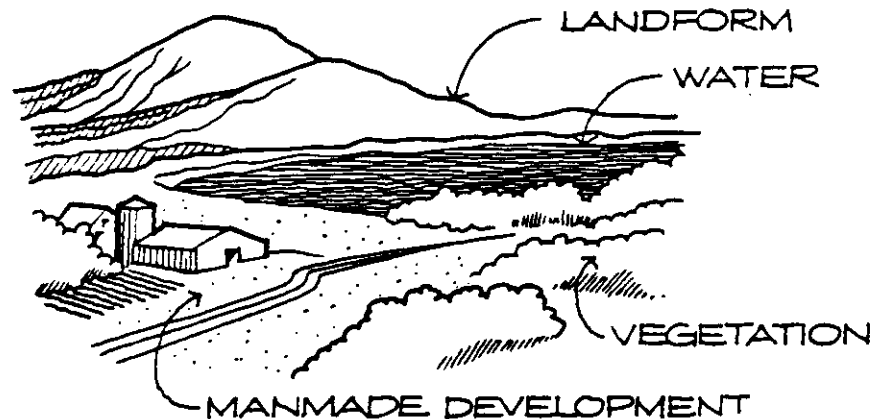
*The underlying landform:*

*mountains, valley, beach*

*The landcover on it:*

## **WATER**

*lake, river*



## **VEGETATION**

*tundra, forest, crops*

## **MANMADE DEVELOPMENT**

*house, barn, road*

# **LANDSCAPE UNITS**

---

*Landscape Units are a framework for the assessment and management of visual resources and the effects of highway projects upon them.*

*Based on visual characteristics, and responsive to regional differences in these characteristics, Landscape Units are a tool for mapping "outdoor rooms."*

---

The visual appearance of the landscape is dependent on the underlying landform and its landcover. Landscape types are homogeneous combinations of slope (landform surface) and landcover. Landscape types occur in more than one location and are generic within a region. Examples include "hillside hardwood forest" and "valley bottom industrial development".

- LANDSCAPE TYPES . multiple locations  
                  . regional distribution  
                  . usually unnamed  
                  . visually homogeneous  
                  . view orientation undefined

Landscape types combine to form specific landscape forms. These landform and landcover masses are geographically located and are often given place names (Bunker Hill is a named landform mass; Boston is a named landcover mass). They can also be classified into hierarchical systems on the basis of regional characteristics.

- LANDSCAPE FORMS . specific geographic location  
                  . physical dimensions  
                  . usually named  
                  . heterogeneous visual elements  
                  . view orientation varies

Landscape types and landscape forms combine to define visually bounded landscape units or "outdoor rooms". The spatial enclosure and visual interrelationships among the individual landscape types determine the visual character of the landscape unit. The edges dividing the unit from other landscape units are often defined by slope types, at watershed ridges and spatial constrictions.

- SPATIALLY ENCLOSED . geographic location  
                  . visually bounded  
LANDSCAPE UNIT . distinct landscape character  
                  . interrelated but diverse visual elements  
                  . high degree of intervisibility

In areas of vast spatial extent (characteristic of certain regions), the landscape unit may be the distant horizon. In this case, the landscape unit may consist of essentially a single homogeneous landscape type.

- SPATIALLY UNENCLOSED . geographic location  
LANDSCAPE UNIT . visually unbounded  
                  . distinct landscape character  
                  . continuous, similar visual elements  
                  . moderate degree of intervisibility

## THE PROJECT VIEWSHED

The regional landscape establishes the general visual environment of a project. We can determine the precise limits of the visual environment by mapping the project *viewshed*. A viewshed is the surface area visible from a given viewpoint or series of viewpoints; it is also the area from which that viewpoint or series of viewpoints may be seen. Put another way, a viewshed is a tool for identifying the views that a project could actually affect. Viewshed mapping can go far to dispel exaggerated community fears over the visual effects of a project by accurately establishing which views have any potential of being affected. The extent of these views is often less than expected by the public. On the other hand, judgment must be exercised as to whether the area of assessment should extend to the farthest limits of the viewshed.

When a project involves location alternatives, each alternative may have its own viewshed. Often, these alternative viewsheds will include different landscape units. If the alternatives are all in the same valley, however, their viewsheds may be very similar. In such cases, as well as on existing roads, it can be useful to combine landscape unit and viewshed boundaries to define *visual assessment unit* as the visible portions of the landscape units through which the highway passes. Utilizing these composite units for evaluating and managing visual effects will help us limit our effort to the areas from which the highway may actually be seen. This approach is particularly well-suited for upgrading a road on its present location.

# Viewsheds

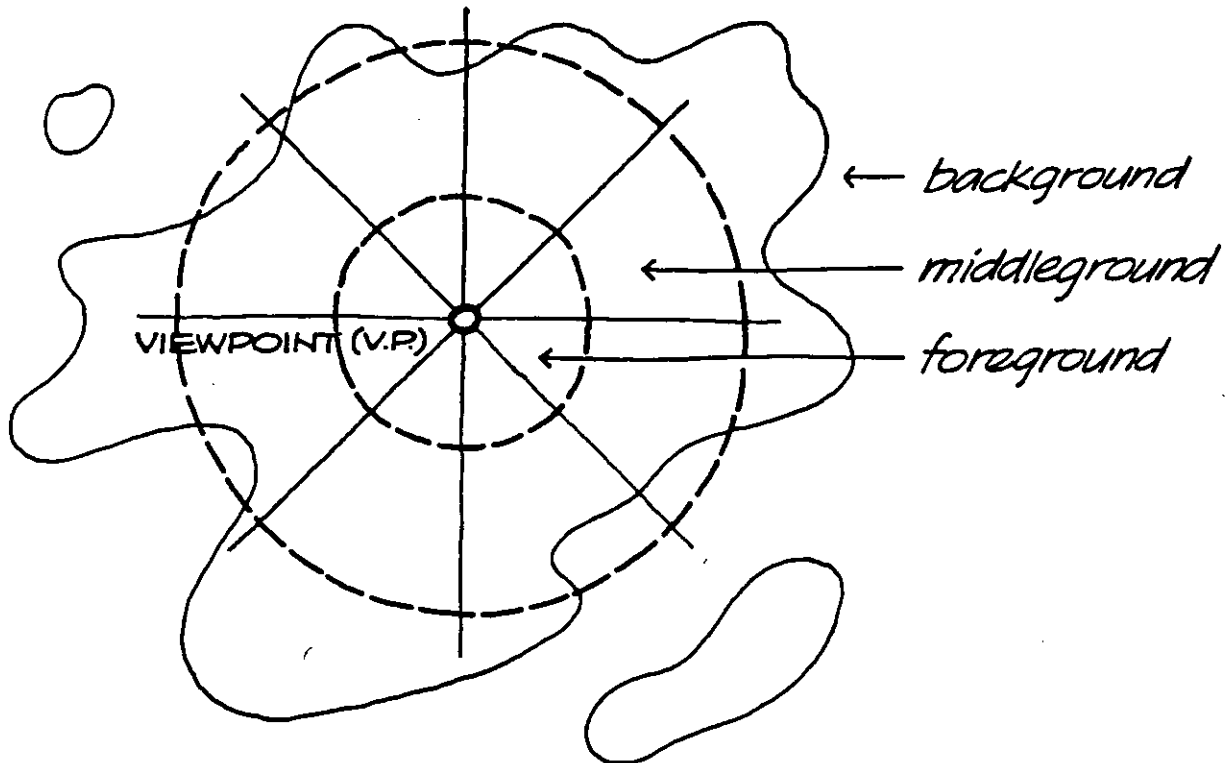
## KEY CONCEPTS

Viewshed:	<ol style="list-style-type: none"><li>1) All the surface area visible from an observer's viewpoint.</li><li>2) All the surface area from which the viewpoint is seen.</li></ol> Analogous terms: seen area, visible area.
Sightline:	The unobstructed line of sight between an observer and a viewed object.
Inter-visibility:	The principle that from any point visible to an observer, the observer can also be seen.
Observer viewpoint:	A point from which a selected view is analyzed and/or evaluated. Analogous concept: landscape control point (Litton).
Topographic (potential) viewshed:	The area which would be visible from a viewpoint based on landform alone, without the screening effect of vegetation and structures.
Composite viewshed:	The composite of overlapping areas visible from: <ol style="list-style-type: none"><li>1) A continuous linear sequence of viewpoints along a road.</li><li>2) A network of viewpoints surrounding a road.</li></ol>
Visual Assessment Unit:	That portion of a landscape unit visible or potentially visible from a highway project or from which a highway project may be seen. To be useful in visual assessment the unit should be identified on the basis of visual distinctions, such as landscape unit boundaries or limit of visibility.

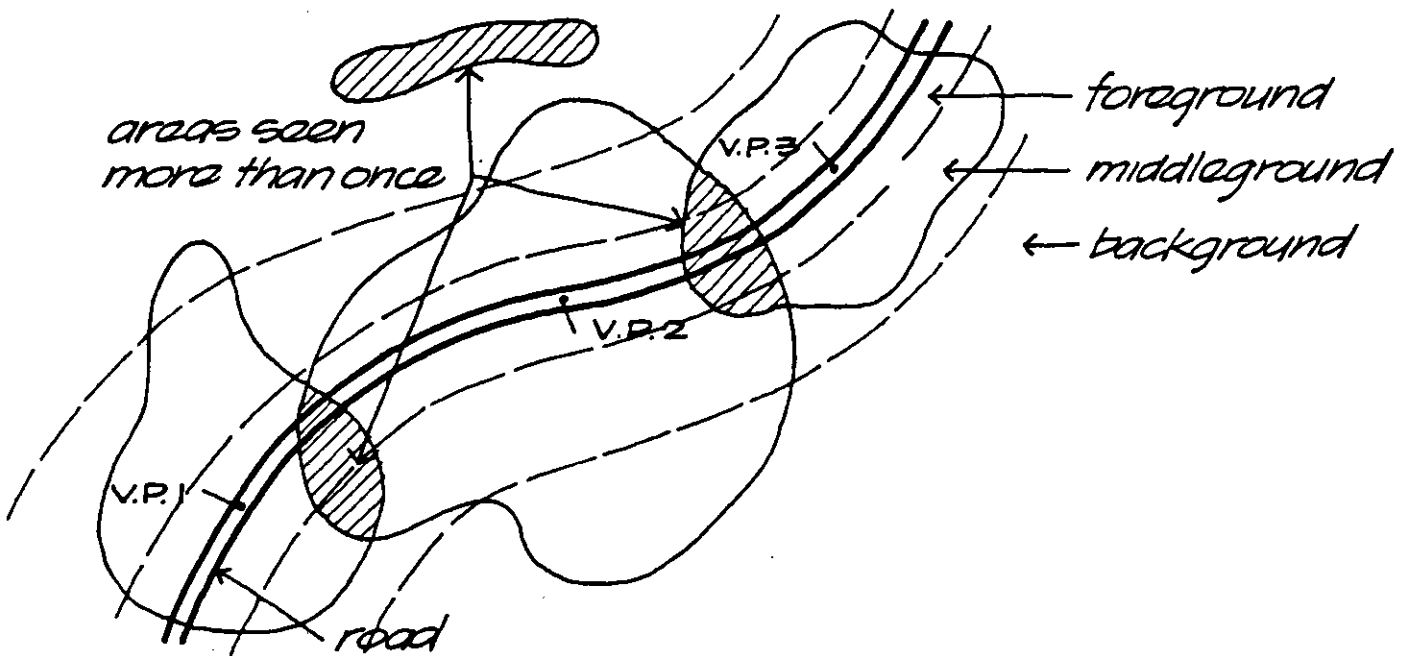


# VIEWSHED MAPPING

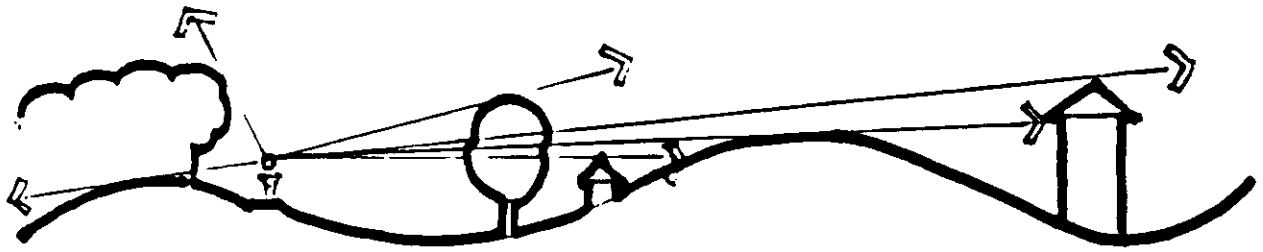
## VIEWSHED FOR SINGLE VIEWPOINT



## COMPOSITE VIEWSHED FOR MULTIPLE VIEWPOINTS

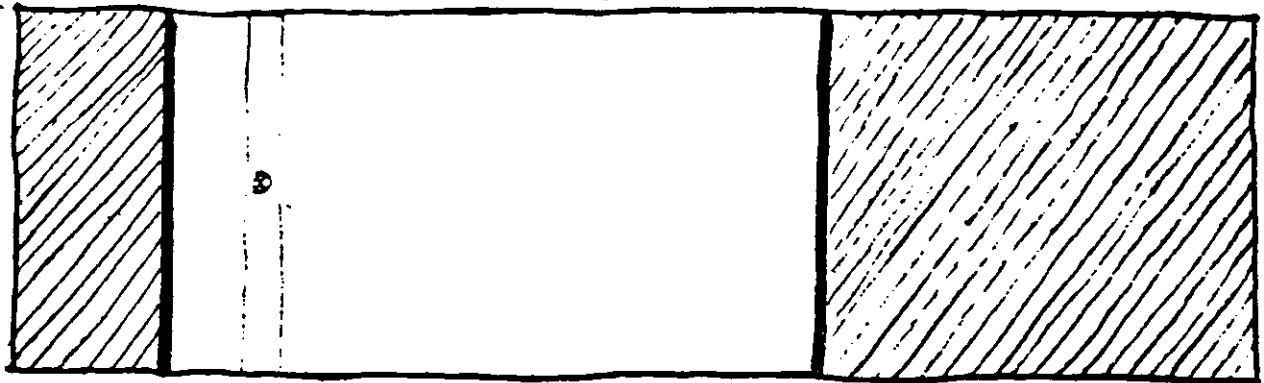


# VIEWSHED MAPPING

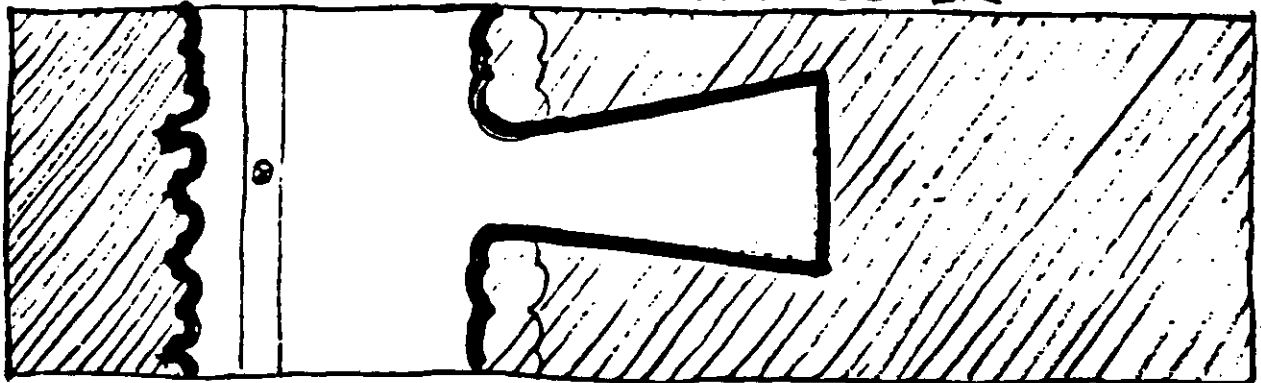


VIEWPOINT

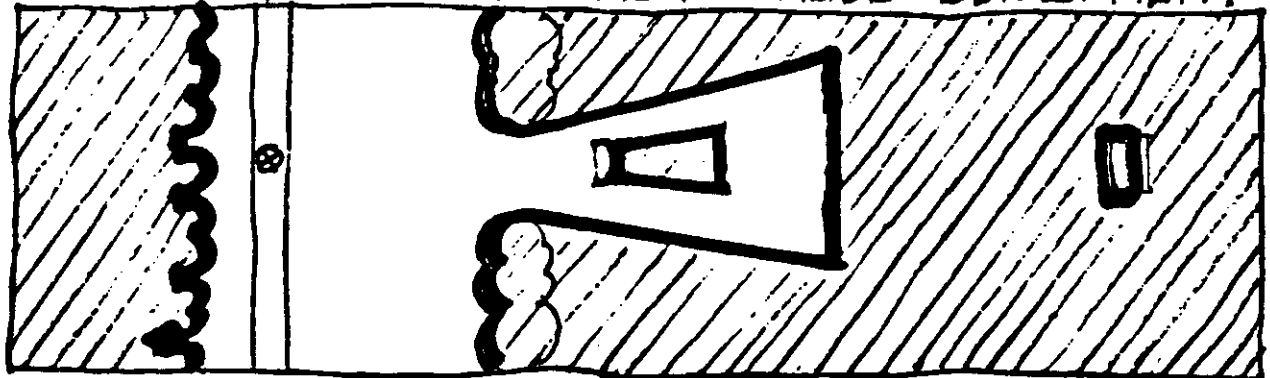
LANDFORM



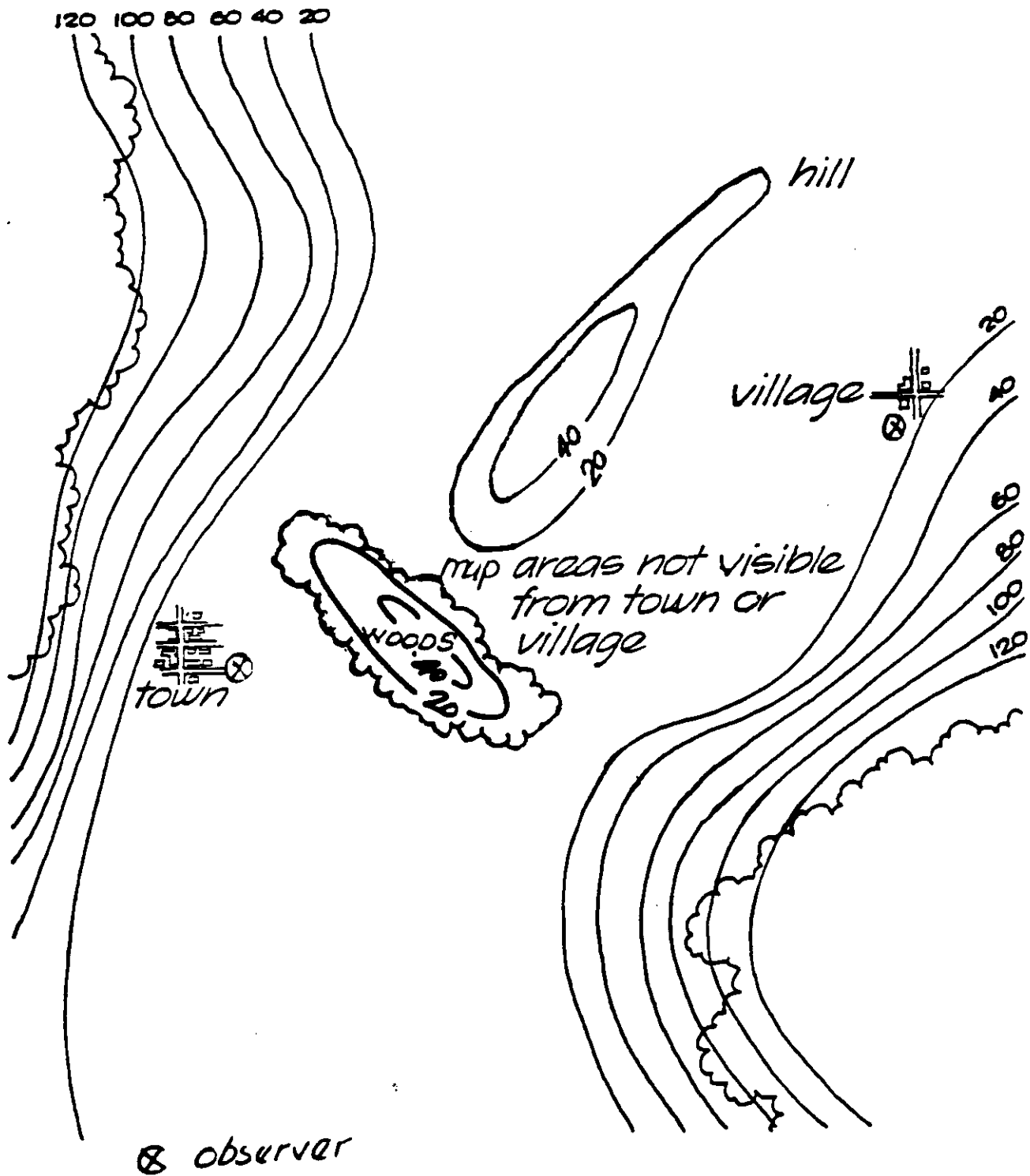
LANDFORM AND LANDCOVER



LANDFORM, LANDCOVER AND MANMADE DEVELOPMENT

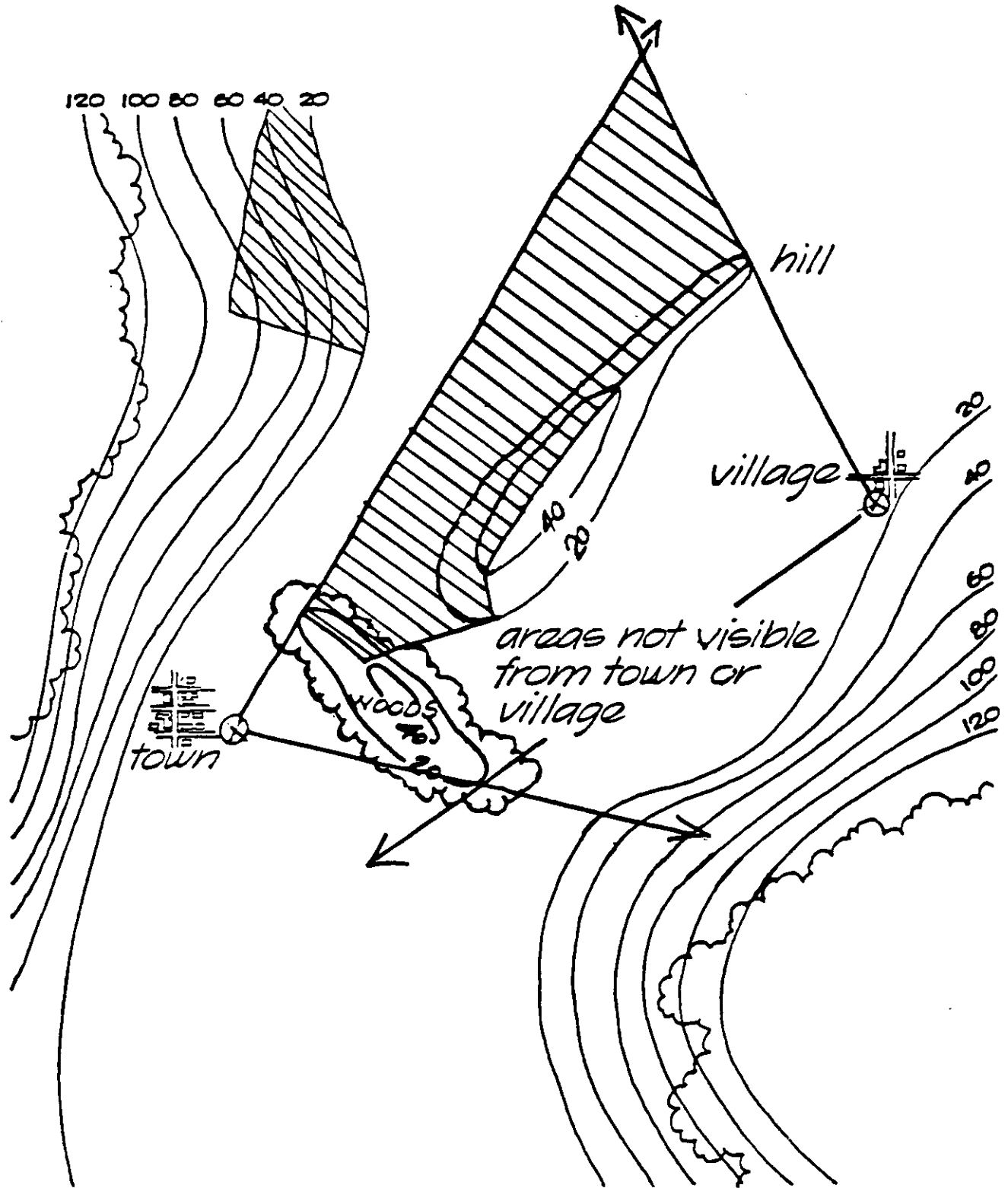


# VIEWSHED EXAMPLE: Gravel Pit



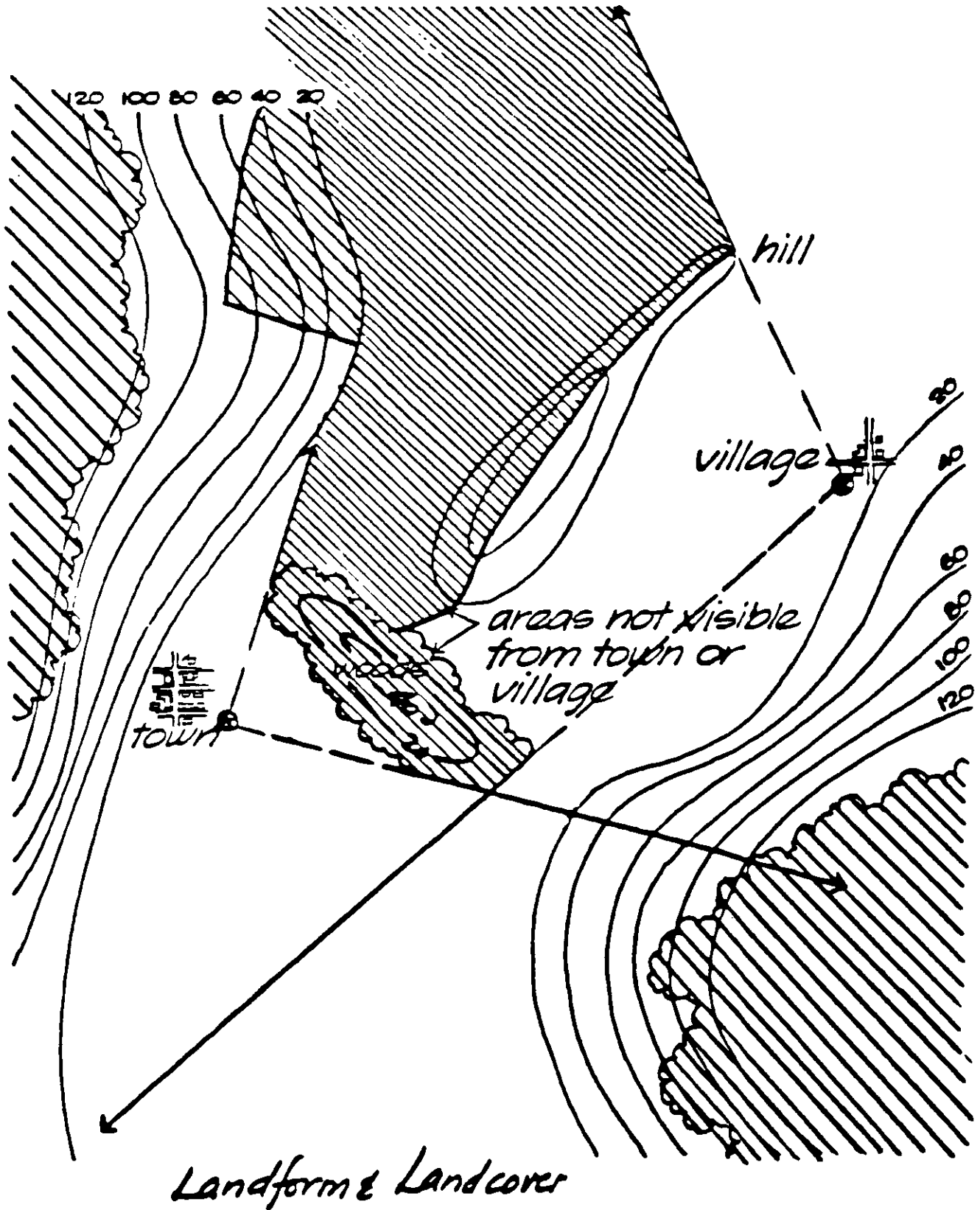
EXERCISE - map areas not visible from town or village  
using (1) landform constraints.  
(2) land form and land cover constraints

# VIEWSHED EXAMPLE: Gravel Pit



Landform only

# VIEWSHED EXAMPLE: Gravel Pit



# SELECTING OBSERVER VIEWPOINTS

BIAS  
most



## **SENSITIVE** POINTS ON THE ROAD OR IN THE SURROUNDING AREA

- Areas with high population
- Critical viewpoints
- Landscape transition points
- Critical visual resources:

## **TYPICAL** POINTS ON THE ROAD OR IN THE SURROUNDING AREA

- Representative of the character of the landscape
- Representative of the types of viewer

## **RANDOM** POINTS ON THE ROAD OR IN THE SURROUNDING AREA

- Evenly spaced points along the road
- Grid spacing over the area surrounding the road
- Random number table selection

least

COST  
least



most

## VISUAL RESOURCES

The visual resources of a landscape are the stimuli upon which actual visual experience is based. A highway project can alter visual experience by changing the visual resource base. We must, therefore, be able to inventory the existing resources of the project visual environment and analyze their attributes before we can assess and manage visual impacts.

### **Visual Information**

The visible components of a landscape—its landform and landcover—are its store of

*visual information.* This is the basic data for the perception of objects in the landscape. An inventory of existing visual information, by landscape unit or visual assessment unit, will clearly display what we have to work with and will enable us to make basic comparisons of the visual effects of project alternatives. Specific inventory categories should derive from the regional landscape: its characteristic range of landforms, its types of water bodies, its vegetation communities, its land use and development types.

# EXERCISE: INVENTORY

## LANDSCAPE UNIT CHECKLIST: VISUAL INVENTORY AND ANALYSIS

Project Name _____	Evaluator _____
S.R. Number _____	Date _____
Assessment Unit _____	Weather _____
L/F District _____	
L/F Section _____	
L/F Province _____	

	<u>Visual Information</u> (Perception)	<u>Visual Character</u> (Cognition)
	Resource Supply  3 High Prominence 2 Moderate Prominence 1 Present 0 Absent	
LANDFORM	_____ Mountains _____ Steep Hills/Ridges _____ Rolling Hills _____ Undulating Land _____ Plateaus/Plains _____ Valleys _____ Cliffs, Bluffs _____ Points _____ Beaches _____ _____	
Land Cover <u>WATER</u>	_____ Bays/Inlets _____ Rivers _____ Streams _____ Lakes _____ Ponds _____ Marshes _____ Waterfalls/Rapids _____ _____	



	Resource Supply	Pattern Elements	Pattern Character
Land Cover VEGETATION	<ul style="list-style-type: none"> <li>— Coniferous Woods</li> <li>— Deciduous Woods</li> <li>— Scrubland</li> <li>— Grassland</li> <li>— Pasture/Croplands</li> <li>— Parks/Lawns</li> <li>— Street Trees</li> <li>— Agriculture</li> <li>—</li> </ul>		
Land Cover MANMADE DEVELOPMENT	<ul style="list-style-type: none"> <li>— Urban Centers</li> <li>— Suburban Areas</li> <li>— Industrial Areas</li> <li>— Commercial Areas</li> <li>— Institutional Areas</li> <li>— Residential Areas</li> <li>— Historic Features</li> <li>— Highways</li> <li>— Railroads</li> <li>— Utility Lines</li> <li>— Towers/Structures</li> <li>— Docks/Piers/Boats</li> <li>— Bridges/Dams</li> <li>— Parking/Storage Yard</li> <li>— Embankments/Cuts/Pits</li> <li>— Billboards/Signs</li> </ul>		

## VISUAL CHARACTER

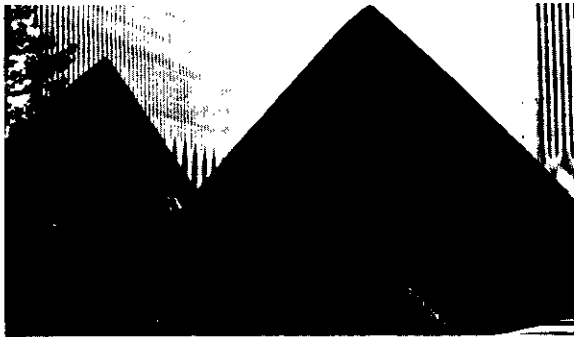
We do not simply experience the visual environment one object at a time; we experience the visual environment as an integrated whole. Our visual understanding or cognition of that environment is based on the *visual character* of objects and the relationships between these objects. The assessment of visual character is descriptive and not evaluative; that is, it is based on defined attributes that are neither good nor bad in themselves. Nevertheless, there can be strong public preference for the established visual character of a district and strong resistance to a project that would contrast with that character.

Descriptions of visual character can distinguish at least two levels of attributes: pattern elements and pattern character. Visual *pattern elements* are primary visual attributes of objects; they include form, line, color, and texture. The *form* of an object is its visual mass, bulk, or shape. *Line* is introduced by the edges of objects or parts of objects. The *color* of an object is both its value or reflective brightness (light, dark) and its hue (red, green). *Texture* is apparent surface coarseness. Our awareness of these pattern elements varies with distance. From afar, only the largest objects are seen as individual forms and we may see a city hillside as a

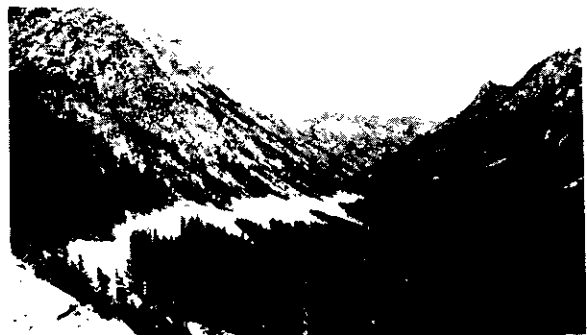
textured surface. Distance also attenuates the intensity of colors.

The visual relationships between these pattern elements can be important secondary visual attributes of an object or an entire landscape. For example, there is a great difference between the visual character of a two-lane country road and an eight-lane freeway, although both may exhibit similar line, color, and texture. The visual contrast between a highway project and its visual environment can frequently be traced to four aspects of *pattern character*: dominance, scale, diversity, and continuity.

Specific components in a landscape may be visually *dominant* because of position, extent, or contrast of basic pattern elements. *Scale* is the apparent size relationship between a landscape component and its surroundings; an object can be made to look smaller or larger in scale by manipulating its visual pattern elements. Visual *diversity* is a function of the number, variety, and intermixing of visual pattern elements. *Continuity* is the uninterrupted flow of pattern elements in a landscape and the maintenance of visual relationships between immediately connected or related landscape components.



Visual character: form is the most prominent pattern element in this man-made setting.



The horizontal line of this fresh highway cut contrasts with the characteristic diagonal lines in the natural landscape.



*At a distance the individual structures in an urban district may merge into a relatively uniform visual texture.*



*The forms, colors and textures of this street improvement project increase the diversity of this urban view.*



*The visual scale of this freeway segment harmonizes with the scale of its urban setting because of the relatively low retaining wall and the planted slope above it.*



*The visual continuity of this ridge is breached, perhaps unavoidably, by the highway.*



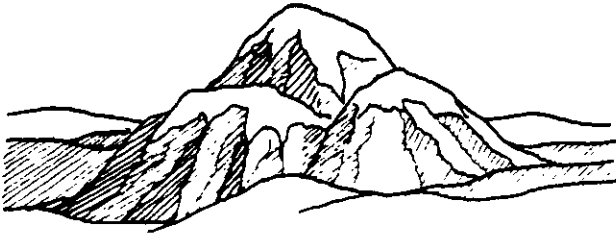
*Visual character: this hotel is visually dominant because of a combination of pattern elements, including its form, color, and line—all in strong contrast with its setting.*

---

---

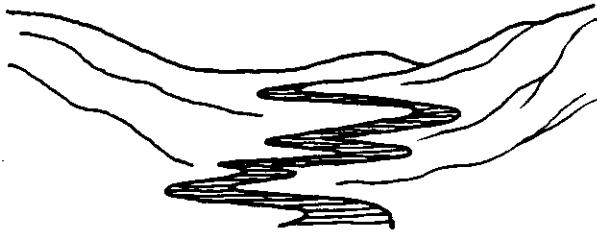
# VISUAL PATTERN ELEMENTS

---



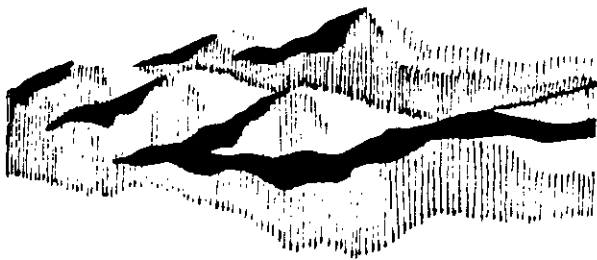
## Form

visual mass, bulk  
or shape of an object.



## Line

horizons, silhouettes,  
edges of areas; man-  
made development.



## Color

reflected hue (red,  
blue, yellow) and value  
(light and dark).



## Texture

apparent coarseness  
of visual surface.

# **LANDSCAPE COMPONENTS and VISUAL PATTERN**

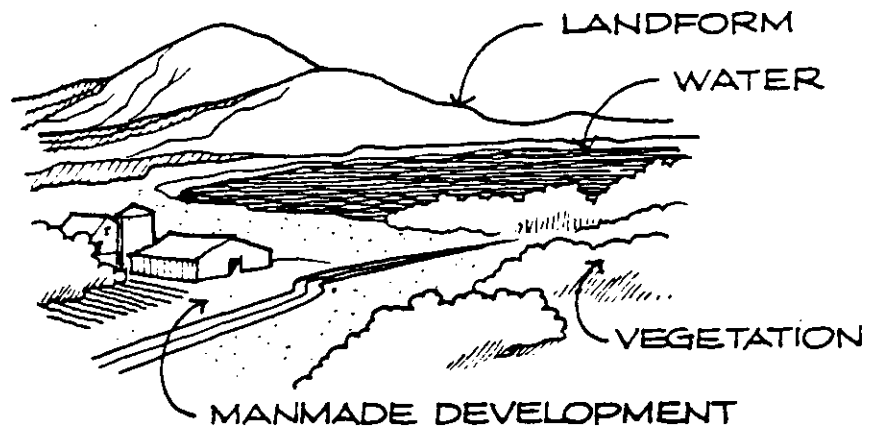
---

*The underlying landform:  
form and line*

*The landcover on it:*

## **WATER**

*line and color (reflected Light)*



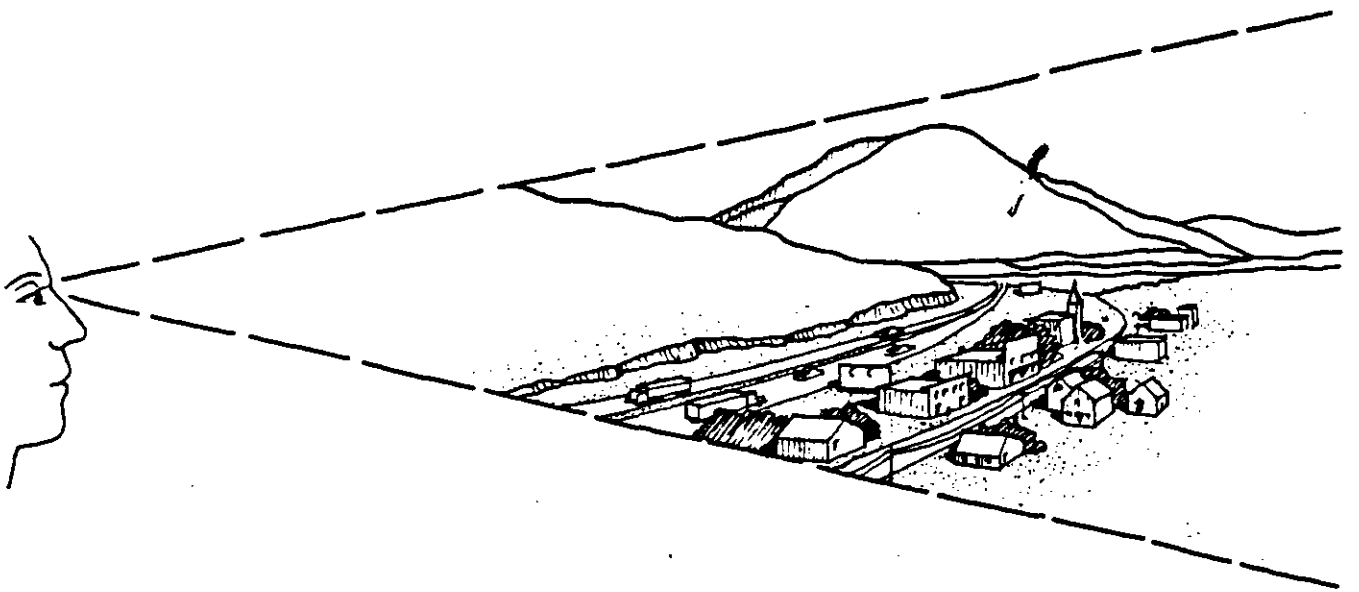
## **VEGETATION**

*color and texture*

## **MANMADE DEVELOPMENT**

*form, line and color.*

# VISUAL CHARACTER



*The character of the visible landscape  
can be objectively described.*

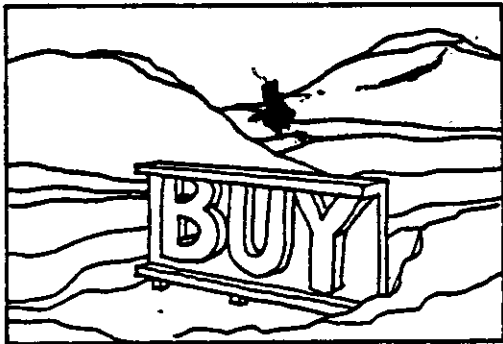
PATTERN ELEMENTS CREATE PATTERN CHARACTER

FORM  
LINE  
COLOR  
TEXTURE

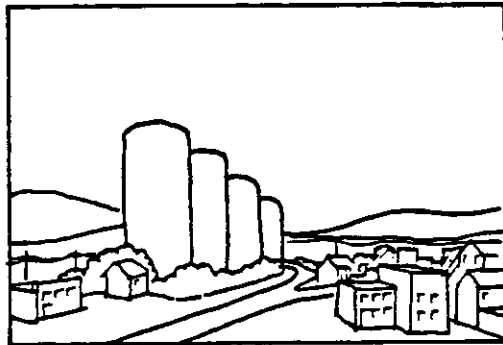
DOMINANCE  
SCALE  
DIVERSITY  
CONTINUITY

# PATTERN CHARACTER

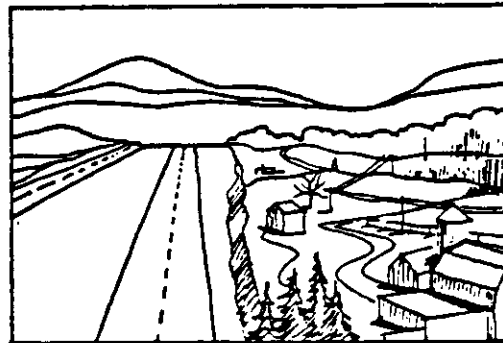
---



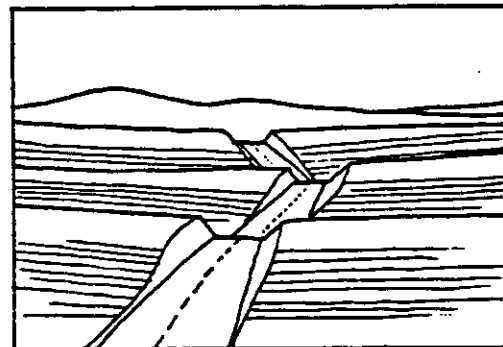
*Dominance* . Specific components in a scene may be dominant because of position, contrast, extent, or importance of their pattern elements. The sign is a dominant feature in this scene.



*Scale* . Apparent size relationships between landscape components and their surroundings; while overall size contributes, visual scale depends not only on overall size and position, but the pattern elements of a landscape component. The monolithic grain elevators are very large in scale compared to the town at their feet



*Diversity* . The number of pattern elements as well as the variety among them, and edge relationships between them; landscapes in which pattern elements are intermixed appear more diverse than landscapes with distinct boundaries between types compare the right and left sides of this sketch.



*Continuity* . Uninterrupted flow of pattern elements, maintenance of visual relationships between immediately connected or related landscape components or features. In this sketch, highway gradients have been maintained at the expense of landform continuity



# EXERCISE: INVENTORY

## LANDSCAPE UNIT CHECKLIST: VISUAL INVENTORY AND ANALYSIS

Project Name _____	Evaluator _____
S.R. Number _____	Date _____
Assessment Unit _____	Weather _____
L/F District _____	
L/F Section _____	
L/F Province _____	

<u>Visual Information</u> (Perception)	<u>Visual Character</u> (Cognition)	
	<p style="text-align: center;">Pattern Elements</p> <p>3 High Prominence 2 Moderate Prominence 1 Present 0 Absent</p>	<p style="text-align: center;">Pattern Character</p> <p>3 High Prominence 2 Moderate Prominence 1 Present 0 Absent</p>
	<p>___ Form ___ Line ___ Color ___ Texture</p>	<p>___ Dominance of Landforms ___ Scale of Landforms ___ Diversity of Landforms ___ Continuity of Landform Pattern</p>
	<p>___ Form ___ Line ___ Color ___ Texture</p>	<p>___ Dominance of Waterforms ___ Scale of Waterforms ___ Diversity of Waterforms ___ Continuity of Waterform Pattern</p>

---

Resource Supply	Pattern Elements	Pattern Character
	<ul style="list-style-type: none"> <li>___ Form</li> <li>___ Line</li> <li>___ Color</li> <li>___ Texture</li> </ul>	<ul style="list-style-type: none"> <li>___ Dominance of Vegetation</li> <li>___ Scale of Vegetation</li> <li>___ Diversity of Vegetation</li> <li>___ Continuity of Vegetation Pattern</li> </ul>
	<ul style="list-style-type: none"> <li>___ Form</li> <li>___ Line</li> <li>___ Color</li> <li>___ Texture</li> </ul>	<ul style="list-style-type: none"> <li>___ Dominance of Development</li> <li>___ Scale of Development</li> <li>___ Diversity of Development</li> <li>___ Continuity of Development Pattern</li> </ul>

---

# VISUAL QUALITY

Esthetics is concerned not only with the character of visual experience, but also with its excellence. Where it exists, this excellence has both viewer and visual resource dimensions. The enjoyment or interpretation of experience can have many preferential and subjective components, yet there is clear public agreement that the visual resources of certain landscapes have high *visual quality* and that plans for projects in these areas should therefore be subject to careful examination.

On the level of visual information or visual character, such landscapes may have little in common. For instance, high visual quality is recognized in urban landscapes such as the New York skyline, as well as in natural landscapes such as the Grand Tetons. Both of these exhibit striking vertical relief, yet horizontal landscapes such as Cape Cod are also recognized for their high quality. Visual quality has often been tied to water, always nearby on Cape Cod, but desert landscapes such as Bryce Canyon are also noted for visual quality. Because of these differences in the character of the visual environment, a project in an area with high visual quality does not always have an adverse effect on that visual quality. How do we establish which landscapes have high visual quality and what is its basis?

## Approaches to Assessing Visual Quality

Pragmatic approaches to answering these questions start with the recognition that Americans agree on the high visual quality of many landscapes. Some of these places are already officially designated—national parks and scenic rivers, for example. This may be considered proof of high visual quality, and a first approach to establishing the visual quality of a project area is simply to check for designated scenic areas. However, there is no comprehensive official process for identifying areas of high visual quality,

nor does NEPA allow us to consider only superlative environments.

A second approach is to ask project viewer groups their visual preference for the principal landscape types in the project area. This approach has the virtue of directness and can avert challenge based on the potential difference between professional judgment and public opinion. However, it can also have its difficulties, including time, cost, and statistical validity, particularly when there are strong differences in values between local and regional viewer groups. Viewer preference techniques can be very useful for identifying areas to avoid during project location, but are not as helpful for devising and evaluating mitigation measures for areas the project cannot avoid crossing.

A third approach, used by several federal land-managing agencies, looks to the regional landscape for specific resource indicators of visual quality. High quality ratings are assigned to those landscape units which most clearly or dramatically exhibit the natural processes characteristic of the geographic region. Resource indicators of visual quality may be on the level of visual information (e.g., rock faces, avalanche cones) or visual character (e.g., variety). This approach has primarily been used for settings that are natural in appearance. It also tends to presume a region-wide visual analysis as a starting point and may be difficult to implement on a project-by-project basis.

A fourth approach to the evaluation of visual quality looks for indicators on the level of visual relationships rather than on the level of landscape components. A number of such relationships correlate well enough with public judgments of visual quality to predict those judgments. In other words, professionals can use these relationships as valid and reliable criteria for evaluative appraisals of visual quality. These criteria can be used within different geographic regions, as long as direct comparisons of visual quality are kept within the same region.

### Vividness, Intactness, Unity

Several sets of evaluative criteria have been proposed and tested. One set that has proven useful includes three criteria: vividness, intactness, and unity. None of these is itself equivalent to visual quality; all three must be high to indicate high quality. *Vividness* is the visual power or memorability of landscape components as they combine in striking and distinctive visual patterns; Niagara Falls is a good instance. *Intactness* is the visual integrity of the natural and man-built landscape and its freedom from encroaching elements; this factor can be present in well-kept urban and rural landscapes, as well as in natural settings. *Unity* is the visual coherence and compositional harmony of the landscape considered as a whole; it frequently attests to the careful design of individual components in the landscape.

This evaluation approach can be particularly useful for highway project planning, since it does not simply presume that a highway project is an eyesore. It can also help identify effective ways of reducing specific adverse visual resource effects that are actually likely to occur.

Whatever the approach to the evaluation of visual quality, direct validation by project viewer groups should be obtained whenever possible. Public opinion on visual quality issues can be included in the normal community involvement program. A full representative and random sample is generally not necessary; the point is to ensure that the assessors and the general public are on the same track. Some form of public participation, and validation of professional judgment, may be particularly important where legal challenge is a possibility.

We have identified the major factors in our experience of the visual environment and are now ready to examine some of the ways in which a highway project can affect this experience.



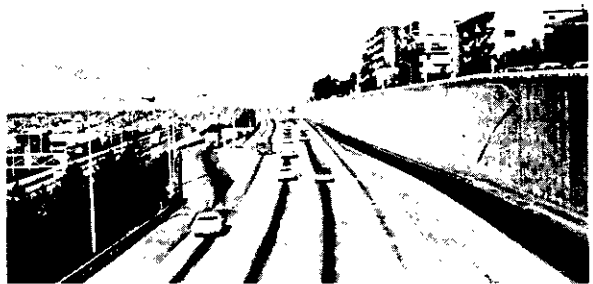
*Visual quality: vividness or memorability is one of several criteria that can be used to help evaluate the visual quality of natural and manmade landscapes; the Manhattan skyline rates high on this criterion.*



*While the visual intactness and unity of this farm scene are both quite high, its overall visual quality is somewhat lower because it is not highly vivid.*



*A highway may also improve visual quality if it increases the unity and visual harmony of a landscape.*



*Large urban highways may disrupt the visual intactness of their city settings, lowering visual quality for highway neighbors.*



*Rio de Janeiro is a city recognized around the world for its high visual quality; the vivid combination of natural and urban forms, including transportation, is also characterized by high visual intactness of component elements and high visual unity in views such as this.*

# Visual Quality

## KEY CONCEPTS

- Visual Quality:** While many factors contribute to a landscape's visual quality, they can conveniently be grouped under three headings: Vividness, Intactness and Unity. Analogous concepts: scenery quality rating (B.L.M.), variety class (U.S.F.S.)
- Vividness:** The memorability of the visual impression received from contrasting landscape elements as they combine to form a striking and distinctive visual pattern.
- Intactness:** The integrity of visual order in the natural and man-built landscape, and the extent to which the landscape is free from visual encroachment.
- Unity:** The degree to which the visual resources of the landscape join together to form a coherent, harmonious visual pattern. Unity refers to the compositional harmony or inter-compatibility between landscape elements.

$$\text{Visual Quality} = \frac{\text{Vividness} + \text{Intactness} + \text{Unity}}{3}$$



---

---

# SAMPLE VISUAL QUALITY EVALUATION, LEVEL 3

## VISUAL QUALITY EVALUATION - VIEW OF THE ROAD

Project \_\_\_\_\_ Evaluation Scale: 1-7  
 S.R. No. \_\_\_\_\_ 1 = Very Low  
 V.R.M. Unit \_\_\_\_\_ 4 = Medium  
 \_\_\_\_\_ 7 = Very High  
 Evaluator \_\_\_\_\_  
 Date \_\_\_\_\_  
 Weather \_\_\_\_\_

VIEW		SETTING	Road Distance			
			Observer Position			
			Land Use			
			Observer Viewpoint			
General Visual Quality (L1)						
VIVIDNESS		CRITERIA	Vividness (1-7)			
			Manmade Dev.			
			Vegetation			
			Water			
			Landform			
FEATURES		Features				
INTACTNESS		CRITERIA	Intactness (Av.; 1-7)			
			Overall Intact.			
			Absence of Encroachment			
ENCROACHMENT		Encroachment				
UNITY		CRITERIA	Unity (Av.; 1-7)			
			Overall Unity			
			Man/Natural			
		(V+I+U) ÷ 3				



---

LEGEND

Land Use

- URB = urban
- SUB = suburban
- IND = industrial
- COM = commercial
- INS = institutional
- RES = residential
- REC = recreational
- TRA = transportation

Observer Position

- S = superior
- N = normal
- I = inferior

Road Distance

- F = foreground            to ¼ miles (0.4 km)
- M = middleground        ¼ to 3 miles (0.4 km to 5 km)
- B = background           beyond 3 miles (5 km)

Evaluation Scale: 1-7 (1=Very Low, 4=Medium, 7=Very High)

VIVIDNESS	<u>MANMADE DEVELOPMENT</u>	<u>ENCROACHMENTS UNDESIRABLE EYESORES</u>	UNITY/INTACTNESS
Very high	None	None	Very high
High	Little	Few	High
Moderately high	Some	Some	Moderately high
Average	Average	Average	Average
Moderately low	Moderately high	Several	Moderately low
Low	High	Many	Low
Very low	Very high	Very many	Very many

---

## VISUAL QUALITY

Let us compare a view of a pristine alpine tarn to that of an unsightly marsh landfill. We may note that while both scenes consist of land, vegetation, water and sky, one scene is strikingly vivid and the other mundane and nondescript; that while one is intact and bears little or no trace of disturbance, the other is severely encroached upon; and that while one exhibits overall visual harmony, balance, and compositional integrity, the other is merely chaotic, jumbled and confused and lacking in strong visual unity.

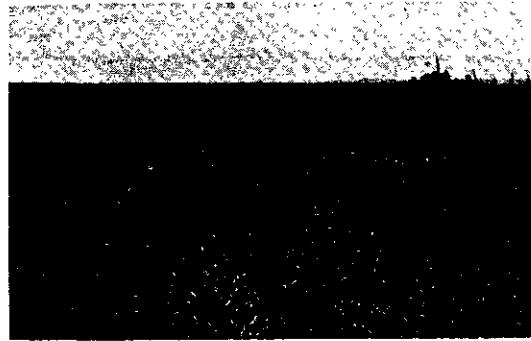


To perform an evaluative appraisal of landscape visual quality -- whether the landscape is a tarn or a landfill -- three criteria are particularly useful. These criteria are termed vividness, intactness, and unity. Expert evaluations based on these three criteria have proven to be good predictors of visual quality levels obtained from large numbers of public judgments, using the following simple equation:

$$\text{Visual Quality} = \frac{\text{Vividness} + \text{Intactness} + \text{Unity}}{3}$$

Each of the three criteria is independent; each is intended to evaluate one aspect of visual quality. In other words, no one criterion in itself captures visual quality. In the following pages we will examine the criteria of vividness, intactness and unity in more detail, with illustrations of each.

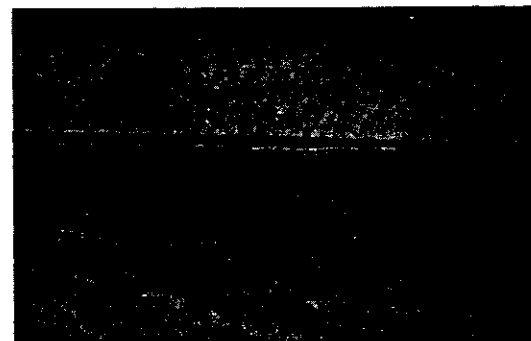
The vividness or memorability of a landscape is derived from contrasting landscape components as they combine in striking and distinctive visual patterns. It is often useful to assess the vividness of individual landscape components. Landform vividness is frequently determined by the pattern elements of form or line. An example is the strongly defined skyline of the mountain landscape illustrated here.



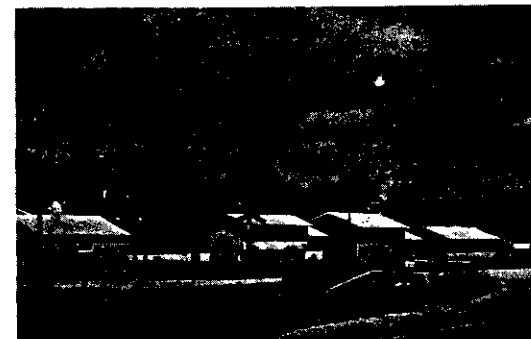
Landcover is comprised of water, vegetation and manmade development. Water is often a vivid landscape component because of line (the shoreline or the dramatic edge of a waterfall) and color. Reflection, clarity and motion are particularly important aspects of water in relation to color and its contribution to the vividness of water in the landscape.



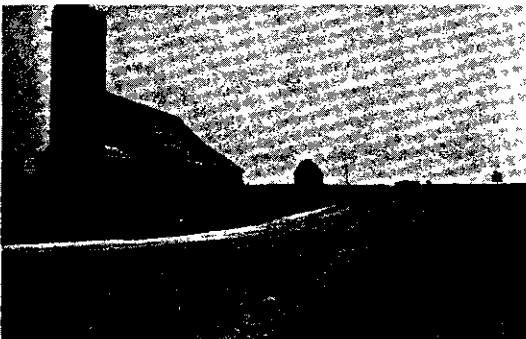
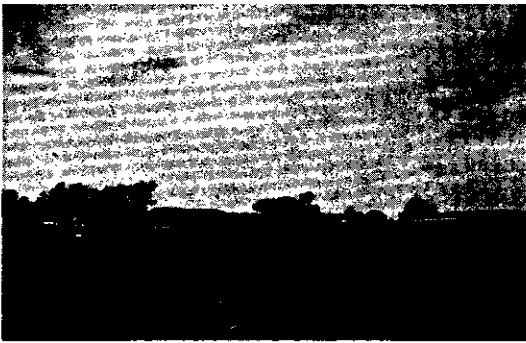
Vegetation is a major visual component in the landscape. It may frequently mask landform or water and can be manipulated for a variety of visual purposes. The degree of vividness in landscape vegetation is frequently due to the pattern elements of texture and color. Every year, autumn in New England provides many examples of landscapes which are highly vivid because of the colors and patterns of their vegetation.



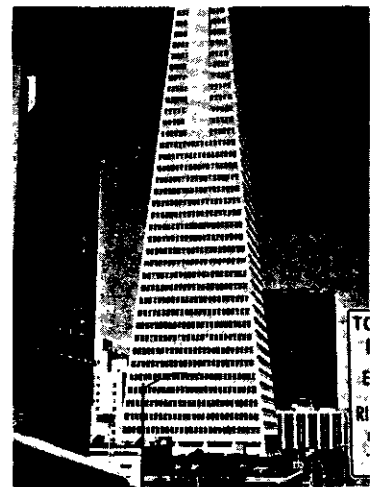
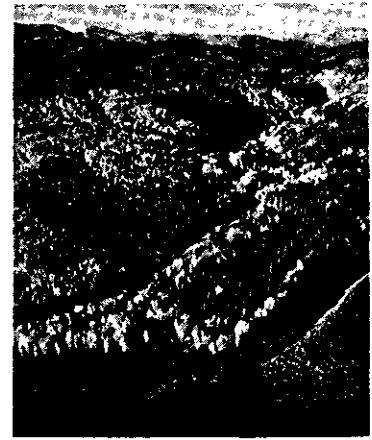
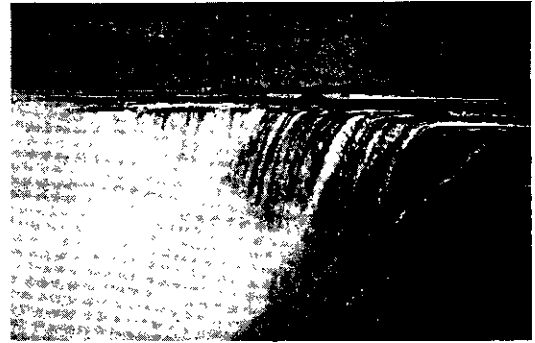
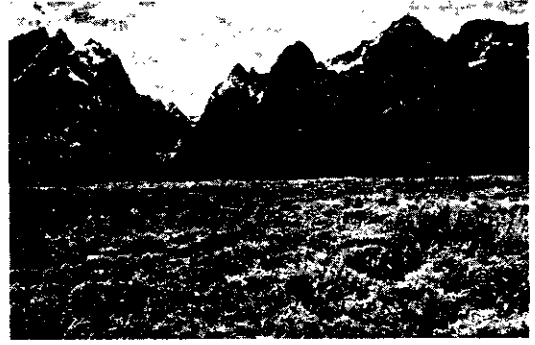
Manmade development often contrasts visually in form, line and color with its natural or manmade setting. Designers may deliberately utilize contrasting pattern elements to achieve a high degree of memorability for a particular building. Traditional land-use patterns and homespun construction may also result in vivid manmade development. On the other hand, too many contrasting visual elements may cancel each other and result in a scene of low memorability.



MODERATE



HIGH



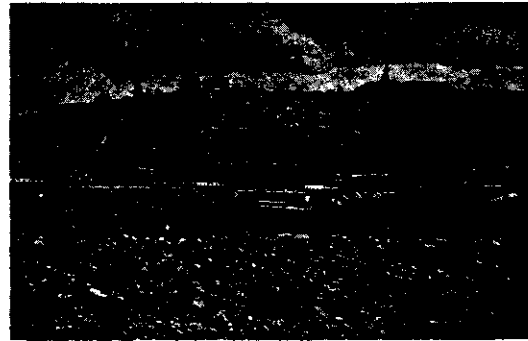
Visual intactness refers both to the integrity of visual pattern and the extent to which the landscape is free from visually encroaching features. In a predominantly natural environment, manmade development can be an additive element that does not necessarily encroach on its visual setting. However, the presence of visual encroachment or eyesores contributes to low visual intactness.



Predominantly manmade landscapes may have strong established visual character. Added manmade pattern elements may also encroach upon this type of landscape. The absence of eyesores or encroaching features thus contributes to high visual intactness in manmade environments.



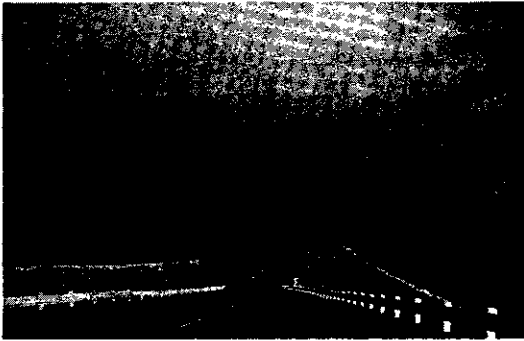
Visual intactness is also dependent on the integrity of visual order in the landscape. Overall intactness may be reduced by the obvious subtraction of visual elements. In a predominantly natural setting, an unreclaimed open-pit mine is an obvious example of low intactness. The natural visual order of an untouched landscape, such as these badlands, may be very intact, whatever its other visual qualities.



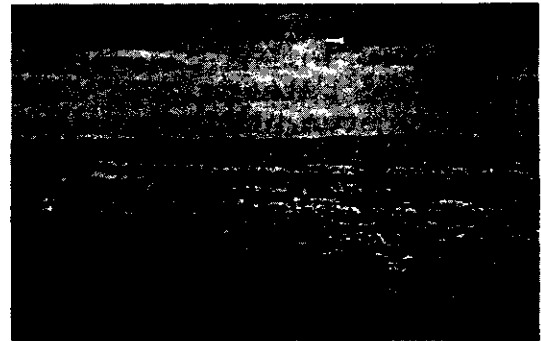
The visual integrity of manmade patterns and orders can also be disturbed. Subtractive disruptions of the urban pattern can reduce overall intactness in a particular cityscape to a low level. The urban pattern in the middle view has been partially re-established and visual intactness has been improved since the highway was first cut through.



MODERATE



HIGH



Unity is the degree to which the visual resources of the landscape join together to form a coherent, harmonious visual pattern. One aspect of this criterion is the unity between manmade and natural pattern elements. In the predominantly natural landscapes shown here, the way in which the manmade elements have been introduced has a noticeably different effect on the visual unity of each scene.



In a predominantly manmade setting, the inclusion of natural elements is a first condition of unity between manmade and natural elements. Manmade environments with no visual relation to natural landform or landcover patterns lack this element of unity. In other manmade environments, manmade and natural patterns may reinforce each other and result in high visual unity.



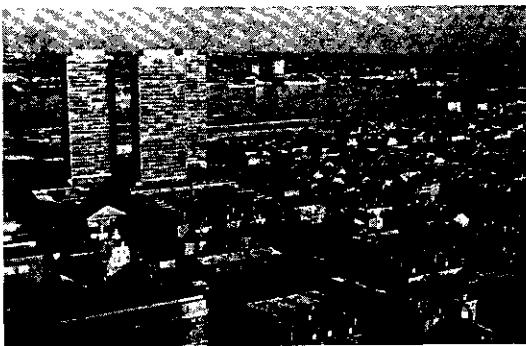
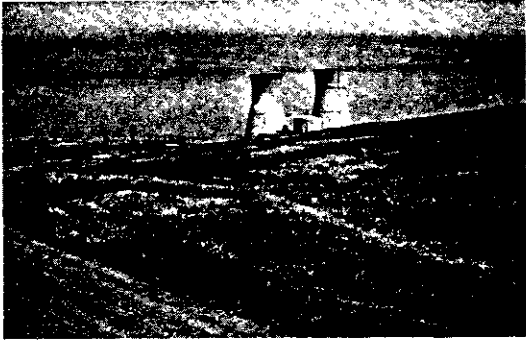
Overall unity is dependent on the degree to which all visual elements combine to form a coherent, harmonious visual pattern. In some instances, even entirely natural landscapes are visually chaotic and jumbled. They lack overall visual unity, to a greater or lesser degree, although they may be intact (the badlands scene) or vivid (the rock outcroppings). Characteristic, though ephemeral, light and atmospheric conditions may contribute to especially high overall unity.



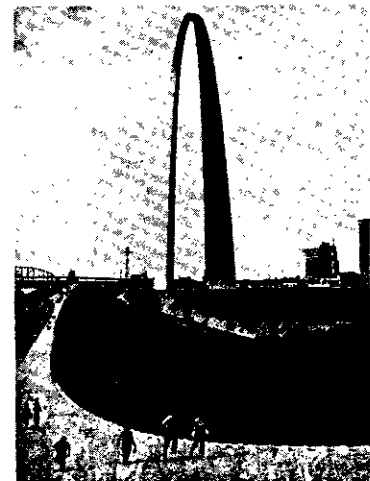
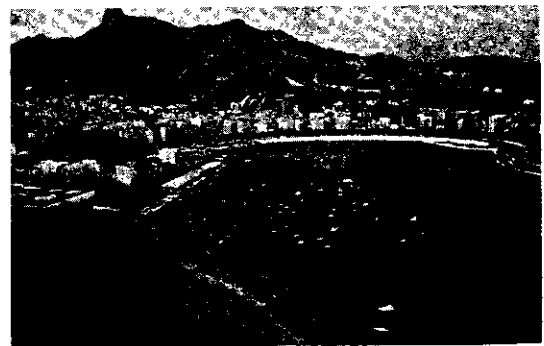
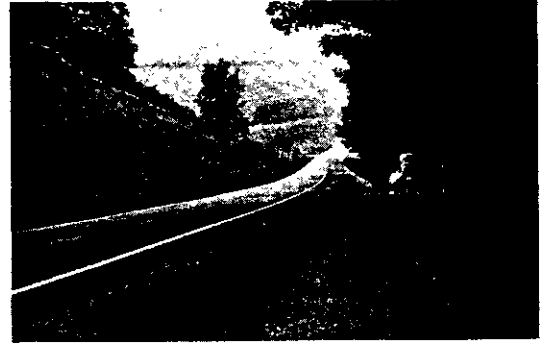
Predominantly manmade landscapes may also exhibit the full range of overall unity because of the compositional harmony of their visually interrelated components and patterns -- or the almost complete absence of this quality.



MODERATE



HIGH





---

---

# **EXERCISE: SUMMARY QUESTIONS**

## THE VISUAL ENVIRONMENT

1. Evaluation of visual quality between differing geographic areas of the United States (is) (is not) a valid comparative measure (i.e., the Rockies vis a vis New England).
  2. A landscape unit can be thought of as:
    - (a) everything that can be seen from a single point
    - (b) an outdoor room
    - (c) a single landscape type.
  3. Identification (mapping) of a project's viewshed will usually (increase) (decrease) the perceived scope of its actual visual impact.
  4. The visual resources within a project are quantifiable. True \_\_\_\_ False \_\_\_\_
  5. The assessment of visual character is:
    - (a) descriptive
    - (b) evaluative.
  6. The form of an object is its apparent surface coarseness. True \_\_\_\_ False \_\_\_\_
  7. A highway will usually have a positive or unifying visual impact in a landscape which has a high level of:
    - (a) pattern diversity
    - (b) pattern continuity
  8. The character of the visible landscape:
    - (a) can be objectively described
    - (b) is in the eye of the beholder
  9. Visual quality can be objectively evaluated by:
    - (a) Artists, Landscape Architects, Architects, and Visual experts
    - (b) Citizens
    - (c) Public agencies
    - (d) Engineers
    - (e) all of the above
-

- 
10. Three evaluative criteria which can be used to evaluate visual quality are:
- (a) Form, color, texture
  - (b) Vividness, intactness, unity
  - (c) Pattern, continuity, character.

# 5 CHARACTERISTICS OF VIEWERS

Visual experience is a compound of visual resources and viewer response. To understand and predict viewer response to the appearance of a highway projects, we must know something about the viewers who may see the project and the aspects of the visual environment to which they are likely to respond. Vision is an active sense; we usually have some reason for looking at the landscape and what we see is unconsciously conditioned by what we are looking for. How we feel about what we see is conditioned by other human factors; many of these are shared among large groups of people and may be important for project planning.

## Viewer Groups and Viewer Exposure

Visual perception is the basic act of seeing or recognizing an object. Naturally, we assume an unobstructed sightline, but other physical conditions can also affect perception. As observer distance increases, the ability to see the details of an object decreases. As observer speed increases, the sharpness of lateral vision declines and the observer tends to focus along the line of travel.

We can differentiate major *viewer groups* by physical factors that modify perception. For highway projects, we begin with the basic distinction of the view from the road (highway users) and the view of the road (highway neighbors). We can use viewshed mapping to further categorize these viewer groups by *viewer exposure*: the physical location of each viewer group, the number of people in each group, and the duration of their view.

## Viewer Sensitivity

The receptivity of different viewer groups to the visual environment and its elements is

not equal. This variable receptivity is *viewer sensitivity* and is strongly related to visual preference. It modifies visual experience directly by means of viewer activity and awareness; indirectly, sensitivity modifies experience by means of values, opinions, and preconceptions. High viewer sensitivity can be critical to project planning and design because it heightens viewer response and increases the importance of visual resource issues. In a few cases, high viewer sensitivity may tend to discourage any visible change to the project environment.

Activities such as commuting in heavy traffic or working on a construction site can distract an observer from many aspects of the visual environment. Head-mounted cameras, for instance, have demonstrated that a driver can look directly at a landmark and still not see it. On the other hand, activities such as driving for pleasure or relaxing in scenic surroundings can encourage an observer to look at the view more closely and at greater length. Therefore, *viewer activity* is another identifying characteristic of viewer groups.



*This dramatic mountain gateway heightens the visual awareness of highway travelers.*

For example, we may well want to distinguish among project viewers located in residential, recreational, and industrial areas.

*Viewer awareness* is the extent to which the receptivity of viewers is heightened by the immediate experience of visual resource characteristics. Visual change heightens awareness: a landscape transition, such as entering a mountain range or a major city, may heighten viewer awareness for a number of miles along a road. Measures that modify viewer exposure, such as selective clearing or screening, may also be deliberately employed to modify viewer awareness. For example, we well may want to distinguish among project viewers located in residential, recreational, and industrial areas.

*Local values and goals* operate indirectly on viewer experience by shaping view expectations, aspirations and appreciations. If the existing appearance of a project site is uninspiring, a community may still object to projects that fall short of its visual goals. At a regional or national level, viewers may be particularly sensitive to the visual resources

and appearance of a particular landscape as a result of its *cultural significance*. This significance may be due to the presence of historic values, scientific or recreational resources, or other unique features: any visible evidence of change may be seen as a threat to these values or resources.



*An elevated highway would traverse the unsightly industrial area on the other side of this waterway. Nevertheless, there has been strong public concern over the visual effects of the highway on future redevelopment and on the historic railroad station in the middle distance.*

# **VIEWER GROUPS**

---

*Classes of viewers which differ in their visual response to the highway and its setting. Response is affected by viewer location, activity, and values.*

## **GROUPS WITH A VIEW FROM THE ROAD**

- driver*
- passenger*

## **GROUPS WITH A VIEW OF THE ROAD IN THE LANDSCAPE SETTING**

- residents*
  - urban & suburban*
  - rural*
- commercial/industrial interests*
- recreational groups*
  - park, resort, overlook, & historic site visitors*
  - river and lake users*
  - scenic railroad passengers*
  - trail users*
- other special interest groups*
  - civic*
  - cultural*
  - environmental*
  - educational*
  - economic*

## **GROUPS WITH A VIEW OF THE ROAD FROM THE ROADSIDE**

- wayside and rest area users*
- cyclists and other traffic in right-of-way*

# COMPARISON: Two Basic Groups

## HIGHWAY NEIGHBOR

### VIEW OF THE ROAD

← Physical →  
Maximum acuity  
Comprehensive field  
of vision  
No constraint on  
vision

← Psychological →  
Desire for visual  
detail  
Viewer costs  
Visual problems

## HIGHWAY USER

### VIEW FROM THE ROAD

Reduced acuity  
Narrowed cone of  
vision  
Point of concentra-  
tion

Need for visual sim-  
plicity  
Viewer benefits  
Visual opportunities

# **VIEWER EXPOSURE**

---

*The degree to which viewers are exposed to a view by their physical location, the numbers of people viewing and the duration of view*

## **PHYSICAL LOCATION :**

- distance zones*
  - foreground*
  - middle ground*
  - background*
- observer position*
  - superior*
  - normal*
  - inferior*
- direction of view*
  - north*
  - south*
  - east*
  - west*

## **NUMBER OF VIEWERS :**

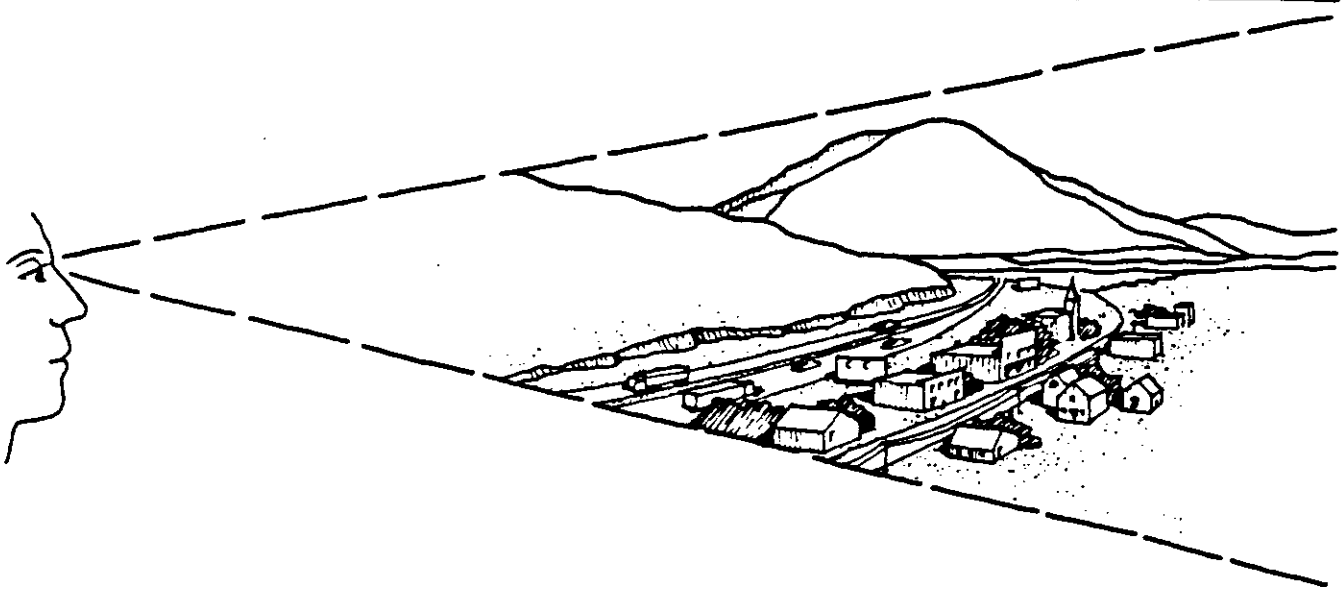
- residents*
- visitors*
  - view of the road*
  - view from the road*

## **DURATION OF VIEW :**

- frequency of exposure*
- stationary view*
- moving view*



# VIEWER SENSITIVITY



*The preferences, values, and opinions of different viewer groups can be documented in the following ways:*

- viewer activity & awareness*
- local values*
- cultural significance of the visual resource*

# **ACTIVITY & AWARENESS**

The degree to which viewers are likely to be receptive to the visual details, character, and quality of the surrounding landscape. Two principal factors affect viewer sensitivity: activity and awareness.

## *• Viewer Activity*

A viewer's ability to perceive the landscape is affected by his activity. In a particular landscape setting, viewer activity may:

- 1) encourage him to look at the landscape, such as pleasure driving, or
- 2) distract him from the landscape, such as commuting in heavy traffic.

## *• Viewer Awareness*

A viewer's receptivity to the visual character of the landscape can be affected by the landscape setting itself, or by expectations about the setting. Major variables are:

- 1) viewing position, such as an overlook or a position near a major landmark,
- 2) recent visual experience, such as a landscape transition, and
- 3) individual preconceptions about the landscape (and the highway's appropriateness in it).

# **CULTURAL SIGNIFICANCE**

---

At a regional or national level, viewers may be particularly sensitive to the visual resources and appearance of a particular landscape because of:

## *· History*

The landscape may commemorate some historic event.

## *· Scientific or Recreational Resources*

The landscape may be singled out and widely known for values - scientific, recreational, esthetic - directly connected with its appearance.

## *· Uniqueness*

Its visual resources, character or quality may be uncommon or rare in the region or nation.

# **LOCAL VALUES**

---

The visual appearance of certain landscapes and certain visual resources within these landscapes may be important to the local community because of:

- *Local Visual Preferences*
- *Local Historical Associations*
- *Local Aspirations and Goals*

The highway agency's community involvement program can help to identify visual resources affected by local values and goals.

---

## VIEWER RESPONSE

### VIEWER EXPOSURE

- *viewshed*
- *viewing groups and numbers*
- *viewer location, distance and position*
- *view duration and frequency*

### VIEWER SENSITIVITY: ACTIVITY AND AWARENESS

- *current viewers*
- *new viewers*

### VIEWER SENSITIVITY: LOCAL VALUES

- *current local values and plans*
- *project impacts on these values*

### VIEWER SENSITIVITY: CULTURAL SIGNIFICANCE

- *existing historic, scientific, unique or recreation resources*
- *elimination or change of the resource and its setting*

# EXERCISE: SUMMARY QUESTIONS

## CHARACTERISTICS OF VIEWERS

1. The visual experience which one receives from his or her surroundings depends heavily on what is seen and ones reaction to it. This can be characterized as:
    - (a) Visual exposure and viewer awareness
    - (b) Visual activity and viewer consciousness
    - (c) Visual resources and viewer response.
  2. An observer's ability to see the details of an object decreases when the distance from the object (increases) or (decreases).
  3. A driver traveling at a high speed will have the same lateral vision as one traveling at a lower speed. True \_\_\_; False \_\_\_.
  4. Visual awareness is generally heightened by:
    - (a) Viewer exposure
    - (b) Viewer activity
    - (c) Visual Change.
  5. The most important viewers to be addressed in a visual assessment are those with:
    - (a) A view of the road
    - (b) A view from the road
    - (c) A view of the road from the roadside
    - (d) All of the above.
-

---

---

# 6 VISUAL EFFECTS OF HIGHWAY PROJECTS

This chapter is designed to show how the principles that we discussed in the preceding chapters apply to the visual effects of highway projects. We will identify the visual characteristics of typical highway projects, look at some examples of their effects, and consider viewer response to these effects. Finally, we will discuss ways to assess the visual effects of projects at different stages in the highway development process.

## VISUAL CHARACTERISTICS OF HIGHWAYS

Adverse visual impacts are not consciously designed into a project; they creep in when decisions are made without considering the visual consequences. This is particularly true of highway projects, which are very complex, take a long time to complete, and are planned by large, diverse teams of specialists. The visual effects of project decisions such as right-of-way limits and lighting are readily overlooked until it is too late. For these reasons, it is important that the project team systematically consider the visual appearance of the total highway early and throughout project development.



*The number of lanes and total width of the roadway go far to determine the visual effects of a highway.*

## Roadway, Roadside and Right-of-way

The most immediately obvious visual component of a highway project is the road surface itself. The exact cross-section, plan, and profile proposed for a specific road are far more important to its visual effects than the generalized characteristics of its functional class. Roadway variables with clear visual implications include the number of travel lanes, their width, and pavement material and color. Shoulders can also be visually important; for example, paved shoulders enlarge the roadway's apparent scale and turf shoulders minimize it. Design speed and gradient standards help determine the roadway's visual effects on its visual environment. The relationship of opposing travel lanes is also visually significant; an undivided four-lane highway looks very different from a divided highway with independent alignment for each travel direction. Another visually important factor is the coordination of horizontal and vertical curves. Many of these roadway variables are hard to adjust because of capacity and safety requirements, and other limitations. Nevertheless, they can be significant in determining the visual effects of the highway.



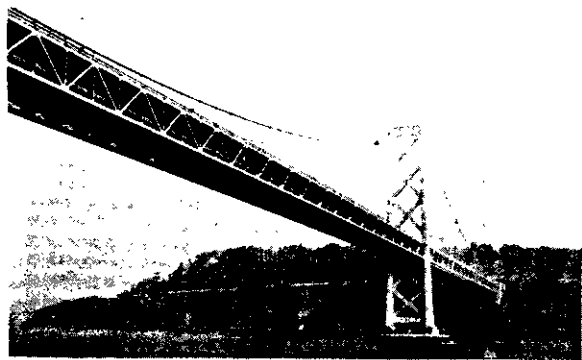
*Horizontal and vertical curves have been coordinated on this freeway, making it appear to flow smoothly over the rolling landscape, despite the high design speed.*



The roadside includes all lands within the right-of-way that are not part of the roadway. The visual characteristics of the roadside are determined by the landcover and landform modifications employed to fit the roadway into the right-of-way: clearing, earthwork, slope retention, drainage, and roadside planting. The appearance of the roadside helps to determine the visual scale and dominance of the highway. A wider right-of-way may actually allow us to reduce the visual scale of the highway by reducing apparent roadside width. For example, it may allow flatter side slopes which blend back into the surrounding landscape and are not perceived as roadside. It may also allow a natural-appearing median between independently aligned roadways, substituting the appearance of two smaller highways for one large highway.

### Structures and Appurtenances

We may imagine a new highway as a ribbon of pavement flowing smoothly through its landscape. In reality, the view of this ribbon is often obscured by a profusion of highway structures and "highway furniture." The need for highway structures may be foreseen at the EIS stage and their visual effects can be identified if we remember to consider their visual characteristics, even though final grade and other details may not be known. The location and appearance of highway appurtenances can be more difficult to determine. Many of these have been developed as safety and environmental improvements; unfortunately, incremental change has sometimes been a principal cause of visual deterioration along existing



Careful consideration has been given to the visual appearance of major highway bridges: some have become regional landmarks and scenic elements.

highways. In situations where visual impact is likely to be an issue we need to think about appurtenances at the EIS stage, just as we do structures, recognizing that their final positions will not be assigned until later.

Structures for the roadway itself may include bridges, viaducts, tunnels, and their portals. Grade separation structures may include interchanges, overpasses, and underpasses for roads, railroads, and transit. Slope retention structures and drainage structures may include retaining walls, bin walls or gabions. While these may not be firmed up by the time of the EIS, except when forced by the 4(f) or historic preservation procedures, any of these structure types may be dominant because of size or viewer position. A new structure may also replace an existing structure which is an important visual resource or is valued for its historic significance. For these reasons, the visual characteristics of highway structures can be a major consideration in a project EIS.

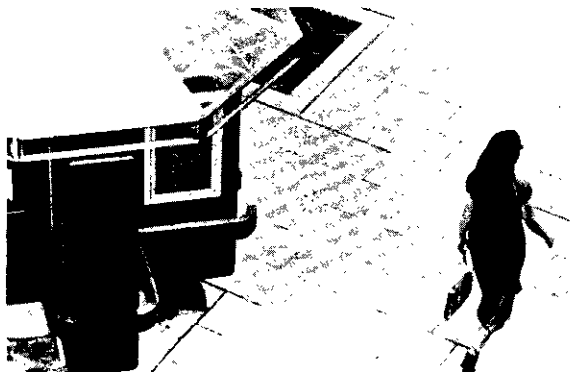


The visual appearance of minor highway structures, such as this series of retaining walls, can also contribute to the quality of the visual environment.



The visual unity of the highway can be enhanced by the design of highway appurtenances.

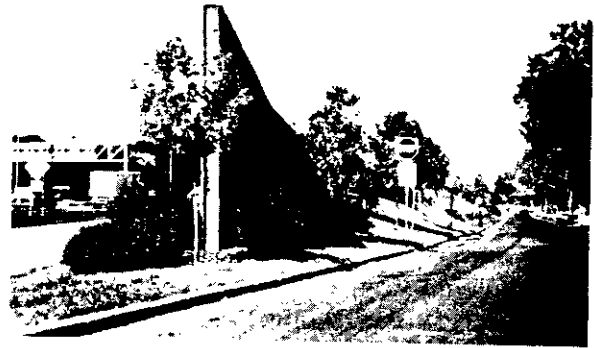
Lights, signs, and traffic control devices are among the highway appurtenances that can have significant visual effects. When lights are required, the height, spacing and configuration of the standards or supports are very important; we may also need to know the light distribution pattern of the fixture type, its glare cutoff characteristics, and the color of the light it produces. The visual characteristics of highway signs include placement, size, color (both front and back), lighting, reflectorization, and support structure. The last can be particularly important for examples such as the sign bridges on freeways. Traffic control devices include conventional traffic signals and new "readerboard" devices for metering congested freeways. Size, lighting, glare cutoff, and support structure can be very important; the size and location of signal control equipment can also be a significant consideration for urban streetscapes.



*Traffic signal equipment is often bulky and unsightly. On urban streetscape projects, it can be consolidated in attractive kiosks with multiple functions.*

Acoustic barriers or "noise walls" are increasingly prominent highway appurtenances. They have been installed along major highways to reduce community noise levels, but several communities have also objected to the installation of acoustic barriers because of fears over loss of views or other perceived visual impacts. Some of these objections can probably be traced to specific designs, since a wide selection of barrier types is available. The alternatives include earth berms and wood, concrete, or metal barrier construction, either singly or in combination. The visual characteristics of these alternatives should be carefully considered in acoustic barrier planning and

design. Their general type and configuration can be envisioned, although noise walls are not normally designed by the time of the EIS, unless they are to protect 4(f) lands.



*The visual appearance of noise barrier designs can complement the visual character of neighborhoods next to highways.*

Highway appurtenances also include the various safety devices installed along the roadside edge. Concrete median barriers ("Jersey" barriers) guard rails, and impact attenuators are among these devices. These appurtenances can adversely affect the appearance of the highway if added incrementally, but they can also have positive visual effects if integrated into highway planning and design. The need for these devices should be identified in the visual assessment when possible, although design details will generally be unavailable. This is true of many of the preceding types of appurtenances, because their design is generally not finalized until later phases of the highway development process.



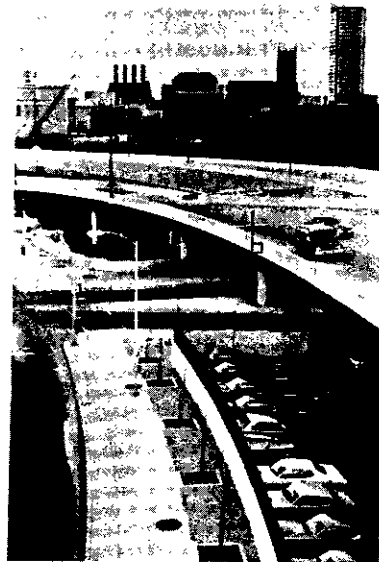
*Impact attenuators and other safety improvements can affect the appearance of existing highways to which they are added.*

## Highway-related Facilities

Highway construction, operation, and maintenance requires a number of facilities which may be located either within or outside the right-of-way; their visual effects may also be significant. Highway-related construction facilities may have important short-term and long-term effects; they include construction staging areas, borrow pits, and spoil disposal areas. The location of these is frequently the contractor's option and may not be determined until the contract is let; however, consideration at the EIS stage could be advisable for very sensitive projects. Highway operation may also require a variety of facilities, including rest areas, scenic overlooks, service areas, inspection stations, and patrol stations. Joint-use facilities may be visually significant, including transit stops, park-and-ride lots, and bus parking, as well as recreational, office, and preservation uses. Schematics and feasibility studies for these are often available at the EIS stage. Finally, highway maintenance facilities may cause localized visual problems, particularly where equipment and material storage are involved. Secondary effects—developments which are likely to follow after the project is completed—should also be considered.



*Highway borrow pits are often a visual problem, but they can also represent a visual opportunity.*



*Joint uses such as car-pool parking can enhance the visual appearance of otherwise wasted space beneath elevated highways.*

# Measuring Impact

## KEY CONCEPTS

### Visual Impact:

The degree of change in visual resources and viewer response to those resources caused by highway development and operations.

### Visual Resource Change:

The degree of change in visual resources caused by highway development and operations, assessed without regard to viewer response.

### Viewer Response:

Measures of viewer response to visual resource change include viewer exposure, sensitivity and cultural significance and local values.

Visual Impact = Visual Resource Change + Viewer Response

## VISUAL RESOURCE EFFECTS

When highway projects alter the physical environment, they also alter the visual information in that environment, its visual character, and its visual quality. Several typical project examples will help to illustrate the nature and variety of these visual resource effects.

### Visual Information

Highway projects substitute new visual information for old. The roadway always displaces existing visual resources, but the roadside sometimes retains these resources (particularly vegetation) or replaces them with other resources that are similar. The identity and extent of the landscape components involved can be important in themselves because of visual preferences; viewers may feel that forestlands are visually more important than farmlands—or vice versa. A simple tabulation of the landscape components affected by each project alternative provides a framework for considering these visual preferences.

Viewers also tend to notice and value the unusual. For example, a stand of large trees along an existing road can be sufficiently striking and unusual that a community may object to a widening project that would remove them. Highway projects may have to detour around such features; therefore it is



*Removing these live oaks would degrade the visual quality of this historic Florida town.*

often useful to identify any landscape components that are scarce or sensitive in the project area or the surrounding region.

### Visual Character

Concern over the appearance of a highway project often is based on how it will affect the overall visual character of an area rather than on the particular visual resources it will displace. Federal law identifies certain settings where effects on character are the paramount visual resource concern. Among these are wilderness areas, rivers in the National Wild and Scenic Rivers System, parks, recreational areas, wildlife and waterfowl refuges, and historic districts, sites, buildings, and structures.

Specific criteria have been adopted for evaluating the impact of development on historic properties. The introduction of visual elements "that are out of character with the property or alter its setting" is considered an adverse effect; such elements would jeopardize viewer perceptions of the reality of the past and its relevance to the present. It is important to note that the visual character of the project is at issue, not the project itself; if the character of the project can be made to complement the character of the historic property and its setting, it may have no adverse visual effects.

In chapter Four we discussed several attributes of visual character that are relevant to highway projects; these include pattern elements (form, line, color, and texture) and pattern character (dominance, scale, diversity, and continuity). Both the project and the project setting can be assessed according to these attributes; if their visual character is similar, the visual *compatibility* of the project will be high. If the visual character of the project contrasts strongly with the visual character of its setting, its visual compatibility will be low.

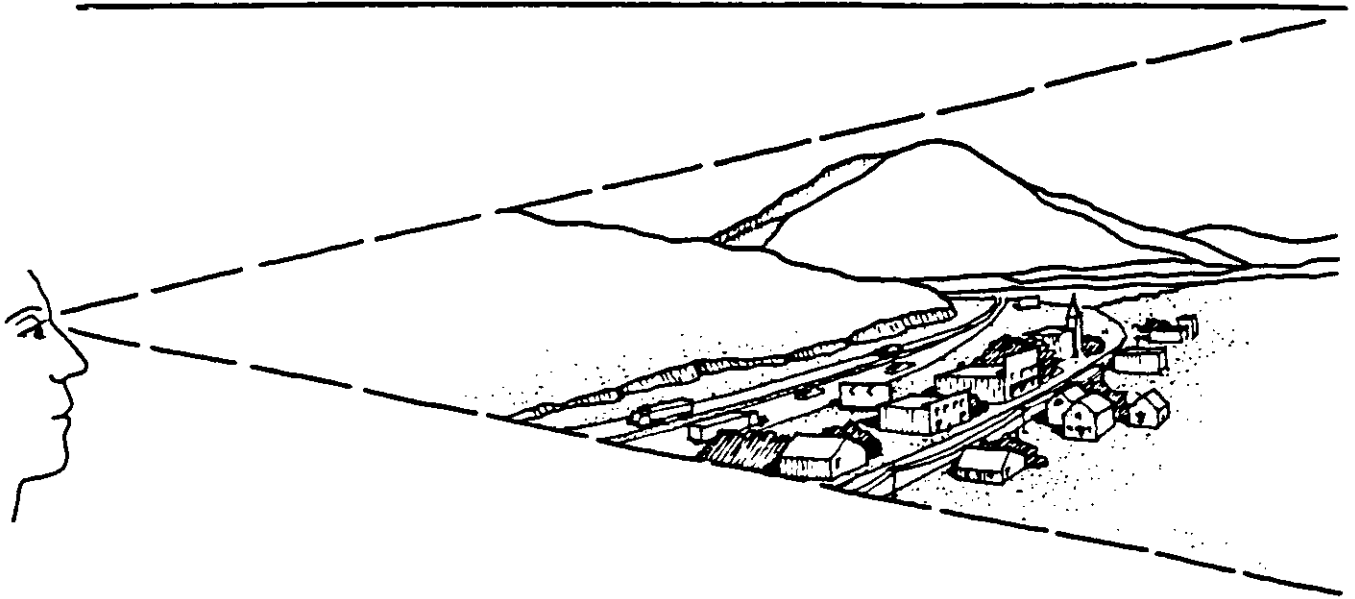
An explicit analysis of visual character frequently makes it possible to modify a



*A steel guard rail was carefully designed to complement the visual character of this historic bridge after the appearance of a concrete barrier proved unsatisfactory.*

project to improve its visual compatibility. For example, objections to the appearance of safety improvements for a historic bridge were resolved, through the required historic preservation coordination procedures, by substituting an unobtrusive steel guard rail for a visually dominant concrete barrier that would have contrasted strongly with the existing bridge in form, color and texture. The steel guard rail is small in scale and is not visually dominant. Some contrast in color and texture was considered desirable so that viewers would not misread the rail as part of the historic structure.

# VISUAL COMPATIBILITY



*The actual or potential compatibility of a project with its landscape setting can be objectively evaluated by examining the:*

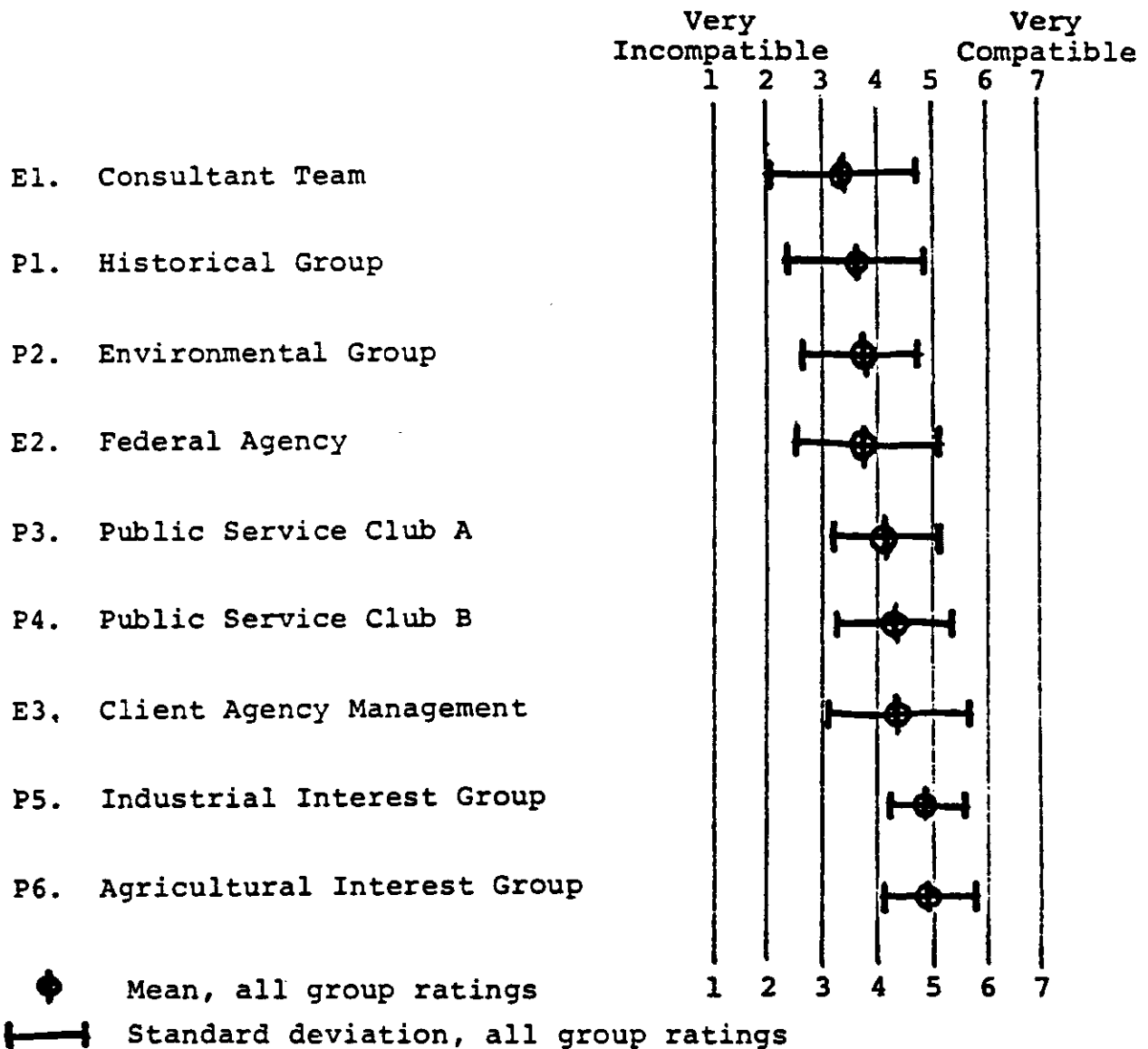
COMPATIBILITY OF PATTERN ELEMENTS

*(form, line, color, texture)*

COMPATIBILITY OF PATTERN CHARACTER

*(dominance, scale, diversity, continuity)*

**COMPARISON OF GROUP VALUES AND ABILITY TO MAKE VISUAL DISTINCTIONS**  
**Compatibility, Mean Ratings**



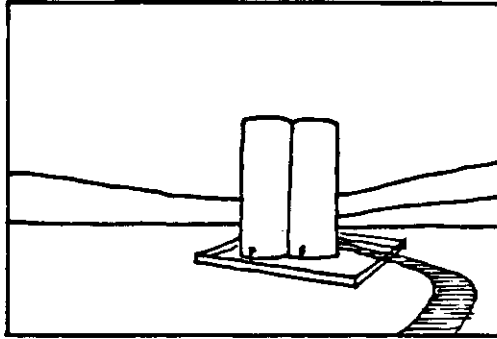
**What This Diagram Illustrates:**

1. There are significant differences in group values about visual resources, related to overall group interests.
2. Expert groups make more discriminating judgments about visual compatibility than the general public.
3. Agency expert groups appear to know how to fit a feature into its visual surroundings, although they may have to be convinced of the need to make the effort.

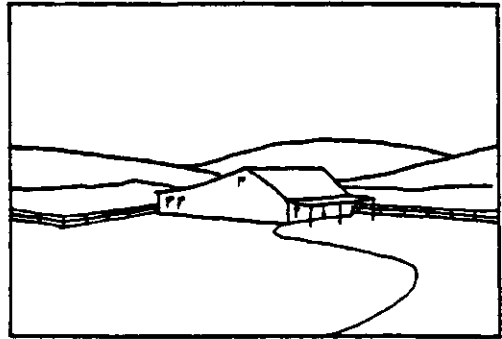


# COMPATIBILITY: PATTERN ELEMENTS

*Form*

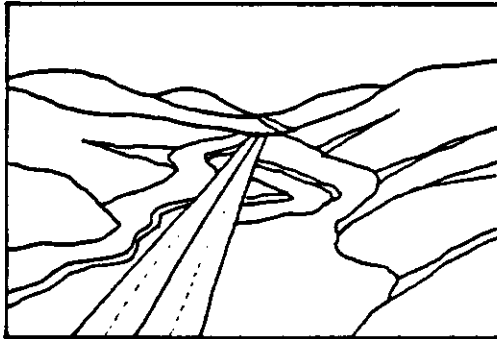


*low*

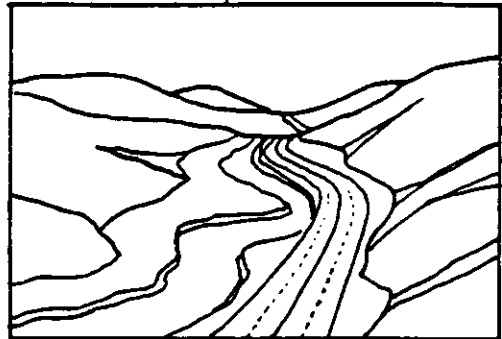


*high*

*Line*

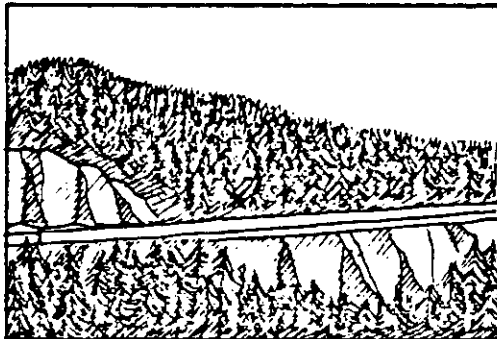


*low*

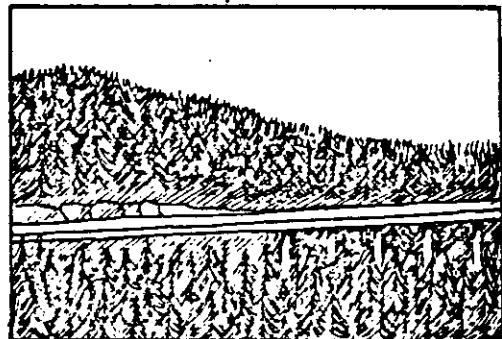


*high*

*Color*

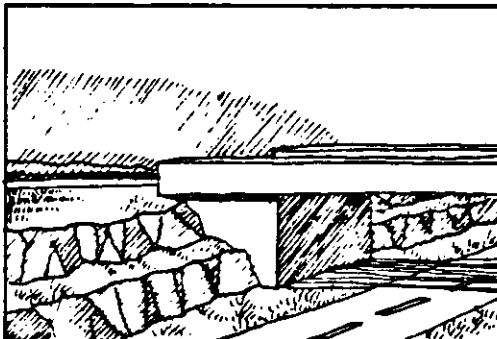


*low*

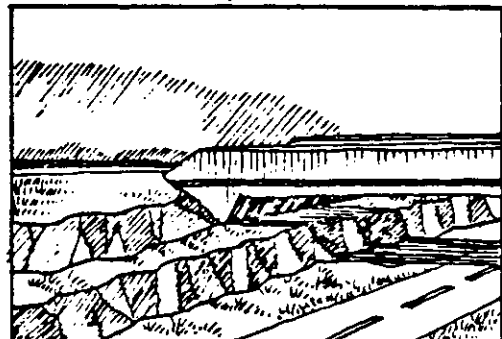


*high*

*Texture*



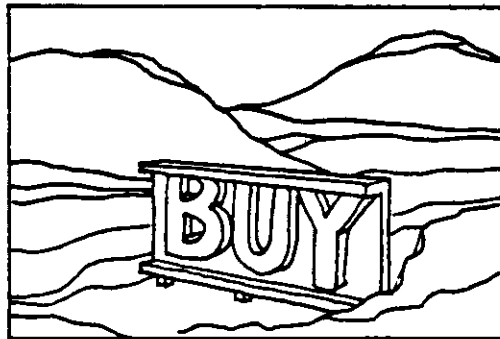
*low*



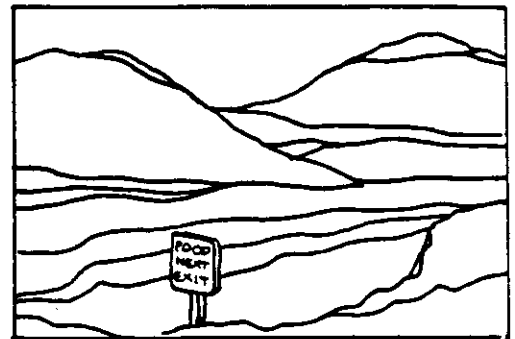
*high*

# ...and PATTERN CHARACTER

*Dominance*

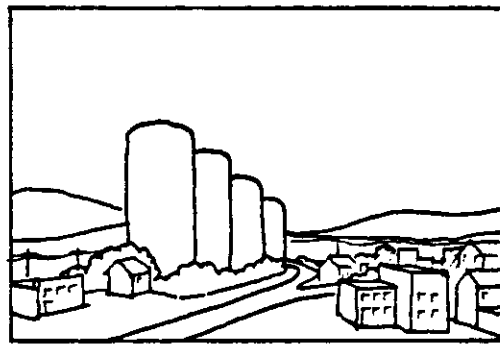


*low*

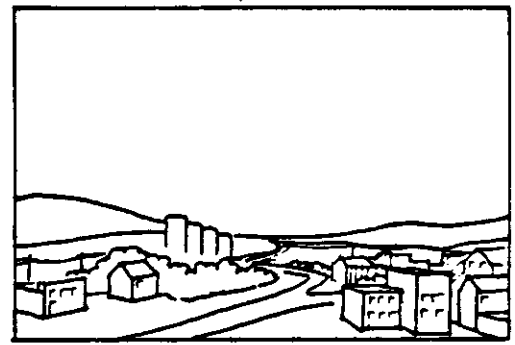


*high*

*Scale*

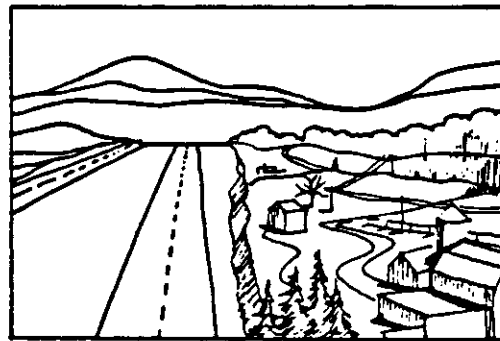


*low*

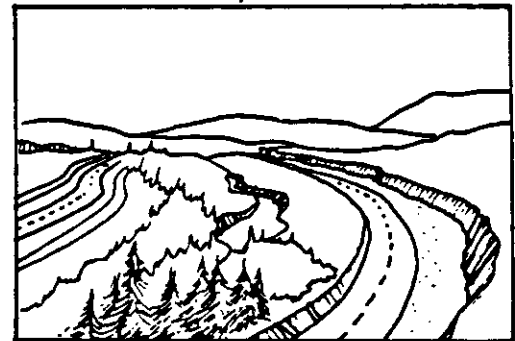


*high*

*Diversity*

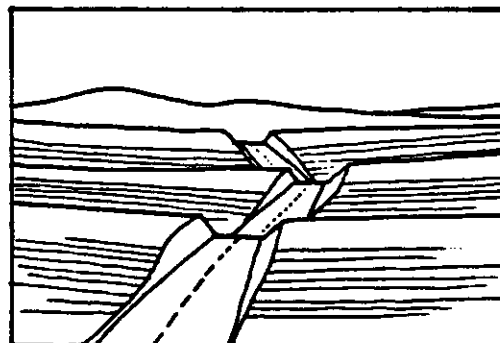


*low*

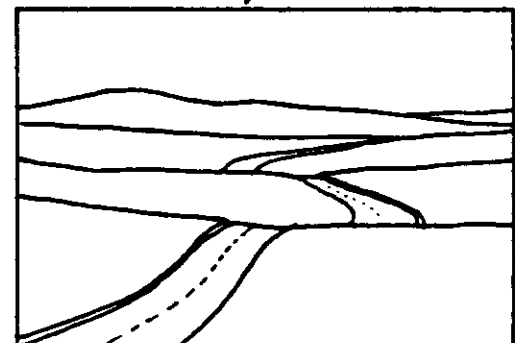


*high*

*Continuity*



*low*



*high*

## VISUAL QUALITY

One important indicator of the public concern a project is likely to generate is the visual quality of its landscape setting. Highway projects in landscapes with high visual quality are likely to receive close scrutiny. In certain classes of lands, areas with high visual quality are singled out for special consideration in highway project planning. These classes include "4(f) lands" (public parks, recreation areas, wildlife and waterfowl refuges, and historic sites) and lands associated with the National Wild and Scenic Rivers System. On other lands managed for their resource values, special management attention is paid to all types of development in areas with high visual quality; these lands include those managed by the U.S. Forest Service and the Bureau of Land Management. Where visual quality is high, we may have to carefully consider the visual effects of relatively simple projects, such as straightening a rural trunk highway and widening its shoulders.

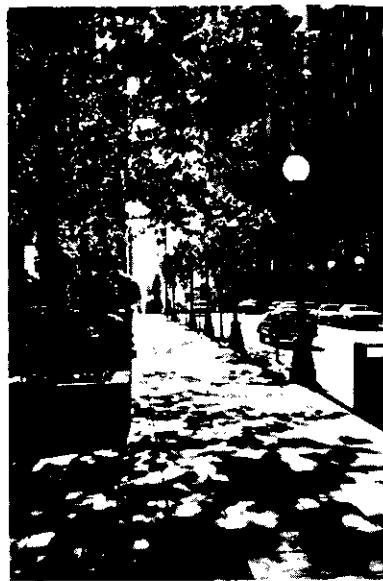


*When this trunk road to a wilderness canoe area is upgraded, its alignment will be adjusted to preserve several large "sentinel pines."*

Low visual quality does not necessarily mean there will be no concern over the visual effects of a project, however. In instances such as urban entry roads, communities may ask that highway projects help improve existing visual quality. The DOT Design, Art, and Architecture in Transportation program supports such requests by emphasizing the

consideration of the design arts in projects with high public visibility or use. In other words, improvements to the visual quality of everyday environments deserve consideration just because these environments are experienced so frequently by so many people. Streets and highways are major public investments and attention to their design quality can do much to raise visual quality around them.

Highway projects may affect the visual quality of an area by displacing attractive visual resources—or adding them. The "esthetic additive" approach was taken in the Highway Beautification program but proved vulnerable to budget cuts and maintenance reductions. Moreover we have seen that visual quality is often due to the visual relationships among all components of a landscape, rather than the presence of a single preferred feature. As we discussed in Chapter Four, explicit evaluative criteria may be used to appraise these relationships.



*This major urban streetscape project widened travel lanes and sidewalks by removing curbside parking. A principal visual objective was also to unify the diverse commercial architecture along the street by the use of consistent color, texture, and scale in paving and "street furniture."*

Vividness, intactness, and unity are three criteria that have proven to be effective indicators of visual quality. Visually successful projects usually achieve a balance among all three; too frequently, design emphasis is placed on one of these criteria at the expense of the other two.

For example, a pedestrian mall can be "oversized" and made so vivid that it is out of character with the surrounding urban environment and detracts from visual unity. This example is not meant to indicate that vivid contrast always causes an adverse effect on visual quality. The bridges of the Swiss

engineer Maillart exhibit vivid form and color, but also maintain the visual intactness of their mountain settings and achieve strong visual unity with those settings. In many urban settings, however, the number and variety of existing manmade forms suggest that enhancing overall visual unity may be a more effective approach to improving visual quality than attempting to introduce vivid new forms into the setting. For example, an urban arterial improvement and streetscape project may deliberately understate individual design elements such as street lights, traffic signals, and paving patterns.

# VISUAL IMPACT

---

$$\text{VISUAL IMPACT} = \text{VISUAL RESOURCE CHANGE} + \text{VIEWER RESPONSE}$$

## VISUAL RESOURCE CHANGE

### CHANGE IN VISUAL INFORMATION

- *existing visual resources*
- *introduced resources*

### COMPATIBILITY OF VISUAL CHARACTER

- *existing character*
- *compatibility of new feature*

### RESULTING VISUAL QUALITY

- *direct measurement of alteration (appraise built product)*
  - *existing visual quality*
  - *visual quality after development*
- *prediction of alteration (appraise simulated project)*
  - *existing visual quality*
  - *visual quality after development*

# PREDICTING CHANGE IN QUALITY

## PREDICTING CHANGE IN VISUAL QUALITY (AT DIFFERENT STAGES IN THE DEVELOPMENT PROCESS)

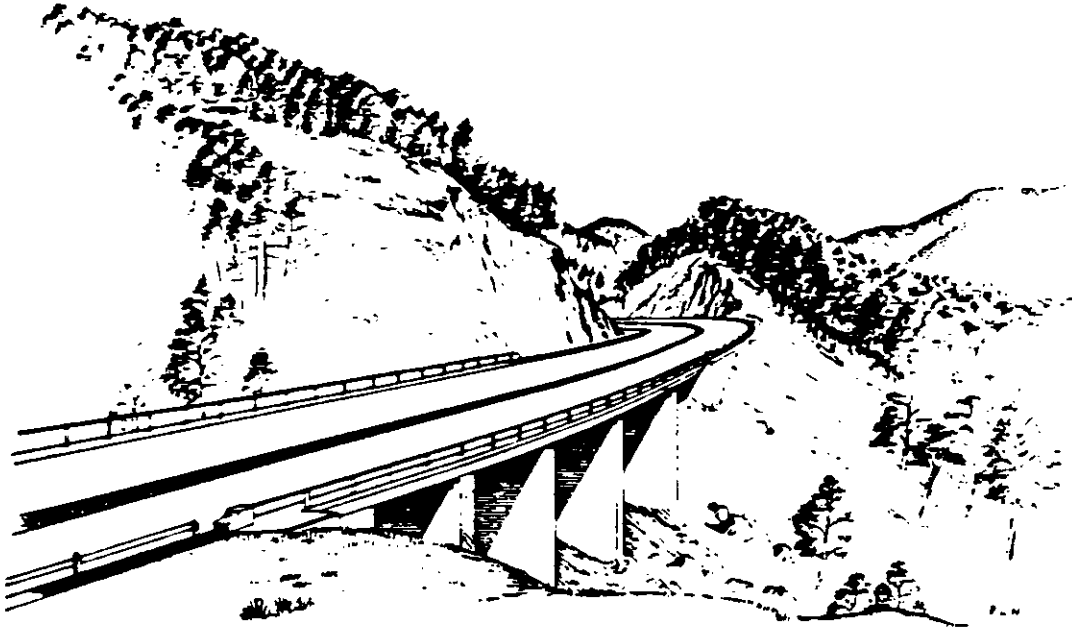
- **PLANNING** (*Project is not site specific*)  
VISUAL QUALITY (*before development*)  
CHANGE =                   +  
                                  VISUAL COMPATIBILITY
- **LOCATION AND DESIGN** (*Project is site specific*)  
VISUAL QUALITY (*before development*)  
CHANGE =                   +  
                                  VISUAL QUALITY (*after development*)
- **CONSTRUCTION AND MAINTENANCE**  
(*Site has already been modified*)  
VISUAL QUALITY (*after development*)  
CHANGE =                   +  
                                  VISUAL COMPATIBILITY

# SIMULATION

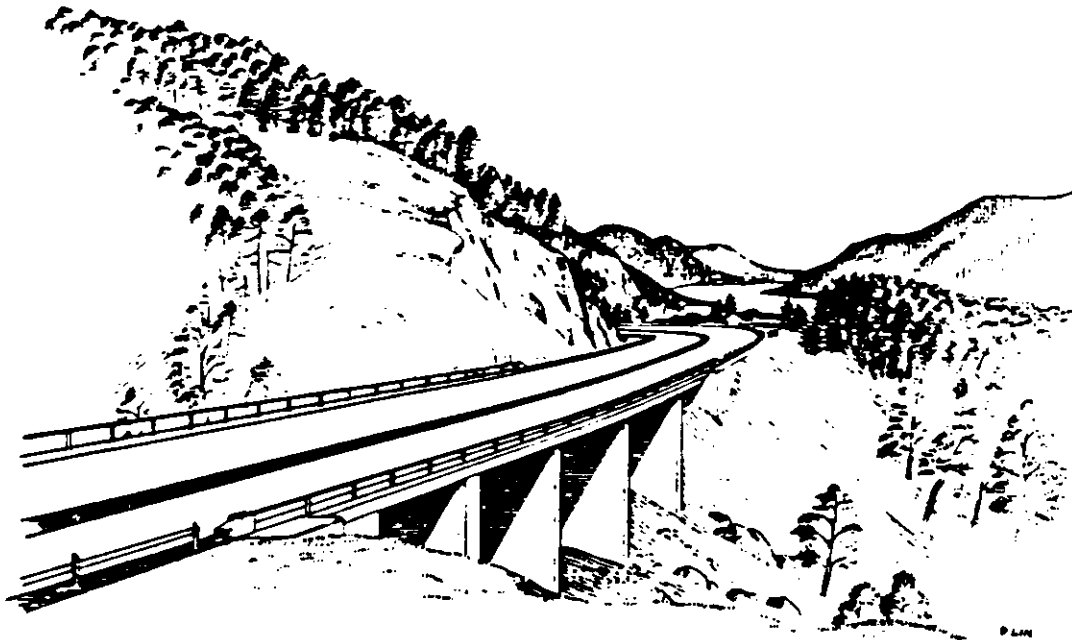
---

SIMULATING VISUAL RESOURCE CHANGE: ARTISTS' SKETCHES OF PROPOSED ACTIONS

---



Removing a residual piece of rock between the freeway and a natural slope can lead to smoother landscape design and can open up vistas which are otherwise obscured



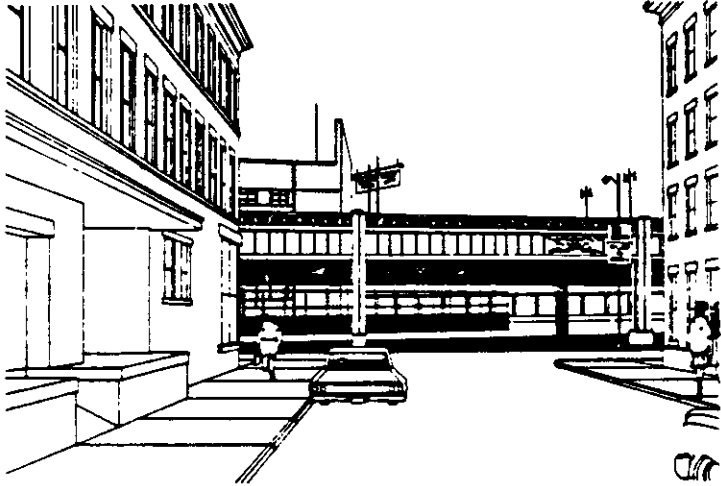
Source: C. Tunnard and B. Pushkarev, Manmade America: Chaos or Control? (New Haven, Conn.: Yale University Press, 1963), p. 226.

---

---

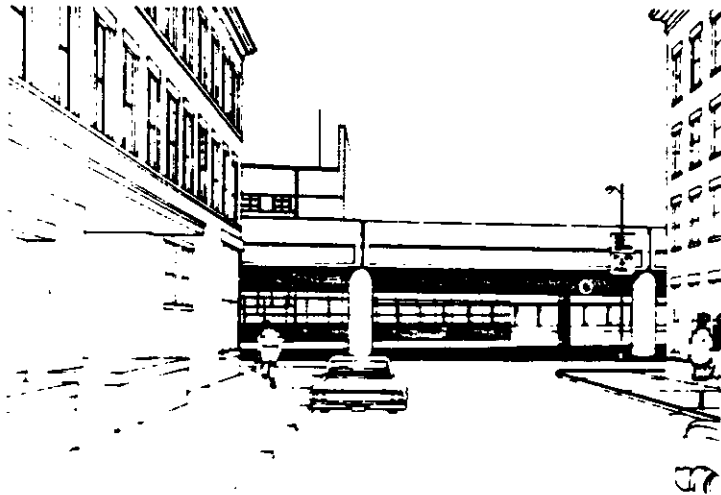
**SIMULATING VISUAL RESOURCE CHANGE: ARCHITECTURAL RENDERINGS OF THE WEST SIDE HIGHWAY, NEW YORK**

---

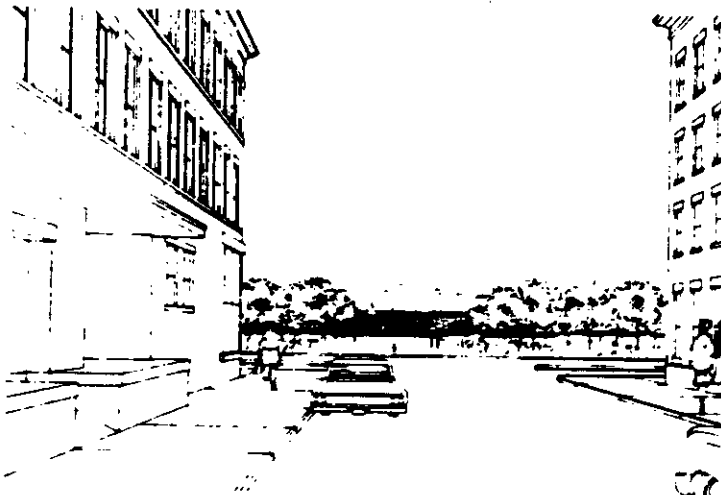


Source: U.S. Department of Transportation, New York Department of Transportation, West Side Highway Project Environmental Impact Statement (New York: 1974), p. 187.

MAINTENANCE



INBOARD RECONSTRUCTION



OUTBOARD



# VISUAL IMPACT EVALUATION

## LEVEL OF QUALITY

V.Q. BEFORE

£

V.Q. AFTER

- Vividness
- Intactness
- Unity
- V.Q. =  $\frac{V+I+U}{3}$

## NUMERIC DIFFERENCE

$$\text{change} = (\text{V.Q. before}) - (\text{V.Q. after})$$



---

---

VISUAL QUALITY EVALUATION - VIEW FROM THE ROAD

Project Name \_\_\_\_\_  
 Assessment Unit \_\_\_\_\_  
 Evaluator \_\_\_\_\_  
 Date \_\_\_\_\_  
 Weather \_\_\_\_\_

Evaluation Scale: 1-7  
 1 = Very Low  
 4 = Medium  
 7 = Very High

VIEW	VISUAL QUALITY				IMPACT		
	VIVIDNESS	INTACTNESS	UNITY	Overall Visual Quality	Visual Quality Difference	Positive Impact	Negative Impact
Observer Viewpoint	Memorability of landscape components as they combine in striking and distinctive visual patterns	The integrity of visual pattern. The extent to which the landscape is free from visual encroachments.	The degree to which visual elements of the landscape join to form a coherent, harmonious visual pattern.	General Visual Quality			
Proposed / Existing	General Vividness	General Intactness	Overall Unity				
E	Features	Encroachment	Elements				
P							
E							
P							
E							
P							
E							
P							
E							
P							
E							
P							

---

LEGEND

Land Use

URB = urban  
 SUB = suburban  
 IND = industrial  
 COM = commercial  
 INS = institutional  
 RES = residential  
 REC = recreational  
 TRA = transportation

Observer Position

S = superior  
 N = normal  
 I = inferior

Road Distance

F = foreground to ¼ miles (0.4 km)  
 M = middleground ¼ to 3 miles (0.4 km to 5 km)  
 B = background beyond 3 miles (5 km)

Evaluation Scale: 1-7 (1=Very Low, 4=Medium, 7=Very High)

VIVIDNESS	<u>MANMADE DEVELOPMENT</u>	<u>ENCROACHMENTS UNDESIRABLE EYESORES</u>	UNITY/INTACTNESS
Very high	None	None	Very high
High	Little	Few	High
Moderately high	Some	Some	Moderately high
Average	Average	Average	Average
Moderately low	Moderately high	Several	Moderately low
Low	High	Many	Low
Very low	Very high	Very many	Very many

---

# VIEWER RESPONSE TO HIGHWAY PROJECTS

Several factors discussed in Chapter Two can help us gauge viewer response to a project's visual effects. These factors include viewer exposure and three aspects of viewer sensitivity: activity and awareness, local values, and cultural significance.

## Viewer Exposure

First, will the project be viewed by persons other than its users? If so, what are the viewer groups, how many people are in them and how far away are they? The answers help to establish viewer exposure to the project. Viewer exposure may be particularly high along urban rights-of-way and in public use areas; the latter may include safety rest areas, auto-restricted zones, transit malls, fringe parking and certain joint development projects. High viewer exposure heightens the importance of early consideration of design, art, and architecture and their roles in managing the visual resource effects of a project. As an alternative or supplement to managing those effects, we can manage viewer exposure by adjustments to project location and alignment, and by mitigation measures such as full or partial screening. Viewer exposure may become an important issue where the sight of the highway—however well designed—would intrude on the visual character of historic districts or natural areas. In extreme cases, projects have been depressed or placed in tunnels to restrict or eliminate views of the highway.

## Viewer Sensitivity: Activity and Awareness

Viewer activity and awareness can be significant variables in the selection of highway alternatives. For example, one location may expose a highway to viewers in a recreation area, a second to viewers in an industrial zone. Alignment and design alternatives, such as "daylighting" a curve, may expose highway users to a view that heightens their awareness of an approaching destination. Conversely, bypass highways

have sometimes eliminated views of bypassed communities and have diminished driver awareness of town centers.



*Highways located in recreational areas are often exposed to a very sensitive group of viewers with strong preconceptions about the visual appropriateness of roads in these settings.*



*Sometimes a highway project can make a significant contribution to the renewal of a city center by increasing the traveler's awareness of the center and improving the visual quality of the entry to it.*

## Viewer Sensitivity: Local Values

Local values and goals may confer visual significance on landscape components and areas that would otherwise appear unexceptional in a visual resource analysis. Highway planners can learn about these special resources and community aspirations for visual quality through project citizen participation procedures, as well as from local publications and planning documents. Community organizations such as arts councils and historic societies should also be consulted. The resulting information

will sometimes surprise the out-of-town expert. For instance, planners investigating location alternatives in a small western city found what appeared to be a promising alternative in a small river valley with open land, private ownership and industrial zoning. Its existing visual resources include an old dam and powerplant, exposed penstock, gravel roads, and several transmission lines. However, contact with community groups revealed that the valley



*Hydropower development seriously encroaches on the visual quality of this river valley, but local residents regard it as a scenic area and oppose further development of any type.*

is regarded locally as a wildlife refuge, an historic area, the scenic core of the city's open space system—and strictly off-limits for new transportation development.

#### **Viewer Sensitivity: Cultural Significance**

Regional or national cultural significance is usually accompanied by formal designation (or by study status for designation) that recognizes a property or district for its historic, wilderness, recreational, or other value. While such properties or districts are not necessarily high in visual quality, we have seen that their visual character is often considered important to their cultural value. The planning and design of a highway project in an historic district or the rehabilitation of an historic bridge may have to make concessions to the visual character of the district or bridge. Alternatively, project visibility may be controlled with vegetation, an appropriately-designed acoustic barrier, or other means to avoid perceived visual incompatibility with a setting savored for its absence of visible evidences of contemporary urban civilization.

#### **VISUAL EFFECTS AND PROJECT STAGES**

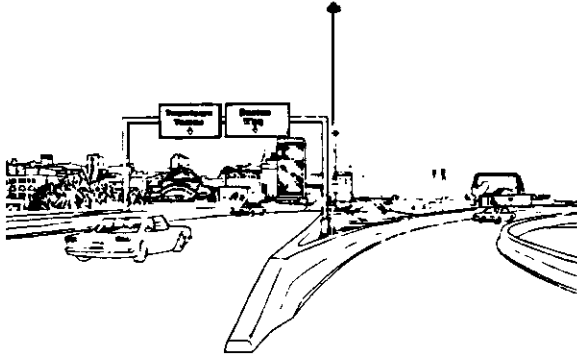
The highway development process can be divided into five general stages: planning, location, design, construction and maintenance. The visual effects of a highway project are most clearly defined in the last project stages, but they are determined progressively throughout the process. The most broad-reaching effects are determined early. If the highway corridor contains resources that are highly valued for their visual character, highway alignment and design may be unable to completely avoid or



*Despite considerable design effort, this bridge approach structure does not succeed in eliminating adverse visual effects on the church next to it.*

mitigate adverse visual impacts that are “locked in” by corridor selection. Conversely construction and maintenance are crucial to the realization of design intentions. Consideration of visual effects and the highway development process can ensure that problems and opportunities are identified soon enough for effective action.

Drawings or simulations of project appearance from representative viewpoints provide a direct means of evaluating the visual effects of highway alternatives. At the design stage, we can illustrate the appearance of the alignment, alternative structures, roadside appurtenances, and roadside planting in detail. Unfortunately, most environmental assessments are prepared earlier, during the location stage. If approximate alignment and typical cross-section are known, these can provide sufficient information to illustrate the general appearance of the highway. If controversy over the visual effects of the project still exists, final environmental



*A lighting and signing alternative is illustrated in this sketch of a view from the road; this visually simple alternative was preferred, partially because of the complex geometry of the roadway itself.*

clearance may be delayed until the studies necessary to provide visual details can be carried out. This has occurred on a number of urban freeway projects and also on highways through scenic areas.

The probable broad-scale visual effects of a project can be considered early in the highway development process, even if project information is insufficient to simulate and assess specific project views. First, the visibility and viewer exposure of alternative corridors can be assessed by mapping the viewsheds of major existing viewer groups. Significant and valued visual resources can then be located and avoided. The landscape units can be identified and their visual quality assessed. Finally, the visual compatibility between the proposed project type and the landscape types representative of the project area can be established by comparing their visual character. By generalizing the principle that high contrast is likely to adversely affect high visual quality, conflict areas can be identified. Highway planners can then avoid placing corridors in these areas or can identify these conflicts for resolution during design.



# EXERCISE: SUMMARY QUESTIONS

## VISUAL EFFECTS OF HIGHWAY PROJECTS

1. The cross-section, plan and profile of a highway \_\_\_\_\_ (will or will not) be important to the visual effects of the highway project.
  2. Since lights, signs, and traffic control devices are common highway safety appurtenances, it is not necessary that they be considered in determining the visual effect of a highway. True \_\_\_; False \_\_\_.
  3. If the visual character of a highway contrasts strongly with the visual character of its setting, its visual compatibility will be:
    - (a) High
    - (b) Low.
  4. Projects located in landscape settings that have low visual quality will never have a visual impact. True \_\_\_; False \_\_\_.
  5. Highway projects can enhance existing visual quality. True \_\_\_; False \_\_\_.
  6. Vividness, intactness, and unity are three criteria that are effective indicators of visual quality. In order to be visually successful, a project must:
    - (a) Have any combination of all three
    - (b) Achieve a high balance of all three
    - (c) Be strong in any one of the three.
  7. Visual significance of landscape components \_\_\_\_\_ (can or cannot) be determined by visual inventories or inspections alone.
  8. In assessing the visual impact of a project, concern should be given to the visual effects of the project during night hours.  
True \_\_\_; False \_\_\_.
-

# 7 VISUAL IMPACT MITIGATION

Mitigation encompasses the enhancement of positive effects as well as the reduction or elimination of negative effects. To be relevant, visual mitigation measures must address the specific visual impacts or problems caused by project alternatives. Different types of mitigation measures are appropriate to successive stages in the highway development process. In the location stage, highway corridors can avoid traversing visual resources that are exceptional in quality or visually incompatible with highway development, while maintaining the potential for views to these resources. On the viewer response side, viewsheds of sensitive viewer groups or historic sites can be bypassed.

During design, alignment can be manipulated to minimize blockage of existing views, to enhance good views from the road, and avoid bad ones. Care can be taken to maximize the visual compatibility of the project with adjoining parks or historic districts. Finally, special effort may be put into the design of structures and public use areas, including the incorporation of art and architecture, to ensure that these project components have high visual quality in

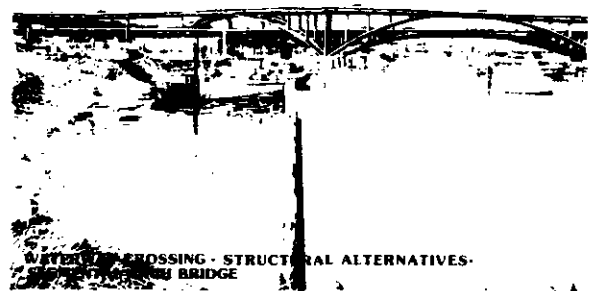
themselves as well as in relation to the larger project environment.

To ensure the full realization of any mitigation actions, highway agencies must coordinate environmental assessment activities with the subsequent design, construction, and maintenance phases of highway development.



WATERWAY CROSSING - PRELIMINARY SKETCH - EXISTING

*Despite the presence of water and boats, the existing quality of this view is relatively low because of the encroachment of fill, dereliction, and a general lack of visual unity. Redevelopment for recreational boating has begun, however, and community expectations for visual improvement are high.*



WATERWAY CROSSING - STRUCTURAL ALTERNATIVES - SEGMENTAL ARCH BRIDGE

*In response to community concerns about the future visual appearance of this area, the highway agency studied structural alternatives for this crossing. This segmental arch design would span the waterway cleanly and enhance its visual unity. This alternative would avoid adverse effects on existing visual quality, but would not markedly improve that quality.*



BOAT LAUNCH, GARDEN BANK, WATERWAY PARK

*Development of a public boat launch and park under the crossing could help to bring the visual potential of the waterway to reality. The inclusion of joint use in this project would provide significant beneficial impacts on visual quality and land use.*

# MITIGATION PLANNING

- 1 Identify priority viewpoints
- 2 Rate and rank each viewpoint
- 3 Develop and prioritize objectives for critical viewpoints
- 4 Evaluate mitigation options to meet objectives
- 5 Finalize mitigation plan

# MITIGATION OBJECTIVES

How to write a Visual Resource Management Objective:

environmental management principle	+ assessment of effect +	critical viewpoint	+ viewer groups
<ul style="list-style-type: none"> <li>• protect</li> <li>• enhance</li> <li>• conserve</li> <li>• mitigate</li> </ul>	<ul style="list-style-type: none"> <li>• visual compatibility</li> <li>• visual quality</li> </ul>	<ul style="list-style-type: none"> <li>• view of project</li> <li>• view from project</li> </ul>	<ul style="list-style-type: none"> <li>• driver</li> <li>• passenger</li> <li>• residents</li> <li>• users</li> <li>• occupants</li> </ul>

## EXAMPLES:

- Enhance + the visual quality + of the view of the project + for residents on Tumwater Hill.
- Mitigate + the diversity of pattern character + for the view from the project + for the driver.

# MITIGATION

# OPTIONS

Corridor selection

Horizontal alignment

Vertical alignment

Slope ratios

Grading

Right of way width

Walls

Fences

Curbing

Pavement marking

Selective clearing

Landscaping

Signing

Lighting

Guard rail

Bridges

Service structures

Mowing patterns

Litter pickup

Roadside delineators

Noise barriers

# **8 MANAGEMENT BY VISUAL OBJECTIVES**

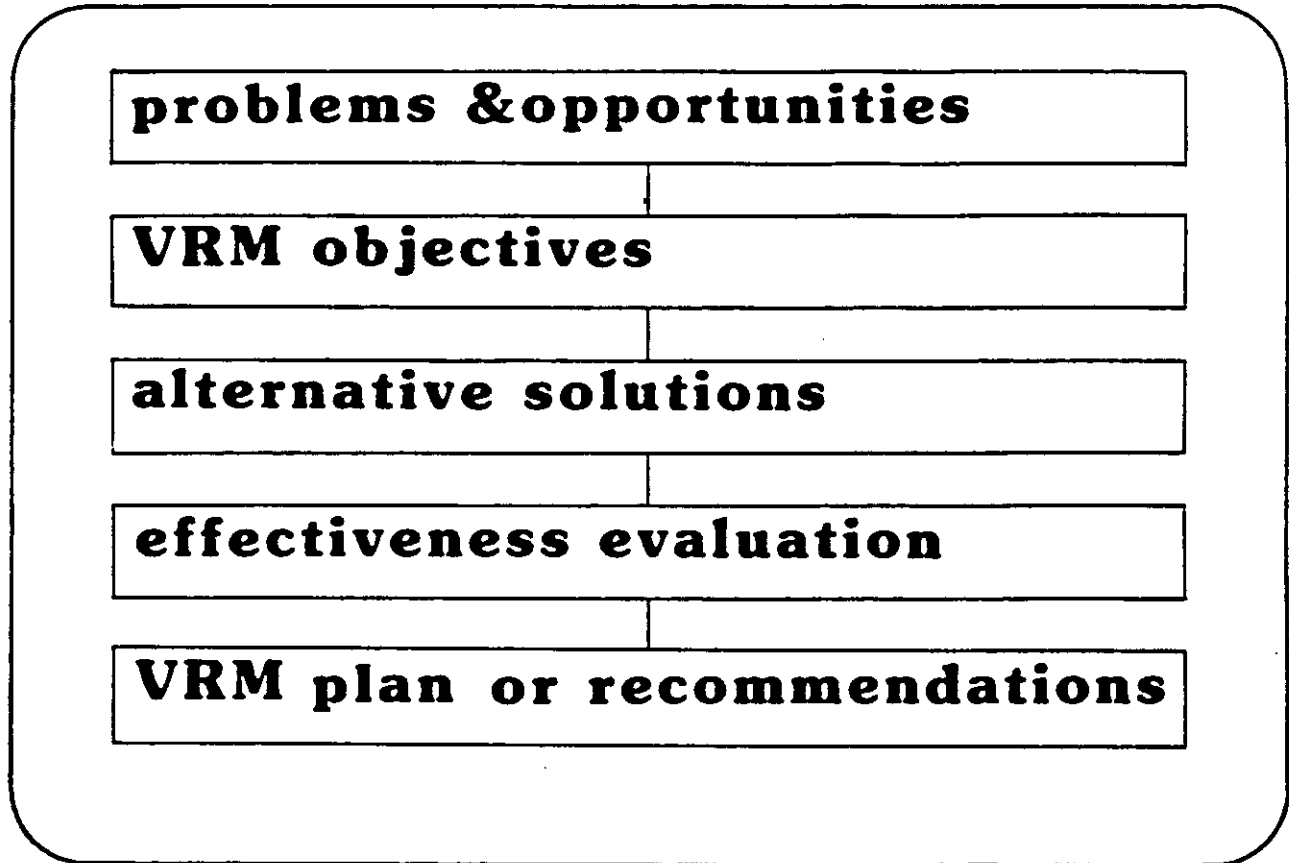
Visual assessment processes can be directly linked to management processes by the visual resource management (VRM) objective.

A VRM objective must specify the visual resources and viewer groups to be affected, the results to be achieved, the time for achievement, and the means for measuring achievement.

Establishing VRM objectives allows the planner or designer to compare the visual effectiveness of alternatives.

VRM objectives also make it easier to integrate visual considerations with other considerations in decision-making.

# **VISUAL MANAGEMENT PROCESS**



# **MANAGEMENT PRINCIPLES**

*These principles are commonly applied to the management of a broad range of environmental resources, including visual resources.*

## **PROTECTION**

- to guard resources from change,*
- maintain existing resource quality,*
- prevent adverse impacts.*

## **ENHANCEMENT**

- to augment resources,*
- improve resource quality above some standard,*
- heighten positive impacts.*

## **CONSERVATION**

- to utilize resources with moderate change,*
- hold resource quality at some standard,*
- minimize adverse impacts.*

## **MITIGATION**

- to alleviate effects of resource utilization,*
- upgrade resource quality to some standard, offset adverse impacts.*



# MANAGEMENT ACTIONS

*Manipulate the landscape components,  
Landform and landcover (water, vegetation,  
manmade development),*

*to control the visibility of areas (viewsheds/  
vistas),*

- extent and duration of view*
- number of viewers*
- location of viewers*

*to change visual elements and relationships,  
and*

- visual information in the landscape*
- visual character of the landscape*
- visual quality of the landscape*
- visual compatibility of the road in the landscape*

*to influence viewer groups,*

- types of viewers*
- viewer sensitivity*

# WRITING V.R.M. OBJECTIVES

*How to write a Visual Resource Management Objective:*

V.R.M. NEED

PROBLEM/OPPORTUNITY

*environmental  
management  
principle*

*+ assessment  
of effect + visual  
resources + viewer  
groups*

EXAMPLE:

*Enhance + the visual quality + of the view  
of the project + for residents on  
Tumwater Hill*

# **PLANNING FOR V.R.M. : AN OUTLINE**

## **I. Design the Work Process**

- A. Organize the Visual Inventory, Analysis and Evaluation Techniques**
  - 1. Level of effort appropriate to each stage
  - 2. Specialist staff required for each stage
- B. Agree on a Format for VRM Recommendations and Plan**

## **II. Perform Visual Assessment**

- A. Identify Assessment Units**
  - 1. Landform and landcover
  - 2. Landscape units
    - a. Area-wide (location alternatives)
    - b. Highway alignment (fixed location)
  - 3. Major viewer groups
  - 4. Viewsheds
    - a. Area-wide (location alternatives)
    - b. From and of highway (fixed location)
  - 5. Visual resource assessment units
- B. Analyze and Evaluate Visual Resources**
  - 1. Inventory visual information in highway R.O.W. and setting
  - 2. Analyze visual character of highway and setting
  - 3. Evaluate existing visual quality of the landscape, including the highway and its setting
  - 4. Evaluate visual compatibility of the highway with its setting (or visual quality after development)
  - 5. Document effects of highway on visual resources
- C. Analyze and Evaluate Viewer Response**
  - 1. Additional viewsheds, as needed: from and of highway
  - 2. Analyze viewer exposure to highway and setting
  - 3. Evaluate viewer sensitivity to visual resources
  - 4. Evaluate cultural significance of specific resources
  - 5. Document viewer response to change in visual resources.

## **III. Establish Visual Resource Management Objectives**

- A. Establish VRM Needs**
    - 1. Landscape Context
      - a. Area-wide
      - b. Within specific units
    - 2. Viewing Context
      - a. View from the road
      - b. View of the road
-

- 
3. Phases of Highway Development Process
    - a. Planning and location
    - b. Design and redevelopment
    - c. Construction and maintenance
  4. Identify visual problems and opportunities
    - a. Critical areas
    - b. Existing positive effects (impacts)
    - c. Existing negative effects (impacts)
    - d. Identify potential visual effects (impacts) of new development
  5. Determine applicable management principles
    - a. Preservation
    - b. Enhancement
    - c. Conservation
    - d. Mitigation
- B. Formulate VRM Objectives
1. VRM Need
    - a. Management principle
  2. Visual problem or opportunity
    - a. Assessment of effect
    - b. Visual resources
    - c. Viewer groups
- IV. Develop VRM Recommendations or Plans
- A. Propose Alternative VRM Actions
1. VRM Objective
    - a. Viewers
    - b. Visual resources
    - c. Visual problem or opportunity
      - i. Effect
      - ii. Cause
    - d. Management principle
  2. Possible visual resource management actions
    - a. Landform
    - b. Water
    - c. Vegetation
    - d. Built form
  3. Potential Effects
    - a. Visual resource
      - i. Information
      - ii. Character
      - iii. Quality
      - iv. Compatibility
    - b. Viewer Response
      - i. Exposure
      - ii. Sensitivity
      - iii. Cultural significance
-

- 
4. Select appropriate actions
    - a. Planning and location
      - i. Corridor
      - ii. Route
    - b. Design and redevelopment
      - i. Alignment
      - ii. Cross-sections
      - iii. Structures
      - iv. Landscaping
    - c. Construction and maintenance
      - i. Techniques for visual quality control during construction
      - ii. Maintenance
- B. Decision-Making
1. Evaluate Alternative VRM Actions
    - a. Priorities among alternative VRM actions
      - i. Relative cost and effectiveness
      - ii. Concentration of resources
      - iii. Political process
      - iv. Other considerations
    - b. Integrate with other highway concerns
      - i. Operations
      - ii. Economy
      - iii. Safety
      - iv. Other environmental concerns
  2. Agree Decision Between All Members of Highway Development Team
    - a. Resolve conflicts between objectives
- C. Prepare Visual Resource Management Recommendations or Plans
1. Highway Development Process
    - a. Planning and location - general alternatives
    - b. Design and redevelopment
    - c. Construction and maintenance - specific actions
  2. Recommended VRM actions
    - a. Effect of actions
    - b. Cost of actions
    - c. Prioritize actions
  3. Set level of effort and schedule appropriate to each phase
  4. Select specialist staff required
  5. Implications for next phase of Highway Development Process
    - a. Appropriate and relevant VRM considerations
    - b. Continuity
    - c. Prior consultation
-

# SUMMARY

Wide-ranging Federal laws and regulations require explicit consideration of visual resource issues in management programs and individual projects.

In addition, many states have parallel laws and requirements. With the demonstrated success of major agency systems, demand is growing for the use of VRM techniques by other agencies.

An increasing emphasis on movement from assessment into active management, for projects as well as lands, is also recurring.

Visual resource management offers a battery of techniques to assure appropriate consideration of esthetics at all project stages for an expanding range of project types.

---

---

# GLOSSARY

---

**Color:**

The third of the four basic elements of visual pattern; the hue (e.g. red or blue) and value (e.g. light or dark) of the light reflected or emitted by an object.

**Commemoration:**

Landscapes and special districts formally or informally recognized for their connection with past events. The visual quality, character, or information of these settings may have acquired cultural value beyond that revealed in an assessment based strictly on visual resources.

**Continuity:**

Continuity is the uninterrupted flow of pattern elements, maintenance of visual relationships between immediately connected or related landscape components or features.

**Cultural Significance:**

Specific landscape settings may be significant because of cultural values; the setting must be at least briefly examined in its regional and national contexts to determine if it is culturally significant. Three general criteria are: uniqueness, commemoration, and designation.

**Designation:**

Landscapes and special districts formally or informally recognized for their historic, educational, scientific, recreational, or esthetic value. Designation may affect viewer expectations about these areas.

**Direction of Light:**

Indicates how light strikes the surface of objects in terms of back, front, or side-lighting.

Backlighting: A viewing situation in which sunlight is coming toward the observer from behind a feature or elements in a scene.

Frontlighting: A viewing situation in which sunlight is coming behind the observer to a feature or elements in a scene.

Sidelighting: A viewing situation in which sunlight is coming from the side of the observer to a feature or elements in a scene.



---

### Distance Zones:

Three conventional terms in painting--foreground, middle-ground, background--which can be helpful in describing distance relationships.

Foreground (0 to  $\frac{1}{4}$ - $\frac{1}{2}$  mile): That area which can be designated with clarity and simplicity not possible in middle and background because the observer is a direct participant. He can have the impressions of immediate details--bark pattern, boulder forms, or degraded parts. This is a zone of important linkage because it sets a tone of quality or its absence. Intensity of color and its value will be at a maximum level, lacking the effect of color diminution due to atmospheric scattering of light rays. At greater distances, the intensification of aerial perspective becomes an important means of discrimination.

Middleground ( $\frac{1}{4}$ - $\frac{1}{2}$  to 3-5 miles): A critical area for two reasons. This is where the parts of the landscape can be seen to join together, where hills become a range or trees make a forest. This is also where manmade changes may be revealed as sitting comfortably upon the landscape. Or where conflicts of form, color, shape, or scale show up. Colors will be unmistakable but they will be more blue, softer than those of the foreground. Some of the sharpness of value contrasts will be reduced.

Background (3-5 to infinite miles): That area where distance effects are primarily explained by aerial perspective. Surfaces of land forms will lose detail distinctions, emphasis will be on outline or edge, with background becoming an effective foil against which foreground or background is more clearly seen--a figure-ground relationship. Silhouettes and ridges of one land mass against another are the conspicuous visual parts of the background with skyline the strongest line of all (Litton).

### Districts:

The medium-to-large sections of the city, conceived of as having two-dimensional extent, which the observer mentally enters "inside of", and which are recognizable as having some common, identifying character. Always identifiable from the inside, they are also used for exterior reference if visible from the outside. (Lynch)

---

Diversity.

The number of pattern elements as well as the variety among them, and edge relationships between them.

Dominance:

Dominance of components or specific features in a scene may be dominant because of prominent positioning, contrast, extent, or importance of pattern elements.

Edges:

The linear elements not used or considered as paths by the observer. They are the boundaries between two phases, linear breaks in continuity: shores, railroad cuts, edges of development, walls. They are lateral references rather than coordinate axes. Such edges may be barriers, more or less penetrable, which close one region off from another; or they may be seams, lines along which two regions are related and joined together. These edge elements, although probably not as dominant as paths, are for many people important organizing features. (Lynch)

Ephemeral Influences:

Those diverse and transitory effects that defy cataloging. Some of them are positively related to light but represent somewhat more unusual phenomena; they could be described as "double-take" effects. As factors they are divided into four groupings: 1) meteorological conditions, 2) seasonal expectations, 3) projected and reflected images, and 4) animal occupancy and signs. (Litton)

Esthetics:

The science or philosophy concerned with the quality or sensory experience (in this course, limited to visual experience). A branch of philosophy dealing with the nature of the beautiful and with judgments concerning beauty. It is also viewed as a body of knowledge about those characteristics of objects that make them pleasing or displeasing to the senses, and those characteristics of human perception that affect sensation. The quality of being esthetic is not the opposite of the qualities of "practicality" or "reality," but rather another aspect or way of experiencing the same real world phenomena. Thus, blue skies, uncontaminated water and uncluttered urban landscapes all have aesthetic value, because they imply health, pleasure and security. (Murtha)

Form:

One of the four basic elements of visual pattern (usually the strongest); the mass or shape of an object.

---

---

## Human Response to Landscape:

Descriptive Assessments: A human response to the landscape which simply seeks to depict, rate, measure, etc., the attributes of specific visual resources or landscapes.

Evaluative Appraisals: A judgment of the relative quality of specific visual resources or landscapes against some implicit or explicit standard of comparison.

Preferential Judgments: An expression of a wholly personal subjective appreciation of (or repugnance for) specific visual resources or landscapes. (Craik)

## Imageability:

That quality in a physical object which gives it a high probability of evoking a strong image in any given observer. It is that shape, color, or arrangement which provides a strongly identified, powerfully structural, highly useful mental image of the environment.

## Intactness:

The integrity of visual order in the natural and man-built landscape, and the extent to which the landscape is free from visual encroachment.

## Inter-visibility:

The principle that from any point visible to an observer, the observer can also be seen.

## Landmarks:

Another type of point reference, but in this case the observer does not enter within them, they are external. They are usually a rather simply defined physical object: building, sign, store or mountain. Some landmarks are distant ones, typically seen from many angles and distances, over the tops of smaller elements, and used as radial references. They may be within the city or at such a distance that for all practical purposes they symbolize a constant direction. (Lynch)

## Landscape:

Landform and landcover forming a distance visual pattern. Landcover comprises water, vegetation and manmade development, including cities.

## Landscape Control Points:

A network of permanently established observation sites which provide the means of studying the visual impact of alternatives to the landscape. (Similar terms: Observation Points, Observer Viewpoints). (Litton)

---

---

**Landscape Form:**

A landform or landcover mass composed of heterogeneous visual elements, but distinguished from surrounding areas by overall form, pattern, and edge. Landscape forms have physical dimensions and a specific location. They also often have names: Bunker Hill is a named landform mass; Boston is a named area of landcover.

**Landscape Type:**

An area of landform plus land cover forming a distinct, homogeneous component of a landscape, differentiated from other areas by its degree of slope plus a single pattern of landcover.

A landscape type is a unique segment of the environment. This segment or portion of the environment can be separated from other segments on the basis of the land cover and the landform. Any landscape type can be subdivided into unique landscape sub-types, through definition of the desired homogeneity of the landscape type. For example, a forest is composed of different tree types, and each tree is itself made up of branches, a trunk and foliage and so on. (Vaughn)

**Landscape Unit:**

- a. An area or volume of distinct landscape character which forms a spatially enclosed unit at ground level; it may include more than one landscape type; outdoor room.
- b. The extent of a single landscape type which is not spatially enclosed at ground level.

**Line:**

Geometrically, a point that has been extended, or the intersection of two planes, e.g., a silhouette, or a boundary between patterns in the landscape. The second strongest of the four basic visual pattern elements.

**Local Values and Goals:**

The landscape setting and its visual resources may be valued by local viewer groups for reasons not evident in an assessment based strictly on visual resources and not widely known outside the community.

**Management Principles:**

Protect: To guard, maintain, prevent impact (U.S.F.S. "preservation").

---

---

Enhance: To augment, heighten positive impact, improve above a standard (U.S.F.S. "enhancement").

Conserve: To utilize with minimum impact on a standard (U.S.F.S. "retention").

Mitigate: To alleviate, moderate negative impact, upgrade to an acceptable standard (U.S.F.S. "modification" and "rehabilitation").

**Nodes:**

Points, the strategic spots in a city into which an observer can enter, and which are the intensive foci to and from which he is traveling. They may be primarily junctions, places of a break in transportation, a crossing or convergence of paths, moments of shift from one structure to another. Or the nodes may be simply concentrations, which gain their importance from being the condensation of some use or physical character. (Lynch)

**Observer Position:**

A term employed to describe the observer's elevational relationship between himself and the landscape he sees. It is used to indicate if he is essentially below, essentially at the same level, or essentially above the visual objective. Three specific terms are used: 1) observer inferior, viewer below object; 2) observer normal, viewer on level of object; 3) observer superior, viewer above object.

**Observer Viewpoint:**

A point from which a select view is analyzed and/or evaluated. Analogous concept: Landscape control point. (Litton)

**Orientation:**

The necessary information and opportunities to see significant features indicating location, direction, and progress. The needs of orientation are:

- 1) Sense of Location: The driver's awareness of his location in the environment at any point during travel.
  - 2) Sense of Direction: The driver's sense of travel direction, both compass direction (north-south) and geographic direction (i.e., along the shore).
  - 3) Sense of Progress: The driver's sense that he is making progress from his origin to his destination.
-

---

Physical orientation elements in the landscape that satisfy such needs are the following:

- 1) Landmark Feature: A prominent or conspicuous object in the landscape that serves as a guide.
- 2) Landmark Areas: An area having distinctive characteristics and definable boundaries that are useful to the traveler in determining where he is.
- 3) Linear Elements: Features in the landscape with directional characteristics because they lie on a perceived axis and/or connect other features.

(Hornbeck)

**Paths:**

The channels along which the observer customarily, occasionally, or potentially moves. They may be streets, walkways, transit lines, canals, railroads. For many people, these are the predominant elements in their image. People observe the city while moving through it, and along these paths the other environmental elements are arranged and related. (Lynch)

**Pattern Character Compatibility:**

The degree to which the visual character of the highway blends with that of the surrounding landscape, in terms of dominance, scale, diversity, and continuity; related to intactness and lack of encroachment.

**Pattern Element Compatibility:**

The degree to which the line, form, color and texture of the highway and related facilities conform, rather than contrast, to the basic visual pattern of the landscape setting; related to the vividness of the highway in its setting.

**Scale:**

Visual scale is the apparent size relationships between landscape components or features and their surroundings.

**Sightline:**

The unobstructed line of sight between an observer and viewed object.

**Slope:**

An area of landform surface differentiated from other areas by its degree of slope. It is a component of landforms but is not limited in place or extent. E.g.: cliff, gentle slope, flat plain. Analogous concept: Landtype (U.S.F.S.)

---

---

**Texture:**

The visual or tactile surface characteristic of various elements in the landscape; often the least dominant of the four visual pattern elements.

**Uniqueness:**

A resource-oriented criterion: a visual resource, visual character, or visual quality which is rare or uncommonly found at a regional or national scale.

**Unity:**

The degree to which the visual resources of the landscape join together to form a coherent, harmonious visual pattern. Unity refers to the compositional harmony or inter-compatibility between landscape elements.

**Viewer Activity:**

The extent of a viewer's ability to perceive the landscape and its detail may be heightened or decreased by the visual requirements of his current activity and his past experience of the landscape.

**Viewer Awareness:**

A viewer's receptivity to the visual character of the landscape can be affected by elements and relationships in the landscape setting itself or by expectations about the setting. Visual experience contrary to expectation may be suppressed or heightened, depending on the degree of disagreement.

**Viewer Response:**

Measures of viewer response to change in visual resources include viewer exposure, viewer sensitivity, cultural significance and local values.

**Viewer Exposure:**

The degree to which viewers are exposed to a view by their physical location, numbers viewing and duration of view.

**Viewer Groups:**

Classes of viewers differentiated by their visual response to the highway and its setting; response is affected by viewer activity, awareness and values.

**Viewer Sensitivity:**

The viewer's variable receptivity to the elements within the environment that he is viewing, affected by viewer activity and awareness. A person cannot readily notice every object and all the attributes of the objects that compose the total visual environment. Analogous concept: sensitivity level (U.S.F.S. and B.L.M.).

---

---

Viewshed:

- 1) All the surface areas visible from an observer's viewpoint.
- 2) Surface areas from which a critical object or viewpoint is seen.

Analogous terms: seen area, visible area.

Existing and Topographic Viewsheds:

- a) Existing Viewshed: The area normally visible from an observer's viewpoint, including the screening effects of intermediate vegetation and structures.
- b) Topographic Viewshed: The area which would be visible from a viewpoint based on landform alone, without the screening effect of vegetation and structures.

Composite Viewsheds:

- a) Definition: Composite of overlapping areas visible from:
  - A continuous sequence of viewpoints along a road.
  - A network of viewpoints surrounding a road (or object).
- b) The Visual Corridor: Each visually and spatially distinct experience.

View:

A scene observed from a given vantage point.

Visual Absorption:

The physical capacity of a landscape to screen proposed development and still maintain its inherent visual character. Two major factors affecting the absorption capacity of a landscape are: 1) the degree of visual penetration, and 2) the complexity of the landscape. The degree of visual penetration (i.e., the distance into the landscape that you can see from a vantage point) is affected both by vegetation and topography. The higher the visual penetration, the lower the ability of the landscape to visually absorb development and still maintain its existing visual character. Also, the higher the visual complexity within a landscape, the greater the visual absorption. (Vaughn)



---

**Visual Alteration:**

The degree of change in visual resources caused by highway development and operations, assessed without regard to viewer response.

**Visual Assessment Units:**

A portion of the area visible or potentially visible from a highway project or from which a highway project may be seen; to be useful in visual assessment, it should be identified on the basis of visual distinctions, such as landscape unit boundaries.

**Visual Character:**

The visual character of a landscape is formed by the order of the patterns composing it. The elements of these patterns are the form, line, color and texture of the landscape's visual resources. Their interrelationships can be objectively described in terms of dominance, diversity, continuity, and so on.

**(Visual) Cognition:**

The process of recognizing visual relationships among objects and between objects and their setting.

**Visual Compatibility:**

The degree to which development with specific visual characteristics is visually unified with its setting. Visual compatibility can be evaluated with reference to Pattern Elements and Pattern Character. Analogous concepts: contrast rating (B.L.M.), visual absorption criteria (U.S.F.S.), external harmony (Tunnard and Pushkarev).

**Visual Corridor:**

A continuous succession of visually and spatially distinct experiences.

**Visual Impact:**

The degree of change in visual resources and viewer response to those resources caused by highway development and operations.

**Visual Information:**

Visual information in a landscape is:

- 1) The identity of landscape components or features such as mountains, valleys, rivers, forests, towns or highways.
- 2) The message conveyed by signs and symbols in verbal or graphic form.

**(Visual) Interpretation:**

The process of judging or evaluating the visual appearance of objects and/or their setting.

---

---

**Visual Pattern Elements:**

Form, line, color, texture. Analogous term: dominance elements (U.S.F.S.).

**(Visual) Perception:**

The process of visually identifying and distinguishing objects from their setting.

**Visual Quality:**

While many factors contribute to a landscape's visual quality, they can ultimately be grouped under three headings: Vividness, Intactness and Unity. Analogous concepts: Scenery quality rating (B.L.M.), variety class (U.S.F.S.).

**Visual Resource Management in the Highway Development Process:**

Making and implementing decisions during the Highway Development Process which affect the visual resources of the highway and its setting and viewer response on character, content and quality of those resources.

**Visual Resources:**

The appearance of the features that make up the visible landscape. Includes the land, water, vegetative, animal, and other features that are visible on all national resource lands. (U.S.F.S.)

**Visual Vulnerability:**

The degree to which manmade changes might be seen in the landscape and their potential for degradation (of scenic quality)--in essence, the landscape's resistance or susceptibility to visual changes. (Litton)

**Vividness:**

The memorability of the visual impression received from contrasting landscape elements as they combine to form a striking and distinctive visual pattern.

**VRM Needs:**

The degree to which specific visual resources require management for specific viewer groups.

**VRM Objective:**

Statement of a Visual Resource Management result to be achieved, specifying:

- 1) management principle
  - 2) measure of effect
  - 3) visual resources to be managed
  - 4) viewing group(s) for which resources are to be managed.
-

---

VRM Plan:

A specification of the management actions, timing, personnel, and financial resources by which given visual resources are to be managed, once a project has been geographically located.

VRM Unit:

A geographic unit for the management of visual resources; frequently identical to the assessment unit, or to a landscape type.

**WSDOT**  
**Visual Quality Assessment**  
**Forms**

# Visual Quality Analysis

## VIEW TO AND FROM PROJECT

0 1 2 3 4 5 6 7 8 9 10

---comments---

---

### **VIVIDNESS**

10	VERY HIGH
9	HIGH
7,8	MODERATELY HIGH
4,5,6	AVERAGE
2,3	MODERATELY LOW
1	LOW
0	VERY LOW

---

### **INTACTNESS**

#### **(MAN-MADE DEVELOPMENT)**

10	NO DEVELOPMENT
9	LITTLE DEVELOPMENT
7,8	SOME DEVELOPMENT
4,5,6	AVERAGE LEVEL OF DEVELOPMENT
2,3	MODERATELY HIGH DEVELOPMENT
1	HIGH LEVEL OF DEVELOPMENT
0	VERY HIGH LEVEL OF DEVELOPMENT

#### **(NATURAL ENVIRONMENT)**

10	VERY HIGH
9	HIGH
7,8	MODERATELY HIGH
4,5,6	AVERAGE
2,3	MODERATELY LOW
1	LOW
0	VERY LOW

---

### **UNITY**

10	VERY HIGH
9	HIGH
7,8	MODERATELY HIGH
4,5,6	AVERAGE
2,3	MODERATELY LOW
1	LOW
0	VERY LOW



**VIEW TOWARD THE ROAD**

**VISUAL QUALITY ASSESSMENT**

SR	10-Feb-97	VIEW UNIT NUMBER (E-existing, P-proposed)	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15		
LEVEL 1	GENERAL VISUAL QUALITY	SPECIAL FEATURES																	
		LAND																	
		WATER																	
		VEGETATION																	
		MAN-MADE																	
		LAND																	
		WATER																	
		VEGETATION																	
		MAN-MADE																	
		LAND																	
		WATER																	
		VEGETATION																	
		MAN-MADE																	
		MAN MADE																	
		LEVEL 2	GENERAL VISUAL QUALITY	NATURAL ENVIRONMENT															
AVERAGE																			
NATURAL ENVIRONMENT																			
AVERAGE																			
NATURAL ENVIRONMENT																			
AVERAGE																			
OVERALL																			
MAN-MADE																			
OVERALL																			
MAN-MADE																			
OVERALL																			
WITHIN RW																			
OUTSIDE RW TO NATURAL BREAK																			
NATURAL BREAK TO INFINITY																			
LEVEL OF IMPORTANCE																			
SUB-TOTAL	WITHIN RW																		
	OUTSIDE RW TO NATURAL BREAK																		
	NATURAL BREAK TO INFINITY																		
<b>TOTAL VISUAL QUALITY</b>																			
VIEW UNIT NUMBER (E-existing, P-proposed)		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15			







## Index

### **Supplemental Draft EIS Preparation Notices**

Notice of Supplemental Draft EIS Preparation, *EQB Monitor Vol. 37, No. 15*, July 22, 2013.

Intent to Prepare a Supplemental Draft Environmental Impact Statement for the Southwest Light Rail Transit Extension Project (Formerly Referred to as the Southwest Transitway), *Federal Register, Vol. 78, No. 140*, July 22, 2013.

### **Public Meeting Notices**

Operation and Maintenance Facility site Selection Public Open Houses, May 2013.

Freight Rail Issues Public Open Houses, June 2013.

Light Rail Station Locations Public Open Houses, July 2013.

Freight Rail Issues Public Community Meetings, July 2013.

Southwest Light Rail Recommendations for the Minneapolis Segment, October 2013.

Southwest Light Rail Studies in the Kenilworth Corridor Town Hall/Community Meetings, January 2014.

Draft Results of the Southwest Light Rail Studies in the Kenilworth Corridor Town Hall/Community Meetings, February 2014

**Supplemental Draft EIS Preparation Notices**

---

## NOTICE OF SUPPLEMENTAL DEIS PREPARATION

**Project Title:** Supplemental Draft Environmental Impact Statement for the Southwest Light Rail Transit Project (formerly referred to as the Southwest Transitway)

**RGU:** Metropolitan Council

**Description:** The Federal Transit Administration (FTA), the Federal lead agency, and the Metropolitan Council (Council), the local lead agency, intend to publish a Supplemental Draft Environmental Impact Statement (SDEIS) for the Southwest Light Rail Transit (SWLRT) Project (formerly referred to as the Southwest Transitway), in accordance with the National Environmental Policy Act (NEPA), its implementing regulations, provisions of the Moving Ahead for Progress in the 21st Century (MAP-21), and Minnesota Administrative Rules Chapter 4410, Environmental Review.

On September 8, 2008, the notice to prepare a Draft Environmental Impact Statement (DEIS) for the Southwest Transitway project was published in the *EQB Monitor*. Availability of the DEIS was published in the *EQB Monitor* and the document was distributed on October 15, 2012. Public Hearings were held in November, 2012 and the public comment period concluded on December 31, 2012.

The Project is a new 15.8-mile light rail alignment with 17 new light rail stations, several new park-and-ride lots, and one new light rail operations and maintenance facility (OMF). The project requires modification to existing freight rail alignments within the project vicinity. The SDEIS will evaluate environmental impacts associated with proposed adjustments to the Locally Preferred Alternative, freight rail alignments, and location of the OMF. The SDEIS will also incorporate pertinent issues raised during the DEIS comment period. FTA and the Council anticipate that the SDEIS scope will include, but not be limited to, the following areas: Eden Prairie LRT alignment and stations; LRT OMF site; freight rail alignments (i.e., Relocation and Co-location); and other areas where FTA and the Council determine that there is a need to be supplemented with additional information which was not included in the Project's October 2012 DEIS.

Written comments on the scope of the SDEIS as outlined above may be submitted to Ms. Nani Jacobson (see contact information below) by August 12, 2013, which is within 20 days of publication this notice. Comments received within this period, and responses to the comments, will be included in the SDEIS.

**Contact Person:**

Ms. Nani Jacobson, Project Manager  
Southwest Light Rail Transit Project Office  
6465 Wayzata Boulevard, Suite 500, St. Louis Park, MN 55426  
Telephone: 612-373-3808  
E-mail: [nani.jacobson@metrotransit.org](mailto:nani.jacobson@metrotransit.org).

Notice regarding the intent to prepare the SDEIS will be sent to the appropriate federal, state, and local agencies that have expressed or are known to have an interest or legal role in this proposed action. Following publication and review of the SDEIS, a FEIS will be prepared and circulated.

**Additional Information:** The SWLRT Project (Green Line Extension) will operate from downtown Minneapolis through the southwestern suburban cities of St. Louis Park, Hopkins, Minnetonka, and Eden Prairie, passing in close proximity to the city of Edina. The proposed alignment is primarily at-grade and includes 17 new stations and approximately 15.8-miles of double track. The line will connect major activity centers in the region including downtown Minneapolis, the Opus/Golden Triangle employment area in Minnetonka and Eden Prairie, Methodist Hospital in St. Louis Park, the Eden Prairie Center Mall, and the Minneapolis Chain of Lakes. Ridership in 2030 is projected at 29,660 weekday passengers. The project will interline with Central Corridor LRT (Green Line) which will provide a one-seat ride to destinations such as the University of Minnesota, state Capitol, and downtown St. Paul. It will be part of an integrated system of

transitways, including connections to the METRO Blue Line, the Northstar Commuter Rail line, a variety of major bus routes along the alignment, and proposed future transitway and rail lines. The Metropolitan Council will be the grantee of federal funds. The regional government agency is charged with building the line in partnership with the Minnesota Department of Transportation. The Southwest Corridor Management Committee, which includes commissioners from Hennepin County and the mayors of Minneapolis, St. Louis Park, Edina, Hopkins, Minnetonka, and Eden Prairie, provides advice and oversight. Funding is provided by the FTA, Counties Transit Improvement Board (CTIB), state of Minnesota, and Hennepin County Regional Railroad Authority (HCRRA). Additional information on the SWLRT project can be found at [www.swlrt.org](http://www.swlrt.org).

## ALTERNATIVE URBAN AREAWIDE REVIEW ADOPTED

### Project Title: FMC Site Development

**Project Description:** The City Council of the city of Fridley approved Resolution #2013-33 on July 8, 2013, approving and certifying the adequacy of the Alternative Urban Areawide Review (AUAR) document for the FMC Site Redevelopment. Copies of the draft AUAR were available for public and agency review and noticed in the EQB Monitor on April 1, 2013. The Final AUAR with responses to the comments received during the draft AUAR review period was available for public and agency review on June 10, 2013.

Please direct any questions to Scott J. Hickok, AICP, Community Development Director, at 763-572-3590.

RGU: City of Fridley

## NOTICES

### Notification of Release of Genetically Engineered Organisms

File Number	Company	Crop	Project	County
13-NO-074	M.S. Technologies, LLC	soybean	Herbicide Tolerant	Renville

For more information contact Dr. Steve Malone, Minnesota Department of Agriculture, 625 Robert St N., St. Paul, MN 55155, 651-201-66531, [stephen.malone@state.mn.us](mailto:stephen.malone@state.mn.us)

**DEPARTMENT OF TRANSPORTATION****Federal Transit Administration****Intent To Prepare a Supplemental Draft Environmental Impact Statement for the Southwest Light Rail Transit Extension Project (Formerly Referred to as the Southwest Transitway)**

**AGENCY:** Federal Transit Administration (FTA), Department of Transportation.

**ACTION:** Notice of Intent to prepare a Supplemental Draft Environmental Impact Statement

**SUMMARY:** The Federal Transit Administration (FTA), the Federal lead agency, and the Metropolitan Council (Council), the local lead agency, intend to publish a Supplemental Draft Environmental Impact Statement (SDEIS) for the Southwest Light Rail Transit Extension (SWLRT) Project (formerly referred to as the Southwest Transitway Project), in accordance with the National Environmental Policy Act (NEPA), its implementing regulations, provisions of the Moving Ahead for Progress in the 21st Century (MAP-21), and the Minnesota Environmental Policy Act (MEPA). The original Notice of Intent to prepare a DEIS for the Project was issued on September 23, 2008. The Project's Draft Environmental Impact Statement (DEIS) was published on October 12, 2012, with a public comment period concluding on December 31, 2012. The Project is a new 15.8-mile light rail alignment with 17 new light rail stations, several new park-and-ride lots, and one new light rail operations and maintenance facility (OMF). The project requires modification to existing freight rail alignments within the project vicinity. The SDEIS will evaluate environmental impacts associated with proposed adjustments to the Locally Preferred Alternative, freight rail alignments, and location of the OMF. The SDEIS will also incorporate pertinent issues raised during the DEIS comment period.

For commenting purposes under NEPA, written comments on the scope of the SDEIS should be directed to Ms. Nani Jacobson, Project Manager, Southwest Light Rail Transit Project Office, 6465 Wayzata Boulevard, Suite 500, St. Louis Park, MN 55426, Telephone: 612-373-3808; Email: [nani.jacobson@metrotransit.org](mailto:nani.jacobson@metrotransit.org). Comments on the scope may be submitted within 20 days of publication of the preparation notice in the state publication, the EQB Monitor. Notice in the EQB Monitor is anticipated to be published on July 22, 2013, with the 20 day period for submitting written

comments ending on August 12, 2013. In accordance with MEPA, comments received within this period, and responses to the comments, will be included in the SDEIS.

**FOR FURTHER INFORMATION CONTACT:** For general information on FTA's NEPA review, please contact Maya Sarna, Department of Transportation, 1200 New Jersey Avenue SE., East Building, Washington DC 20590, Telephone: (202) 366-5811.

**SUPPLEMENTARY INFORMATION:** The SWLRT Project will operate from downtown Minneapolis through the southwestern suburban cities of St. Louis Park, Hopkins, Minnetonka, and Eden Prairie, passing in close proximity to the city of Edina. The proposed alignment is primarily at-grade and will include 17 new stations and approximately 15.8-miles of double track. The line will connect major activity centers in the region including downtown Minneapolis, Methodist Hospital in St. Louis Park, the Opus/Golden Triangle employment area in Minnetonka and Eden Prairie, and the Eden Prairie Center Mall. Ridership in 2030 is projected at 29,660 weekday passengers. The project will connect with the Green Line (Central Corridor LRT), which will provide a one-seat ride to destinations such as the University of Minnesota, the State Capitol, and downtown St. Paul. The proposed SWLRT will be part of an integrated system of transitways, including connections to the METRO Blue Line, the Northstar Commuter Rail line, a variety of major bus routes along the alignment, and proposed future transitway and rail lines.

The SDEIS will supplement the evaluation of impacts included in the Project's DEIS where there have been adjustments to the design of proposed LRT and freight rail alignments, stations, park-and-ride lots, and an OMF site that would likely result in impacts not documented in the Project's DEIS. FTA and the Council anticipate that the SDEIS scope will include, but not be limited to, the following areas: Eden Prairie LRT alignment and stations; LRT OMF site; freight rail alignments (i.e., Relocation and Co-location); and other areas where FTA and the Council determine that there is a need to be supplemented with additional information which was not included in the Project's October 2012 DEIS.

Notice regarding the intent to prepare the SDEIS will be sent to the appropriate Federal, State, and local agencies. Following publication and review of the SDEIS, a FEIS will be prepared and circulated.

The Paperwork Reduction Act seeks, in part, to minimize the cost to the taxpayer of the creation, collection, maintenance, use, dissemination, and disposition of information. Consistent with this goal and with principles of economy and efficiency in government, it is FTA policy to limit insofar as possible distribution of complete printed sets of NEPA documents. Accordingly, unless a specific request for a complete printed set of the NEPA document is received before the document is printed, FTA and its grant applicants will distribute only electronic copies of the NEPA document. A complete printed set of the environmental document will be available for review at the Metropolitan Council's offices and elsewhere as will be noted in the Notice of Availability; and electronic copy of the complete environmental document will be available on the Metropolitan Council's Southwest Light Rail Transit Project Web site (<http://www.swlrt.org>).

Issued on: July 11, 2013.

**Marisol Simon,**

*Regional Administrator, FTA Region V.*

[FR Doc. 2013-17506 Filed 7-19-13; 8:45 am]

**BILLING CODE P**

**DEPARTMENT OF TRANSPORTATION****National Highway Traffic Safety Administration**

[Docket No. NHTSA-2012-0075; Notice 2]

**BMW of North America, LLC, a Subsidiary of BMW AG, Grant of Petition for Decision of Inconsequential Noncompliance**

**AGENCY:** National Highway Traffic Safety Administration, DOT.

**ACTION:** Grant of petition.

**SUMMARY:** BMW of North America, LLC<sup>1</sup> a subsidiary of BMW AG,<sup>2</sup> has determined that certain model year (MY) 2012 BMW X6MSAV multipurpose passenger vehicles (MPV) manufactured between April 1, 2011 and March 23, 2012, do not fully comply with paragraph S4.3 (b) of Federal Motor Vehicle Safety Standard (FMVSS) No. 110, *Tire selection and rims and motor home/recreation vehicle trailer load carrying capacity information for motor vehicles with a GVWR of 4,536 kilograms (10,000 pounds) or less*. BMW has filed an appropriate report dated April 4, 2012,

<sup>1</sup> BMW of North America, LLC is a U.S. company that manufactures and imports motor vehicles.

<sup>2</sup> BMW AG is a German company that manufactures motor vehicles.





# PUBLIC OPEN HOUSES

## Operation and Maintenance Facility Site Selection

The Southwest LRT (Green Line Extension) Project will host three public open houses in May to hear public feedback on a short list of potential locations for the Project's Operation and Maintenance Facility (OMF).

### LOCATIONS & TIMES:

**May 13 5:00–7:00 P.M.\***

Eden Prairie City Center, Heritage Rooms  
8080 Mitchell Road, Eden Prairie

\* This open house is being held concurrently with Hennepin County's Transitional Station Area Action Plan meeting at the same location. Visit [www.southwesttransitway.org](http://www.southwesttransitway.org) for details.

**May 15 4:30–7:30 P.M.**

Southwest LRT Project Office  
Park Place West Building  
6465 Wayzata Blvd, Suite 500, St. Louis Park

**May 22 4:30–7:30 P.M.**

Hopkins Center for the Arts, Jaycees Studio  
1111 Mainstreet, Hopkins

Any individual who requires assistance to participate should contact Southwest LRT Community Outreach Coordinator Dan Pfeiffer, [daniel.pfeiffer@metrotransit.org](mailto:daniel.pfeiffer@metrotransit.org) or 612-373-3897. Requests for special assistance should be made seven business days in advance of the scheduled open house.

The facility will house 180 permanent jobs for train operators, skilled mechanics, maintenance personnel and support staff.

At the OMF, light rail vehicles will be cleaned, stored and receive light maintenance.



Above: The Franklin Operation and Maintenance Facility, serving the Blue Line (Hiawatha LRT), features on-site parking for staff and fully enclosed storage areas for light rail vehicles.

To learn more about the  
Green Line Extension Project, visit  
[www.swlrt.org](http://www.swlrt.org)





# PUBLIC OPEN HOUSE & COMMUNITY MEETING

## Operation and Maintenance Facility Site Selection

The Southwest LRT (Green Line Extension) Project will host three public open houses in May to hear public feedback on a short list of potential locations for the Project's Operation and Maintenance Facility (OMF).

### May 22 Hopkins Center for the Arts

(Jaycees Studio)

1111 Mainstreet, Hopkins

Public Open House: 4:30 – 7:30 P.M.

Hopkins Community Meeting: 6:00 – 7:00 P.M.

The facility will house 180 permanent jobs for train operators, skilled mechanics, maintenance personnel and support staff.

At the OMF, light rail vehicles will be cleaned, stored and receive light maintenance.

### ADDITIONAL OPEN HOUSES WILL BE HELD:

#### May 13 5:00 – 7:00 P.M.\*

Eden Prairie City Center, Heritage Rooms  
8080 Mitchell Road, Eden Prairie

\* This open house is being held concurrently with Hennepin County's Transitional Station Area Action Plan meeting at the same location. Visit [www.southwesttransitway.org](http://www.southwesttransitway.org) for details.

#### May 15 4:30 – 7:30 P.M.

Southwest LRT Project Office  
Park Place West Building  
6465 Wayzata Blvd, Suite 500, St. Louis Park



Above: The Franklin Operation and Maintenance Facility, serving the Blue Line (Hiawatha LRT), features on-site parking for staff and fully enclosed storage areas for light rail vehicles.

Any individual who requires assistance to participate should contact Southwest LRT Community Outreach Coordinator Dan Pfeiffer, [daniel.pfeiffer@metrotransit.org](mailto:daniel.pfeiffer@metrotransit.org) or 612-373-3897. Requests for special assistance should be made seven business days in advance of the scheduled open house.

To learn more about the  
Green Line Extension Project, visit  
[www.swlrt.org](http://www.swlrt.org)



# PUBLIC OPEN HOUSES

## Freight Rail Issues

The Southwest LRT (Green Line Extension) Project will host two public open houses June 13, 2013, on engineering concepts for resolving the location of freight rail in the design of the Southwest LRT (Green Line Extension) project.

### LOCATION & TIMES:

**June 13 8:00–9:30 A.M.**  
**4:30–7:00 P.M.**

Benilde-St. Margaret's School  
Commons Cafeteria  
2501 Highway 100 South, St. Louis Park  
([www.bsmschool.org](http://www.bsmschool.org))

The concepts explore various possibilities for co-locating freight and LRT tracks in Minneapolis, as well as options to reroute freight rail traffic in St. Louis Park to make way for LRT tracks. The relocation concepts to be presented will be different than the one described in the Draft Environmental Impact Statement (DEIS).

**See map of concepts on reverse side.**

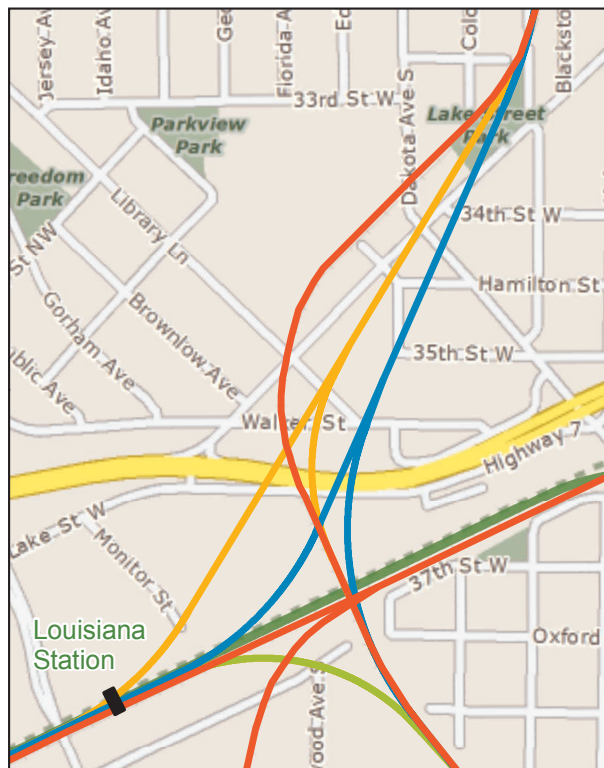
Any individual who requires assistance to participate should contact Southwest LRT Community Outreach Coordinator Sophia Ginis, [Sophia.Ginis@metrotransit.org](mailto:Sophia.Ginis@metrotransit.org) or 612-373-3895. Requests for special assistance should be made seven business days in advance of the scheduled open house.

Both co-location and relocation options would have impacts on residences and businesses, including the freight railroads. The goal is to choose one option and design it in a way that is safe and operationally efficient for both LRT and the freight railroads and cost effective.

Public input at open houses will be summarized and shared with project engineers as they advance the designs. The feedback also will be shared with members of the project's business and community advisory committees, the Corridor Management Committee and the Metropolitan Council to help them understand the issues around co-location and relocation as they provide input.

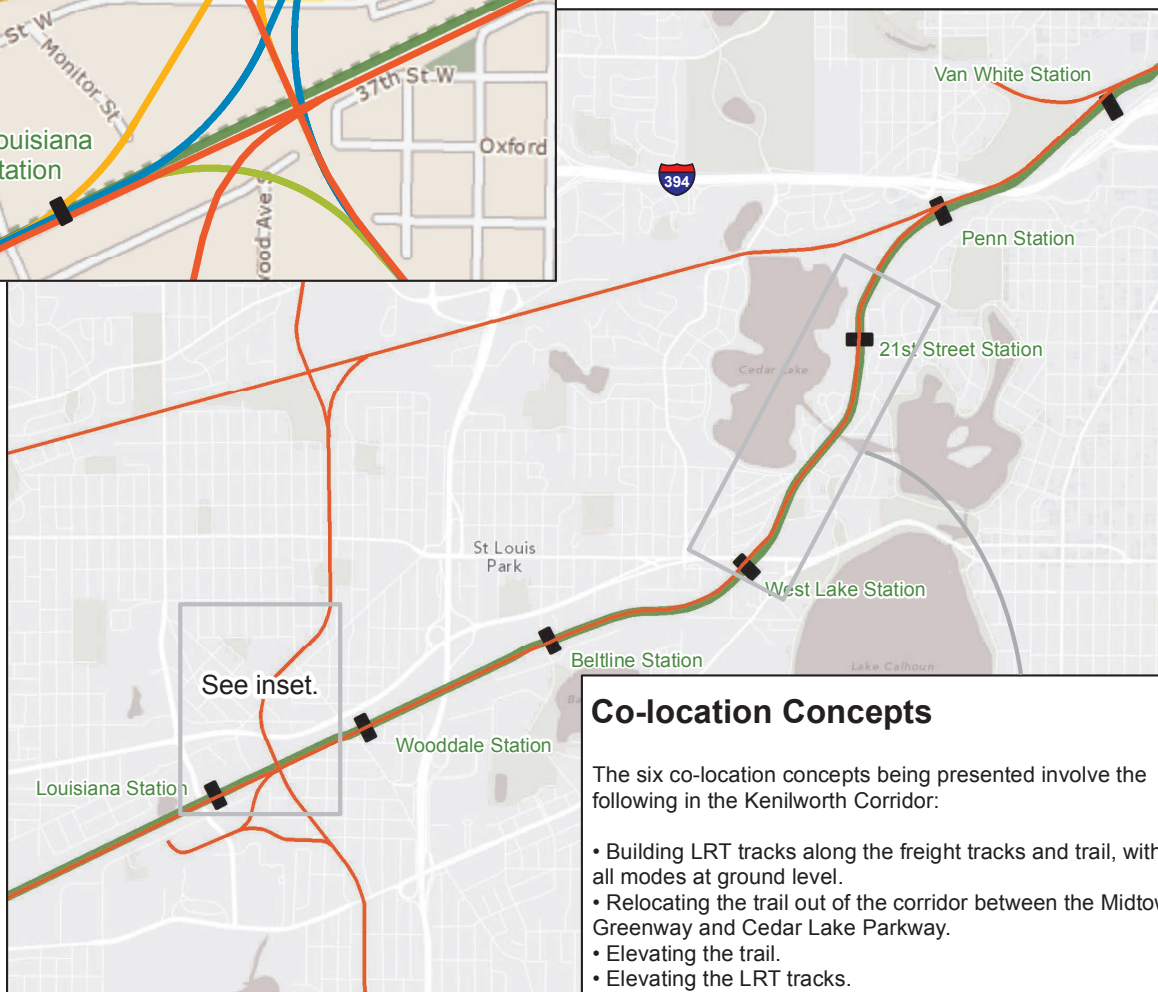
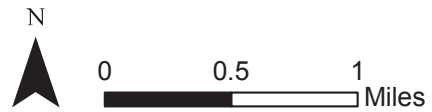
Additional open houses later in June will cover stations and other project elements. Cost impacts of the co-location and relocation concepts will be developed and presented in midsummer.

To learn more about the  
Green Line Extension Project, visit  
[www.swlrt.org](http://www.swlrt.org)



## Relocation Concepts

- Existing Freight Rail
- Brunswick West
- Brunswick Central
- Southern Connection
- Proposed LRT Route



See inset.

## Co-location Concepts

The six co-location concepts being presented involve the following in the Kenilworth Corridor:

- Building LRT tracks along the freight tracks and trail, with all modes at ground level.
- Relocating the trail out of the corridor between the Midtown Greenway and Cedar Lake Parkway.
- Elevating the trail.
- Elevating the LRT tracks.
- Building a shallow tunnel for LRT tracks.
- Building deep twin tunnels, with one tunnel for each LRT track.



# PUBLIC OPEN HOUSES

## Light Rail Station Locations

The Southwest LRT (Green Line Extension) Project will host six open houses in June for the public to learn about, and provide feedback on, proposed locations for all 17 proposed stations.

### LOCATIONS & TIMES:

The public is encouraged to attend the open houses held in the city where they live.

#### MINNEAPOLIS – All Stations

---

**June 17 8–9:30 a.m.**

Metro Transit's Fred T. Heywood Office Building, 560 Sixth Ave N, Minneapolis (<http://goo.gl/maps/uDOZG>).

**June 17 4:30–7 p.m.**

Harrison Recreation Center, 503 Irving Ave. N, Minneapolis (<http://goo.gl/maps/UHtBP>).

**June 24 4:30–7 p.m.**

Kenwood Community Center, 2101 Franklin Ave. W, Minneapolis. (<http://goo.gl/maps/oguGh>).

#### ST. LOUIS PARK – All Stations

---

**June 20 4:30–7 p.m.**

Beth El Synagogue, 5224 W 26th St., St. Louis Park (<http://goo.gl/maps/aRVEP>).

#### MINNETONKA/HOPKINS – All Stations

---

**June 18 4:30–7 p.m.**

Hopkins Center for the Arts, 1111 Mainstreet, Hopkins (<http://goo.gl/maps/oG0SK>).

#### EDEN PRAIRIE – All Stations

---

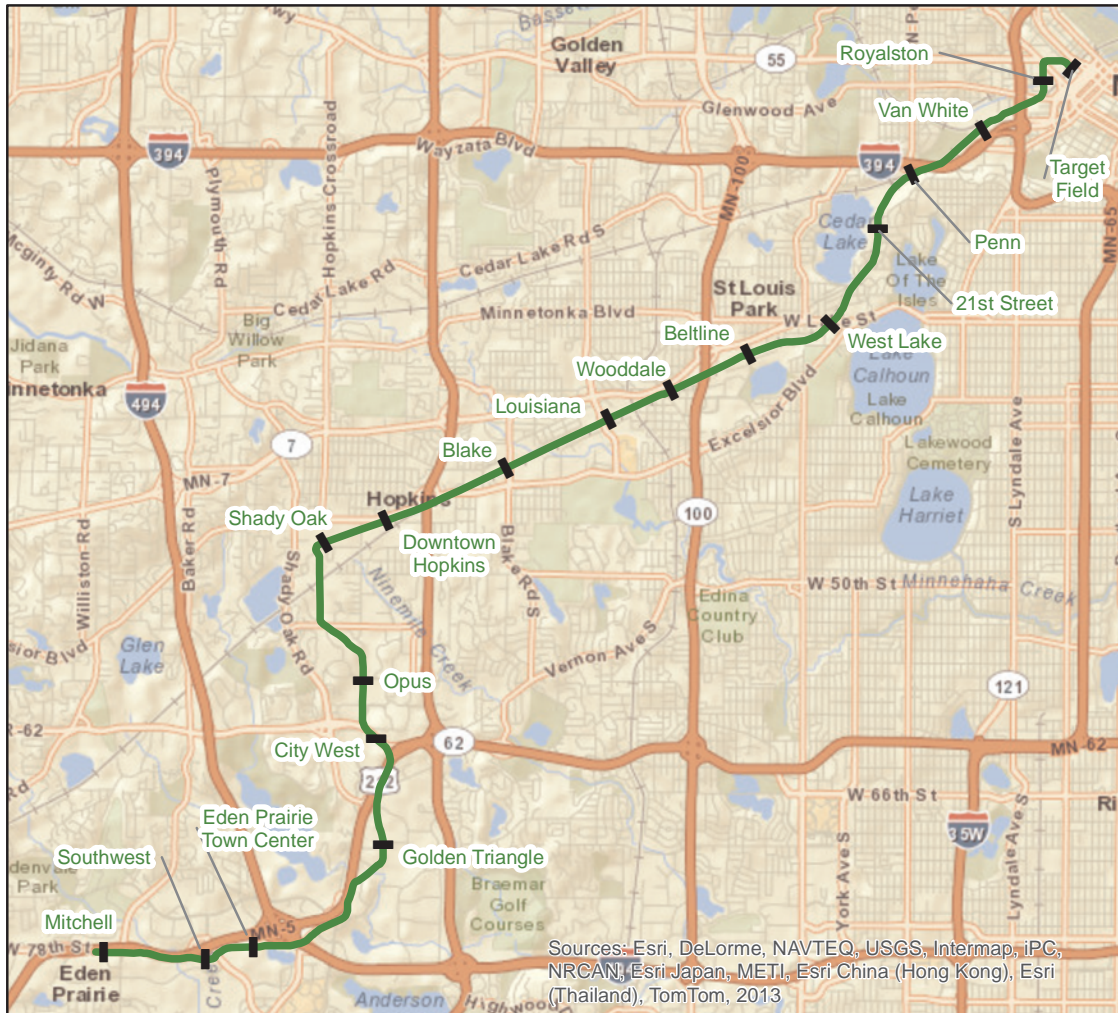
**June 26 4:30–7 p.m.**

Eden Prairie City Center, 8080 Mitchell Rd., Eden Prairie (<http://goo.gl/maps/zpK5l>).

Any individual who requires assistance to participate should contact Southwest LRT Community Outreach Coordinator Daren Nyquist, [Daren.Nyquist@metrotransit.org](mailto:Daren.Nyquist@metrotransit.org) or 612-373-3894. Requests for special assistance should be made seven business days in advance of the scheduled open house.

**See map of proposed station locations on reverse side.**

To learn more about the Green Line Extension Project, visit [www.swlrt.org](http://www.swlrt.org)



Proposed Southwest LRT (Green Line Extension) station locations.

## Proposed Station Locations - Nearest Cross Streets

### Eden Prairie

**Mitchell Road:** Hwy 212 & Mitchell Rd.

**Southwest:** Technology Dr. & Eden Prairie Center Dr.

**Eden Prairie Town Center:** Technology Dr. & Flying Cloud Dr.

**Golden Triangle:** 70th St. W & Shady Oak Rd.

**City West:** 62nd St. W & Shady Oak Rd.

### Minnetonka

**Opus:** Bren Rd. E & Bren Rd. W

### Hopkins

**Shady Oak Road:** 5th St. S & 16th Ave S

**Downtown Hopkins:** Excelsior Blvd. & Eighth Ave. S

**Blake Road:** Blake Rd. & Second St. NE

### St. Louis Park

**Louisiana Avenue:** Louisiana Ave. & Oxford St.

**Wooddale Avenue:** Wooddale Ave. & 36th St. W

**Beltline Boulevard:** Beltline Blvd. & Park Glen Rd.

### Minneapolis

**West Lake Street:** Lake St. W & Chowen/Abbott Ave. S

**21st Street:** 21st St. W & Thomas Ave. S

**Penn Avenue:** I-394 & Penn Ave. S

**Van White Boulevard:** I-394 & Dunwoody Blvd./Van White Blvd.

**Royalston Avenue:** Royalston Ave. & Holden St. N



# PUBLIC COMMUNITY MEETINGS

## Freight Rail Issues

The Southwest LRT (Green Line Extension) Project will host two community meetings July 17 & 18, 2013, on engineering concepts for resolving the location of freight rail in the design of the project.

### LOCATIONS & TIMES:

#### JULY 17 MINNEAPOLIS

**Jones-Harrison Residence**  
3700 Cedar Lake Avenue, Minneapolis  
Open House: 4:30–5:30 P.M.  
Presentation: 5:30–6:15 P.M.  
Facilitated Q & A Session: 6:15–7:00 P.M.  
MAP: <http://goo.gl/maps/UhXfh>

#### JULY 18 ST. LOUIS PARK

**St. Louis Park High School**  
6425 W 33rd Street, St. Louis Park  
Open House: 4:30–5:30 P.M.  
Presentation: 5:30–6:15 P.M.  
Facilitated Q & A Session: 6:15–7:00 P.M.  
MAP: <http://goo.gl/maps/DLBmJ>

The concepts explore various possibilities for co-locating freight and LRT tracks in Minneapolis, as well as options to reroute freight rail traffic in St. Louis Park to make way for LRT tracks. The relocation concepts to be presented will be different than the one described in the Draft Environmental Impact Statement (DEIS).

Both co-location and relocation options would have impacts on residences and businesses, including the freight railroads. The goal is to choose one option

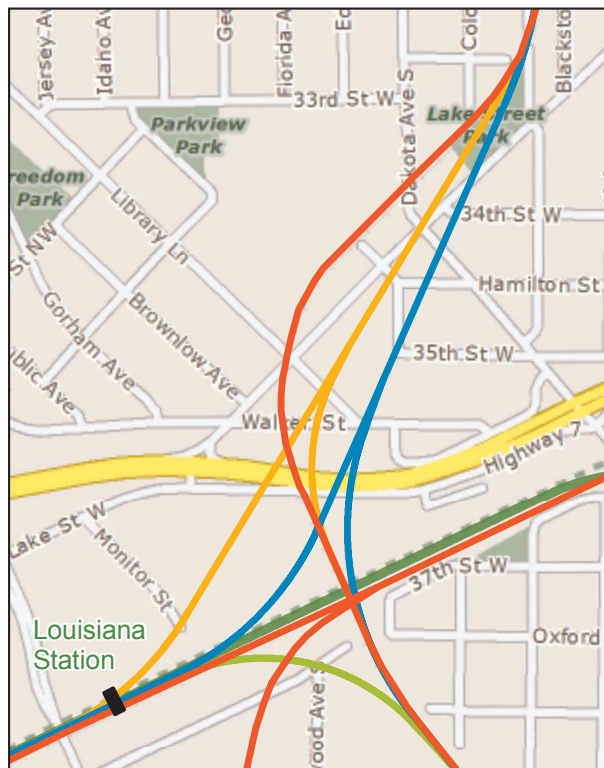
and design it in a way that is safe and operationally efficient for both LRT and the freight railroads and cost effective.

Feedback from these community meetings will be shared with members of the project's Business and Community Advisory Committees, the Corridor Management Committee and the Metropolitan Council to help them understand the issues around co-location and relocation as they provide input.

**See map of concepts on reverse side.**

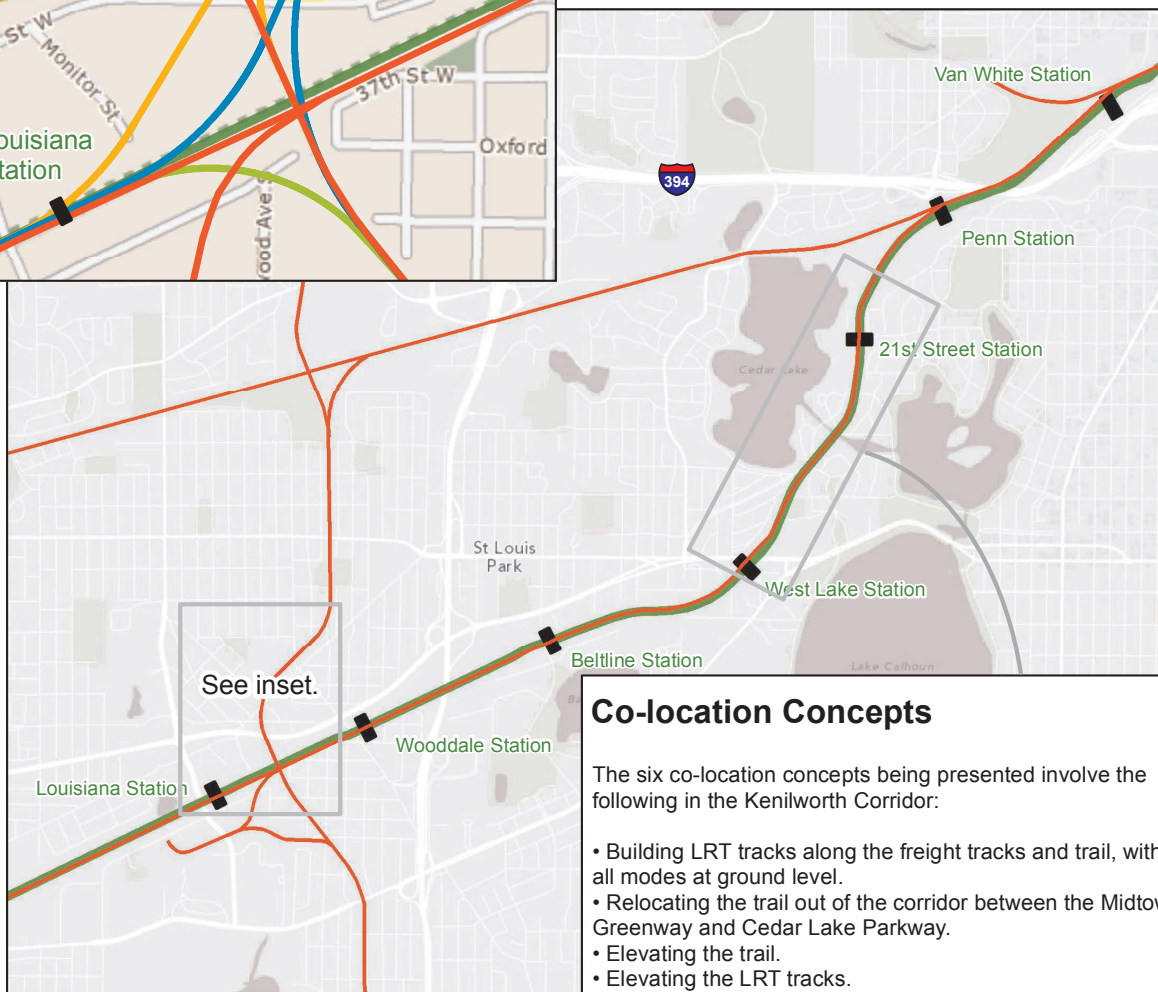
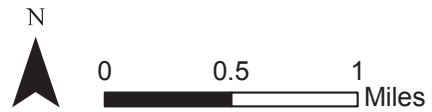
To learn more about the Green Line Extension Project, visit [www.swlrt.org](http://www.swlrt.org)

Any individual who requires assistance to participate should contact Southwest LRT Community Outreach Coordinator Sophia Ginis, 612-373-3895 or [Sophia.Ginis@metrotransit.org](mailto:Sophia.Ginis@metrotransit.org). Requests for special assistance should be made seven business days in advance of the scheduled community meetings.



## Relocation Concepts

- Existing Freight Rail
- Brunswick West
- Brunswick Central
- Southern Connection
- Proposed LRT Route



See inset.

## Co-location Concepts

The six co-location concepts being presented involve the following in the Kenilworth Corridor:

- Building LRT tracks along the freight tracks and trail, with all modes at ground level.
- Relocating the trail out of the corridor between the Midtown Greenway and Cedar Lake Parkway.
- Elevating the trail.
- Elevating the LRT tracks.
- Building a shallow tunnel for LRT tracks.
- Building deep twin tunnels, with one tunnel for each LRT track.



## PUBLIC OPEN HOUSE

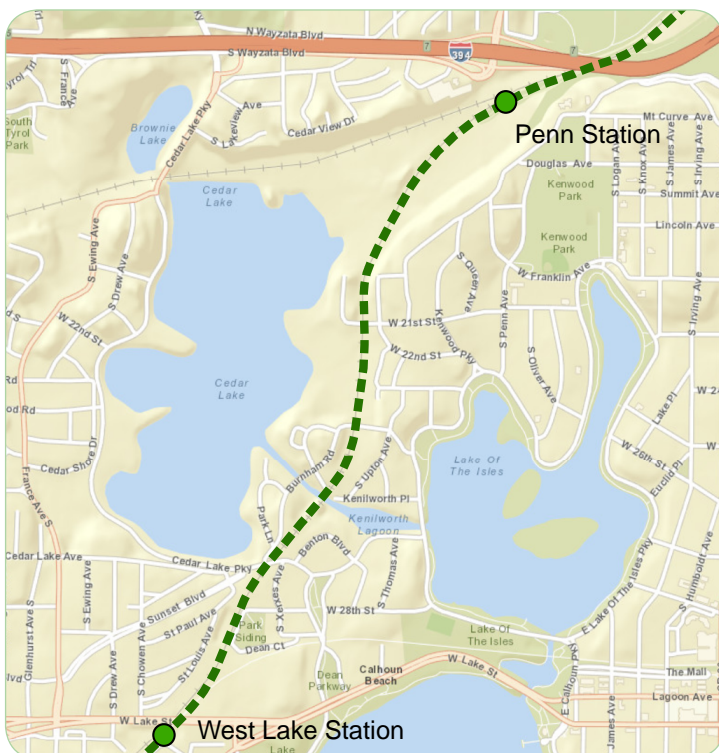
### Southwest LRT Recommendation for the Minneapolis Segment

The Metropolitan Council will host a public open house on Thursday, October 10, 2013 to receive public input on the project office's draft recommendation for the scope and basic design of the Southwest LRT (Green Line Extension) project in Minneapolis.

The Southwest LRT Project Office presented a draft recommendation for the scope and basic design of the light rail line to the project's Corridor Management Committee on October 2.

The draft recommendation includes building shallow tunnels for LRT trains through the Kenilworth Corridor in Minneapolis, eliminating the proposed LRT station at 21st Street and keeping existing freight rail service in the area.

*Proposed route between Cedar Lake and Lake of the Isles.*



#### LOCATION & TIME

**Thursday, October 10, 2013**

**5:30 – 7:30 P.M.**

**Kenwood Community Center**

2101 West Franklin Avenue, Minneapolis

MAP: <http://goo.gl/maps/Tkq84>

This open house will provide an opportunity for community members to ask questions and give feedback on the draft recommendation before the Metropolitan Council considers it.

At this open house, the public will be able to talk with Council members and project staff one-to-one and view engineering drawings of the shallow tunnels. No testimony or formal presentations are planned. Comment cards will be provided.

Any individual who requires assistance to participate should contact Southwest LRT Community Outreach Coordinator Sophia Ginis, 612-373-3895 or [Sophia.Ginis@metrotransit.org](mailto:Sophia.Ginis@metrotransit.org). Requests for special assistance should be made at least 24 hours in advance.

Learn more about Southwest LRT at [www.swlrt.org](http://www.swlrt.org)





# TOWN HALL/COMMUNITY MEETINGS

## Southwest LRT Studies in the Kenilworth Corridor

The Metropolitan Council will host facilitated public community meetings on January 7 & 9, 2014 focused on studies that are currently underway of freight rail, water resources and landscaping/greenscaping in the Kenilworth area of Minneapolis.

### LOCATIONS & TIMES

#### Tuesday, January 7, 2014

5:00 – 7:30 P.M.

#### Kenwood Community Center

2101 Franklin Avenue West, Minneapolis

MAP: <http://goo.gl/maps/oguGh>

#### Thursday, January 9, 2014

5:00 – 7:30 P.M.

#### St. Louis Park Recreation Center

3700 Monterey Drive, St. Louis Park

MAP: <http://goo.gl/maps/waC5T>

In December 2013, the Southwest LRT (Green Line Extension) Project began three studies to clarify important issues that affect the proposed light rail line between Eden Prairie and downtown Minneapolis:

- The location of freight rail service in the Kenilworth Corridor
- Potential impacts of LRT construction on Cedar Lake and Lake of the Isles
- Landscaping and greenscaping in the Kenilworth area

Results of the studies are expected in early 2014.

These meetings will provide opportunities to learn about these studies, talk to project staff and participate in discussions.

### MEETING AGENDA

**5:00 – 5:30** Open house (project staff on hand to answer questions)

**5:30 – 7:30** Welcome and review of meeting purpose

Overview of scopes of work for three studies

Facilitator-led discussion

Wrap-Up/Next Steps

Any individual who requires assistance to participate should contact Southwest LRT Community Outreach Coordinator Daren Nyquist, [Daren.Nyquist@metrotransit.org](mailto:Daren.Nyquist@metrotransit.org) or 612-373-3894 at least seven business days in advance of the scheduled meeting.

Learn more about Southwest LRT at [www.swlrt.org](http://www.swlrt.org)

# DESIGNING A LINE THAT STANDS THE TEST OF TIME



The Southwest Light Rail Transit (Green Line Extension) Project is moving forward with additional studies of technical issues that matter to Twin Cities residents.

***To learn more and stay involved, visit [www.swlrt.org](http://www.swlrt.org).***



In December, the Southwest LRT (Green Line Extension) Project began three studies on important issues that affect the proposed light rail line between Eden Prairie and downtown Minneapolis. Results of the studies are expected in early 2014.

**Freight Rail:** An independent consultant will review options for the relocation of freight rail service that now runs near the proposed LRT route through Kenilworth.

**Water Quality Impacts:** A second independent consultant will review potential impacts of LRT construction and operation on the quality of lake water and groundwater in the Kenilworth Corridor area.

**Accelerated Landscaping & Greenscaping:** The project is creating an inventory of trees and vegetation in the Kenilworth area to identify landscaping and greenscaping opportunities.

In January, the Metropolitan Council will host community meetings focused on the three additional studies. For details on these and other upcoming meetings and events, go to [www.swlrt.org](http://www.swlrt.org).

January 7, 5:00–7:30 p.m., Kenwood Community Center,  
2101 Franklin Ave. W, Minneapolis

January 9, 5:00–7:30 p.m., St. Louis Park Recreation Center,  
3700 Monterey Drive, St. Louis Park

Southwest LRT Project  
6465 Wayzata Blvd., Suite 500  
St. Louis Park, MN 55426



To learn more about Southwest LRT and stay connected:

Visit [www.swlrt.org](http://www.swlrt.org), email [swlrt@metrotransit.org](mailto:swlrt@metrotransit.org) or  
call **612-373-3888** to be connected to a  
Community Outreach Coordinator.



# TOWN HALL/COMMUNITY MEETINGS

## Draft Results of Southwest LRT Studies in the Kenilworth Corridor

Independent consultants will present draft reports on freight rail location alternatives and water resources impacts. The public is invited to ask questions and share comments with Metropolitan Council members and Southwest LRT project staff.

### Monday, February 10, 2014

6:00 – 9:30 P.M.

Dunwoody College of Technology  
Decker Auditorium  
818 Dunwoody Blvd., Minneapolis

Park in west lot; enter via west entrance.

Map: <http://goo.gl/maps/wf1uO>

### Wednesday, February 12, 2014

6:00 – 9:30 P.M.

St. Louis Park Senior High School  
Carl A. Holmstrom Auditorium  
6425 West 33rd Street, St. Louis Park

Park in west lot or on street; enter via School District office door (#2) or main foyer entrance (#5).

Map: <http://goo.gl/maps/5s4WQ>

In December 2013, the Southwest LRT (Green Line Extension) Project began studies of freight rail location alternatives and water resources impacts that could affect the proposed light rail line in the Kenilworth Corridor.

Draft reports from these studies were released on January 30 and are available on the Southwest LRT website at [www.swlrt.org](http://www.swlrt.org). Comments may be submitted online at [www.swlrt.org](http://www.swlrt.org) or via email to [swlrt@metrotransit.org](mailto:swlrt@metrotransit.org).

Any individual who requires assistance to participate should contact Southwest LRT Community Outreach Coordinator Daren Nyquist, [Daren.Nyquist@metrotransit.org](mailto:Daren.Nyquist@metrotransit.org) or 612-373-3894 at least seven business days before the scheduled meeting.

### MEETING AGENDAS

*Agendas will differ at each meeting to reflect the concerns expressed by the communities.*

	Minneapolis	St. Louis Park
Welcome & meeting purpose	6:00	6:00
Water Resources presentation, Q&A, Comments	6:15	6:15
Freight Rail presentation, Q&A, Comments	7:05	6:50
General Q&A; Comments	8:10	8:10
Close and Evaluation	9:10	9:10

**Learn more about Southwest LRT at [www.swlrt.org](http://www.swlrt.org)**