



# Kenilworth Corridor Vegetation Inventory

**REV 1**

March 19, 2014

Southwest LRT Project Technical Report



## Executive Summary

Southwest LRT Project Office (SPO) Consultant staff conducted a vegetation inventory in the Kenilworth Corridor in December 2013 and January 2014. The purpose of the inventory is to identify the location, diameter, species and condition of existing trees; general species, quantity and condition of existing understory vegetation; and type, condition and limits of groundcover (grasses). This information will help the SPO design team advance the landscaping design once a decision is made on the overall Southwest LRT project scope.

The study area (survey limits) encompasses 44 acres within the Corridor, generally defined by the Hennepin County Regional Railroad Authority (HCRRA) right-of-way (ROW) and adjoining BNSF property.

Findings from the inventory are as follows:

- Over 75% of the study area consists of existing vegetation. Of that total:
  - 9% is native vegetation /restoration area
  - 26% is maintained vegetation (mowed grasses)
  - 6% is unmaintained vegetation (groundcover outside of the tree and vegetation area)
  - 59% is trees, understory, and groundcover vegetation
- The remaining 25% of the study area consists of freight ballast and track, trails and other paved surfaces
- Within the survey limits, there are 480 Significant Trees (as defined by City of Minneapolis code, i.e., minimum 12-inch diameter breast height (DBH)). Of that total:
  - Over 90% of the Significant Trees are between 12 and 24 inches DBH
  - Approximately 80% of the Significant Trees inventoried are native softwoods – cottonwood, elm, and boxelder.

This final report reflects responses to comments received on the draft report. Comments can be reviewed at <http://www.metrocouncil.org/Transportation/Projects/Current-Projects/Southwest-LRT/Publications-And-Resources/Engineering/SWLRT-Public-Comments-on-Draft-Reports-Freight-Rai.aspx>.

Once a decision is made on the scope of Project through the Kenilworth Corridor this inventory will help identify the potential tree loss impact and ways to consider avoidance of significant trees.

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## 1 Objective

The objective of the Kenilworth Corridor Vegetation Inventory is to identify the existing conditions within the Kenilworth Corridor by identifying the location, diameter, species and condition of existing trees; general species, quantity and condition of existing understory vegetation; and type, condition and limits of groundcover (grasses). The inventory includes two processes – conducting a tree survey and completing a vegetation inventory. This information will be used in the future to identify the tree loss impact and ways to consider avoidance of significant trees.

## 2 City of Minneapolis Zoning Code

The tree inventory survey began with a review of the current City of Minneapolis code related to the identification of trees. According to City of Minneapolis Code of Ordinance Title 20, Zoning Code Chapter 535.300.a.3, Article IV “Protection of Natural Features” defines **significant trees** as follows:

*“**Significant trees** or plant communities including remnant stands of native trees or remnant prairie grasses, trees or plant communities that are rare to the area or of particular horticultural or landscape value, or trees with a diameter of breast height (DBH) of twelve (12) inches or larger.”*

Based on the winter field inventory of the existing conditions, rare plant communities or areas of particular horticultural or landscape value were not observed.

## 3 Existing Conditions Overview

The existing Kenilworth Corridor is a linear freight and trail route within the Chain of Lakes area of Minneapolis. Trees are currently located within and adjacent to the Corridor, and are nearly completely deciduous, native species. Trees occur near and are located alongside the existing freight tracks and many overhang into the freight rail corridor. In addition to the trees, various types of groundcover and understory vegetation exists, from maintained grasses to dense massings of shrubs and smaller trees. The photographs show the diversity of the existing vegetation in the corridor.



a. View looking north of the Burnham Road Bridge



b. View looking southerly, south of Cedar Lake Pkwy





c. View looking north from Cedar Lake Parkway



d. View looking northerly, north of channel crossing

## 4 Inventory Process

The field work and inventory was performed in December 2013 and January 2014 by Southwest LRT Project Office (SPO) consultant staff. The inventory consisted of a detailed multi-step process, with delineation of the limits as the initial effort. The length of the inventory limits include the segment of Corridor from just south of the West Lake Street Station to just east of the Penn Station at the southerly edge of I-394, for a distance of approximately 1.3 miles. The width is generally defined by the limits of the Hennepin County Regional Railroad Authority (HCRRA) right-of-way (ROW) and BNSF parcels that lie along the west side of the HCRRA ROW from Cedar Lake Parkway to north of 21<sup>st</sup> Street. As the HCRRA ROW widens north of 21<sup>st</sup> Street, the inventory area encompasses areas within the ROW anticipated to be disturbed from the construction of the SWLRT. The total area inventoried is approximately 44 acres. (The plan sheets attached illustrate the limits of the inventory.)

Once the inventory limits were established, Registered Land Surveyor-led crews provided field staking to identify these limits, which were used for both types of inventory – the tree survey and vegetation inventory. Once the limits were established, separate inventory steps were taken as identified below:

Tree Survey: The tree survey was conducted by SPO consultant staff and included identifying Significant Trees as defined by the City of Minneapolis code. The staff included an individual certified as a State of Minnesota Department of Natural Resources Tree Inspector who tagged and cataloged trees six inches and greater in the field, as measured at Diameter Breast Height (DBH), to ensure that all Significant Trees were identified within the study area. This also provides for a better understanding of the contributions of the vegetation in Corridor for subsequent design purposes. It should be noted that some trees tagged and cataloged were located either on or just outside the staking limits – these trees are not anticipated to be impacted and are not included in the quantities tabulated in this report. Finally, the survey crews physically located each tagged tree and provided a base map. (Two sets of eight plan sheets attached illustrate the location of both deciduous and coniferous trees only within the survey limits. The first set illustrates the location of significant trees

within the survey limits. The second set illustrates the location of all trees six inches and greater as measured at DBH within the survey limits.)

Vegetation Inventory: The vegetation coverage inventory was conducted by SPO consultant staff. This work categorized existing ground cover and understory vegetation. This vegetation fell within four categories:

- Native Vegetation/Restoration – native grasses and perennials intentionally established
- Maintained Vegetation – grasses which are periodically maintained (mowed)
- Unmaintained Vegetation –groundcover outside of the tree and vegetation areas
- Tree and Vegetation - trees, understory and groundcover

(The two sets of eight plan sheets attached illustrate the four vegetative categories and the attached data summary sheet provides an image identifying the appearance and character of each category.)

Utilizing the field staking, the initial step in the vegetation inventory included field delineation of the categories. Aerial photography and CAD survey information were used to define the boundaries of the tree vegetative cover, and fieldwork identified the limits of the other three categories. When determining vegetation types and quantities within the tree vegetation category, the field crew used a 20-foot by 20-foot area as a typical representation of a recognized vegetative area. Trees within this typical 400 square foot area were counted, along with an estimate of the buckthorn coverage. These counts were then applied mathematically to other matching vegetative areas to determine totals. (An image illustrating the vegetative inventory categories and inventory summaries are indicated on the attached data summary sheet.)

## **5 Results of Inventory**

The results of the tree survey and vegetation inventory are illustrated graphically and tabulated on the attached data summary sheet. In addition to the detailed information identified on that sheet, the following additional information is provided:

Tree Survey: A total of 480 Significant Trees were identified within the study area. The predominant tree types include cottonwood, elm, and boxelder– all softwoods and considered native to the region. Approximately 80% of the trees inventoried are one of these three species. Trees in the Corridor are generally in good health, and range in size from the Significant Tree minimum of 12-inch DBH to 66-inch DBH, with a great majority (over 90%) of trees under 24-inch DBH.

Vegetation Inventory: Over 75% of the 44 acre study area is represented in the four categories listed in Section 4 above. The remaining approximately 25% is covered by freight ballast and track, trail or other paved surfaces. Of the vegetated areas, approximately half are covered in tree vegetation, which includes trees, understory plants and unmaintained groundcover and grasses. Buckthorn, identified as an invasive species, was found to be significantly represented within this area.





- NATIVE VEGETATION/  
RESTORATION AREA
- MAINTAINED VEGETATION  
(MOWED GRASS)
- UNMAINTAINED VEGETATION  
(GROUNDCOVER OUTSIDE TREE AND  
VEGETATION AREA)
- TREE AND VEGETATION AREA  
(TREES, UNDERSTORY, AND GROUNDCOVER)

VEGETATION INVENTORY SUMMARY

AREAS	ACRES	PERCENT OF VEGETATED AREA
LIMITS OF SURVEY AREA	44	
TOTAL EXISTING NON-VEGETATED AREAS (TRACK BALLAST, ROAD, TRAIL)	10 (23%)	
TOTAL EXISTING VEGETATED AREAS	34 (77%)	100%
NATIVE VEGETATION / RESTORATION AREA	3	9%
MAINTAINED VEGETATION	9	26%
UNMAINTAINED VEGETATION	2	6%
TREE AND VEGETATION AREA	20	59%

NOTE:  
1. Approximately 18% (6 ACRES) of the total vegetated areas is buckthorn; which is located within the tree and vegetation area.

TREE INVENTORY SUMMARY

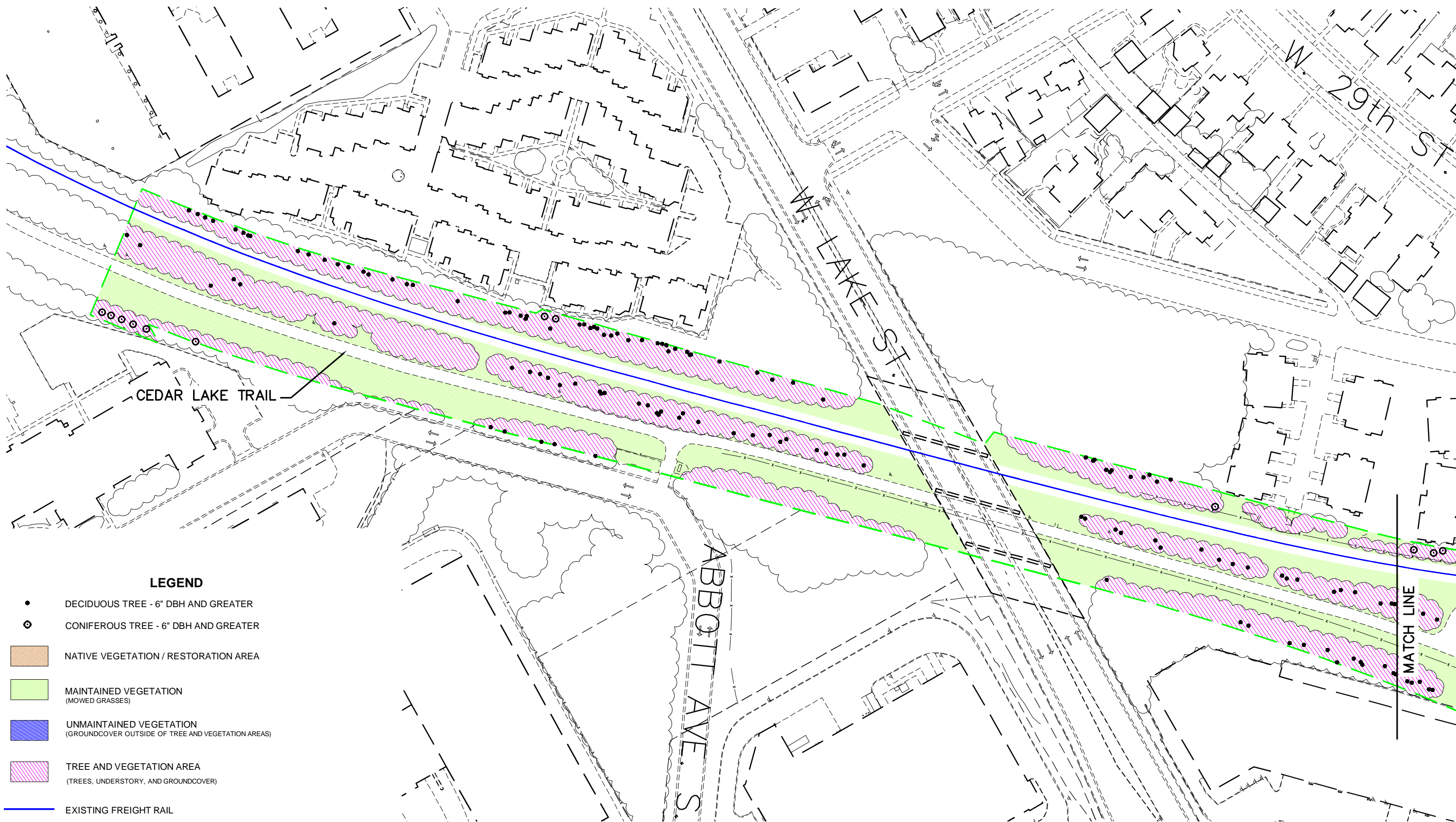
TOTAL SIGNIFICANT TREES WITHIN THE SURVEY AREA						480		
TREES BY SIZE (INCHES DBH)			TOTAL PER SIZE			PERCENT BY SIZE		
12-24			443			92%		
25-36			27			6%		
37+			10			2%		
TREES BY SPECIES (13 SPECIES ARE REPRESENTED)								
SPECIES	QTY	PERCENT	SPECIES	QTY	PERCENT	SPECIES	QTY	PERCENT
ASH	6	1%	ELM	121	25%	SPRUCE	15	3%
ASPEN	19	4%	HACKBERRY	3	1%	WILLOW	5	1%
BASSWOOD	10	2%	MAPLE	4	1%	WALNUT	1	1%
BOXELDER	46	10%	OAK	8	1%			
COTTONWOOD	230	48%	PINE	12	2%			

NOTES:  
1. Significant trees are 12-inch diameter breast height (DBH) and greater, as defined by City of Minneapolis Code.  
2. Total trees 6-inch DBH and greater within the survey area is 1,960.  
3. Some trees outside the survey limits were tagged and are not included in the above quantities.

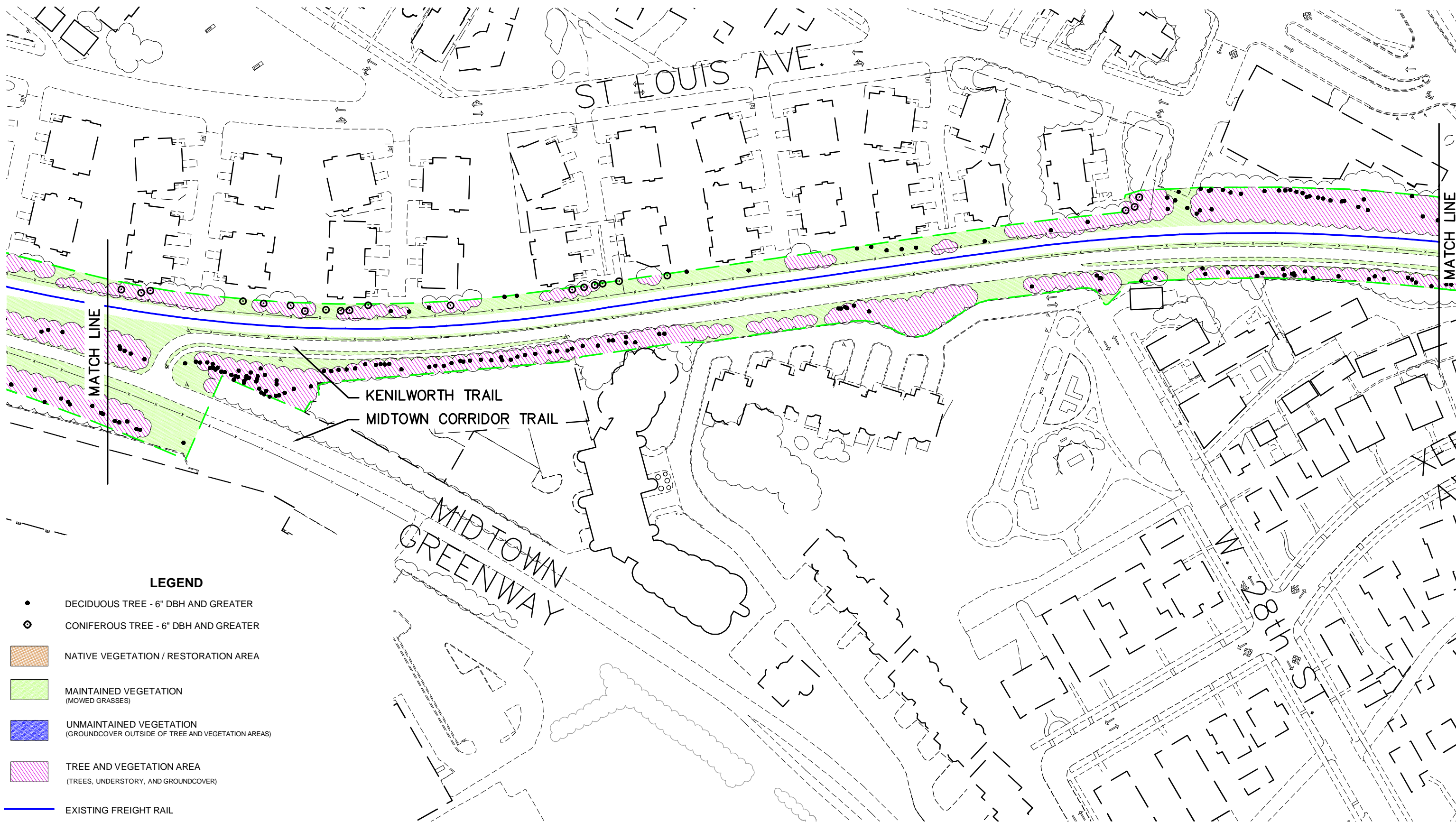
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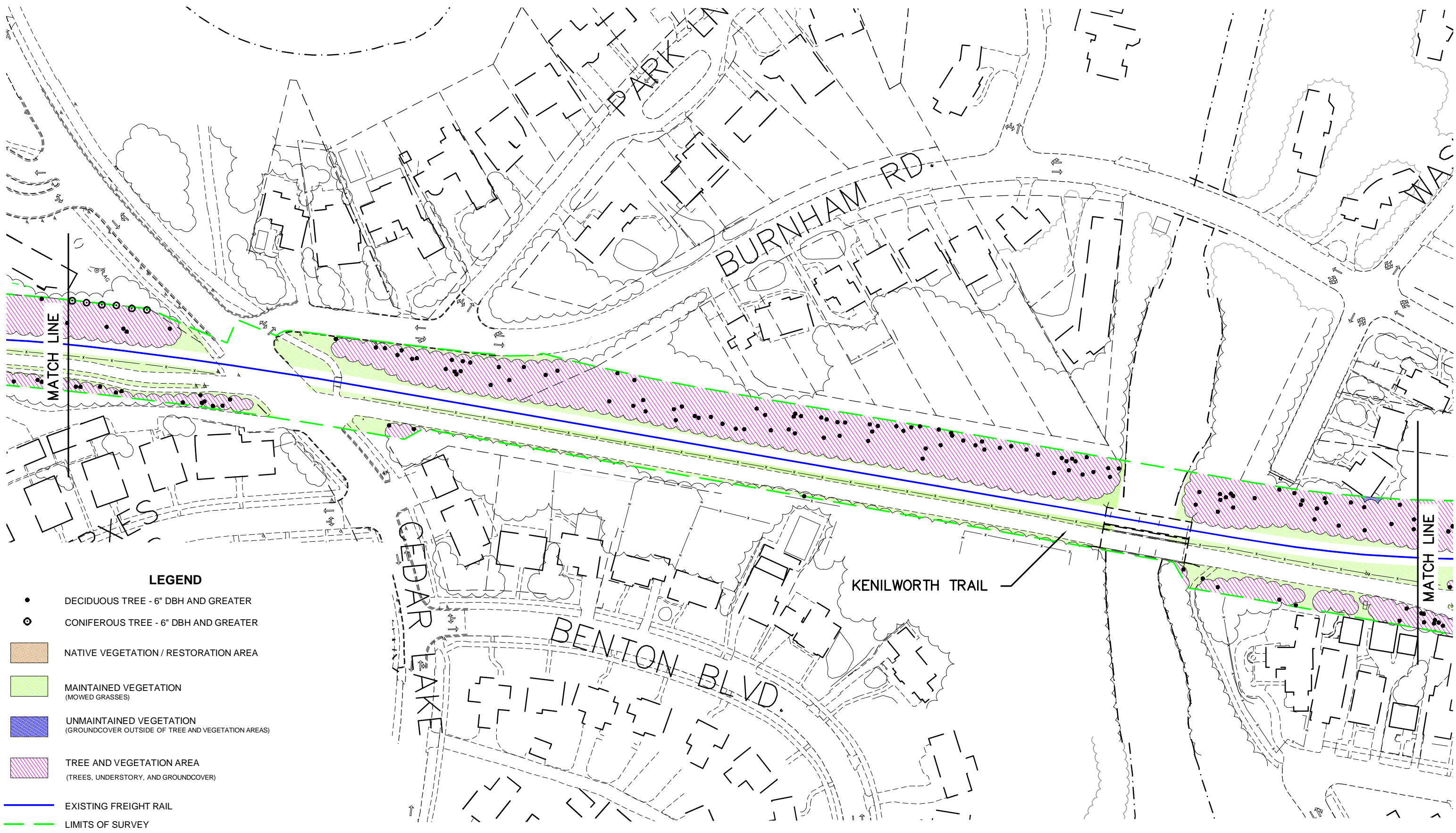


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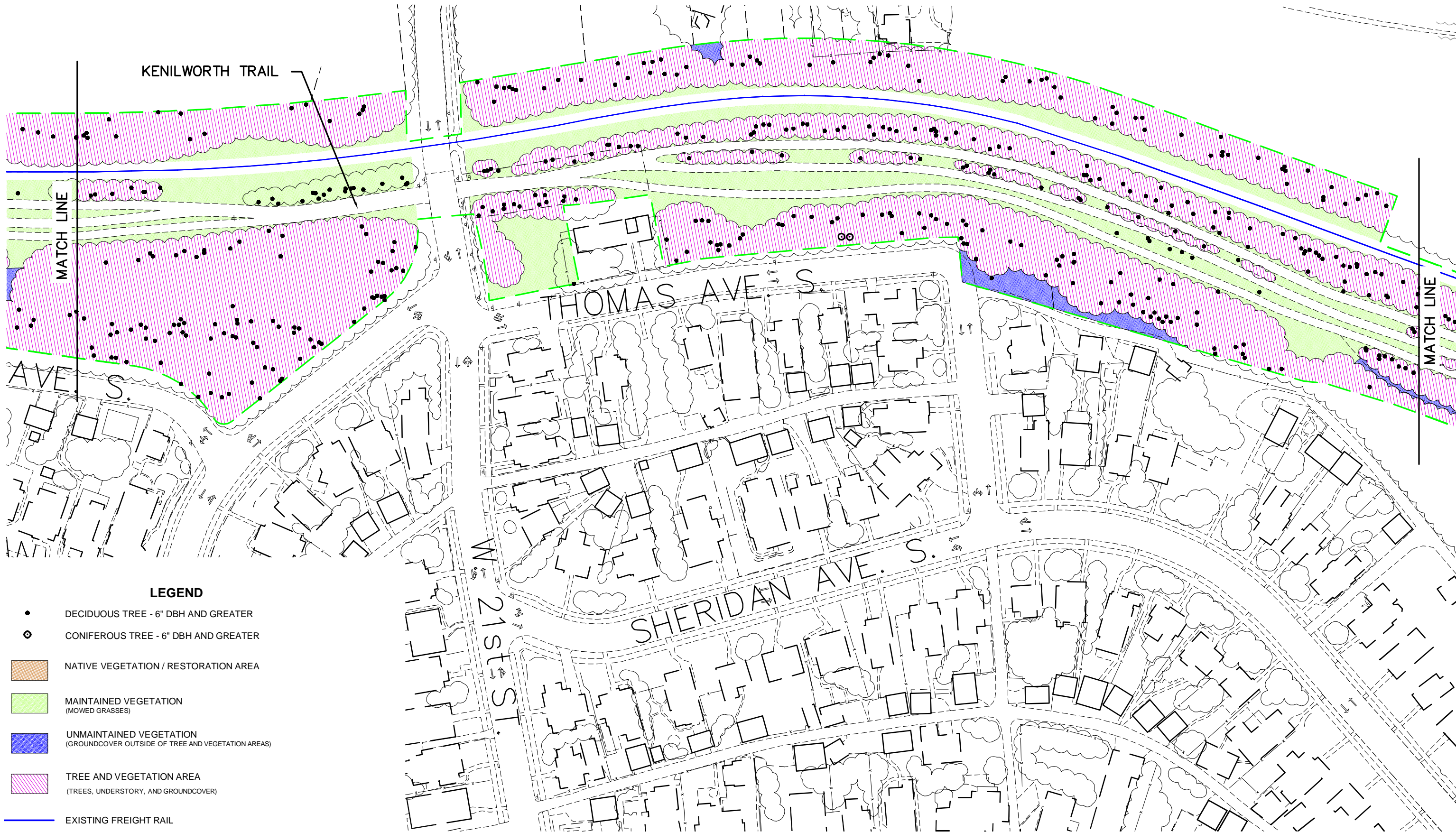


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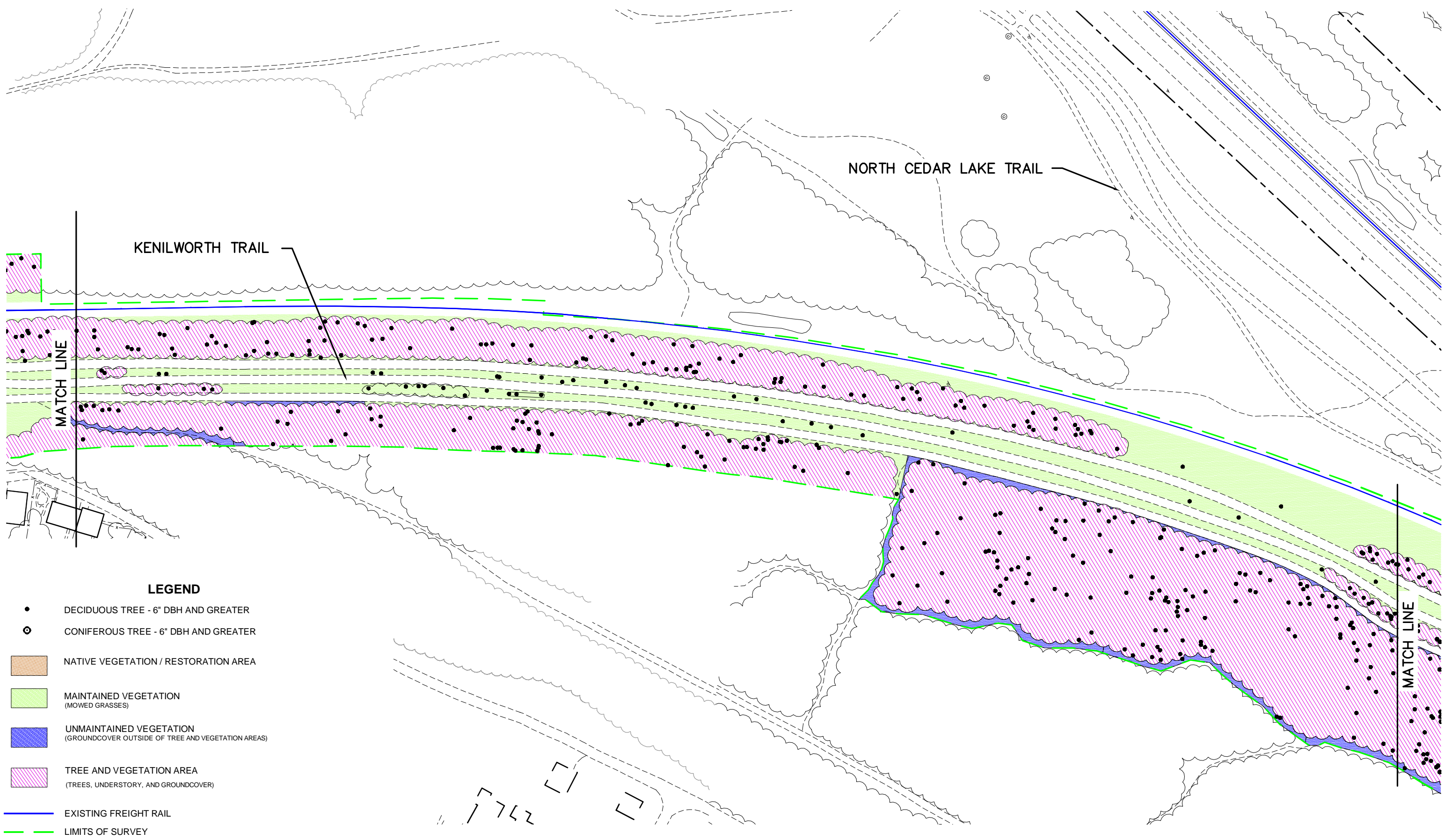


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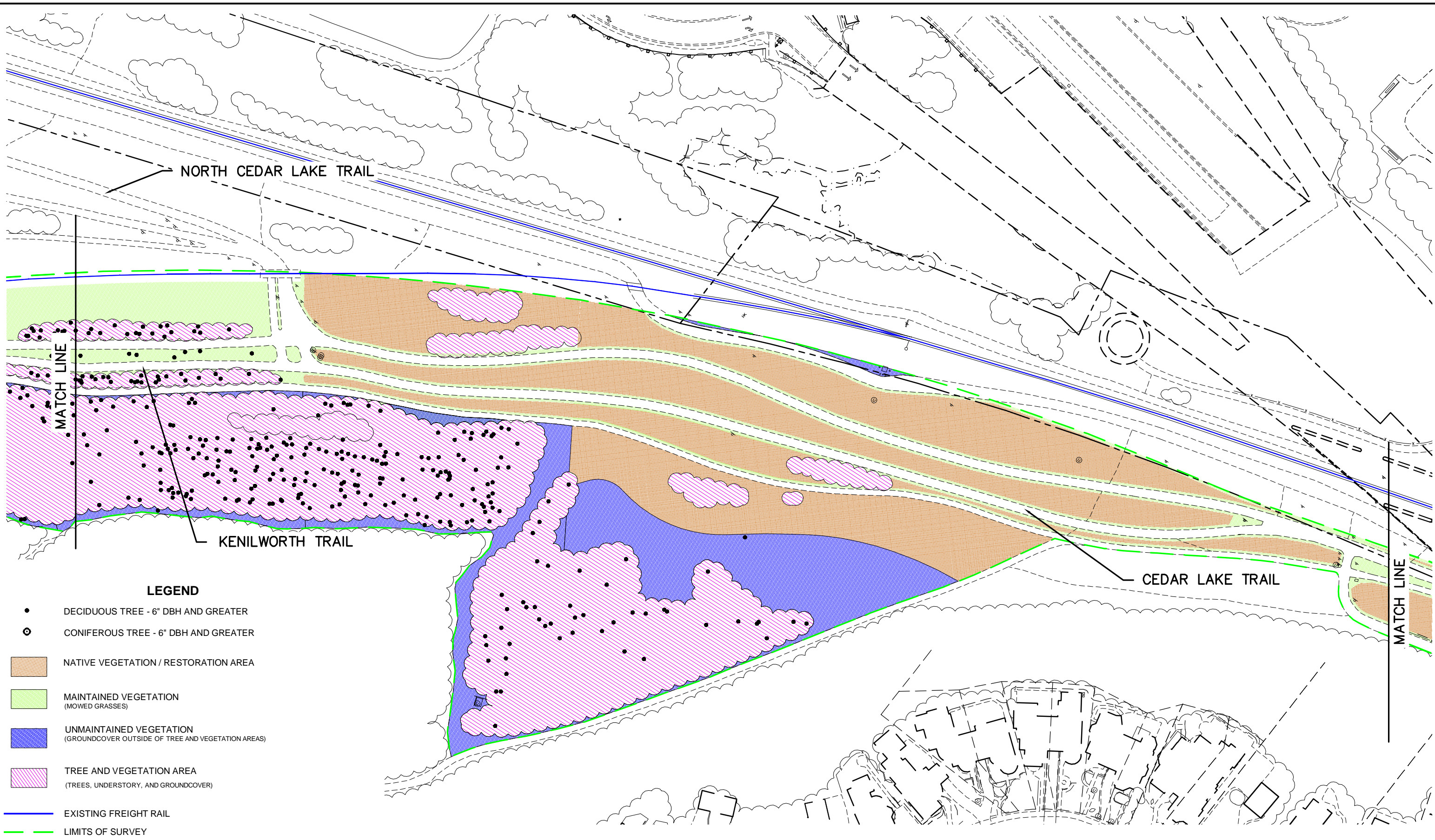


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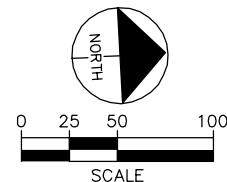


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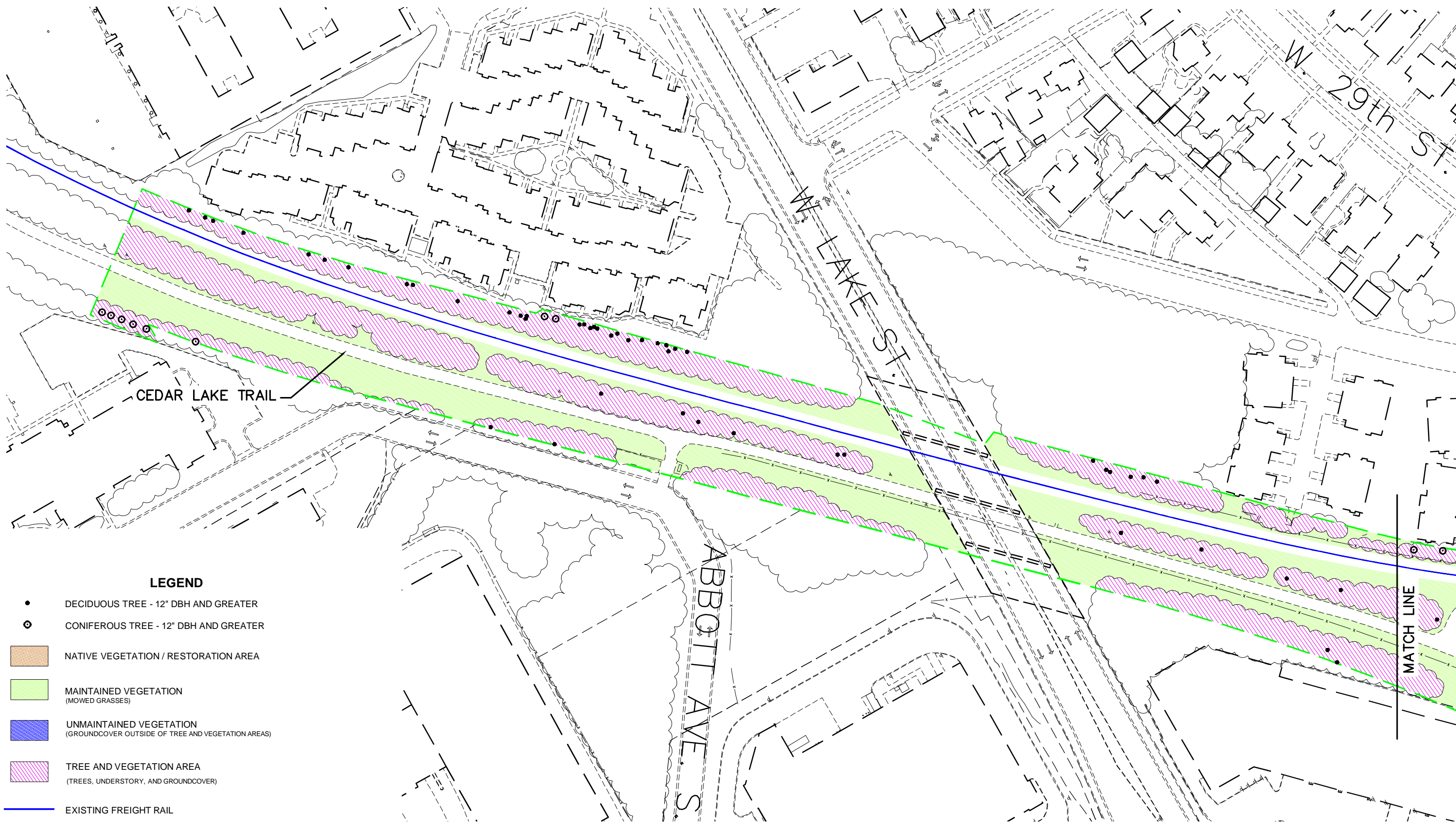
KENILWORTH CORRIDOR VEGETATION & TREE INVENTORY - TREES 6" DBH AND GREATER

SHEET 8 of 8

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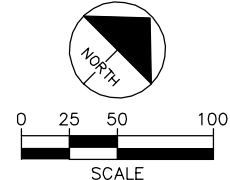


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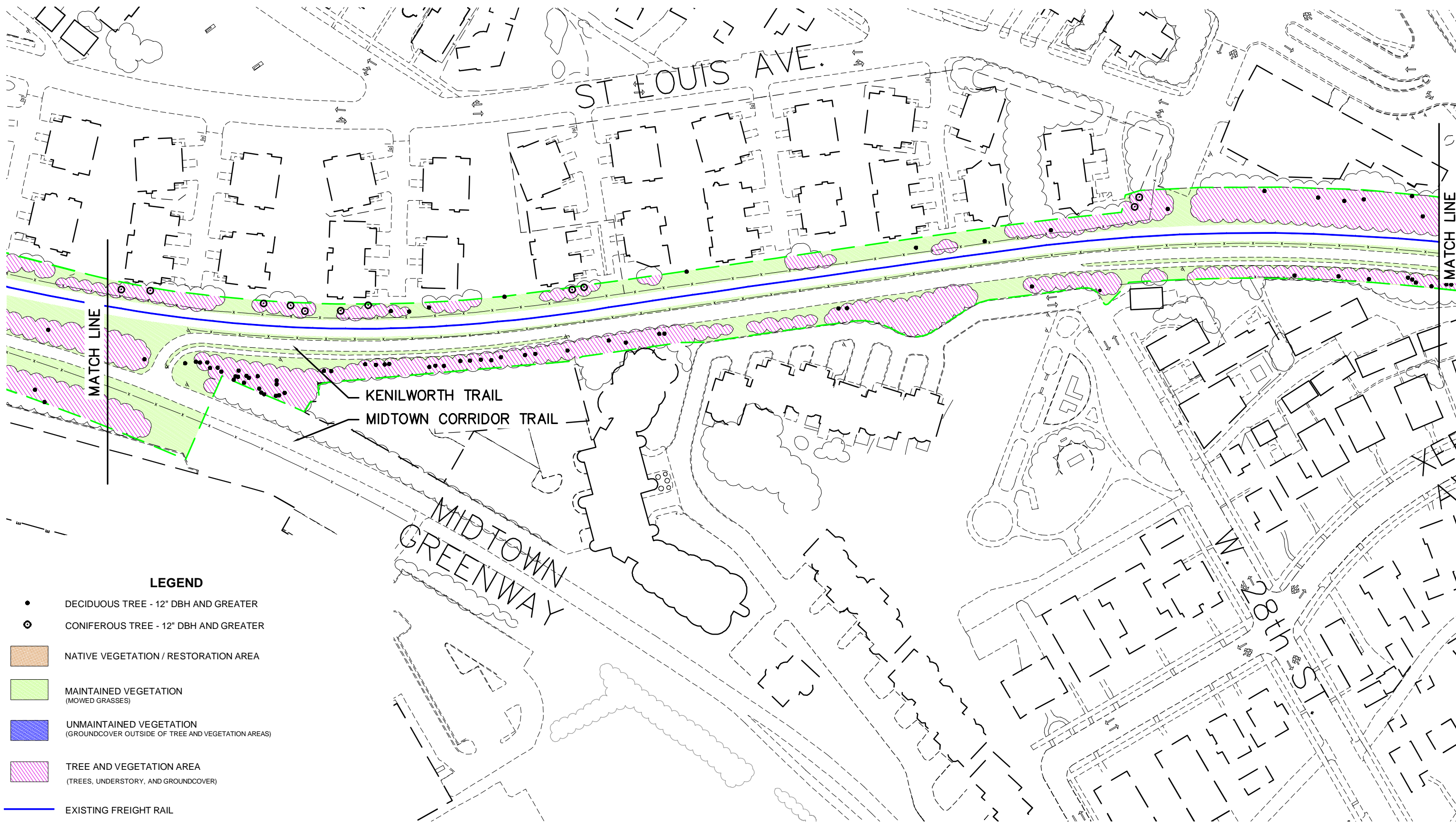
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









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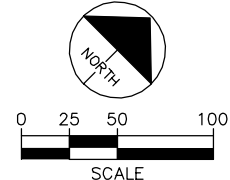
**LEGEND**

- DECIDUOUS TREE - 12" DBH AND GREATER
- ⊙ CONIFEROUS TREE - 12" DBH AND GREATER
-  NATIVE VEGETATION / RESTORATION AREA
-  MAINTAINED VEGETATION (MOWED GRASSES)
-  UNMAINTAINED VEGETATION (GROUND COVER OUTSIDE OF TREE AND VEGETATION AREAS)
-  TREE AND VEGETATION AREA (TREES, UNDERSTORY, AND GROUND COVER)
-  EXISTING FREIGHT RAIL
-  LIMITS OF SURVEY

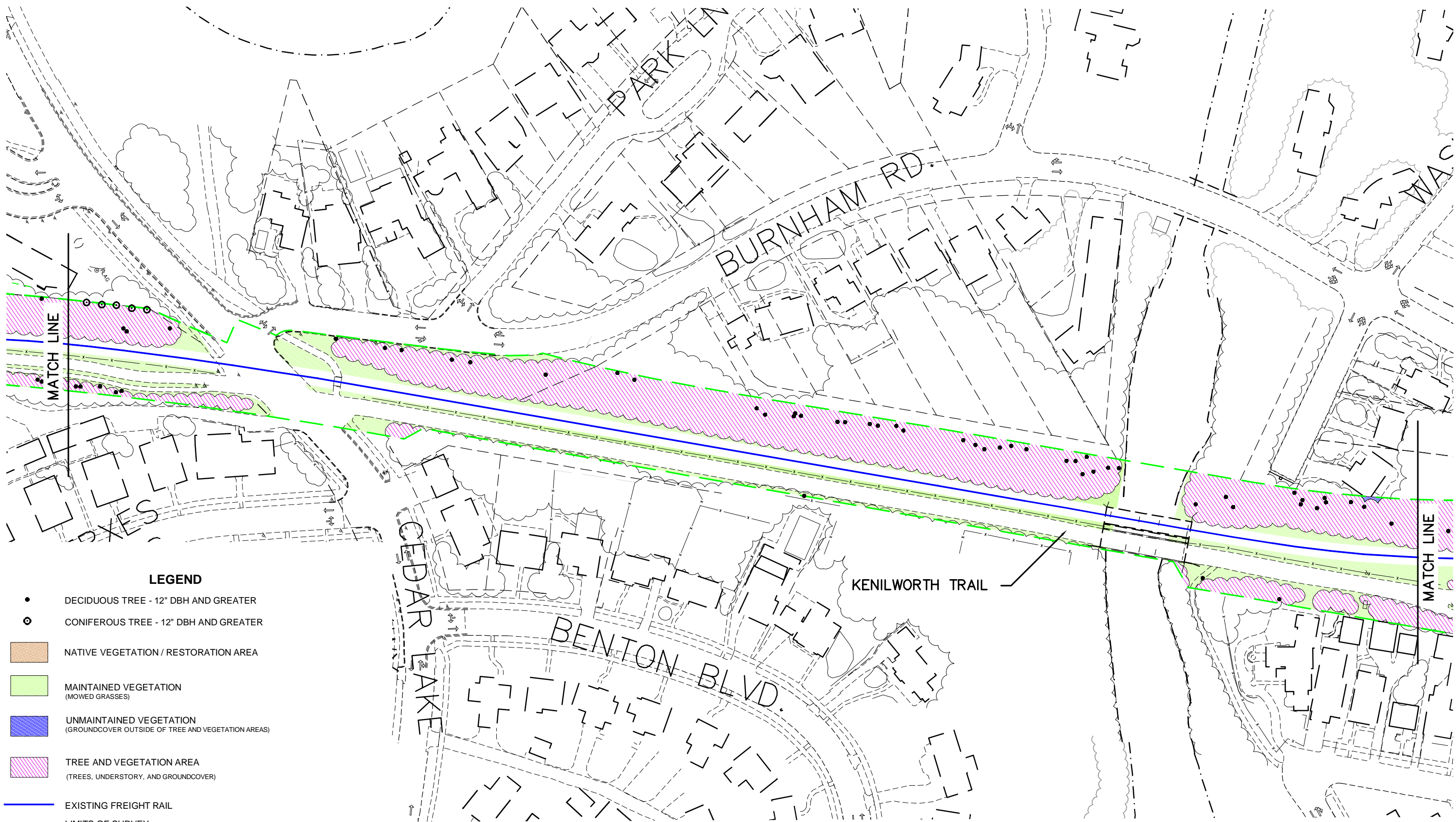


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SHEET 2 of 8

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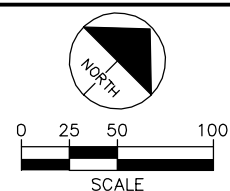
**LEGEND**

- DECIDUOUS TREE - 12" DBH AND GREATER
- ◉ CONIFEROUS TREE - 12" DBH AND GREATER
- NATIVE VEGETATION / RESTORATION AREA
- MAINTAINED VEGETATION (MOWED GRASSES)
- UNMAINTAINED VEGETATION (GROUND COVER OUTSIDE OF TREE AND VEGETATION AREAS)
- TREE AND VEGETATION AREA (TREES, UNDERSTORY, AND GROUND COVER)
- EXISTING FREIGHT RAIL
- LIMITS OF SURVEY

**SOUTHWEST LIGHT RAIL**

KENILWORTH CORRIDOR VEGETATION & TREE INVENTORY - TREES 12" DBH AND GREATER  
SHEET 3 of 8

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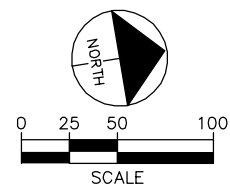


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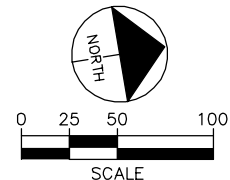


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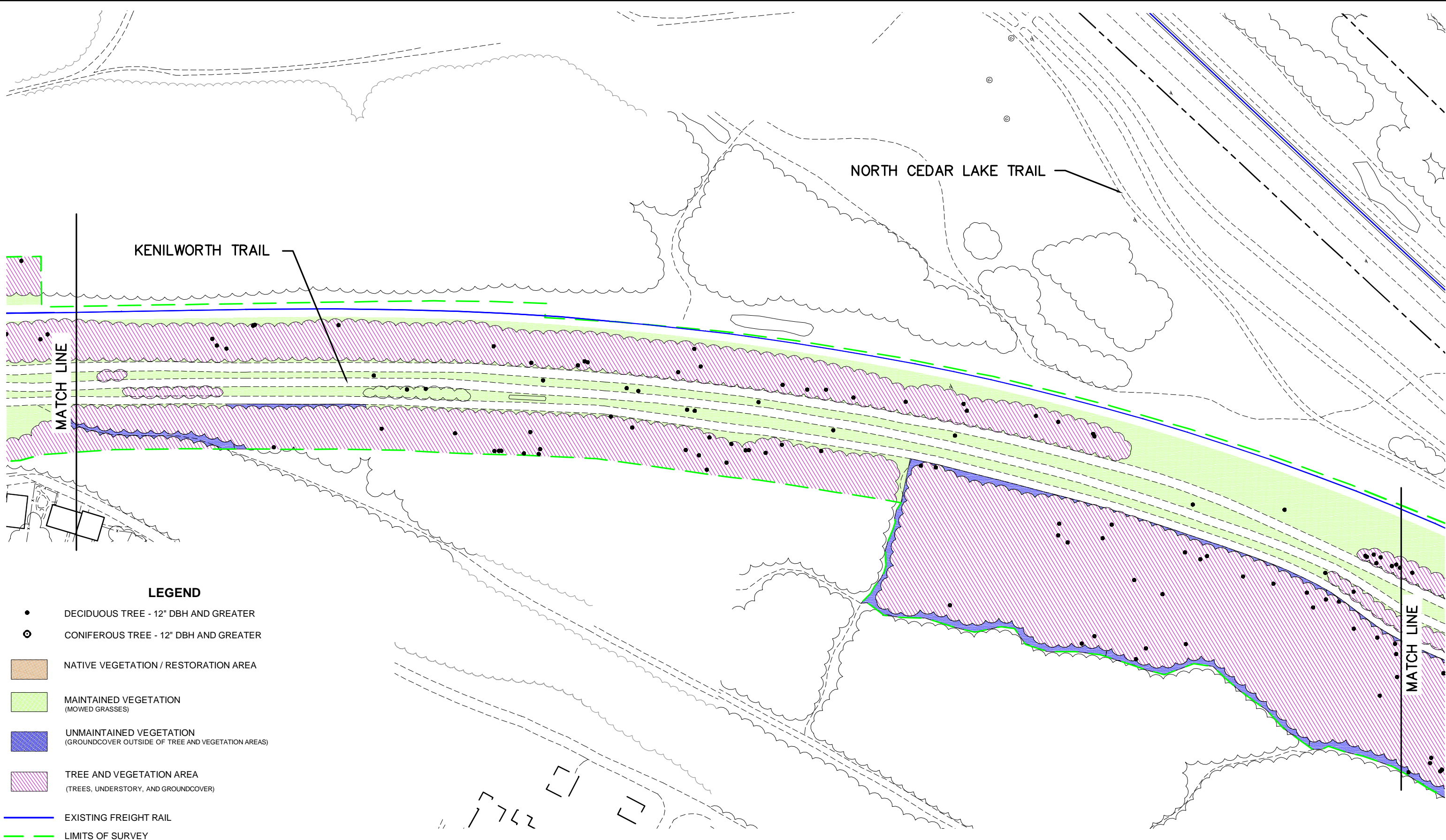
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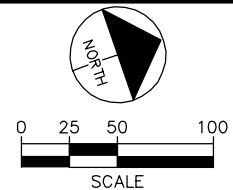


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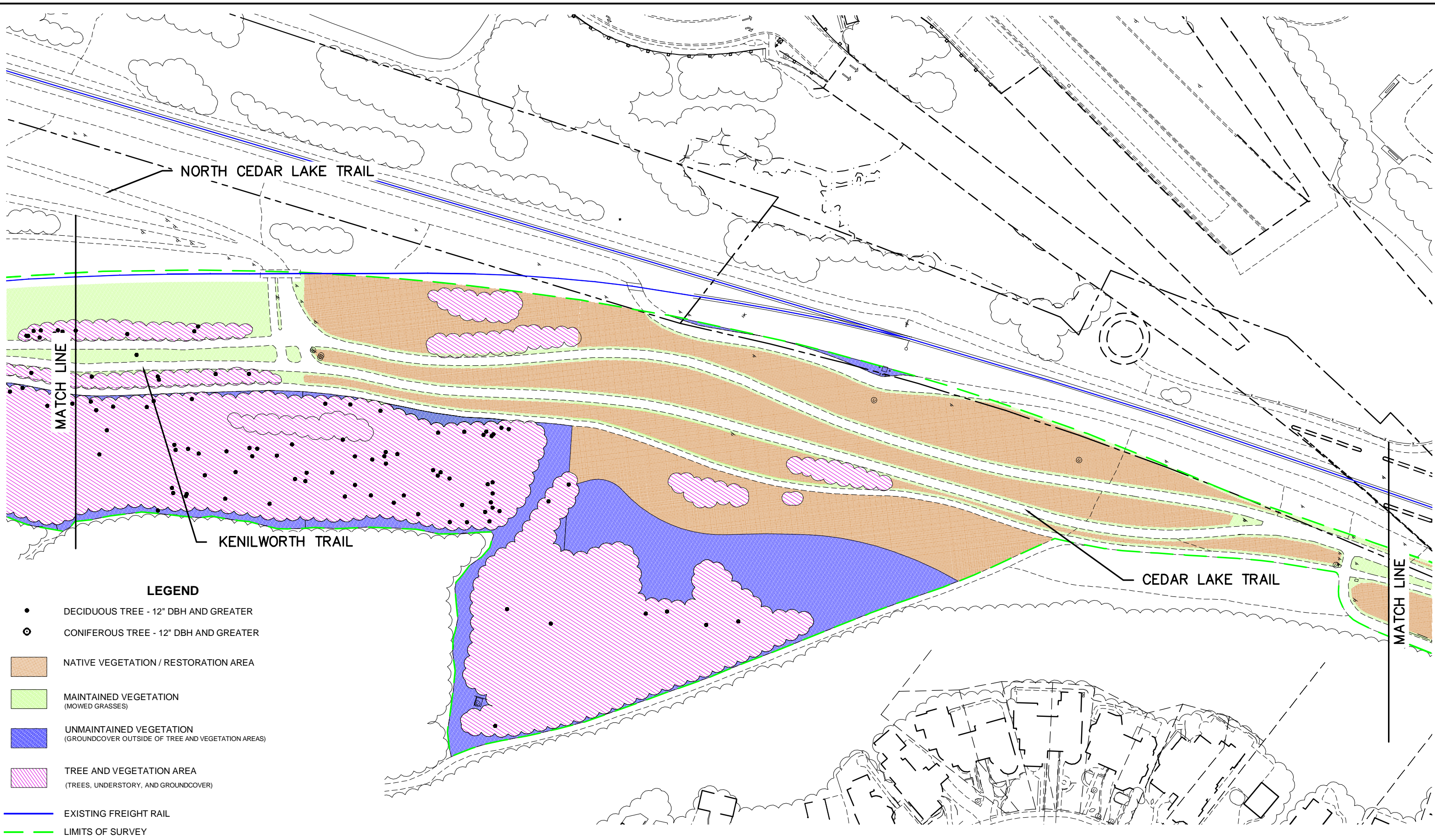
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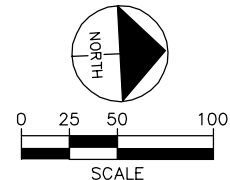


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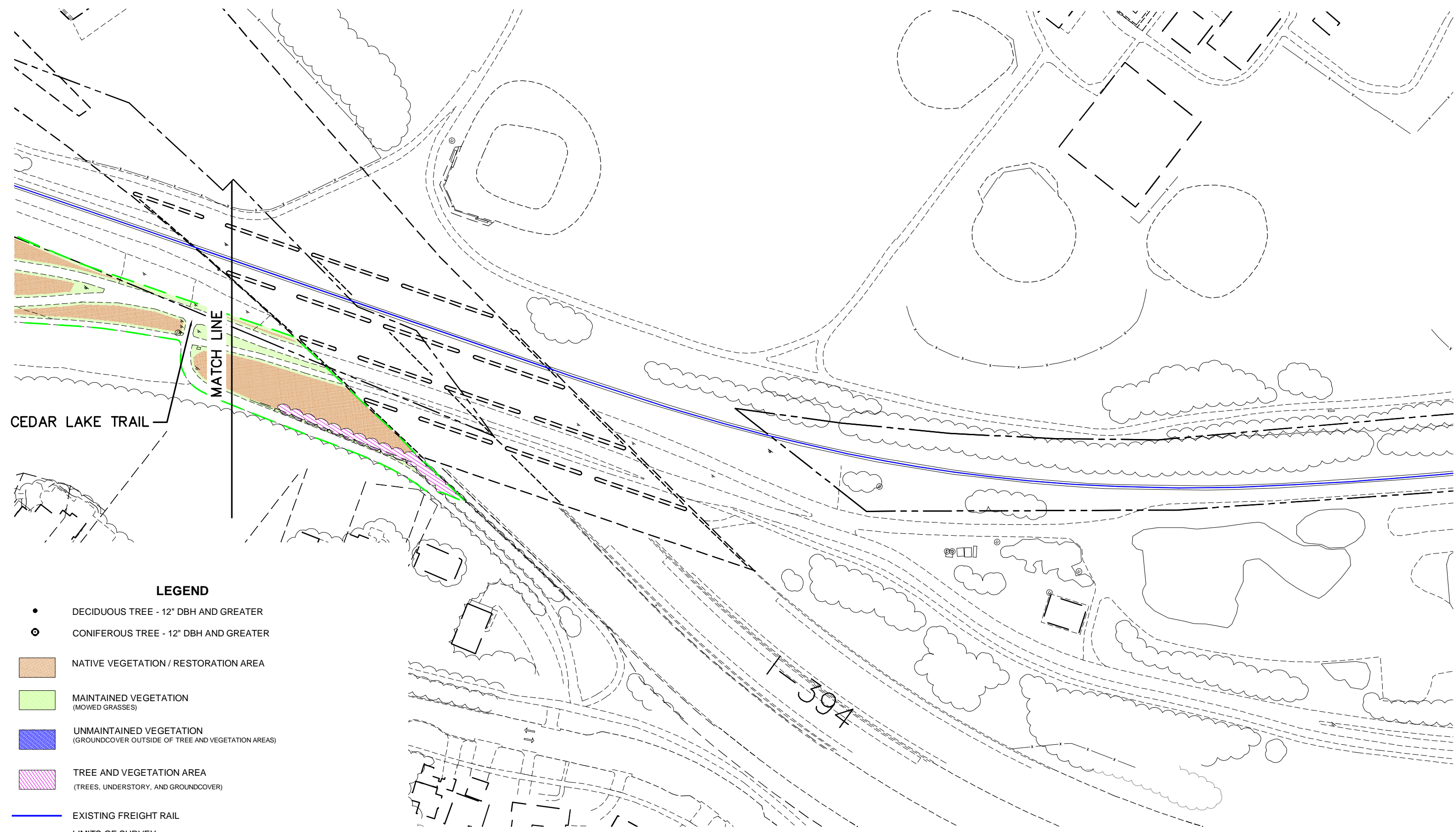
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# **Kenilworth Corridor Vegetation Inventory**

## **Accessible Version of Data Summary Sheets**

March 19, 2014

Southwest LRT Project Technical Report



## Summary

The attached data summary sheets are divided into two categories: vegetation that is six inches or greater in diameter at breast height (DBH) and vegetation that is twelve inches or greater DBH. Each category includes graphical and tabular representations of data summarized in the Kenilworth Corridor Vegetation Inventory document. This document provides alternate text for the figures and data shown in the data summary sheets.

**Table 1: Vegetation Inventory Summary**

Areas	Acres	Percent of Vegetated Area
Limits of Survey Area	44	
Total Existing Non-Vegetated Areas (track ballast, road, trail)	10 (23%)	
Total Existing Vegetated Areas	34 (77%)	100%
Native Vegetation/Restoration Area	3	9%
Maintained Vegetation	9	26%
Unmaintained Vegetation	2	6%
Tree and Vegetation Area	20	59%

Note: Approximately 18% (6 acres) of the total vegetated area is buckthorn, which is located within the tree and vegetation area.

**Table 2: Tree Inventory Summary**

<b>Total Significant Trees within the Survey Area</b>		480
Trees by Size (DBH)	Total Per Size	Percent by Size
12-24	443	92%
25-36	27	6%
37+	10	2%

**Table 3: Significant Trees by Species (13 species are represented)**

Species	Quantity	Percent
Ash	6	1%
Aspen	19	4%
Basswood	10	2%
Boxelder	46	10%
Cottonwood	230	48%
Elm	121	25%
Hackberry	3	1%
Maple	4	1%
Oak	8	1%
Pine	12	2%
Spruce	15	3%
Willow	5	1%
Walnut	1	1%

Notes:

1. Significant trees are 12-inch DBH and greater, as defined by City of Minneapolis Code.
2. Total trees 6-inch DBH and greater within the survey area is 1,960.
3. Some trees outside the survey limits were tagged and not included in the above quantities.

## **Kenilworth Corridor Maps**

For each category of vegetation, the Kenilworth Corridor is shown on eight maps as described below.

### **Sheet 1**

Sheet 1 shows various vegetation types in the area surrounding the West Lake Street and Kenilworth Corridor intersection, along with existing freight rail, trails, streets, and the limits of the survey. Vegetation types include deciduous trees, coniferous trees, native vegetation/restoration area, maintained vegetation, unmaintained vegetation, and tree and vegetation area.

### **Sheet 2**

Sheet 2 shows various vegetation types in the area surrounding the West 28<sup>th</sup> Street and Kenilworth Corridor intersection, along with existing freight rail, trails, streets, and the limits of the survey. Vegetation types include deciduous trees, coniferous trees, native vegetation/restoration area, maintained vegetation, unmaintained vegetation, and tree and vegetation area.

### **Sheet 3**

Sheet 3 shows various vegetation types in the area surrounding the Cedar Lake and Kenilworth Corridor intersection, along with existing freight rail, trails, streets, and the limits of the survey. Vegetation types include deciduous trees, coniferous trees, native vegetation/restoration area, maintained vegetation, unmaintained vegetation, and tree and vegetation area.

### **Sheet 4**

Sheet 4 shows various vegetation types in the area surrounding the Burnham Road and Kenilworth Corridor intersection, along with existing freight rail, trails, streets, and the limits of the survey. Vegetation types include deciduous trees, coniferous trees, native vegetation/restoration area, maintained vegetation, unmaintained vegetation, and tree and vegetation area.

### **Sheet 5**

Sheet 5 shows various vegetation types in the area surrounding the West 21<sup>st</sup> Street and Kenilworth Corridor intersection, along with existing freight rail, trails, streets, and the limits of the survey. Vegetation types include deciduous trees, coniferous trees, native vegetation/restoration area, maintained vegetation, unmaintained vegetation, and tree and vegetation area.

### **Sheet 6**

Sheet 6 shows various vegetation types in the area to the north of the West 21<sup>st</sup> Street and Kenilworth Corridor intersection, along with existing freight rail, trails, streets, and the limits of the survey. Vegetation types include deciduous trees, coniferous trees, native vegetation/restoration area, maintained vegetation, unmaintained vegetation, and tree and vegetation area.

### **Sheet 7**

Sheet 7 shows various vegetation types in the area to the south of the I-394 and Kenilworth Corridor intersection, along with existing freight rail, trails, streets, and the limits of the survey. Vegetation types include deciduous trees, coniferous trees, native vegetation/restoration area, maintained vegetation, unmaintained vegetation, and tree and vegetation area.



## Sheet 8

Sheet 8 shows various vegetation types in the area surrounding the I-394 and Kenilworth Corridor intersection, along with existing freight rail, trails, streets, and the limits of the survey. Vegetation types include deciduous trees, coniferous trees, native vegetation/restoration area, maintained vegetation, unmaintained vegetation, and tree and vegetation area.