



Southwest LRT Habitat Analysis

May 2016

Southwest LRT Project Technical Report

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SOUTHWEST LRT (METRO GREEN LINE EXTENSION)

Executive Summary

This technical report describes the habitat analysis that was performed to support the development of the Southwest Light Rail Transit (LRT) Final Environmental Impact Statement. The habitat analysis involved a review of multiple sources of publicly available environmental spatial data developed by the Minnesota Department of Natural Resources. The spatial data was analyzed to assess the existing land cover within the vicinity of the proposed Southwest LRT Project in order to quantify and evaluate the existing habitat that is present within a defined habitat study area.

The Minnesota Land Cover Classification System (MLCCS) spatial data was analyzed to identify the existing types of land cover present in the study area. The results are summarized in the table below.

MLCCS Land Cover Classification	Area of Land Cover within Habitat Study Area (acres)	Percent Cover of Habitat Study Area
Impervious Surfaces	805.3	75.1%
Herbaceous	84.6	7.9%
Woodlands	69.6	6.5%
Cultivated Vegetation	86.1	8.0%
Forests	12.1	1.1%
Shrublands	5.4	0.5%
Water	9.2	0.9%
Sparse Vegetation	0.0	0.0%
Nonvascular Vegetation	0.0	0.0%
Total	1,072.3	100%

Two MLCCS-derived spatial data sources were also analyzed, Regional Ecological Corridors (REC) and Regionally Significant Ecological Areas (RSEA). Portions of RECs occur in five locations throughout the habitat study area. The results of the RSEA analysis are summarized in the table below. RSEAs are ranked from low to high ecological importance.

Ranking	Area of RSEAs within Habitat Study Area (acres)	Percent of Habitat Study Area
1 (Low)	32.8	3.1%
2 (Medium)	44.5	4.1%
3 (High)	0.0	0.0%
Total	77.3	7.2%

Two Minnesota Biological Survey spatial data sources were analyzed as well, Native Plant Communities and Sites of Biological Significance. No sites associated with these sources were identified within the habitat study area.

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1 Introduction

Habitat is not specifically protected under local, state, or federal law, unless the habitat is designated as critical habitat for a federally listed threatened or endangered species that is regulated under Section 7 of the Endangered Species Act.¹ However, there are some regulated resources that could be associated with habitat. For instance, the removal of trees could have an impact on existing habitat, and is often regulated under various municipal zoning and tree ordinances.

The habitat study area for the Project is defined as the area extending 100 feet around the Southwest LRT Project's limits of disturbance.²

2 Methodology

Existing habitat has been identified and evaluated through a review of five environmental spatial data sources created by MnDNR: (1) Minnesota Land Cover Classification System (MLCCS), (2) Regional Ecological Corridors, (3) Regionally Significant Ecological Areas, (4) Native Plant Communities, and (5) Sites of Biodiversity Significance. These spatial data sources, as described in the remainder of this section, are publicly available on the Minnesota Geospatial Commons website.³

2.1 Minnesota Land Cover Classification System

The Minnesota Land Cover Classification System (MLCCS)⁴ is a tool created by MnDNR to categorize urban and built-up areas in terms of existing vegetation or land cover types. The land cover types associated with the habitat study area were reviewed in July 2015 using the most current available MLCCS data⁵ to identify the existing land cover types. As defined below, the MLCCS consists of nine land cover classes.⁶

- **Artificial Surfaces and Associated Areas (i.e., Impervious Surfaces).** Areas of vegetative alteration, with a vegetative cover of less than 96 percent. Vegetation may be planted, cultivated, or pre-development that humans have altered or fragmented. This class includes areas that contain artificial cover resulting from human activities such as construction sites (e.g., buildings, pavement), extraction sites (e.g., open mines, quarries, pits), and waste disposal sites. This class is determined by the presence of human-made impervious surface. This subsystem loosely correlates to typical land uses, such as those defined as residential, industrial, or transportation.
- **Cultivated Vegetation.** Areas of vegetative alteration with a vegetative cover of 96 to 100 percent. Natural vegetation has often been removed or modified and replaced with different types of vegetative

¹ Section 7 of the Endangered Species Act requires that all federal agencies consider and avoid, if possible, adverse impacts to federally-listed rare, threatened and endangered species or their critical habitats, which may result from their direct, regulatory, or funding actions. The Federal Transit Administration participated in a Section 7 consultation with the U.S. Fish and Wildlife Service for the Southwest LRT Project. Based on this consultation, the Southwest LRT Project will not affect habitat that is designated as critical habitat for any federally listed threatened or endangered species.

² The Southwest LRT Project's limits of disturbance are defined as the area of soil that will be temporarily or permanently disturbed by the project.

³ See <https://gisdata.mn.gov/>

⁴ See <http://www.dnr.state.mn.us/mlccs/index.html>.

⁵ See <https://gisdata.mn.gov/dataset/biota-landcover-mlccs>

⁶ See <http://files.dnr.state.mn.us/assistance/nrplanning/community/mlccs/manual.pdf>

cover resulting from anthropic activities. Vegetation may be either planted, cultivated, treated with annual management, and/or otherwise altered by humans. Soils usually have been mechanically or physically altered for the establishment of vegetation. This formation class generally includes typical land uses of agriculture, parks, golf courses, or other such land uses where the vegetation is cultivated, planted, or maintained, and impervious surface contributes less than 5 percent of the area.

- **Forests.** Trees with their crowns overlapping (generally forming 60 to 100 percent cover). Forests are defined primarily by the dominant species present, not by the current height of the cover. For example, if the area is composed by young elms and ashes that are only 15 feet tall, it is classified as a forest or woodland, depending on the density of the tree species. If the area is composed of willows and dogwoods also 15 feet tall, it is classified as shrubland.
- **Woodlands.** Open stands of trees with crowns not usually touching (generally forming 25 to 60 percent cover). Canopy tree cover may be less than 25 percent in cases where it exceeds shrub, dwarf-shrub, herb, and nonvascular cover, respectively.
- **Shrublands.** Shrubs and dwarf-shrubs with individuals or clumps overlapping to not touching (generally forming more than 25 percent cover, trees generally less than 25 percent cover). Shrub cover may be less than 25 percent where it exceeds tree, herb, and nonvascular cover, respectively. Vegetation dominated by woody vines is generally treated in this class.
- **Herbaceous.** Herbs (i.e., graminoids, forbs, and ferns) dominant (generally forming at least 25 percent cover; trees, shrubs, and dwarf-shrubs generally with less than 25 percent cover). Herb cover may be less than 25 percent where it exceeds tree, shrub, dwarf-shrub, and nonvascular cover, respectively.
- **Nonvascular Vegetation.** Nonvascular cover (i.e., bryophytes, non-crustose lichens, and algae) dominant, generally forming at least 25 percent cover. Nonvascular cover may be less than 25 percent where it exceeds tree, shrub, dwarf-shrub, and herb cover, respectively. Crustose lichen-dominated areas should be placed in the Sparse Vegetation class.
- **Sparse Vegetation.** Describes vegetation with low total plant cover; abiotic substrate features are dominant; vegetation is scattered to nearly absent and generally restricted to areas of concentrated resources (total vegetation cover is typically less than 25 percent and greater than 0 percent); areas with high cover of crustose lichen and no other vegetation are included here.
- **Water.** This formation class cover type is to be used for open water. Open water may include large mats of floating algae or non-rooted vascular vegetation. Emergent vegetation generally contributes less than 5 percent total cover. Where emergent vegetation found in rivers, intermittent streams, lakes, and wetlands is greater than 4 percent, they are to be classified under other formation class cover types.

2.2 Regional Ecological Corridors

Regional Ecological Corridors (RECs)⁷ are derived from the MLCCS. They are defined as contiguous wildlife habitat passageways. MnDNR generated this data using cost/distance analysis to find the shortest connection through the best (most natural) land cover types between MLCCS patches. The most current available REC data were reviewed in July 2015 by overlaying Regional Ecological Corridor data on aerial photos to determine the types and locations of corridors (i.e., natural, restoration potential [agriculture], or urban) present within the habitat study area.

⁷ See <https://gisdata.mn.gov/dataset/env-mlccs-regional-corr-areas>.

2.3 Regionally Significant Ecological Areas

Regionally Significant Ecological Areas (RSEA)⁸ are also derived from the MLCCS. This dataset consists of the location and rank of MnDNR-identified regionally significant terrestrial and wetland ecological areas within the seven county metropolitan of MN. These areas are ranked by MnDNR with scores of 1, 2, or 3 (low to high) in terms of ecological importance as determined by the size, shape, cover type diversity, and adjacent land use. The most current available RSEA data were reviewed within the habitat study area in July 2015.

2.4 Native Plant Communities

Native Plant Communities (NPC)⁹ are a select dataset obtained from the MnDNR Minnesota Biological Survey (MBS).¹⁰ The MnDNR MBS systematically collects, interprets, and delivers baseline data on the distribution and ecology of rare plants and animals, native plant communities, and functional landscapes. NPCs are groups of native plants that interact with each other and their surrounding environment in ways not greatly altered by modern human activity or by introduced plant or animal species. The MBS classifies these groups with consideration to vegetation, hydrology, landforms, soils, and natural disturbance regimes. The most current available NPC data¹¹ were reviewed within the habitat study area in July 2015.

2.5 Sites of Biodiversity Significance

Sites of Biodiversity Significance (SBS)¹² are also a select dataset obtained from the MnDNR MBS. SBSs include areas of statewide native biological diversity, as ranked by MBS ecologists. An area's rank is based on the presence of rare species populations, the size and condition of native plant communities, and the landscape context of a given area. The most current available SBS data¹³ were reviewed within the habitat study area in July 2015.

3 Results

3.1 Minnesota Land Cover Classification System

Existing land cover types within the habitat study area were identified using MLCCS data to quantify habitat areas (Exhibit 3-1). The predominant land cover type within the habitat study area is impervious surfaces, which is common in urbanized areas. The areas and percentages of each land cover type present within the habitat study area are summarized in Table 3-1. Table 3-1 also includes a summary of the wildlife species typically associated with each land cover classification type.

TABLE 3-1
Summary of Land Cover Types Present in Habitat Study Area

MLCCS Land Cover Classification	Area of Land Cover within Habitat Study Area (acres)	Percent Cover of Habitat Study Area	Habitat Study Area Typical Wildlife Association
Impervious Surfaces	805.3	75.1%	None
Herbaceous	84.6	7.9%	Grey squirrel, raccoon, rabbit, field mice, vole, mole, common songbirds, Canada geese, hawks, owls, white-tailed deer, red fox

⁸ See <https://gisdata.mn.gov/dataset/env-mlccs-regional-corr-areas>.

⁹ See <http://www.dnr.state.mn.us/npc/classification.html>

¹⁰ See <http://www.dnr.state.mn.us/mbs/index.html>.

¹¹ See <https://gisdata.mn.gov/dataset/biota-dnr-native-plant-comm>

¹² See http://www.dnr.state.mn.us/eco/mcbs/biodiversity_guidelines.html

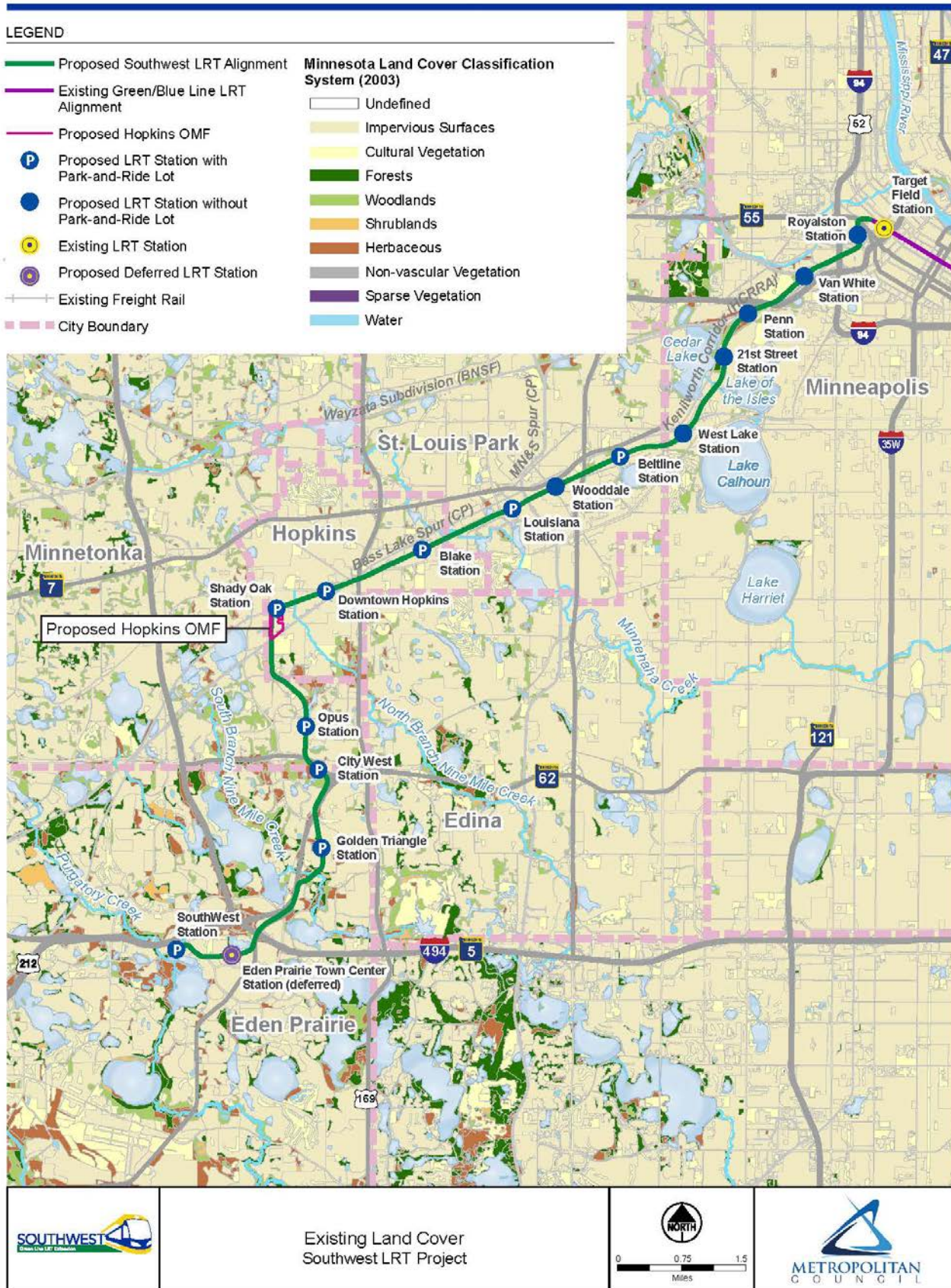
¹³ See <https://gisdata.mn.gov/dataset/biota-mcbs-sites-of-biodiversity>

MLCCS Land Cover Classification	Area of Land Cover within Habitat Study Area (acres)	Percent Cover of Habitat Study Area	Habitat Study Area Typical Wildlife Association
Woodlands	69.6	6.5%	Grey squirrel, raccoon, rabbit, field mice, vole, mole, common songbirds, Canada geese, hawks, owls, white-tailed deer, red fox
Cultivated Vegetation	86.1	8.0%	Grey squirrel, raccoon, rabbit, field mice, vole, mole, common songbirds, Canada geese, hawks, owls, white-tailed deer, red fox
Forests	12.1	1.1%	Grey squirrel, raccoon, rabbit, field mice, vole, mole, common songbirds, Canada geese, hawks, owls, white-tailed deer, red fox
Shrublands	5.4	0.5%	Grey squirrel, raccoon, rabbit, field mice, vole, mole, common songbirds, Canada geese, hawks, owls, white-tailed deer, red fox
Water	9.2	0.9%	Common reptile and amphibian species, common fish species, common waterfowl, songbirds
Sparse Vegetation	0.0	0.0%	Grey squirrel, raccoon, rabbit, field mice, vole, mole, common songbirds, Canada geese, hawks, owls, white-tailed deer, red fox
Nonvascular Vegetation	0.0	0.0%	None
Total	1,072.3	100%	

3.2 Regional Ecological Corridors

Portions of Regional Ecological Corridors (MLCCS-derived) (MnDNR, 2008) occur in five locations throughout the habitat study area: near the proposed SouthWest Station, Interstate 494 near Eden Prairie Town Center Station, City West Station, Highway 100 near Wooddale Station, and Penn Station (Exhibit 3-1). Of the five Regional Ecological Corridors identified within the habitat study area, three will be physically bisected by the Project. The corridors occurring in the habitat study area fall under the urban classification and make up approximately 7 percent of the entire habitat study area.

EXHIBIT 3-1
Existing Land Cover



3.3 Regionally Significant Ecological Areas

There are four RSEAs located within the habitat study area (Exhibit 3-2), three of which are ranked as having low ecological importance and one of which is ranked as having medium ecological importance. There are no areas of high ecological importance located within the habitat study area. The area and rankings of the RSEAs identified in the habitat study area are summarized in Table 3-2. Patches with a score of 1 (low) make up approximately 3 percent of the entire habitat study area, and areas with a score of 2 (medium) make up approximately 4 percent of the entire habitat study area. The remaining 93 percent of the habitat study area is not considered a RSEA.

TABLE 3-2
Summary of Direct and Indirect Impacts on Regionally Significant Ecological Areas

Ranking	Area of RSEAs within Habitat Study Area (ac)	Percent of Habitat Study Area
1 (Low)	32.8	3.1%
2 (Medium)	44.5	4.1%
3 (High)	0.0	0.0%
Total	77.3	7.2%

3.4 Native Plant Communities

NPC spatial data, as identified by the MBS, were reviewed and evaluated within the habitat study area. No sites associated with NPCs were identified within the habitat study area (Exhibit 3-3).

3.5 Sites of Biodiversity Significance

SBS spatial data, as identified by the MBS, were reviewed and evaluated within the habitat study area. No sites associated with SBS were identified within the habitat study area (Exhibit 3-3).

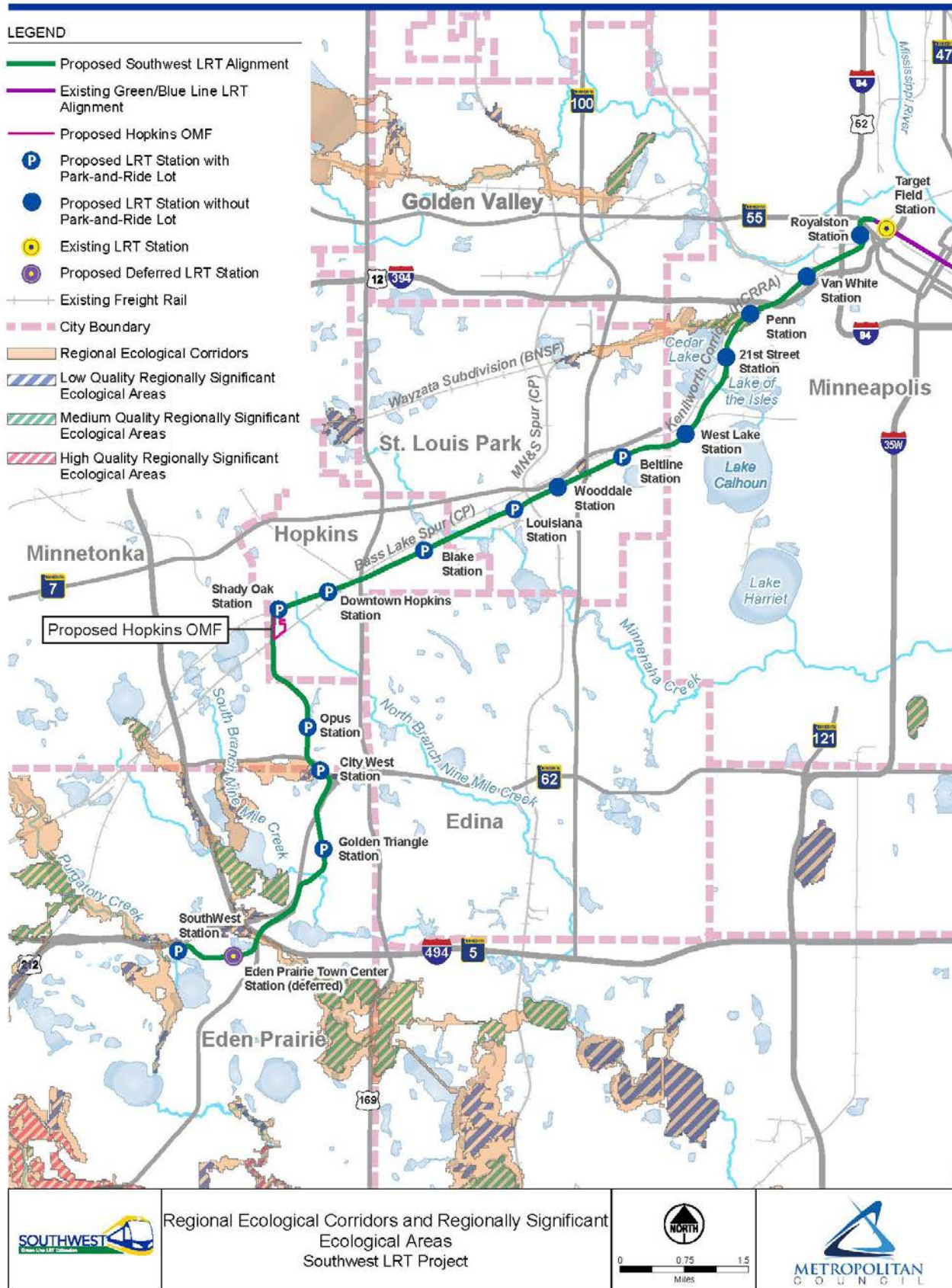
4 Conclusion

The majority of the existing land cover in the habitat study area (83.1 percent) is composed of non-natural land cover classification types (impervious surfaces and cultivated vegetation). The remainder of the habitat study area (16.9 percent) is composed of natural land cover types (herbaceous, woodlands, forests, shrublands, and water). Portions of five RECs that fall under the urban classification occur throughout the study area, making up approximately 7 percent of the study area. A small portion of the habitat study area (7.2 percent) is comprised of RSEAs that are ranked as having either low or medium ecological importance. There are no NPCs or SBSs located within the habitat study area.

The Southwest LRT Project will be located mostly in areas that have been previously disturbed or developed with impervious surfaces and buildings. Portions of the Project will be within or near limited pockets of aquatic habitats and natural or open areas with vegetative cover that may provide foraging, migrating, or nesting habitat for wildlife. The size and quality of the natural or open areas determines the likelihood of supporting wildlife. In general, areas with lower levels of human activity and larger areas of relatively undisturbed habitat support the largest number and highest diversity of wildlife and vegetative species.

EXHIBIT 3-2

Regional Ecological Corridors and Regionally Significant Ecological Areas



Regional Ecological Corridors and Regionally Significant Ecological Areas Southwest LRT Project

