Appendix E.2

Cultural Resources Analysis of Effects for the Xcel Energy Hiawatha Project

CULTURAL RESOURCES ANALYSIS OF EFFECTS FOR THE XCEL ENERGY HIAWATHA PROJECT, MINNEAPOLIS, HENNEPIN COUNTY, MINNESOTA

PREPARED FOR NATURAL RESOURCES GROUP LLC AND XCEL ENERGY SERVICES, INC.

PREPARED BY

and

March 2010

Cultural Resources Analysis of Effects for the Xcel Energy Hiawatha Project, Minneapolis, Hennepin County, Minnesota

Prepared for:
Natural Resource Group, LLC
1000 IDS Center
80 South 8th Street
Minneapolis, MN 55402

Xcel Energy Services, Inc.
414 Nicollet Mall
Minneapolis, MN 55401

Prepared by:
Stark Preservation Planning LLC
www.StarkPreservation.com

and

Summit Envirosolutions, Inc.
www.Summite.com

Report Authors:
William E. Stark, M.A., Stark Preservation Planning LLC
Andrea C. Vermeer, Ph.D. RPA, Summit Envirosolutions Inc.

March 2010

Management Summary

In March 2010, Stark Preservation Planning LLC (Stark) conducted a cultural resources analysis of effects study for the proposed Hiawatha Project (Project), which entails the construction of two new 115-kilovolt (kV) transmission lines and two new substations in south Minneapolis, Hennepin County, Minnesota by Northern States Power, a Minnesota corporation (Xcel Energy). Xcel Energy has submitted an application for a Route Permit to the Minnesota Public Utilities Commission (PUC) for the PUC to determine the Project's impact on the environment, including archaeological and historic resources, and any alternatives that would increase or decrease these impacts.

Xcel Energy has contracted Natural Resource Group, LLC (NRG) to assist with the permitting process. Stark has been retained by NRG to provide additional information on the preferred route and substation sites to analyze the effects of the Project on known historic resources. The purpose of this investigation is to assess the potential effects of the Project on known historic or potential historic resources. Additional analysis was undertaken to assess the potential for underground resources associated with historical streetcar lines and sewer systems to be significant and to be affected by the project. William E. Stark, M.A. served as Project Manager and Principal Investigator for architectural history resources. Andrea Vermeer, Ph.D., RPA of Summit Envirosolutions Inc. served as Principal Investigator for archaeological resources.

Xcel Energy has proposed to construct the Project in Minneapolis, Minnesota. Due to the complexity of running transmission facilities through a largely developed urban area, several transmission line routes and substation locations have been identified as alternatives. The Project would require two new transmission lines to be connected to two new substations. One substation is to be located at the eastern end of the transmission line (referred to as the Hiawatha Substation in the vicinity of Hiawatha Avenue and East 28th Street), and the second substation is to be located at the western end of the transmission line (referred to as the Midtown Substation in the vicinity of Portland Avenue and East 29th Street).

Xcel Energy requested that Stark perform an analysis of effects study on its preferred route, Route A. Route A has three sub-alternatives, Route A1, Route A2, and Route A3. Route A1 is a double circuit overhead alignment from the Hiawatha Substation to the Midtown Substation, generally following the alignment of East 29th Street. Route A2 is an underground alternative generally following the alignment of East 29th Street. Route A3 is an underground route generally following the Midtown Greenway bicycle/pedestrian trail. In addition, Xcel Energy has requested the analysis of effects study to take into account five substation alternatives currently being considered. Three Hiawatha Substation alternatives are located on the east end, and are known as Hiawatha East, Hiawatha West, and the Zimmer-Davis site. Two Midtown Substation alternatives are located on the west end: Midtown North and Midtown South.

Because a significant amount of survey work has been completed within and around the project area over the last several decades, no additional survey to identify historic resources was conducted within

the area of potential effect for this project. For the purposes of this investigation, the analysis completed was for known historic or potentially historic resources. These resources include properties listed in the National Register of Historic Places (NRHP), determined eligible for listing in the NRHP, locally designated by the Minneapolis Heritage Preservation Commission (HPC), or identified on the Minneapolis "800 list." These resources were identified in the cultural resources assessment completed for the Project in 2009 (Stark and Vermeer).

As a preliminary step in the current study, Stark defined the area of potential effect (APE) to define the geographic area or areas within which an undertaking may directly or indirectly cause changes in the character or use of historic properties. The APE took into consideration potential effects such as alteration or removal of a building or structure; changes in the character of a property's use or physical features; and the introduction of visual, atmospheric, or audible elements that could diminish the integrity of a property's significant historic features. At a minimum the APE encompassed an 800-foot (one block) buffer around the transmission line corridor, which was expanded in other areas as field conditions warranted.

The effects analysis was completed for seven known historic resources within the APE for effects from eight Project components and alternatives. The seven known historic resources are the South Side Destructor, the Sears, Roebuck and Company (Sears) building, the Avalon Theater, the Minneapolis Pioneers and Soldiers Memorial Cemetery/Layman's Cemetery, the Zinsmaster Baking Company (Zinsmaster) building, a house at 2812-14 11th Avenue South, and the Chicago, Milwaukee and St. Paul Grade Separation Historic District (Grade Separation historic district). Emphasis was placed on the Project's potential for visual, aesthetic, direct, vibratory, and noise effects that would diminish the qualities that contribute to a historic resource's significance. The Hennepin County Regional Railroad Authority (HCRRA), owner of the Midtown Greenway where the NRHP-listed Grade Separation historic district is located, has established a set of treatment guidelines for specific activities with the potential for affecting the historic district. The Project alternatives were assessed for their ability to meet the recommended guidelines.

Based on the analysis of effects study, several project components were found to have adverse effects or the potential for adverse effects on the known historic properties. The following recommendations are made to remove, reduce, or mitigate the adverse effects.

Midtown South Substation

The Project has the potential to cause adverse effects to the Zinsmaster building resulting from the vibrations created during construction work for the Midtown South substation. Additional investigation may be necessary to determine the extent of vibrations that will be caused by the construction activity, and whether the resulting vibrations have the potential to cause damage to the historic property.

Route A1

Adverse effects to the Zinsmaster building would result from the overhead route A1 alternative, where the position of the pole structure at the southwest corner of Park Avenue and the railroad corridor would obstruct important views from the Zinsmaster building along Park Avenue. Stark recommends

shifting this pole structure to the east, away from the Park Avenue frontage, to resolve this adverse effect.

Route A1 was found to have adverse visual and aesthetic effects on the setting of the Grade Separation historic district. It is important to note that while the adverse effects to the setting in the historic district *diminishes* some of its character-defining features, they would not make the property ineligible for listing in the NRHP. Alternative materials, such as wood poles structures or poles with a weathering steel material finish, may serve to reduce the visual presence of the Project.

Route A2

Because Route A2 is an underground alternative, substantial earth-moving operations may be necessary during the construction process, depending on the methods used. These operations may result in excessive vibrations, which could cause permanent adverse effects to adjacent historic properties, including the historic bridges spanning the trench of the Grade Separation historic district, the Sears building, and the Zinsmaster building. Additional investigation may be necessary to determine the extent of the vibrations caused by the construction activity, and whether the resulting vibrations have the potential to cause damage to the historic properties.

The Route A2 alternative may also have direct effects to the granite retaining wall features west of the 18th Avenue bridge, where the line transitions from the base of the trench to 29th Street, or to concrete retaining walls east of the 10th Avenue bridge, where the line transitions from 29th Street to the base of the trench near 10th Avenue. Should Route A2 be the selected alternative, construction plans should avoid the destruction or removal of historic retaining walls in these and other locations.

Route A3

Like the Route A2 alternative, Route A3 also has the potential to cause adverse effects from vibrations created during the construction phase on the historic bridges of the Grade Separation historic district, the Sears building, and the Zinsmaster building. Procedures for determining the extent of the vibrations and minimizing or removing adverse effects should be undertaken as proposed for Route A2.

Other Recommendations

Substation Screening Walls

The Midtown South Substation site is adjacent to the Zinsmaster building and the Grade Separation historic district. Xcel Energy has proposed the construction of architecturally designed screening walls around the substation sites. Design of the screening wall is of importance and should respond appropriately to the Zinsmaster building and to the Grade Separation historic district. Although properties on Oakland and Portland avenues are not historic resources, the screening wall should respond appropriately to the context of this residential community as well.

Coordination with HCRRA

The HCRRA has developed treatment guidelines for the Grade Separation historic district in order to preserve its character-defining features. Because each of the Route A alternatives would use this corridor and impact it in some way, Xcel Energy should coordinate design details with the HCRRA to

assure that the guidelines are met to the extent possible for the selected route. The development of a memorandum of agreement may be appropriate to address issues such as documentation of the existing conditions, corridor restoration, vegetation restoration plans, and detailed effects to minor elements within the historic district.

Archaeological Resources

In addition to the analysis of effects study, as described above, the investigation also completed a study to assess the potential for underground resources associated with historical streetcar lines and sewer systems to be significant and to be affected by the Project. The investigation concluded that any potentially present archaeological resources associated with the streetcar lines or the sewer lines within the APE would not meet NRHP criteria for significance.

Table of Contents

MANAGEMENT SUMMARY I

TABLE OF FIGURES IX

TABLE OF TABLES X

1.0 INTRODUCTION 1
1.1 SCOPE OF ANALYSIS OF EFFECTS 1
1.2 PROJECT DESCRIPTION 2
1.2.1 Transmission Lines 4
1.2.1.1 Route A1 4
1.2.1.2 Route A2 4
1.2.1.1 Route A3 6
1.2.2 Substations 6
1.2.2.1 Hiawatha West 6
1.2.2.2 Hiawatha East 6
1.2.2.3 Zimmer-Davis 7
1.2.2.4 Midtown North 7
1.2.2.5 Midtown South 7

2.0 METHODS 8
2.1 OBJECTIVES 8
2.2 SEWER LINE AND STREET CAR RESEARCH 8
2.3 EFFECTS STUDY PROCESS 8
2.4 SIGNIFICANCE CRITERIA 10
2.5 GUIDANCE FOR ASSESSING VISUAL AND AESTHETIC EFFECTS 11

3.0 AREA OF POTENTIAL EFFECTS 13
3.1 DELINEATION OF AREAS OF POTENTIAL EFFECT 14
3.1.1 APE for Direct Effects 14
3.1.2 APE for Indirect Effects 14
3.2 INVENTORY OF HISTORIC PROPERTIES WITHIN THE APE 16

4.0 ARCHAEOLOGICAL RESOURCES 19
4.1 ASSESSMENT SUMMARY 19
4.1.1 Transmission Lines 19
4.1.2 Substations 19
4.2 RESULTS FOR ADDITIONAL BELOW-GROUND RESOURCES 20
4.2.1 Streetcar Lines 20
4.2.2 Sewer Lines 21

5.0 ANALYSIS OF EFFECTS ON HISTORIC RESOURCES 23
5.1 SOUTH SIDE DESTRUCTOR 23
5.1.1 Summary of Significance 23
5.1.2 Character-Defining Features 23

5.1.3 Effects 25
5.1.3.1 General Observations 25
5.1.3.2 Aesthetic Effects on Views from Property 25
5.1.3.3 Aesthetic Effects on Views of Property 25
5.1.3.4 Other Effects 25
5.1.3.5 Summary of Effects 25
5.2 Sears, Roebuck and Company 28
5.2.1 Summary of Significance 28
5.2.2 Character-Defining Features 28
5.2.3 Effects 31
5.2.3.1 General Observations 31
5.2.3.2 Aesthetic Effects on Views from Property 31
5.2.3.3 Aesthetic Effects on Views of Property 31
5.2.3.4 Other Effects 33
5.2.3.5 Summary 33
5.2.3.6 Proposed Response to Potential Adverse Effects 33
5.3 Avalon Theater 34
5.3.1 Summary of Significance 34
5.3.2 Character-Defining Features 34
5.3.3 Effects 34
5.3.3.1 General Observations 34
5.3.3.2 Aesthetic Effects on Views from Property 34
5.3.3.3 Aesthetic Effects on Views of Property 36
5.3.3.4 Other Effects 36
5.3.3.5 Summary 36
5.4 Minneapolis Pioneers and Soldiers Memorial Cemetery (Layman's Cemetery) 38
5.4.1 Summary of Significance 38
5.4.2 Character Defining Features 38
5.4.3 Effects 41
5.4.3.1 General Observations 41
5.4.3.2 Aesthetic Effects on Views from Property 41
5.4.3.3 Aesthetic Effects on Views of Property 43
5.4.3.4 Other Effects 43
5.4.3.5 Summary 43
5.5 Zinsmaster Baking Company 45
5.5.1 Summary of Significance 45
5.5.2 Character-Defining Features 45
5.5.3 Effects 47
5.5.3.1 General Observations 47
5.5.3.2 Aesthetic Effects on Views from Property 47
5.5.3.3 Aesthetic Effects on Views of Property 49
5.5.3.4 Other Effects 51
5.5.3.5 Summary 51

5.5.3.6 Proposed Response to Potential Adverse Effects 51
5.6 HOUSE 53
5.6.1 Summary of Significance 53
5.6.2 Character Defining Features 53
5.6.3 Effects 53
5.6.3.1 General Observations 53
5.6.3.2 Aesthetic Effects on Views from Property 55
5.6.3.3 Aesthetic Effects on Views of Property 56
5.6.3.1 Other Effects 56
5.6.3.2 Summary 56
5.7 CM&STP RAILROAD GRADE SEPARATION HISTORIC DISTRICT 57
5.7.1 Summary of Significance 57
5.7.2 Character-Defining Features 57
5.7.3 Examples of Transmission Lines in Historic Districts 63
5.7.4 Effects 66
5.7.4.1 General Observations 66
5.7.4.2 Direct Effects 66
5.7.4.3 Aesthetic Effects on Views from Property 68
5.7.4.4 Aesthetic Effects on Views of Property 73
5.7.4.5 Other Effects 74
5.7.4.6 Summary 75
5.7.4.7 Proposed Response to Potential Adverse Effects 75
5.7.5 Cultural Landscape and Management Treatment Guidelines 76
5.7.5.1 Spatial Organization and Land Patterns 77
5.7.5.2 Topography 80
5.7.5.3 Vegetation 83
5.7.5.4 Circulation 85
5.7.5.5 Water Features 85
5.7.5.6 Buildings 85
5.7.5.7 Structures, Furnishings, and Objects 86
5.7.5.8 Accessibility Considerations 90
5.7.5.9 Health and Safety Considerations 90
5.7.5.10 Environmental Energy Considerations 93

6.0 SUMMARY AND RECOMMENDATIONS 95
6.1 SUMMARY OF BELOW-GROUND RESOURCES ASSESSMENT 95
6.2 SUMMARY OF EFFECTS ANALYSIS 96
6.3 RECOMMENDATIONS FOR ADVERSE EFFECTS 98
6.3.1 Midtown South Substation 98
6.3.2 Route A1 98
6.3.3 Route A2 98
6.3.4 Route A3 99
6.4 OTHER RECOMMENDATIONS 99

6.4.1 Review of Plans for Route 99
6.4.2 Phase I Cultural Resources Investigation 99
6.4.3 Substation Screening Walls 99
6.4.4 Coordination with HCRRA 99

7.0 REFERENCES CITED 101

APPENDIX A: PERSONNEL A-1

Table of Figures

FIGURE 1. PROJECT LOCATION 3
FIGURE 2. TYPICAL DOUBLE-CIRCUIT STRUCTURE 5
FIGURE 3. PROJECT APE AND HISTORIC PROPERTIES 17
FIGURE 4. SOUTH SIDE DESTRUCTOR, FACING NW 24
FIGURE 5. SOUTH SIDE DESTRUCTOR, FACING NE 24
FIGURE 6. VIEW TO HIAWATHA SUBSTATION FROM SOUTH SIDE DESTRUCTOR, FACING E 26
FIGURE 7. VIEW TO TRANSMISSION LINE POLES 6 AND 7 FROM SOUTH SIDE DESTRUCTOR, FACING W 26
FIGURE 8. VIEW TO TRANSMISSION LINE POLE 4 FROM SOUTH SIDE DESTRUCTOR, FACING N 27
FIGURE 9. SEARS, ROEBUCK AND COMPANY BUILDING, FACING NE 29
FIGURE 10. SEARS, ROEBUCK AND COMPANY BUILDING AND WEST PARKING LOT, FACING E 29
FIGURE 11. SEARS, ROEBUCK AND COMPANY BUILDING, FACING NW 30
FIGURE 12. SEARS, ROEBUCK AND COMPANY BUILDING, FACING SE 30
FIGURE 13. VIEW TO TRANSMISSION LINE POLE 14 FROM SEARS' 10TH AVENUE FACADE, FACING N 32
FIGURE 14. VIEW TO TRANSMISSION LINE POLE 15 FROM SEARS WEST PARKING LOT, FACING N 32
FIGURE 15. SIMULATED BEFORE AND AFTER VIEWS OF TRANSMISSION LINE POLE 14 AND SEARS BUILDING, FACING SW 33
FIGURE 16. AVALON THEATER, FACING NE 35
FIGURE 17. AVALON THEATER, FACING NW 35
FIGURE 18. VIEW TO TRANSMISSION LINE POLE 10 FROM REAR ELEVATION OF AVALON THEATER, FACING N 36
FIGURE 19. VIEW TO TRANSMISSION LINE POLE 11 FROM LAKE STREET AND AVALON THEATER, FACING N 37
FIGURE 20. CEMETERY CEDAR AVENUE ENTRANCE AND DRIVE, FACING E 39
FIGURE 21. CEMETERY, CHAIN-LINK FENCE ON NORTH SIDE, FACING E 39
FIGURE 22. CEMETERY, FACING N 40
FIGURE 23. CEMETERY, VIEW OF NORTH BOUNDARY FROM CEDAR AVENUE AND OF TRANSMISSION LINE POLES 5 AND 6, FACING NE 40
FIGURE 24. VIEW EAST FROM CEDAR AVENUE WITH CEMETERY AND TRANSMISSION-LINE CORRIDOR 42
FIGURE 25. VIEW OF TRANSMISSION LINE POLE 7 FROM CEMETERY AT CEDAR AVENUE, FACING NW 42
FIGURE 26. VIEW OF CEMETERY FROM CEDAR AVENUE AND TRANSMISSION LINE POLE 7, FACING NE 44
FIGURE 27. VIEW OF CEMETERY FROM LAKE STREET AND TRANSMISSION LINE POLES 5 AND 6, FACING N 44
FIGURE 28. ZINSMASTER BAKING COMPANY, FACING NW 46
FIGURE 29. ZINSMASTER BAKING COMPANY, FACING SW 46
FIGURE 30. VIEW FROM ZINSMASTER BAKING COMPANY ON PARK AVENUE AND TRANSMISSION LINE POLE 17, FACING NE 48
FIGURE 31. VIEW FROM ZINSMASTER BAKING COMPANY TO MIDTOWN NORTH SUBSTATION SITE, FACING W 48
FIGURE 32. VIEW FROM ZINSMASTER BAKING COMPANY TO MIDTOWN SOUTH SUBSTATION SITE, FACING NW 50
FIGURE 33. VIEW OF ZINSMASTER BUILDING REAR WING (LEFT) AND MIDTOWN SOUTH SUBSTATION SITE (RIGHT), FACING S 50
FIGURE 34. HOUSE, FACING NW 54
FIGURE 35. HOUSE, FACING NE 54
FIGURE 36. VIEW TO TRANSMISSION LINE POLE 13 FROM HOUSE, FACING SE 55
FIGURE 37. VIEW TO TRANSMISSION LINE POLE 14 FROM REAR ELEVATION OF HOUSE, FACING SW 56
FIGURE 38. AERIAL VIEW OF GRADE SEPARATION HISTORIC DISTRICT FROM 10TH AVENUE, FACING E 58
FIGURE 39. TYPICAL TRENCH AND BRIDGE VIEW, FACING W 58
FIGURE 40. SEARS AND SEARS ADDITION BUILDINGS, FACING W 60
FIGURE 41. DAYTON ROGERS BUILDING, FACING NW 60
FIGURE 42. RETAINING WALLS ON SOUTH SIDE OF TRENCH, NEAR 10TH AVENUE 61
FIGURE 43. BICYCLE RAMP, LIGHT STANDARDS, AND EMERGENCY CALL BOX BETWEEN PARK AND PORTLAND AVENUES, FACING W 61

FIGURE 44. GRADE SEPARATION HISTORIC DISTRICT FROM CEDAR AVENUE BRIDGE, FACING W 62
FIGURE 45. VIEW OF GRADE SEPARATION HISTORIC DISTRICT FROM BLOOMINGTON AVENUE, FACING N 62
FIGURE 46. MINNEHAHA HISTORIC DISTRICT VIEW 65
FIGURE 47. ST. ANTHONY FALLS HISTORIC DISTRICT 65
FIGURE 48. GRANITE RETAINING WALL WEST OF 18TH AVENUE BRIDGE, FACING SE 67
FIGURE 49. BEFORE AND AFTER VIEWS OF TRANSMISSION LINE FROM GRADE SEPARATION HISTORIC DISTRICT AT 17TH AVENUE 69
FIGURE 50. EAST END OF GRADE SEPARATION HISTORIC DISTRICT, FACING NE 70
FIGURE 51. GRADE SEPARATION HISTORIC DISTRICT, CA. 1917 71
FIGURE 52. MIDTOWN NORTH SUBSTATION SITE FROM GRADE SEPARATION HISTORIC DISTRICT, FACING NE 72
FIGURE 53. MIDTOWN SOUTH SUBSTATION SITE FROM GRADE SEPARATION HISTORIC DISTRICT, FACING SW 72
FIGURE 54. SIMULATED VIEW OF MIDTOWN NORTH SUBSTATION FROM GRADE SEPARATION HISTORIC DISTRICT 73
FIGURE 55. SIMULATED BEFORE AND AFTER VIEWS OF TRANSMISSION LINE FROM 17TH AVENUE 74

Table of Tables

TABLE 1. SHPO INVENTORY OF ARCHITECTURAL HISTORY PROPERTIES IN STUDY AREA 18
TABLE 2. SUMMARY OF EFFECTS TO HISTORIC PROPERTIES BY PROJECT COMPONENT AND ALTERNATIVE 97

1.0 Introduction

In March 2010, Stark Preservation Planning LLC (Stark) conducted a cultural resources analysis of effects study for the proposed Hiawatha Project (Project), which entails the construction of two new 115-kilovolt (kV) transmission lines and two new substations in south Minneapolis, Hennepin County, Minnesota by Northern States Power, a Minnesota corporation (Xcel Energy). Xcel Energy has submitted an application for a Route Permit to the Minnesota Public Utilities Commission (PUC) for the PUC to determine the Project's impact on the environment, including archaeological and historic resources, and any alternatives that would increase or decrease these impacts.

Due to the complexity of running transmission facilities through a largely developed urban area, several transmission line routes and substation locations have been identified as alternatives. The Project would require two new transmission lines to be connected to two new substations. One substation is to be located at the eastern end of the transmission line (referred to as the Hiawatha Substation) and the second substation is to be located at the western end of the transmission line (referred to as the Midtown Substation). For the Draft Environmental Impact Statement (DEIS), the Office of Energy Security developed analyses for five route alternatives and six substation alternative sites (Environmental Resources Management Inc. 2010).

Prior to this investigation, Stark completed a cultural resources assessment to identify known cultural resource properties and the potential for previously unidentified cultural resource properties that may be significant and potentially eligible for listing in the National Register of Historic Places (NRHP) to inform the route alternative selection process (Stark and Vermeer 2009).

Xcel Energy has contracted Natural Resource Group, LLC (NRG) to assist with the permitting process. Stark has been retained by NRG to provide additional information on the preferred route and substation sites to analyze the effects of the Project on known historic resources. The purpose of this investigation is to assess the potential effects of the project on known historic or potential historic resources. Additional analysis was undertaken to assess the potential for underground resources associated with historical streetcar lines and sewer systems to be significant and to be affected by the project. William E. Stark, M.A. served as Project Manager and Principal Investigator for architectural history resources. Andrea Vermeer, Ph.D., RPA of Summit Envirosolutions, Inc. served as Principal Investigator for archaeological resources.

1.1 Scope of Analysis of Effects

Because a significant amount of survey work has been completed within and around the project area over the last several decades, no additional survey to identify historic resources was conducted within the area of potential effect for this project. For the purposes of this investigation, an analysis was completed for known historic or potentially historic resources. These resources include properties listed in the NRHP, determined eligible for listing in the NRHP, locally designated by the Minneapolis Heritage

Preservation Commission (HPC) or identified on the Minneapolis "800 list."[1] These resources were identified in the cultural resources assessment completed for this project in 2009 (Stark and Vermeer).

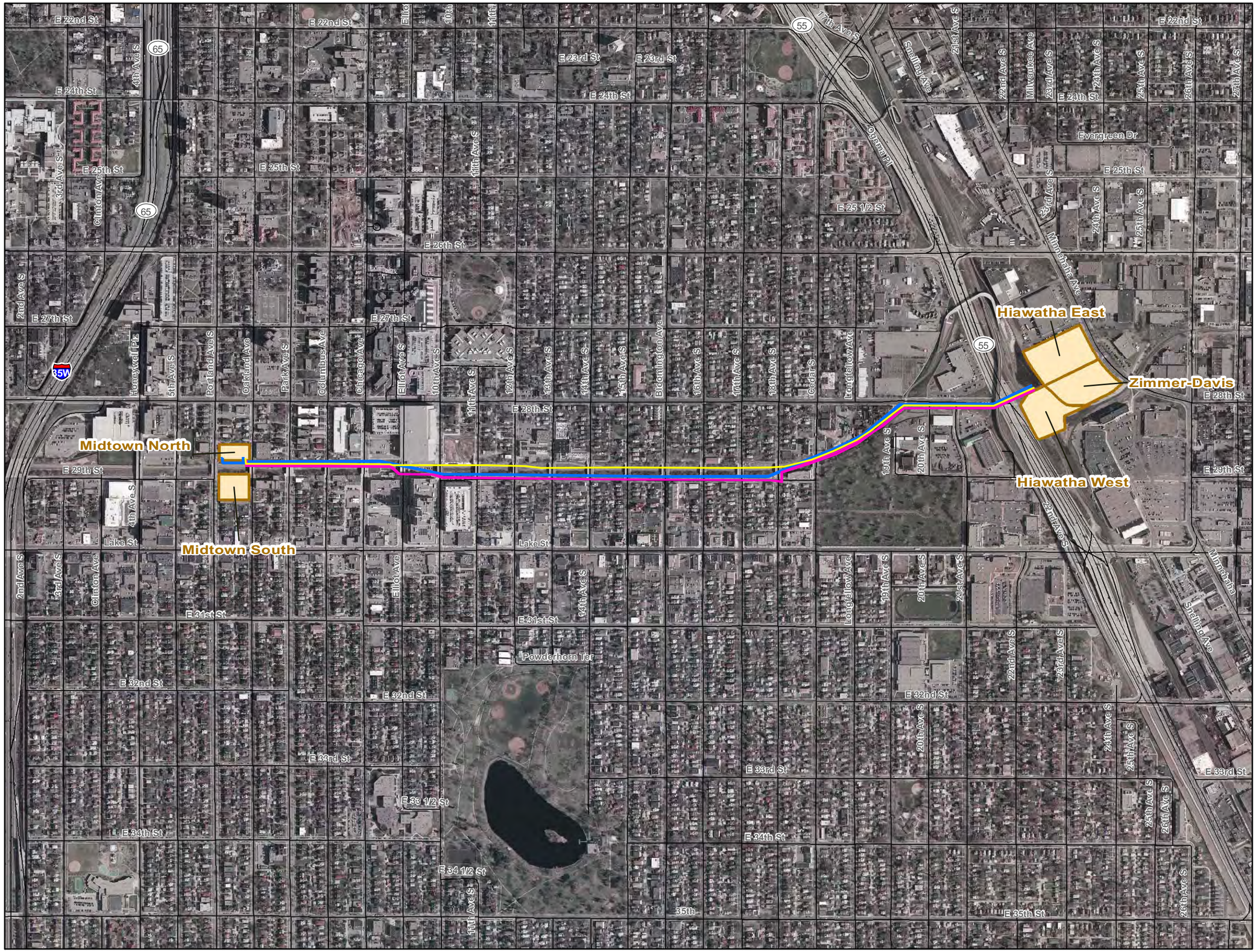
Although the DEIS scope entails five route alternatives and seven substation alternatives, the scope of work for this analysis of effects was limited to a study of Xcel Energy's preferred route (Route A) and five substation alternatives. This approach is consistent with guidelines for federal undertakings for a phased approach to the identification and evaluation of historic resources (36 CFR 800.4(b)(2)). This approach is recommended where alternatives under consideration consist of corridors or large land areas with multiple alternatives. In this approach, the process would establish the likely presence of historic properties within the area of potential effects for each alternative through background research, consultation and an appropriate level of field investigation. The final identification and evaluation of historic properties may be deferred until specific aspects or alternatives are refined.

1.2 PROJECT DESCRIPTION

Xcel Energy has requested that Stark perform an analysis of effects study on its preferred route, Route A (Figure 1). Route A has three sub-alternatives, Route A1, Route A2, and Route A3. Route A1 is an overhead alignment from the Hiawatha Station to the Midtown Station, generally following the alignment of the Midtown Greenway and/or East 29th Street. Route A2 is an underground alternative generally following the alignment of the Midtown Greenway and/or East 29th Street. Route A3 is an underground route generally following the Midtown Greenway bicycle/pedestrian trail. In addition, Xcel Energy has requested the analysis of effects study to take into account five substation alternatives currently being considered. Three Hiawatha Substation alternatives are located on the east end, and are currently known as Hiawatha East, Hiawatha West, and the Zimmer-Davis site. Two Midtown Substation alternatives are located on the west end: Midtown North and Midtown South (Figure 1).

The following project component descriptions are based on route maps provided by the Office of Energy Security or Xcel Energy and on the narrative descriptions in the *Draft Environmental Impact Statement* (Environmental Resources Management, Inc. 2010) and the *Application to the Minnesota Public Utilities Commission* (Northern States Power 2009).

[1] The "800 list" refers to the Minneapolis HPC's inventory of historic or potentially historic resources. Many of these resources were recorded as a result of a 1980 architectural and historical survey completed by the Center for Urban and Regional Affairs at the University of Minnesota as part of an effort to identify buildings and areas for heritage preservation protection. The "800 List" has served in part as the basis for designation activities by the HPC for over two decades. Although some properties have subsequently become designated or listed on the NRHP, many from the original list remain un-designated. They are, however, considered by the city to be properties of importance and would receive special attention in historical reviews.



Legend

- Route A1
- Route A2
- Route A3
- Xcel Substation Alternatives

0 800 Feet

1 inch = 800 feet

Site Location

N W E S

Project Location

Cultural Resources Analysis of Effects
for the Excel Energy Hiawatha Project
Minneapolis, Hennepin County, Minnesota

Figure 1

File: Fig1_ProjectLocation.mxd
Summit Proj. No.: 2013-002
Plot Date: 3/16/2010
Arc Operator: THV
Reviewed by: WS

Summit Envirosolutions®

Map adapted from USGS High Resolution Orthoimagery for the Minneapolis-St. Paul, Minnesota Urban Area, 2008.

1.2.1 Transmission Lines

1.2.1.1 *Route A1*

Proposed Route A1 is a 1.4-mile overhead route beginning at the Hiawatha Substation (east end) site (see Figure 1). The route crosses west over Hiawatha Avenue and the Metro Transit Hiawatha Light Rail Line, then follows the south right-of-way on East 28th Street to a point where the Midtown Greenway corridor meets East 28th Street. From there, it follows the Midtown Greenway corridor, with proposed structures mounted on the north side of this corridor. From the east side of Cedar Avenue South to the west side of 18th Avenue South, the route crosses the Midtown Greenway corridor and follows the route of the corridor on its south side, with proposed structures placed near the top of the earthen trench, to a point east of 10th Avenue South. Between that point and a point mid-block between Elliot Avenue South and Chicago Avenue South, the route crosses again to the north side of the Midtown Greenway corridor. The route continues along the north side to its terminus at the Midtown Substation (west end) between Oakland Avenue South and Portland Avenue South. If the Midtown South substation is selected as the western terminus, additional overhead lines would need to be added across the Midtown Greenway to connect the line to the substation.

Route A1 would carry double-circuit 115kV lines on 19 structures (poles) with a span of approximately 500 feet between the structures, although some smaller spans have been proposed based upon existing features along the route. The structures generally would be 75 to 80 feet in height, although some would reach 100 to 115 feet in height where the line crosses transportation corridors. The pole structures would be built with galvanized steel with three cross-arms mounted on a concrete footing (Figure 2). The right-of-way width would be 50 feet to accommodate construction and maintenance of the facilities.

1.2.1.2 *Route A2*

Proposed Route A2 is a 1.4-mile underground double-circuit route beginning at the Hiawatha Substation site (see Figure 1). The route crosses west under Hiawatha Avenue and the Metro Transit Hiawatha Light Rail Line and follows the south right-of-way on East 28th Street to a point where the Midtown Greenway corridor meets East 28th Street. From there, it follows the Midtown Greenway corridor on the north side of this corridor to the east side of 18th Avenue South, where it crosses the Midtown Greenway corridor and follows East 29th Street. Where East 29th Street terminates at 10th Avenue South, the route continues within the Midtown Greenway Corridor to the east side of Elliot Avenue South, where it crosses the Midtown Greenway corridor and follows this corridor until it terminates at the Midtown Substation between Oakland Avenue South and Portland Avenue South.

Manholes would be placed along the route to allow for pulling the conductors through the duct system. The underground line would be built using surface-cut open trenching, horizontal boring, or horizontal directional drilling (HDD). It is anticipated that the majority of the transmission facilities would be constructed by installation of a concrete-encased duct bank raceway system in an open-cut trench on either the north or south sides of East 29th Street. The right-of-way for the underground line would be

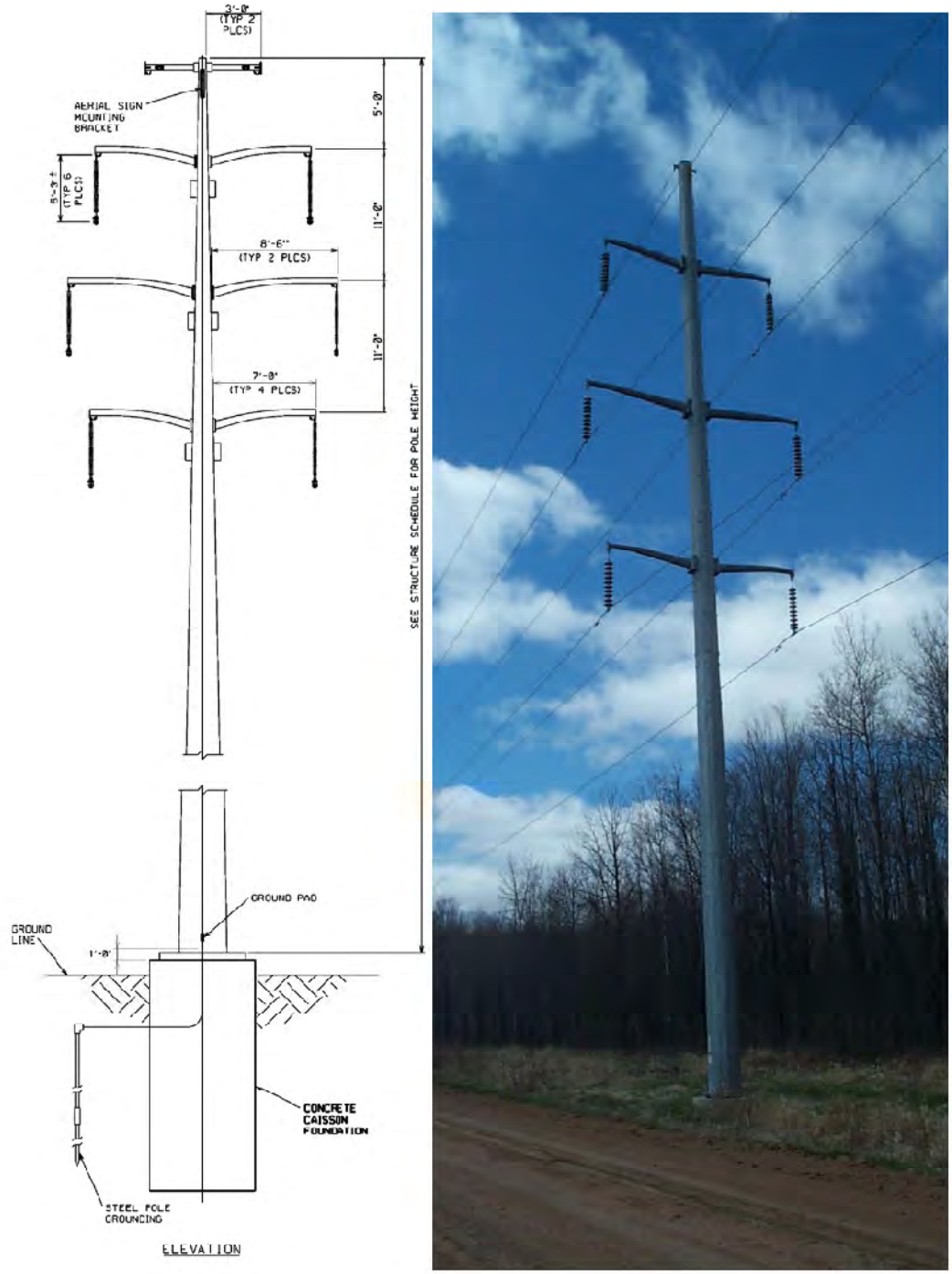


Figure 2. Typical double-circuit structure

30 feet wide, and the typical excavation area would be approximately 10 feet wide by 5 feet deep. The excavation area may be larger depending on soil conditions, and whether shoring/sheeting is required.

1.2.1.1 *Route A3*

Proposed Route A3 is a 1.4-mile underground double circuit route beginning at the Hiawatha Substation site (see Figure 1). The route crosses west under Hiawatha Avenue and the Metro Transit Hiawatha Light Rail Line and follows the south right-of-way on East 28th Street to a point where the Midtown Greenway corridor meets East 28th Street. From there, it follows the Midtown Greenway corridor on the north side of this corridor to 18th Avenue South, where it enters the base of the trench of the Midtown Greenway corridor. The route would be placed at the bottom of the slope parallel to or under the existing bicycle/pedestrian trail, and it would be confined to the northernmost section of the bridge underpass, between the slope and the first bridge support. The route continues until it terminates at the Midtown Substation between Oakland Avenue South and Portland Avenue South.

Manholes would be placed along the route to allow for pulling the conductors through the duct system. The underground line would be built using surface-cut open trenching, horizontal boring, or HDD. The right-of-way for the underground line would be 30 feet wide, and the typical excavation area would be approximately 10 feet wide by 5 feet deep. The excavation area may be larger depending on soil conditions, and whether shoring/sheeting is required.

1.2.2 Substations

1.2.2.1 *Hiawatha West*

The Hiawatha West substation alternative is an area along the existing 115-kV transmission line located between Hiawatha Avenue to the west, Minnehaha Avenue to the east, and the Soo Line Railroad to the south (see Figure 1). The preferred site is currently an open area owned by the Minnesota Department of Transportation. Zimmer-Davis, a light-industrial warehouse located at 2700 Minnehaha Avenue is east of the proposed site.

The proposed substation would be a low-profile (average height of approximately 20 feet) design with a dimension of 253 feet by 392 feet, or approximately 2.25 acres, with the larger dimension being the north-south axis along Hiawatha Avenue. The substation location would be surrounded on three sides (north, west, and south) with a 12-foot-high architecturally designed wall. The east side would be fenced with a chain-link gate to allow access for construction and maintenance. A 20-by-40-foot electrical equipment enclosure will house all electrical control protective relaying and auxiliary equipment.

1.2.2.2 *Hiawatha East*

The Hiawatha East substation alternative is located at 2650 Minnehaha Avenue (northeast of the Hiawatha West site), and is currently occupied by a light industrial business (Crew) (see Figure 1). The substation would be designed as a low-profile (average height of approximately 20 feet) substation covering a footprint of approximately 284 feet by 481 feet, or approximately 3.15 acres. The substation would be surrounded on three sites (east, north, and west) by an architecturally designed wall. The south side would be fenced with a chain-link gate to allow access for construction and maintenance.

1.2.2.3 *Zimmer-Davis*

The Zimmer-Davis substation alternative is located at 2700 Minnehaha Avenue (southeast of the Hiawatha East site), and is currently occupied by a light-industrial business (Zimmer-Davis) (see Figure 1). The substation would be designed as a low-profile substation (average height of approximately 20 feet) and would be similar in area to the other Hiawatha substation sites. The substation would be surrounded by combinations of an architecturally designed wall and chain-link gate for access to construction and maintenance.

1.2.2.4 *Midtown North*

The Midtown North substation alternative is located in an area that includes the following property addresses: 2840 Oakland Avenue South (former Xcel Energy Oakland Substation site); 2833 Portland Avenue South (condemned triplex); and 2841 Portland Avenue South (vacant Brown Campbell land, formerly owned by Xcel Energy) (see Figure 1). Two of these properties, 2840 Oakland Avenue South and 2841 Portland Avenue South, include a 43-foot slope to the Midtown Greenway elevation. The proposed substation at the Midtown North location would be a high-profile design (average height of approximately 45 feet) with a dimension of 176 feet by 248 feet, or approximately one acre, with the larger dimension being the east-west axis along the Midtown Greenway. Assuming probable setbacks for landscaping would remain the same as at present, usable space would be 110 feet by 248 feet, or approximately 0.63 acre. The substation would be landscaped on the south, east, and west sides as practical and walled on four sides with an architecturally designed wall, with wooden gates on both Oakland Avenue and Portland Avenue to allow airflow for equipment cooling and access for construction and maintenance.

1.2.2.5 *Midtown South*

The Midtown South substation alternative is located south of the Midtown North site, across the Midtown Greenway in an area that includes 2907 Portland Avenue South and 2915 Portland Avenue South (see Figure 1). The substation at the Midtown South site would be a low-profile design (average height of approximately 20 feet) and measure approximately 245 feet by 249 feet, or 1.4 acres, with the larger dimension being the east-west axis along the Midtown Greenway. The substation would have 10 feet for landscaping on the east and west sides and would be walled on four sides with an architecturally designed wall with chain-link gates on both Oakland Avenue and Portland Avenue to allow airflow for equipment cooling and access for construction and maintenance.

2.0 Methods

2.1 Objectives

The purpose of the cultural resources analysis of effects was to define the ways in which the proposed project may or may not cause effects to known historic properties that would result in diminished historic integrity. This information will be used to identify ways in which to remove, reduce, or mitigate adverse effects. An additional objective was to address concerns regarding the effects to below-ground resources, specifically historic streetcar tracks and sewer lines.

2.2 Sewer Line and Street Car Research

Information on the early history of the streetcar lines, including construction dates and types, within the project APE largely was contained within *The Electric Railways of Minnesota* (Olson 1976) and *Twin Cities by Trolley* (Diers and Isaacs 2007). Twin City Rapids Transit Company streetcar line maps dating to the mid twentieth century were obtained online from the Minnesota Streetcar Museum website (http://www.trolleyride.org), and other maps depicting the streetcar routes from the horsedrawn-streetcar era to the mid twentieth century were reviewed in the above-mentioned secondary sources.

Strip maps, which provide plan views, detailed cross sections, and construction specifications (e.g., materials used, size of pipe) for sewer lines, relevant to the project area were obtained from the Minneapolis Department of Storm and Surface Water Management.

2.3 Effects Study Process

The process for the analysis of effects study entailed the following tasks.

1. *Establish an Area of Potential Effect (APE).* An appropriate APE was established to account for all potential effects from the proposed project. On-site field investigation tested the limits of the visual presence of the structures related to the project, which is believed to be the most wide-ranging area to be affected.

2. *Identify historic properties.* The APE was not surveyed to identify additional historic properties, as a number of surveys have already occurred within the area. Instead, properties for which effects were assessed were limited to seven properties previously identified as listed in the NRHP, determined eligible for listing in the NRHP, locally designated by the Minneapolis HPC, or identified with potential significance on the City of Minneapolis' "800 List" (see *Cultural Resources Assessment for the Xcel Energy Hiawatha Project, Minneapolis, Hennepin County, Minnesota*, Stark and Vermeer 2009). Although additional historic resource survey work was completed in 2001 by BRW/URS for large portions of this project area, this survey did not fully evaluate the significance of each property. These properties, many of which were identified as having "possible significance," were not included for analysis in the effects study.

3. *Background research*. Documentation on each of the historic properties identified within the APE was retrieved from the Minnesota State Historic Preservation Office (SHPO) and/or Minneapolis HPC files.

4. *Field assessment.* Each historic property was inspected in the field. Photographs of each property were taken. Photographs were taken from each property (publicly accessible areas at street grade) toward important visual linkages and/or toward the locations of key proposed structures. Field notes recorded observations regarding the potential for effects.

5. *Assess effects.* Effects to historic properties were assessed for each property or property grouping (district) within the APE. To limit the subjectivity of the assessment of effects, Stark used the guidelines for determining effects to historic resources in Section 106 of the National Historic Preservation Act of 1966, as amended (36 CFR Part 800) as well as other forms of guidance. The assessment of effects comprises the following elements:
   a. Summary of each property's significance, based on existing documentation.
   b. Summary of each property's character-defining features, including important view sheds or historic linkages.
   c. Assessment of indirect aesthetic effects of the Project on views *of* the historic property and views *to* the historic property, and the compatibility of the project with the landscape and architectural features of the historic property.
   d. Assessment of obstructive effects on views of the Project on the historic property.
   e. Assessment of other indirect effects, such as noise, vibrations, and others identified in the DEIS.
   f. Assessment of direct where a property may be physically impacted by Project activity.
   g. Recommendation for each historic property of *no effect, no adverse effect,* or *adverse effect.*
      i. A *no effect* recommendation indicates that the Project would result in no effect to the historic property.
      ii. A *no adverse effect* recommendation indicates that the Project may have an effect to the historic property (e.g. it may be visible from the property), but that effect would not diminish the qualities that make it eligible to be a historic property.
      iii. An *adverse effect* recommendation indicates that the Project would alter the characteristics of a historic property that qualify the property for inclusion in the NRHP in a manner that would diminish the integrity of the property's location, design, setting, materials, workmanship, feeling or association (36 CFR Part 800.5(a)(1)).

6. *Apply Standards and Guidelines.* The Grade Separation historic district is listed in the NRHP. The three Route A alternatives would be routed within, adjacent to, or across this historic property, resulting in potential direct and indirect effects. Because of the proximity of this historic resource to the Project and the potential for effects, this property was assessed for effects using additional standards. The *Cultural Landscape Management and Treatment Guidelines for the Chicago Milwaukee and St. Paul Grade Separation Historic District of the Midtown Corridor, Minneapolis Minnesota* was prepared by the Hennepin County Regional Railroad Authority (HCRRA) in 2006 to

offer management and treatment guidelines for the district "in an effort to prevent irrevocable damage to the character-defining features of the district" (HCRRA 2006:3). The document provides for landscape management guidelines, in the broad areas of spatial organization, topography, vegetation, structures, furniture, and objects, with recommended and not recommended treatments in each category. The Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for the Treatment of Cultural Landscapes (National Park Service 1996) were used extensively in the creation of the HCRRA guidelines. Because the guidelines are specific to the historic district, it was found to be appropriate to measure the impacts of the current project in light of these standards.

2.4 SIGNIFICANCE CRITERIA

PUC rules indicate that "archaeological and historic resources" are among the factors to be considered for the permitting of large high-voltage transmission lines. The rules do not define the qualities of archaeological and historic resources that would be sufficient factors to consider. In most cases, standards used for the NRHP can be used to define significant resources types. The NRHP is a federal program of the National Park Service (NPS), and is locally administered by the Minnesota SHPO. The NPS has established criteria for evaluating the significance of historic resources in four broad areas:

A. Properties that are associated with events that have made a significant contribution to the broad patterns of history;
B. Properties that are associated with the lives of persons significant in the past;
C. Properties that embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; and
D. Properties that have yielded, or may be likely to yield, information important in prehistory or history.

The NPS has identified seven aspects of integrity to be considered when evaluating the ability of a property to convey its significance: location, design, setting, materials, workmanship, feeling, and association (National Park Service 1995). This assessment, therefore, takes into account conditions related to both significance and integrity with regard to the eligibility of any cultural resources that might be present.

In the case of the Hiawatha study area, the City of Minneapolis also has local historic landmark designation procedures through its HPC. It would be appropriate, therefore, to consider properties designated at the local level as important historic resources worthy of consideration in the PUC permitting process. The following criteria, similar to those used for the NRHP, are considered in determining whether a property is worthy of designation:

1. The property is associated with significant events or with periods that exemplify broad patterns of cultural, political, economic or social history;
2. The property is associated with the lives of significant persons or groups;

3. The property contains or is associated with distinctive elements of city or neighborhood identity;
4. The property embodies the distinctive characteristics of an architectural or engineering type or style, or method of construction;
5. The property exemplifies a landscape design or development pattern distinguished by innovation, rarity, uniqueness or quality of design or detail;
6. The property exemplifies works of master builders, engineers, designers, artists, craftsmen or architects; and
7. The property has yielded, or may be likely to yield, information important in prehistory or history.

The city may designate individual properties and districts.

2.5 GUIDANCE FOR ASSESSING VISUAL AND AESTHETIC EFFECTS

The potential visual effects of the above-ground alternative and other project components (Route A1 and substations) have similar effects to those posed by the installation of towers built for cellular antennas (cell towers). Because cell towers require a permit from the Federal Communications Commission (FCC), the erection of these towers must be reviewed under Section 106 of the National Historic Preservation Act of 1966. In 2004, the FCC and the National Conference of State Historic Preservation Officers (NCSHPO) reached an agreement for an approach to assessing the effects of cell towers on historic resources through a nationwide programmatic agreement. Because of the similarities of the potential visual and aesthetic effects with those that may occur through the Project, this agreement provides valuable guidance in assessing the effects of the Project on historic properties. According to the agreement, "an undertaking will have a visual adverse effect on a historic property if the visual effect from the facility will noticeably diminish the integrity of one or more of the characteristics qualifying the property for inclusion in or eligibility for the National Register. Construction of a facility will not cause a visual adverse effect except where visual setting or visual elements are character-defining features of eligibility of a historic property located within the APE" (*Nationwide Programmatic Agreement for Review of Effects on Historic Properties for Certain Undertakings Approved by the Federal Communications Commission*, electronically accessed at http://wireless.fcc.gov/siting/npa/FCC-04-222A3.pdf, 2004:21).

Adverse visual effects can be the result of either a negative *aesthetic effect* or an *obtrusive effect.* If either of these types of visual effects diminishes the integrity characteristics that qualifies the historic property for inclusion in the NRHP, it may be considered an adverse effect. In all cases, it is important to understand the property's historic significance in order to evaluate the Project's effects on the property's eligibility for listing in the NRHP.

Aesthetic effects include:

- Alterations that can affect the view *from* the historic property and possibly the location, feeling, setting, and association of the historic property;
- Alterations that can affect the view *of* the historic property and possibly the location, feeling, setting, and association of the historic property; and

- Compatibility of the project with the landscape and architectural features of the historic property.

Assessment of obstructive effects should consider the following factors:

- The nature and quality of the views from the historic property: Does the view include such features as natural topography, features of man-made or natural interest, or other historic properties which contribute to the historic property's significance and integrity?
- Extent of obstruction: Would the project entail a total blockage, partial interruption, or diminishment of a person's enjoyment and appreciation of a scenic view or historic property viewed from the historic property?
- Obstruction of a historic property: Does the project obstruct the historic property being visually appreciated from surrounding viewpoints?[2]

The above criteria were taken into consideration for the current assessment of effects study.

[2] Visual effects assessment criteria was adapted from "Assessing Visual Effects on Historic Properties" prepared by the Delaware State Historic Preservation Office in 2003.

3.0 Area of Potential Effects

The determination of APEs is the preliminary step in addressing effects to historic properties and refers to the geographic area or areas within which an undertaking may directly or indirectly cause changes in the character or use of historic properties; this area is influenced by the scale and nature of an undertaking and may vary for different kinds of effects caused by the undertaking (36 CFR Part 800.16(d)). An APE takes into consideration potential effects, such as alteration or removal of a building or structure; a change in the character of a property's use or physical features; and the introduction of visual, atmospheric, or audible elements that diminish the integrity of a property's significant historic features. Factors that contribute to the determination of an APE are those that may contribute to potential adverse effects, including significant changes in traffic volume and noise; changes in access to properties; vibrations resulting from construction or on-going use; effects from dust or other air quality effects; impacts to land use and a property's setting; and changes to visual effects that impact the setting of a historic property.

The APEs for the Project have been determined using the descriptions of the project elements contributing to the effect factors provided in the *Hiawatha Transmission Line Project Draft Environmental Impact Statement* (Environmental Resources Management, Inc. 2010) and the *Northern States Power Company Application to the Public Utilities Commission for a Route Permit: Hiawatha Project* (Northern States Power Company 2009) as applied to the following criteria and considerations.

Physical (Direct) Impacts. Direct physical effects to historic or potential historic resources will occur in the locations where proposed construction is to occur, including the substation sites, the underground route alternatives, and the overhead route alternative in locations where the pole structures are to be sited.

Land/Right-of-Way Acquisition. Land acquisition will occur at the substation sites where property is not already owned by Xcel Energy. Construction of an overhead transmission line would require a 50-foot-wide right-of-way. Construction of an underground transmission line would require a 30-foot-wide right-of-way.

Changes in Access to Properties. The transmission line routes and substation sites will not result in permanent changes in access to properties.

Alterations in Traffic Patterns. The Route A3 alternative may result in temporary disruption and/or re-routing of the Midtown Greenway bicycle/pedestrian trail during the construction phase, but will not result in permanent changes in traffic patterns. Other alternatives may result in road closures, and rerouting during the construction phase. These occurrences would be temporary in nature and would likely occur to properties adjacent to the transmission line route.

Noticeable Increases in Traffic Volume. The Project would not result in permanent increases in traffic volume.

Noticeable Increases in Volume. Most of the noise resulting from the Project would occur during the construction phase, and would therefore be temporary in nature. The audible noise of a 115 kV overhead line during fair weather is expected to be very low and seldom noticeable, even when standing directly under the line, and would not exceed applicable noise standards. Transmission lines may be most audible during times of damp or foggy weather as electricity near the power lines ionizes the moist air around the wires; this effect is expected to be minor. Underground route alternatives are not expected to result in any operational noise impacts. The substations generate additional operational noise, and may produce audible noise slightly above background levels depending upon weather conditions and their design. In addition to serving as visual barriers, walls around the substations are expected to mitigate noise. For the purposes of determining the APE, increases in volume can be expected to have a potential effect to properties immediately adjacent to the substation sites.

Visual Effects. The substations and the overhead route alternative have the potential to visually impact surrounding historic resources. The substations would be 20 to 45 feet in height, and the transmission lines and structures range from 75 to 115 feet in height. Although the densely built-up neighborhood helps to limit views of the proposed structures, this potential effect expands the APE to its broadest extent.

Increase in Vibration. Noticeable increases in vibration are likely to occur during the construction phase of the Project. Because of the additional earth-moving work necessary for the underground alternatives, these would be likely to have the greatest potential vibratory effect to historic properties. It is assumed that vibratory effects would not extend beyond the transmission line route and substations and the adjacent parcels.

Change in Air Quality. The DEIS did not identify changes in air quality as an affected environment.

Impacts to Land Use. Acquisition of rights-of-way may result in limiting land use for properties within those rights-of-way. Effects would be limited to those properties within the right-of-way acquisition area.

3.1 DELINEATION OF AREAS OF POTENTIAL EFFECT

3.1.1 APE for Direct Effects

The APE for direct effects consists of the maximum construction limits for the Project, and it therefore corresponds to the locations of the pole structures associated with Route A1; the locations of the transmission lines, including manholes, for Routes A2 and A3; and the locations of all substation alternatives (Figure 3).

3.1.2 APE for Indirect Effects

The area around the proposed route and substation alternatives was investigated on foot and by car to delineate the APE for indirect effects. As noted above, the visual impact of the overhead route alternative (A1) and the substation alternatives would have the farthest reaching APE, and therefore the

potential for visual effects was used as the guide for forming this APE. Other types of potential effects would be subsumed within this area.

The Project is located in a densely built-up urban area, with wide ranges of property types and uses. Most of the area comprises single-family and multi-family dwellings, generally in one- to three-story buildings on uniform lots. In addition, substantial areas are occupied by industrial, commercial, and transportation activities. The urban neighborhood has a broad range of visual elements, from historic to modern, from residential to industrial. From some locations, tall structures such as downtown skyscrapers can be seen from great distances. In other instances, tall buildings such as the Sears Building (Midtown Exchange) tower are not visible or noticeable from just one or two blocks away.

The APE for indirect effects was delineated to include properties that have the potential to result in a significant visual impact from the Project, causing changes to that property's character. Because all of the properties in the vicinity of the Project are within this urban setting, the mere ability to see a new structure, such as a transmission line pole, from a property does not suggest that the property's historic character would be adversely affected. The arrangement of the pole structures, which are generally placed mid-block, helps to limit views of these structures from public rights-of-way along the north-south streets. Field investigation confirmed that the possibility to glimpse a transmission line structure from a property greater than approximately one block away was considered extremely unlikely to result in effects that would change the character of historic properties within this urban setting. The APE was delineated to include properties where the Project may figure prominently in views from, or of the surrounding properties.

The Hiawatha Substation alternatives are surrounded by modern developments, including light-industrial complexes, a strip-style shopping center, a three-story apartment building, and the Trunk Highway 55 (Hiawatha Avenue) and light rail corridor. The buildings are interspersed with surface parking lots. While the buildings would limit views of the substations (as high as 20 feet), the surface parking lots and wide streets would offer more extended views. Generally, any significant views of the substations would be limited to the first tier of buildings surrounding the proposed sites and along longer view corridors. The Midtown Substation alternatives are located within a more densely built area, surrounded by single-family and multi-family dwellings. Without the large surface lots, the distance from which the substations could be easily viewed is limited to several lots surrounding the substation.

The route itself would be visually apparent by the construction of the 19 pole structures, which would typically stand 75 to 80 feet, with those near the transportation corridors as tall as 115 feet. As with the substation alternatives, the built-up, urban quality of the neighborhood would help to limit views of these structures, even though they would be significantly taller than most of the surrounding buildings. Based on the field investigation, it did not appear that the structures would have a significant visual impact on properties farther than one block (approximately 800 feet) from the overhead route. The orientation of most of the buildings facing the north-south streets helps to limit the possibility of seeing the overhead transmission corridor in views from or of properties. In other words, properties oriented with their primary façade perpendicular to the transmission line would be less likely to be impacted by

the Project. Similarly, those properties whose façade is oriented parallel to the transmission corridor would be more likely to have views of the pole structures from the primary façade, or the pole structures would be visible in views of their primary façade. For this reason, the APE was delineated to include properties along the south side of Lake Street, where the facades of buildings face the proposed route within one block of the transmission line. The relatively open land of the Minneapolis Pioneers and Soldiers Cemetery (2925 Cedar Avenue South) may result in the pole structures being visible at a distance greater than one block. In this area, the properties facing Lake Street, although more than one block from the transmission line corridor, are included within the APE. The transmission lines themselves are not considered to have significant visual impacts.

A graphic illustration of the APE is provided in Figure 3.

3.2 INVENTORY OF HISTORIC PROPERTIES WITHIN THE APE

During the assessment phase of this investigation (Stark and Vermeer 2009), the literature search identified several previous cultural resource surveys that have occurred within the APE to identify potential historic properties. These surveys resulted in a number of properties that have been designated as historic or potentially historic through NRHP listing, NRHP determinations of eligibility, local designation, or identification on the city's "800 list." One of these properties is the Grade Separation historic district, listed in the NRHP, which runs parallel to, or coterminous with large segments of the Route A sub-alternatives. Because a substantial amount of survey work has been completed, and the NRHP-listed historic district has already been identified as a property with the most significant potential for direct and indirect effects by the Project, Xcel Energy has chosen to perform the analysis of effects study only for those properties that had previously been identified as listed in the NRHP, determined eligible for NRHP listing, locally designated, or identified on the city's "800 list" (Table 1).

Several other properties were identified in the earlier assessment as being located within the APE. Documentation and field investigation has verified that two are no longer extant:

- Stewart Grain Elevator, 2836 11th Avenue South (HE-MPC-0625)
- Phillips 66 Station, 17xx Lake St. E. (HE-MPC-4122)

The commercial building at 1701-1707 East Lake Street ("Nordlanders;" HE-MPC-4121) was included on the City's "800 List" as an example of an early 1900s commercial building. The subsequent Lake Street survey (Stark and Vermeer 2004) determined that the property was *not* eligible for NRHP listing. Because of this later determination that the property was not historic, it was not included in the current study.

Not included in the earlier assessment (Stark and Vermeer 2009), but within the APE revised for the current study were resources associated with the CM&StP rail yard, which were identified in the "800 List." Additional research in HPC files for these properties referenced a former blacksmith shop near the intersection of Hiawatha Avenue and East 26th Street. Although still standing through at least 1988, this building is no longer extant and therefore was not included in the analysis of effects.

Legend

APE for Direct Effects

- Route A1 - Pole
- Route A2 - Manhole
- Route A2
- Route A3

- APE for Indirect Effects
- Route A1
- Historic Property
- Xcel Substation Alternatives
- CM&StP Grade Separation historic district

0 800 Feet

1 inch = 821 feet

Site Location

N W E S

Project APEs and Historic Properties

Cultural Resources Analysis of Effects for the Excel Energy Hiawatha Project
Minneapolis, Hennepin County, Minnesota

Figure 3

File: Fig3_APE_and_HistProps.mxd
Summit Proj. No.: 2013-002
Plot Date: 3/10/2010
Arc Operator: THV
Reviewed by: WS

Summit Envirosolutions

Map adapted from USGS High Resolution Orthoimagery for the Minneapolis-St. Paul, Minnesota Urban Area, 2008.

Table 1. SHPO Inventory of Architectural History Properties in Study Area

Inventory Number	Name	Address	Designation
HE-MPC-3504	South Side Destructor	2850 20th Ave. S	NRHP Eligible
HE-MPC-3517	Sears, Roebuck and Company	900-930 Lake Street (2929 Chicago Ave. S.)	NRHP Listed; Locally Designated
HE-MPC-4116	Avalon Theater	1500 Lake St. E.	NRHP Eligible; Locally Designated
HE-MPC-4123	Minneapolis Pioneers and Soldiers Memorial Cemetery (Layman's Cemetery)	2925 Cedar Ave. S	NRHP Listed; Locally Designated
HE-MPC-4220	Zinsmaster Baking Company	2900 Park Ave. S.	NRHP Eligible
HE-MPC-4434	House	2814-2812 11th Ave. S.	800 List
--	Chicago Milwaukee and St. Paul Grade Separation Historic District	Corridor parallel to 29th St. between Humboldt Ave. S. and 20th Ave S.	NRHP Listed
Grade Separation Historic District Properties within APE			
	Trench	Parallel to 29th Street	Contributing
	Retaining Wall	Various locations in trench	Contributing
	Bicycle/Pedestrian Trail	Parallel to 29th Street	Non-contributing
	Sears, Roebuck and Company	2929 Chicago Avenue	Non-contributing (individually listed)
	Sears Addition	2800 10th Ave. S.	Non-contributing (not within period of significance)
	Dayton Rogers Manufacturing Company	2824 13th Ave. S.	Non-contributing (not within period of significance)
	Bridge 90437	Cedar Avenue	Contributing
	Bridge L8923	18th Avenue	Contributing
	Bridge L8922	17th Avenue	Contributing
	Bridge 92350	Bloomington Avenue	Contributing
	Bridge L8920	15th Avenue	Contributing
	Bridge L8919	14th Avenue	Contributing
	Bridge L8918	13th Avenue	Contributing
	Bridge L8917	12th Avenue	Contributing
	Bridge L8916	11th Avenue	Contributing
	Bridge L8915	10th Avenue	Contributing
	Bridge L8914	Elliot Avenue	Contributing
	Bridge 92349	Chicago Avenue	Non-contributing (reconstructed 2005)
	Bridge L8913	Columbus Avenue	Contributing
	Bridge 90491	Park Avenue	Non-contributing (reconstructed 2006)
	Bridge L8911	Oakland Avenue	Contributing
	Bridge 90494	Portland Avenue	Contributing
	Bridge 92348	Fourth Avenue	Non-contributing (reconstructed)
	Minor historic features, including iron picket fence, system of small granite block. limestone, and concrete retainers, wood utility poles	Various	Contributing
	Minor non-historic features, such as light standards, emergency boxes, bicycle access ramps, chain link fence, retaining walls	Various	Non-contributing

4.0 Archaeological Resources

The previous cultural resources assessment (Stark and Vermeer 2009) addressed archaeological resources for a range of proposed route and substation alternatives. This study determined that because the proposed transmission lines were limited to existing rights of way, which had been disturbed through road construction and utility installation, any potential archaeological resources would not likely be intact. Subsequent to the assessment, Xcel Energy requested an assessment of the potential for resource types associated with early road construction and utility installation, specifically streetcar lines and sewer lines, to be significant and to be affected by the project. A summary of the assessment findings for the transmission line and substation alternatives addressed in the previous investigation, and the results of the current study are presented below.

4.1 ASSESSMENT SUMMARY

4.1.1 Transmission Lines

The Route A alternatives include both overhead and underground alternatives. Because the pole structures would be installed into the ground approximately every 500 feet, or closer, for the overhead alternative, this alternative would still result in subsurface impacts.

As currently planned, the alternatives run primarily east-west along East 28th Street, East 29th Street or the Midtown Greenway within the existing street and Greenway rights-of -way, with portions crossing the Hiawatha Avenue rights of way. The rights of way were undoubtedly previously disturbed by road construction and the installation of other utilities, such as water mains, and are therefore unlikely to contain intact archaeological resources.

4.1.2 Substations

On the east end, the proposed Hiawatha Substation alternatives were previously occupied by the CM&StP railroad shops and tracks. These areas have been heavily disturbed by the construction of Trunk Highway 55 and new industrial construction, and therefore are not likely to contain intact archaeological resources. Although the Hiawatha East substation site was not specifically addressed in the previous assessment report (Stark and Vermeer 2009), its historic use was similar to that of the other Hiawatha sites (CM&StP railroad infrastructure), and the presence of a light industrial building on the site suggests that the property would not likely contain intact archaeological resources.

On the west end, the proposed Midtown North substation location was historically occupied by a coal yard and coal bins and subsequently by a transformer yard, and it would therefore be unlikely to contain archaeological resources. The proposed Midtown South substation is occupied by the former Minneapolis Curling Club. This location is also considered to have low potential for containing archaeological resources.

4.2 RESULTS FOR ADDITIONAL BELOW-GROUND RESOURCES

4.2.1 Streetcar Lines

Archaeological sites are typically eligible for listing in the NRHP under Criterion A, association with events that have made a significant contribution to the broad patterns of our history, or Criterion D, ability to yield important historical information. Because streetcar lines were a common method of transportation historically, construction of a streetcar line does not automatically constitute a historically significant event. Rather, to meet Criterion A, a streetcar line would need to tie into an event of historical significance, for example, being the first streetcar line constructed within a system, providing the first or an important connection between two urban areas, or being directly responsible for the economic growth and survival of a town or city.

Streetcar lines within the project APE for direct effects were located on Chicago, Bloomington, and Cedar avenues, and all were constructed by the Minneapolis Street Railway (MSR) (Olson 1976:16, 28). The Chicago Avenue line was originally constructed for horse-drawn streetcars, with the portion crossing the APE built in 1886, 11 years after the construction of the first streetcar line in Minneapolis. As part of the network of lines within Minneapolis, it did not provide significant connections, joining an existing line at Chicago and Franklin to the north and having no connection on the south. The Chicago Avenue line was converted for electricity-powered cars in 1890 (Olson 1976:27-29, 31). In 1915, the Chicago Avenue streetcar line within the APE was reconstructed when the CM&StP constructed its grade separation, which included a new bridge to carry Chicago Avenue over the depressed railroad grade (Vermeer and Stark 2004). The 1915 bridge was recently replaced due to structural deficiencies.

The Bloomington Avenue line was constructed as a horse-drawn-streetcar line in 1886 (26th to 29th streets) and 1888 (29th to 32nd streets). Like the Chicago Avenue line, it was simply another line within the Minneapolis streetcar network and did not make significant connections; at the time the portion within the APE was constructed, it joined the existing Bloomington line from Franklin Avenue to 26th Street on the north and did not make a connection to the south (Olson 1976:28-31). Although the Bloomington Avenue line from 32nd Street to Franklin Avenue was slated to become a cable-car line after a resolution passed by the Minneapolis City Council in July of 1889, the MSR convinced the Council six months later that electrification was a better option, particularly in winter conditions; therefore, the Bloomington Avenue line was instead electrified in 1891 (Olson 1976:16-17). The Bloomington Avenue line within the APE would also have been reconstructed during the CM&StP grade separation project and construction of the associated Bloomington Avenue bridge in 1916 (Vermeer and Stark 2004).

The history of the Cedar Avenue line within the APE is similar to those of the Chicago and Bloomington Avenue lines. The portion within the APE was built for horse-drawn streetcars in 1881 (single track) and 1886 (double track), and subsequently electrified in 1891. When constructed, the Cedar Avenue line made a connection to an existing line that followed Cedar from 7th Street South to Franklin Avenue on the north, and no connection was present on the south (Olson 1976:27-29, 31). The streetcar line within the APE would have been reconstructed during the construction of the CM&StP grade separation and the associated Cedar Avenue bridge in 1915-1916 (Vermeer and Stark 2004).

Because all three of the former streetcar line corridors within the project APE for direct effects are not early or otherwise important examples of the streetcar line system in Minneapolis, did not make significant connections, were not directly responsible for the economic growth or survival of the city, and are not otherwise important in the history of Minneapolis, associated archaeological resources would not satisfy Criterion A. Further, because the integrity of the original streetcar lines has been compromised by their replacement in the 1910s, they would not be able to convey any potential significance were it to exist.

With regard to Criterion D, the locations and construction methods of streetcar lines in the Twin Cities are well understood; therefore, the remnants of these lines are unlikely to provide important historical information (Olson 1976; "Archaeological Investigation Plan for the Central Corridor LRT Project, February 2, 2009," on file at the SHPO [AIP 2009]). A noted exception to our understanding of streetcar line construction has been the construction methods used in the few cable-car lines that were present in the Twin Cities (AIP 2009). No lines, however, of this type were present within the APE. Any archaeological resources associated with streetcar lines in the project APE therefore would not meet Criterion D.

4.2.2 **Sewer Lines**

Even more so than streetcar lines, sewer lines were ubiquitous in Minneapolis, thus like streetcar lines, their construction is not an inherently significant event. Additionally, sewer lines are unlikely to be associated with events that have made significant contributions to the broad patterns of Minneapolis history. Archaeological resources associated with sewer lines therefore would not meet Criterion A.

Historical archaeologists frequently look to the historical presence of sewer lines as an indicator of low research potential, i.e., an inability to provide important historical information, because it generally represents the abandonment of privy use. Privies, unless they were cleaned out, often doubled informally as trash receptacles, and therefore can contain artifact deposits that were stationary and thus can be associated with specific occupants/occupations. Further, these deposits are often dense and therefore provide substantial historical information. Although material items could have been flushed or drained into sewer lines, the size and types of artifacts would be limited by spatial constraints, and the resulting artifact assemblage would be extremely low in density. Because of the movement of materials within sewer systems, artifacts could not be associated with occupants/occupations, and therefore with a historic context, thus they would have no research potential.

With regard to the sewer lines themselves, the locations and construction methods used in Minneapolis, like those of the streetcar lines, are generally well understood, with non-reinforced concrete and brick in use until 1895; clay replacing non-reinforced concrete circa 1896; and reinforced concrete replacing brick circa 1930 (City of Minneapolis 1997-2010; AIP 2009); therefore, the remnants of these lines are unlikely to provide important historical information. One possible exception might be the construction methods for early wooden sewers. Although wooden sewers have not been documented in the city, at least one wooden water main was in use as of 1871, on Washington Avenue in the city core (Arnott 1996:5). If wooden sewers were used, they likely served as precursors to the non-reinforced concrete

and brick systems present in Minneapolis that carried stormwater and sewage to the Mississippi River between 1870 and 1895 (City of Minneapolis 1997-2010).

Sewer strip maps indicate that sewer lines were present and ran down nearly all of the streets crossing 29th Street between Park Avenue and Cedar Avenue, as well as down Hiawatha Avenue within the project APE. These sewer lines were constructed of brick or clay between 1890 and 1928, with the majority built during the first decade of the twentieth century (Strip Maps S-P-8, S-P-9, S-C-153, S-C-154, S-C-67, S-E-16, S-10A-8, S-12A-12, S-13A-9, S-14A-13, S-B-48, S-16A-14, S-17A-10, S-18A-14, S-C-24, S-H-56, on file at the Minneapolis Department of Storm and Surface Water Management). Archaeological resources associated with sewer lines within the APE therefore would not provide important historical information and thus would not meet Criterion D.

5.0 Analysis of Effects on Historic Resources

The analysis of effects was completed according to the methods described in Section 2.0 for the known, extant historic resources listed in the NRHP, determined eligible for the NRHP, locally designated, or identified in the city's "800 List."

5.1 SOUTH SIDE DESTRUCTOR

Location: 2850 20th Avenue South
Site No.: HE-MPC-3504
Historic Status: NRHP Eligible

5.1.1 Summary of Significance

The South Side Destructor is locally significant under NRHP Criterion A as an example of a larger trend of urban waste management and in particular in association with the City of Minneapolis' community planning and development. It is also an example of a public utility built under the auspices of the Federal Relief Construction programs and is significant within the framework of the Minnesota Federal Relief Construction historic context. The 1939 building offered the most up-to-date technology for waste incineration and stands as an excellent example of the early twentieth-century solution of incineration as a means of dealing with the increasing tonnage of waste in an efficient and economical manner (Stark et al. 2002).

5.1.2 Character-Defining Features

The South Side Destructor was built near other industrial properties, a railroad corridor, and a cemetery, suggesting the garbage incinerator was a less-than-pleasant neighbor and was situated in a setting where few residents could complain of its output. Efforts to make the building more attractive, however, are character-defining features of both this building and of federal relief projects in general. With regard to the South Side Destructor, features include well-constructed brick walls, the symmetrical arrangement of the principal (east) façade, the building's cubic massing and stepped wings, and fine Kasota limestone trim work with Art Deco influences. The tall, central block with extensive fenestration suggests its industrial uses for a garbage pit, crane, and furnaces. Utilitarian aspects of the building are critical in characterizing its historic use, and include features such as the truck entry and dumping floor, and the massive hollow-tile smoke stack. Much of the original landscaping, intended to beautify the facility, is no longer extant (Figures 4 and 5).

Figure 4. South Side Destructor, facing NW

Figure 5. South Side Destructor, facing NE

5.1.3 Effects

5.1.3.1 *General Observations*

The Southside Destructor is located within approximately 400 feet of the Route A alignments, and approximately 1,000 feet from the Hiawatha Substation alternatives. The Project would have no direct effects to the historic property. Underground route alternatives A2 and A3 would have no indirect effects to the historic property. Separated by several light industrial buildings, Highway 55 and the Hiawatha light rail line, the Hiawatha Substation would not be visible from the historic property and would have no other indirect effects (Figure 6). The overhead Route A1 is separated from the historic property by industrial buildings to the north, and by a cemetery to the west and northwest.

5.1.3.2 *Aesthetic Effects on Views from Property*

Under Route A1, several of the pole structures (poles 4, 6, 7 and possible 5) would be visible in views from the historic property, primarily to the west where unobstructed views through the cemetery are possible. Views of these structures would not have a significant presence, nor would they appear incompatible with the surrounding industrial landscape (Figure 7). Views toward the Project to the north are obstructed by intervening buildings and would not have a significant effect (Figure 8). These views would not diminish the integrity of character-defining features of the setting in views from the property.

5.1.3.3 *Aesthetic Effects on Views of Property*

Views of the property may include views of the pole structures in certain instances. Located several hundred feet away, the structures would not be a significant presence in these views, would not appear entirely incompatible with the industrial setting, and would not significantly diminish the setting of the historic property. The pole structures would not obstruct important views of the property.

5.1.3.4 *Other Effects*

Based on the distance of the South Side Destructor from the Project, other potential effects from the Project, such as construction vibrations or noise, would not have an impact on this property.

5.1.3.5 *Summary of Effects*

The proposed project would have the following effects:

- Midtown and Hiawatha Substations: no effect
- Route A1: no adverse effect
- Routes A2 and A3: no effect

Figure 6. View to Hiawatha Substation from South Side Destructor, facing E

○ indicates approximate location of visible transmission line pole structures; representation is not to scale.

Figure 7. View to transmission line poles 6 and 7 from South Side Destructor, facing W

◯ indicates approximate location of visible transmission line pole structure: representation is not to scale.

Figure 8. View to transmission line pole 4 from South Side Destructor, facing N

5.2 SEARS, ROEBUCK AND COMPANY

Location: 2929 Chicago Avenue South
Site No.: HE-MPC-3517
Historic Status: NRHP Listed; Locally designated

5.2.1 Summary of Significance

The Sears, Roebuck and Company Mail-Order Warehouse and Retail Store (Sears building) in Minneapolis represents an important phase in the development of one of America's major retailers, during which Sears changed the way it served customers and located facilities. The Minneapolis complex housed a distribution center for the mail-order business and retail store. Its Lake Street location was a precursor to the suburban malls that would begin to dominate retailing four decades later. While served by streetcar lines, the importance of automobile transportation was also acknowledged by Sears' acquisition of land for a parking lot west of the building (Gales and Roise 2005). The building was rehabilitated in 2005-2006 and is now known as the Midtown Exchange. It is listed under NRHP Criterion A with state-wide significance in the area of commerce. It is locally designated under HPC Criterion 1, exemplifying broad economic and geographic trends in the history of Minneapolis, and Criterion 4 as a well-preserved example of the industrial designs of George Nimmons and Company. Its period of significance is 1925 to 1955 (NRHP) or 1927 to 1954 (HPC).

5.2.2 Character-Defining Features

The NRHP-listed property is composed of a retail/warehouse building, as well as the west parking lot, and the Elliot and Tenth Avenue bridges (also contributing structures to the Grade Separation historic district). The HPC boundaries exclude the west parking lot and the bridges, but include the train shed. For the purposes of this characterization, the more expansive property boundary definition of the NRHP listing will be used.

The complex covers the areas bound by Chicago Avenue South, East Lake Street, Tenth Avenue South, and the trench of the railroad grade separation. The site is primarily occupied by the building, which itself covers an entire city block. Constructed of concrete, it is clad with cream and tan brick. The building's defining element is a 211-foot-tall central tower. A 12-story warehouse is set back from the tower. The principal façade faces west, onto the vacated Elliot Avenue and the west parking lot. The facade consists of a series of recessed wall surfaces organized around the tower, with uniform fenestration of steel-sash windows. Bedford limestone ornamentation is used on the facades, which includes ribbed piers, incised panels, spandrels, and other elements. An attached train shed was built into the depressed railroad corridor north of the building and was incorporated into the Elliot Avenue and 10th Avenue bridge structures. The west parking lot is included in the property boundaries because of its importance to the building's commercial use. Important views are of the west, principal façade, and the south, Lake Street, façade. Linkages to the west parking lot, the Lake Street frontage, and the railroad corridor are significant in defining the historical character of the property (Figures 9 through 12).

Figure 9. Sears, Roebuck and Company building, facing NE

Figure 10. Sears, Roebuck and Company building and west parking lot, facing E

Figure 11. Sears, Roebuck and Company building, facing NW

Figure 12. Sears, Roebuck and Company building, facing SE

5.2.3 **Effects**

5.2.3.1 ***General Observations***

The Sears building is located adjacent to the Route A alignments and the depressed railroad grade. None of the proposed route alternatives would be constructed within the boundaries of the historic property, and therefore they would not have direct impacts. The overhead line would cross from the south side of the railroad trench to the north side immediately north of the Sears building. The nearest pole structures would be on the northeast corner of 10th Avenue South and East 29th Street, and mid-block on the north side of the railroad trench between Elliot and Chicago avenues. The Midtown Substation alternatives would be located four blocks, or approximately 1,000 feet, west of the Sears building and would not be visible from it. The Hiawatha Substation alternatives are significantly farther and would not be visible from the historic property. The site is located within a busy, urban area, and views to and from the property include a range of historic and non-historic elements.

5.2.3.2 ***Aesthetic Effects on Views from Property***

The nearby pole structures would be visible from the historic property. In views from the rear (east) elevation, the pole structure 14 at the northeast corner of 10th Avenue and East 29th Street would be visible within views that also include a newly constructed parking and residential facility on that block (Figure 13). From the front (west) façade and west parking lot, the mid-block pole structure number 15 between Elliot and Chicago avenues would be visible beyond the newly constructed Sheraton Hotel, situated at the north end of the west parking lot (Figure 14). The series of pole structures along the railroad grade separation trench would also be visible from the Elliot Avenue and 10th Avenue bridges, which are contributing properties to the historic Sears property. None of these visual intrusions would have significant effects to the views from the historic property, where its linkages to the parking lot, railroad corridor, and Lake Street are the most significant. The property is surrounded by new and substantial construction – the parking/residential facility to the east, the warehouse to the north (across the trench), and the Sheraton Hotel to the northwest. The parking/residential facility and the hotel were both added since the property, which was rehabilitated as a certified historic preservation tax credit project, was listed in the NRHP. The introduction of the new transmission-line elements within the railroad corridor would be compatible with the industrial nature of the property's historic setting and would not obstruct views with significant historical associations, including the west parking lot, Lake Street, and the railroad corridor.

5.2.3.3 ***Aesthetic Effects on Views of Property***

The nearby pole structures would be visible in views of the historic property. The structures would be visible in views of the principal, west façade, but would not obstruct views of this façade from important viewsheds (e.g. Lake Street and Chicago Avenue) (see Figures 9 through 11). Views of the pole structures 14 and 15 would be seen beyond the Sears property, but the poles would not be perceived as an intrusion into the character of the historic property. The structures would be most apparent in views of the historic property from the north side of the railroad corridor (Figure 15; pole 14). The pole structures, however, would neither obstruct nor significantly interfere with the understanding of the

◯ indicates approximate location of visible transmission line pole structure: representation is not to scale.

Figure 13. View to transmission line pole 14 from Sears' 10th Avenue facade, facing N

◯ indicates approximate location of visible transmission line pole structure: representation is not to scale.

Figure 14. View to transmission line pole 15 from Sears West Parking Lot, facing N

Source: Xcel Energy, 2009

Figure 15. Simulated before and after views of transmission line pole 14 and Sears Building, facing SW

building's relationship to the railroad, the bridges, or the train shed. Because of the industrial nature of the corridor, the pole structures would not appear entirely out of place within these views. The addition of the pole structures would not exceed the height of the building tower, an important character-defining feature of the Sears building.

5.2.3.4 *Other Effects*

Other effects, such as increased noise levels, are not expected to be significant for the transmission line, even for properties within proximity (see Chapter 3). Vibratory effects may occur during the construction process, and would presumably be more significant for underground alternatives A2 and A3, where more substantial construction would be necessary. Measurement of the expected vibratory effects has not been undertaken, but could have effects to the walls and foundations of the historic building and the Elliot Avenue and 10th Avenue bridges, under which each of the lines would pass.

5.2.3.5 *Summary*

The proposed project would have the following effects:

- Midtown and Hiawatha Substations: no effect
- Route A1: no adverse effect
- Routes A2 and A3: potential for adverse effect due to vibratory effects

5.2.3.6 *Proposed Response to Potential Adverse Effects*

The proposed project has the potential to cause adverse effects to the historic property resulting from the vibrations created during construction work for the underground A2 and A3 route alternatives. Additional investigation may be necessary to determine the extent of the vibrations caused by the construction activity, and if the resulting vibrations have the potential to cause damage to the historic property. If the potential for damage exists, efforts should be made to modify construction techniques to minimize vibratory or other effects. At a minimum, the bridges and building should be monitored during the construction phase to measure the vibrations. If dangerous limits are exceeded, construction should cease until the cause for excessive vibrations can be remedied.

5.3 AVALON THEATER

Location: 1500-06 East Lake Street
Site No.: HE-MPC-4116
Historic Status: NRHP Eligible; Locally Designated

5.3.1 Summary of Significance

The Avalon Theater is locally significant in the areas of architecture and theater. Constructed in 1924, the Kasota stone façade and marble decoration represent a good example of the Streamline Moderne style designed by Ekman, Holm & Company. The building served as a movie theater from 1924 into the 1970s, providing an important entertainment venue to the neighborhood and greater Minneapolis.

5.3.2 Character-Defining Features

Situated on the northeast corner of Lake Street and 15th Avenue, the theater is dominated by a two-story, corner-entrance tower and marquee. This and other architectural details such as the Kasota-stone walls, granite base, curved ticket booth, stylized waterfall door, and the large glass-block window facing onto Lake Street serve to define the building's Streamline Moderne architecture (Figures 16 and 17). As a building that served as an important entertainment venue, its siting on the busy commercial corridor, where streetcars were readily accessible, is an important, character-defining feature. Its proximity to other commercial buildings of similar height and scale, built closely together, is also an important contribution to its setting.

5.3.3 Effects

5.3.3.1 *General Observations*

The Avalon Theater is located one block south of the proposed Route A alternatives, and approximately midway between the Hiawatha and Midtown substations. The project would have no direct effects to the historic property. Underground route alternatives A2 and A3 would have no indirect effects to the historic property. Neither substation would be visible from this building and would have no effects to the historic property. Between the theater and Route A1 is a built up neighborhood of two-story houses, a church, and a surface parking lot directly north of the Avalon Theater.

5.3.3.2 *Aesthetic Effects on Views from Property*

Primary views from the historic property would be directed from its corner facades, facing southwest toward Lake Street and 15th Avenue. These views are important for the setting of the historic property. The transmission-line pole structures would not be visible in these directions. Views to the north from the property's rear or side elevation would be in the direction of the project, where the upper portions of the nearest pole structures (10 and 11) would be visible from mid-block locations along 29th Street between 15th and Bloomington avenues and between 14th and 15th avenues (Figure 18). Although visible, these views are not significant in defining the character of the building, and therefore the structures would not have impacts that would diminish the integrity of the historic property.

Figure 16. Avalon Theater, facing NE

Figure 17. Avalon Theater, facing NW

○ indicates approximate location of visible transmission line pole structure: representation is not to scale.

Figure 18. View to transmission line pole 10 from rear elevation of Avalon Theater, facing N

5.3.3.3 *Aesthetic Effects on Views of Property*

Views of the historic property's principal facades would be to the northeast. Such views are inclusive of other urban features, including houses, commercial buildings, a church, parking lots, streets and trees. No buildings are taller than three stories within these views. These views may also include views of the tops of the two nearest pole structures (10 and 11), one block beyond the historic property (Figure 19). The Project would not introduce structures that would obstruct views of the historic property. Visibility of the pole structures within these views would not have significant effects to the property's architectural character or to its important relationship to Lake Street. The Project would not diminish the property's integrity of setting, feeling or association that would alter the characteristics that qualify the property for the NRHP.

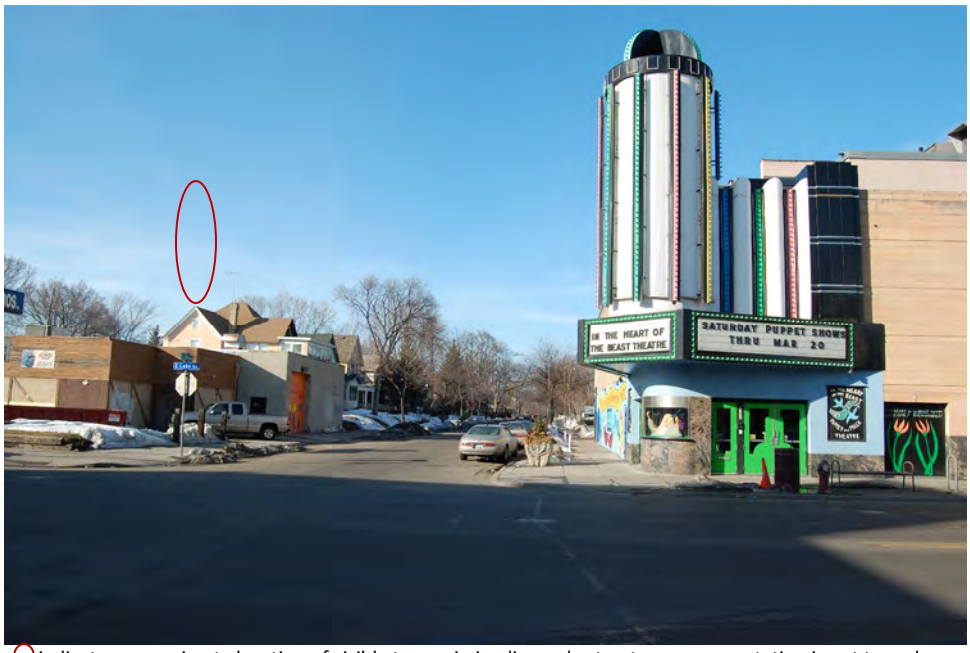
5.3.3.4 *Other Effects*

No other effects, such as increases in noise or vibration are expected to occur in relation to this historic property.

5.3.3.5 *Summary*

The proposed project would have the following effects:

- Midtown and Hiawatha Substations: no effect
- Route A1: no adverse effect
- Routes A2 and A3: no effect



O indicates approximate location of visible transmission line pole structure: representation is not to scale.

Figure 19. View to transmission line pole 11 from Lake Street and Avalon Theater, facing N

5.4 MINNEAPOLIS PIONEERS AND SOLDIERS MEMORIAL CEMETERY (LAYMAN'S CEMETERY)

Location: 2925 Cedar Avenue South
Site No.: HE-MPC-4123
Historic Status: NRHP Listed; Locally Designated

5.4.1 Summary of Significance

The Minneapolis Pioneers and Soldiers Memorial Cemetery/Layman's Cemetery has local significance under NHRP Criterion A in the area of social history. Established in 1853 or 1858, it is the oldest surviving cemetery in Minneapolis and one of the few surviving features from the city's first period of settlement. It contains the graves of several Minneapolis Euroamerican settlers; those of soldiers and veterans of the War of 1812, the Civil War, and the Spanish-American War; and those of many late nineteenth-century immigrants. The cemetery derives its significance from the preservation efforts, beginning in 1925, and through its partial redesign between 1928 and 1936, reflecting the historic preservation movement that sought to protect sites deemed significant to local history. Its period of significance is 1925 to 1942. It is designated as a local landmark under Criterion 1 for its association with significant events and periods which have made broad contributions to social history and under Criterion 2 for its association with the lives of significant persons and groups, with a period of significance from 1853 to 1942.

5.4.2 Character Defining Features

The cemetery is a 27-acre parcel bound by Cedar Avenue, Lake Street, 21st Avenue South, the irregular line of the railroad right-of-way (Grade Separation historic district), and the vacated edges of 19th Avenue South and 29th Street East (see Figure 3). In addition to the site itself, contributing features include the cemetery office building; the surrounding iron-picket/limestone-post fence (facing Cedar Avenue and Lake Street) (Figure 20) and the chain-link fence (facing secondary streets) (Figure 21); the driveway; and objects such as a flagpole, commemorative monuments, and about 5,000 headstones. The terrain is relatively flat, and the grave sites are laid out in a grid pattern conforming to the lines of the original claim and the subsequent city street system. According to the NRHP nomination, "regularity, symmetry, and accessibility through lanes lined by rows of trees were the hallmarks of Layman's Cemetery" (Pearson 2001) (Figure 22), contrasting with the later pastoral landscape designs that characterize the "lawn park" cemetery movements. When established, the cemetery setting was that of a rural prairie, but by the 1920s, it was surrounded by urban rail and automobile traffic, commercial enterprises, and industry. Between 1928 and 1929 (during the NRHP period of significance), efforts were made to limit the effects of the surrounding environment by constructing sidewalks and fences with gates around the cemetery. Six-foot chain-link fences were erected on the north and east sides, and wrought-iron pickets with limestone-block posts were placed on the sides facing Cedar Avenue and Lake Street. Trees were also planted during this period, forming allées along the driveways from Lake Street (allée no longer extant) and Cedar Avenue, and in north-south rows parallel to the abandoned lanes. Trees clustered on the northern edges of the cemetery also appear to date from this period. The purpose of these plantings, which once included shrubbery, as to hide views of the railroad tracks and

Figure 20. Cemetery Cedar Avenue entrance and drive, facing E

Figure 21. Cemetery, chain-link fence on north side, facing E

Figure 22. Cemetery, facing N

○ indicates approximate location of visible transmission line pole structure: representation is not to scale.

Figure 23. Cemetery, view of north boundary from Cedar Avenue and of transmission line poles 5 and 6, facing NE

car barns to the north (Figure 23). These protective barriers were established to "reinforce the sense of the cemetery as a protected enclave, set apart from the surrounding urban area," according to the NRHP nomination (Pearson 2001). Although the large trees now dominate the site, some 5,000 grave markers of various shapes and forms reflect the trades, military service, social status, and ethnic identities of those buried in the cemetery.

5.4.3 Effects

5.4.3.1 *General Observations*

The cemetery is located within an urban area and clearly defined by a fence around its perimeter. East Lake Street forms the south boundary, 21st Avenue South the east boundary, and Cedar Avenue the west. The Midtown Greenway corridor is located on portions of the northern boundary, and the Southside Destructor transfer station is adjacent to the northeast section. The Route A alternatives would be located near portions of the cemetery's northern boundary, opposite the Midtown Greenway/historic railroad line. The positioning of the transmission line to the north side of the Midtown Greenway will help to ease the effects of the project on the cemetery. Rather than rising directly over the cemetery, the lines would be placed to the side, and separate from the historic property (Figure 24). The Hiawatha Substation alternatives would be sited as close 800 feet from the nearest point in the cemetery, separated from it by light-industrial buildings, the Hiawatha light rail, and Hiawatha Avenue.

5.4.3.2 *Aesthetic Effects on Views from Property*

The overhead Route A1 alternative would be visible from this historic property, located just north of the cemetery's boundary. It is likely that three pole structures (5, 6 and 7) could be seen from within the cemetery (see Figure 23). Since the 1920s, when the perimeter fences were installed, preservation work at the cemetery focused the experience of the cemetery inward in a concerted effort to keep out the surrounding urban activity which encroached upon the setting since its establishment. Important view corridors and linkages, such as the allées and lines of grave markers are meant to be viewed from within the property; the enclosing nature of the fence and vegetation do not block, but discourage views of the surrounding urban setting. While the setting is important to this historic landscape, it is not a critical factor contributing to its significance. Heavy vegetation, comprised of mature trees, is planted along the northern border of the cemetery and would limit the views of the pole structures in this direction (Figure 24). Views of the structures would not diminish the integrity of setting to the extent that it would result in an adverse effect.

The Hiawatha Substation site would be located as close as 800 feet from the nearest location within the historic cemetery. Separated by modern buildings, the light rail corridor, and Hiawatha Avenue, these low-profile substation sites would not be visible from the cemetery. The Midtown Substation alternatives are located over one mile away and neither would be visible.

Figure 24. View east from Cedar Avenue with cemetery and transmission-line corridor

◯ indicates approximate location of visible transmission line pole structure: representation is not to scale.

Figure 25. View of transmission line pole 7 from Cemetery at Cedar Avenue, facing NW

5.4.3.3 *Aesthetic Effects on Views of Property*

In addition to views within the cemetery, important views *of* the cemetery are from Cedar Avenue and Lake Street, where the distinctive stone posts and iron picket fence are clearly visible, and help to define the character of the property. These views would not be obstructed by the proposed pole structures. The pole structures (4, 5, 6 and 7) may be visible within these views beyond the cemetery, but would not dominate the landscape, which also includes other tall, industrial structures such as the smoke stack for the waste incinerator. In most instances, the pole structures would be largely obscured by the mature trees along the northern boundary and within the cemetery (Figures 26 and 27).

Views from north of the site are less significant, but would also not be obstructed by the pole structures, which would be placed along the southern edge of an industrial property.

5.4.3.4 *Other Effects*

The cemetery does not have fragile structures located in close proximity to the proposed construction activity, and would be unlikely to experience vibratory effects that would cause harm. Noise from the transmission lines would not be audible above the urban, ambient noise level.

Concern has been expressed for the potter's field reported to be in the northeastern part of the cemetery, where the graves are unmarked and human remains may have shifted over the past 150 years. All ground-disturbing activity proposed by the Xcel Energy Route A overhead and underground alternatives will occur north of the historic railroad corridor, which has been in place since 1881 (see Figure 24). It would be extremely unlikely that graves would be found north of, or within the historic railroad corridor.

5.4.3.5 *Summary*

The proposed project would have the following effects:

- Midtown and Hiawatha Substations: no effect
- Route A1: no adverse effect
- Routes A2 and A3: no effect

○ indicates approximate location of visible transmission line pole structure: representation is not to scale.

Figure 26. View of Cemetery from Cedar Avenue and transmission line pole 7, facing NE

○ indicates approximate location of visible transmission line pole structure: representation is not to scale.

Figure 27. View of Cemetery from Lake Street and transmission line poles 5 and 6, facing N

5.5 ZINSMASTER BAKING COMPANY

Location: 2900 Park Avenue South
Site No.: HE-MPC-4220
Historic Status: NRHP Eligible

5.5.1 Summary of Significance

The Zinsmaster Baking Company (Zinsmaster) building is significant under NRHP Criterion A in the areas of industry and commerce for its role in the rise of regional industrial bakeries and on a local level in the areas of community planning and development and politics/government for its role in rezoning and the power struggle between industries and residents in Minneapolis. Incorporating the latest technologies, marketing, and distribution systems, the Zinsmaster building is an excellent example of the rise of industrial baking between 1900 and 1930; its period of significance is 1928, the year of its construction. Situated on Park Avenue and adjacent to the CM&StP rail line, the area was partially zoned as residential. The Zinsmaster Baking Company forced a reconsideration of the 1924 original zoning plan for Minneapolis, resulting in a victory for industry, affecting the direction of future development in the Park Avenue neighborhood, and setting a precedent for the acceptance of industry along the rail line, even at the expense of residential development.

The Zinsmaster building is also significant under NRHP Criterion B for its association with Harry Zinsmaster, who is important for his involvement and leadership in the baking industry at the local, state, and national levels. Harry Zinsmaster was a leader in the baking industry at the local, state, and national levels who was renowned for his strides in promoting the industry (Stark et al. 2002).

5.5.2 Character-Defining Features

The Zinsmaster building's setting at the junction of Park Avenue (a residential street) and the former railroad line (an industrial corridor) is an important character-defining feature of this property, and contributes directly to its significance. The creators of the building responded to both aspects of its setting by designing an industrial building that fit within the residential district. The brick-faced building has elegant architectural details that help it to blend with its residential setting, beyond the character of most industrial facilities. The use of the Collegiate Gothic revival style, complete with cast stone coping, watertable, sills, crenellated parapet, and panels inscribed with the letter "Z" give the building a dignified appearance, more suggestive of a neighborhood school, than an industrial bakery. Its stepped form – rising to three stories on the south and two on the north – also helps to mitigate the impact of this building within its setting. Rear (west) additions were added in the 1950s, and post-date the period of significance (Figures 28 and 29).

Figure 28. Zinsmaster Baking Company, facing NW

Figure 29. Zinsmaster Baking Company, facing SW

5.5.3 **Effects**

5.5.3.1 ***General Observations***

The historic Zinsmaster building is located adjacent to the railroad corridor, and to the proposed Route A alternative. The Midtown South substation would be sited across Oakland Avenue, immediately to the west, and the Midtown North substation would be sited across the railroad corridor, diagonally to the northwest. The building is set among two- and three-story single-family and multi-family dwellings along Park Avenue, and with light industrial buildings to the west.

5.5.3.2 ***Aesthetic Effects on Views from Property***

The historic property would have views of the Route A1 overhead alternative, and of the Midtown South and Midtown North substations. At this location, the Route A1 transmission line would be placed on the north side of the Midtown Greenway, opposite the historic property. The nearest pole structure for the overhead route would be located diagonally across Park Avenue on the north side of the railroad trench (pole 17). Others would be placed on the north side of the trench between Oakland and Portland avenues (pole 18). These structures would be visible in views from various facades of the historic property, although none of these structures would be placed immediately north of the building within the same block. Views in these directions encompass a variety of modern and historic properties, including the historic grade separation, a modern bicycle ramp created for the Midtown Greenway, the Park Avenue Bridge (replaced 2006), and modern office, residential, and light-industrial buildings. Although other utility lines are also within these views, the placement of the transmission-line pole structures within these view sheds would introduce significantly taller and more substantial features.

The Zinsmaster building was purposefully constructed along the rail transportation line, and as an industrial building it relates directly to that use. Although the building fits aesthetically with Park Avenue, it historic views to the railroad corridor would have been industrial in nature. The adjacency of the railroad corridor is an important, character-defining feature, and the proposed transmission line would not obstruct views to the railroad line or alter its relationship to it. With the pole structures placed outside of the railroad corridor, east of Portland Avenue and west of Oakland Avenue, this important view remains uninterrupted.

Views along Park Avenue are equally important. The structure placed near Park Avenue (pole 17) would be clearly visible in views along Park Avenue to the northeast, where a series of well-designed, brick apartment buildings help to define the streetscape (Figure 30). The placement of this structure so near the street diminishes the important aesthetic qualities of this view, diminishes its integrity of setting and association, and would result in an adverse effect.

The Midtown South substation would be placed immediately west of the historic property, across Oakland Avenue on a parcel currently used for light-industrial purposes by Brown-Campbell Co. (Figure 31). This facility would be visible from the rear elevation of the historic property. Xcel Energy proposes to construct the substation with a low profile (an average of 20 feet in height) and to erect a decorative wall around its perimeter, all of which will help to mitigate aesthetic effects. Sited along a railroad

◯ indicates approximate location of visible transmission line pole structure: representation is not to scale.

Figure 30. View from Zinsmaster Baking Company on Park Avenue and transmission line pole 17, facing NE

Figure 31. View from Zinsmaster Baking Company to Midtown North substation site, facing W

corridor, the building currently on the site was once used as a curling club, and has since been converted for light-industrial use. The linkages and views from the Zinsmaster building to this site are neither significant nor character-defining, although the presence of the recreational and industrial uses helps to reinforce the utilitarian nature of the corridor in contrast with the surrounding residential neighborhood. To some extent, the conversion of the site to a power substation continues that tradition, and would result in no adverse effect.

The Midtown North substation would be placed on the north side of the railroad corridor between Portland and Oakland avenues. It would be visible from the historic property's west (rear) and north elevations (Figure 32), and to some extent from the east (front) façade. Xcel Energy proposes a high-profile substation for the site, with an average height of 45 feet. It would be surrounded by a decorative wall. Views in this direction from the historic property are of the railroad corridor and should generally be industrial in nature. Although visible from several locations around the historic property, views to the site are not a significant character-defining feature. For many years the site was used as substation, and the reintroduction of a substation would appear to be an appropriate reuse. Decorative walls will help to diminish its effect on the landscape. It would have no adverse effect.

5.5.3.3 *Aesthetic Effects on Views of Property*

The proposed transmission line would be neither obtrusive nor obstructive in views of the historic property. Placing the transmission line on the north side of the railroad corridor, opposite the historic property, would limit views of the historic property that would include those of the pole structures and lines. Most views from the north would not include views of the pole structures. Some views from the south may include views of pole structures, but these would not be obstructive and the structures would not figure prominently within the landscape.

The Midtown South substation would be visible in some views of the historic property, when viewing from the north or south. The substation would figure most prominently in views of the historic building's rear (west) wing, a later addition to the building that has been significantly modified (Figure 33). These views are not considered to be important views that serve to illustrate the character of the building and its significance. The substation would also be visible in views of the entire building, particularly views from the northeast. Although visible, the substation would not be obstructive in nature. Removed to the building's rear, the substation would not play a significantly obtrusive role that would diminish the historic character of the property.

The Midtown North substation is unlikely to be visible from important views of the historic property. Located on the north side of the railroad corridor, and one block west of its primary elevation, the substation would be unlikely to have a strong visual presence in views of the historic property. The substation would be clearly separated from the historic property, and would not figure prominently, if at all, in most views of the property. It would not be obstructive or obtrusive.

The Hiawatha Substation alternatives are 1.4 miles away, and would have no effect to the historic property.

Figure 32. View from Zinsmaster Baking Company to Midtown South substation site, facing NW

Figure 33. View of Zinsmaster building rear wing (left) and Midtown South substation site (right), facing S

5.5.3.4 *Other Effects*

Located adjacent to the transmission corridor and to the Midtown South Substation site, the historic property has the potential to be impacted by vibratory and noise effects. Vibratory effects may occur during the construction process, and would presumably be more significant for the underground alternatives A2 and A3, where more substantial construction would be necessary. Similarly, the construction of the adjacent Midtown South Substation may result in vibratory effects to the historic building. Measurement of the expected vibratory effects has not been undertaken, but could have effects to the walls and foundations of the historic building.

The substations are expected to generate additional operational noise that may be slightly above background levels depending upon weather conditions and their design. In addition to serving as visual barriers, walls around the substations are expected to provide sound barriers to help mitigate any noise. The City of Minneapolis has established noise ordinances that prohibit activities that generate sound that is more than 10 dBA above the ambient noise level when measured within any dwelling unit. The noise ordinance also provides maximum permitted sound levels in decibels by octave band frequency, which apply to the boundary of a residence or business district. Xcel Energy has committed to ensuring that the noise levels at the substations does not exceed the levels established in the noise ordinances (Northern States Power Company 2009:78). As a historically industrial building adjacent to a railroad corridor within an urban setting, intermittent high volumes of noise and ambient noise would not be unexpected. Quietude would not be a character-defining feature of the property, and the anticipated noise levels would not be expected to exceed its historical levels. The historic Zinsmaster building now serves a residential purpose. Commitments made by Xcel Energy assure that the noise levels appropriate to the dwellings would not be exceeded, and would therefore not threaten the livability and viability of the historic building.

5.5.3.5 *Summary*

The proposed project would have the following effects:

- Midtown South substation: no adverse visual effects; potential adverse vibratory effects
- Midtown North substation: no adverse effects
- Hiawatha Substation alternatives: no effect
- Route A1: adverse effect
- Routes A2 and A3: potential for adverse effect due to vibratory effects

5.5.3.6 *Proposed Response to Potential Adverse Effects*

Adverse effects resulting from the overhead route A1 are the result of the position of the pole structure at the southwest corner of Park Avenue and the railroad corridor (pole 17). This placement is obtrusive to important views from the Zinsmaster building along Park Avenue. Shifting this structure to the east, away from the Park Avenue frontage, should resolve this adverse effect.

The proposed project has the potential to cause adverse effects to the historic property resulting from the vibrations created during construction work for the underground A2 and A3 route alternatives and the Midtown South substation. Additional investigation may be necessary to determine the extent of

vibrations caused by the construction activity, and whether the resulting vibrations have the potential to cause damage to the historic property. If there is the potential for damage, efforts should be made to modify construction techniques to minimize vibratory or other effects. If vibrations are expected to cause effects to the historic property, the building should be monitored during the construction phase to measure the vibrations. If dangerous limits are exceeded, construction should cease until the cause for excessive vibrations can be remedied.

Xcel Energy has proposed the construction of screening walls around the substation sites. Design of the screening wall is of importance and should respond appropriately to the Zinsmaster building and to the Grade Separation historic district. These designs should not be overly decorative and should be in keeping with both the industrial nature of the railroad corridor and the neighborhood. Although properties on Oakland and Portland avenues are not historic resources, the screening wall should respond appropriately to the context of this residential community, as well. To meet these suggestions, design may require different materials and styles for different wall surfaces, depending on the context of the facing elevation. These designs should be inspired by, but not mimic, the surrounding environment. For example, it would be appropriate for the wall facing the Grade Separation historic district to have an industrial look and material, such as concrete, similar to the designs used for the historic retaining walls or buildings adjacent to the corridor in other locations. The walls facing the Zinsmaster building or other neighborhood buildings may use material, such as stucco, and should avoid monolithic planes over spans larger than a typical residential lot.

5.6 HOUSE

Location: 2812-2814 11th Avenue South
Site Number: HE-MPC-4434
Historic Status: Potential significance in the 800 List

5.6.1 Summary of Significance

The brick, Queen Anne style double house at 2812-2814 11th Avenue South is identified in the city's "800 List." The brief inventory form in the SHPO files is not specific about the property's historical significance, although it suggests that this building possesses potential significance on its architectural merits, as a good example of the Queen Anne style.

5.6.2 Character Defining Features

This double house is characterized by its symmetrical façade formed by the projecting bays with gabled and hipped roofs. A number of architectural details help to define this building as the Queen Anne style, including the complex roof forms, the projecting bays, arched window hoods, colored brick banding around the windows and below the front cornice, and the use of various surface textures and materials, such as the dog-tooth string courses and clapboard gable ends (Figure 34). A number of alterations have occurred to this building since its construction and since its initial entry into the SHPO survey in 1980. The inventory form notes that the front porch addition appears to be a later addition. Since that time, the front porch was clad with vinyl siding and casement windows were installed. Similar frame additions and a deck have been appended to the rear elevation (Figure 35). The setting of this property has also been altered in recent years. The former Cepro grain elevator once stood within this block to the south, and was a towering presence that would have blocked views of the Sears building, south of the Midtown Greenway. The removal of grain elevator, along with several houses, has dramatically altered the character of the setting, offering views not historically available for much of the building's existence.

5.6.3 Effects

5.6.3.1 *General Observations*

The house faces east onto 11th Avenue South, oriented perpendicular to Route A and is set among one- to two-story dwellings. The property is located approximately a half block north of the proposed Route A alternative, which is situated on the south side of the Midtown Greenway corridor at this location. The Hiawatha and Midtown substation sites are of sufficient distance that they would not be visible from this property. The underground Route A2 and A3 alternative would have no effect to this property.

Figure 34. House, facing NW

Figure 35. House, facing NE

5.6.3.2 *Aesthetic Effects on Views from Property*

Primary views from this property would be from its façade on 11th Avenue, facing east. Views to the southeast may include views of pole 13 of the Route A1 alternative (Figure 36). It is likely that foliage on street trees would block this view during the summer months. When visible, the pole structure would not figure prominently in the landscape, and would not have effects to the character-defining, architectural features of this historic property. It would also not impair views to the neighboring residences. While less important, pole structure 14 may also be included views from the rear elevation of this property (Figure 37). This perspective also includes a view of the historic Sears building. Historically, this view would have been obstructed by the Cepro grain elevator, and it would not have been possible to see the Sears building. Views from this elevation are not part of the character-defining features, and the presence of pole 14 would not adversely impact important architectural qualities of the building or historic viewsheds.

○ indicates approximate location of visible transmission line pole structure: representation is not to scale.

Figure 36. View to transmission line pole 13 from house, facing SE

○ indicates approximate location of visible transmission line pole structure: representation is not to scale.

Figure 37. View to transmission line pole 14 from rear elevation of house, facing SW

5.6.3.3 *Aesthetic Effects on Views of Property*

Views of the historic property's principal facade are to the west (see Figure 34). Such views are inclusive of other urban features, particularly the neighboring houses, streets and trees. The pole structures from Route A1 would not be visible in these views, nor would they obstruct views of the historic property.

5.6.3.1 *Other Effects*

No other effects, such as increases in noise or vibration are expected to occur that would affect this historic property.

5.6.3.2 *Summary*

The proposed project would have the following effects:

- Midtown substation alternatives: no effect
- Hiawatha Substation alternatives: no effect
- Route A1: no adverse effect
- Routes A2 and A3: no effect

5.7 CM&StP Railroad Grade Separation Historic District

Location: Generally parallel to 29th Street, from around 20th Avenue South to Humboldt Avenue South
Historic Status: NRHP Listed

5.7.1 Summary of Significance

The Grade Separation historic district is locally significant under NRHP Criterion A in the area of community planning and development for its representation of the culmination of efforts by the citizens, city government, and city planners of Minneapolis to direct the future growth and appearance of south Minneapolis while ensuring the safety of its residents and maintaining economically necessary industrial interests. What began as a safety project evolved into one driven by aesthetics, and guided by the principles of the City Beautiful movement. During the debates between the railroad company, the City of Minneapolis, and its citizens, a Civic Commission was formed to guide public works projects in a manner that would encourage the development of business, increase the well-being of people, and beautify the city. The commission was influential in its insistence on a depressed, rather than elevated, grade separation, and was a precursor to the modern city planning department. After years of public debate, the commission was able to persuade the city council to pass an ordinance in 1910 ordering the construction of a depressed railroad corridor with 37 street bridges constructed with a uniform design of reinforced concrete and architectural details in the Classical Revival style. The project was carried out between 1912 and 1916, the historic district's period of significance (Vermeer and Stark 2004).

5.7.2 Character-Defining Features

The historic district is a 2.8-mile straight, linear corridor extending from Humboldt Avenue South on the west end to Cedar Avenue South, where it then arches northward to meet East 28th Street at its eastern terminus. The easternmost one mile (approximately) of the district is located within the Project APE (see Figure 3 for a partial view of the district boundary). The primary character-defining features include a 22-foot deep trench through which the railroad passed, street bridges spanning the trench, and occasional adjacent buildings that form the walls of the trench.

The area surrounding the corridor comprises industrial and residential properties (Figure 38). Residential buildings generally comprise two-story, single-family houses or duplexes constructed between 1880 and 1930. Many are buffered from the railroad by being situated south of 29th Street, where that street runs between the trench and the neighboring blocks. Most industrial facilities are found on the north side of the corridor, where they either serviced the railroad (such as coal yards) or used the line for transportation of goods to and from the manufacturing plants. Although located within a residential community, "the presence of these industries along the corridor gave a distinctly industrial feel to the CM&StP corridor," according to the NRHP nomination (Vermeer and Stark 2004).

The trench is generally formed by a sloped earthen embankment with a ratio of one-and-a-half horizontal to one vertical. The approximate width of the trench at the track grade ranges from 35 to 60 feet. The approximate width of the trench at the top of the slope (street grade) ranges from 110 to 135 feet (Figure 39).

Source: William E. Stark, 2003, taken from former Cepro Grain Elevator

Figure 38. Aerial View of Grade Separation historic district from 10th Avenue, facing E

Figure 39. Typical trench and bridge view, facing W

Several instances are present along the corridor where buildings that line the trench actually form its edge. Within the project APE, three buildings create this effect: the Sears building (2929 Chicago Avenue South), the Sears Addition (2800 10th Avenue South) (Figure 40), and the Dayton Rogers Manufacturing Company Building (2824 13th Avenue South) (Figure 41). Because they were all constructed after the period of significance, they are considered non-contributing to the historic district, although they are within the district boundaries.

After the trench itself, the street bridges that span the trench are the most prominent structural features of the historic district. The corridor was originally constructed with 37 bridges. At the time of the district's NRHP nomination, 28 of the original bridges were extant and contributed to the district. Within the project APE are 17 historic bridge crossings, three of which have been replaced and would now be considered non-contributing. An additional bridge crossing has been added since the nomination. Most of the historic bridges were built according to standard plans, with three spans supported by square, concrete, double-arched piers. The two main tracks ran under the center span. In most instances, the outer spans accommodated the slope of the trench. Where necessary, a reinforced concrete retaining wall was constructed at the side spans where spurs leading to adjacent industries could be placed. The bridge superstructures were built with modest aesthetic flourishes, including recessed panels at the juncture of the piers and on the solid parapet railings (see Figure 39).

Several minor features also contribute to the character of the historic district, although some have been removed with the conversion of the district to the Midtown Greenway bicycle/pedestrian trail. These features include a system of small patches of granite block, limestone and concrete retainers with mortar placed near the bridge abutments near the upper portion of the slope, and wooden utility poles along the southern side of the trench (Figure 42).

A number of newer features within the historic district have resulted in changes to its character. The rail lines have been removed, and a bituminous bicycle/pedestrian trail runs the length of the district in its place. Large ramp systems with extensive retaining walls have been constructed to provide access for new users. Within the APE, the ramps are located at Park Avenue, 10th Avenue, 13th Avenue, and 18th Avenue. Several wooden and concrete stairways offer direct access to pedestrians. Within the APE, the district now includes a system of emergency call boxes and modern light standards, new vegetation, an additional pedestrian bridge crossing at the Midtown Exchange, two replaced street bridges, and additional retaining walls (Figure 43).

Much of the character of the historic district is defined by the continuous, linear views along the corridor, punctuated by the regularly spaced bridge crossings creating a tunnel effect (see Figure 39, and Figure 44). The view provides a sense of enclosure and insulation from the surrounding city, where nearby buildings not constructed directly within or on the edge of the trench, are barely glimpsed. The trench is generally characterized by a sloped, earthen wall which helps to focus the linear view; vegetation on the slope also serves to limit views outside of the depressed corridor. In accordance with the aesthetic principles of the grade separation project, the railroad corridor is meant to vanish from

Figure 40. Sears and Sears Addition buildings, facing W

Figure 41. Dayton Rogers building, facing NW

Figure 42. Retaining walls on south side of trench, near 10th Avenue

Figure 43. Bicycle ramp, light standards, and emergency call box between Park and Portland avenues, facing W

Figure 44. Grade Separation historic district from Cedar Avenue bridge, facing W

Figure 45. View of Grade Separation historic district from Bloomington Avenue, facing N

street level views. Views along the north-south streets running perpendicular to the former railroad largely achieve this; other than the bridge railings, few hints of the corridor crossing are evident (Figure 45). Street-level views of the corridor are generally available from the bridges, where the neighboring bridges spanning the trench dominate the viewshed and illustrate the repetitive pattern of structures. From 29th Street, which runs parallel to but outside of the historic district, the parapet railings of the street bridges are visible, with occasional glimpses into the trench below, typically across a chain link fence.

It is worth noting that historical accounts of the district's setting from the time of its construction emphasize the contrasts between the industrial corridor and the surrounding residential districts, a "tension that continues to the present," according to historian Charlene Roise (2007:11). These descriptions include the following (as quoted in Roise 2007:11):

- "This work of depression is through a residence district, with numerous industries scattered along."
- The corridor "passes through a residence district, although for a considerable part of its length it is bordered by elevators, coal yards, lumber yards and other industries."
- "The tracks which are to be depressed pass through a portion of the better residence districts of Minneapolis and although numerous industries line the right of way for the greater part of the distance, it was desirable to have the finished work give as pleasing an effect as possible."
- "The majority of the industries are located on the north side of the tracks. Twenty-ninth street being adjacent to the right of way on the south side for nearly the full length of the depression."

Roise continues, "clearly, this was an industrial corridor. Industry had claimed it first, when the at-grade rail tracks were originally installed around 1880…. The conflicts between the old and new land uses were, in fact, the basis for the track depression project" (2007:10-11).

5.7.3 Examples of Transmission Lines in Historic Districts

It is worth noting that two important Minneapolis historic districts (both are NRHP-listed and locally designated) also have overhead, high-voltage transmission lines within their boundaries: the Minnehaha historic district and the St. Anthony Falls historic district.

The Minnehaha historic district is located in Minnehaha Park, Minnesota's oldest regional park. Its central feature is the Minnehaha Falls, which attracted visitors and artists to the site since the 1840s. It is also an important link in the Grand Rounds Parkway, devised by landscape architect Horace W. S. Cleveland in 1883. The visionary urban plan emphasized natural beauty, river banks, woodland vistas, and open spaces. The park contains several historic structures, including the John Stevens House (moved from its original site), the Longfellow House, and the Queen Anne-styled Minnehaha Railway Station. Like the Grade Separation historic district, the Minnehaha historic district is set within an urban area, although its emphasis is on natural, as well as historic features.

High-voltage transmission lines, similar in size and style to those proposed for the Hiawatha project, run through the Minnehaha historic district boundaries on its west side parallel to Hiawatha Avenue

(Highway 55). The lines can be seen from many places within the park, although rarely do the pole structures have a dominant visual presence. By being placed toward the edge of the district, most important sight lines are preserved without the intrusion of the modern structures. Most views of the structures are those directed outside of the park, where the busy highway and urban development also figure largely in the setting. Perhaps the most significantly adverse effect is on the Minnehaha Railway Station, where the placement of the transmission line is placed along the route of the former railroad, and its proximity dwarfs the diminutive depot (Figure 46).

In a very different setting, one of the state's most significant historic districts is the St. Anthony Falls historic district, spanning large areas on both sides of the Mississippi River in central Minneapolis. This district is associated with the city's milling heritage, where flour and other mills harnessed the power of the St. Anthony Falls to generate an entire industry. The result was an intensely industrialized district which spawned business activity that would become the economic underpinnings for generations of Minnesotans. It is the home of two National Historic Landmarks, one housing the Minnesota Historical Society's Mill City Museum. Several of the historic mills have been converted to high-end residential lofts, and the area has been transformed from an industrial district to one dominated by recreational and residential purposes.

In this historic district, uniquely designed three-legged structures carry high-voltage transmission lines through the district and across the St. Anthony Falls (Figure 47). Their presence is included within nearly every view shed, but within this historically industrial setting that encompasses many historic and modern visual experiences, they appear compatible and relatively unobtrusive. At least seven three-legged transmission line structures were erected within the core of the historic district. Their presence has thematic, if not historic associations with the power generation of the St. Anthony Falls area. This density is comparable to or greater than the 15 structures that would be evenly spaced along the one-mile stretch of the Grade Separation historic district.

These examples suggest that high-voltage transmission lines can indeed be compatible within certain historic districts, depending on the placement of the lines and the historic context of the district. Within urban settings, which often include views of non-historic and sometimes differently scaled features, the transmission lines are not inherently considered intrusive or incompatible with a historic district. The three-legged structures in the St. Anthony Falls historic district were specifically designed for that district. Their massive structural presence responds to a district dominated by massive, vertically oriented buildings in a highly industrialized setting. These designs would not necessarily be appropriate for all historic districts. Because the structures enhance the mass, rather than minimize, they likely would not be considered compatible within the Grade Separation historic district, which is a linear district set in a residential neighborhood.

Figure 46. Minnehaha historic district view

Figure 47. St. Anthony Falls historic district

5.7.4 Effects

5.7.4.1 *General Observations*

Located within the eastern half of the Grade Separation historic district, the Project would have both direct and indirect effects to the historic district. Pole structures 5 through 19 of overhead Route A1 would generally be erected at the top of the trench along its north or south side. Underground Route A2 would be placed within the trench at the eastern end of the district (between East 28th Street and 18th Avenue South) and would cross the district in two locations. For the most part, it would be placed within the 29th Street right-of-way. It would result in direct effects to the district, but no permanent visual effects. Underground Route A3 would be constructed entirely within the historic district from East 28th Street to Portland Avenue. It also would result in direct effects to the district, but no permanent visual effects. Because of these characteristics, the analysis of *aesthetic* effects was applied only to the Route A1 alternative.

The Hiawatha Substation alternatives would be located several blocks from the historic district, separated by Hiawatha Avenue and the light rail, and would have no effects to the district. The Midtown Substation alternatives would be placed adjacent to the historic district on its north or south side, between Oakland and Portland avenues. Although not within the boundaries of the district, they would have potential effects on its historic character.

Twenty-three contributing and non-contributing structures and buildings within the APE are specified in the NRHP nomination; in addition, contributing features, such as fences and small retaining walls are within the APE. Properties within the district were analyzed by type – the trench, the bridges, the buildings – since the effects of the project would be similar within each category of structure (e.g., bridges). The analysis of effects was completed for individual properties in the district only where that property would be uniquely affected by the project.

5.7.4.2 *Direct Effects*

The three Route A alternatives would each have direct effects to the historic district to varying degrees, as they would be constructed within the boundaries of the district. Underground Routes A2 and A3 would use a cut-and-cover method of construction, excavating areas approximately 10 feet wide by 5 feet deep. Route A2 would be placed at the top of the trench on its north or south sides (mostly within the 29th Street right-of-way) and would cross the trench in two locations. Route A3 would generally follow the route of the non-contributing bicycle/pedestrian trail at the base of the trench, requiring its removal and repair in certain locations. In both instances, all vegetation would need to be removed along the route alignments. Project plans call for the restoration of the grade to its original condition and replanting appropriate vegetation (see Section 5.7.5 for more detailed discussion regarding the topographical and vegetation restoration procedures). These procedures would have an effect to the trench's integrity of materials, although the material – earth – is not considered to be an important aspect of its historic character. Rehabilitation procedures following construction would restore the integrity of design by reconstituting the trench's topographic configuration, angles of the slope, and vegetation. The Project would have no adverse direct effects to the trench.

At this time, detailed plans have not been completed to determine what effect these routes may have on minor features, such as the concrete retaining walls, or the small patches of granite, limestone, or concrete retainers. In particular, the Route A2 alternative would necessitate the transition from the 29th Street grade to the base of the trench east of 10th Avenue. Historic concrete retaining walls and retainers made of other materials are within this area. Similarly, this route works its way out of the trench west of the 18th Avenue bridge, where a granite retaining wall is extant (Figure 48). This proposed alternative has the potential to affect these contributing minor features. Disturbance to minor features should be avoided wherever possible.

The underground routes would have no direct effects to bridges or buildings within the historic district.

The Route A1 overhead alternative would have direct effects to the material of the historic district by the placement of the 15 pole structures within the boundaries of the district. The placement of these structures would not change the configuration or dimensions of the trench, and would therefore have no adverse direct effect to the trench.

The substation alternatives would have no direct effect to the historic district.

Figure 48. Granite retaining wall west of 18th Avenue bridge, facing SE

5.7.4.3 *Aesthetic Effects on Views from Property*

As a district characterized by its grade separation, views from the property have distinctly differing historical characteristics and effects depending on whether the viewer is at street level or at the base of the trench. As a linear district with a repeating pattern of bridges, the effects of the proposed project would bear little relationship to its location along the trench. In other words, the effects from 17th Avenue would be the same as those from 12th Avenue or Columbus Avenue. Discussion, therefore, of effects to specific bridges or effects from specific tower structure locations is unnecessary. Where effects fall outside of the uniform application due to differing alignments of the proposed routes or due to differing characteristics of the historic district, further discussion will elaborate on those potential effects.

Views from the Base of the Trench. Views within the trench along the corridor are an essential character-defining feature. The Route A1 alternative would place the pole structures at the top of the trench at street level for the sections west of Cedar Avenue, meaning the base of the structures would begin 22 feet above the base of the trench. Although no more than one pole structure would be placed on each block, the series of poles would be visible in views along the corridor. These can be compared with other modern features, such as the series of light fixtures where there are typically two per block. Historic views would have included a large number of wood utility poles, where there were as many as four per block. The size and scale, however, of proposed transmission lines offer an important distinction from these comparisons. While the modern light standards and the historic wood utility poles are comparable in scale to the trench or to the surrounding buildings, the proposed transmission line is not, and greatly exceeds the height of nearly all visual elements within the APE, the Sears building tower and the South Side Destructor smoke stack being the exceptions.

Fifteen pole structures along the historic district would be visible from the trench floor, and would add a system of modern, vertical elements to the landscape, impacting one-third of the district's length. Views of the series of bridges and the sloped embankment would be preserved and would continue to form the primary focus of linear views. The placement of the pole structures in these locations would not have obstructive effects in key views of the linear corridor, the trench, the series of bridges, the earthen slope, or the buildings that form the edges of the trench. The proposed pole structures would not significantly diminish the integrity of feeling or association, as these aspects of integrity are more closely tied to experience of the trench as a transportation corridor and to the bridges that span the trench. The pole structures would be readily visible as an incompatible infrastructural system within the setting of the historic district, and would alter the setting of the historic district from views within the historic property, resulting in an adverse effect (Figure 49).

In two locations, near 18th Avenue and between 10th and Chicago avenues, the overhead transmission lines cross the district. A third crossing may occur if the Midtown South substation is selected. The transmission lines, while intrusive, would not have obstructive qualities and would not diminish the integrity of the property's character-defining features to any greater degree than that described above.

At the east end of the historic district, three pole structures would be placed on the north side of the trench. In this location, the character of the corridor begins to change and the sloped embankment on the north side diminishes as the railroad grade meets the street grade at East 28th Street. The north side of the corridor is abutted by a foundry yard and other industrial properties (Figure 50). Because the setting in this segment of the district differs from that of other segments, the presence of the pole structures would have no greater effect on the historic setting, feeling, or association than pole structures placed in other locations on the edge of the district.

Views from Street Level. At the street level, the aesthetic views from the historic property that serve to diminish the presence of the railroad corridor are of importance. These historic views help to emphasize the residential qualities of the surrounding neighborhood by depressing the noisy and unattractive industrial qualities associated with a railroad corridor. Despite the intentions, industries continued to be sited adjacent to the corridor and utility companies intensively used 29th Street as a thoroughfare, with utility lines strung along *both* sides of the street historically (Figure 51).

Although historic precedence exists for the industrial character of the corridor, the proposed project introduces new structures that would be visible from street grade and would result in adverse effects to the historic setting, feeling, and association of key views. The proposed structures would be several times taller and much wider in girth than the existing or historical utility lines. Their presence would appear to be out of scale with the surrounding setting. Although the structures would not *obstruct* important views, they would likely *distract* from the enjoyment and appreciation of views of the historic property and would draw attention to its industrial nature, which is contrary to the original goals of the depression project. Their placement would compromise the integrity of setting, feeling, and association and result in an adverse effect to views from the historic property.

Source: Xcel Energy, 2009

Figure 49. Before and after views of transmission line from Grade Separation historic district at 17th Avenue

Figure 50. East end of Grade Separation historic district, facing NE

Both the Midtown North and the Midtown South substations would be situated immediately adjacent to the historic district between Portland and Park avenues (Figures 52 and 53). Both would be placed at the top of the slope, and would be visible in views from the historic district. Their visual effects would be similar to other buildings adjacent to, but outside of the district, and would not obstruct significant views along the corridor, of the bridges or other important linkages. Xcel Energy proposes to construct "architecturally designed walls" facing onto the historic district (Figure 54). The final design of these walls is important in preserving the character and setting of the historic property, and should be designed to be compatible with the district's character to mitigate and minimize effects.

Source: Minnesota Historical Society, Photograph Album Call #212

Figure 51. Grade Separation historic district, ca. 1917

Figure 52. Midtown North substation site from Grade Separation historic district, facing NE

Figure 53. Midtown South substation site from Grade Separation historic district, facing SW

Source: Xcel Energy, 2009

Figure 54. Simulated view of Midtown North substation from Grade Separation historic district

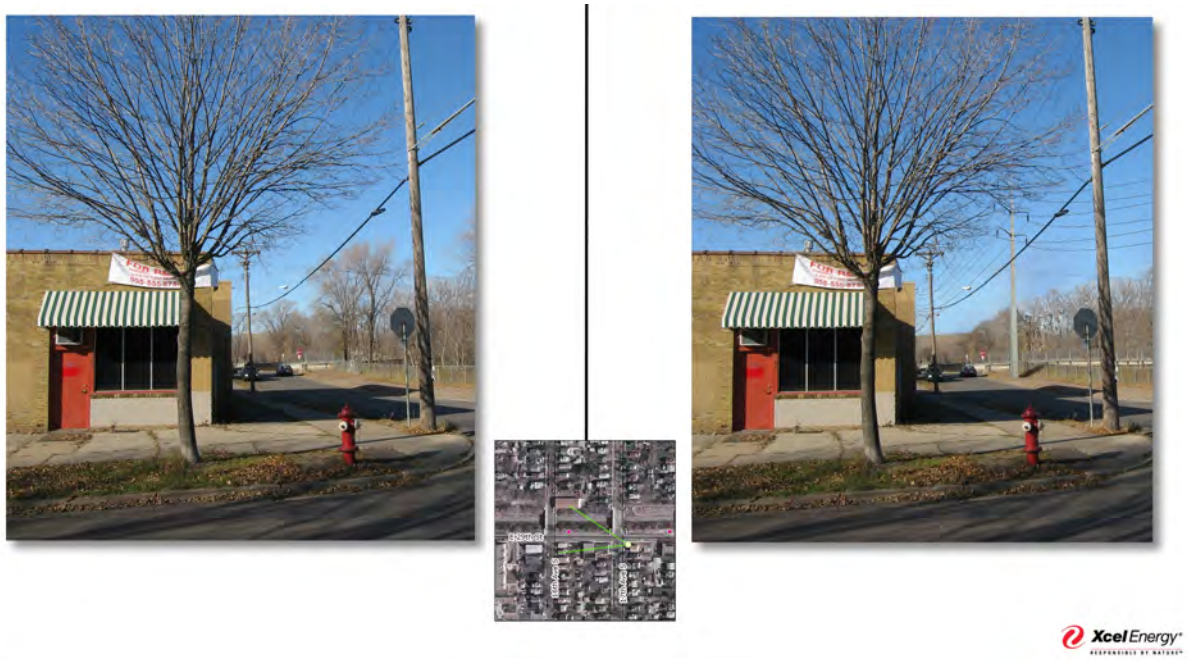
5.7.4.4 *Aesthetic Effects on Views of Property*

Because of the nature of the depressed railroad corridor, most views *of* the historic property are also from *within* the historic property, and are addressed above. Exceptions to this include views of adjacent buildings that form the edge of the trench and views of the bridges from street level.

Within the APE, all of the adjacent buildings in the historic district boundaries are non-contributing, although they serve to form the wall of the trench in their respective locations. These buildings include the Sears building, the Sears Addition, and the Dayton Rogers Manufacturing Building. With the exception of the Sears and Roebuck Company Building, the proposed project would not significantly obstruct views of these buildings. In the case of the Sears and Roebuck Company Building, a pole structure is proposed to be placed near the northeast corner of that property in or above the Grade Separation historic district corridor. This structure would be included in views of this building, but would not diminish its important character-defining features as it relates to the historic district, namely the relationship of the building to the railroad corridor and trench. For further discussion on the effects of this structure to the Sears and Roebuck Company building, which is individually listed in the NRHP, see Section 5.2. The proposed project would have no effect on the relationship of the Sears Addition or the Dayton Rogers building to the historic district, and the pole structures would not be included in most views of these buildings.

From the street grade, the pole structures would be included within views of the historic district, but would not obstruct important views of the historic district. As noted above, street-grade views were intended to minimize the aesthetic impacts of the railroad corridor by depressing the rail line and adding attractive street bridges. Although the project would have no direct impact on these features, its

presence along the corridor serves to emphasize its utilitarian nature, rather than the aesthetic improvements. The scale of the structures, many times higher than the surrounding neighborhood buildings, also appears to be incompatible with the district's setting and would result in an adverse effect.



Source: Xcel Energy, 2009

Figure 55. Simulated before and after views of transmission line from 17th Avenue

5.7.4.5 *Other Effects*

Noticeable Increases in Volume. As a railroad and industrial corridor, the historic district would be characterized by high volumes of noise. Although many of the historic sounds of the district are no longer present, the volume levels would be typical of urban settings. The audible noise produced by the overhead lines and the substations is not expected to exceed noise standards or produce appreciable increases. Any noise produced by the project after its initial construction phase would not be expected to have an adverse effect to the historic character of the property, nor would it diminish its viability and enjoyment.

Vibrations. Vibratory effects may occur during the construction process, and would presumably be more significant for the underground alternatives A2 and A3, where more substantial construction would be necessary. Measurement of the expected vibratory effects has not been undertaken, but could have effects to the historic retaining walls and to the historic bridges, under which each of the lines would pass. The historic bridges are in a deteriorated condition, and may be subject to effects from vibration caused during the construction process. The extent of the vibrations caused by the erection of the pole structures in the overhead alternative A1 would not be likely to cause serious vibratory effects to the bridges.

5.7.4.6 *Summary*

The proposed project would have the following effects:

- Midtown South substation: no adverse visual or direct effects, although design of the screening walls should be considered within the context of the character of the historic district.
- Midtown North substation: no adverse visual or direct effects, although design of the screening walls should be considered within the context of the character of the historic district.
- Hiawatha Substation alternatives: no effect.
- Route A1: adverse visual effect of views from and of the historic district. No direct adverse effects.
- Route A2: potential for adverse effect due to vibratory effects on bridges; potential adverse direct effects on retaining walls or other minor features, depending on final design.
- Route A3: potential for adverse effect due to vibratory effects on bridges.

5.7.4.7 *Proposed Response to Potential Adverse Effects*

Midtown Substation Sites: Design of the walls around the Midtown Substation is of importance and should be in keeping with the industrial nature of the corridor and with the management treatment guidelines (see below). The design of the walls facing the historic district may differ from the design of the walls facing the residential neighborhoods.

Route A1: It is important to note that while the adverse effects to the setting in the historic district *diminishes* some of its character-defining features, they would not make the property ineligible for listing in the NRHP. Considerations such as material and finish of the pole structures that would be more compatible with the historic and industrial nature of the corridor may serve to reduce the visual intrusion of the structures on the setting of the historic district. Wood poles were historically used in the Grade Separation district, and therefore may be considered the most appropriate material for the historic setting. Alternatively, weathering steel materials, such as Cor-Ten, which develops a rich brown patina with the appearance of a rusted finish, may also be compatible with the historic industrial setting.

Routes A2 and A3: The proposed project has the potential to cause adverse effects to the historic bridges resulting from the vibrations created during construction work for the underground A2 and A3 route alternatives. Additional investigation may be necessary to determine the extent of vibrations caused by the construction activity, and whether the resulting vibrations have the potential to cause damage to the bridges. If the potential for damage exists, efforts should be made to modify construction techniques to minimize vibratory or other effects. At a minimum, the bridges should be monitored during the construction phase to measure the vibrations. If dangerous limits are exceeded, construction should cease until the cause for excessive vibrations can be remedied.

Route A2: Should Route A2 be the selected alternative, construction plans should avoid the destruction or removal of historic retaining walls as the line transitions from 29th Street to the base of the trench near 10th Avenue and from the trench to 29th Street west of the 18th Avenue bridge.

5.7.5 **Cultural Landscape and Management Treatment Guidelines**

In 2006, the HCRRA completed the *Cultural Landscape Management and Treatment Guidelines for the Chicago Milwaukee and St. Paul Grade Separation Historic District of the Midtown Corridor, Minneapolis, Minnesota* in an "effort to prevent irrevocable damage to the character defining features of the district." Largely based on the National Park Service's Secretary of the Interior's Standards and Guidelines for Historic Preservation, these guidelines provide specific application to the historic district with recommended and not recommended treatments as they relate to the district's character-defining features.

The guidelines address the ranges of features that contribute to the district's significance, name the specific character-defining features, and recommend guidelines for treatment. Although not all of these aspects relate directly the proposed Project, each section is addressed here in detail commensurate with potential impacts.

5.7.5.1 *Spatial Organization and Land Patterns*

Character-Defining Features of spatial organization and land patterns:

- Lineal trench
- Depth and width of the trench
- Volunteer vegetation
- Slopes of the trench
- Bridges and the repetition of the bridges
- Views of the bridges

Recommended	Not Recommended	Proposed Project Impacts	Result
Maintaining the lineal trench	Shifting the trench north or south	Route A1 would not impact the trench slopes. Route A2 would require cutting into the trench slope in two locations; cut and cover techniques would replace the trench slopes and not shift its location. Route A3 would place the transmission lines underground at the base of the trench or along the slope; cut and cover techniques would replace the trench slopes and not shift its location.	Routes A1, A2, and A3 would meet this guideline.
Maintaining the depth and width of the trench. The trench is approximately 22 feet deep and 35 to 60 feet wide at the trench floor. The trench at the top of the slope ranges from 110 to 135 feet wide.	Planting vegetation that obscure views of the bridges.	The Project would not alter the trench dimensions. Where cuts in the trench are necessary for the underground alternatives, the trench would be replaced to its original dimension. Replacement vegetation would be arranged in coordination with HCRRA to meet this guideline.	Routes A1, A2, and A3 would meet this guideline.

Recommended	Not Recommended	Proposed Project Impacts	Result
Maintaining the existing slopes of the trench, either the earthen embankment or the solid concrete retaining walls.	Altering the slopes of the trench.	The proposed project would not alter the existing slopes or retaining walls of the trench. Where cuts in the trench are necessary for the underground alternatives, the trench slopes would be replaced to their original forms.	Routes A1, A2, and A3 would meet this guideline.
Retaining as much of the original retaining wall as possible, use care in removing graffiti.	Constructing angled or curved bridges across the Midtown Greenway.	The A2 underground alternative would potentially impact the granite retaining wall west of the 18th Avenue bridge as the line transitions from the base of the trench to the 29th Street grade and the concrete retaining wall east of the 10th Avenue bridge, where that route transitions from the 29th Street grade to the north side of the trench. Construction details have not determined how the transitions would be made or if they might result in effects to the retaining walls. Route A1 and A3 alternatives would not impact historic retaining walls. No bridges would be constructed as part of this project.	Routes A1 and A3 would meet this guideline. Route A2 may not meet this guideline, depending on the final construction designs for the route's transition from the 29th Street grade to the north side of the trench.
Repairing deterioration of bridges and retaining walls.	Removing bridges without considering the interruption to the city grid system.	The Project does not propose to repair deteriorated bridges, would not cause further deterioration of bridges and retaining walls, and would not result in the removal of bridges.	Routes A1, A2, and A3 would meet this guideline.
Replacing deteriorated elements with historic matching elements.		The Project would not require the replacement of deteriorated elements.	Routes A1, A2, and A3 would meet this guideline.

Recommended	Not Recommended	Proposed Project Impacts	Result
Retaining the scale of the building walls that form the vertical plane of the trench.		The Project would not alter the scale of the building walls that form the vertical plane of the trench.	Routes A1, A2, and A3 would meet this guideline.
Maintaining the city grid pattern through the preservation of bridges or the reconstruction of the new bridges in the same location.		The Project would not alter the bridges.	Routes A1, A2, and A3 would meet this guideline.
Working with existing sites where slopes have been altered or demolished to create additional access points.		The Project will not require additional access points.	Routes A1, A2, and A3 would meet this guideline.

In summary, the proposed project could meet all of the guidelines for Spatial Organization and Land Patterns, depending on the final construction designs for the route's transition from the 29th Street grade to the north side of the trench.

5.7.5.2 *Topography*

Character-Defining Features:

- Separation of the elevation of the city and the elevation of the rail bed.
- Level surface/flat plane of city and rail bed.
- Predominant steep side slopes with grades of 60 percent.

Recommended	Not Recommended	Proposed Project Impacts	Result
Retaining the graded slopes to provide definition to the property. Selected modifications of the grade will be considered to a) provide access to transit stations and b) provide public access to public facilities. Where possible, access needs should be accommodated in areas where grade permits.	Adding new structures or buildings on the side slopes so that the definition and linear nature of the separation is lost.	The Project would retain the graded slopes. In underground alternatives where cuts are necessary, the slope would be restored to their original form. Fifteen pole structures would be added within or near the historic district in the Route A1 overhead alternative. The structures would not be built into the slope, but rather at the top of the slope and would not result in the loss of the linear nature of the grade separation.	Routes A1, A2, and A3 would meet this guideline.
Restoring slopes temporarily altered during construction to pre-construction conditions. A topographic survey and photo documentation of site must be completed proper to project work.	Grading back the side slopes so that a sense of the separation and definition of the rail bed is lost.	Route A1 would not alter slopes. The proposed project would restore the slopes to be altered during construction to preconstruction conditions for Routes A2 and A3. No alternatives for the Project would require grading back the side slopes.	Conducting a topographic survey and photo documentation of the site for underground Route A2 and A3 alternatives where these routes disturb the topography of the historic district is needed to meet this guideline. Route A1 would meet this guideline.

Recommended	Not Recommended	Proposed Project Impacts	Result
Repairing of slopes damaged by erosion, compaction, or traffic patterns.	Using heavy maintenance or construction equipment which destroys or degrades the topography.	Route A1 would not damage slopes or alter the topography. For underground Routes A2 and A3 alternatives, typical construction equipment used on a project consists of tree removal equipment, mowers, cranes, backhoes, digger-derrick line trucks, track-mounted drill rigs, dump trucks, front end-loaders, bucket trucks, bulldozers, flatbed tractor-trailers, flatbed trucks, pickup trucks, concrete trucks and various trailers. This equipment may result in damage by causing erosion or compaction. Topography would be fully repaired if damage occurs. Stockpiled soils excavated during construction would be returned to the trench with the exception of contaminated soils. Erosion resulting from the underground alternatives would be controlled with erosion control blankets with embedded seeds, silt fences, matting and hay bales.	The proposed repairs to the slopes for the A2 and A3 alternatives would effectively restore the original topography and diminish the effects of erosion to meet this guideline. Route A1 would also meet this guideline.
Controlling drainage and grading to correct existing erosion problems.	Altering existing grades or drainage in a manner that causes or increases erosion.	Route A1 would not result in drainage or erosion problems. As noted above, procedures for erosion control would occur for the underground A2 and A3 alternatives and would not cause increased erosion.	Routes A1, A2, and A3 would meet this guideline.
Cleaning of drainage systems and the mowing of vegetative cover to maintain the slopes.	Replacing graded slopes with retaining walls.	The Project would not prevent the routine mowing and maintenance of the slopes. No slopes would be replaced with retaining walls.	Routes A1, A2, and A3 would meet this guideline.

Recommended	Not Recommended	Proposed Project Impacts	Result
Retaining the sense of the level grid of the city at an elevation above the rail bed.	Replacing poured in place concrete retaining walls with block retaining walls or graded slopes.	The proposed project would have no effect on the sense of the level street grid. No retaining walls would be replaced.	Routes A1, A2, and A3 would meet this guideline.
Stabilizing the slopes with hydroseeding, vegetation or other appropriate ground cover when restoring slopes.		Erosion control measures would be required in the vicinity of the structure locations for the Route A1 alternative. The underground Routes A2 and A3 alternatives would require clearing all vegetation along the right-of-way. Cleared areas would be re-vegetated with compatible shallow rooted species. During construction, extensive use of erosion control measures would be required along the length of the line.	Routes A1, A2, and A3 would meet this guideline.
Using mulch or straw to temporarily stabilize slopes where final grading is delayed.		As noted above, erosion control measures will be taken during construction.	Routes A1, A2, and A3 would meet this guideline.

In summary, assuming that Xcel Energy agrees to conduct a topographic survey and photo-documentation of the slope conditions prior to construction and that the slope is repaired in a manner that would restore those conditions, the Project would meet these guidelines.

5.7.5.3 *Vegetation*

Character-defining features:

- Random spacing of trees
- Random groups of trees
- A variety of hardy tree species, such as Box Elder and Green Ash
- Volunteer plant species
- Grassy ground plane

Recommended	Not Recommended	Proposed Project Impacts	Result
Planting trees randomly.	Planting trees in rows, lines or a select pattern.	The Project would result in the removal of trees located in the right-of-way for the transmission line. Trees outside of the right-of-way would need to be removed, including trees that are unstable and could potentially fall into the transmission facilities. Xcel Energy would work with property owners to replace removed trees with suitable trees regardless of the route selected.	Routes A1, A2, and A3 would meet this guideline.
Grouping a variety of trees together.	Planting a monoculture, such as red maples.	See above.	Routes A1, A2, and A3 would meet this guideline.
Limiting the use of shrubs and perennials.	Planting flowering annuals and bulbs.	See above.	Routes A1, A2, and A3 would meet this guideline.
Protecting vegetation from disease and damage caused by vehicles.	Planting or allowing through poor maintenance plants listed on the *Minnesota Noxious Weed List.*	See above.	Not all existing vegetation in the district would be protected, although appropriate replacements would be provided. Routes A1, A2, and A3 would meet this guideline.
Installing low-maintenance, naturalized plantings over formal, geometric plantings.	Planting high maintenance species such as trees that fruit or sucker.	See above.	Routes A1, A2, and A3 would meet this guideline.

Recommended	Not Recommended	Proposed Project Impacts	Result
Intensive landscaping may be considered to reinforce specific nodes along the corridor. These include access points, ramps, gateways, and locations of public art.	Unnatural pruning (i.e. espalier) to control size and to shape.	See above.	Routes A1, A2, and A3 would meet this guideline.
Selecting plants appropriate for the site conditions, including soil conditions (pH, texture, nutrient levels, compaction), drainage, sun exposure, slopes, drought tolerance, deicing salt tolerance, microclimate, and exhaust fumes.	Using rocks as planting bed edging.	See above.	Routes A1, A2, and A3 would meet this guideline.

In summary, although vegetation would need to be removed within the transmission right-of-way, replacement of appropriate vegetation meeting these guidelines would mitigate the concerns, and all route alternatives would meet these guidelines.

5.7.5.4 *Circulation*

Character-defining features:

- The lineal nature of the railroad trench.
- The repetition of the bridges overhead.
- The intersection of vehicle, pedestrian, and train traffic at the bridges.
- The segregation of the various types of transportation – trains, automobiles, and people.

The Project would have no effect to the circulation patterns of the corridor, would not change the existing alignment, trench width, or slopes, or bridge configuration, and would not introduce new access points, pathways, sidewalks, or stairs. Routes A1, A2, and A3 would meet all recommendations for this guideline.

5.7.5.5 *Water Features*

Water features have never existed within the historic district, either within the period of significance (1912-1916) or following this period. The proposed project would not introduce any water features, and would meet all recommendations for this guideline.

5.7.5.6 *Buildings*

Character-defining features:

- The eight buildings with exterior building walls that form a vertical plan of the trench (three are located within the project APE).

The proposed project will not alter existing buildings within the APE that form the wall of the trench, nor would it add new buildings to the historic district. It would therefore meet all recommendations for this guideline.

5.7.5.7 *Structures, Furnishings, and Objects*

Character-defining features:

- The earthen trench.
- The bridges that span the depressed railroad corridor.
- The reinforced concrete retaining walls constructed between 1912 and 1916 that form the sides of the trench in specific locations.
- Parapet wall constructed during the period of significance with recessed panel located at street grade.
- The monolithic concrete-block retaining walls constructed between 5th Avenue and Hiawatha Avenue.
- The iron picket fence with concrete posts.
- The series of wood utility poles located on the south side of the trench.
- The small patches of granite block, limestone and concrete retainers.

Recommended	Not Recommended	Proposed Project Impacts	Result
General			
Developing a standard palette of structures, retaining walls, and furnishing for the historic district. For example, each furnishing may be slightly different; however, the basis for each piece is similar.		The Project would not add retaining walls or furnishings to the historic district. The A1 Route would add 15 transmission-line structures at the top of the slope on the north or south sides of the corridor. These structures would be of uniform design. The A2 and A3 Route alternatives would not add any structures.	Routes A1, A2, and A3 would meet this guideline.

Recommended	Not Recommended	Proposed Project Impacts	Result
Designing and constructing new structures, retaining walls, and furnishings that are compatible with the transportation theme of the corridor, yet distinctive from the historic resources.		The Project's Route A1 alternative would introduce 15 new transmission-line structures within the historic district. Wooden utility poles on the south side of the trench (no longer extant within the APE) were a historic feature that helped to define the character of the corridor. The proposed structures would be placed at the top of the trench along 29th Street from 18th Avenue to 10th Avenue, and on the north side from 28th Street to Cedar Avenue and from Elliot Avenue to Portland Avenue. The presence of the transmission line would be a compatible structure with the transportation and industrial theme of the corridor. The Route A2 and A3 underground alternatives would not introduce new structures.	Routes A1, A2, and A3 would meet this guideline.
Structures			
Maintaining the historic relationship of the trench to the street, bridges, and buildings.	Removing or relocating bridges, buildings, or the trench without understanding the significance of this structure to the historic landscape.	The Project maintains the relationship of the trench to the street, bridges, and buildings.	Routes A1, A2, and A3 would meet this guideline.

Recommended	Not Recommended	Proposed Project Impacts	Result
Designing and installing a new structure, furnishing, or piece of art that is compatible with the preservation of the historic character of the district.		As noted above, the overhead Route A1 alternative would introduce new structures into the historic district. Although the mere fact of a utility line following the course of the historic railroad would not change the character of the district, the proposed structures would be significantly taller and greater in girth than their historical counterparts, and would be constructed of galvanized steel, rather than wood. As a result, they would not be considered compatible with the historic character of the district. The Route A2 and A3 underground alternatives would not introduce new structures.	Route A1 would introduce new structures that would not be compatible with the historic district's character and would not meet this guideline. Routes A2 and A3 would meet this guideline.
Designing and installing bridge railings needed for transit comprehensively.		The Project would not install bridge railings.	Routes A1, A2, and A3 would meet this guideline.
Retaining Walls			
Using monolithic concrete blocks in the construction of retaining walls.	Using modular block to create retaining walls.	The Project would not likely construct any retaining walls. If it were necessary to build a retaining wall, monolithic concrete blocks would be used.	Routes A1, A2, and A3 would meet this guideline.
Replacing the existing modular retaining wall block with monolithic concrete blocks as a retaining wall material according to budgetary constraint. If the modular block walls should fail, replacing them with monolith concrete blocks.	Terracing of the earthen trench.	The Project would not likely replace any retaining walls, and would not terrace the earthen trench. If it were necessary to build a retaining wall, monolithic concrete blocks would be used.	Routes A1, A2, and A3 would meet this guideline.

Recommended	Not Recommended	Proposed Project Impacts	Result
Lighting			
Replacing the acorn light fixture with the shoebox light fixture when replacement is needed and the necessary budget exists.	Using a number of lighting types in the greenway.	The Project would not install any new light fixtures.	Routes A1, A2, and A3 would meet this guideline.
	Using flashing or neon lighting as a means of illumination or to draw attention to, such as on signs that are not used for safety purposes.	The Project would not use flashing or neon lighting.	Routes A1, A2, and A3 would meet this guideline.
Furnishings and Objects			
Removing features that diminish the quality of the historic experience, for example the existing billboards.	Introducing a furnishing, object, or art piece that is incompatible with the industrial nature of the railroad corridor.	The Project would neither remove nor introduce new furnishings or objects (see above regarding new structures).	Routes A1, A2, and A3 would meet this guideline.
Retaining, repairing, and preserving the iron-picket fence and where able to document its previous existence, replicating the fence.	Relocating the wood utility poles.	No documented segments of the picket fence are located within the project APE, and all wood utility poles within the APE have already been removed.	Routes A1, A2, and A3 would meet this guideline.
Designing and installing a new furnishing or piece of art that is compatible with the preservation of the historic character of the district.	Using materials that were not available or widely used during the time period of 1912-1915 (for example, plastic).	The Project would neither remove nor introduce new furnishings or objects (see above regarding new structures).	Routes A1, A2, and A3 would meet this guideline.
Supplying trash receptacles that are industrial in appearance. A responsible entity for trash pick-up must be identified prior to installation.	Placing numerous benches and objects throughout the corridor. The location of furnishings and objects (including stone for seating) should be well thought out.	The Project would not install trash receptacles or benches in the historic district.	Routes A1, A2, and A3 would meet this guideline.
Providing barrier-free access that promotes independence for the disabled person, while preserving character-defining landscape features, materials, and finishes.	Providing stands for the distribution of newspaper and literature. This will create a litter problem.	The Project would not create any access points or provide newspaper stands.	Routes A1, A2, and A3 would meet this guideline.
	Using rocks as decorative features.	The Project would not use rocks as decorative features.	Routes A1, A2, and A3 would meet this guideline.

Permanent Art			
[Various guideline recommendations pertain to the installation of permanent art]		The Project does not intend to install permanent art.	Routes A1, A2 and A3 would meet this guideline.
Signs			
Installing trail operational signs that are compatible with the railroad character, similar to the interpretive panels or landmark signs. No bright day-glo or fluorescent colors should be used on the signs.	Installing signs not related to the operation of the Midtown Corridor (i.e. private advertising).	The Project would not require the installation of signage.	Routes A1, A2 and A3 would meet this guideline.
Limiting the size of memorial plaques to 6" by 6" or smaller. For numerous donations, larger plaques may be used. Plaques should be inset into paving, attached to benches or sign posts.	Installing permanent signs to bridges or historic retaining walls.	The Project would not install memorial plaques, or affix signs to bridges or retaining walls.	Routes A1, A2 and A3 would meet this guideline.

5.7.5.8 *Accessibility Considerations*

Since the district has been converted into a recreational bicycle/pedestrian trail, sets of ramps and stairs have been added to allow previously unavailable access to the depressed trench for new users. The guidelines provide recommendations for the design, locations, and style of the access points. The proposed project would not add additional access points and would not impact those already in place.

5.7.5.9 *Health and Safety Considerations*

The history of industrial uses along the railroad corridor has caused environmental contamination of the soils or surface materials of the corridor, which may be contaminated with lead, petroleum products, or arsenic. Although the railroad ties have been removed, the remaining ballast could contain carcinogenic compounds from the creosote treatment of the railroad ties.

Recommended	Not Recommended	Proposed Project Impacts	Result
Developing safety plans that consider and incorporate the character-defining features of the greenway.	Destroying character-defining features without first considering less destructive alternatives to meet safety and health goals.	The Project would comply with all health and safety regulations, but would not add any additional safety structures, such as emergency call boxes, that would alter the character-defining features.	Routes A1, A2, and A3 would meet this guideline.
Using light judiciously to enhance safety.	Removing volumes of contaminated soils and not returning the land to its original grade through the replacement of soils.	The Project would not add lighting. Underground Routes A2 and A3 would require significant ground disturbance except where horizontal directional drilling was used. For the overhead Route A1 alternative, subsurface work would be confined to the transmission structure locations. Segregation and disposal of contaminated soils would meet all legal obligations and Xcel Energy's applicable policies protecting worker health and safety. The land would be returned to its original grade through the replacement of soils.	Routes A1, A2, and A3 would meet this guideline.
Testing all soil for contamination prior to manipulation of the soil.	Failing to remove sediment or erosion from the path system.	Initial research prepared for the project application identified the known or suspected contaminated sites for all routes. Xcel Energy policies and legal obligations require crews to continually monitor for possible soil contamination during construction. Erosion control procedures would prevent the buildup of sediment in the path system during construction.	Routes A1, A2, and A3 would meet this guideline.

Recommended	Not Recommended	Proposed Project Impacts	Result
Providing all personnel working with potentially contaminated soils the appropriate protective equipment.	Allowing vegetation to block lights, emergency telephones, security cameras, and important sight lines.	Xcel Energy would meet all legal obligations and applicable policies protecting worker health and safety. Any planting of new vegetation would be not block safety features or important sight lines, and would be done in coordination with the HCRRA to meet this guideline.	Routes A1, A2, and A3 would meet this guideline.
Designing landscape plans to promote the visibility into and from spaces.	Planting shrubs with a mature height and width that would allow individuals to hide behind the shrubs.	The Project would require the removal of vegetation within the transmission line right-of-way for all underground Route A2 and A3 alternatives. Replacement of vegetation would be done in coordination with the HCRRA to meet these guidelines.	Routes A1, A2, and A3 would meet this guideline.
Designing development to provide public access into the Midtown Corridor while taking into account the character-defining features of the corridor.	Planting closer than 5 feet from the cycling/walking paths.	The Project would not provide additional public access to the Midtown Corridor. Plantings would be done in coordination with the HCRRA to meet all guidelines.	Routes A1, A2, and A3 would meet this guideline.
Maintaining lights, emergency telephones, and security cameras.	Controlled burning as a maintenance practice for native plantings.	The Project would replace any lights, emergency telephones, and security cameras it required to remove during the construction of route. The project would not undertake controlled burning.	Routes A1, A2, and A3 would meet this guideline.
Using physical and biological means to control pests. Physical management activities include the hand removal of pests. Biological activities involve the use of the beneficial insects to control invading insects. For example, using ladybugs to control aphids.	Applying chemicals (insecticides, pesticides, and herbicides) to control pests prior to using all other suitable physical and biological control strategies. Chemicals are to be applied by Minnesota-certified pesticide applicators.	The Project would not employ any means of pest management.	Routes A1, A2, and A3 would meet this guideline.

Recommended	Not Recommended	Proposed Project Impacts	Result
Removing sediment and erosion from the path system.	Grading the slopes so the water and the associated sediment drains on to the cycling and walking paths.	Erosion control procedures would prevent the buildup of sediment in the path system during construction. Slopes would be graded to avoid drainage onto the cycling and walking path.	Routes A1, A2, and A3 would meet this guideline.
Removing any bio hazards such as needles.		The proposed project does not anticipate the need to remove any bio hazards.	Routes A1, A2, and A3 would meet this guideline.

In summary, the proposed project would meet all Health and Safety Consideration guidelines.

5.7.5.10 *Environmental Energy Considerations*

Environmental concerns related to the Midtown Greenway Corridor are the handling of storm water, water conservation, and lighting pollution.

Recommended	Not Recommended	Proposed Project Impacts	Result
Using the shoebox light fixture or another industrial light fixture that directs the light downward.	Using extensive retaining walls to maintain the slopes of the corridor.	The Project would not introduce additional lighting or retaining walls.	Routes A1, A2, and A3 would meet this guideline.
Minimizing the use of hard-paved impermeable surfaces or installing permeable pavers where appropriate.		The Project would not introduce additional paved surfaces.	Routes A1, A2, and A3 would meet this guideline.
Replacing the existing acorn light fixture with the shoebox fixture as the acorn fixture ages and the budget allows.		The Project would not be constructed in segments of the Midtown Greenway where the acorn light fixtures are in place, and would not require this modification.	Routes A1, A2, and A3 would meet this guideline.

Recommended	Not Recommended	Proposed Project Impacts	Result
Planting should be located to conserve energy, modify temperature, ameliorate wind extremes, and not require irrigation after initial establishment.		The Project would require the removal of vegetation within the transmission line right-of-way for underground Route A2 and A3 alternatives. Replacement of vegetation would be done in coordination with the HCRRA to meet these guidelines.	Routes A1, A2, and A3 would meet this guideline.

In summary, the proposed project would meet the Environmental Energy Consideration guidelines.

6.0 Summary and Recommendations

In March 2010, Stark, in collaboration with Summit Envirosolutions Inc., conducted a cultural resources analysis of effects for the proposed Hiawatha Project to assist with the permitting process reviewed by the PUC. The analysis of effects was completed for known properties listed in the NRHP, determined eligible for listing in the NRHP, locally designated by the Minneapolis HPC, or identified in the city's "800 List." A total of seven properties within the APE met these criteria: the South Side Destructor, the Sears, Roebuck and Company (Sears) building, the Avalon Theater, the Minneapolis Pioneers and Soldiers Memorial Cemetery/Layman's Cemetery, the Zinsmaster Baking Company (Zinsmaster) building, a house at 2812-2814 11th Avenue South, and the Chicago, Milwaukee and St. Paul Grade Separation Historic District (Grade Separation historic district).

The effects study took into account the following elements of the Project's proposed alternatives:

- Hiawatha East substation alternative
- Hiawatha West substation alternative
- Zimmer-Davis substation alternative
- Midtown North substation alternative
- Midtown South substation alternative
- Route A1, an overhead transmission route
- Route A2, an underground transmission route
- Route A3, an underground transmission route

In addition to the analysis of effects study, as described above, analysis was undertaken to assess the potential for underground resources associated with historical streetcar lines and sewer systems to be significant and to be affected by the project.

6.1 Summary of Below-Ground Resources Assessment

The previous cultural resources assessment (Stark and Vermeer 2009) addressed archaeological resources for a range of proposed route and substation alternatives. This study determined that because the proposed transmission lines were limited to existing rights of way, which had been disturbed through road construction and utility installation, any potential archaeological resources would not likely be intact.

Subsequent to the assessment, Xcel Energy requested an assessment of the potential for resource types associated with early road construction and utility installation, specifically streetcar lines and sewer lines, to be significant and to be affected by the project. With regard to streetcars, the investigation concluded that because all three of the former streetcar line corridors within the project APE are not early or otherwise important examples of the streetcar line system in Minneapolis, did not make significant connections, were not directly responsible for the economic growth or survival of the city, and are not otherwise important in the history of Minneapolis, associated archaeological resources

would not satisfy NRHP Criterion A. Further, because the integrity of the original streetcar lines has been compromised by their replacement in the 1910s, they would not be able to convey any potential significance were it to exist. The locations and construction methods of streetcar lines in the Twin Cities are well understood; therefore, the remnants of these lines are unlikely to provide important historical information to meet Criterion D.

Sewer lines are unlikely to be associated with events that have made significant contributions to the broad patterns of Minneapolis history, and archaeological resources associated with sewer lines would not meet Criterion A. Archaeological resources associated with sewer lines within the APE would not provide important historical information and thus would not meet Criterion D.

6.2 SUMMARY OF EFFECTS ANALYSIS

The effects analysis was completed for seven known historic resources within the APE for effects from eight Project components/alternatives. Emphasis of the study was placed on the Project's potential for visual, aesthetic, direct, vibratory, and noise effects that would diminish the qualities that contribute to the resources' historic significance. The summary of those effects are presented in Table 2. Information on the type, nature, and extent of the effects are detailed in the previous chapter.

The HCRRA, owner of the Grade Separation historic district, has established a set of treatment guidelines for specific activities with the potential for affecting the historic district. These guidelines were applied to the Project alternatives and assessed for their ability to meet the recommended guidelines (see Section 5.7.5). The project was found to meet nearly all of these treatment guidelines. Exceptions include:

- Route A2 may not meet the guideline to retain original retaining walls depending on the final construction specifications for the route's transition from the 29th Street grade to the north side of the trench and on the transition from the base of the trench to 29th Street west of the 18th Avenue bridge. If these specifications call for the potential impact to these resources, Xcel Energy is encouraged to avoid such impact through alternative construction methods. Where it is not possible to avoid impacts, Xcel Energy is encouraged to repair or reconstruct walls using appropriate materials, styles and methods.
- Route A1 would introduce new structures that would not be compatible with the historic district's character and would not meet the recommendation to install a new structure that is compatible with the preservation of the historic character of the district.

The completion of a topographic survey and photo documentation of the site would need to be undertaken by Xcel Energy for the Route A2 and A3 alternatives where the Project would disturb the topography of the historic district to meet the guidelines.

Table 2. Summary of Effects to Historic Properties by Project Component and Alternative

Project Component	Alternative	Historic Property						
		Southside Destructor	**Sears Roebuck Company**	**Avalon Theater**	**Minneapolis Pioneers and Soldiers Cemetery**	**Zinsmaster Baking Company**	**House at 2812-2814 11th Avenue South**	**CM&StP Grade Separation Historic District**
East Substation	**Hiawatha East**	No Effect	No Effect	No Effect	No Effect	No Effect	No Effect	No Effect
	Hiawatha West	No Effect	No Effect	No Effect	No Effect	No Effect	No Effect	No Effect
	Zimmer-Davis	No Effect	No Effect	No Effect	No Effect	No Effect	No Effect	No Effect
West Substation	**Midtown North**	No Effect	No Effect	No Effect	No Effect	No Adverse Effect	No Effect	No Adverse Effect
	Midtown South	No Effect	No Effect	No Effect	No Effect	Potential Adverse Effect	No Effect	No Adverse Effect
Transmission Line Route	**Route A1**	No Adverse Effect	No Adverse Effect	No Adverse Effect	No Adverse Effect	Adverse Effect	No Adverse Effect	Adverse Effect
	Route A2	No Effect	Potential Adverse Effect	No Effect	No Effect	Potential Adverse Effect	No Effect	Potential Adverse Effect
	Route A3	No Effect	Potential Adverse Effect	No Effect	No Effect	Potential Adverse Effect	No Effect	Potential Adverse Effect

6.3 RECOMMENDATIONS FOR ADVERSE EFFECTS

Based on the analysis of effects study, where several project components were found to have adverse effects, or potential adverse effects on the known historic properties, the following recommendations are made to remove, reduce, or mitigate adverse effects.

6.3.1 Midtown South Substation

The Project has the potential to cause adverse effects to the Zinsmaster building resulting from the vibrations created during construction work for the Midtown South substation. Additional investigation may be necessary to determine the extent that vibrations are caused by the construction activity, and whether the resulting vibrations have the potential to cause damage to the historic property. If the potential for damage exists, efforts should be made to modify construction techniques to minimize vibratory or other effects. If vibrations are expected to cause effects to the historic property, the building should be monitored during the construction phase to measure the vibrations. If dangerous limits are exceeded, construction should cease until the cause for excessive vibrations can be remedied.

6.3.2 Route A1

Adverse effects to the Zinsmaster building would result from the overhead Route A1 alternative where the position of the pole structure at the southwest corner of Park Avenue and the railroad corridor would obstruct important views from the Zinsmaster building along Park Avenue. Stark recommends shifting this structure to the east, away from the Park Avenue frontage, to resolve this adverse effect.

Route A1 was found to have adverse visual and aesthetic effects on the Grade Separation historic district. It is important to note that while the adverse effects to the setting in the historic district *diminishes* some of its character-defining features, they would not make the property ineligible for listing in the NRHP. Considerations of the material and finish of the pole structures that would be more compatible with the historic and industrial nature of the corridor may serve to reduce the visual intrusion of the structures on the setting of the historic district. Wood poles were historically used in the Grade Separation historic district, and therefore may be considered the most appropriate material for the historic setting. Alternatively, weathering steel materials, such as Cor-Ten, which develops a rich brown patina with the appearance of a rusted finish, may also be compatible with the historic industrial setting.

6.3.3 Route A2

Because Route A2 is an underground alternative, substantial earthmoving construction may be necessary during the construction process, depending on the methods used. This may result in excessive vibrations, which could cause permanent adverse effects to adjacent historic properties, including the historic bridges spanning the trench of the Grade Separation historic district; the Sears building; and the Zinsmaster building. Additional investigation may be necessary to determine the extent of the vibrations caused by the construction activity, and whether the resulting vibrations have the potential to cause damage to the historic properties. If the potential for damage exists, efforts should be made to modify construction techniques to minimize vibratory effects. At a minimum, the bridges and buildings should

be monitored during the construction phase to measure the vibrations. If dangerous limits are exceeded, construction should cease until the cause for excessive vibrations can be remedied.

The Route A2 alternative may also have direct effects to historic retaining walls east of the 10th Avenue bridge, where the line transitions from 29th Street to the base of the trench, and to the retaining walls west of the 18th Avenue bridge, where the line transitions from the trench to the 29th Street grade. Should Route A2 be the selected alternative, construction plans should avoid the destruction or removal of historic retaining walls in these and other areas.

6.3.4 Route A3

Like the Route A2 alternative, Route A3 also has the potential to cause adverse effects from vibrations created during the construction phase on the historic bridges of the Grade Separation historic district, the Sears building, and the Zinsmaster building. Procedures for determining the extent of the vibrations and minimizing or removing adverse effects should be undertaken as proposed for Route A2.

6.4 OTHER RECOMMENDATIONS

6.4.1 Review of Plans for Route

If any of the preferred Route A alternatives are selected as the final route by the PUC, detailed construction plans should be carefully reviewed to make a final determination of effects in an effort to avoid, reduce, or mitigate those effects. The generalized plans available for this analysis of effects study may not account for effects to all minor elements of the Grade Separation historic district or for modifications that may need to occur in the construction plan development phase.

6.4.2 Phase I Cultural Resources Investigation

Xcel Energy has committed to conducting a Phase I cultural resources investigation to identify any additional cultural resources within the APE for the selected route. Identification of additional historic properties may result in route modifications to avoid or minimize adverse effects to those properties.

6.4.3 Substation Screening Walls

The Midtown South Substation site is adjacent to the Zinsmaster building and the Grade Separation historic district. Xcel Energy has proposed the construction of architecturally designed screening walls around the substation sites. Design of the screening wall is of importance and should respond appropriately to the historic character of the Zinsmaster building and the Grade Separation historic district. Although properties on Oakland and Portland avenues are not historic resources, the screening wall should respond appropriately to the context of this residential community, as well.

6.4.4 Coordination with HCRRA

The HCRRA, owner of the Midtown Greenway corridor, has developed treatment guidelines for the Grade Separation historic district in order to preserve its character-defining features. Because each of the Route A alternatives would use this corridor and impact it in some way, Xcel Energy should coordinate design details with the HCRRA to assure that the guidelines are met to the extent possible for the selected route. The development of a memorandum of agreement may be appropriate to address

issues such as documentation of the existing conditions, corridor restoration, vegetation restoration plans, and detailed effects to minor elements within the historic district.

7.0 References Cited

Arnott, Sigrid

1996 Twin Cities Sanitation History. Available online at www.fromsitetostory.org/sources/papers/tcmsanitation/tcmsanitation.asp.

City of Minneapolis

1997-2010 History of Stormwater and Wastewater and Drainage Systems in Minneapolis. Available online at http://www.ci.minneapolis.mn.us/stormwater/overview/construction-history.asp.

Diers, John W. and Aaron Isaacs

2007 *Twin Cities by Trolley: The Streetcar Era in Minneapolis and St. Paul*. University of Minnesota Press, Minneapolis

Environmental Resources Management, Inc.

2010 *Hiawatha Transmission Line Project Draft Environmental Impact Statement.* Prepared for the Minnesota Department of Commerce, Office of Energy Security.

Gales, Elizabeth and Charlene Roise

2005 *Sears, Roebuck and Company Mail Order Warehouse and Retail Store National Register of Historic Places Registration Form.* On file at the Minnesota State Historic Preservation Office. St. Paul.

Hennepin County Regional Railroad Authority (HCRRA)

2006 *Cultural Landscape Management and Treatment Guidelines for the Chicago Milwaukee and St. Paul Grade Separation Historic District of the Midtown Corridor, Minneapolis, Minnesota.* Accessed online at: http://www.ci.minneapolis.mn.us/cped/docs/Midtown_Plan_Submit_III.pdf.

National Park Service

1995 *National Register Bulletin 15: How to Apply the National Register Criteria for Evaluation.* U.S. Government Printing Office, Washington, D.C.

1996 *The Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for the Treatment of Cultural Landscapes.* Government Printing Office. Washington, D.C.

Northern States Power Company

2009 *Northern States Power Company Application to the Public Utilities Commission for a Route Permit: Hiawatha Project*. MPUC Docket No. E002/TL-09-38.

Olson, Russell L.

1976 *The Electric Railways of Minnesota*. Minnesota Transportation Museum, Hopkins.

Pearson, Marjorie

2001 *Minneapolis Pioneers and Soldiers Memorial Cemetery National Register of Historic Places Registration Form.* On file at the Minnesota State Historic Preservation Office. St. Paul.

Roise, Charlene
2007 “Origins of the Grade Separation” in *Midtown Corridor Historic Bridge Study.* Prepared for the Public Works Department, City of Minneapolis, Minnesota by TKDA and Hess Roise.

Stark, William E. and Andrea C. Vermeer
2004 *Phase I and II Architectural History Investigations for the Lake Street Repaving and Streetscape Design Project, Minneapolis, Hennepin County, Minnesota.* On file at the Minnesota State Historic Preservation Office. St. Paul.

2009 *Cultural Resources Assessment for the Xcel Energy Hiawatha Project, Minneapolis, Hennepin County, Minnesota.* Prepared for Natural Resources Group LLC and Xcel Energy Services, Inc.

Stark, William E., Andrea Vermeer, Michelle Terrell, and Kristen Zschomler
2002 *Phases I and II of the Architectural History Investigation for the Proposed Midtown Greenway, Minneapolis, Hennepin County, Minnesota Volume I: Report.* Prepared for Hennepin County Department of Transit and Community Works. On file at the Minnesota State Historic Preservation Office. St. Paul.

Vermeer, Andrea C. and William E. Stark
2004 *Chicago Milwaukee and St. Paul Railroad Grade Separation Historic District National Register of Historic Places Registration Form.* On file at the Minnesota State Historic Preservation Office. St. Paul.

Appendix A: Personnel

Project Personnel

Project Manager	William E. Stark, M.A.
Principal Investigator, Architectural History	William E. Stark, M.A. Stark Preservation Planning LLC
Principal Investigator, Archaeology	Andrea C. Vermeer, Ph.D., RPA Summit Envirosolutions, Inc.
GIS Mapping and Graphics	Tylia H. Varilek, B.A. Summit Envirosolutions, Inc.