

# TREE SURVEY REPORT

## Jackson Park Mobility Improvements Chicago, IL

Prepared for:



September 2019

GSG Project No.: 17-3003



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# 1 Executive Summary

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GSG Consultants Inc. (GSG) was contracted to identify trees located within Jackson Park from approximately E 56<sup>th</sup> Street to E 67<sup>th</sup> Street and from S Dorchester Avenue to the western curb of S Lake Shore Drive.

GSG completed a tree survey of the ±550-acre Jackson Park study area, located in the in Sections 12, 13, 14, 23, and 24, Township 38N, Range 14E, and Section 19, Township 38N, Range 15E in Cook County, Illinois (**Exhibit 1**). The study area contains existing roads, road right-of-way, golf course, shoreline, and maintained and natural area parklands.

Based on a field investigation conducted by GSG on June 13<sup>th</sup>-15<sup>th</sup>, 2018, and October 31<sup>st</sup> and November 1<sup>st</sup>, 916 trees were identified within the survey limits

## 1.1 Study Area

The study areas observed are as follows (**Exhibit 2**):

- Western side of S Lake Shore Drive (US Route 41) between E 57<sup>th</sup> Drive and approximately 1,300 feet south of E Columbia Drive Cutoff;
- Western side of S Lake Shore Drive (US Route 41) approximately 675 feet north and 245 feet south of E Hayes Drive;
- North and south sides of E Hayes Drive approximately 565 feet west of S Lake Shore Drive;
- Western and eastern sides of E Marquette Drive between approximately 500 feet south of S La Rabida Drive and E 67<sup>th</sup> Street;
- Western and eastern sides of E Jeffrey Avenue between E Marquette Drive and E 67<sup>th</sup> Street;
- Eastern and western sides of S Stony Island Avenue between Midway Plaisance (South of E 59<sup>th</sup> Street) and E 67<sup>th</sup> Street;
- Southern side of Midway Plaisance (South of E 59<sup>th</sup> Street) between S Cornell Avenue and S Stony Island Avenue;
- Southern side of S Cornell Avenue between approximately 665 feet northeast of S Stony Island Avenue and S Stony Island Avenue;
- Northern side of E Hayes Drive for approximately 200 feet west of S Richards Drive;
- Southern side of E Hayes Drive approximately 425 feet east of S Cornell Drive;
- Northeastern intersection quadrant of E Hayes Drive and S Cornell Drive;
- Intersection of E Marquette Drive and S Richards Drive;
- Western and eastern side of S Cornell Drive between E Hayes Drive and approximately 485 feet south of E Hayes Drive; and
- Northern side of E 63<sup>rd</sup> Street approximately 200 feet east of S Stony Island Avenue.



## 2 Methods

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This tree survey followed the Illinois Department of Transportation (IDOT) Departmental Policies (D&E – 18) regarding the preservation and replacement of trees. IDOT D&E – 18 specifies all landscaped trees (regardless of size) as well as volunteer trees with a diameter breast height (DBH) of six inches or greater be surveyed. Trees were inventoried within the survey limits using the Direct Counting Method. As the majority of the project limits are located within the Chicago Park District property, all trees were also evaluated following the Chicago Park District’s criteria for ecological significance.

### 2.1 Ash Trees

Ash tree species (*Fraxinus* spp.) were assessed for the presence of the emerald ash borer (*Agrilus planipennis*). Visual indicators used to assess the presence/absence of the emerald ash borer includes the following:

- D-shaped exit holes that new adults leave behind when emerging from the tree
- Jagged holes created by birds pecking and scraping at the tree to extract larvae
- Blotching and discoloration of the bark prevalent on branches and/or the trunk
- Wilting and yellowing of the foliage and die-back on branches
- Re-sprouts and new growth that arise below the dead portion of the tree, usually at the base
- Long, winding, s-shaped burrows apparent underneath the bark

Ash trees infested with the emerald ash borer exhibit strong visual evidence of one or more of the above indicators.

## 3 Tree Evaluation

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### 3.1 Tree Type

A total of 557 trees were surveyed within the survey limits. A total of 593 trees were present in the CAD file provided by C\*NECT, which also identified trees that were observed to no longer exist. Some trees were represented by multiple surveys and were identified more than once.

A total of 38 species of trees were identified within the survey limits. The most common species identified include Hackberry (*Celtis occidentalis*, 16 percent), Honey locust (*Gleditsia triacanthos*, 11 percent), and Crabapple (*Malus sylvestris*, 10 percent). Table 3-1 presents the tree type distribution data.



**Table 3-1 – Tree Data by Type**

Type	Quantity	Percent Total
Dead	36	3.15%
American Elm ( <i>Ulmus americana</i> )	23	2.01%
Amur maple ( <i>Acer ginnala</i> )	1	0.09%
Apple ( <i>Malus</i> spp.)	3	0.26%
Bald cypress ( <i>Taxodium distichum</i> )	6	0.52%
Beech ( <i>Fagus grandifolia</i> )	1	0.09%
Bitternut hickory ( <i>Carya cordiformis</i> )	2	0.17%
Black locust ( <i>Robinia pseudoacacia</i> )	7	0.61%
Black oak ( <i>Quercus velutina</i> )	4	0.35%
Black willow ( <i>Salix nigra</i> )	3	0.26%
Boxelder ( <i>Acer negundo</i> )	10	0.87%
Bradford pear ( <i>Pyrus calleryana</i> )	8	0.70%
Buckeye ( <i>Aesculus glabra</i> )	7	0.61%
Burr Oak ( <i>Quercus macrocarpa</i> )	5	0.44%
Catalpa ( <i>Catalpa bignonioides</i> )	32	2.80%
Chokecherry ( <i>Prunus virginiana</i> )	6	0.52%
Cottonwood ( <i>Populus deltoides</i> )	1	0.09%
Crabapple ( <i>Malus sylvestris</i> )	119	10.40%
Downy hawthorn ( <i>Crataegus mollis</i> )	4	0.35%
Dwarf hackberry ( <i>Celtis tenuifolia</i> )	1	0.09%
Eastern Cottonwood ( <i>Populus deltoides</i> )	4	0.35%
Elm ( <i>Ulmus</i> species)	28	2.45%
Freeman maple ( <i>Acer freemanii</i> )	18	1.57%
Ginko ( <i>Ginkgo biloba</i> )	16	1.40%
Green ash ( <i>Fraxinus pennsylvanica</i> )	10	0.87%
Hackberry ( <i>Celtis occidentalis</i> )	180	15.73%
Hawthorn ( <i>Crataegus monogyna</i> )	59	5.16%
Honey locust ( <i>Gleditsia triacanthos</i> )	149	13.02%
Horse chestnut ( <i>Aesculus hippocastanum</i> )	6	0.52%
Hybrid elm ( <i>Ulmus</i> <i>hyb.</i> )	17	1.49%
Kentucky coffee tree ( <i>Gymnocladus dioica</i> )	36	3.15%
Linden ( <i>Tilia americana</i> )	71	6.21%
Linden littleleaf ( <i>Tilia cordata</i> )	1	0.09%
Mulberry ( <i>Morus</i> species)	2	0.17%
Norway maple ( <i>Acer platanoides</i> )	65	5.68%
Quaking aspen ( <i>Populus tremuloides</i> )	1	0.09%
Redbud ( <i>Cercis canadensis</i> )	1	0.09%
Red maple ( <i>Acer rubrum</i> )	17	1.49%
Red mulberry ( <i>Morus rubra</i> )	42	3.67%
Red oak ( <i>Quercus rubra</i> )	8	0.70%
River Birch ( <i>Betula nigra</i> )	5	0.44%
Siberian elm ( <i>Ulmus pumila</i> )	12	1.05%
Silver maple ( <i>Acer sacharinum</i> )	17	1.49%
Slippery elm ( <i>Ulmus rubra</i> )	2	0.17%
Speckled alder ( <i>Alnus incana</i> )	1	0.09%
Staghorn Sumac ( <i>Rhus typhina</i> )	16	1.40%
Sugar maple ( <i>Acer saccharum</i> )	20	1.75%
Swamp white oak ( <i>Quercus bicolor</i> )	40	3.50%
Sweet Gum ( <i>Liquidambar styraciflua</i> )	1	0.09%
Sycamore ( <i>Platanus occidentalis</i> )	10	0.87%
Tree lilac( <i>Syringa vulgaris</i> )	5	0.44%
Tree of Heaven ( <i>Ailanthus altissima</i> )	1	0.09%
Tulip tree ( <i>Liriodendron tulipifera</i> )	1	0.09%
White oak ( <i>Quercus alba</i> )	1	0.09%
White poplar ( <i>Populus alba</i> )	2	0.17%
Total	1144	100.00%



### 3.2 Tree Health and Structure

Tree health and structure were assessed during the tree survey and are summarized in Table 3-2 and Table 3-3, respectively. Tree health refers to the vigor of the tree. Signs of disease are considered when evaluating the health of a tree. The following considerations were taken into account when rating tree health Good, Fair, Poor, Dead

- Good: Healthy vigorous growth, no signs of disease, infestation, healthy root growth, no signs of root damage.
- Fair: Moderately healthy growth, some signs of stress (discoloration in leaves, etc.) some signs of potential root damage.
- Poor: Sparse leaf density, dead/dying branches, heavy signs of stress (discoloration in leaves, etc.), obvious signs of root damage, suckers actively sprouting from base of tree.
- Dead: No signs of active growth, peeling bark.

The structure of the tree refers to the branching pattern and structural integrity of the tree. The normal shaping of individual tree species is considered and compared to the tree species in the field. Missing or cut branches are also considered when rating the structure of the tree. The following considerations were taken into account when rating tree structure Good, Fair, Poor, Dead.

- Good: No signs of trunk damage/splitting, branch pattern typical of species, without any obvious hazardous growth (branching at risk of falling) healthy and stable trunk/soil interface, good aesthetics
- Fair: Some signs of trunk damage/splitting with active signs of regrowth/healing, evidence of previous trimming/delimiting, in need of trimming/ delimiting to improve structure/aesthetics.
- Poor: Heavy damage to trunk from impact/rot/infestation, no signs of regrowth/healing, branches actively falling, or at risk of falling, “weedy” branching pattern.
- Dead: No signs of active growth, peeling bark/trunk fallen to ground.

**Table 3-2 - Tree Data by Health**

Health	Number	Percent Total
Good	811	70.89%
Fair	204	17.83%
Poor	91	7.95%
Dead	38	3.32%
<b>Total</b>	<b>1144</b>	<b>100.00%</b>



**Table 3-3 - Tree Data by Structure**

Structure	Number	Percent Total
Good	836	73.08%
Fair	165	14.42%
Poor	107	9.35%
Dead	36	3.15%
<b>Total</b>	<b>1144</b>	<b>100.00%</b>

### 3.3 Tree Origin

Trees were evaluated to determine if they were likely to have been planted purposefully (landscaped) or developed from seed/sprout (volunteer). This determination was made by considering the location and species of tree. Tree species with aggressive or weedy growth habits that were observed growing in unmaintained, or locations where a tree would not normally be planted (very close proximity to a building/wall/fence, crowding a larger, higher quality tree) were considered volunteer. Since the absolute origin of a tree is unknown this rating should be considered subjective.

**Table 3-4 - Tree Data by Origin**

Origin	Number	Percent Total
Landscaped	1083	94.67%
Volunteer	61	5.33%
<b>Total</b>	<b>1144</b>	<b>100.00%</b>

### 3.4 Screening Trees

Screening trees are typically, coniferous, or trees that contain foliage throughout the year compared to deciduous trees, that do not contain foliage for portions of the year. Deciduous trees have reduced screening functions during portions of the year when foliage is not present. None of the trees within the survey limits are considered screening trees.

### 3.5 Trees with Special Functions

Trees that serve as a buffer between a highway and a State-listed Natural Area, Nature Preserve, or Land and Water Reserve are considered to possess special functions. There are no trees with special functions located within the survey limits.

### 3.6 Specimen and Exceptional Trees

Specimen trees are those listed on the 2013 Illinois Big Tree Register; those that are outstanding examples possessing exceptional size, form, etc.; or those having recognized historical significance (IDOT D&E-18). There are no specimen trees within the survey limits. None of the surveyed trees are on the 2013 Illinois Big Tree Register.





Exceptional trees are native trees that are average to high quality based on their coefficient of conservatism (C-value, Wilhelm and Rericha, 2017), have large size, and have good structure or landscaped trees that provide visual aesthetics, have large size, and have good health and structure.

**Table 3-5 - Tree Data by Exceptional Data**

Tag #	Species	Scientific	DBH (inches)	Canopy Width (dia, ft)
389	Hackberry	<i>Celtis occidentalis</i>	36	52
2111	Hackberry	<i>Celtis occidentalis</i>	45	36
332	Hackberry	<i>Celtis occidentalis</i>	36	64
3013	Catalpa	<i>Catalpa bignonioides</i>	50	50
1999	Honey locust	<i>Gleditsia triacanthos</i>	36	40
371	Hackberry	<i>Celtis occidentalis</i>	35	80
752	Hackberry	<i>Celtis occidentalis</i>	30	68
197	Hackberry	<i>Celtis occidentalis</i>	45	46
3015	Red mulberry	<i>Morus rubra</i>	58	80
1612	Hackberry	<i>Celtis occidentalis</i>	35	34
4154	Hackberry	<i>Celtis occidentalis</i>	40	45

### 3.7 Oak and Hickory Trees

Oak and hickory trees (*Quercus* spp. and *Carya* spp.) are conservative native trees possessing a C-value of 4 or greater. Oaks are classified as a keystone species as many fauna species rely on them for habitat and a food source. Populations of oak trees in Illinois are dwindling due to environmental and human induced stresses. Preserving both reproductively active younger oak trees and larger oak trees are critical to maintain future oak populations. For this reasoning, in addition to the identified exceptional trees, it is recommended that all oak trees regardless of size, health rating, and structure rating, be preserved and protected within and immediately adjacent to the survey limits, when practical. Table 3-6 summarizes Oak/Hickory trees in the survey limits.

**Table 3-6 - Tree Data containing Oak/Hickory Trees**

Tag #	Species	Scientific	DBH (inches)	Canopy Width
235	Bitternut hickory	<i>Carya cardiformis</i>	15	30
1463	Bitternut hickory	<i>Carya cardiformis</i>	18	36
2565	White oak	<i>Quercus alba</i>	8	20
3005	Swamp white oak	<i>Quercus bicolor</i>	16	32
3010	Swamp white oak	<i>Quercus bicolor</i>	12	20
3011	Swamp white oak	<i>Quercus bicolor</i>	18	48
3039	Swamp white oak	<i>Quercus bicolor</i>	23	38
9914	Swamp white oak	<i>Quercus bicolor</i>	5	16
9915	Swamp white oak	<i>Quercus bicolor</i>	5	16
9939	Swamp white oak	<i>Quercus bicolor</i>	3	10
9935	Swamp white oak	<i>Quercus bicolor</i>	4	12
9932	Swamp white oak	<i>Quercus bicolor</i>	5	14
9931	Swamp white oak	<i>Quercus bicolor</i>	5	12
9919	Swamp white oak	<i>Quercus bicolor</i>	5	14



9916	Swamp white oak	<i>Quercus bicolor</i>	5	12
9913	Swamp white oak	<i>Quercus bicolor</i>	4	14
4460	Swamp white oak	<i>Quercus bicolor</i>	13	24
4449	Swamp white oak	<i>Quercus bicolor</i>	4	8
4447	Swamp white oak	<i>Quercus bicolor</i>	9	24
<b>Tag #</b>	<b>Species</b>	<b>Scientific</b>	<b>DBH (inches)</b>	<b>Canopy Width</b>
4445	Swamp white oak	<i>Quercus bicolor</i>	6	16
4443	Swamp white oak	<i>Quercus bicolor</i>	8	20
4442	Swamp white oak	<i>Quercus bicolor</i>	5	14
4440	Swamp white oak	<i>Quercus bicolor</i>	8	18
4439	Swamp white oak	<i>Quercus bicolor</i>	9	22
4436	Swamp white oak	<i>Quercus bicolor</i>	7	14
4435	Swamp white oak	<i>Quercus bicolor</i>	9	18
4371	Swamp white oak	<i>Quercus bicolor</i>	11	22
1622	Swamp white oak	<i>Quercus bicolor</i>	6	10
12559	Swamp white oak	<i>Quercus bicolor</i>	8	11
1650	Swamp white oak	<i>Quercus bicolor</i>	7	8
1671	Swamp white oak	<i>Quercus bicolor</i>	12	10
1672	Swamp white oak	<i>Quercus bicolor</i>	13	12
1675	Swamp white oak	<i>Quercus bicolor</i>	14	13
1676	Swamp white oak	<i>Quercus bicolor</i>	13	13
1677	Swamp white oak	<i>Quercus bicolor</i>	11	12
1678	Swamp white oak	<i>Quercus bicolor</i>	13	12
4177	Swamp white oak	<i>Quercus bicolor</i>	29	30
1743	Swamp white oak	<i>Quercus bicolor</i>	7	7
215	Swamp white oak	<i>Quercus bicolor</i>	2	4
9895	Red oak	<i>Quercus rubra</i>	4	12
9901	Red oak	<i>Quercus rubra</i>	4	14
257	Red oak	<i>Quercus rubra</i>	4	12
1994	Red oak	<i>Quercus rubra</i>	11	22
9920	Red oak	<i>Quercus rubra</i>	29	44
171	Black oak	<i>Quercus velutina</i>	1	4
192	Black oak	<i>Quercus velutina</i>	1	3
193	Black oak	<i>Quercus velutina</i>	1	3
210	Black oak	<i>Quercus velutina</i>	1	3
1624	Burr oak	<i>Quercus macrocarpa</i>	5	7
1625	Burr oak	<i>Quercus macrocarpa</i>	6	7
1663	Burr oak	<i>Quercus macrocarpa</i>	9	10
1691	Burr oak	<i>Quercus macrocarpa</i>	34	35
9855	Red oak	<i>Quercus rubra</i>	11	11
9856	Red oak	<i>Quercus rubra</i>	9	10
9849	Swamp white oak	<i>Quercus bicolor</i>	8	6
1929	Swamp white oak	<i>Quercus bicolor</i>	24	23
<i>Total</i>			56	

### 3.8 Aesthetic Trees

The aesthetic value of a tree is subjective. Typically, landscaped trees in good or fair health and structure generally possess an aesthetic value as they have been specifically planted or tended to for that purpose. Volunteer trees located within protected natural areas which have an average



to high C-value may also provide a function of aesthetic value. Table 3-7 summarizes aesthetic trees in the survey limits. Note: these trees did not meet the criteria for exceptional trees.

**Table 3-7 - Tree Data by Aesthetic Value**

Tag #	Species	Scientific	DBH (inches)	Canopy Width (dia, ft)
3378	Hackberry	<i>Celtis occidentalis</i>	29	42
202	Sugar maple	<i>Acer saccharum</i>	27	40
3039	Swamp white oak	<i>Quercus bicolor</i>	23	38
9920	Red oak	<i>Quercus rubra</i>	29	44

## 4 References

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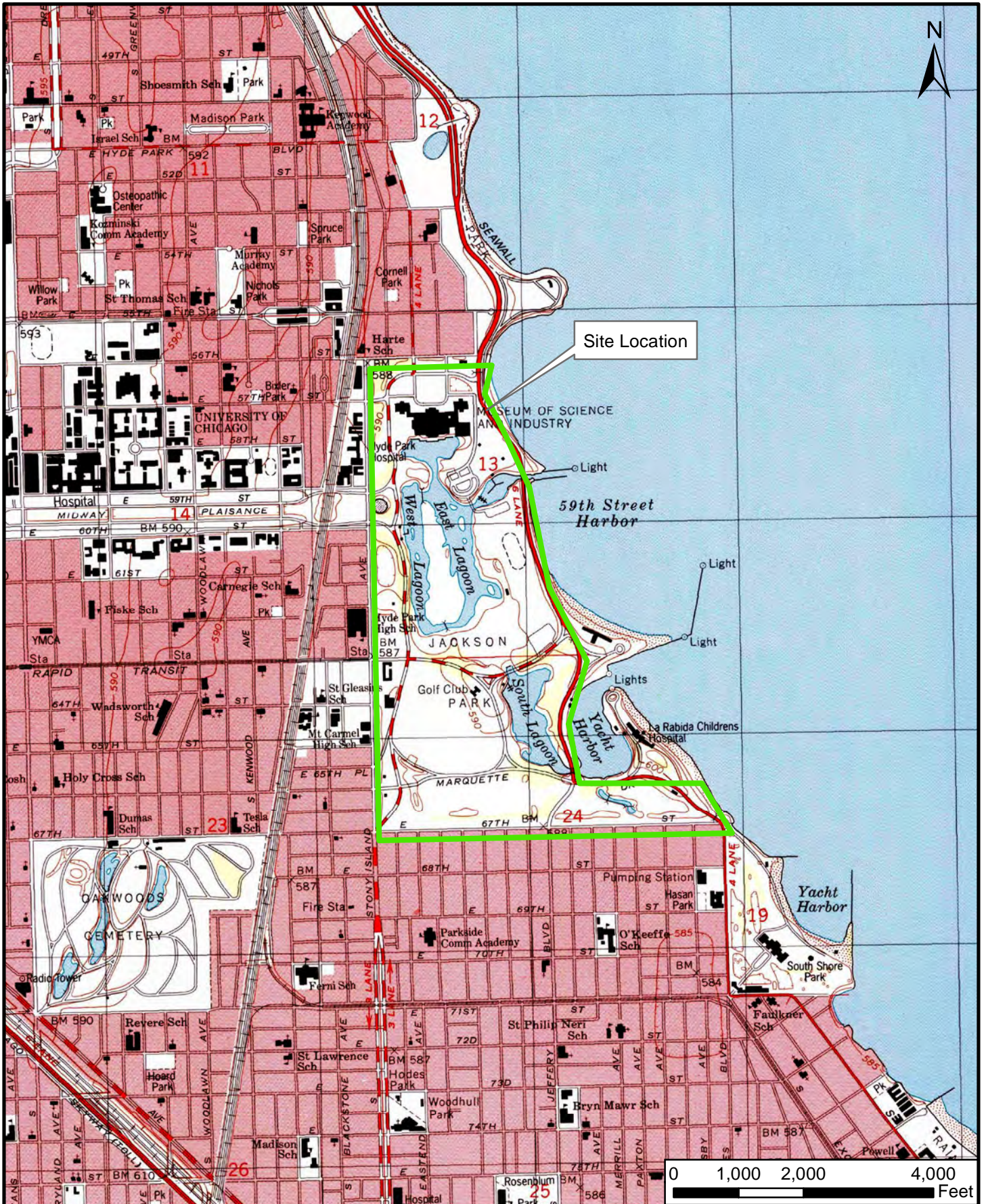
**APPENDIX A**

**EXHIBIT 1: Site Location Map**

**EXHIBIT 2: Tree Location Map**

**Site Photographs**

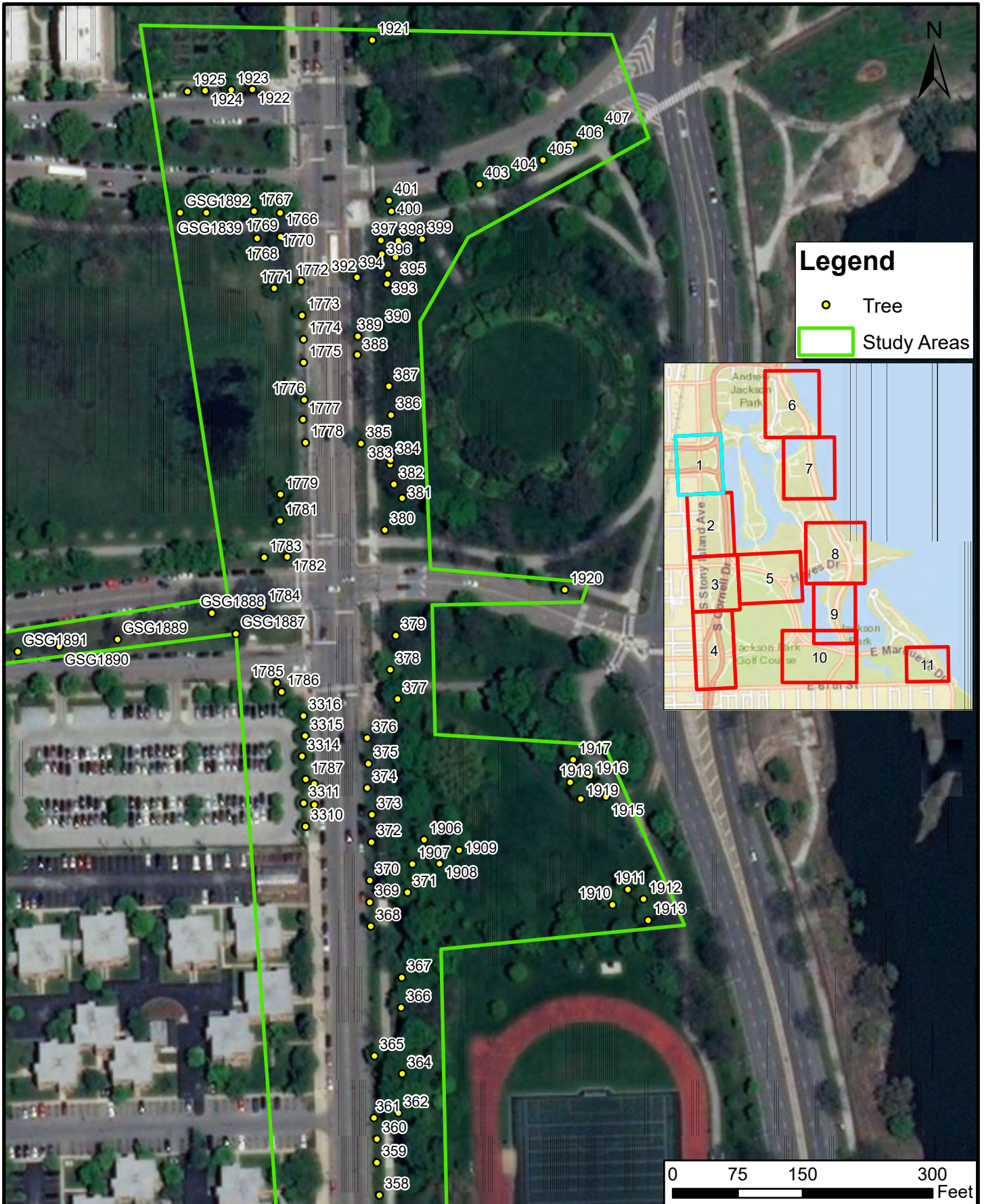


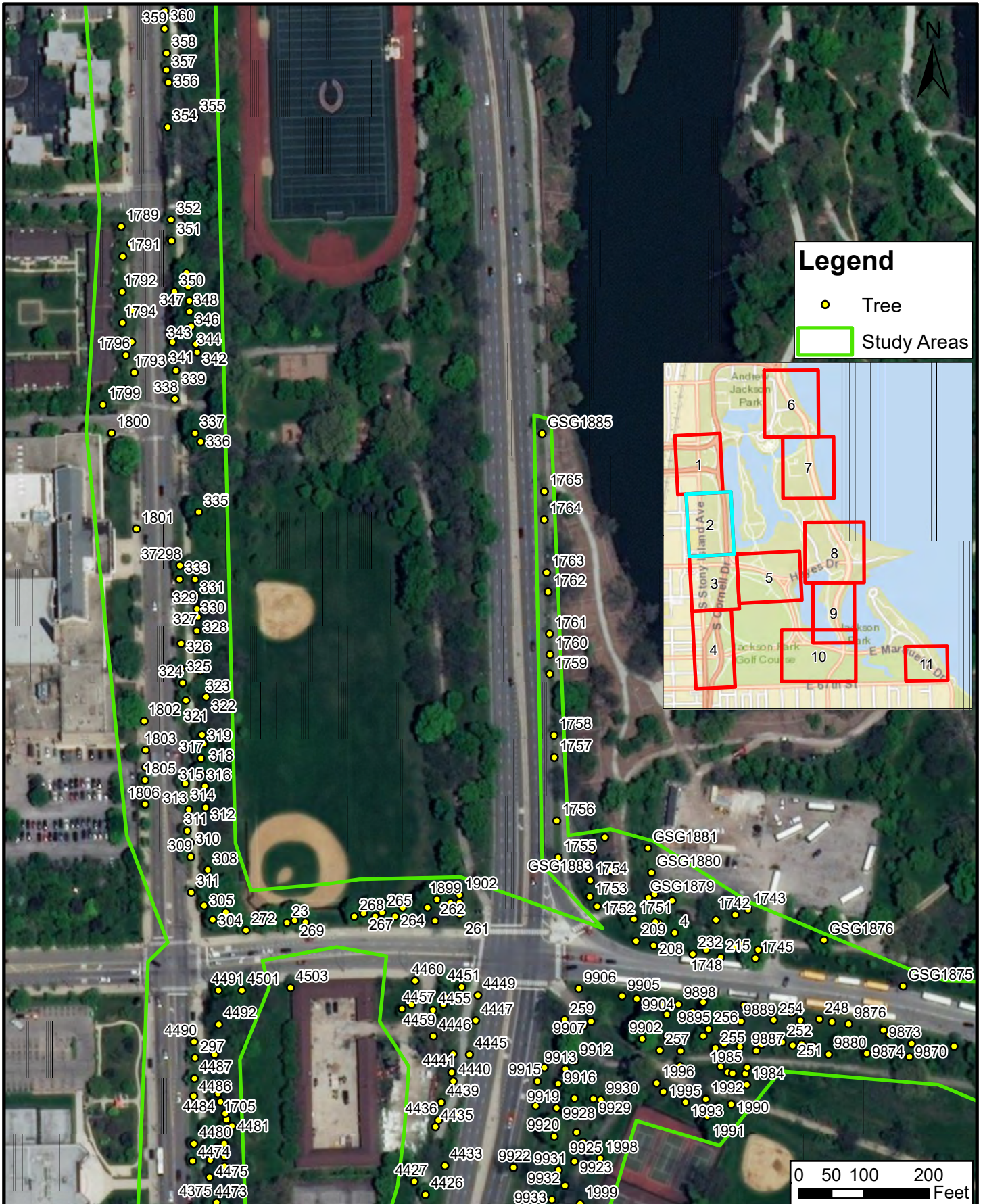


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Exhibit 1:  
 Site Location Map

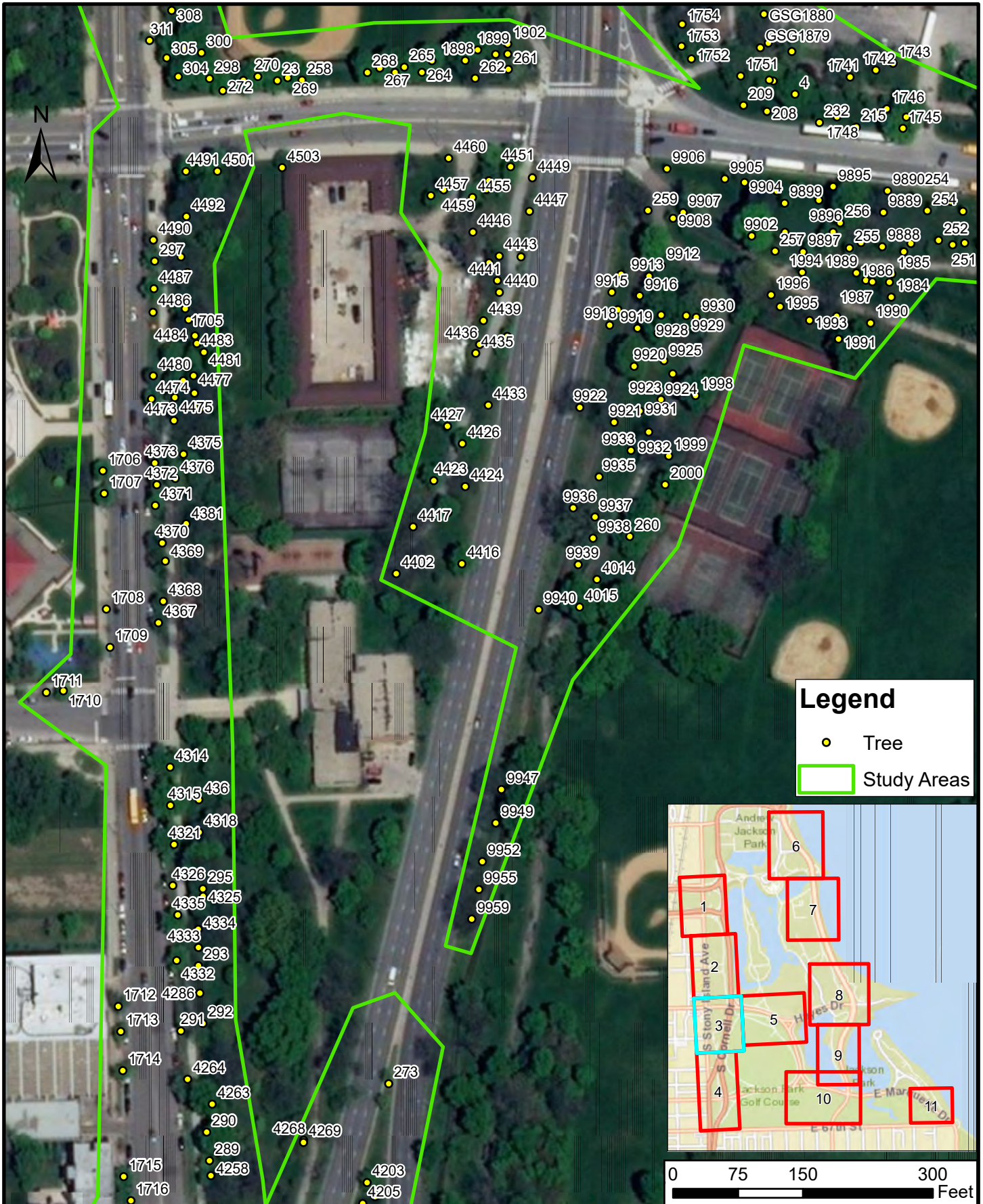




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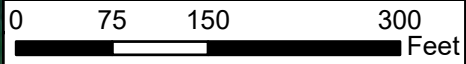
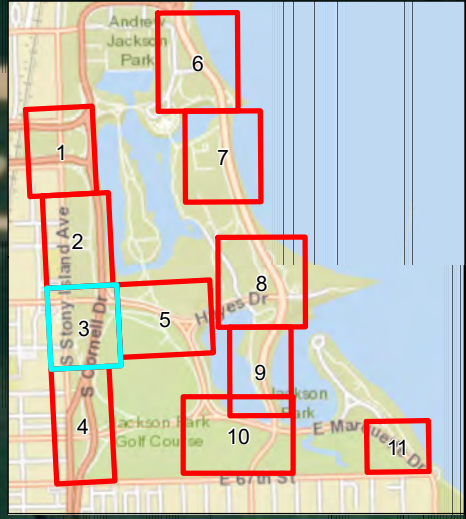
Jackson Park Tree Survey  
 Infrastructure Engineering  
 Chicago Department of Transportation  
 6401 S. Stony Island Avenue, Chicago, IL

August 2019  
 Exhibit 2:  
 Sheet 2  
 Tree Survey

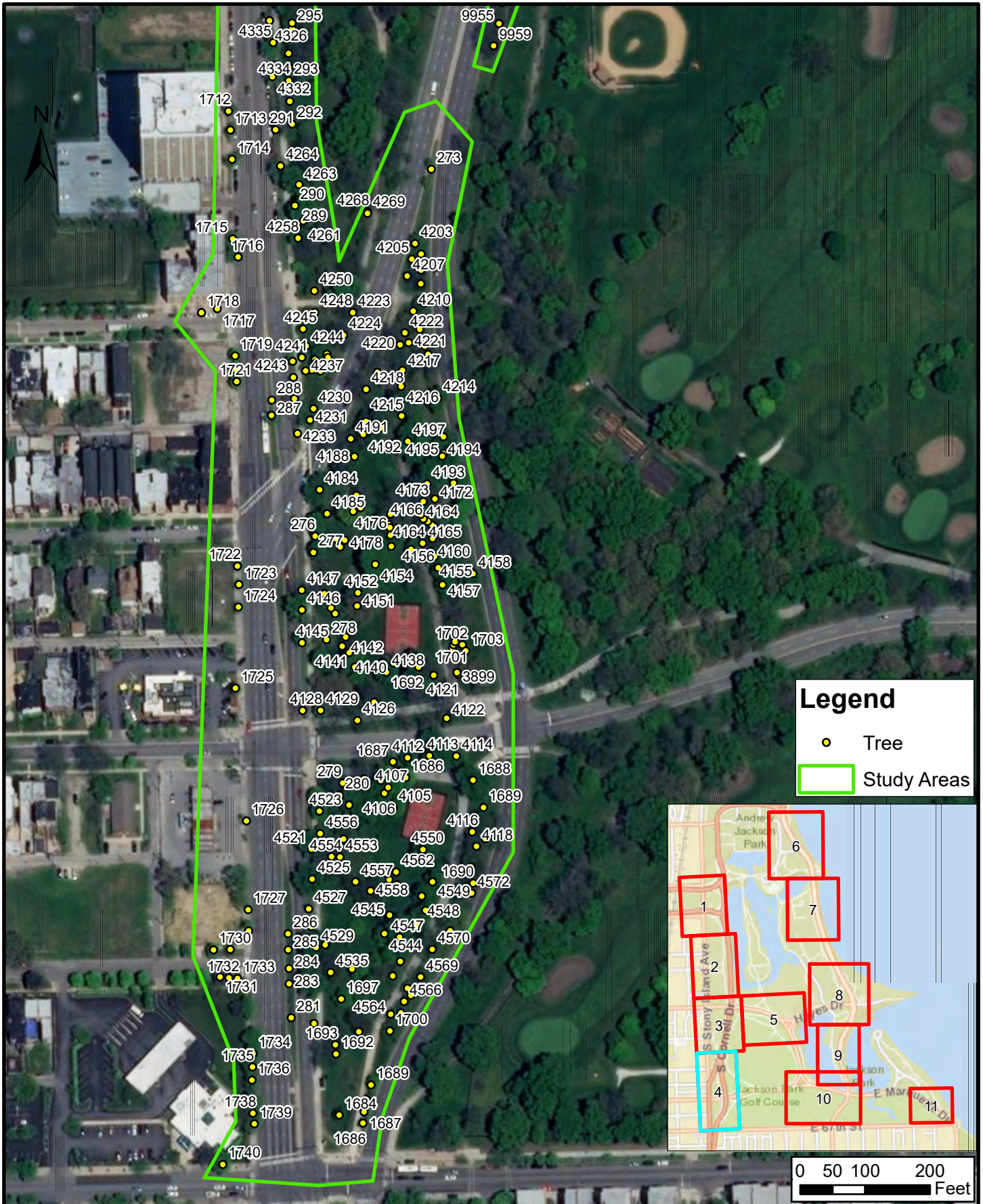


**Legend**

- Tree
- Study Areas

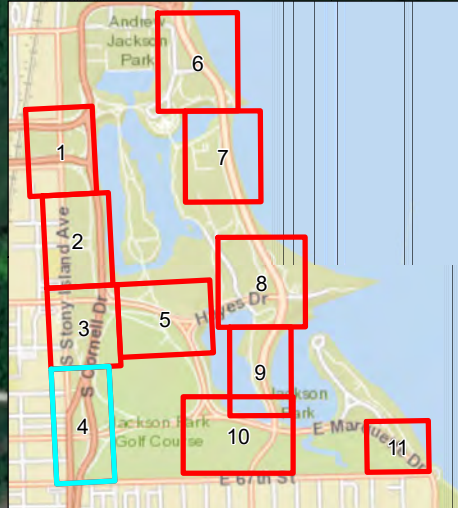
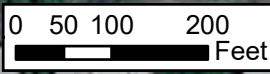






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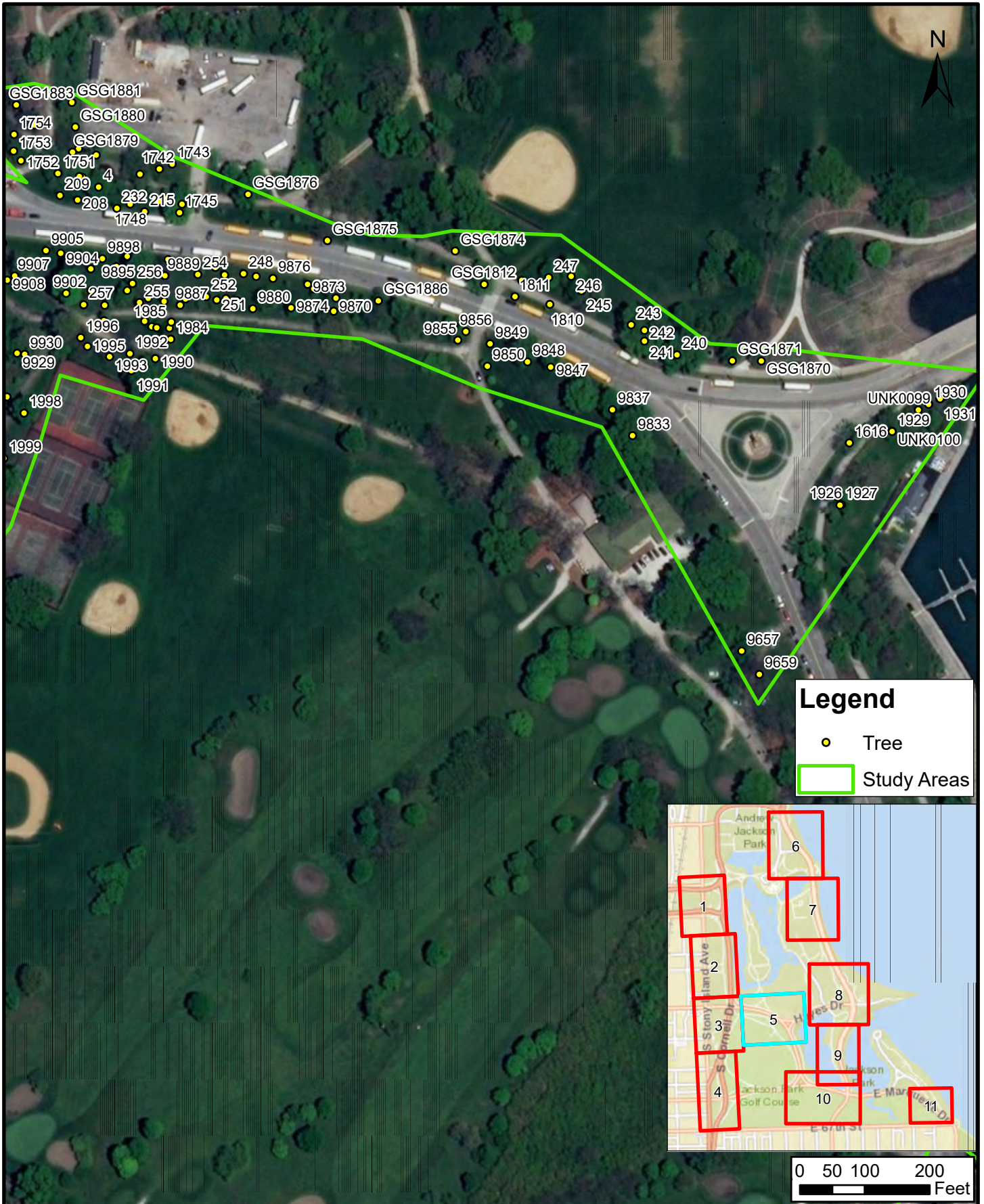
- Tree
- ▭ Study Areas



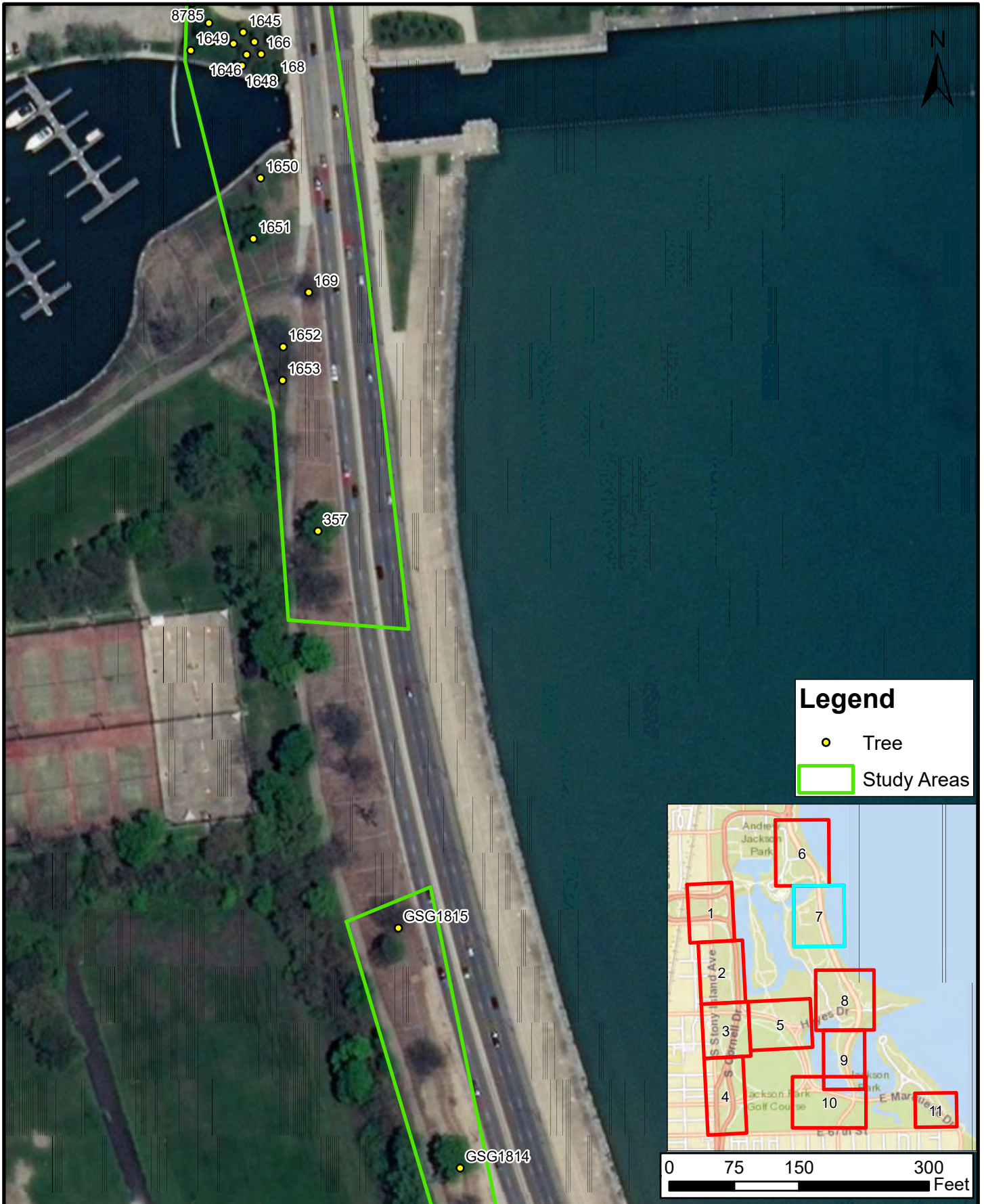
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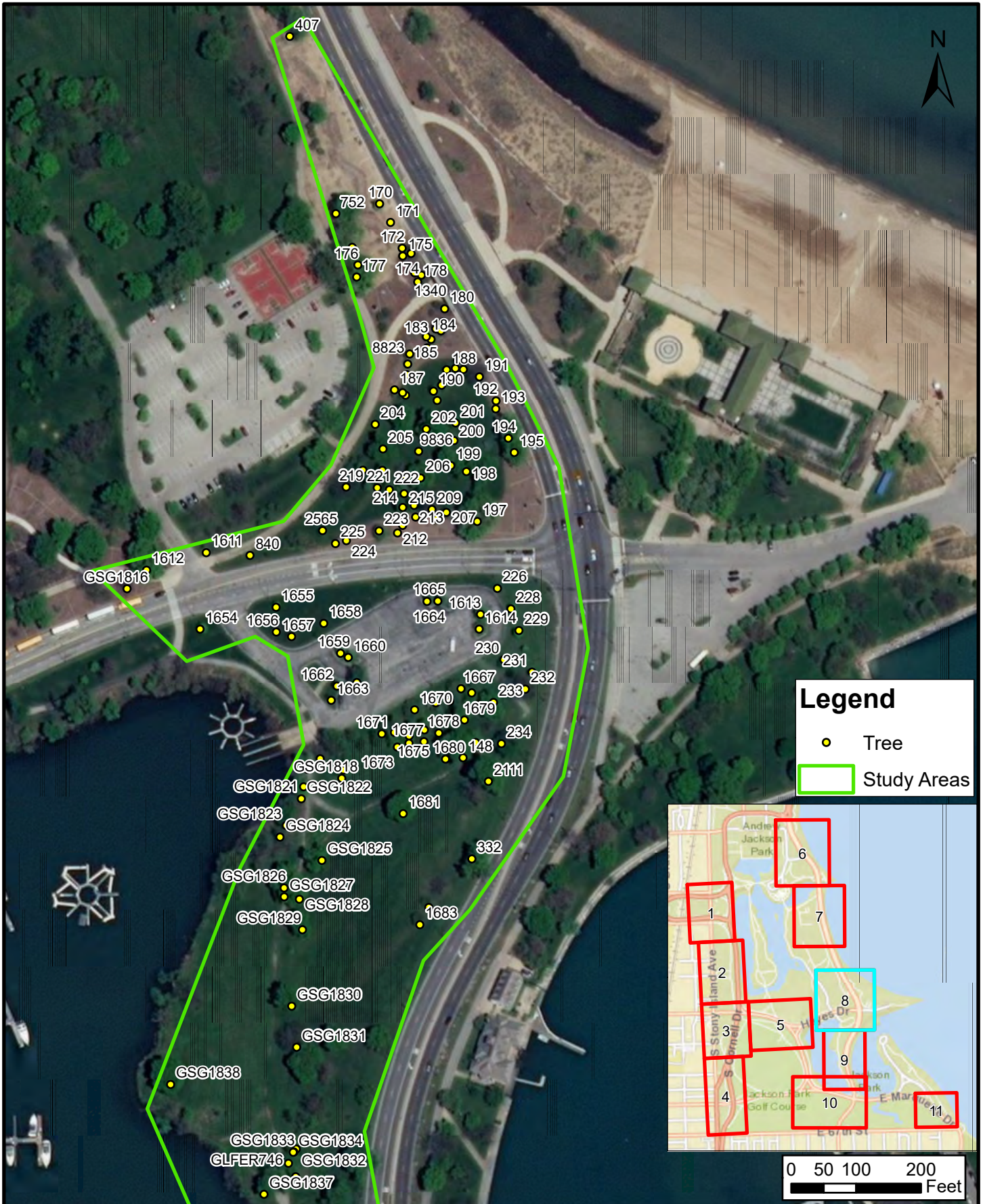
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August 2019  
 Exhibit 2:  
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 Tree Survey



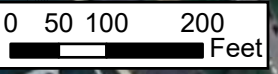
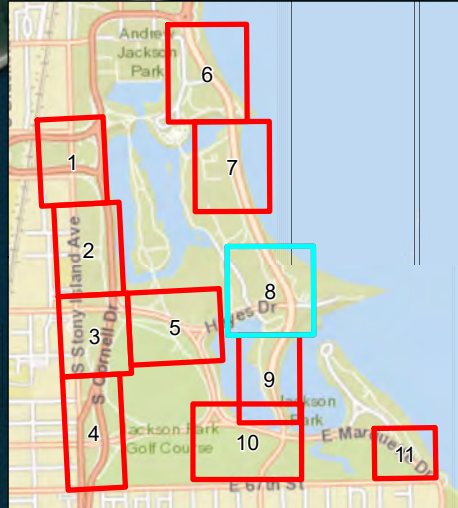


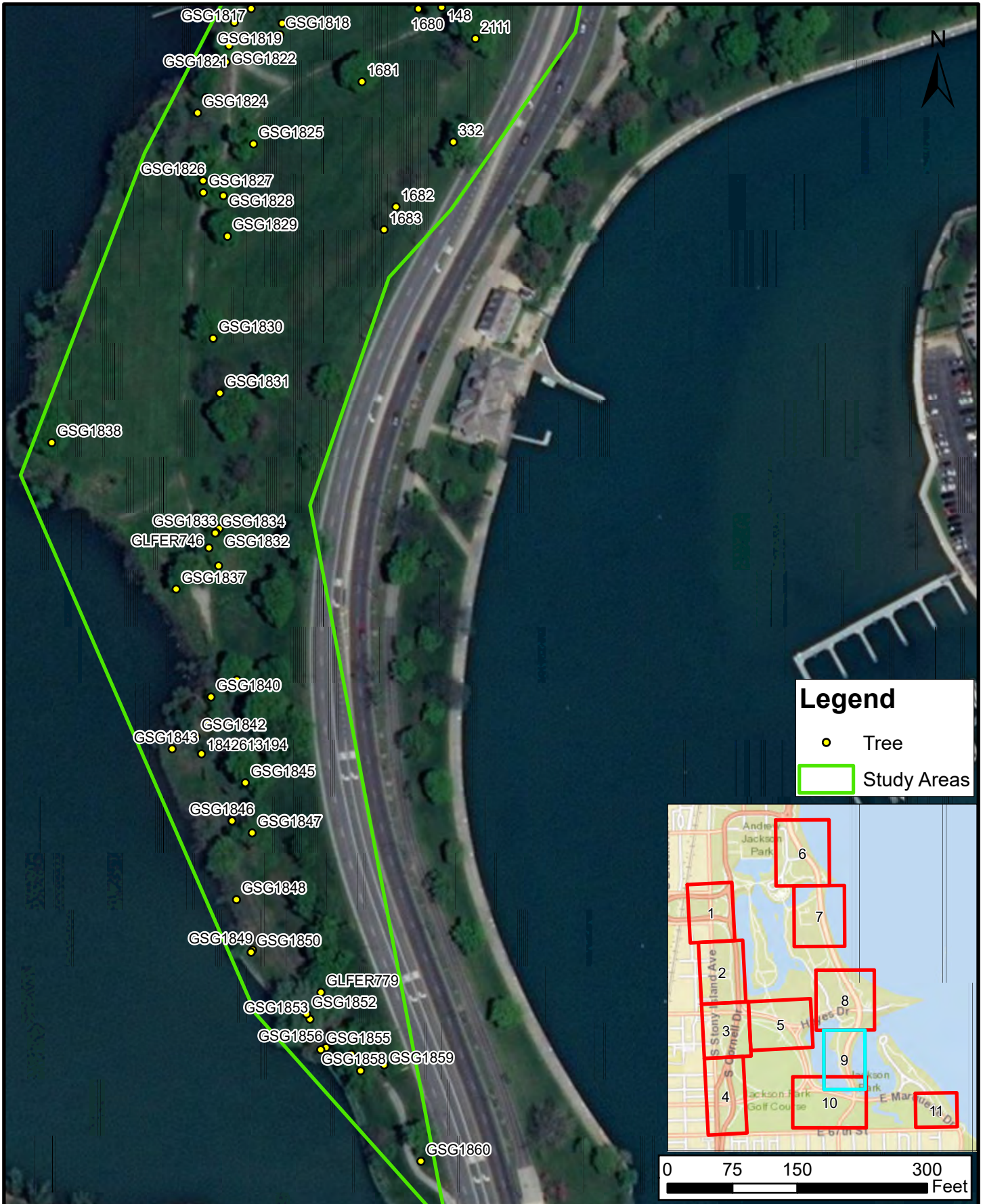




**Legend**

- Tree
- ▭ Study Areas

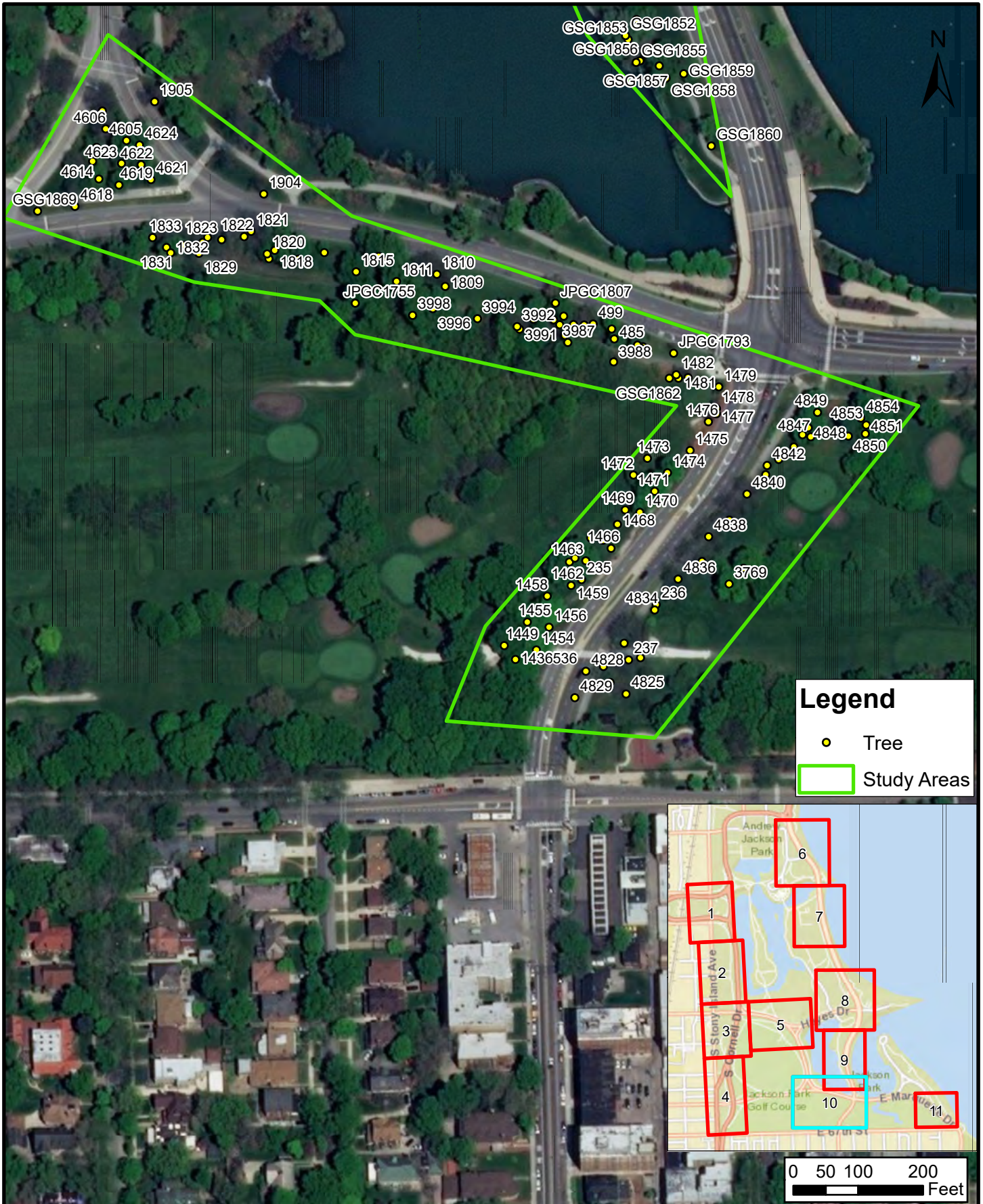




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August 2019  
Exhibit 2:  
Sheet 9  
Tree Survey



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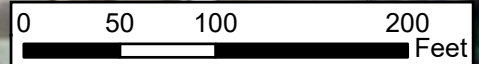
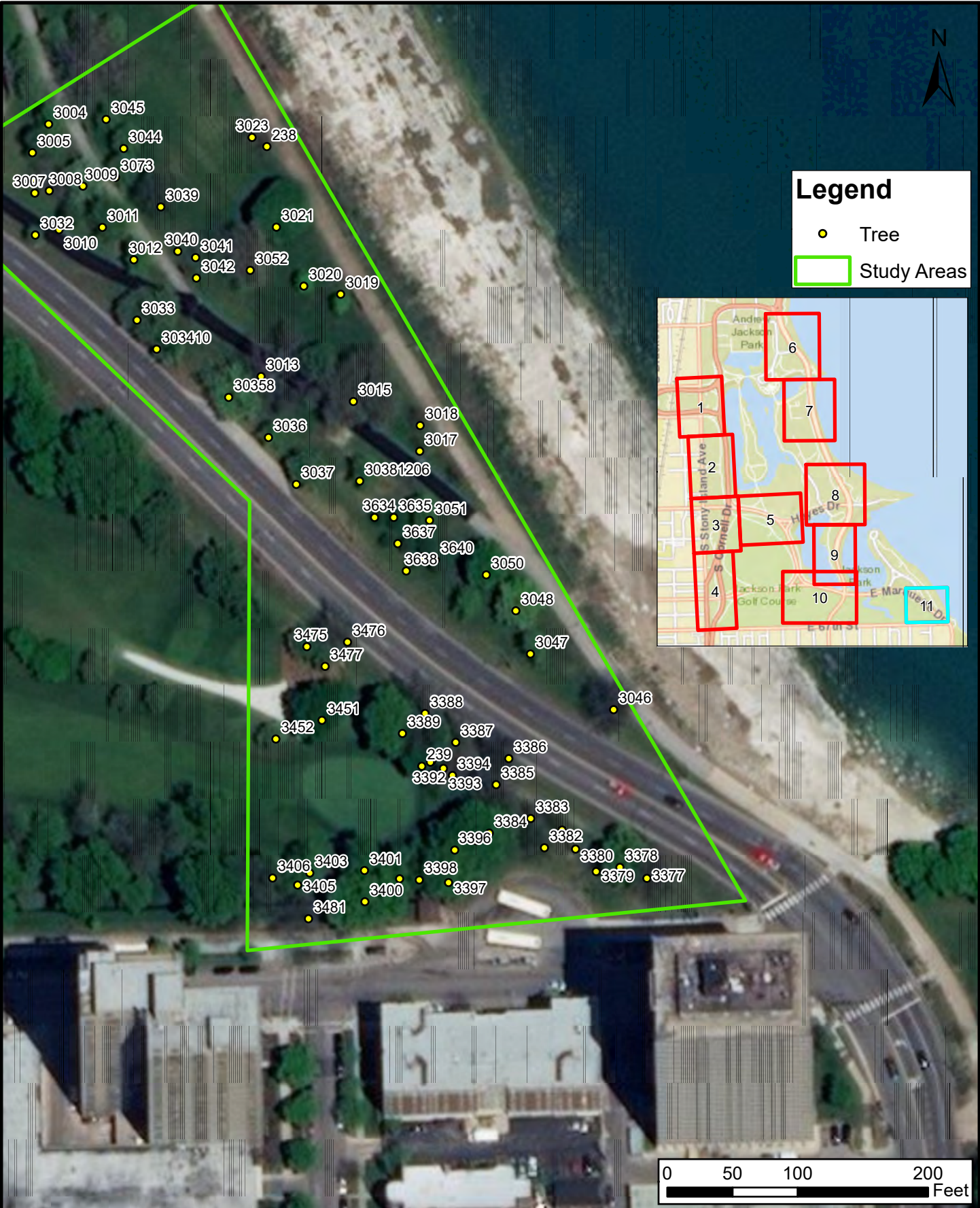
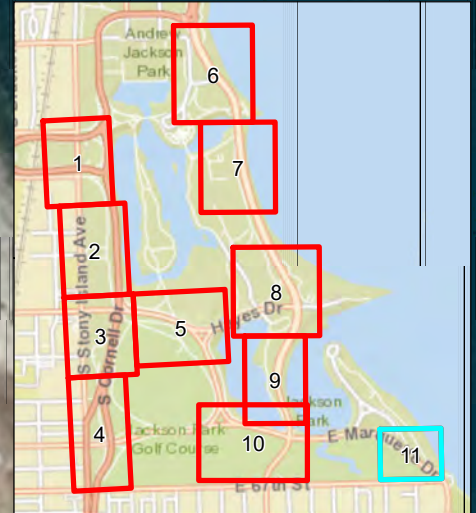
Jackson Park Tree Survey  
 Infrastructure Engineering  
 Chicago Department of Transportation  
 6401 S. Stony Island Avenue, Chicago, IL

Exhibit 2: August 2019  
 Sheet 10  
 Tree Survey



### Legend

- Tree
- Study Areas







Date: 06/13/2018  
View of tree #4826, Green Ash. Photo facing north.

1



Date: 06/14/2018  
View of restoration area northwest of Hayes Dr. and Lake Shore Drive.

2



Date: 06/14/2018  
View of tree #4446, multiple stem. Photo facing east.

3



Date: 06/14/2018  
View of tree #4205, multiple stem. Photo facing west.

4



Date: 06/15/2018  
View of GSG measuring canopy width with wheel. Photo facing south. 5



Date: 06/15/2018  
View of landscaped trees along Stony Island Drive. Photo facing south. 6