Dundee Nursery Redevelopment

Environmental Assessment Worksheet

Prepared for:

City of Plymouth

Prepared by:

Kimley»Horn

March 2021

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July 2013 Version

Environmental Assessment Worksheet

This Environmental Assessment Worksheet (EAW) form and EAW Guidelines are available at the Environmental Quality Board's website at: http://www.eqb.state.mn.us/EnvRevGuidanceDocuments.htm. The EAW form provides information about a project that may have the potential for significant environmental effects. The EAW Guidelines provide additional detail and resources for completing the EAW form.

Cumulative potential effects can either be addressed under each applicable EAW Item, or can be addressed collectively under EAW Item 19.

Note to reviewers: Comments must be submitted to the RGU during the 30-day comment period following notice of the EAW in the *EQB Monitor*. Comments should address the accuracy and completeness of information, potential impacts that warrant further investigation, and the need for an EIS.

1. Project Title

Dundee Nursery Redevelopment

2. Proposer

Proposer: Parkera
Contact Person: Kelsey Malecha
Title: Senior Vice President and Director of Growth, Research and Analytics
Address: 3800 American Boulevard West, Suite 1120
City, State, ZIP: Bloomington, MN 55431
Phone: 952-334-0411
Email: kelseym@ciproperties.com

3. RGU

RGU: City of Plymouth
Contact Person: Lori Sommers
Title: Senior Planner
Address: 3400 Plymouth Boulevard
City, State, ZIP: Plymouth, MN 55447
Email: lsommers@plymouthmn.gov

4. Reason for EAW Preparation

Check one:

Required:	Discretionary:
☐ EIS Scoping	☐ Citizen petition
☒ Mandatory EAW	☐ RGU discretion
	☒ Proposer initiated

If EAW or EIS is mandatory, give EQB rule category subpart number(s) and name(s):

44100.4300, Subp. 32 Mixed-Use Development

5. Project Location

County: Hennepin
City/Township: Plymouth
PLS Location (¼, ¼, Section, Township, Range): SE ¼ of the SW ¼ and SW ¼ of the SE ¼ of Section 17, Township 118N, Range 22W
Watershed (81 major watershed scale): Mississippi River – Twin Cities
Tax Parcel Number: 17-118-22-34-0002, 17-118-22-43-0037
At a minimum, attach each of the following to the EAW:

- **County map showing the general location of the project** (see Figure 1)
- **US Geological Survey 7.5 minute, 1:24,000 scale map indicating project boundaries** (see Figure 2)
- **Site plans showing all significant project and natural features** (see Attachment 1)

6. Project Description

a. Provide the brief project summary to be published in the *EQB Monitor* (approximately 50 words).

Parkera is proposing to redevelop a 23.7-acre site in the northwest quadrant of TH 55 and CSAH 9. The current site is being operated as Dundee Nursery and the Plymouth Presbyterian Church and a City Metro Link Park and Ride location (parking lot of the Plymouth Presbyterian Church). The site is proposed to be redeveloped into a mixed-use development with a medical office building, multi-family residential building, along with the existing church with a preschool which will remain on the site.

b. Give a complete description of the proposed project and related new construction, including infrastructure needs. If the project is an expansion, include a description of the existing facility. Emphasize 1) construction and operation methods and features that will cause physical manipulation of the environment or will produce wastes; 2) modifications to existing equipment or industrial processes; 3) significant demolition, removal, or remodeling of existing structures; and 4) timing and duration of construction activities.

The developer is proposing to redevelop the existing Dundee Nursery at 16800 Highway 55 and the existing Plymouth Presbyterian Church at 3755 Dunkirk Lane North, Plymouth, Hennepin County, MN. The site is approximately 23.7 acres and currently contains an active nursery, tree lots, landscaping materials, a church and preschool, and a parking

lot. There are two existing access points to the site, one from Minnesota Highway 55 and the second from Dunkirk Court North.

The commercial and residential development is proposed to include up to 70,000 square feet for a medical office building, up to 300 residential units, and a 17,000 square foot existing church including a 3,600 square foot preschool. The church will include a future 3,000 square feet (sf) expansion and 125-person capacity increase. The site will also include up to 970 parking spaces with 583 included in a parking garage for the residential units, 326 parking stalls for the medical office building, 31 stalls for the church, and 30 stalls considered proof-of-parking for the future church expansion. The 30 proof-of-parking stalls can be built north of the church and meet all code requirements for the future 3,000 sf sanctuary expansion. The medical office building and the church will share parking during off-peak hours (evenings and weekends). Five street parking spaces are proposed on Dunkirk Court North for the park. The proposed development includes stormwater treatment areas, green space, and associated infrastructure.

A public frontage road is proposed from Dunkirk Lane North (36th Avenue North) to a cul-de-sac at the existing TH 55 Dundee/Tri-State Drilling access (see site plan in Attachment 1). The existing TH 55 Dundee/Tri-State Drilling access will serve as an emergency access until the Tri-State Drilling site is redeveloped. The project proposes to relocate and shorten the existing Dunkirk Court North cul-de-sac to provide access to the future church parking lot and secondary access to the medical office building. The Dunkirk Court North cul-de-sac will provide a 24-foot wide secondary access to the medical office building parking lot. The project will relocate the watermain and underground electrical and communication infrastructure associated with Dunkirk Court North.

Construction activities are anticipated to begin in the Fall of 2021 and is anticipated to be completed by 2023.

c. Project magnitude

Table 1: Project Magnitude

Measure	Magnitude
Total Project Acreage	23.7 acres
Linear Project Length	Not applicable
Number and Type of Residential Units	300 apartment units
Commercial/Office Building Area (square feet)	70,000 square feet
Church (square feet)	3,000 square feet expansion (125 seat expansion)
Other Uses - Parking	970 parking spaces
Structure Height(s)	Residential Building – approximately 48 feet Medical Office Building – approximately 58 feet

d. Explain the project purpose. If the project will be carried out by a governmental unit, explain the need for the project and identify its beneficiaries.

The purpose of the project is to redevelop the existing nursery facility into a mixed-use commercial/office and residential development and retain the existing church facility

and preschool. The site is currently zoned as Future Restricted Development (FRD) (Dundee) and Residential Single Family Detached 2 (RSF-2) (Church).

e. **Are future stages of this development, including development on any other property, planned or likely to happen? ☐ Yes ☒ No**

If yes, briefly describe future stages, relationship to present project, timeline, and plans for environmental review.

Not applicable

f. **Is this project a subsequent stage of an earlier project? ☐ Yes ☒ No**

If yes, briefly describe the past development, timeline, and past environmental review.

Not applicable

7. Cover Types

Estimate the acreage of the site with each of the following cover types before and after development.

Table 2: Cover Types

Cover Type	Before (Acres)	After (Acres)
Wetlands	0.98	1.05
Deep Water/Streams	0	0
Lawn/Landscaping	10.09	11.75
Impervious Surface	12.56	9.20
Stormwater Pond	0.07	1.70
Total	23.7	23.7

8. Permits and Approvals Required

List all known local, state, and federal permits, approvals, certifications, and financial assistance for the project. Include modifications of any existing permits, governmental review of plans, and all direct and indirect forms of public financial assistance including bond guarantees, Tax Increment Financing, and infrastructure. *All of these final decisions are prohibited until all appropriate environmental review has been completed. See Minnesota Rules Chapter 4410.3100.*

Table 3: Permits and Approvals Required

Unit of Government	Type of Application	Status
US Army Corps of Engineers	Section 404 Permit	To be submitted, if needed
Minnesota Department of Health	Well and Boring Sealing Record	To be submitted
	Watermain Extension Permit	To be submitted
Minnesota Pollution Control Agency (MPCA)	Notice of Intent of Demolition Permit	To be submitted
	National Pollutant Discharge Elimination System (NPDES)	To be submitted
MPCA / Metropolitan Council Environmental Services	Sanitary Sewer Extension Permit	To be submitted

Unit of Government	Type of Application	Status
Minnesota Department of Natural Resources	Water Appropriation Permit	To be submitted, if needed
Minnesota Department of Labor and Industries	Utility Permit	To be submitted
Minnesota Department of Transportation	Access Permit, grading permit, drainage permit, and work in ROW permit	To be submitted
City of Plymouth	EIS Decision	In process
	Land Use Guide Plan Amendment	To be submitted
	Rezoning	To be submitted
	Planned Unit Development General Plan	To be submitted
	Preliminary Plat	To be submitted
	Planned Unit Development Final Plan	To be submitted
	Final Plat	To be submitted
	Demolition Permit	To be submitted
	Building Permit	To be submitted
	Grading Permit	To be submitted
	Right-of-Way Permits	To be submitted
Hennepin County	Work within Right-of-Way/ Access Permit	To be submitted
Bassett Creek Water Management Commission	Stormwater Management Plan Review	To be submitted
Minnehaha Creek Watershed District	Stormwater Management Plan Review	To be submitted

9. Land Use

a. Describe:

i. Existing land use of the site as well as areas adjacent to and near the site, including parks, trails, and prime or unique farmlands.

The existing site is currently an active plant and landscape nursery, retail center, and church. The surrounding land uses include single family-residential, multi-family residential, and industrial uses.

Trails are located along Dunkirk Lane North and CSAH 9.

According to the Natural Resources Conservation Service (NRCS) Web Soil Survey, 17.8 acres of the site contain soils that are considered prime farmland or farmland of statewide importance; however, given the urban and developed nature of the project site, the proposed project area is not considered active agricultural land that may have additional farmland protections.

There are no parks near project site. Parks within the surrounding area include Plymouth Creek Park, Turtle Lake Park, and Shiloh Park across Highway 55.

ii. Planned land use as identified in comprehensive plans (if available) and any other applicable plan for land use, water, or resource management by a local, regional, state, or federal agency.

The City of Plymouth's 2040 land use plan (updated in July 2019) identifies the Dundee Nursery and Plymouth Presbyterian Church as commercial and living area (see Attachment 2). The comprehensive plan would need to be amended to Mixed Use (MXD) or Mixed Use Residential (MXD-R) and Public/Institutional (P-I) for the proposed sites.

iii. **Zoning, including special districts or overlays such as shoreland, floodplain, wild and scenic rivers, critical area, agricultural preserves, etc.**

The City of Plymouth's zoning map (updated in September 2019) identifies the Dundee Nursery and Plymouth Presbyterian Church sites as Future Restricted Development (FRD) and Residential Single Family Detached 2 (RSF-2) (see Attachment 3).

The project site does not fall within or adjacent to a wild and scenic river, critical area, agricultural preserve, shoreland overlay district, or FEMA-mapped 100-year floodplain. The site is identified within the Minnesota Department of Health (MDH) Plymouth Drinking Water Supply Management Area and is located within the Plymouth Wellhead Protection Area (WPA) (see Figure 5).

b. **Discuss the project's compatibility with nearby land uses, zoning, and plans listed in Item 9a above, concentrating on implications for environmental effects.**

The proposed project will require a land use guide plan amendment as the proposed project is mixed use with residential and a medical office building and the current zoning for the site is Future Restricted Development and Residential Single Family Detached 2. The existing church and preschool will remain as an active use on the site. The land use guide plan amendment will require the project proposer to rezone the site and request a Planned Unit Development (PUD). The PUD will include the existing church and a future 3,000 sf sanctuary expansion.

All lands adjacent to the site are guided and utilized for planned unit development (PUD), industrial, residential, and public purposes. The proposed project is not anticipated to have any significant adverse environmental effects related to land use compatibility, and the existing environmental conditions will be mitigated through soil correction and implementation of stormwater best management practices (BMPs).

c. **Identify measures incorporated into the proposed project to mitigate any potential incompatibility as discussed in Item 9b above.**

The proposed project will require a land use guide plan amendment and Planned Unit Development (PUD) as part of the City approval process.

10. Geology, Soils, and Topography/Land Forms

a. **Geology – Describe the geology underlying the project area and identify and map any susceptible geologic features such as sinkholes, shallow limestone formations, unconfined/shallow aquifers, or karst conditions. Discuss any limitations of these features for the project and any effects the project could have on these features. Identify any project designs or mitigation measures to address effects to geologic features.**

According to the Geologic Atlas of Hennepin County and information provided in the Phase II Environmental Site Assessment (ESA) completed for the site in November 2020, the bedrock geology of the project area consists of the St. Peter Sandstone Formation. The St. Peter Sandstone consists of fine- to medium-grained quartz sandstone. The depth to bedrock is approximately 200-250 feet below ground surface. The surficial geology consists of loam to sandy loam diamict, with scatters of pebbles and cobbles.

There are no known sinkholes, shallow limestone formations, unconfined aquifers, or karst conditions in the project vicinity. The surficial geology is anticipated to have a low sensitivity to potential contamination from surface activities.

With the proposed stormwater BMPs and proposed construction, no adverse impacts to groundwater are anticipated as a result of the project.

b. Soils and Topography – Describe the soils on the site, giving NRCS (SCS) classifications and descriptions, including limitations of soils. Describe topography, any special site conditions relating to erosion potential, soil stability, or other soil limitations, such as steep slopes or highly permeable soils. Provide estimated volume and acreage of soil excavation and/or grading. Discuss impacts from project activities (distinguish between construction and operational activities) related to soils and topography. Identify measures during and after project construction to address soil limitations including stabilization, soil corrections, or other measures. Erosion/sedimentation control related to stormwater runoff should be addressed in response to Item 11.b.ii.

According to the NRCS Web Soil Survey, there are six soil types within the project site (see Table 4 and Figure 6). The erosion hazard ratings indicate the hazard of soil loss from off-road areas after disturbance activities that expose soil surface (see Attachment 4). Within the project site, approximately 10% of the site is mapped with a "severe" rating, meaning that erosion is very likely and that erosion-control measures are advised. Approximately 37% of the site is mapped with a "moderate" rating, meaning that some erosion is likely. Approximately 53% of the site is mapped with a "slight" rating, meaning that erosion is unlikely under ordinary climatic conditions.

Table 4: Soil Types within the Project Site

Soil Type	Acres within Site	Percent of Site	Erosion Hazard
Minnetonka silty clay loam, 0 to 2 percent slopes	3.2	13.7%	Slight
Lester loam, 6 to 10 percent slopes, moderately eroded	2.3	9.7%	Severe
Cordova loam, 0 to 2 percent slopes	0.2	0.7%	Slight
Glencoe clay loam, 0 to 1 percent slopes	0.6	2.6%	Slight
Lerdal loam, 1 to 3 percent slopes	1.3	5.4%	Slight
Angus loam, 2 to 6 percent slopes	8.8	37.3%	Moderate
Nessel loam, 1 to 3 percent slopes	5.4	22.6%	Slight
Dundas-Cordova complex, 0 to 3 percent slopes	1.9	8.0%	Slight
Total	23.7	100%	

A geotechnical exploration and review of the site was completed in October of 2019. Based on the results of the geotechnical exploration, soil corrections or ground improvement techniques may be needed for construction.

With the proposed redevelopment, site grading will need to occur. The far north portion of the site will mostly remain undisturbed; however, excavation will be needed to accommodate the building foundations, stormwater pond, and underground parking.

Sedimentation and erosional BMP's, such as erosion blankets during construction and reseeding post-construction, will be utilized to minimize impacts to soils and topology.

11. Water Resources

a. Describe surface water and groundwater features on or near the site below.

i. Surface Water – lakes, streams, wetlands, intermittent channels, and county/judicial ditches. Include any special designations such as public waters, trout stream/lake, wildlife lakes, migratory waterfowl feeding/resting lake, and outstanding resource value water. Include water quality impairments or special designations listed on the current MPCA 303d Impaired Waters List that are within one mile of the project. Include DNR Public Waters Inventory number(s), if any.

A Wetland Investigation and field review was performed by Kimley-Horn in September 2020. The site was covered with an onsite delineation and three wetlands were identified (see Figure 3). The report documenting the findings is included in Attachment 5. The delineation was approved in a Notice of Decision dated February 3, 2021 (see Attachment 5).

According to the Minnesota Department of Natural Resources (DNR) Public Waters Inventory (PWI), there are 16 Public Water Basins within approximately one mile of the site; no Public Water Basins were identified as impaired waters within approximately one mile of the site (see Figure 4).

One MN DNR Public Water Watercourse, Bassett Creek (DNR PWI #07010206), was identified within one mile of the site and is identified as an impaired water. Bassett Creek was identified as an aquatic life and recreation impaired use water. A Total Maximum Daily Load (TMDL) plan has been approved by the U.S. Environmental Protection Agency (EPA) for chloride and *Escherichia coli* impairment.

The project site is located within both the Bassett Creek Water Management Commission and Minnehaha Creek Watershed District areas.

ii. Groundwater – aquifers, springs, and seeps. Include 1) depth to groundwater; 2) if project is within a MDH well protection area; and 3) identification of any onsite and/or nearby wells, including unique numbers and well logs, if available. If there are no wells known on site or nearby, explain the methodology used to determine this.

According to the geotechnical exploration and Phase II ESA completed for the site in October of 2019 and supplemental information completed in 2020, groundwater was observed at depths of approximately 8-40 feet. The Minnesota Geologic Atlas identified groundwater at depths of approximately 10-20 feet. According to the Minnesota Department of Agriculture Source Water Protection

Areas map, the public water supply has a low sensitivity to potential contamination, due to the low permeability in the soils in the project vicinity.

Groundwater beneath the site lies within surficial deposits and several bedrock aquifers, including the St. Peter Sandstone, Prairie Du Chien/Jordan, and Mt. Simon Aquifers. The Plymouth public water supply draws from the Prairie Du Chien and Jordan aquifers, with City water supply wells located within one mile of the site.

The site is within the Plymouth Wellhead Protection Area (WPA) and a low vulnerability Minnesota Department of Health (MDH) Plymouth Drinking Water Supply Management Area (see Figure 5). According to the MDH Minnesota Well Index (MWI), 63 public water supply wells are within approximately one mile of the site (see Figure 5). The wells within one mile of the project site are primarily identified as domestic/residential or monitoring wells. Two irrigation wells are identified adjacent to the site (MWI #100283 and #673885) (see Figure 5). One Hennepin County well located south of CSAH 9 along Vicksburg Lane North is identified as a temporary well (MWI #767736) (see Figure 5). One City well located south of CSAH 9 along 37th Avenue North is used for testing purposes (MWI #426802) (see Figure 5).

Wells were also reviewed as part of the Phase I ESA completed for this project in October 2019. Two irrigation wells were observed on the subject property during the Phase I ESA site visit. All existing wells on site shall be sealed according to Minnesota Rules Chapter 4725. If unidentified wells are found, the MPCA and MDH will be contacted and the wells shall be sealed by a licensed well contractor.

b. Describe effects from project activities on water resources and measures to minimize or mitigate the effects below.

i. Wastewater – For each of the following, describe the sources, quantities, and composition of all sanitary, municipal/domestic, and industrial wastewaters projected or treated at the site.

1) If the wastewater discharge is to a publicly owned treatment facility, identify any pretreatment measures and the ability of the facility to handle the added water and waste loadings, including any effects on, or required expansion of, municipal wastewater infrastructure.

Based on the Metropolitan Council's Sewer Available Charge determination standards for a commercial building with 70,00 square feet (sf), 300 apartment units, and parking ramp, wastewater flows are anticipated to be 99,150 gallons per day (gpd). Wastewater is expected to be equivalent to domestic strength wastewater. Flows were calculated using the MPCA SAC determination tool.

The sanitary sewer service will be provided by the City of Plymouth through an existing 8-inch sanitary sewer line along the west side of the site that flows through Holly Creek Village townhomes towards 39th Avenue North. The

existing system currently has the capacity to handle up to 99,150 gpd of wastewater generated by the proposed project. Downstream of the site the City has identified a segment of local trunk sewer that will be monitored in the spring 2021 to verify modeled flows. Sanitary services will be connected to the existing lines via manhole and line extensions into the property and the proposed buildings will be connected to the main line via an 8-inch sanitary line. Manholes will be provided every 200 feet to provide access to the main line on the site for serviceability and monitoring. All sanitary sewers are located outside the MDH required setbacks from a well.

2) **If the wastewater discharge is to a subsurface sewage treatment system (SSTS), describe the system used, the design flow, and suitability of site conditions for such a system.**

   Not applicable

3) **If the wastewater discharge is to surface water, identify the wastewater treatment methods, discharge points, and proposed effluent limitations to mitigation impacts. Discuss any effects to surface or groundwater from wastewater discharges.**

   Not applicable

ii. **Stormwater – Describe the quantity and quality of stormwater runoff at the site prior to and post construction. Include the routes and receiving water bodies for runoff from the site (major downstream water bodies as well as the immediate receiving waters). Discuss any environmental effects from stormwater discharges. Describe stormwater pollution prevention plans including temporary and permanent runoff controls and potential BMP site locations to manage or treat stormwater runoff. Identify specific erosion control, sedimentation control, or stabilization measures to address soil limitations during and after project construction.**

Currently, the site is composed of a plant and landscape nursery, tree lots, dirt lots, a church, and a parking lot, with approximately 53% impervious surfaces largely due to the existing buildings and gravel parking lots. Stormwater systems currently convey runoff to the southeast towards Minnehaha Creek, and northwest towards Bassett Creek.

To comply with the wellhead area protection criteria, stormwater management areas including filtration and infiltration basins will be evaluated for feasibility within these areas. Any potential stormwater treatment ponds will be designed to include a clay liner up to two feet above the high-water level in accordance with the MPCA and MDH requirements. The medical office and the residential areas will include a stormwater pond with a sand filtration bench. This basin will discharge to the north via two 24" pipes and fall under Bassett Creek Water Management Commission review. The frontage road will drain into two proposed filtration basins that are located between the south edge of the frontage road and CSAH 9. These basins will discharge into a larger wetland south of CSAH 9 and ultimately into the Minnehaha Creek Watershed District. The church parcel is

split in half with the north half draining into an existing rain garden and the south half draining to a proposed filtration basin. Options for stormwater reuse for irrigation along with other filtration options are being studied to provide the volume extraction portion of the watershed requirements. The existing rain garden will need to be expanded at the time of the 3,000 sf sanctuary expansion and parking lot construction north of the church.

The stormwater system will provide the required treatment to remove 90% of the Total Suspended Solids (TSS) and phosphorus from the runoff prior to entering city storm sewer. Some possible filtration options include sand filters or other filters that will provide the phosphorous removals required for the project. The development will provide treatment that meets Minnehaha Creek Watershed District, Bassett Creek Water Management Commission, and City of Plymouth requirements.

The site is served by a 24-inch storm sewer on the west side of the site that flows north to the backyards of Holly Creek Village townhomes and west into Holly Creek Village Pond No. 4. The site is also served with a 24-inch storm sewer at the northeast corner of the site that flows north and then east into Holly Creek Village Pond No. 1. There is also a 12-inch storm sewer at the southeast corner of the site that drains the public right-of-way (ROW) into a pond and wetland at the northeast quadrant of CSAH 9 and Trunk Highway 55.

The project will include more than one acre of new or fully reconstructed impervious surface. The Bassett Creek Watershed Management Commission (BCWMC) requirements for projects that include more than one acre or impervious surface include rate control, water quality, and erosion and sedimentation control. The project must manage stormwater runoff such that peak flow rates leaving the site are equal to or less than the existing rate leaving the site for the 2-, 10-, and 100-year storm events based on National Oceanic and Atmospheric Administration (NOAA) Atlas 14 precipitation amounts and using a nested 24-hour rainfall distribution. The BCWMC requires all stormwater to be treated in accordance with the BCWMC performance goals for new development and redevelopment. A performance goal specifies what level of stormwater treatment must be achieved on a site. If the performance goal is not feasible and/or is not allowed for a proposed project, then the project proposer must implement the BCWMC flexible treatment options. It is assumed that the Minimal Impact Design Standards (MIDS) quality treatment standards will be required. The Minnehaha Creek Watershed District (MCWD) requires that one inch of imperviousness be abstracted, rate control in the post condition must not exceed the existing condition in the 2-, 10-, and 100-year storm, and no net increase in phosphorus.

A stormwater pollution prevention plan (SWPPP) will be developed in accordance with the NPDES permit administered by the MPCA, the City of Plymouth, the BCWMC, and the MCWD. The SWPPP will include temporary measures to prevent pollution during construction. Silt-fence, bio-rolls, and fabric covers for existing catch basins will be used to provide erosion and sediment control during construction and site disturbance.

iii. **Water Appropriation – Describe if the project proposes to appropriate surface or groundwater (including dewatering). Describe the source, quantity, duration, use, and purpose of the water use and if a DNR water appropriation permit is required. Describe any well abandonment. If connecting to an existing municipal water supply, identify the wells to be used as a water source and any effects on, or required expansion of, municipal water infrastructure. Discuss environmental effects from water appropriation, including an assessment of the water resources available for appropriation. Identify any measures to avoid, minimize, or mitigate environmental effects from the water appropriation.**

Water appropriation is not anticipated for the proposed project; however, may be needed for the underground parking areas. If dewatering is required for construction, an appropriations permit will be obtained from the Minnesota Department of Natural Resources (DNR).

All existing wells on site shall be sealed according to Minnesota Rules Chapter 4725. If unidentified wells are found, the MPCA and MDH will be contacted and the wells shall be sealed by a licensed well contractor.

The existing Dundee Nursery is served by an 8-inch water main on the west side of the site. The water main ties into another water main north of the site in the Holly Creek Village townhomes along 39th Avenue North. A 12-inch water main on the west side of Dunkirk Court North ties into Dunkirk Lane. The existing 12-inch main will remain private and serve a fire hydrant in the medical office building parking lot. A 12-inch water main loop will be constructed in the frontage road connecting the 8-inch water main on the west side of the site with the 16-inch water main in Dunkirk Lane. Additional fire hydrants will be added to this loop to meet the City of Plymouth's coverage requirements. Both proposed buildings will have individual services from the new water loop lines to provide adequate fire protection. The existing church will continue to be served from an 8" watermain that comes off of Dunkirk Lane.

iv. **Surface Waters**

1) **Wetlands – Describe any anticipated physical effects or alterations to wetland features, such as draining, filling, permanent inundation, dredging, and vegetative removal. Discuss direct and indirect environmental effects from physical modification of wetlands, including the anticipated effects that any proposed wetland alterations may have to the host watershed. Identify measures to avoid (e.g., available alternatives that were considered), minimize, or mitigate environmental effects to wetlands. Discuss whether any required compensatory wetland mitigation for unavoidable wetland impacts will occur in the same minor or major watershed, and identify those probable locations.**

Three wetlands were identified in the Level 2 Wetland Investigation and site visit performed by Kimley-Horn (see Figure 3). Based on the site plan, Wetland 2 will be permanently filled due to the construction of the frontage road (see

Attachment 1 and Figure 3). The other wetlands on the site will be avoided with the existing function and value of the wetlands will remain.

Any wetland impacted as a result of access modifications would require Minnesota Wetland Conservation Act (WCA) approval with the City of Plymouth as the WCA LGU, and an US Army Corps of Engineers (USACE) Section 404 of the Clean Water Act permit. Wetland impacts would be mitigated based on current rules and requirements from the City and USACE.

2) **Other surface waters – Describe any anticipated physical effects or alterations to surface water features (lakes, streams, ponds, intermittent channels, county/judicial ditches) such as draining, filling, permanent inundation, dredging, diking, stream diversion, impoundment, aquatic plant removal, and riparian alteration. Discuss direct and indirect environmental effects from physical modification of water features. Identify measures to avoid, minimize, or mitigate environmental effects to surface water features, including in-water Best Management Practices that are proposed to avoid or minimize turbidity/sedimentation while physically altering the water features. Discuss how the project will change the number or type of watercraft on any water body, including current and projected watercraft usage.**

No streams, lakes, or ponds are identified within the project site (see Figures 3 and 4). Bassett Creek is identified north of the project site (see Figure 4). According to the site plan, impacts and development are not anticipated to any surrounding streams, lakes, or ponds (Attachment 1).

No changes to the number or type of watercraft on the waterbodies are anticipated.

Stormwater runoff will be pre-treated with filtration systems, including sand and/or other filters that will provide phosphorous removals required for the project. Aboveground stormwater ponding areas along with BMP's will be utilized to treat stormwater. Stormwater ultimately drains southeast towards Minnehaha Creek and northwest towards Bassett Creek.

12. Contamination/Hazardous Materials/Wastes

a. **Pre-project Site Conditions – Describe existing contamination or potential environmental hazards on or in close proximity to the project site, such as soil or groundwater contamination, abandoned dumps, closed landfills, existing or abandoned storage tanks, and hazardous liquid or gas pipelines. Discuss any potential environmental effects from pre-project site conditions that would be caused or exacerbated by project construction and operation. Identify measures to avoid, minimize, or mitigate adverse effects from existing contamination or potential environmental hazards. Include development of a Contingency Plan or Response Action Plan.**

A Phase I ESA was completed for the project site in October of 2019. The Dundee Nursery land was used for agricultural purposes dating back to at least 1898. Between 1964 and 1967, the project site was converted into a nursery. The project site contains one retail

building with attached greenhouses, one storage building, and one former office building. The remainder of the project site contains paved parking, landscaped areas, and landscaping materials storage areas. Evidence of tanks and wells were observed within the subject property.

Two irrigation wells were observed on the subject property during the Phase I ESA site visit and one was identified in the MDH MWI (MWI #100283). One well is located on the east side of the former office building and the other (MWI #100283) is located in a fenced pit on the west portion of the subject property. One approximately 150-gallon Aboveground Storage Tank (AST) was observed in the western portion of the subject property. The tank did not appear in use and based on available data from MPCA, it appears the tank was not registered with the state. No evidence of damage, spills, or leaks was observed in the vicinity of the AST.

The potential environmental hazards identified in the Phase I ESA for the Dundee Nursery are as follows:

- An active Tri State Drilling leak site (#LS0020693) adjoins the subject property to the west. Groundwater and soil contamination have been reported in association with the leak near the site. The open leak site represents a recognized environmental condition (REC) for the project site.
- The approximately 40,000 cubic yard privacy soil berm in the northern portion of the site was associated with low levels of diesel range organics (DRO), Resource Conservation and Recovery Act (RCRA) metals, volatile organic carbons (VOCs), Total Kjeldahl Nitrogen (TKN), nitrate-nitrogen, and debris. The contaminated berm represents a controlled recognized environmental condition (CREC).
- Of the RCRA metals, only arsenic concentrations in the soil exceed the Minnesota Pollution Control Agency (MPCA) Residential and Industrial Soil Reference Values (SRVs) and/or Soil Leaching Values (SLVs).
- DRO has been in groundwater samples and exceeds "additional investigation threshold" guidance.
- Various VOCs were detected above the method detection limits in the soil vapor and groundwater samples collected from the subject property.

The Phase I ESA identified one of the irrigation wells as an MDH registered well. If the wells will remain in use, they should be registered and maintained with the MDH and/or sealed by a licensed contractor per MN state standards.

A Phase II ESA was completed in November 2020. Based on the results of the Phase II ESA testing, fill soils were encountered. The soil investigation data was compared to the Minnesota Pollution Control Agency's Residential and Industrial, Soil Reference Values (SRVs). SRVs are specific land use related action levels established by the MPCA to assess risks of human contact with contaminated soil. Additionally, MPCA Screening Soil Leaching Values (SLVs) were referenced to evaluate the potential risk to groundwater at from the soil-to-groundwater leaching pathway.

The majority of soil samples did not have DRO, VOCs, or PAHs detected above laboratory reporting limits. DRO and various PAHs were detected in a few soil samples below MPCA regulatory limits. Arsenic, barium, cadmium, chromium, lead, and mercury were detected in the samples collected and analyzed for RCRA metals with barium, cadmium, chromium, lead, and mercury detected below MPCA regulatory limits.

Arsenic was identified in three soil samples above its Screening SLV or Residential SRV. Arsenic concentrations in regional soils commonly exceed Screening SLVs and SRVs due to the limestone and shale content of the glacially related deposits originating in Western and Southern Minnesota. The results from soil samples appear consistent with recognized regional background levels of arsenic. These detected concentrations are not indicative of a contaminant release.

Groundwater analytical results from temporary wells sampled during investigation did not indicated the presence of significant groundwater impacts. Three groundwater samples had DRO above laboratory reporting limits, but well below the MPCA's PRP Guidance for Petroleum Releases.

It is anticipated that a Response Action Plan (RAP) and Construction Contingency Plan (CCP) will be prepared. The project proposer is evaluating enrollment into the MPCA Voluntary Investigation and Clean Up or Brownfield Program for the management of fill soils. It is anticipated that the project proposer will work with MPCA on the closer of the identified leak site. Any stormwater features located within areas with contaminated soils will be lined and designed to avoid potential impacts to those soils or groundwater in the area.

Utility trench backfill shall follow the MPCA's Response Action Plan and Construction Contingency Plan recommendations on use and handling of impacted soils. Utility trench spoils shall be handled in accordance with the RAP and CCP for the proposed project.

b. Project Related Generation/Storage of Solid Wastes – Describe solid wastes generated/stored during construction and/or operation of the project. Indicate method of disposal. Discuss potential environmental effects from solid waste handling, storage, and disposal. Identify measures to avoid, minimize, or mitigate adverse effects from the generation/storage of solid waste including source reduction and recycling.

Demolition of the building will generate soil waste and potentially regulated waste which will be disposed of in accordance with state regulations and guidelines. Construction of the development will generate construction-related waste materials such as wood, packaging, excess materials, and other wastes, which will either be recycled or disposed of in the proper facilities in accordance with state regulations and guidelines.

Solid waste generated from the completed project will consist of minimal industrial, medical, and office waste materials. A source recycling/separation plan will be implemented and wastes that cannot be recycled will be managed in accordance with state regulations and guidelines.

Hazardous waste products are not anticipated to be produced nor stored while awaiting distribution. If a tenant does produce or store hazardous waste products, they will be

properly stored and handled according to current state and federal regulations, including impervious containment surface and spill/release plan and supplies.

c. **Project Related Use/Storage of Hazardous Materials – Describe chemicals/hazardous materials used/stored during construction and/or operation of the project including method of storage. Indicate the number, location, and size of any above or below ground tanks to store petroleum or other materials. Discuss potential environmental effects from accidental spills or releases of hazardous materials. Identify measures to avoid, minimize, or mitigate adverse effects from the use/storage of chemicals/hazardous materials including source reduction and recycling. Include development of a spill prevention plan.**

   One aboveground storage tank (AST) was identified during the Phase I ESA. The tank will be removed during site development per MPCA standards. New diesel fuel tanks for one or more generators are anticipated for the two proposed buildings.

   Any hazardous waste materials used/stored during construction and/or operation of the project will be disposed of in the manner specified by local or state regulation or by the manufacturer. A spill prevention plan will be developed, and proper spill prevention controls will be in place for any vehicle refueling or maintenance that occurs on site during construction or storage or hazardous waste as described in the section below.

d. **Project Related Generation/Storage of Hazardous Wastes – Describe hazardous wastes generated/stored during construction and/or operation of the project. Indicate method of disposal. Discuss potential environmental effects from hazardous waste handling, storage, and disposal. Identify measures to avoid, minimize, or mitigate adverse effects from the generation/storage of hazardous wastes including source reduction and recycling.**

   Regulated material and/or waste will be managed in accordance with state requirements. No known toxic or hazardous wastes are anticipated to be generated on site. If any toxic or hazardous waste is generated on the site, it will be properly handled to current state and federal regulations. Toxic or hazardous wastes to be stored on site during construction will include fuel and oil necessary for maintaining and running heavy construction equipment and during operations may include commercial cleaning supplies. The MPCA regulates asbestos management activities and disposal activities. Any disposal of asbestos regulated waste will be in accordance with MPCA rules.

13. Fish, Wildlife, Plant Communities, and Sensitive Ecological Resources (Rare Features)

a. **Describe fish and wildlife resources as well as habitats and vegetation on or near the site.**

   The current site provides no fish habitat as there are no intermittent or perennial streams, rivers, lakes, or ponds located within the site. The waterbodies adjacent to the project site provide fish habitat.

   Minimal potential wildlife habitat is located within the project site, primarily in the northwest corner and along the edges of the project site. Given the urban setting of the

project site, wildlife, including white-tailed deer, small mammals, and bird species that are currently using the project site for potential habitat are well adapted to highly disturbed urban environments.

Adjacent land uses include industrial, commercial, roadway right-of-way, and residential provide minimal wildlife habitat.

b. Describe rare features such as state-listed (endangered, threatened, or special concern) species, native plant communities, Minnesota County Biological Survey Sites of Biodiversity Significance, and other sensitive ecological resources on or within close proximity to the site. Provide the license agreement number (LA) and/or correspondence number (ERDB) from which the data were obtained, and attach the Natural Heritage letter from the DNR. Indicate if any additional habitat or species survey work has been conducted within the site and describe results.

The Natural Heritage Information System (NHIS) database was reviewed (per LA-965) for state-listed endangered, threatened, or special concern species, DNR native plant or prairie communities, and Minnesota County Biological Survey (MCBS) Sites of Biodiversity Significance within one mile of the project site.

According to the NHIS, no state-listed endangered, threatened, or special concern species were identified within or within one mile of the project site. Furthermore, no DNR native plant or prairie communities or MCBS Sites of Biodiversity Significance were identified within or within one mile of the site. No known northern long-eared bat (NLEB) townships are found within one mile of the site.

According the DNR, one Regionally Significant Ecological Areas (RSEA) was identified within one mile of the project site. The NHIS database review identified no known sightings of the rusty-patched bumble bee (RPBB) within one mile of the project site. The project site is located within a low-potential zone for the rusty-patched bumble bee (RPBB).

The information above has been submitted to the Minnesota Department of Natural Resources for review.

c. Discuss how the identified fish, wildlife, plant communities, rare features, and ecosystems may be affected by the project. Include a discussion on introduction and spread of invasive species from the project construction and operation. Separately discuss effects to known threatened and endangered species.

One RSEA was identified within one mile of the site. No impacts to the RSEA are anticipated, as the development is confined to the project site.

No suitable habitat for the NLEB was identified within the project site, as the forested areas are fragmented; therefore, no impacts are anticipated to the NLEB.

Wildlife currently using the site are highly adaptive and should not be adversely affected by the project. Invasive species will be controlled on site during construction, and turf grass and other ornamental landscape plants will be used on the site and may provide some additional habitat for songbirds, small mammals, and insects.

d. Identify measures that will be taken to avoid, minimize, or mitigate adverse effects to fish, wildlife, plant communities, and sensitive ecological resources.

To minimize potential impacts to fish and fish habitat, no impacts to the adjacent waterbodies are anticipated. Wildlife friendly erosion control BMP's will be used to minimize impacts to any wildlife utilizing the project area.

Construction phasing and staging will be completed to minimize any potential impacts to wildlife or species that may be using the site. Green space and native landscape areas will be added to the proposed development to provide additional habitat within the project vicinity. The planned development will increase the landscaped area with a blend of biodiverse, native, drought-tolerant plant species that could provide pollinator habitat.

14. Historic Properties

Describe any historic structures, archeological sites, and/or traditional cultural properties on or in close proximity to the site. Include 1) historic designations; 2) known artifact areas; and 3) architectural features. Attach letter received from the State Historic Preservation Office (SHPO). Discuss any anticipated effects to historic properties during project construction and operation. Identify measures that will be taken to avoid, minimize, or mitigate adverse effects to historic properties.

A SHPO database review request was completed in April 2020. The SHPO database review results and a map depicting the approximate location of these sites are included in Attachment 6.

The database review inventoried 10 sites listed within proximity of the project area. None of the sites are listed on the National Register of Historic Places (NRHP). The Soo Line Railroad is listed as "considered eligible for" the NRHP. The railroad is more than a quarter mile from the project area.

The database review identified a commercial building at 16800 Trunk Highway 55, which is in the location of the Dundee Nursery (see Attachment 6). Trunk Highway 55 was also identified in the SHPO database review. Two farmsteads and one unnamed house were identified within a quarter mile of the project area (see Attachment 6). One of the farmsteads, John Jordan Farmhouse, has been razed. Two additional unnamed houses included on the database list were not located within a quarter mile of the project area. Two additional sites identified on the database review list could not be mapped given the lack of information provided by the SHPO database review results.

The proposed project would impact the Dundee Nursery commercial building; however, the building is not listed with the NRHP nor has been identified as a potentially eligible resource.

Therefore, no impacts to historic properties or archaeological resources are anticipated for the project. If any historic properties or artifacts are encountered during construction, Unanticipated Discoveries protocol will be followed.

15. Visual

Describe any scenic views or vistas on or near the project site. Describe any project related visual effects such as vapor plumes or glare from intense lights. Discuss the potential visual effects from the project. Identify any measures to avoid, minimize, or mitigate visual effects.

There are no known existing scenic views or vistas with the project site. The project will not create any vapor plumes or intense lighting. The proposed project is within the LZ-2 Lighting District for the City. Lighting will include LED building-mounted lights and LED parking lot lights with proper shielding and will be in conformance with city ordinances. The views from the adjacent neighborhood and roadways will be different than what was previously there as the current view from the adjacent roadways is the front of the plant nursery. The current views from the neighborhood and church parcel include the backside of the nursery which includes landscape waste, greenhouses and equipment. The aesthetics of the proposed buildings within the new development will be designed to fit into the surrounding area including the addition of native landscaping areas that include trees, shrubs and drought-tolerant pollinator friendly plant species, a park area, outdoor amenities, and screening for the proposed parking structure. The proposed development will incorporate glazing, balconies, and building materials that create a connection between nature and living areas for residents. Renderings of the proposed buildings are included in Attachment 1.

16. Air

a. **Stationary Source Emissions – Describe the type, sources, quantities, and compositions of any emissions from stationary sources such as boilers or exhaust stacks. Include any hazardous air pollutants, criteria pollutants, and any greenhouse gases. Discuss effects to air quality including any sensitive receptors, human health, or applicable regulatory criteria. Include a discussion of any methods used to assess the project's effect on air quality and the results of that assessment. Identify pollution control equipment and other measures that will be taken to avoid, minimize, or mitigate adverse effects from stationary source emissions.**

   No stationary source emissions will be generated on site; therefore, no mitigation is required.

b. **Vehicle Emissions – Describe the effect of the project's traffic generation on air emissions. Discuss the project's vehicle-related emissions effect on air quality. Identify measures (e.g., traffic operational improvements, diesel idling minimization plan) that will be taken to minimize or mitigate vehicle-related emissions.**

   The Minnesota Department of Transportation (MnDOT) has developed a screening method designed to identify intersections that will not cause a carbon monoxide (CO) impact above state standards. MnDOT has demonstrated that even the 10 highest traffic volume intersections in the Twin Cities do not experience CO impacts. Therefore, intersections with traffic volumes lower than these 10 highest intersections will not cause a CO impact above state standards. MnDOT's screening method demonstrates that intersections with total daily approaching traffic volumes below 82,300 vehicles per day will not have the potential for causing CO air pollution problems. None of the

intersections in the study area exceed the criteria that would lead to a violation of the air quality standards.

All construction equipment will be properly muffled to minimize vehicle emissions.

c. **Dust and Odors – Describe sources, characteristics, duration, quantities, and intensity of dust and odors generated during project construction and operation. (Fugitive dust may be discussed under Item 16a). Discuss the effect of dust and odors in the vicinity of the project including nearby sensitive receptors and quality of life. Identify measures that will be taken to minimize or mitigate the effects of dust and odors.**

The project will generate temporary fugitive dust emissions during construction. These emissions will be controlled by watering, sprinkling, or calcium chloride application, as appropriate or as prevailing weather and soil conditions dictate. Dust emissions are not anticipated during operations as all ground surfaces will either be impervious or vegetated.

The construction and operation of the project is not anticipated to generate objectionable odors. Dust and odors are not anticipated to have a significant impact on human health, quality of life, or the environment.

17. Noise

Describe sources, characteristics, duration, quantities, and intensity of noise generated during project construction and operation. Discuss the effect of noise in the vicinity of the project including 1) existing noise levels/sources in the area; 2) nearby sensitive receptors; 3) conformance to state noise standards; and 4) quality of life. Identify measures that will be taken to minimize or mitigate the effects of noise.

Noise Sources

Existing noises include commercial and industrial land uses as well as noise from Trunk Highway 55 (TH 55) and CSAH 9. Noise from TH 55 and CSAH 9 is the primary existing noise source in the project area.

Construction of the proposed development will generate noise from activities such as, but not limited to, demolition, concrete crushing, dynamic compaction, earth work and construction.

The proposed development will include a mix of commercial and residential uses. The intensity of noise from the site will be consistent with the existing land uses in the area.

The proposed site will generate noise from delivery truck activity and automotive travel. The intensity of the noise will be lower than the adjacent noises from TH55 and CSAH 9 and will be consistent with other land uses in the project area.

Nearby Sensitive Receivers

Surrounding land uses are commercial, industrial, residential, and public areas that are adjacent to CSAH 9 and Trunk Highway 55. The parking and main roadways are located along the front of the development away from the amenity spaces and the existing residential development. The residential building along with the existing berm and tree line

will create a buffer from the parking and roadway areas to the existing residential development in the area.

Conformance to State Noise Standards

The operation of the development will have minimal noise impacts to the surrounding area. Traffic generated by the site is one potential noise source. Typically, traffic volumes for the proposed development would need to double to see a noticeable change in noise level that would be considered barely perceptible. Traffic generated by the development will be a small fraction of the existing traffic that exists in the area, resulting in minimal noise level changes.

The proposed residential building and office building will be set back from the existing highway and all outdoor amenity spaces will be situated on the interior portion of the site. The buildings will provide a barrier between the existing roadways and the outdoor amenity spaces to minimize noise from the adjacent roadways.

Quality of Life

The project will be consistent with the nature of the surrounding area and will not cause noise levels to increase to the surrounding land uses.

Noise Mitigation

During construction, equipment will be kept in proper working order, including engine exhaust systems All construction and operational noise will be in compliance with city noise ordinances as outlined below.

"No person shall engage in or permit construction, maintenance and repair activities involving the use of any kind of electric, diesel or gas-powered motor vehicles or machine or other power equipment except between the hours of 7:00 a.m. and 10:00 p.m. Monday through Friday and 8:00 a.m. and 9:00 p.m. Saturday, Sunday, and holidays (New Year's Day, Memorial Day, Fourth of July, Labor Day, Thanksgiving, and Christmas)." During construction, equipment will be kept in proper working order, including engine exhaust systems.

The outdoor amenity spaces will be set back from the existing roadways to minimize noise impacts to these areas. Noise mitigation technologies will be included in the design of the buildings to minimize the noise to the residential units and residents.

No additional specific mitigation will be required or incorporated into the daily operation of the site.

18. Transportation

a. Describe traffic-related aspects of project construction and operation. Include 1) existing and proposed additional parking spaces; 2) estimated total average daily traffic generated; 3) estimated maximum peak hour traffic generated and time of occurrence; 4) source of trip generation rates used in the estimates; and 5) availability of transit and/or other alternative transportation modes.

As part of the traffic study, two scenarios were analyzed:

- The Proposed Development includes a 300-unit multifamily apartment complex, 70,000 square feet of medical office, and a 3,000 sf church expansion of 125 seats.
- The Proposed Development plus the redevelopment of the Tri-State Drilling parcel, which was assumed to redevelop as a 52,500 square foot office building. The traffic study is provided in Attachment 7.

Parking

The site will also include up to 970 parking spaces with 583 included in a parking garage for the residential units, 326 parking stalls for the medical office building, 31 stalls for the church, and 30 stalls considered proof-of-parking for the future church expansion. The 30 proof-of-parking stalls can be built north of the church and meet all code requirements for the future 3,000 sf sanctuary expansion. The medical office building and the church will share parking during off-peak hours (evenings and weekends) for the medical office building.

Average Daily Trips

TH 55 is a four-lane divided principal arterial highway with select turn lanes and a 55-mile per hour (mph) speed limit. The annual average daily traffic (AADT) is 35,500 vehicles per day west of CSAH 9 and 41,000 vehicles per day east of CSAH 9.

CSAH 9 is a four-lane divided A-minor expander with select turn lanes and a 45-mph speed limit. The annual average daily traffic (AADT) is 11,000 vehicles per day within the study area.

Old Rockford Road is a two-lane undivided major collector roadway with select turn lanes and a 45-mph speed limit. The annual average daily traffic (AADT) is 4,850 vehicles per day within the study area.

Dunkirk Lane is a two-lane undivided local road with a 40-mph speed limit. The annual average daily traffic (AADT) is 4,750 vehicles per day within the study area.

Trip Generation

The average rate for ITE land uses were used to calculate the trip generation potential of the site. The Proposed Development is anticipated to generate an additional 288 new trips during the AM peak hour (171 entering, 117 exiting) and 353 new trips during the PM peak hour (140 entering, 213 exiting). There are no pass by trips for the multifamily housing and medical office. The Tri-State Redevelopment would generate an additional 55 new trips during the AM peak hour (47 entering, 8 exiting) and 53 new trips during the PM peak hour (9 entering, 44 exiting).

The site trips were distributed to adjacent roadways based on the current traffic patterns in the area and a general assessment of the major regional roadways surrounding the study area. In general, the following global trip distribution was assumed for the development:

- 5% west on Old Rockford Road
- 10% west on TH 55

- 10% south on CSAH 24
- 40% east on TH 55
- 25% east on CSAH 9
- 10% north on Vicksburg Lane

b. Discuss the effect on traffic congestion on affected roads and describe any traffic improvements necessary. The analysis must discuss the project's impact on the regional transportation system. *If the peak hour traffic generated exceeds 250 vehicles or the total daily trips exceeds 2,500, a traffic impact study must be prepared as part of the EAW.* Use the format and procedures described in the Minnesota Department of Transportation's Access Management Manual, Chapter 5 or a similar local guidance.

A traffic analysis was completed to assess the impacts that site traffic will have on the local roadway network. As previously mentioned, the traffic study is provided in Attachment 7.

A capacity analysis was performed for Existing (2020), Year 2023 Proposed Development, and Year 2023 Proposed Development with Tri-state Drilling Redevelopment.

The Proposed Development frontage road and reconfigured Dunkirk Court North will provide two access points for the development. The frontage road with its connection to Dunkirk Lane North will terminate in a cul-de-sac on the west edge of the property. If the Tri-State Drilling property is redeveloped the frontage road could be extended to connect to TH 55. However, the timeline for frontage road extension is in unknown. The Dunkirk Court North cul-de-sac will provide a 24-foot wide secondary access to the medical office building parking lot.

In the Existing conditions, all study intersections operate at an overall LOS D or better during the a.m. and p.m. peak hours, except for the TH 55 and CSAH 9 intersection during the p.m. peak hour, which operates at an overall LOS E; 95th percentile queues along CSAH 9 extend approximately 800 feet, which limits access to the left- and right-turn lanes approximately 25 percent and 15 percent of the p.m. peak hour, respectively. It should be noted that LOS E operations along TH 55 intersections is common during the peak hours. To improve intersection operations to LOS D or better, significant infrastructure changes would be needed and may not provide enough benefit to justify the cost. However, turn lane modifications, such as extending the southbound left-turn lane along CSAH 9 at TH 55 (to 550 feet), would reduce queuing impacts.

Results of the year 2023 build intersection capacity analysis indicates that all study intersections are expected to operate at an overall LOS C or better during the a.m. and p.m. peak hours, except for the TH 55 and CSAH 9 intersection during the a.m. and p.m. peak hours under both the Proposed Development and Proposed Development plus Tri-State Drilling development conditions, which operates at an overall LOS E. These operations along TH 55 intersections are common during the peak hours and to improve the intersection operations to LOS D or better, significant infrastructure changes would be needed and may not provide enough benefit to justify the cost.

c. Identify measures that will be taken to minimize or mitigate project related transportation effects.

Based on the difficulty to make a left-turn maneuver from the West Tri-State Access to eastbound TH 55, as well as the limited number of motorists that are expected to complete this maneuver, the West Tri-State access should be converted to a three-quarter access, right-in/right-out, or closed as the opportunity arises. If this access is to remain, an eastbound left-turn and westbound right-turn lane should be constructed. The removal of the westbound U-Turn movement/turn lane could also be considered if the existing Tri-State/Dundee access is eliminated.

The segment of Dunkirk Lane between CSAH 9 and the proposed frontage road should be restriped to include a westbound left-turn lane along Dunkirk Lane to the frontage road and an eastbound right-turn lane along Dunkirk Lane to CSAH 9.

To avoid any potential impacts, the frontage road could be designed with sufficient width at the intersection with Dunkirk Lane to allow for dedicated left- and right-turn lanes. At a minimum, the frontage road approach should be wide enough to effectively allow for two vehicles to queue as they approach Dunkirk Lane (i.e. a two-lane approach).

Multimodal improvements and connections should be incorporated to help promote alternative modes of travel and reduce potential traffic impacts.

19. Cumulative Potential Effects

a. Describe the geographic scales and timeframes of the project related environmental effects that could combine with other environmental effects resulting in cumulative potential effects.

Cumulative effects are defined as "the impact on the environment which result from incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency or persons undertakes such actions." The geographic areas considered are those areas adjacent to the project site, and the timeframe considered includes projects would be constructed within in two years of the start of construction of the proposed development.

b. Describe any reasonably foreseeable future projects (for which a basis of expectation has been laid) that may interact with environmental effects of the proposed project within the geographic scales and timeframes identified above.

No reasonably foreseeable future projects have been identified within the project vicinity. However, there is potential for the Tri-State site to redevelop in the future. No specific redevelopment plans have been identified for this site.

An environmental assessment was completed by MnDOT for the TH 55 and CSAH 9 intersection as part of the TH 55 Preliminary Design project. It is anticipated that no additional right-of-way would be needed from the proposed development site for the proposed intersection improvements. Currently, no funding has been identified for this project.

c. Discuss the nature of the cumulative potential effects and summarize any other available information relevant to determining whether there is potential for significant environmental effects due to these cumulative effects.

Future development is taken into consideration in the traffic analysis, and all other impacts from the project will be addressed via regulatory permitting and approval processes. Therefore, the project will be individually mitigated to ensure minimal cumulative impacts occur.

20. Other Potential Environmental Effects

If the project may cause any additional environmental effects not addressed by Items 1 to 19, describe the effects here, discuss the how the environment will be affected, and identify measures that will be taken to minimize and mitigate these effects.

All known environmental effects are addressed in the preceding sections.

The proposed project will be designed to be consistent with goals and polices focused on building efficiency, protecting and restoring natural resources, and improving the resiliency of the community as outlined in the 2040 comprehensive plan.

The project will enroll in the Xcel Energy Design Assist (EDA) program to optimize energy design strategies. Energy efficiency with performance functionality will be aggressively deployed to achieve sustainable conservation and ongoing reduction of the project's carbon footprint.

The proposed project incorporates sustainability features throughout the site. The development will have stormwater management infrastructure and other low-impact development components such as pervious pavers, automated utilization for parking, and infiltration basins. The project will also be designed to accept a Photovoltaic solar rooftop system, subject to funding sources. Additional sustainability features in the development may include the use of sustainable and recycled construction materials, low carbon use in building and maintenance, low site waste due to panelized construction, low volatile organic compound (VOC) adhesion materials and paints, low-e insulated glass, potential for geothermal heating and cooling, efficient HVAC systems, LED fixtures, efficient building envelope, Energy Star rated appliances, ultra-low flow plumbing fixtures, on-site parking for car sharing, and electrical vehicle charging stations.

RGU Certification

*The Environmental Quality Board will only accept **SIGNED** Environmental Assessment Worksheets for public notice in the EQB Monitor.*

I hereby certify that:

- The information contained in this document is accurate and complete to the best of my knowledge.
- The EAW describes the complete project; there are no other projects, stages, or components other than those described in this document, which are related to the project as connected actions or phased actions, as defined at Minnesota Rules, parts 4410.0200, subparts 9c and 60, respectively.
- Copies of this EAW are being sent to the entire EQB distribution list.

Signature _____ Date 3.15.2021

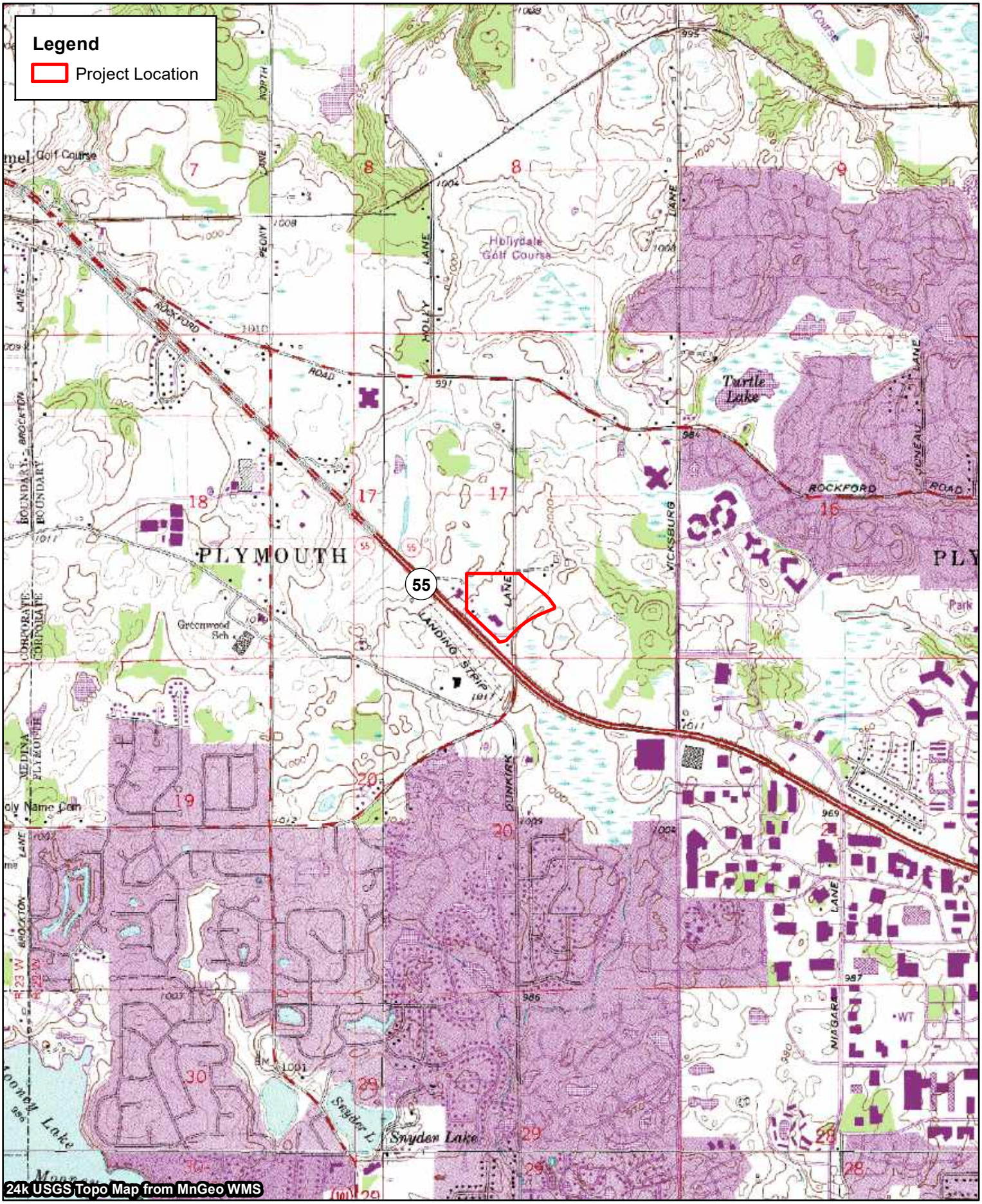
Title Senior Planner

Figures

Kimley»Horn

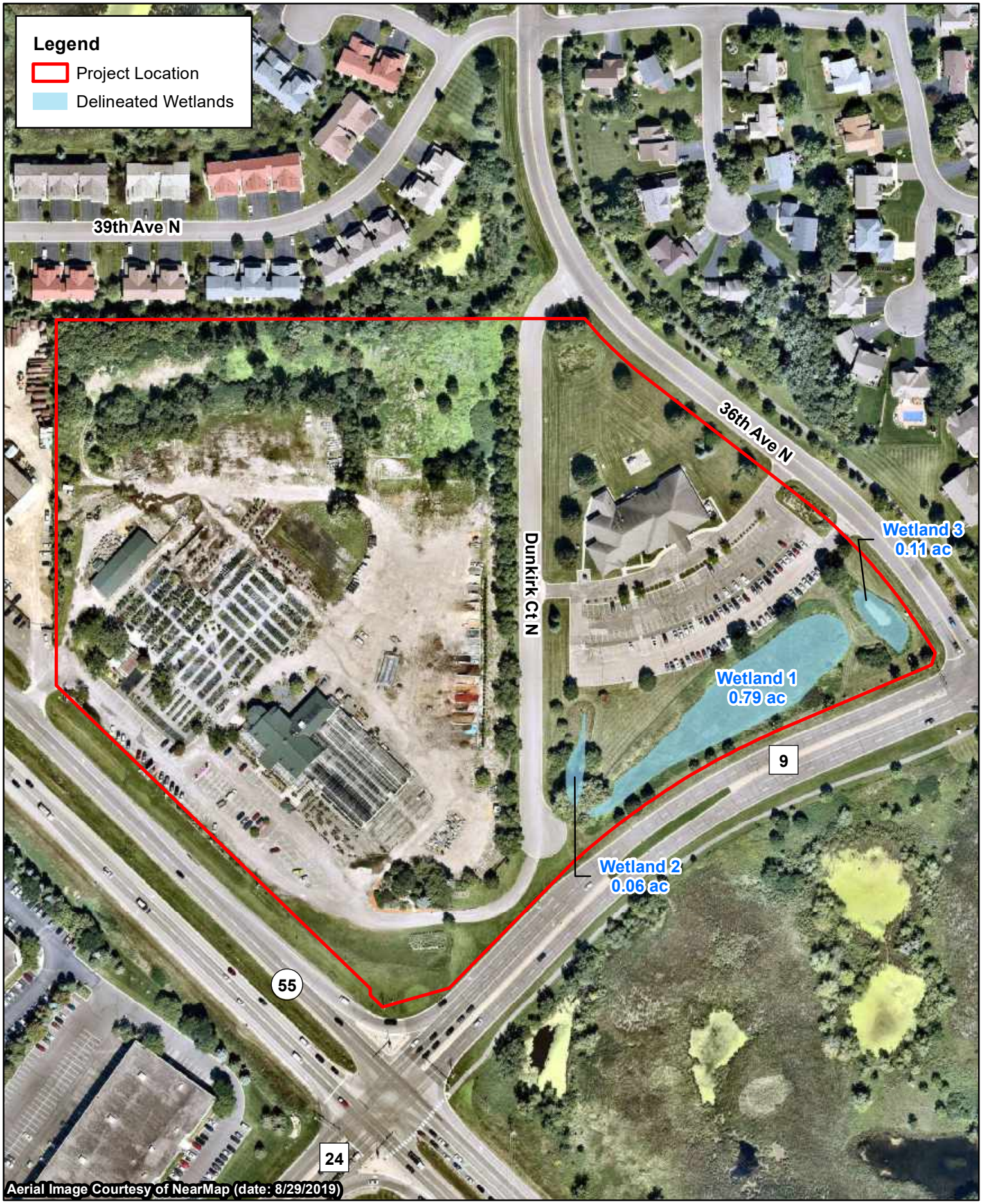
0 150 300 Feet

Figure 1. Project Location
Dundee Nursery Redevelopment
Environmental Assessment Worksheet



0 1,000 2,000 Feet

Figure 2. USGS Topographic Map
Dundee Nursery Redevelopment
Environmental Assessment Worksheet



Kimley»Horn

0 100 200 Feet

Figure 3. Wetland Delineation Summary Map

Dundee Nursery Redevelopment
Environmental Assessment Worksheet

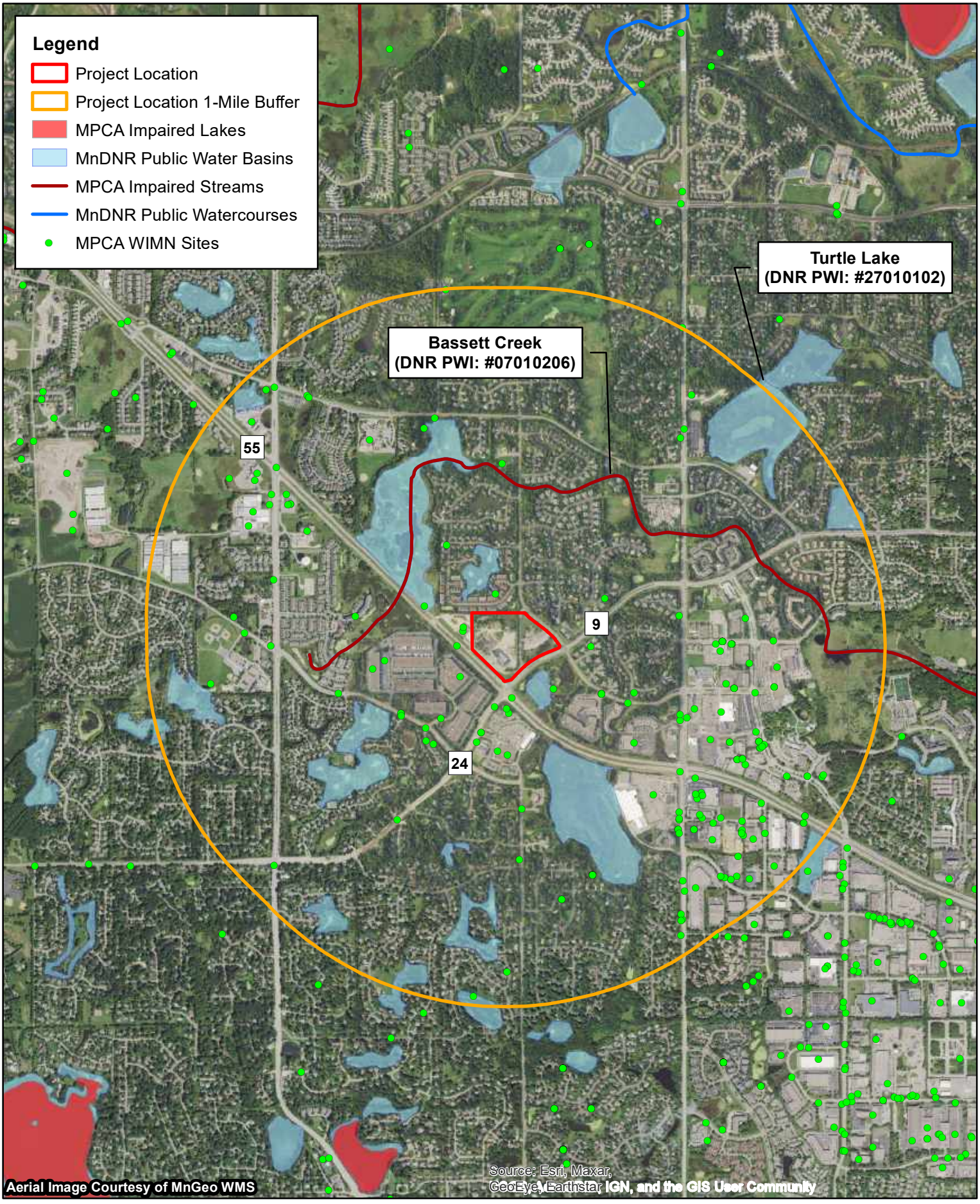


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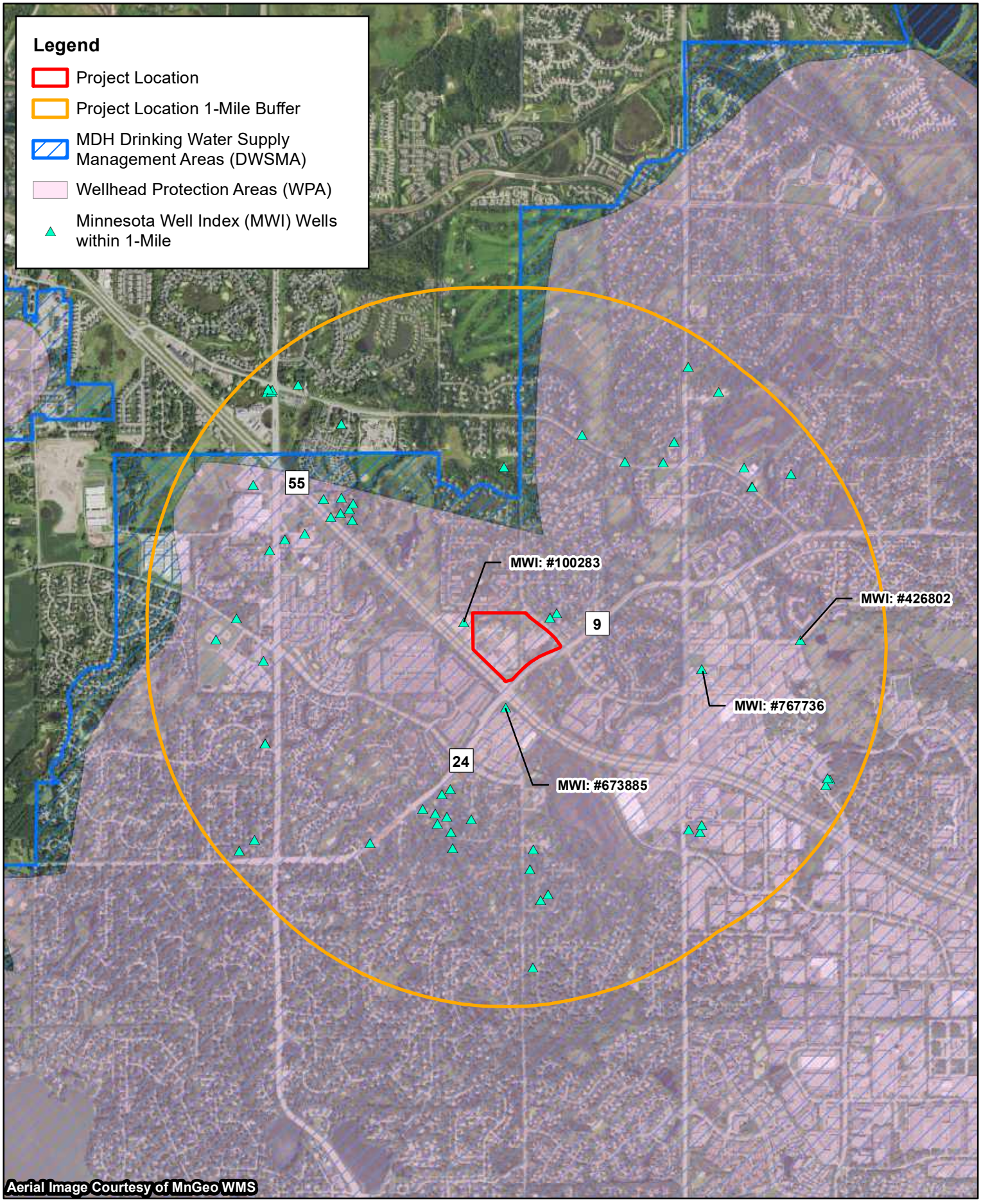
Figure 4. MPCA and Public Waters Data Map

Dundee Nursery Redevelopment
Environmental Assessment Worksheet



Kimley»Horn

0 1,000 2,000 Feet

Figure 5. DWSMA, WPA, and MWI Map

Dundee Nursery Redevelopment
Environmental Assessment Worksheet

Kimley»Horn

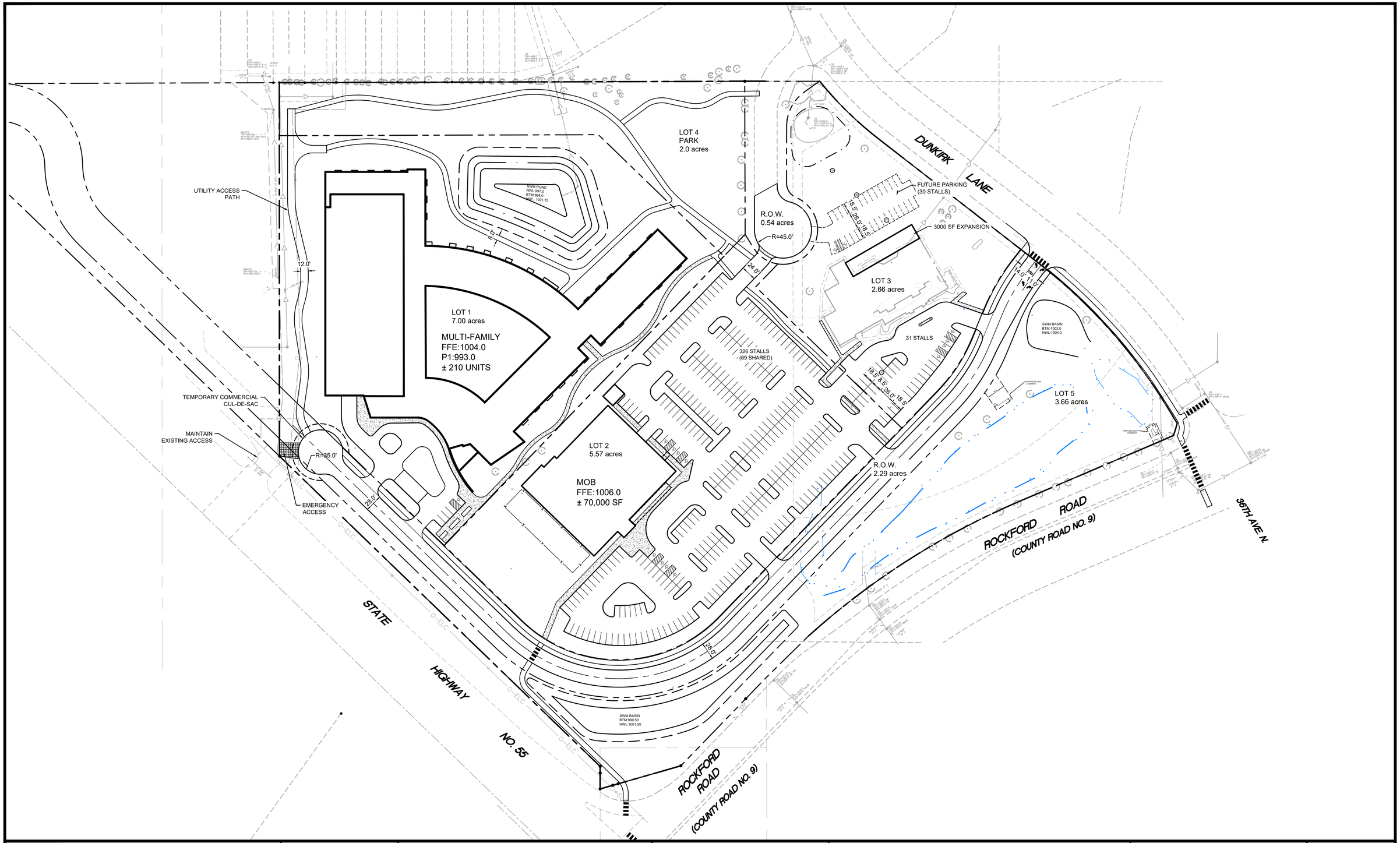
0 150 300 Feet

Figure 6. Hydric Soils Map
Dundee Nursery Redevelopment
Environmental Assessment Worksheet

Attachments

Attachment 1

Site Plan



GRAPHIC SCALE IN FEET
0 35 70 140

NORTH

PARK ERA℠

TITLE:

REVISED CHURCH
SITE PLAN 4.0

DUNDEE NURSERY REDEVELOPMENT
PREPARED FOR: COMMERCIAL
INVESTMENT PROPERTIES

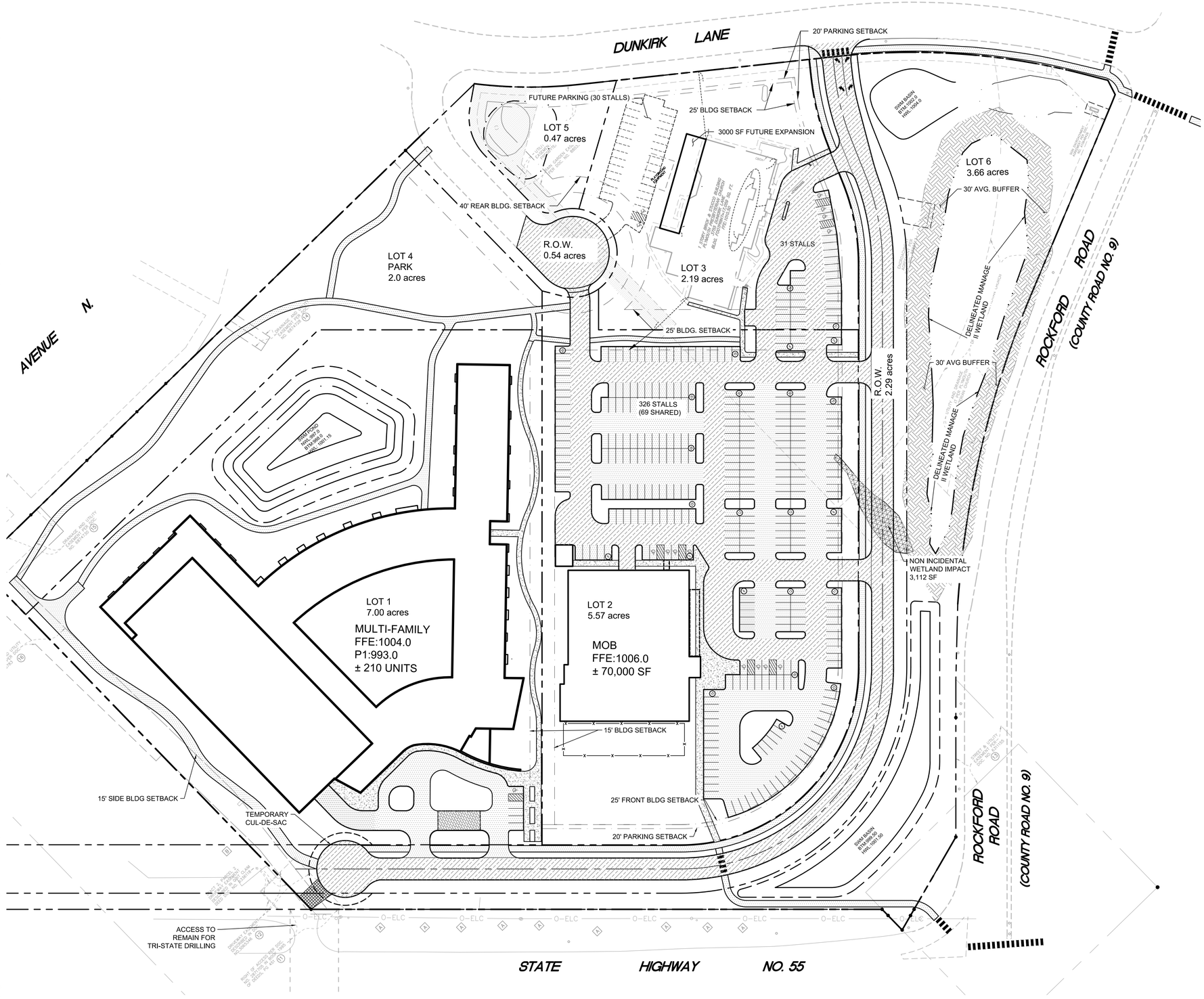
DRAWN BY:

MJI

DATE:

03/01/2021

SHEET NO.



LEGEND

- PROPERTY LINE
- PROPOSED FENCE
- SETBACK LINE
- PROPOSED CURB AND GUTTER
- PROPOSED HEAVY DUTY ASPHALT
- PROPOSED STANDARD DUTY ASPHALT
- PROPOSED CONCRETE PAVEMENT
- PROPOSED STORMWATER MANAGEMENT AREA
- PROPOSED CONCRETE SIDEWALK
- WETLAND BUFFER
- WETLAND IMPACT

SITE PLAN NOTES

1. ALL WORK AND MATERIALS SHALL COMPLY WITH ALL CITY/COUNTY REGULATIONS AND CODES AND O.S.H.A. STANDARDS.
2. CONTRACTOR SHALL REFER TO THE ARCHITECTURAL PLANS FOR EXACT LOCATIONS AND DIMENSIONS OF VESTIBULES, SLOPE PAVING, SIDEWALKS, EXIT PORCHES, TRUCK DOCKS, PRECISE BUILDING DIMENSIONS AND EXACT BUILDING UTILITY ENTRANCE LOCATIONS.
3. ALL INNER CURBED RADII ARE TO BE <3'> AND OUTER CURBED RADII ARE TO BE <10'> UNLESS OTHERWISE NOTED. STRIPED RADII ARE TO BE 5'.
4. ALL DIMENSIONS AND RADII ARE TO THE FACE OF CURB UNLESS OTHERWISE NOTED.
5. EXISTING STRUCTURES WITHIN CONSTRUCTION LIMITS ARE TO BE ABANDONED, REMOVED OR RELOCATED AS NECESSARY. ALL COST SHALL BE INCLUDED IN BASE BID.
6. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL RELOCATIONS, (UNLESS OTHERWISE NOTED ON PLANS) INCLUDING BUT NOT LIMITED TO, ALL UTILITIES, STORM DRAINAGE, SIGNS, TRAFFIC SIGNALS & POLES, ETC. AS REQUIRED. ALL WORK SHALL BE IN ACCORDANCE WITH GOVERNING AUTHORITIES REQUIREMENTS AND PROJECT SITE WORK SPECIFICATIONS AND SHALL BE APPROVED BY SUCH. ALL COST SHALL BE INCLUDED IN BASE BID.
7. SITE BOUNDARY, TOPOGRAPHY, UTILITY AND ROAD INFORMATION TAKEN FROM A SURVEY BY <SURVEYOR>, DATED XX/XX/XXXX.

   KIMLEY-HORN ASSUMES NO LIABILITY FOR ANY ERRORS, INACCURACIES, OR OMISSIONS CONTAINED THEREIN.
8. TOTAL LAND AREA IS 23.72 ACRES.
9. PYLON / MONUMENT SIGNS SHALL BE CONSTRUCTED BY OTHERS. SIGNS ARE SHOWN FOR GRAPHICAL & INFORMATIONAL PURPOSES ONLY. CONTRACTOR TO VERIFY SIZE, LOCATION AND ANY REQUIRED PERMITS NECESSARY FOR THE CONSTRUCTION OF THE PYLON / MONUMENT SIGN.
10. CONTRACTOR SHALL REFERENCE ARCH / MEP PLANS FOR SITE LIGHTING AND ELECTRICAL PLAN.
11. NO PROPOSED LANDSCAPING SUCH AS TREES OR SHRUBS, ABOVE AND UNDERGROUND STRUCTURES, OR OTHER OBSTRUCTIONS SHALL BE LOCATED WITHIN EXISTING OR PROPOSED UTILITY EASEMENTS AND RIGHTS OF WAY UNLESS SPECIFICALLY NOTED ON PLANS OTHERWISE.
12. REFERENCE ARCHITECTURAL PLANS FOR DUMPSTER ENCLOSURE DETAILS.
13. REFER TO FINAL PLAT OR ALTA SURVEY FOR EXACT LOT AND PROPERTY BOUNDARY DIMENSIONS.
14. ALL AREAS ARE ROUNDED TO THE NEAREST SQUARE FOOT.
15. ALL DIMENSIONS ARE ROUNDED TO THE NEAREST TENTH FOOT.
16. ALL PARKING STALLS TO BE 9' IN WIDTH AND 18' IN LENGTH UNLESS OTHERWISE INDICATED.
17. THERE ARE 0.7 ACRES OF WETLAND IMPACTS.
18. FOR OFFSITE IMPROVEMENTS, SEE THE <OFFSITE PLANS> IMPROVEMENTS PLANS.

PROPERTY SUMMARY

DUNDEE NURSERY REDEVELOPMENT	
TOTAL PROPERTY AREA	1,033,559 SF (23.72 AC)
LOT 1	304,842 SF (7.00 AC)
LOT 2	242,665 SF (5.57 AC)
LOT 3	95,353 SF (2.19 AC)
LOT 4	87,134 SF (2.00 AC)
LOT 5	20,615 SF (0.47 AC)
LOT 6	159,455 SF (3.66 AC)
FRONTAGE ROAD R.O.W. DEDICATION	99,856 SF (2.29 AC)
DUNKIRK COURT R.O.W. DEDICATION	23,639 SF (0.54 AC)
TOTAL DISTURBED AREA	784,080 SF (18.00 AC)

ZONING SUMMARY	
EXISTING ZONING	FRD (FUTURE RESTRICTED DEVELOPMENT RSF2 (SINGLE FAMILY DETACHED 2)
PROPOSED ZONING	PUD
BUILDING SETBACKS	FRONT (ARTERIAL STREET) = 50' FRONT (NON ARTERIAL STREET)= 25' SIDE (STREET) = 25 SIDE = 15' REAR = 25'
PARKING SETBACKS	10'

PARKING	
REQUIRED CHURCH PARKING	125 SPACES @ 1/3 SEATS
PROVIDED CHURCH PARKING	125 STALLS (69 SHARED)
REQUIRED MOB PARKING	350 SPACES @ 1/200 SF
PROVIDED MOB PARKING	326 STALLS
REQUIRED MULTI-FAMILY PARKING	420 STALLS @ 2 STALLS/UNIT
PROPOSED MULTI-FAMILY PARKING	434 STALLS

GRAPHIC SCALE IN FEET
0 30 60 120

PRELIMINARY - NOT FOR CONSTRUCTION

No.	REVISIONS	DATE	BY
1	SITE PLAN REVISIONS	02/19/21	MJI

PARK ERA
esg
ARCHITECTURE & DESIGN
500 Washington Avenue South, Suite 1080
Minneapolis, MN 55415
p 612.339.5508 | f 612.339.5382
www.esgarch.com

DF/
DAMON FARBER LANDSCAPE ARCHITECTS

Kimley»Horn
© 2019 KIMLEY-HORN AND ASSOCIATES, INC.
767 EUSTIS STREET, SUITE 100, ST. PAUL, MN 55114
PHONE: 651-645-4197
WWW.KIMLEY-HORN.COM

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

FIRST M. LAST
MN LIC. NO. XXXXX
XXXXXXXXX DATE: XXX

KHA PROJECT 160882003
DATE 12/23/2020
SCALE AS SHOWN
DESIGNED BY XXX
DRAWN BY XXX
CHECKED BY XXX

OVERALL SITE PLAN

DUNDEE NURSERY REDEVELOPMENT
PREPARED FOR
COMMERCIAL INVESTMENT PROPERTIES
PLYMOUTH MN

SHEET NUMBER
C400

K:\TWC_LDEV\COMMERCIAL INVESTMENT PROPERTIES\Plymouth\CAD\PlanSheets\C4-SITE PLAN.dwg February 22, 2021 - 5:15pm

AVENUE H

LOT 1
7.00 acres

MULTI-FAMILY
FFE:1004.0
P1:993.0
± 210 UNITS

SWM POND
NWL:997.0
BTM:988.0
HWL: 1001.15

LOT 2
5.57 acres

MOB
FFE:1006.0
± 70,000 SF

326 STALLS
(69 SHARED)

R.O.W.
2.29 acres

30' AVG BUFFER

DELINEATED MANAGE II/ WETLAND

NON INCIDENTAL
WETLAND IMPACT
3,112 SF

15' BLDG SETBACK

15' SIDE BLDG SETBACK

25' FRONT BLDG SETBACK

20' PARKING SETBACK

TEMPORARY
CUL-DE-SAC

SWM BASIN
BTM:989.50
HWL:1001.50

ACCESS TO
REMAIN FOR
TRI-STATE DRILLING

ROCKFORD
ROAD

STATE HIGHWAY NO. 55

KEYNOTE LEGEND

- (A) CONCRETE SIDEWALK
- (B) B612 CURB & GUTTER (TYP.)
- (C) MATCH EXISTING EDGE OF PAVEMENT/ CURB & GUTTER
- (D) ACCESSIBLE CURB RAMP
- (E) ACCESSIBLE PARKING SIGN
- (F) ACCESSIBLE PARKING
- (G) AREA STRIPED WITH 4" SYSL @ 45° 2' O.C.
- (H) STANDARD DUTY ASPHALT PAVEMENT
- (I) LANDSCAPE AREA - SEE LANDSCAPE PLANS
- (J) HEAVY DUTY CONCRETE PAVEMENT
- (K) HEAVY DUTY ASPHALT PAVEMENT
- (L) TRANSITION CURB
- (M) FLAT CURB
- (N) B618 CURB & GUTTER (TYP.)
- (O) BITUMINOUS TRAIL
- (P) TRASH ENCLOSURE (REFER TO ARCH. PLANS)
- (Q) PERVIOUS PAVERS
- (R) REINFORCED TURF EMERGENCY ACCESS
- (S) PUBLIC UTILITY ACCESS PATH (SEE CITY DETAIL SS-9)
- (T) CITY OF PLYMOUTH TYPICAL STREET SECTION (SEE DETAIL ON SHEET C700)

LEGEND

- PROPERTY LINE
- PROPOSED FENCE
- SETBACK LINE
- PROPOSED CURB AND GUTTER
- PROPOSED HEAVY DUTY ASPHALT
- PROPOSED STANDARD DUTY ASPHALT
- PROPOSED CONCRETE PAVEMENT
- PROPOSED STORMWATER MANAGEMENT AREA
- PROPOSED CONCRETE SIDEWALK
- WETLAND BUFFER
- WETLAND IMPACT

NORTH

GRAPHIC SCALE IN FEET
0 20 40 80

No.	REVISIONS	DATE	BY
1	SITE PLAN REVISIONS	02/19/21	MJI

CIP Commercial Investment Properties

esg ARCHITECTURE & DESIGN

500 Washington Avenue South, Suite 1080
Minneapolis, MN 55415
p 612.339.5508 | f 612.339.5382
www.esgarch.com

DF/ DAMON FARBER LANDSCAPE ARCHITECTS

Kimley»Horn

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FIRST M. LAST
MN
LIC. NO. XXXXX

DATE: XX/XX/XXXX

KHA PROJECT	160882003
DATE	12/23/2020
SCALE	AS SHOWN
DESIGNED BY	XXX
DRAWN BY	XXX
CHECKED BY	XXX

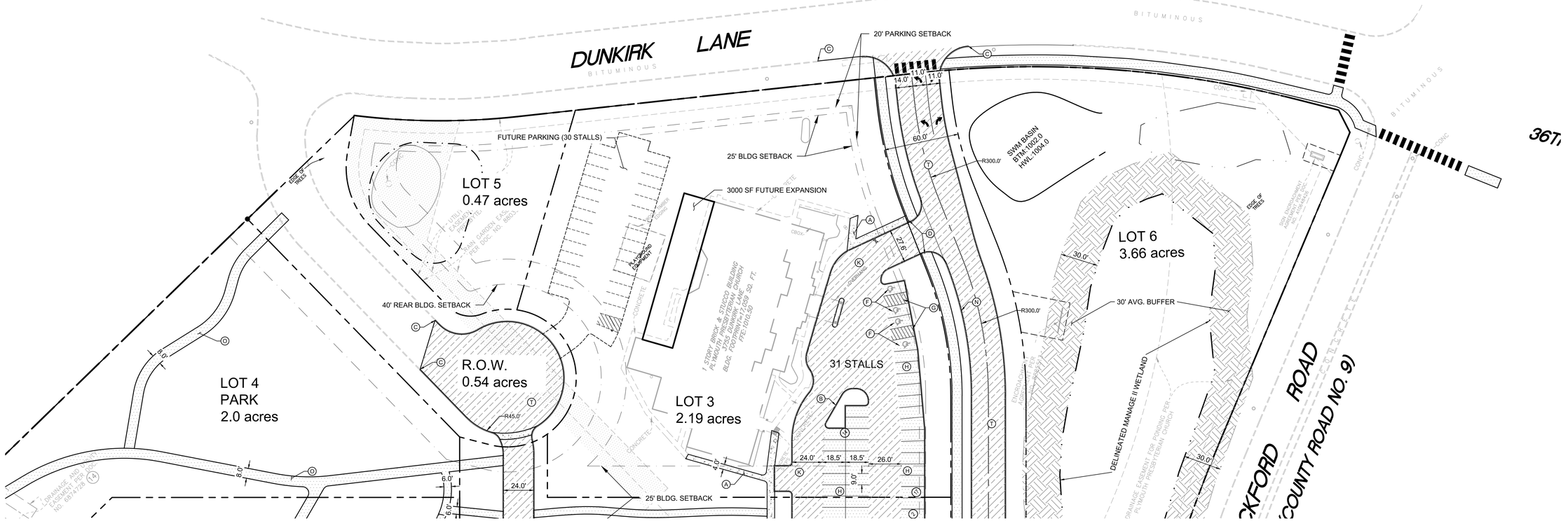
ENLARGED SITE PLAN

PRELIMINARY - NOT FOR CONSTRUCTION

DUNDEE NURSERY REDEVELOPMENT
PREPARED FOR
COMMERCIAL INVESTMENT PROPERTIES
PLYMOUTH MN

SHEET NUMBER
C401

K:\TWC_LDEV\COMMERCIAL INVESTMENT PROPERTIES\Plymouth\CADD\PlanSheets\C4-SITE PLAN.dwg February 22, 2021 - 5:15pm



LEGEND

- PROPERTY LINE
- PROPOSED FENCE
- SETBACK LINE
- RETAINING WALL
- PROPOSED CURB AND GUTTER
- PROPOSED HEAVY DUTY ASPHALT
- PROPOSED STANDARD DUTY ASPHALT
- PROPOSED CONCRETE PAVEMENT
- PROPOSED STORMWATER MANAGEMENT AREA
- PROPOSED CONCRETE SIDEWALK
- WETLAND BUFFER
- WETLAND IMPACT

KEYNOTE LEGEND

A	CONCRETE SIDEWALK
B	B612 CURB & GUTTER (TYP.)
C	MATCH EXISTING EDGE OF PAVEMENT/ CURB & GUTTER
D	ACCESSIBLE CURB RAMP
E	ACCESSIBLE PARKING SIGN
F	ACCESSIBLE PARKING
G	AREA STRIPED WITH 4" SYSL @ 45° 2' O.C.
H	STANDARD DUTY ASPHALT PAVEMENT
I	LANDSCAPE AREA - SEE LANDSCAPE PLANS
J	HEAVY DUTY CONCRETE PAVEMENT
K	HEAVY DUTY ASPHALT PAVEMENT
L	TRANSITION CURB
M	FLAT CURB
N	B618 CURB & GUTTER (TYP.)
O	BITUMINOUS TRAIL
P	TRASH ENCLOSURE (REFER TO ARCH. PLANS)
Q	PERVIOUS PAVERS
R	REINFORCED TURF EMERGENCY ACCESS
S	PUBLIC UTILITY ACCESS PATH (SEE CITY DETAIL SS-9)
T	CITY OF PLYMOUTH TYPICAL STREET SECTION (SEE DETAIL ON SHEET C700)

NORTH

GRAPHIC SCALE IN FEET
0 20 40 80

PRELIMINARY - NOT FOR CONSTRUCTION

No.	REVISIONS	DATE	BY
1	SITE PLAN REVISIONS	02/19/21	MJI

CIP Commercial Investment Properties
esg ARCHITECTURE & DESIGN
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FIRST M. LAST
MN
DATE: XX/XX/XXXX LIC. NO. XXXXX

KHA PROJECT	160982003
DATE	12/23/2020
SCALE	AS SHOWN
DESIGNED BY	XXX
DRAWN BY	XXX
CHECKED BY	XXX

ENLARGED SITE PLAN

DUNDEE NURSERY REDEVELOPMENT
PREPARED FOR
COMMERCIAL INVESTMENT PROPERTIES
PLYMOUTH MN

SHEET NUMBER
C402

DESIGN

The design of the building, both materially and formally, is the intersection of natural elements, architectural forms, and familiar housing elements to create a unique connection between nature and living.

The Parkera concept itself places an emphasis on holistic sustainability, connecting people with nature, and the longevity of the project and it’s place in the community.

Attachment 2

City of Plymouth 2040 Land Use Plan

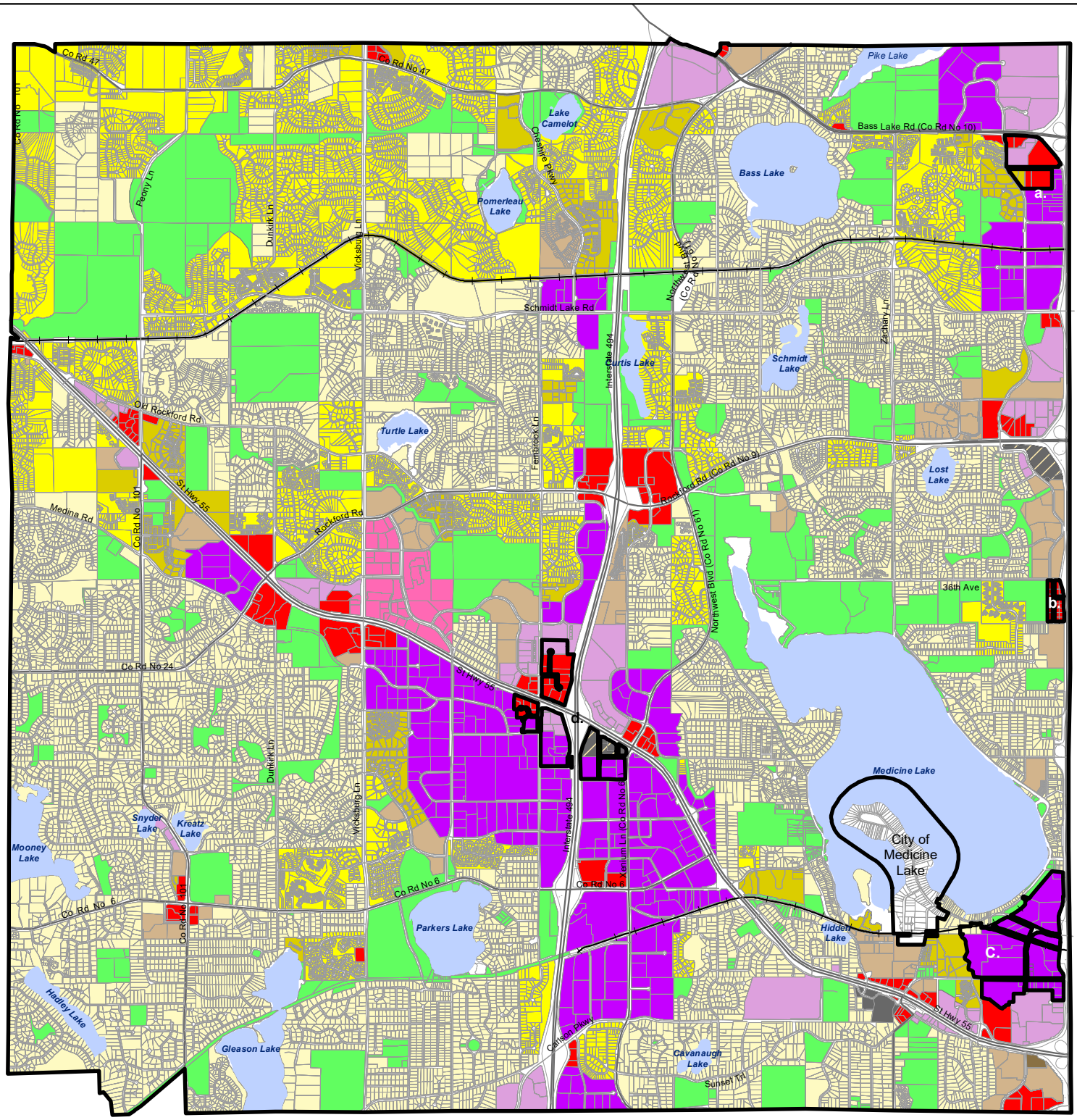


Figure 3-2

2040 Land Use Plan

As of 7/23/2019

City of Plymouth

THIS REPRESENTS A COMPILATION OF INFORMATION AND DATA FROM CITY, COUNTY, STATE AND OTHER SOURCES THAT HAS NOT BEEN FIELD VERIFIED. INFORMATION SHOULD BE FIELD VERIFIED AND COMPARED WITH ORIGINAL SOURCE DOCUMENTS.

N

- Study Areas
- Living Area 1, LA-1 (2-3)
- Living Area 2, LA-2 (3-6)
- Living Area 3, LA-3 (6-12)
- Living Area 4, LA-4 (12-20)
- Living Area 5, LA-5 (20-60)
- Mixed Use, MXD
- Mixed Use Residential, MXD-R
- Industrial, IND
- Commercial, C
- Commercial Office, CO
- City Center, CC
- Public/Semi-Public/Institutional, P-I

Areas with Potential Land Use Change

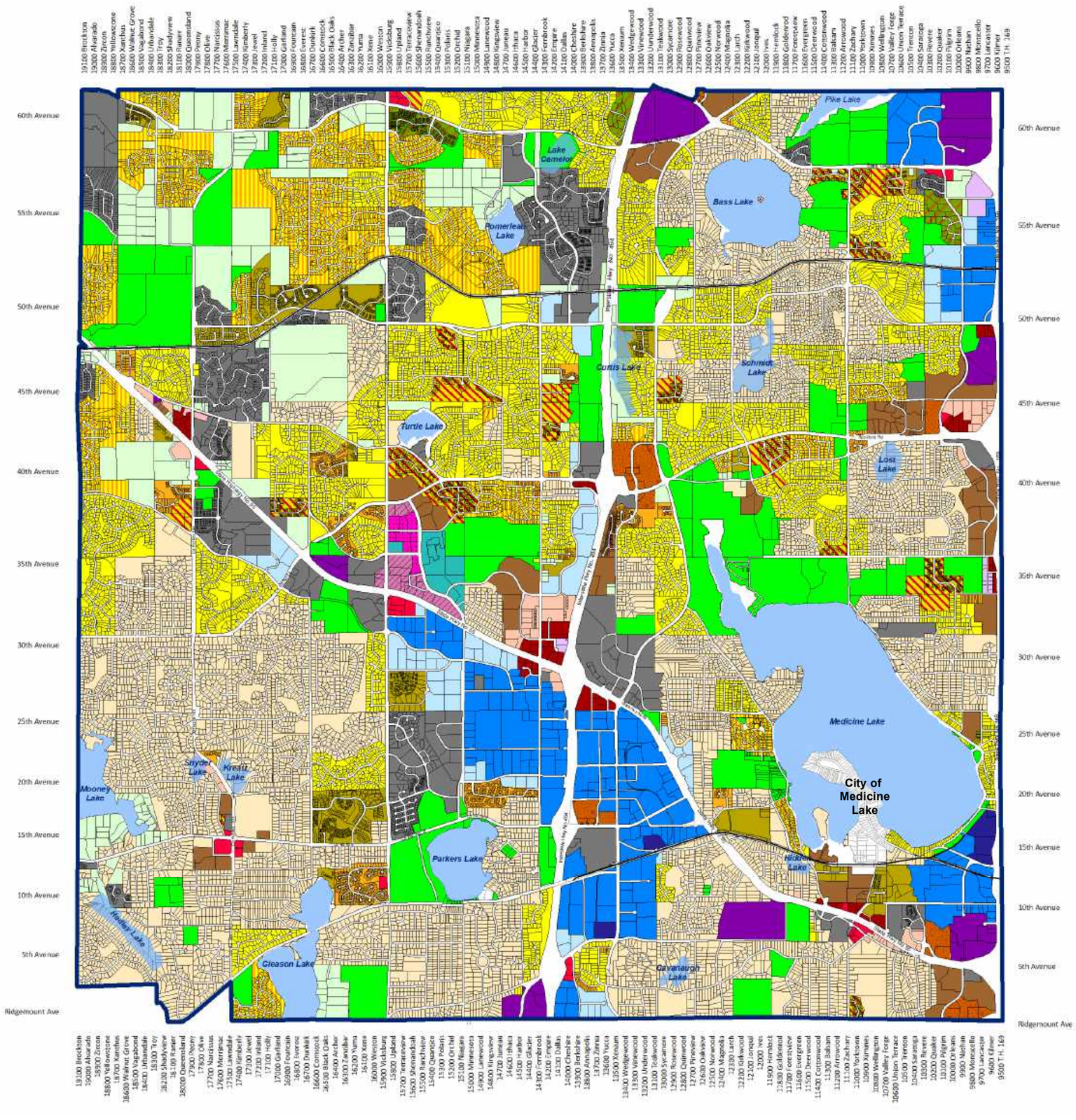
a. Potential Mixed Use Site
b. Potential Commercial Office / Light Industrial Site
c. Potential Commercial Office south of 10th Avenue and west of Nathan Lane; potential higher density residential north of 10th Avenue
d. Potential Mixed Use site

Attachment 3

City of Plymouth Zoning Map

Zoning Map

Adopted December 18, 1996
Dated September 10, 2019
Per Ordinance NO. 2019-16



Legend

- City Limits
- Lakes
- FRD, Future Restricted Development
- RSF-1, Single Family Detached 1
- RSF-2, Single Family Detached 2
- RSF-3, Single Family Detached 3
- RSF-4, Single and Two Family
- RMF-1, Multiple Family 1
- RMF-2, Multiple Family 2
- RMF-3, Multiple Family 3
- RMF-4, Multiple Family 4
- O, Office
- C-1, Convenience Commercial
- C-2, Neighborhood Commercial
- C-3, Highway Commercial
- C-4, Community Commercial
- CC-P, City Center, Public
- CC-OT & R, City Center, Office/Tech & Retail
- CC-R & E, City Center, Retail & Entertainment
- C-5, Commercial/Industrial
- B-C, Business Campus
- I-1, Light Industrial
- I-2, General Industrial
- I-3, Heavy Industrial
- P-I, Public/Institutional
- PUD, Planned Unit Development

0 0.25 0.5 1 1.5 2 Miles

N

February 2020

City of Plymouth

THIS REPRESENTS A COMPILATION OF INFORMATION AND DATA FROM CITY, COUNTY, STATE AND OTHER SOURCES THAT HAS NOT BEEN FIELD VERIFIED. INFORMATION SHOULD BE FIELD VERIFIED AND COMPARED WITH ORINGIAL SOURCE DOCUMENTS.
N:\PROJECTS\PLANNING\Zoning Map

Attachment 4

NRCS Erosion Hazard – Hennepin County, MN

Map Scale: 1:2,880 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 40 80 160 240

Feet: 0 100 200 400 600

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 15N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils

Soil Rating Polygons
- Very severe
- Severe
- Moderate
- Slight
- Not rated or not available

Soil Rating Lines
- Very severe
- Severe
- Moderate
- Slight
- Not rated or not available

Soil Rating Points
- Very severe
- Severe
- Moderate
- Slight
- Not rated or not available

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:12,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Hennepin County, Minnesota
Survey Area Data: Version 16, Jun 5, 2020

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: May 30, 2020—Jul 3, 2020

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Erosion Hazard (Off-Road, Off-Trail)

Map unit symbol	Map unit name	Rating	Component name (percent)	Rating reasons (numeric values)	Acres in AOI	Percent of AOI
L9A	Minnetonka silty clay loam, 0 to 2 percent slopes	Slight	Minnetonka (90%)		3.2	13.7%
			Depressional soil (10%)			
L22C2	Lester loam, 6 to 10 percent slopes, moderately eroded	Severe	Lester, moderately eroded (85%)	Surface kw times slope times R index (0.76)	2.3	9.7%
L23A	Cordova loam, 0 to 2 percent slopes	Slight	Cordova (85%)		0.2	0.7%
			Glencoe, depressional (10%)			
			Nessel (5%)			
L24A	Glencoe clay loam, 0 to 1 percent slopes	Slight	Glencoe (80%)		0.6	2.6%
			Okoboji (10%)			
			Webster (5%)			
			Canisteo (5%)			
L35A	Lerdal loam, 1 to 3 percent slopes	Slight	Lerdal (80%)		1.3	5.4%
			Mazaska (10%)			
			Cordova (5%)			
			Le Sueur (5%)			
L37B	Angus loam, 2 to 6 percent slopes	Moderate	Angus (80%)	Surface kw times slope times R index (0.09)	8.8	37.3%
			Angus, moderately eroded (10%)	Surface kw times slope times R index (0.20)		
L44A	Nessel loam, 1 to 3 percent slopes	Slight	Nessel (85%)		5.4	22.6%
			Cordova (10%)			
			Angus (5%)			
L45A	Dundas-Cordova complex, 0 to 3 percent slopes	Slight	Dundas (65%)		1.9	8.1%
			Cordova (25%)			
			Glencoe (5%)			
Totals for Area of Interest					**23.7**	**100.0%**

Rating	Acres in AOI	Percent of AOI
Slight	12.6	53.0%

Rating	Acres in AOI	Percent of AOI
Moderate	8.8	37.3%
Severe	2.3	9.7%
Totals for Area of Interest	**23.7**	**100.0%**

Description

The ratings in this interpretation indicate the hazard of soil loss from off-road and off-trail areas after disturbance activities that expose the soil surface. The ratings are based on slope, soil erosion factor K, and an index of rainfall erosivity (R). The soil loss is caused by sheet or rill erosion in off-road or off-trail areas where 50 to 75 percent of the surface has been exposed by logging, grazing, mining, or other kinds of disturbance.

The ratings are both verbal and numerical. The hazard is described as "slight," "moderate," "severe," or "very severe." A rating of "slight" indicates that erosion is unlikely under ordinary climatic conditions; "moderate" indicates that some erosion is likely and that erosion-control measures may be needed; "severe" indicates that erosion is very likely and that erosion-control measures, including revegetation of bare areas, are advised; and "very severe" indicates that significant erosion is expected, loss of soil productivity and off-site damage are likely, and erosion-control measures are costly and generally impractical.

Numerical ratings indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the specified aspect of forestland management (1.00) and the point at which the soil feature is not a limitation (0.00).

The map unit components listed for each map unit in the accompanying Summary by Map Unit table in Web Soil Survey or the Aggregation Report in Soil Data Viewer are determined by the aggregation method chosen. An aggregated rating class is shown for each map unit. The components listed for each map unit are only those that have the same rating class as listed for the map unit. The percent composition of each component in a particular map unit is presented to help the user better understand the percentage of each map unit that has the rating presented.

Other components with different ratings may be present in each map unit. The ratings for all components, regardless of the map unit aggregated rating, can be viewed by generating the equivalent report from the Soil Reports tab in Web Soil Survey or from the Soil Data Mart site. Onsite investigation may be needed to validate these interpretations and to confirm the identity of the soil on a given site.

Rating Options

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

Attachment 5

Wetland Delineation Report

Wetland Delineation Report

Dundee Nursery Redevelopment

City of Plymouth

Hennepin County Minnesota

Prepared for:

Commercial Investment Properties
5600 American Boulevard West, Suite 730
Bloomington, MN 55437

Prepared by:

Kimley-Horn and Associates, Inc.
767 Eustis Street, Suite 100
Saint Paul, MN 55114

October 2020

Kimley»Horn

Table of Contents

List of Figures

Appendices

1 Introduction

Wetland scientist Aaron Stolte (CMWD 1297) with Kimley-Horn and Associates, Inc. conducted a wetland investigation and field delineation for Commercial Investment Properties and the Dundee Nursery Redevelopment in the City of Plymouth, Hennepin County, Minnesota. The wetland investigation and delineation included the Plymouth Presbyterian Church property at 3755 Dunkirk Lane (PID # 1711822430037) adjacent to the east of the Dundee Nursery (the "study area"). The study area is shown in **Figure 1.** The study area consists of the Church, a parking lot, and an outdoor recreation area. Cover types within the study area includes manicured lawn, wetlands, and stormwater management areas.

A routine level 2 (onsite) wetland delineation, as outlined in the *1987 Corps of Engineers Wetlands Delineation Manual* (January 1987) along with the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Midwest Region (Version 2.0) (August 2010)* occurred on August 25, 2020. The purpose of this delineation was to identify the extent of wetlands within the study area. The information will be used to facilitate project design and determine if aquatic resource impacts are avoidable and/or if minimization of impacts can result from design modifications.

2 Project Description

Commercial Investment Properties is proposing to develop/reconstruct the parcel.

3 Statement of Qualifications

Kimley-Horn has extensive experience completing wetland investigations and delineations across the United States. Kimley-Horn's personnel has been trained to use the *1987 Corps of Engineers Wetlands Delineation Manual (USACE, 1987)* along with the applicable regional supplements. Kimley-Horn has experience completing off-site hydrology analysis, historic aerial reviews, and difficult or atypical situation delineations.

Aaron Stolte earned Bachelor of Arts Degrees in Environmental Studies and Biology from Saint John's University in Minnesota. He has over five years of experience in completing and managing ecological related projects for both public and private sector clients. Aaron specializes in local, regional, and federal environmental compliance and water related permits. He has a strong background in wetland and stormwater regulations and applying them to projects of various scopes and scales. He also has extensive experience in using GIS data to complete natural resource assessments as they relate to permitting requirements. Aaron is a certified delineator in the state of Minnesota and his primary focus is environmental work in the Midwest. He has experience working in Minnesota, Illinois, Wisconsin, Michigan, North Dakota, Nebraska, Arizona, and Florida.

4 Mapping and Background Information

Prior to field reconnaissance, potential wetland areas within the project study areas were identified through a desktop review of United States Geological Survey (USGS) Topographic maps, National Wetlands Inventory (NWI), aerial photography (2020), National Hydrography Dataset (NHD), survey data, the soil survey for Hennepin County, Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps (FIRM), and antecedent precipitation for a location near the study area. The selected resources are described below:

4.1 Topographic Map

The Osseo 7.5 minute United States Geological Survey (USGS) topographical map and survey data for the project were reviewed for the study area. According to the USGS topographic map (see Figure 2), the study area is undeveloped land east of Dunkirk Lane. A wetland is depicted that overlaps the southern portion of the study area. The LiDAR map depicts the site as generally flat with the exception of the wetland areas to the south. The slight slopes away from the center of the study area in all directions. The site ranges from 1009 feet (above mean sea level) to 999 feet, see Appendix A.

4.2 National Wetlands Inventory

According to NWI mapping, available from the Minnesota DNR (updated in 2018), depicts potential wetland areas and waterbodies based on stereoscopic analysis of high altitude and aerial photographs and was reviewed for the study area. According to the NWI map, there are two wetlands in the study area, both south of the parking lot along Rockford Road and Dunkirk Lane.

4.3 National Hydrography Dataset

The National Hydrography Dataset (NHD), available from USGS, depicts drainage networks and related features, including rivers, streams, canals, lakes, and ponds. The NHD dataset is not field verified. According to NHD mapping, there are no identified drainage features within the study area.

4.4 Soil Survey

The Natural Resources Conservation Service's (NRCS) *Web Soil Survey* for Hennepin County was reviewed for the project site. According to the survey, there are four soil mapping units within the study area which are generally loams with some clay loam. The majority of the study area was mapped with nonhydric soils; however, 15% of the study area contains area mapped as hydric soil. Maps and information obtained from NRCS online web soil survey are included in Appendix B.

4.5 Federal Emergency Management Agency Floodplain

The Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) was reviewed for the project study area. According to the FEMA, FIRM, the study area is located in Zone X of panel 27053C0190F (effective November 4, 2016), which is outside the designated 100-year and 500-year floodplain zones.

4.6 Precipitation

Precipitation data for the project site were obtained from the NRCS online climate data retrieval system. NRCS WETS (Wetlands) tables were reviewed for a climate station within the vicinity of the study area to determine the current hydrologic conditions for the site and if those conditions are typical for this time of year. Precipitation levels for the three months (May, June, and July) leading up to the field review were compared to historical data. The data show that July had normal, June had dryer than normal, and May had wetter than normal precipitation levels. In summary, the field visit constituted normal precipitation conditions. This information is included in Appendix C.

5 Field Investigation

A routine level 2 (onsite) wetland delineation, as outlined in the *1987 Corps of Engineers Wetlands Delineation Manual* (January 1987) along with the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Midwest Region (Version 2.0) (August 2010)* occurred on August 25, 2020.

During the onsite delineation, vegetation, soils, and current hydrologic characteristics were evaluated at each wetland area and area of investigation identified within the study area. Wetland boundaries were flagged with wetland flags where one or more of the three criteria were no longer present. The sample point locations, wetland boundaries, and aquatic features were surveyed with a Trimble GPS and are shown in Figure 3.

The field data sheets are included in Appendix D. Site photos can be found in Appendix E.

6 Summary of Results

Table 1. Delineation Summary

Resource ID	Wetland Plant Community	C-39 Type	Size (acres)	NWI?	Hydric Soils?	Photo ID	Associated Sample Points	NOTES
Wetland 1	Shallow Marsh	3	0.79	Yes, PEM1C	Yes	1-2	SP1 (Wet) SP2 (Up)	Wetland located in depression located between church parking lot and Rockford Road. The wetland collects runoff from the surrounding landscape, Wetland 2 via a culvert, and Wetland 3 during high water events and drains south via culvert to an offsite wetland south of Rockford Road.
Wetland 2	Shallow Marsh	3	0.06	No	No	3	SP1 (Wet) SP2 (Up)	Wetland located in a small depression in the southwestern portion of the study area. The wetland collects runoff from the church parking lot and surrounding landscape and drains to Wetland 1 via a culvert. The wetland appears to have been constructed for stormwater treatment of the adjacent parking lot runoff prior to discharge to Wetland 1.
Wetland 3	Shallow Marsh	3	0.11	Yes, PABHx	No	4	SP3 (Wet) SP4 (Up)	Wetland located in a small depression at the corner of Rockford Road and 36th Avenue. The wetland collects runoff from the church parking lot and is not connected to other features via stormwater pipe; however, there appears to be a small swale which connects Wetland 1 and 2 in the southeast corner of the study area during high water events. The wetland appears to have been constructed for stormwater treatment of parking lot runoff.

7 Regulatory Requirements

A summary of the permit requirements that may pertain to the project is provided below. Any activity planned within areas identified as wetland must be coordinated with and approved by the appropriate agencies prior to commencement of such activities.

Agencies in Minnesota relevant to this study area that regulate activities that affect lakes, rivers, streams, and wetlands include:

- US Army Corps of Engineers (USACE)
  - Section 404 of the Clean Water Act
- Local Governmental Units (LGUs)
  - Wetland Conservation Act (WCA)

The LGU for this project is the City of Plymouth. The WCA applies to nearly all wetlands. The regularity authority of the USACE covers Waters of the United States, including those that are subject to WCA. Generally, the USACE reviewed delineations to determine whether wetlands are jurisdictional (i.e., Waters of the United States). In Minnesota, a joint application process has been developed for projects with anticipated wetland impacts. Applications are coordinated between the USACE and LGU.

8 Report Preparation

The procedures followed for this wetland delineation are in accordance with the *Corps of Engineers Wetlands Delineation Manual* and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Midwest Region (Version 2.0) (August 2010)*

This report describes site conditions for a specific date in time and is generally valid for a period of five years from the date of the final field investigation and delineation, which was August 25, 2020.

9 Conclusion

The field delineation identified three wetlands within the study area. Each of the delineated resources is described in Table 1.

10 Disclaimer

Kimley-Horn has prepared this document based on limited field observations and our interpretation, as scientists, of applicable regulations and agency guidance. While Kimley-Horn believes our interpretation to be accurate, final authority to interpret the regulations lies with the appropriate regulatory agencies. Regulatory agencies occasionally issue guidance that changes the interpretation of published regulations. Guidance issued after the date of this report has the potential to invalidate our conclusions and/or recommendations and may cause a need to reevaluate our conclusions and/or recommendations.

Because Kimley-Horn has no regulatory authority, the Client understands that proceeding based solely upon this document does not protect the Client from potential sanction or fines from the applicable regulatory agencies. The Client acknowledges that they have the opportunity to submit documentation to the regulatory agencies for concurrence prior to proceeding with any work. If the Client elects not to do so, then the Client proceeds at their sole risk.

References

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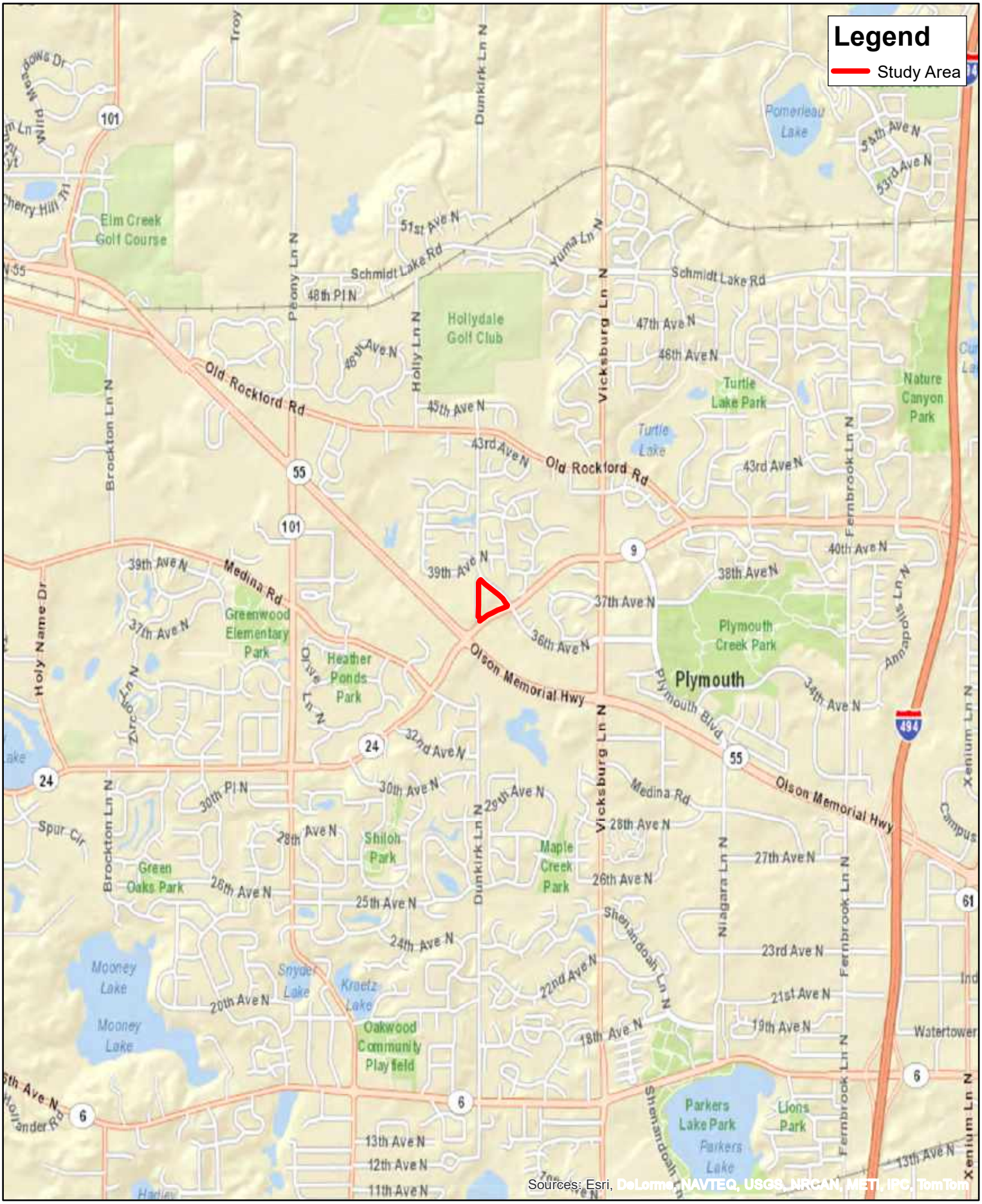
U.S. Army Corps of Engineers. *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Midwest Region (Version 2.0) (August 2010)* Available at http://www.usace.army.mil/Missions/Civil-Works/Regulatory-Program-and-Permits/reg_supp/.

U.S. Geological Survey. *National Hydrography Dataset*. Shapefiles available at https://nhd.usgs.gov/, accessed October 2020.

U.S. Geological Survey. *Topographical Map*. Accessed via ESRI at http://www.arcgis.com/home/item.html?id=30e5fe3149c34df1ba922e6f5bbf808f, accessed August 2020.

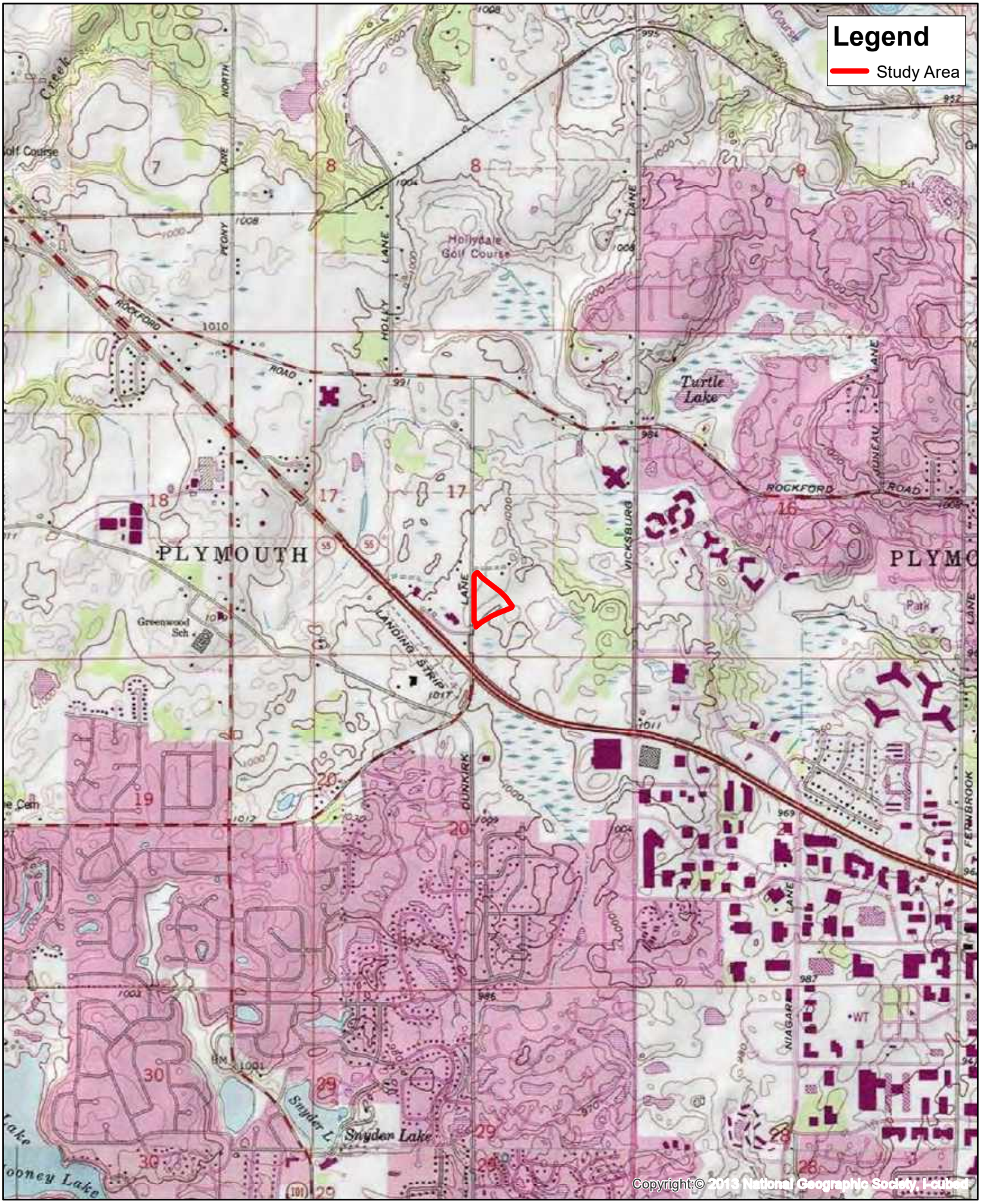
Figures



Kimley»Horn

0 0.25 0.5 Miles

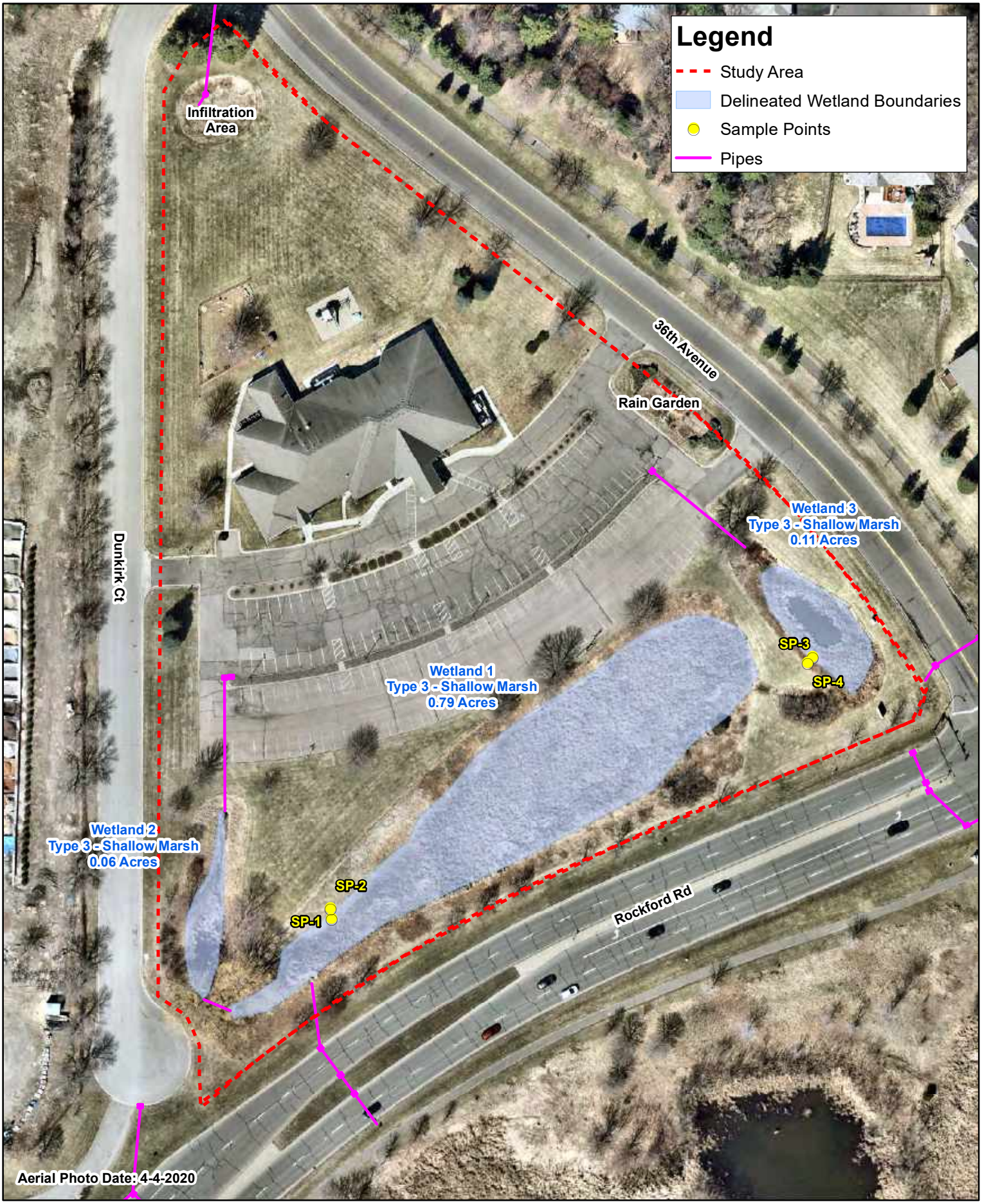
Figure 1. Project Location
Plymouth Presbyterian Church Delineation
Dundee Nursery Redevelopment



Kimley»Horn

0 1,000 2,000 Feet

Figure 2. USGS Topo Map
Plymouth Presbyterian Church Delineation
Dundee Nursery Redevelopment

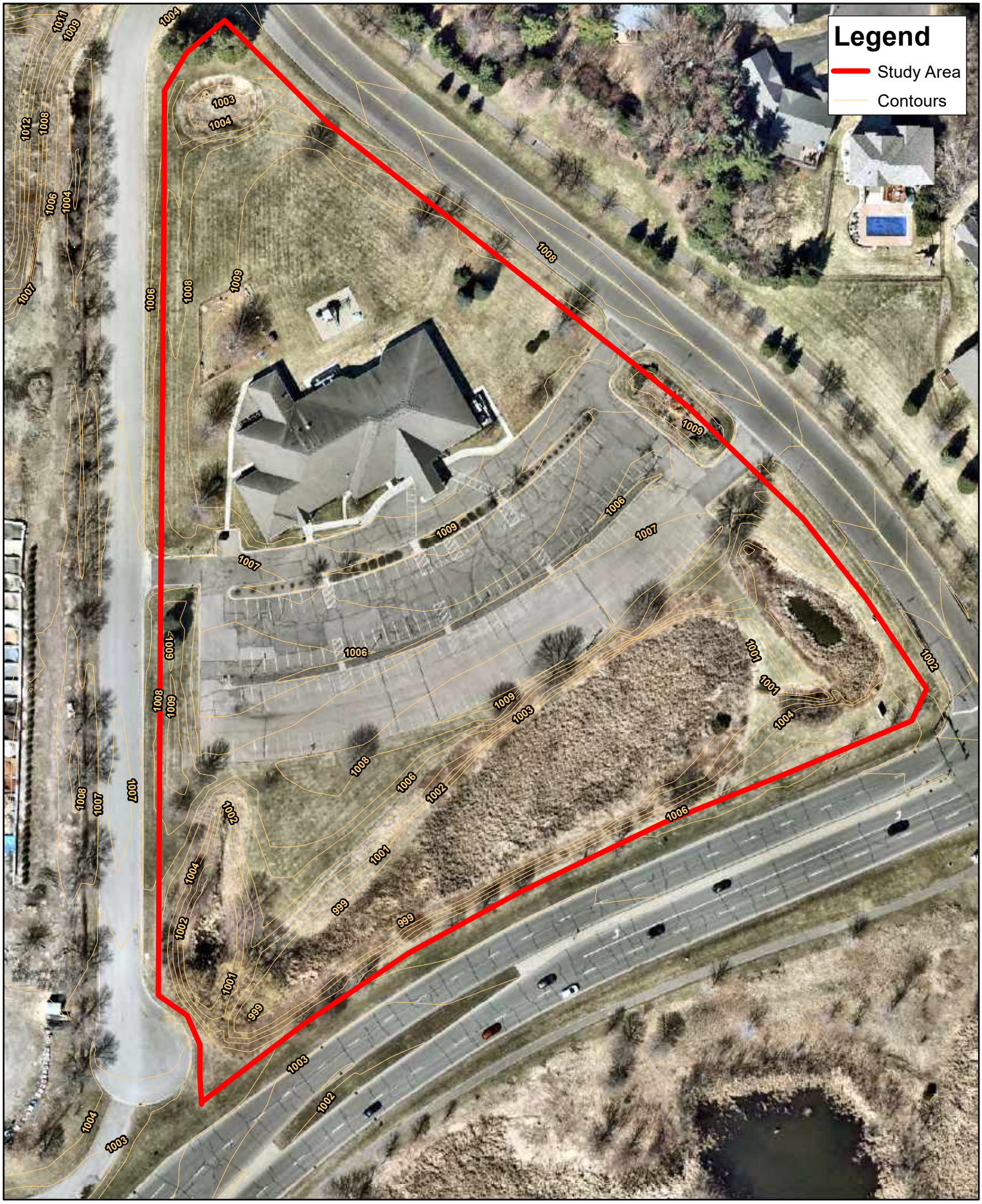


Kimley»Horn

0 50 100 Feet

Figure 3. Delineation Summary
Plymouth Presbyterian Church Delineation
Dundee Nursery Redevelopment

Appendix A: National Wetlands Inventory/DNR Public Waters Inventory/National Hydrography Dataset/LiDAR



Kimley»Horn

0 50 100 Feet

Appendix A. Aurvey Topo
Plymouth Presbyterian Church Delineation
Dundee Nursery Redevelopment

DEPARTMENT OF NATURAL RESOURCES

National Wetland Inventory

Cowardin Classification

- Aquatic Bed/ Nonpersistent Emergent
- Emergent
- Forested
- Moss/Lichen
- Rock Bottom
- Rocky Shore
- Streambed (Intermittent)
- Scrub-Shrub
- Unconsolidated Bottom (Open Water)
- Unconsolidated Shore (Banks & Sandbars)
- Public Waters Basins
- Public Water Watercourse
- Public Ditch/Altered Natural Watercourse

0 0.05 0.1 0.2 mi

Date Printed: 10/02/2020

Appendix B: Hydric Soils Information

Map Scale: 1:1,820 if printed on A portrait (8.5" x 11") sheet.

N

Meters: 0 25 50 100 150

Feet: 0 50 100 200 300

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 15N WGS84

MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

Soils

Soil Rating Polygons

- Hydric (100%)
- Hydric (66 to 99%)
- Hydric (33 to 65%)
- Hydric (1 to 32%)
- Not Hydric (0%)
- Not rated or not available

Soil Rating Lines

- Hydric (100%)
- Hydric (66 to 99%)
- Hydric (33 to 65%)
- Hydric (1 to 32%)
- Not Hydric (0%)
- Not rated or not available

Soil Rating Points

- Hydric (100%)
- Hydric (66 to 99%)
- Hydric (33 to 65%)
- Hydric (1 to 32%)
- Not Hydric (0%)
- Not rated or not available

Water Features

- Streams and Canals

Transportation

- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background

- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:12,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Hennepin County, Minnesota
Survey Area Data: Version 16, Jun 5, 2020

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: May 30, 2020—Jul 3, 2020

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Hydric Rating by Map Unit

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
L22C2	Lester loam, 6 to 10 percent slopes, moderately eroded	2	2.7	28.0%
L24A	Glencoe clay loam, 0 to 1 percent slopes	100	1.4	15.1%
L37B	Angus loam, 2 to 6 percent slopes	5	4.9	52.0%
L44A	Nessel loam, 1 to 3 percent slopes	10	0.5	4.9%
Totals for Area of Interest			**9.5**	**100.0%**

Description

This rating indicates the percentage of map units that meets the criteria for hydric soils. Map units are composed of one or more map unit components or soil types, each of which is rated as hydric soil or not hydric. Map units that are made up dominantly of hydric soils may have small areas of minor nonhydric components in the higher positions on the landform, and map units that are made up dominantly of nonhydric soils may have small areas of minor hydric components in the lower positions on the landform. Each map unit is rated based on its respective components and the percentage of each component within the map unit.

The thematic map is color coded based on the composition of hydric components. The five color classes are separated as 100 percent hydric components, 66 to 99 percent hydric components, 33 to 65 percent hydric components, 1 to 32 percent hydric components, and less than one percent hydric components.

In Web Soil Survey, the Summary by Map Unit table that is displayed below the map pane contains a column named 'Rating'. In this column the percentage of each map unit that is classified as hydric is displayed.

Hydric soils are defined by the National Technical Committee for Hydric Soils (NTCHS) as soils that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part (Federal Register, 1994). Under natural conditions, these soils are either saturated or inundated long enough during the growing season to support the growth and reproduction of hydrophytic vegetation.

The NTCHS definition identifies general soil properties that are associated with wetness. In order to determine whether a specific soil is a hydric soil or nonhydric soil, however, more specific information, such as information about the depth and duration of the water table, is needed. Thus, criteria that identify those estimated soil properties unique to hydric soils have been established (Federal Register, 2002). These criteria are used to identify map unit components that normally are associated with wetlands. The criteria used are selected estimated soil properties that are described in "Soil Taxonomy" (Soil Survey Staff, 1999) and "Keys to Soil Taxonomy" (Soil Survey Staff, 2006) and in the "Soil Survey Manual" (Soil Survey Division Staff, 1993).

If soils are wet enough for a long enough period of time to be considered hydric, they should exhibit certain properties that can be easily observed in the field. These visible properties are indicators of hydric soils. The indicators used to make onsite determinations of hydric soils are specified in "Field Indicators of Hydric Soils in the United States" (Hurt and Vasilas, 2006).

References:

Federal Register. July 13, 1994. Changes in hydric soils of the United States.

Federal Register. September 18, 2002. Hydric soils of the United States.

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Soil Survey Staff. 1999. Soil taxonomy: A basic system of soil classification for making and interpreting soil surveys. 2nd edition. Natural Resources Conservation Service. U.S. Department of Agriculture Handbook 436.

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Rating Options

Aggregation Method: Percent Present

Component Percent Cutoff: None Specified

Tie-break Rule: Lower

Appendix C: Precipitation Data

Minnesota State Climatology Office

State Climatology Office - DNR Division of Ecological and Water Resources

Precipitation Worksheet Using Gridded Database

Precipitation data for target wetland location:
county: **Hennepin** township number: **118N**
township name: **Plymouth** range number: **22W**
nearest community: **Hamel** section number: **6**

Aerial photograph or site visit date:
Tuesday, August 25, 2020

Score using 1981-2010 normal period

values are in inches A 'R' following a monthly total indicates a provisional value derived from radar-based estimates.	first prior month: **July 2020**	second prior month: **June 2020**	third prior month: **May 2020**
estimated precipitation total for this location:	**2.63R**	**3.73R**	**4.55R**
there is a 30% chance this location will have less than:	2.51	3.74	2.50
there is a 30% chance this location will have more than:	5.11	5.07	4.18
type of month: dry normal wet	**normal**	**dry**	**wet**
monthly score	**3 * 2 = 6**	**2 * 1 = 2**	**1 * 3 = 3**
multi-month score: 6 to 9 (dry) 10 to 14 (normal) 15 to 18 (wet)	**11 (Normal)**		

Other Resources:

- retrieve daily precipitation data
- view radar-based precipitation estimates
- view weekly precipitation maps
- *Evaluating Antecedent Precipitation Conditions* (BWSR)

Appendix D: Field Data Sheets

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: Plymouth Presbyterian Church | City/County: Plymouth/Hennepin | Sampling Date: 8/25/2020
Applicant/Owner: Commercial Investment Properties | State: MN | Sampling Point: SP-1
Investigator(s): A Stolte (CMWP #1297) | Section, Township, Range: Sec 17, Twp 118N, Ran 22W
Landform (hillslope, terrace, etc.): footslope | Local relief (concave, convex, none): concave
Slope (%): 5 | Lat: 45.023629 | Long: -93.491337 | Datum: WGS 1984
Soil Map Unit Name: L22C2 - Lester loam, 6 to 10 percent slopes, moderately eroded | NWI Classification: PEM1C
Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)
Are vegetation ____, soil ____, or hydrology ____ significantly disturbed? Are "normal circumstances" present? Yes
Are vegetation ____, soil ____, or hydrology ____ naturally problematic? (If needed, explain any answers in remarks.)

SUMMARY OF FINDINGS

Hydrophytic vegetation present?	Y
Hydric soil present?	Y
Indicators of wetland hydrology present?	Y
Is the sampled area within a wetland?	Y
If yes, optional wetland site ID:	Wetland 1

Remarks: (Explain alternative procedures here or in a separate report.)

At footslope of depression between parking lot and Rockford Road

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species	Indicator Staus
1			
2			
3			
4			
5			
	0	= Total Cover	

Sapling/Shrub stratum (Plot size: 15')			
1			
2			
3			
4			
5			
	0	= Total Cover	

Herb stratum (Plot size: 5')			
1 *Impatiens capensis*	30	Y	FACW
2 *Carex lacustris*	25	Y	OBL
3 *Poa pratensis*	15	N	FAC
4 *Typha angustifolia*	10	N	OBL
5 *Solidago canadensis*	10	N	FACU
6			
7			
8			
9			
10			
	90	= Total Cover	

Woody vine stratum (Plot size: 30')			
1			
2			
	0	= Total Cover	

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 2 (A)
Total Number of Dominant Species Across all Strata: 2 (B)
Percent of Dominant Species that are OBL, FACW, or FAC: 100.00% (A/B)

Prevalence Index Worksheet

Total % Cover of:

OBL species	35	x 1 =	35
FACW species	30	x 2 =	60
FAC species	15	x 3 =	45
FACU species	10	x 4 =	40
UPL species	0	x 5 =	0
Column totals	90 (A)		180 (B)

Prevalence Index = B/A = 2.00

Hydrophytic Vegetation Indicators:

- ____ Rapid test for hydrophytic vegetation
- X Dominance test is >50%
- X Prevalence index is ≤3.0*
- ____ Morphogical adaptations* (provide supporting data in Remarks or on a separate sheet)
- ____ Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic vegetation present? Y

Remarks: (Include photo numbers here or on a separate sheet)

SOIL **Sampling Point:** SP-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type*	Loc**	Texture	Remarks
0-8	10YR 5/2	90	10YR 5/8	10	C	M	si cl lo	

*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- ___ Histisol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils:

- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR K, L)**
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (explain in remarks)

*Indicators of hydrophytic vegetation and weltand hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric soil present? Y

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- X FAC-Neutral Test (D5)

Field Observations:

Surface water present?	Yes	___	No	X	Depth (inches):	___
Water table present?	Yes	___	No	X	Depth (inches):	___
Saturation present? (includes capillary fringe)	Yes	X	No	___	Depth (inches):	8

Indicators of wetland hydrology present? Y

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: Plymouth Presbyterian Church | City/County: Plymouth/Hennepin | Sampling Date: 8/25/2020
Applicant/Owner: Commercial Investment Properties | State: MN | Sampling Point: SP-2
Investigator(s): A Stolte (CMWP #1297) | Section, Township, Range: Sec 17, Twp 118N, Ran 22W
Landform (hillslope, terrace, etc.): hillslope | Local relief (concave, convex, none): none
Slope (%): 25 | Lat: 45.023652 | Long: -93.491341 | Datum: WGS 1984
Soil Map Unit Name: L22C2 - Lester loam, 6 to 10 percent slopes, moderately eroded | NWI Classification: none
Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)
Are vegetation ____, soil ____, or hydrology ____ significantly disturbed? Are "normal circumstances" present? Yes
Are vegetation ____, soil ____, or hydrology ____ naturally problematic? (If needed, explain any answers in remarks.)

SUMMARY OF FINDINGS

Hydrophytic vegetation present?	N
Hydric soil present?	N
Indicators of wetland hydrology present?	N
Is the sampled area within a wetland?	N
If yes, optional wetland site ID:	

Remarks: (Explain alternative procedures here or in a separate report.)

Slope between depression and parking lot approximately 2 feet higher than SP-1

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species	Indicator Staus
1			
2			
3			
4			
5			
	0	= Total Cover	

Sapling/Shrub stratum (Plot size: 15')			
1			
2			
3			
4			
5			
	0	= Total Cover	

Herb stratum (Plot size: 5')			
1 *Poa pratensis*	30	Y	FAC
2 *Solidago canadensis*	30	Y	FACU
3 *Cirsium arvense*	20	Y	FACU
4 *Carex lacustris*	10	N	OBL
5			
6			
7			
8			
9			
10			
	90	= Total Cover	

Woody vine stratum (Plot size: 30')			
1			
2			
	0	= Total Cover	

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 1 (A)
Total Number of Dominant Species Across all Strata: 3 (B)
Percent of Dominant Species that are OBL, FACW, or FAC: 33.33% (A/B)

Prevalence Index Worksheet

Total % Cover of:

OBL species	10	x 1 =	10	
FACW species	0	x 2 =	0	
FAC species	30	x 3 =	90	
FACU species	50	x 4 =	200	
UPL species	0	x 5 =	0	
Column totals	90	(A)	300	(B)

Prevalence Index = B/A = 3.33

Hydrophytic Vegetation Indicators:

- ____ Rapid test for hydrophytic vegetation
- ____ Dominance test is >50%
- ____ Prevalence index is ≤3.0*
- ____ Morphogical adaptations* (provide supporting data in Remarks or on a separate sheet)
- ____ Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic vegetation present? N

Remarks: (Include photo numbers here or on a separate sheet)

SOIL

Sampling Point: SP-2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type*	Loc**	Texture	Remarks
0-8	7.5YR 3/2	100					si cl lo	
8-16	10YR 4/3	100					si cl lo	

*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- ___ Histisol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils:

- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR K, L)**
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (explain in remarks)

*Indicators of hydrophytic vegetation and weltand hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric soil present? N

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface water present?	Yes	___	No	X	Depth (inches): ___
Water table present?	Yes	___	No	X	Depth (inches): ___
Saturation present? (includes capillary fringe)	Yes	___	No	X	Depth (inches): ___

Indicators of wetland hydrology present? N

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: Plymouth Presbyterian Church | City/County: Plymouth/Hennepin | Sampling Date: 8/25/2020
Applicant/Owner: Commercial Investment Properties | State: MN | Sampling Point: SP-3
Investigator(s): A Stolte (CMWP #1297) | Section, Township, Range: Sec 17, Twp 118N, Ran 22W
Landform (hillslope, terrace, etc.): footslope | Local relief (concave, convex, none): concave
Slope (%): 5 | Lat: 45.024217 | Long: -93.489836 | Datum: WGS 1984
Soil Map Unit Name: L22C2 - Lester loam, 6 to 10 percent slopes, moderately eroded | NWI Classification: PABHx
Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)
Are vegetation ____, soil ____, or hydrology ____ significantly disturbed? Are "normal circumstances" present? Yes
Are vegetation ____, soil ____, or hydrology ____ naturally problematic? (If needed, explain any answers in remarks.)

SUMMARY OF FINDINGS

Hydrophytic vegetation present?	Y
Hydric soil present?	Y
Indicators of wetland hydrology present?	Y
Is the sampled area within a wetland?	Y
If yes, optional wetland site ID:	Wetland 2

Remarks: (Explain alternative procedures here or in a separate report.)

At footslope of depression at corner of Rockford Road and Dunkirk Lane

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species	Indicator Staus
1			
2			
3			
4			
5			
	0	= Total Cover	

Sapling/Shrub stratum (Plot size: 15')			
1			
2			
3			
4			
5			
	0	= Total Cover	

Herb stratum (Plot size: 5')			
1 *Typha angustifolia*	40	Y	OBL
2 *Impatiens capensis*	35	Y	FACW
3 *Lotus corniculatus*	15	N	FACU
4 *Verbena hastata*	10	N	FACW
5			
6			
7			
8			
9			
10			
	100	= Total Cover	

Woody vine stratum (Plot size: 30')			
1			
2			
	0	= Total Cover	

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 2 (A)
Total Number of Dominant Species Across all Strata: 2 (B)
Percent of Dominant Species that are OBL, FACW, or FAC: 100.00% (A/B)

Prevalence Index Worksheet

Total % Cover of:

OBL species	40	x 1 =	40
FACW species	45	x 2 =	90
FAC species	0	x 3 =	0
FACU species	15	x 4 =	60
UPL species	0	x 5 =	0
Column totals	100 (A)		190 (B)

Prevalence Index = B/A = 1.90

Hydrophytic Vegetation Indicators:

- ____ Rapid test for hydrophytic vegetation
- X Dominance test is >50%
- X Prevalence index is ≤3.0*
- ____ Morphogical adaptations* (provide supporting data in Remarks or on a separate sheet)
- ____ Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic vegetation present? Y

Remarks: (Include photo numbers here or on a separate sheet)

SOIL

Sampling Point: SP-3

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type*	Loc**	Texture	Remarks
0-6	10YR 2/2	100					si lo	
6-12	10YR 5/2	90	10YR 5/8	10	C	M	si cl lo	

*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- ___ Histisol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- X Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils:

- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR K, L)**
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (explain in remarks)

*Indicators of hydrophytic vegetation and weltand hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric soil present? Y

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- X FAC-Neutral Test (D5)

Field Observations:

Surface water present?	Yes	___	No	X	Depth (inches): ___
Water table present?	Yes	___	No	X	Depth (inches): ___
Saturation present? (includes capillary fringe)	Yes	___	No	X	Depth (inches): ___

Indicators of wetland hydrology present? Y

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: Plymouth Presbyterian Church | City/County: Plymouth/Hennepin | Sampling Date: 8/25/2020
Applicant/Owner: Commercial Investment Properties | State: MN | Sampling Point: SP-4
Investigator(s): A Stolte (CMWP #1297) | Section, Township, Range: Sec 17, Twp 118N, Ran 22W
Landform (hillslope, terrace, etc.): hillslope | Local relief (concave, convex, none): none
Slope (%): 20 | Lat: 45.024204 | Long: -93.489851 | Datum: WGS 1984
Soil Map Unit Name: L22C2 - Lester loam, 6 to 10 percent slopes, moderately eroded | NWI Classification: none
Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)
Are vegetation ____, soil ____, or hydrology ____ significantly disturbed? Are "normal circumstances" present? Yes
Are vegetation ____, soil ____, or hydrology ____ naturally problematic?

SUMMARY OF FINDINGS

(If needed, explain any answers in remarks.)

Hydrophytic vegetation present?	N
Hydric soil present?	N
Indicators of wetland hydrology present?	N

Is the sampled area within a wetland? N
If yes, optional wetland site ID:

Remarks: (Explain alternative procedures here or in a separate report.)

One to two feet upslope of SP-3, just below mowed area

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species	Indicator Staus
1			
2			
3			
4			
5			
	0	= Total Cover	

Sapling/Shrub stratum (Plot size: 15')			
1			
2			
3			
4			
5			
	0	= Total Cover	

Herb stratum (Plot size: 5')			
1 *Lotus corniculatus*	80	Y	FACU
2 *Poa pratensis*	20	Y	FAC
3			
4			
5			
6			
7			
8			
9			
10			
	100	= Total Cover	

Woody vine stratum (Plot size: 30')			
1			
2			
	0	= Total Cover	

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 1 (A)
Total Number of Dominant Species Across all Strata: 2 (B)
Percent of Dominant Species that are OBL, FACW, or FAC: 50.00% (A/B)

Prevalence Index Worksheet

Total % Cover of:

OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	20	x 3 =	60
FACU species	80	x 4 =	320
UPL species	0	x 5 =	0
Column totals	100 (A)		380 (B)

Prevalence Index = B/A = 3.80

Hydrophytic Vegetation Indicators:

- ___ Rapid test for hydrophytic vegetation
- ___ Dominance test is >50%
- ___ Prevalence index is ≤3.0*
- ___ Morphogical adaptations* (provide supporting data in Remarks or on a separate sheet)
- ___ Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic vegetation present? N

Remarks: (Include photo numbers here or on a separate sheet)

SOIL

Sampling Point: SP-4

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type*	Loc**	Texture	Remarks

*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- ___ Histisol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils:

- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR K, L)**
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (explain in remarks)

*Indicators of hydrophytic vegetation and weltand hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric soil present? N

Remarks:

No soil pit dug due to lack of hydrophytic vegetation

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface water present?	Yes	___	No	X	Depth (inches): ___
Water table present?	Yes	___	No	X	Depth (inches): ___
Saturation present? (includes capillary fringe)	Yes	___	No	X	Depth (inches): ___

Indicators of wetland hydrology present? N

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Appendix E: Photos

Photo 1: Wetland 1 looking east from SP-1

Photo 2: Wetland 1 looking southwest from SP-1

Photo 3: Wetland 2 looking south from parking lot outlet

Photo 4: Wetland 3 looking east from SP-3

Photo 5: Short swale connecting Wetland 3 and Wetland 2

Photo 6: Rain garden on east side of parking lot looking north

Photo 7: Infiltration area north of church looking east

BOARD OF WATER AND SOIL RESOURCES

Minnesota Wetland Conservation Act
Notice of Decision

Local Government Unit: City of Plymouth	**County:** Hennepin
Applicant Name: Commercial Investment Properties **Applicant Representative:** Kelsey Malecha	
Project Name: Dundee Nursery Redevelopment **LGU Project No. (if any):** 2020-22	
Date Complete Application Received by LGU: 11/16/2020	
Date of LGU Decision: 1/11/2021	
Date this Notice was Sent: 2/3/2021	

WCA Decision Type - check all that apply

☒ Wetland Boundary/Type ☐ Sequencing ☐ Replacement Plan ☐ Bank Plan (not credit purchase)
☐ No-Loss (8420.0415) ☐ Exemption (8420.0420)
Part: ☐ A ☐ B ☐ C ☐ D ☐ E ☐ F ☐ G ☐ H Subpart: ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐ 8 ☐ 9

Replacement Plan Impacts (replacement plan decisions only)

Total WCA Wetland Impact Area:
Wetland Replacement Type: ☐ Project Specific Credits: ☐ Bank Credits:
Bank Account Number(s):

Technical Evaluation Panel Findings and Recommendations (attach if any)

☐ Approve ☒ Approve w/Conditions ☐ Deny ☐ No TEP Recommendation

LGU Decision

☐ Approved with Conditions (specify below)[1] ☒ Approved[1] ☐ Denied
List Conditions: MnRAM be submitted for wetland 1. (See note below)

Decision-Maker for this Application: ☒ Staff ☐ Governing Board/Council ☐ Other:

Decision is valid for: ☒ 5 years (default) ☐ Other (specify):

[1] *Wetland Replacement Plan approval is not valid until BWSR confirms the withdrawal of any required wetland bank credits. For project-specific replacement a financial assurance per MN Rule 8420.0522, Subp. 9 and evidence that all required forms have been recorded on the title of the property on which the replacement wetland is located must be provided to the LGU for the approval to be valid.*

LGU Findings – Attach document(s) and/or insert narrative providing the basis for the LGU decision[1].

☒ Attachment(s) (specify): **Wetland 1 MNRAM**
☒ Summary: **A MNRAM was requested by the TEP during our site meeting in the fall of 2020. The MNRAM for this property was submitted and the wetland classification for wetland 1 has been determined to be a Medium Quality wetland.**

[1] *Findings must consider any TEP recommendations.*

Attached Project Documents

☒ Site Location Map ☐ Project Plan(s)/Descriptions/Reports (specify):

Appeals of LGU Decisions

If you wish to appeal this decision, you must provide a written request within 30 calendar days of the date you received the notice. All appeals must be submitted to the Board of Water and Soil Resources Executive Director along with a check payable to BWSR for $500 *unless* the LGU has adopted a local appeal process as identified below. The check must be sent by mail and the written request to appeal can be submitted by mail or e-mail. The appeal should include a copy of this notice, name and contact information of appellant(s) and their representatives (if applicable), a statement clarifying the intent to appeal and supporting information as to why the decision is in error. Send to:

Appeals & Regulatory Compliance Coordinator
Minnesota Board of Water & Soils Resources
520 Lafayette Road North
St. Paul, MN 55155
travis.germundson@state.mn.us

Does the LGU have a local appeal process applicable to this decision?

☒ Yes[1] ☐ No

[1]*If yes, all appeals must first be considered via the local appeals process.*

Local Appeals Submittal Requirements (LGU must describe how to appeal, submittal requirements, fees, etc. as applicable)

Notice Distribution (include name)

Required on all notices:

☒ SWCD TEP Member: **Ms. Stacey Lijewski, HCA, 701 Fourth Avenue South, Suite 700, Minneapolis, MN 55415-1600** ☒ BWSR TEP Member: **Ben Carlson, BWSR, 520 Lafayette Road North, St. Paul, MN 55401**
☒ LGU TEP Member (if different than LGU contact): **Ben Scharenbroich, 3400 Plymouth Blvd, Plymouth MN 55447**
☒ DNR Representative: **Melissa Collins, MnDNR, 1200 Warner Road, St. Paul, MN 55106** **Lucas Youngsma, MnDNR, 1200 Warner Road, St. Paul, MN 55106**
☒ Watershed District or Watershed Mgmt. Org.: **BCWMC 16145 Hillcrest Lane, Eden Prairie MN 55346** **MWCD, 15320 Minnetonka Blvd, Minnetonka MN 55345**
☒ Applicant: **Commercial Investment Properties c/o Kelsey Malecha 3800 American Boulevard West, Suite 1120, Bloomington MN 55431** ☐ Agent/Consultant: **Kimley-Horn and Associates, Inc. 767 Eustis Street, Suite 100, Saint Paul MN 55114**

Optional or As Applicable:

☒ Corps of Engineers: **US Army Corps of Engineers, c/o Eric White 180 Fifth Street East, Suite 700, St. Paul, MN 5511-1678**
☐ BWSR Wetland Mitigation Coordinator (required for bank plan applications only):
☐ Members of the Public (notice only): ☐ Other:

Signature:	**Date:**
Ben Scharenbroich	2/3/2021

This notice and accompanying application materials may be sent electronically or by mail. The LGU may opt to send a summary of the application to members of the public upon request per 8420.0255, Subp. 3.

	Date 1/6/2021	Wetland name / ID ___Wetland 1_____	Wetland name / ID _____	Wetland name / ID _____	Wetland name / ID _____
	Special Features (from list, p.2--enter letter/s)	- ____	- ____	- ____	- ____
#1	Community Number (circle each community which represents at least 10% of the wetland)	3A, 3B, 4A, 4B, 7A, 7B, 8A, 8B, 10A, 13A, **13B**, 12B, 14A, 15A, 15B, 16A, 16B	3A, 3B, 4A, 4B, 7A, 7B, 8A, 8B, 10A, 13A, 13B, 12B, 14A, 15A, 15B, 16A, 16B	3A, 3B, 4A, 4B, 7A, 7B, 8A, 8B, 10A, 13A, 13B, 12B, 14A, 15A, 15B, 16A, 16B	3A, 3B, 4A, 4B, 7A, 7B, 8A, 8B, 10A, 13A, 13B, 12B, 14A, 15A, 15B, 16A, 16B
#2 & #3	~ Describe each community type individually below ~			~ Describe each community type individually below ~	
Plant Community #1	Community Type (wet meadow, marsh)	13B Shallow Marsh	- -	- -	- -
	Community Proportion (% of total)	100%			
	Dominant Vegetation **/** Cover Class	*Impatiens capensis* , Jewelweed, FACW / 3 *Carex lacustris,* Lake Sedge, OBL / 3			
	Invasive/exotic Vegetation **/** Cover Class	*Typha angustifolia* , Narrow leaved cattail, OBL / 5			
	Community Quality (E, H, M, L)	L 0.1	0	0	0
Plant Community #2	Community Type (wet meadow, marsh)	- -	- -	- -	- -
	Community Proportion (% of total)				
	Dominant Vegetation **/** Cover Class				
	Invasive/exotic Vegetation / Cover Class				
	Community Quality (E, H, M, L)	0	0	0	0
Plant Community #3	Community Type (wet meadow, marsh)	- -	- -	- -	- -
	Community Proportion (% of total)				
	Dominant Vegetation **/** Cover Class				
	Invasive/exotic Vegetation / Cover Class				
	Community Quality (E, H, M, L)	0	0	0	0
Plant Community #4*	Community Type (wet meadow, marsh)	- -	- -	- -	- -
	Community Proportion (% of total)				
	Dominant Vegetation **/** Cover Class				
	Invasive/exotic Vegetation / Cover Class				
	Community Quality (E, H, M, L)	- 0	0	0	0
	Circular 39 Types (primary <TAB> others)	3			
	Cowardin Types	PEM1C			
	Photo ID				
Highest rated community veg. div./integ:		0.1 Low	0 -	0 -	0 -
Average vegetative diversity/integrity:		0.10 Low	- -	- -	- -
Weighted Average veg. diversity/integrity:		0.10 Low	0.00 -	0.00 -	### -
#4	Listed, rare, special plant species?	n Y N	Y N	Y N	Y N
#5	**Rare community or habitat?**	**n Y N**	**Y N**	**Y N**	**Y N**
#6	Pre-European-settlement conditions?	n Y N	Y N	Y N	Y N

Floodplain Forest [1A, 2A, 3A] * Hardwood Swamp [3B] * Coniferous Bog [2A, 4B] * Coniferous Swamp [4B] * Open Bog [1B, 5A, 5B, 6A, 7A, 9A, 10A] * Calcareous Fen [7B, 11B, 14A] * Shrub Swamp [6B] * Alder Thicket [8A] * Shrub-carr [8B] * Sedge Meadow [10B, 11A, 12A, 13A] * Shallow Marsh [13B] * Deep Marsh [12B] * Wet to Wet-Mesic Prairie [14B, 15A] * Fresh (Wet) Meadow [15B] * Shallow, Open Water [9B, 16A] * Seasonally Flooded Basin [16B]

*If there are more than four plant community types, use the next column over to enter the rest and do not rely on the automatic average calculations.

Cover Class	Class Range
1	0 - 3%
2	3 - 10%
3	10 - 25%
4	25 - 50%
5	50 - 75%
6	75 - 100%

MnRAM 3.2 Digital Worksheet, Side 2

		Question Description	User entry	Rating							
	1	Veg. Table 2, Option 4		0.10							
		TOTAL VEG Rating	0.1	L							
	4	Listed, rare, special plant species?	n	next							
	5	Rare community or habitat?	n	next						Highest-rated:	
	6	Pre-European-settlement conditions?	n	next						0.1	
	7	hydrogeo & topo	FT	Depress'l/Flow-through							
	8	Water depth (inches)	12								
		Water depth (% inundation)	80%								
	9	Local watershed/immedita drainage (acres)	4.1								
	10	Existing wetland size	0.79								
	11	SOILS: Up/Wetland (survey classification + site)	Wet: L24A Up: L22C2								
Digital worksheet, section I	12	Outlet characteristics for flood retention	B	0.5							
	13	Outlet characteristics for hydrologic regime	B	0.5							
	14	Dominant upland land use (within 500 ft)	C	0.1	1						
	15	Soil condition (wetland)	A	1							
	16	Vegetation (% cover)	100%	H	1						
	17	Emerg. veg. flood resistance	B	0.5							
	18	Sediment delivery	B	0.5							
	19	Upland soils (based on soil group)	C	1							
	20	Stormwater runoff pretreatment & detention	B	0.5	0.5						
	21	Subwatershed wetland density	C	0.1							
	22	Channels/sheet flow	A	1							
	23	Adjacent naturalized buffer average width (feet)	C	H	WQ	1	H		1		
	24	Adjacent Area Management: % Full	30%	0.3	3	**0.59**					
		adjacent area mgmt: % Manicured	55%	0.275							
		adjacent area mgmt: % Bare	15%	0.015							
	25	Adjacent Area Diversity & Structure: % Native	40%	0.4	3	**0.64**					
		adjacent area diversity: % Mixed	45%	0.225							
		adjacent area diversity: % Sparse/Inv./Exotic	15%	0.015							
	26	Adjacent Area Slope: % Gentle	25%	0.25	2	**0.325**					
		adjacent area slope: % Moderate	0%	0							
		adjacent area slope: % Steep	75%	0.075							
Digital worksheet, section II	27	Downstream sensitivity/WQ protection	A	1							
	28	Nutrient loading	B	0.5							
	29	Shoreline wetland?	N	N							
	30	Rooted shoreline vegetation (%cover)		Enter a percentage							
	31	Wetland in-water width (in feet, average)		Enter a percentage							
	32	Emergent vegetation erosion resistance		Enter valid choice							
	33	Shoreline erosion potential		Enter valid cho							
	34	Bank protection/upslope veg.		Enter valid choice							
	35	Rare Wildlife	N	N							
	36	Scarce/Rare/S1/S2 local community	N	N							
	37	Vegetation interspersion cover (see diagram 1)	1	L	0.1						
	38	Community interspersion (see diagram 2)	1	L	0.1					0	
	39	Wetland detritus	B	0.5							
	40	Wetland interspersion on landscape	A	1	0.5						
	41	Wildlife barriers	C	0.1							
	42	Amphibian breeding potential-hydroperiod	A	1							
	43	Amphibian breeding potential--fish presence	A	1							
	44	Amphibian & reptile overwintering habitat	C	0.1							
	45	Wildlife species (list)									
	46	Fish habitat quality	C	0.1							
	47	Fish species (list)									
	48	Unique/rare educ./cultural/rec.opportunity	N	N							
	49	Wetland visibility	B	0.5							
	50	Proximity to population	N	0.1							
	51	Public ownership	C	0.1							
	52	Public access	C	0.1							
	53	Human influence on wetland	B	0.5							
	54	Human influence on viewshed	C	0.1							
	55	Spatial buffer	B	0.5							
	56	Recreational activity potential	C	0.1							
	57	Commercial crop--hydrologic impact	N/A	N/A							

This comes in from Side 1 automatically using the weighted average. To use the highest rated veg. Community rating, please manually overwrite that value (shown to the right) into the field at E5.

Enter data starting here. Yellow boxes are used in calculations.

Scroll down to answer more questions and see formula calculations

Additional questions

58	*GW - Wetland soils*	R	R or D	0.1	
59	*GW - Subwatershed land use*	R	R or D	0.1	
60	*GW - Wetland size and soil group*	R	R or D	0.1	
61	GW - Wetland hydroperiod	R	R or D	0.1	
62	GW - Inlet/Outlet configuration	D	R or D	1	
63	GW - Surrounding upland topographic relief	R	R or D	0.1	
64	Restoration potential w/o flooding	N	Y or N	1.5	
65	*Landowners affected by restoration*		*E a b c*	Enter valid choice	
66A	*Existing wetland size (acres) [from #10]*	0.79	__ acres		
66B	Total wetland restoration size (acres)		__ acres	0.1	
66C	(Calculated) Potential New Wetland Area [B-A]	-0.79	__ acres	% effectively drained: ####	
67	Average width of naturalized upland buffer (poten	0	__ feet	0.1	value: ####
68	Likelihood of restoration success		a b c	Enter valid choice	
69	Hydrologic alteration type		Outlet, Tile, Ditch, GW pump, Wtrshd div., Filling		
70	Potential wetland type (Circ. 39)		1, 2, 3, 4, 5, 6, 7, 8		
71	Wetland sensitivity to stormwater	b	E a b c		
72	Additional stormwater treatment needs	b	a b c		

Functional Rating Summaries

Function Name	Raw score	Final Rating	Rating Category	Formula shown to the right.
Vegetative Diversity/Integrity		0.10	L	
Hydrology - Characteristic		0.53	Med	
Flood Attenuation		0.68	High	
Water Quality--Downstream		0.57	Med	
Water Quality--Wetland		0.35	Med	
Shoreline Protection		N/A	N/A	
Characteristic Wildlife Habitat Structure	0.37	0.37	Med	
Maintenance of Characteristic Fish Habitat	0.38	0.38	Med	
Maintenance of Characteristic Amphibian Habitat		0.47	Med	
Aesthetics/Recreation/Education/Cultural	0.25	0.25	Low	
Commercial use		N/A	N/A	0
Special Features listing:			-	

Groundwater Interaction	recharge	
Groundwater Functional Index		no special indicators
Restoration Potential (draft formula)	N/A	N/A
Stormwater Sensitivity (not active)		

BOARD OF WATER AND SOIL RESOURCES

Minnesota Wetland Conservation Act
Notice of Application

Local Government Unit: City of Plymouth	**County:** Hennepin
Applicant Name: Commercial Investment Properties **Applicant Representative:** Kelsey Malecha	
Project Name: Dundee Nursery Redevelopment **LGU Project No. (if any):** 2020-22	
Date Complete Application Received by LGU: 11/16/2020	
Date this Notice was Sent by LGU: 12/2/2020	
Date that Comments on this Application Must Be Received By LGU[1]: 12/23/2020	

[1] *minimum 15 business day comment period for Boundary & Type, Sequencing, Replacement Plan and Bank Plan Applications*

WCA Decision Type - check all that apply

☒ Wetland Boundary/Type ☐ Sequencing ☐ Replacement Plan ☐ Bank Plan (not credit purchase)
☐ No-Loss (8420.0415) ☐Exemption (8420.0420)
Part: ☐ A ☐ B ☐ C ☐ D ☐ E ☐ F ☐ G ☐ H Subpart: ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐ 8 ☐ 9

Replacement Plan Impacts (replacement plan decisions only)

Total WCA Impact Area Proposed:

Application Materials

☒ Attached ☐ Other[1] (specify):

[1] Link to ftp or other accessible file sharing sites is acceptable.

Comments on this application should be sent to:

LGU Contact Person: Ben Scharenbroich, Water Resources Supervisor
E-Mail Address: bscharenbroich@plymouthmn.gov
Address and Phone Number: 3400 Plymouth Blvd, Plymouth, MN 55447
Decision-Maker for this Application:
☒ Staff ☐ Governing Board/Council ☐ Other (specify):

Notice Distribution (include name)

Required on all notices:

☒ SWCD TEP Member: **Ms. Stacey Lijewski, HCA, 701 Fourth Avenue South, Suite 700, Minneapolis, MN 55415-1600**
☒ BWSR TEP Member: **Ben Carlson, BWSR, 520 Lafayette Road North, St. Paul, MN 55401**

☐ LGU TEP Member (if different than LGU contact):

☒ DNR Representative: **Melissa Collins, MnDNR, 1200 Warner Road, St. Paul, MN 55106**
Lucas Youngsma, MnDNR, 1200 Warner Road, St. Paul, MN 55106

☒ Watershed District or Watershed Mgmt. Org.: **BCWMC 16145 Hillcrest Lane, Eden Prairie MN 55346**
MWCD, 15320 Minnetonka Blvd, Minnetonka MN 55345

☒ Applicant (notice only): **Commercial Investment Properties c/o Kelsey Malecha 3800 American Boulevard West, Suite 1120, Bloomington MN 55431**
☒ Agent/Consultant (notice only): **Kimley-Horn and Associates, Inc. 767 Eustis Street, Suite 100, Saint Paul MN 55114**

Optional or As Applicable:

☒ Corps of Engineers: **US Army Corps of Engineers, 180 Fifth Street East, Suite 700, St. Paul, MN 5511-1678**
☐ BWSR Wetland Mitigation Coordinator (required for bank plan applications only):
☐ Members of the Public (notice only): ☐ Other:

Signature:	**Date:**
	12/2/2020

This notice and accompanying application materials may be sent electronically or by mail. The LGU may opt to send a summary of the application to members of the public upon request per 8420.0255, Subp. 3.

Wetland Delineation Report

Dundee Nursery Redevelopment

City of Plymouth

Hennepin County Minnesota

Prepared for:

Commercial Investment Properties
3800 American Boulevard West, Suite 1120
Bloomington, MN 55431

Prepared by:

Kimley-Horn and Associates, Inc.
767 Eustis Street, Suite 100
Saint Paul, MN 55114

October 2020

Kimley»Horn

Table of Contents

List of Figures

Appendices

1 Introduction

Wetland scientist Aaron Stolte (CMWD 1297) with Kimley-Horn and Associates, Inc. conducted a wetland investigation and field delineation for Commercial Investment Properties and the Dundee Nursery Redevelopment in the City of Plymouth, Hennepin County, Minnesota. The wetland investigation and delineation included the Plymouth Presbyterian Church property at 3755 Dunkirk Lane (PID # 1711822430037) adjacent to the east of the Dundee Nursery (the "study area"). The study area is shown in **Figure 1.** The study area consists of the Church, a parking lot, and an outdoor recreation area. Cover types within the study area includes manicured lawn, wetlands, and stormwater management areas.

A routine level 2 (onsite) wetland delineation, as outlined in the *1987 Corps of Engineers Wetlands Delineation Manual* (January 1987) along with the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Midwest Region (Version 2.0) (August 2010)* occurred on August 25, 2020. The purpose of this delineation was to identify the extent of wetlands within the study area. The information will be used to facilitate project design and determine if aquatic resource impacts are avoidable and/or if minimization of impacts can result from design modifications.

2 Project Description

Commercial Investment Properties is proposing to develop/reconstruct the parcel.

3 Statement of Qualifications

Kimley-Horn has extensive experience completing wetland investigations and delineations across the United States. Kimley-Horn's personnel has been trained to use the *1987 Corps of Engineers Wetlands Delineation Manual (USACE, 1987)* along with the applicable regional supplements. Kimley-Horn has experience completing off-site hydrology analysis, historic aerial reviews, and difficult or atypical situation delineations.

Aaron Stolte earned Bachelor of Arts Degrees in Environmental Studies and Biology from Saint John's University in Minnesota. He has over five years of experience in completing and managing ecological related projects for both public and private sector clients. Aaron specializes in local, regional, and federal environmental compliance and water related permits. He has a strong background in wetland and stormwater regulations and applying them to projects of various scopes and scales. He also has extensive experience in using GIS data to complete natural resource assessments as they relate to permitting requirements. Aaron is a certified delineator in the state of Minnesota and his primary focus is environmental work in the Midwest. He has experience working in Minnesota, Illinois, Wisconsin, Michigan, North Dakota, Nebraska, Arizona, and Florida.

4 Mapping and Background Information

Prior to field reconnaissance, potential wetland areas within the project study areas were identified through a desktop review of United States Geological Survey (USGS) Topographic maps, National Wetlands Inventory (NWI), aerial photography (2020), National Hydrography Dataset (NHD), survey data, the soil survey for Hennepin County, Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps (FIRM), and antecedent precipitation for a location near the study area. The selected resources are described below:

4.1 Topographic Map

The Osseo 7.5 minute United States Geological Survey (USGS) topographical map and survey data for the project were reviewed for the study area. According to the USGS topographic map (see Figure 2), the study area is undeveloped land east of Dunkirk Lane. A wetland is depicted that overlaps the southern portion of the study area. The LiDAR map depicts the site as generally flat with the exception of the wetland areas to the south. The slight slopes away from the center of the study area in all directions. The site ranges from 1009 feet (above mean sea level) to 999 feet, see Appendix A.

4.2 National Wetlands Inventory

According to NWI mapping, available from the Minnesota DNR (updated in 2018), depicts potential wetland areas and waterbodies based on stereoscopic analysis of high altitude and aerial photographs and was reviewed for the study area. According to the NWI map, there are two wetlands in the study area, both south of the parking lot along Rockford Road and Dunkirk Lane.

4.3 National Hydrography Dataset

The National Hydrography Dataset (NHD), available from USGS, depicts drainage networks and related features, including rivers, streams, canals, lakes, and ponds. The NHD dataset is not field verified. According to NHD mapping, there are no identified drainage features within the study area.

4.4 Soil Survey

The Natural Resources Conservation Service's (NRCS) *Web Soil Survey* for Hennepin County was reviewed for the project site. According to the survey, there are four soil mapping units within the study area which are generally loams with some clay loam. The majority of the study area was mapped with nonhydric soils; however, 15% of the study area contains area mapped as hydric soil. Maps and information obtained from NRCS online web soil survey are included in Appendix B.

4.5 Federal Emergency Management Agency Floodplain

The Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) was reviewed for the project study area. According to the FEMA, FIRM, the study area is located in Zone X of panel 27053C0190F (effective November 4, 2016), which is outside the designated 100-year and 500-year floodplain zones.

4.6 Precipitation

Precipitation data for the project site were obtained from the NRCS online climate data retrieval system. NRCS WETS (Wetlands) tables were reviewed for a climate station within the vicinity of the study area to determine the current hydrologic conditions for the site and if those conditions are typical for this time of year. Precipitation levels for the three months (May, June, and July) leading up to the field review were compared to historical data. The data show that July had normal, June had dryer than normal, and May had wetter than normal precipitation levels. In summary, the field visit constituted normal precipitation conditions. This information is included in Appendix C.

5 Field Investigation

A routine level 2 (onsite) wetland delineation, as outlined in the *1987 Corps of Engineers Wetlands Delineation Manual* (January 1987) along with the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Midwest Region (Version 2.0) (August 2010)* occurred on August 25, 2020.

During the onsite delineation, vegetation, soils, and current hydrologic characteristics were evaluated at each wetland area and area of investigation identified within the study area. Wetland boundaries were flagged with wetland flags where one or more of the three criteria were no longer present. The sample point locations, wetland boundaries, and aquatic features were surveyed with a Trimble GPS and are shown in Figure 3.

The field data sheets are included in Appendix D. Site photos can be found in Appendix E.

6 Summary of Results

Table 1. Delineation Summary

Resource ID	Wetland Plant Community	C-39 Type	Size (acres)	NWI?	Hydric Soils?	Photo ID	Associated Sample Points	NOTES
Wetland 1	Shallow Marsh	3	0.79	Yes, PEM1C	Yes	1-2	SP1 (Wet) SP2 (Up)	Wetland located in depression located between church parking lot and Rockford Road. The wetland collects runoff from the surrounding landscape, Wetland 2 via a culvert, and Wetland 3 during high water events and drains south via culvert to an offsite wetland south of Rockford Road.
Wetland 2	Shallow Marsh	3	0.06	No	No	3	SP1 (Wet) SP2 (Up)	Wetland located in a small depression in the southwestern portion of the study area. The wetland collects runoff from the church parking lot and surrounding landscape and drains to Wetland 1 via a culvert. The wetland appears to have been constructed for stormwater treatment of the adjacent parking lot runoff prior to discharge to Wetland 1.
Wetland 3	Shallow Marsh	3	0.11	Yes, PABHx	No	4	SP3 (Wet) SP4 (Up)	Wetland located in a small depression at the corner of Rockford Road and 36th Avenue. The wetland collects runoff from the church parking lot and is not connected to other features via stormwater pipe; however, there appears to be a small swale which connects Wetland 1 and 2 in the southeast corner of the study area during high water events. The wetland appears to have been constructed for stormwater treatment of parking lot runoff.

7 Regulatory Requirements

A summary of the permit requirements that may pertain to the project is provided below. Any activity planned within areas identified as wetland must be coordinated with and approved by the appropriate agencies prior to commencement of such activities.

Agencies in Minnesota relevant to this study area that regulate activities that affect lakes, rivers, streams, and wetlands include:

- US Army Corps of Engineers (USACE)
  - Section 404 of the Clean Water Act
- Local Governmental Units (LGUs)
  - Wetland Conservation Act (WCA)

The LGU for this project is the City of Plymouth. The WCA applies to nearly all wetlands. The regularity authority of the USACE covers Waters of the United States, including those that are subject to WCA. Generally, the USACE reviewed delineations to determine whether wetlands are jurisdictional (i.e., Waters of the United States). In Minnesota, a joint application process has been developed for projects with anticipated wetland impacts. Applications are coordinated between the USACE and LGU.

8 Report Preparation

The procedures followed for this wetland delineation are in accordance with the *Corps of Engineers Wetlands Delineation Manual* and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Midwest Region (Version 2.0) (August 2010)*

This report describes site conditions for a specific date in time and is generally valid for a period of five years from the date of the final field investigation and delineation, which was August 25, 2020.

9 Conclusion

The field delineation identified three wetlands within the study area. Each of the delineated resources is described in Table 1.

10 Disclaimer

Kimley-Horn has prepared this document based on limited field observations and our interpretation, as scientists, of applicable regulations and agency guidance. While Kimley-Horn believes our interpretation to be accurate, final authority to interpret the regulations lies with the appropriate regulatory agencies. Regulatory agencies occasionally issue guidance that changes the interpretation of published regulations. Guidance issued after the date of this report has the potential to invalidate our conclusions and/or recommendations and may cause a need to reevaluate our conclusions and/or recommendations.

Because Kimley-Horn has no regulatory authority, the Client understands that proceeding based solely upon this document does not protect the Client from potential sanction or fines from the applicable regulatory agencies. The Client acknowledges that they have the opportunity to submit documentation to the regulatory agencies for concurrence prior to proceeding with any work. If the Client elects not to do so, then the Client proceeds at their sole risk.

References

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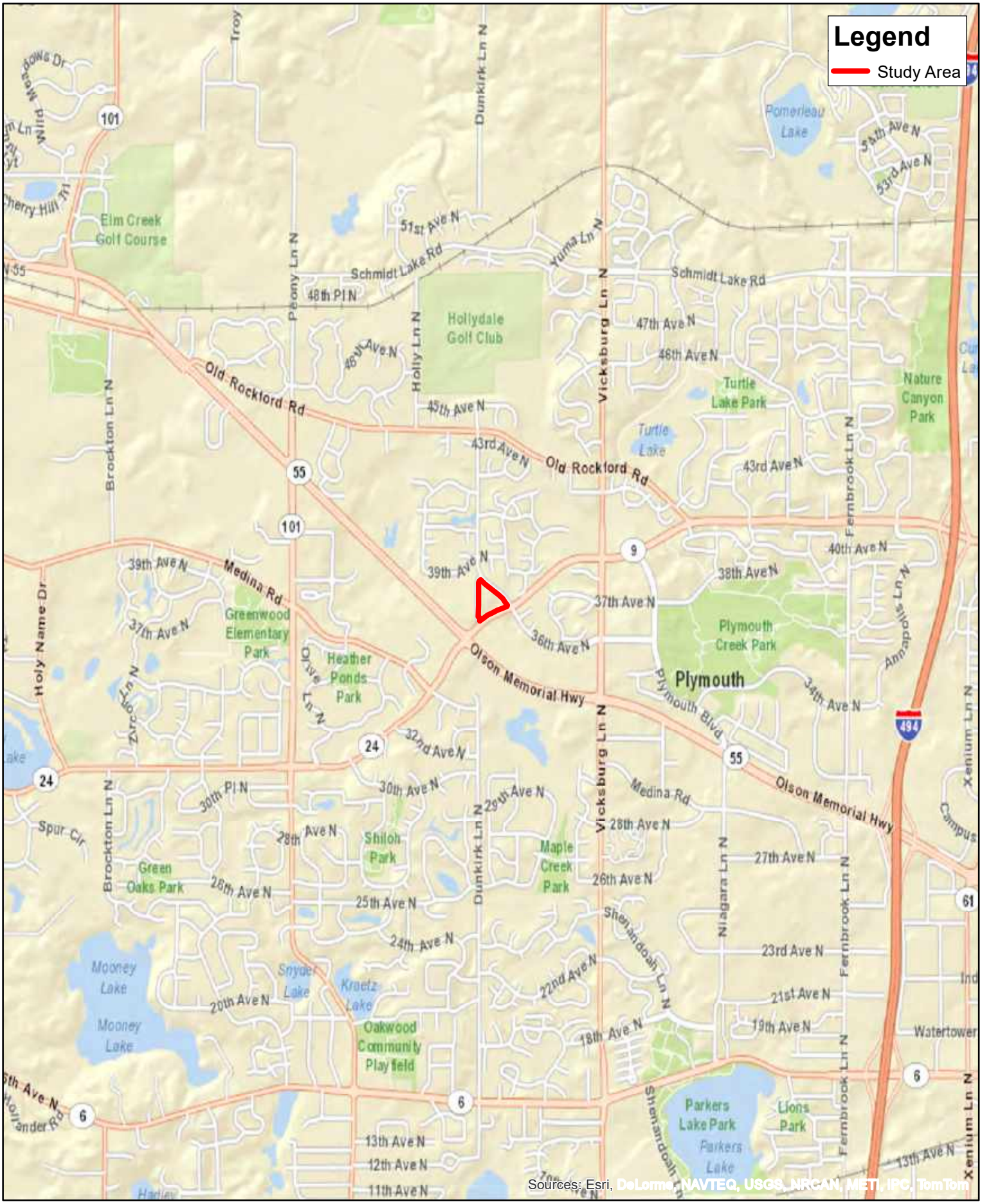
Figures



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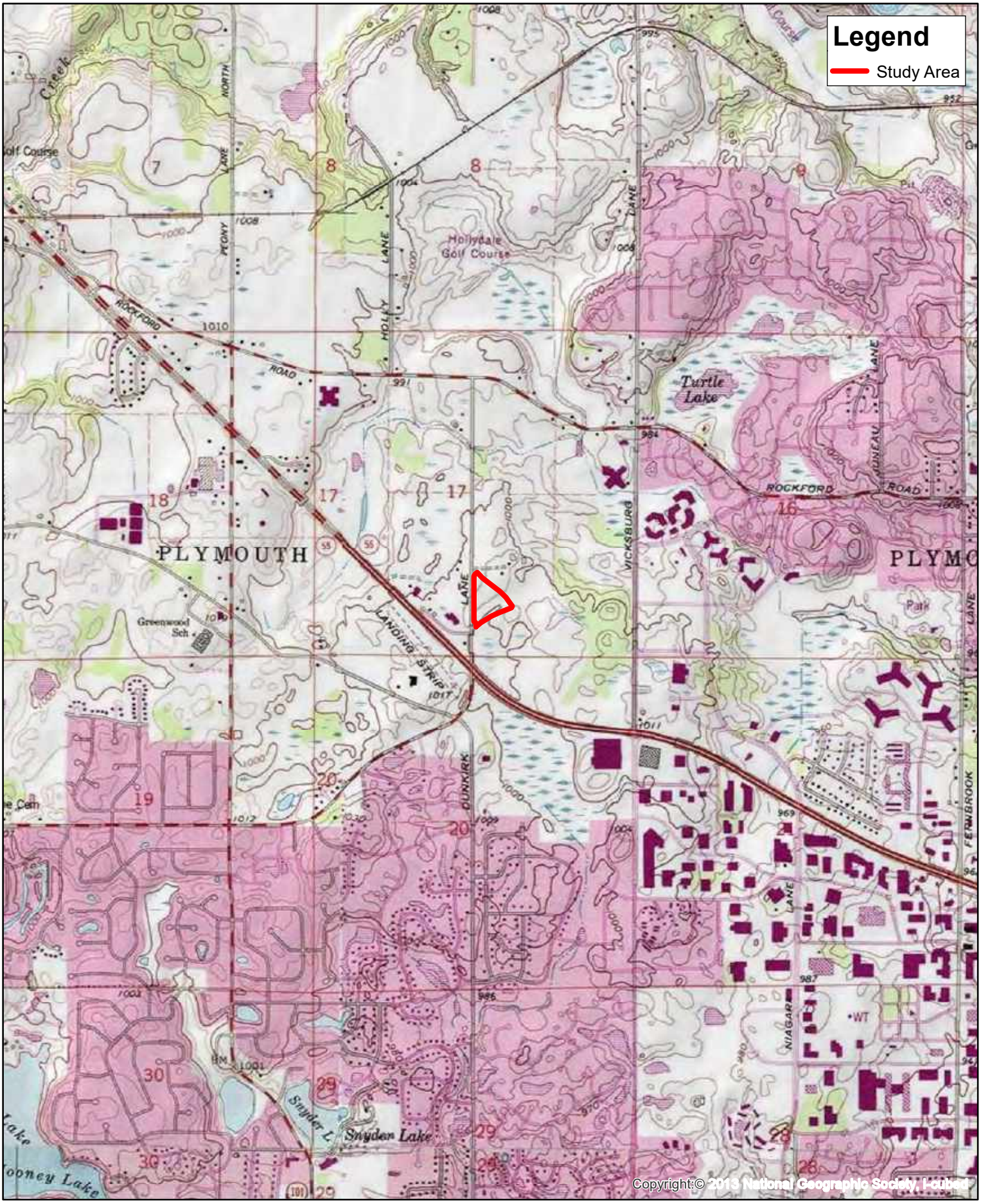
0 0.25 0.5 Miles

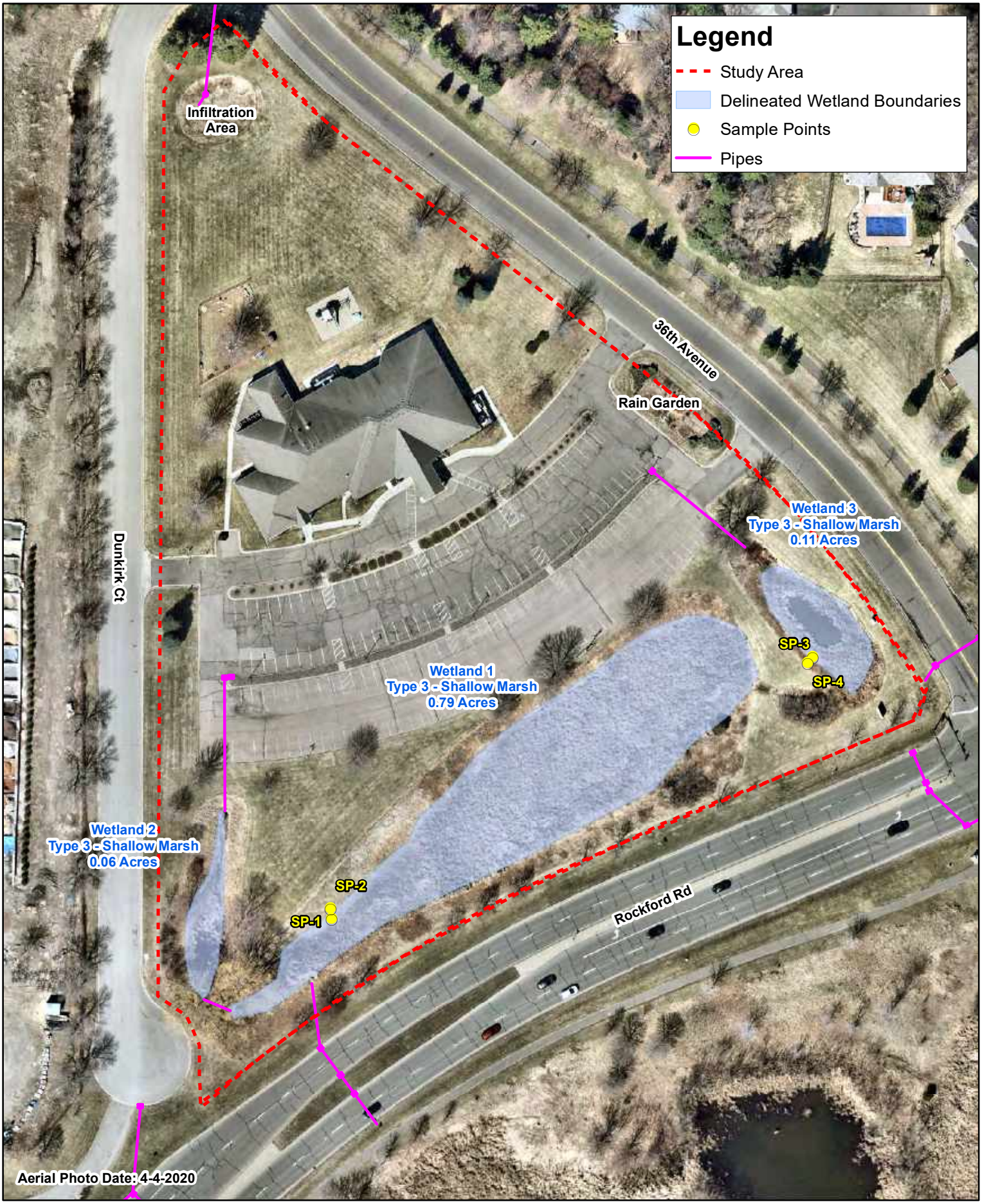
Figure 1. Project Location
Plymouth Presbyterian Church Delineation
Dundee Nursery Redevelopment



Kimley»Horn

0 1,000 2,000 Feet

Figure 2. USGS Topo Map
Plymouth Presbyterian Church Delineation
Dundee Nursery Redevelopment

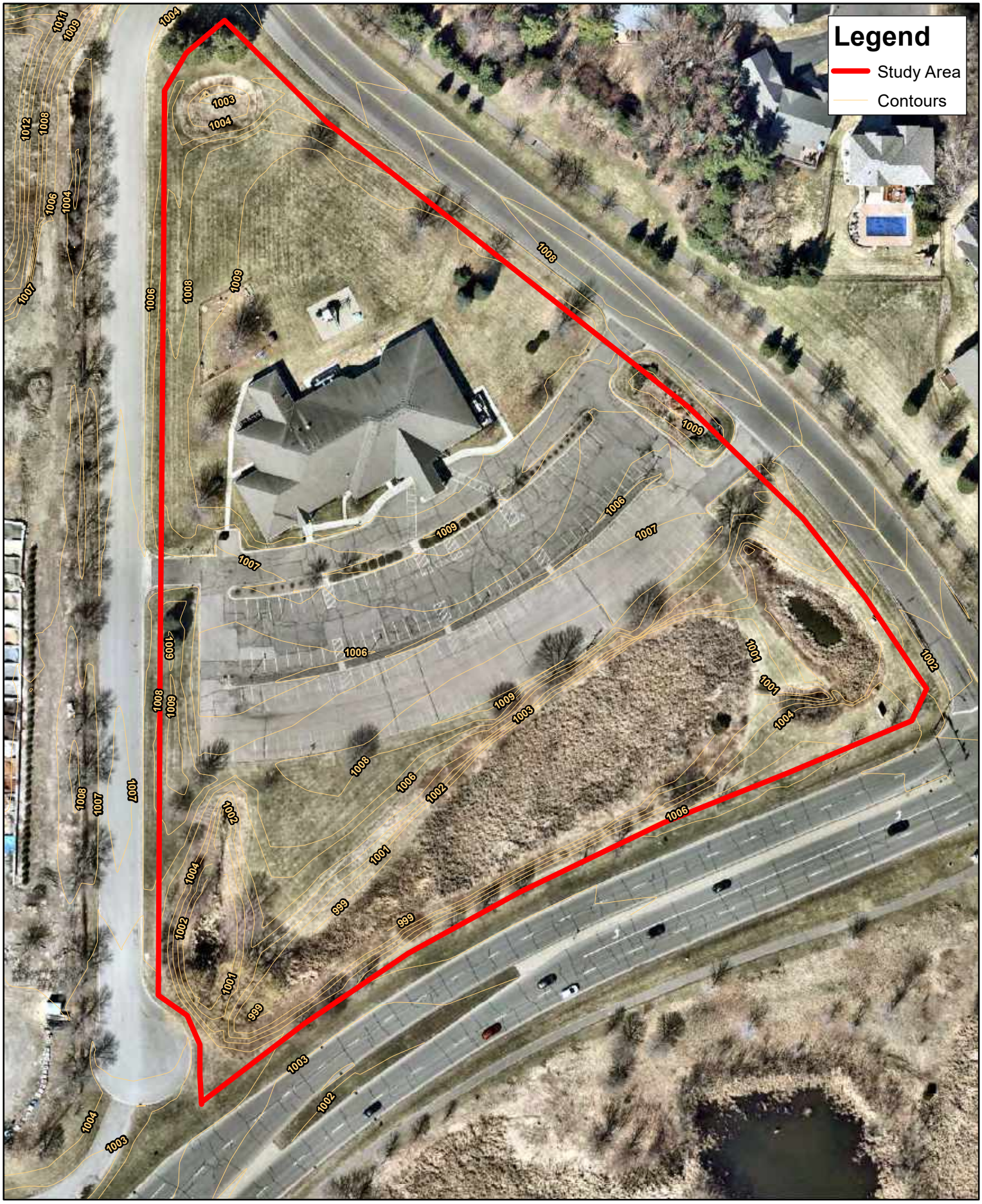


Kimley»Horn

0 50 100 Feet

Figure 3. Delineation Summary
Plymouth Presbyterian Church Delineation
Dundee Nursery Redevelopment

Appendix A: National Wetlands Inventory/DNR Public Waters Inventory/National Hydrography Dataset/LiDAR



Kimley»Horn

0 50 100 Feet

Appendix A. Aurvey Topo
Plymouth Presbyterian Church Delineation
Dundee Nursery Redevelopment

DEPARTMENT OF NATURAL RESOURCES

National Wetland Inventory

Cowardin Classification

- Aquatic Bed/ Nonpersistent Emergent
- Emergent
- Forested
- Moss/Lichen
- Rock Bottom
- Rocky Shore
- Streambed (Intermittent)
- Scrub-Shrub
- Unconsolidated Bottom (Open Water)
- Unconsolidated Shore (Banks & Sandbars)
- Public Waters Basins
- Public Water Watercourse
- Public Ditch/Altered Natural Watercourse

0 0.05 0.1 0.2 mi

Date Printed: 10/02/2020

Appendix B: Hydric Soils Information

Map Scale: 1:1,820 if printed on A portrait (8.5" x 11") sheet.

N

Meters: 0 25 50 100 150

Feet: 0 50 100 200 300

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 15N WGS84

MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

Soils

Soil Rating Polygons

- Hydric (100%)
- Hydric (66 to 99%)
- Hydric (33 to 65%)
- Hydric (1 to 32%)
- Not Hydric (0%)
- Not rated or not available

Soil Rating Lines

- Hydric (100%)
- Hydric (66 to 99%)
- Hydric (33 to 65%)
- Hydric (1 to 32%)
- Not Hydric (0%)
- Not rated or not available

Soil Rating Points

- Hydric (100%)
- Hydric (66 to 99%)
- Hydric (33 to 65%)
- Hydric (1 to 32%)
- Not Hydric (0%)
- Not rated or not available

Water Features

- Streams and Canals

Transportation

- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background

- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:12,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Hennepin County, Minnesota
Survey Area Data: Version 16, Jun 5, 2020

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: May 30, 2020—Jul 3, 2020

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Hydric Rating by Map Unit

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
L22C2	Lester loam, 6 to 10 percent slopes, moderately eroded	2	2.7	28.0%
L24A	Glencoe clay loam, 0 to 1 percent slopes	100	1.4	15.1%
L37B	Angus loam, 2 to 6 percent slopes	5	4.9	52.0%
L44A	Nessel loam, 1 to 3 percent slopes	10	0.5	4.9%
Totals for Area of Interest			**9.5**	**100.0%**

Description

This rating indicates the percentage of map units that meets the criteria for hydric soils. Map units are composed of one or more map unit components or soil types, each of which is rated as hydric soil or not hydric. Map units that are made up dominantly of hydric soils may have small areas of minor nonhydric components in the higher positions on the landform, and map units that are made up dominantly of nonhydric soils may have small areas of minor hydric components in the lower positions on the landform. Each map unit is rated based on its respective components and the percentage of each component within the map unit.

The thematic map is color coded based on the composition of hydric components. The five color classes are separated as 100 percent hydric components, 66 to 99 percent hydric components, 33 to 65 percent hydric components, 1 to 32 percent hydric components, and less than one percent hydric components.

In Web Soil Survey, the Summary by Map Unit table that is displayed below the map pane contains a column named 'Rating'. In this column the percentage of each map unit that is classified as hydric is displayed.

Hydric soils are defined by the National Technical Committee for Hydric Soils (NTCHS) as soils that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part (Federal Register, 1994). Under natural conditions, these soils are either saturated or inundated long enough during the growing season to support the growth and reproduction of hydrophytic vegetation.

The NTCHS definition identifies general soil properties that are associated with wetness. In order to determine whether a specific soil is a hydric soil or nonhydric soil, however, more specific information, such as information about the depth and duration of the water table, is needed. Thus, criteria that identify those estimated soil properties unique to hydric soils have been established (Federal Register, 2002). These criteria are used to identify map unit components that normally are associated with wetlands. The criteria used are selected estimated soil properties that are described in "Soil Taxonomy" (Soil Survey Staff, 1999) and "Keys to Soil Taxonomy" (Soil Survey Staff, 2006) and in the "Soil Survey Manual" (Soil Survey Division Staff, 1993).

If soils are wet enough for a long enough period of time to be considered hydric, they should exhibit certain properties that can be easily observed in the field. These visible properties are indicators of hydric soils. The indicators used to make onsite determinations of hydric soils are specified in "Field Indicators of Hydric Soils in the United States" (Hurt and Vasilas, 2006).

References:

Federal Register. July 13, 1994. Changes in hydric soils of the United States.

Federal Register. September 18, 2002. Hydric soils of the United States.

Hurt, G.W., and L.M. Vasilas, editors. Version 6.0, 2006. Field indicators of hydric soils in the United States.

Soil Survey Division Staff. 1993. Soil survey manual. Soil Conservation Service. U.S. Department of Agriculture Handbook 18.

Soil Survey Staff. 1999. Soil taxonomy: A basic system of soil classification for making and interpreting soil surveys. 2nd edition. Natural Resources Conservation Service. U.S. Department of Agriculture Handbook 436.

Soil Survey Staff. 2006. Keys to soil taxonomy. 10th edition. U.S. Department of Agriculture, Natural Resources Conservation Service.

Rating Options

Aggregation Method: Percent Present

Component Percent Cutoff: None Specified

Tie-break Rule: Lower

Appendix C: Precipitation Data

Minnesota State Climatology Office

State Climatology Office - DNR Division of Ecological and Water Resources

Precipitation Worksheet Using Gridded Database

Precipitation data for target wetland location:
county: **Hennepin** township number: **118N**
township name: **Plymouth** range number: **22W**
nearest community: **Hamel** section number: **6**

Aerial photograph or site visit date:
Tuesday, August 25, 2020

Score using 1981-2010 normal period

values are in inches A 'R' following a monthly total indicates a provisional value derived from radar-based estimates.	first prior month: **July 2020**	second prior month: **June 2020**	third prior month: **May 2020**
estimated precipitation total for this location:	**2.63R**	**3.73R**	**4.55R**
there is a 30% chance this location will have less than:	2.51	3.74	2.50
there is a 30% chance this location will have more than:	5.11	5.07	4.18
type of month: dry normal wet	**normal**	**dry**	**wet**
monthly score	**3 * 2 = 6**	**2 * 1 = 2**	**1 * 3 = 3**
multi-month score: 6 to 9 (dry) 10 to 14 (normal) 15 to 18 (wet)	**11 (Normal)**		

Other Resources:

- retrieve daily precipitation data
- view radar-based precipitation estimates
- view weekly precipitation maps
- *Evaluating Antecedent Precipitation Conditions* (BWSR)

Appendix D: Field Data Sheets

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: Plymouth Presbyterian Church | City/County: Plymouth/Hennepin | Sampling Date: 8/25/2020
Applicant/Owner: Commercial Investment Properties | State: MN | Sampling Point: SP-1
Investigator(s): A Stolte (CMWP #1297) | Section, Township, Range: Sec 17, Twp 118N, Ran 22W
Landform (hillslope, terrace, etc.): footslope | Local relief (concave, convex, none): concave
Slope (%): 5 | Lat: 45.023629 | Long: -93.491337 | Datum: WGS 1984
Soil Map Unit Name: L22C2 - Lester loam, 6 to 10 percent slopes, moderately eroded | NWI Classification: PEM1C
Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)
Are vegetation ____, soil ____, or hydrology ____ significantly disturbed? Are "normal circumstances" present? Yes
Are vegetation ____, soil ____, or hydrology ____ naturally problematic? (If needed, explain any answers in remarks.)

SUMMARY OF FINDINGS

Hydrophytic vegetation present?	Y
Hydric soil present?	Y
Indicators of wetland hydrology present?	Y
Is the sampled area within a wetland?	Y
If yes, optional wetland site ID:	Wetland 1

Remarks: (Explain alternative procedures here or in a separate report.)

At footslope of depression between parking lot and Rockford Road

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species	Indicator Staus
1			
2			
3			
4			
5			
	0	= Total Cover	

Sapling/Shrub stratum (Plot size: 15')			
1			
2			
3			
4			
5			
	0	= Total Cover	

Herb stratum (Plot size: 5')			
1 *Impatiens capensis*	30	Y	FACW
2 *Carex lacustris*	25	Y	OBL
3 *Poa pratensis*	15	N	FAC
4 *Typha angustifolia*	10	N	OBL
5 *Solidago canadensis*	10	N	FACU
6			
7			
8			
9			
10			
	90	= Total Cover	

Woody vine stratum (Plot size: 30')			
1			
2			
	0	= Total Cover	

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 2 (A)
Total Number of Dominant Species Across all Strata: 2 (B)
Percent of Dominant Species that are OBL, FACW, or FAC: 100.00% (A/B)

Prevalence Index Worksheet

Total % Cover of:

OBL species	35	x 1 =	35
FACW species	30	x 2 =	60
FAC species	15	x 3 =	45
FACU species	10	x 4 =	40
UPL species	0	x 5 =	0
Column totals	90 (A)		180 (B)

Prevalence Index = B/A = 2.00

Hydrophytic Vegetation Indicators:

- ____ Rapid test for hydrophytic vegetation
- X Dominance test is >50%
- X Prevalence index is ≤3.0*
- ____ Morphogical adaptations* (provide supporting data in Remarks or on a separate sheet)
- ____ Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic vegetation present? Y

Remarks: (Include photo numbers here or on a separate sheet)

SOIL **Sampling Point:** SP-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type*	Loc**	Texture	Remarks
0-8	10YR 5/2	90	10YR 5/8	10	C	M	si cl lo	

*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- ___ Histisol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils:

- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR K, L)**
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (explain in remarks)

*Indicators of hydrophytic vegetation and weltand hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric soil present? Y

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- X FAC-Neutral Test (D5)

Field Observations:

Surface water present?	Yes	___	No	X	Depth (inches):	___
Water table present?	Yes	___	No	X	Depth (inches):	___
Saturation present? (includes capillary fringe)	Yes	X	No	___	Depth (inches):	8

Indicators of wetland hydrology present? Y

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: Plymouth Presbyterian Church | City/County: Plymouth/Hennepin | Sampling Date: 8/25/2020
Applicant/Owner: Commercial Investment Properties | State: MN | Sampling Point: SP-2
Investigator(s): A Stolte (CMWP #1297) | Section, Township, Range: Sec 17, Twp 118N, Ran 22W
Landform (hillslope, terrace, etc.): hillslope | Local relief (concave, convex, none): none
Slope (%): 25 | Lat: 45.023652 | Long: -93.491341 | Datum: WGS 1984
Soil Map Unit Name: L22C2 - Lester loam, 6 to 10 percent slopes, moderately eroded | NWI Classification: none
Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)
Are vegetation ____, soil ____, or hydrology ____ significantly disturbed? Are "normal circumstances" present? Yes
Are vegetation ____, soil ____, or hydrology ____ naturally problematic? (If needed, explain any answers in remarks.)

SUMMARY OF FINDINGS

Hydrophytic vegetation present?	N
Hydric soil present?	N
Indicators of wetland hydrology present?	N
Is the sampled area within a wetland?	N
If yes, optional wetland site ID:	

Remarks: (Explain alternative procedures here or in a separate report.)

Slope between depression and parking lot approximately 2 feet higher than SP-1

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species	Indicator Staus
1			
2			
3			
4			
5			
	0	= Total Cover	

Sapling/Shrub stratum (Plot size: 15')			
1			
2			
3			
4			
5			
	0	= Total Cover	

Herb stratum (Plot size: 5')			
1 *Poa pratensis*	30	Y	FAC
2 *Solidago canadensis*	30	Y	FACU
3 *Cirsium arvense*	20	Y	FACU
4 *Carex lacustris*	10	N	OBL
5			
6			
7			
8			
9			
10			
	90	= Total Cover	

Woody vine stratum (Plot size: 30')			
1			
2			
	0	= Total Cover	

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 1 (A)
Total Number of Dominant Species Across all Strata: 3 (B)
Percent of Dominant Species that are OBL, FACW, or FAC: 33.33% (A/B)

Prevalence Index Worksheet

Total % Cover of:

OBL species	10	x 1 =	10	
FACW species	0	x 2 =	0	
FAC species	30	x 3 =	90	
FACU species	50	x 4 =	200	
UPL species	0	x 5 =	0	
Column totals	90	(A)	300	(B)

Prevalence Index = B/A = 3.33

Hydrophytic Vegetation Indicators:

- ____ Rapid test for hydrophytic vegetation
- ____ Dominance test is >50%
- ____ Prevalence index is ≤3.0*
- ____ Morphogical adaptations* (provide supporting data in Remarks or on a separate sheet)
- ____ Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic vegetation present? N

Remarks: (Include photo numbers here or on a separate sheet)

SOIL

Sampling Point: SP-2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type*	Loc**	Texture	Remarks
0-8	7.5YR 3/2	100					si cl lo	
8-16	10YR 4/3	100					si cl lo	

*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- ___ Histisol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils:

- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR K, L)**
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (explain in remarks)

*Indicators of hydrophytic vegetation and weltand hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric soil present? N

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface water present?	Yes	___	No	X	Depth (inches): ___
Water table present?	Yes	___	No	X	Depth (inches): ___
Saturation present? (includes capillary fringe)	Yes	___	No	X	Depth (inches): ___

Indicators of wetland hydrology present? N

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: Plymouth Presbyterian Church | City/County: Plymouth/Hennepin | Sampling Date: 8/25/2020
Applicant/Owner: Commercial Investment Properties | State: MN | Sampling Point: SP-3
Investigator(s): A Stolte (CMWP #1297) | Section, Township, Range: Sec 17, Twp 118N, Ran 22W
Landform (hillslope, terrace, etc.): footslope | Local relief (concave, convex, none): concave
Slope (%): 5 | Lat: 45.024217 | Long: -93.489836 | Datum: WGS 1984
Soil Map Unit Name: L22C2 - Lester loam, 6 to 10 percent slopes, moderately eroded | NWI Classification: PABHx
Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)
Are vegetation ____, soil ____, or hydrology ____ significantly disturbed? Are "normal circumstances" present? Yes
Are vegetation ____, soil ____, or hydrology ____ naturally problematic? (If needed, explain any answers in remarks.)

SUMMARY OF FINDINGS

Hydrophytic vegetation present?	Y
Hydric soil present?	Y
Indicators of wetland hydrology present?	Y
Is the sampled area within a wetland?	Y
If yes, optional wetland site ID:	Wetland 2

Remarks: (Explain alternative procedures here or in a separate report.)

At footslope of depression at corner of Rockford Road and Dunkirk Lane

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species	Indicator Staus
1			
2			
3			
4			
5			
	0	= Total Cover	

Sapling/Shrub stratum (Plot size: 15')			
1			
2			
3			
4			
5			
	0	= Total Cover	

Herb stratum (Plot size: 5')			
1 *Typha angustifolia*	40	Y	OBL
2 *Impatiens capensis*	35	Y	FACW
3 *Lotus corniculatus*	15	N	FACU
4 *Verbena hastata*	10	N	FACW
5			
6			
7			
8			
9			
10			
	100	= Total Cover	

Woody vine stratum (Plot size: 30')			
1			
2			
	0	= Total Cover	

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 2 (A)
Total Number of Dominant Species Across all Strata: 2 (B)
Percent of Dominant Species that are OBL, FACW, or FAC: 100.00% (A/B)

Prevalence Index Worksheet

Total % Cover of:

OBL species	40	x 1 =	40
FACW species	45	x 2 =	90
FAC species	0	x 3 =	0
FACU species	15	x 4 =	60
UPL species	0	x 5 =	0
Column totals	100 (A)		190 (B)

Prevalence Index = B/A = 1.90

Hydrophytic Vegetation Indicators:

- ____ Rapid test for hydrophytic vegetation
- X Dominance test is >50%
- X Prevalence index is ≤3.0*
- ____ Morphogical adaptations* (provide supporting data in Remarks or on a separate sheet)
- ____ Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic vegetation present? Y

Remarks: (Include photo numbers here or on a separate sheet)

SOIL

Sampling Point: SP-3

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type*	Loc**	Texture	Remarks
0-6	10YR 2/2	100					si lo	
6-12	10YR 5/2	90	10YR 5/8	10	C	M	si cl lo	

*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- ___ Histisol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- X Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils:

- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR K, L)**
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (explain in remarks)

*Indicators of hydrophytic vegetation and weltand hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric soil present? Y

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- X FAC-Neutral Test (D5)

Field Observations:

Surface water present?	Yes	___	No	X	Depth (inches): ___
Water table present?	Yes	___	No	X	Depth (inches): ___
Saturation present? (includes capillary fringe)	Yes	___	No	X	Depth (inches): ___

Indicators of wetland hydrology present? Y

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: Plymouth Presbyterian Church | City/County: Plymouth/Hennepin | Sampling Date: 8/25/2020
Applicant/Owner: Commercial Investment Properties | State: MN | Sampling Point: SP-4
Investigator(s): A Stolte (CMWP #1297) | Section, Township, Range: Sec 17, Twp 118N, Ran 22W
Landform (hillslope, terrace, etc.): hillslope | Local relief (concave, convex, none): none
Slope (%): 20 | Lat: 45.024204 | Long: -93.489851 | Datum: WGS 1984
Soil Map Unit Name: L22C2 - Lester loam, 6 to 10 percent slopes, moderately eroded | NWI Classification: none
Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)
Are vegetation ____, soil ____, or hydrology ____ significantly disturbed? Are "normal circumstances" present? Yes
Are vegetation ____, soil ____, or hydrology ____ naturally problematic?

SUMMARY OF FINDINGS

(If needed, explain any answers in remarks.)

Hydrophytic vegetation present?	N
Hydric soil present?	N
Indicators of wetland hydrology present?	N

Is the sampled area within a wetland? N
If yes, optional wetland site ID:

Remarks: (Explain alternative procedures here or in a separate report.)

One to two feet upslope of SP-3, just below mowed area

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species	Indicator Staus
1			
2			
3			
4			
5			
	0	= Total Cover	

Sapling/Shrub stratum (Plot size: 15')			
1			
2			
3			
4			
5			
	0	= Total Cover	

Herb stratum (Plot size: 5')			
1 *Lotus corniculatus*	80	Y	FACU
2 *Poa pratensis*	20	Y	FAC
3			
4			
5			
6			
7			
8			
9			
10			
	100	= Total Cover	

Woody vine stratum (Plot size: 30')			
1			
2			
	0	= Total Cover	

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 1 (A)
Total Number of Dominant Species Across all Strata: 2 (B)
Percent of Dominant Species that are OBL, FACW, or FAC: 50.00% (A/B)

Prevalence Index Worksheet

Total % Cover of:

OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	20	x 3 =	60
FACU species	80	x 4 =	320
UPL species	0	x 5 =	0
Column totals	100 (A)		380 (B)

Prevalence Index = B/A = 3.80

Hydrophytic Vegetation Indicators:

- ___ Rapid test for hydrophytic vegetation
- ___ Dominance test is >50%
- ___ Prevalence index is ≤3.0*
- ___ Morphogical adaptations* (provide supporting data in Remarks or on a separate sheet)
- ___ Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic vegetation present? N

Remarks: (Include photo numbers here or on a separate sheet)

SOIL

Sampling Point: SP-4

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type*	Loc**	Texture	Remarks

*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- ___ Histisol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils:

- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR K, L)**
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (explain in remarks)

*Indicators of hydrophytic vegetation and weltand hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric soil present? N

Remarks:

No soil pit dug due to lack of hydrophytic vegetation

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface water present?	Yes	___	No	X	Depth (inches): ___
Water table present?	Yes	___	No	X	Depth (inches): ___
Saturation present? (includes capillary fringe)	Yes	___	No	X	Depth (inches): ___

Indicators of wetland hydrology present? N

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Appendix E: Photos

Photo 1: Wetland 1 looking east from SP-1

Photo 2: Wetland 1 looking southwest from SP-1

Photo 3: Wetland 2 looking south from parking lot outlet

Photo 4: Wetland 3 looking east from SP-3

Photo 5: Short swale connecting Wetland 3 and Wetland 2

Photo 6: Rain garden on east side of parking lot looking north

Photo 7: Infiltration area north of church looking east

Project Name and/or Number: CIP Dundee Nursery Redevelopment

PART ONE: Applicant Information

If applicant is an entity (company, government entity, partnership, etc.), an authorized contact person must be identified. If the applicant is using an agent (consultant, lawyer, or other third party) and has authorized them to act on their behalf, the agent's contact information must also be provided.

Applicant/Landowner Name: Kelsey Malecha, Commercial Investment Properties
Mailing Address: 3800 American Boulevard West, Suite 1120
Bloomington, MN 55431
Phone: 952-334-0411
E-mail Address: kelseym@ciproperties.com

Agent Name: Aaron Stolte, Kimley-Horn
Mailing Address: 767 Eustis Street, Suite 100
Saint Paul, MN 55114
Phone: 612-326-9510
E-mail Address: Aaron.stolte@kimley-horn.com

PART TWO: Site Location Information

County: Hennepin **City/Township: Plymouth**
Parcel ID and/or Address: 3755 Dunkirk Lane/PID# 1711822430037)
Legal Description (Section, Township, Range): Sec 17, Twn 118N, Ran 22W
Lat/Long (decimal degrees): 45.024446°/-93.491105°
Attach a map showing the location of the site in relation to local streets, roads, highways. See Figure 1 of Report
Approximate size of site (acres) or if a linear project, length (feet): 6.7 acres

If you know that your proposal will require an individual Permit from the U.S. Army Corps of Engineers, you must provide the names and addresses of all property owners adjacent to the project site. This information may be provided by attaching a list to your application or by using block 25 of the Application for Department of the Army permit which can be obtained at:

http://www.mvp.usace.army.mil/Portals/57/docs/regulatory/RegulatoryDocs/engform_4345_2012oct.pdf

PART FIVE: Applicant Signature

☐ Check here if you are requesting a pre-application consultation with the Corps and LGU based on the information you have provided. Regulatory entities will not initiate a formal application review if this box is checked.

By signature below, I attest that the information in this application is complete and accurate. I further attest that I possess the authority to undertake the work described herein.

Signature: K K Malecha Date: 11-6-20

I hereby authorize Kimley-Horn to act on my behalf as my agent in the processing of this application and to furnish, upon request, supplemental information in support of this application.

Project Name and/or Number: CIP Dundee Nursery Redevelopment

Attachment A
Request for Delineation Review, Wetland Type Determination, or Jurisdictional Determination

By submission of the enclosed wetland delineation report, I am requesting that the U.S. Army Corps of Engineers, St. Paul District (Corps) and/or the Wetland Conservation Act Local Government Unit (LGU) provide me with the following (check all that apply):

☒ **Wetland Type Confirmation**

☒ **Delineation Concurrence.** Concurrence with a delineation is a written notification from the Corps and a decision from the LGU concurring, not concurring, or commenting on the boundaries of the aquatic resources delineated on the property. Delineation concurrences are generally valid for five years unless site conditions change. Under this request alone, the Corps will not address the jurisdictional status of the aquatic resources on the property, only the boundaries of the resources within the review area (including wetlands, tributaries, lakes, etc.).

☐ **Preliminary Jurisdictional Determination.** A preliminary jurisdictional determination (PJD) is a non-binding written indication from the Corps that waters, including wetlands, identified on a parcel may be waters of the United States. For purposes of computation of impacts and compensatory mitigation requirements, a permit decision made on the basis of a PJD will treat all waters and wetlands in the review area as if they are jurisdictional waters of the U.S. PJDs are advisory in nature and may not be appealed.

☐ **Approved Jurisdictional Determination.** An approved jurisdictional determination (AJD) is an official Corps determination that jurisdictional waters of the United States are either present or absent on the property. AJDs can generally be relied upon by the affected party for five years. An AJD may be appealed through the Corps administrative appeal process.

In order for the Corps and LGU to process your request, the wetland delineation must be prepared in accordance with the 1987 Corps of Engineers Wetland Delineation Manual, any approved Regional Supplements to the 1987 Manual, and the *Guidelines for Submitting Wetland Delineations in Minnesota* (2013).
http://www.mvp.usace.army.mil/Missions/Regulatory/DelineationIDGuidance.aspx

Attachment 6

Cultural Resources Coordination information

Leet-Otley, Keller

From: MN_MNIT_Data Request SHPO <DataRequestSHPO@state.mn.us>
Sent: Monday, April 6, 2020 8:14 PM
To: Payne, Ashley
Cc: Leet-Otley, Keller
Subject: RE: Plymouth, MN Redevelopment SHPO database review request
Attachments: History.xls

Categories: External

Hello Ashley,

Your requested historic report is attached. Our database has no archaeologic records for the given project area.

Jim

SHPO Data Requests
Minnesota State Historic Preservation Office
50 Sherburne Avenue, Suite 203
Saint Paul, MN 55155
(651) 201-3299
datarequestshpo@state.mn.us

Notice: This email message simply reports the results of the cultural resources database search you requested. The database search is only for previously known archaeological sites and historic properties. **IN NO CASE DOES THIS DATABASE SEARCH OR EMAIL MESSAGE CONSTITUTE A PROJECT REVIEW UNDER STATE OR FEDERAL PRESERVATION LAWS –** please see our website at https://mn.gov/admin/shpo/protection/ for further information regarding our Environmental Review Process.
Because the majority of archaeological sites in the state and many historic/architectural properties have not been recorded, important sites or properties may exist within the search area and may be affected by development projects within that area. Additional research, including field surveys, may be necessary to adequately assess the area's potential to contain historic properties or archaeological sites.
Properties that are listed in the National Register of Historic Places (NRHP) or have been determined eligible for listing in the NRHP are indicated on the reports you have received, if any. The following codes may be on those reports:
NR – National Register listed. The properties may be individually listed or may be within the boundaries of a National Register District.
CEF – Considered Eligible Findings are made when a federal agency has recommended that a property is eligible for listing in the National Register and MN SHPO has accepted the recommendation for the purposes of the Environmental Review Process. These properties need to be further assessed before they are officially listed in the National Register.
SEF – Staff eligible Findings are those properties the MN SHPO staff considers eligible for listing in the National Register, in circumstances other than the Environmental Review Process.
DOE – Determination of Eligibility is made by the National Park Service and are those properties that are eligible for listing in the National Register, but have not been officially listed.
CNEF – Considered Not Eligible Findings are made during the course of the Environmental Review Process. For the purposes of the review a property is considered not eligible for listing in the National Register. These properties may need to be reassessed for eligibility under additional or alternate contexts.
Properties without NR, CEF, SEF, DOE, or CNEF designations in the reports may not have been evaluated and therefore no assumption to their eligibility can be made. Integrity and contexts change over time, therefore any eligibility determination made ten (10) or more years from the date of the current survey are considered out of date and the property will need to be reassessed.

If you require a comprehensive assessment of a project's potential to impact archaeological sites or historic/architectural properties, you may need to hire a qualified archaeologist and/or historian. If you need assistance with a project review, please contact Kelly Gragg-Johnson, Environmental Review Specialist @ 651-201-3285 or by email at kelly.graggjohnson@state.mn.us.
The Minnesota SHPO Archaeology and Historic/Architectural Survey Manuals can be found at https://mn.gov/admin/shpo/identification-evaluation/.

Given the Governor's announcement of Stay Home MN, the SHPO office will be closed to visitors and unable to accommodate in-person research and deliveries after 4 p.m. Friday, March 27, 2020 continuing through Friday, April 10, 2020. Our office will continue to take file search requests via DataRequestSHPO@state.mn.us. SHPO staff will continue to work remotely and be available via phone and email. Check SHPO's webpage for the latest updates and we thank you for your continued patience.

From: Payne, Ashley <Ashley.Payne@kimley-horn.com>
Sent: Monday, April 6, 2020 2:59 PM
To: MN_MNIT_Data Request SHPO <DataRequestSHPO@state.mn.us>
Cc: Leet-Otley, Keller <Keller.Leet-Otley@kimley-horn.com>
Subject: Plymouth, MN Redevelopment SHPO database review request

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Hello,

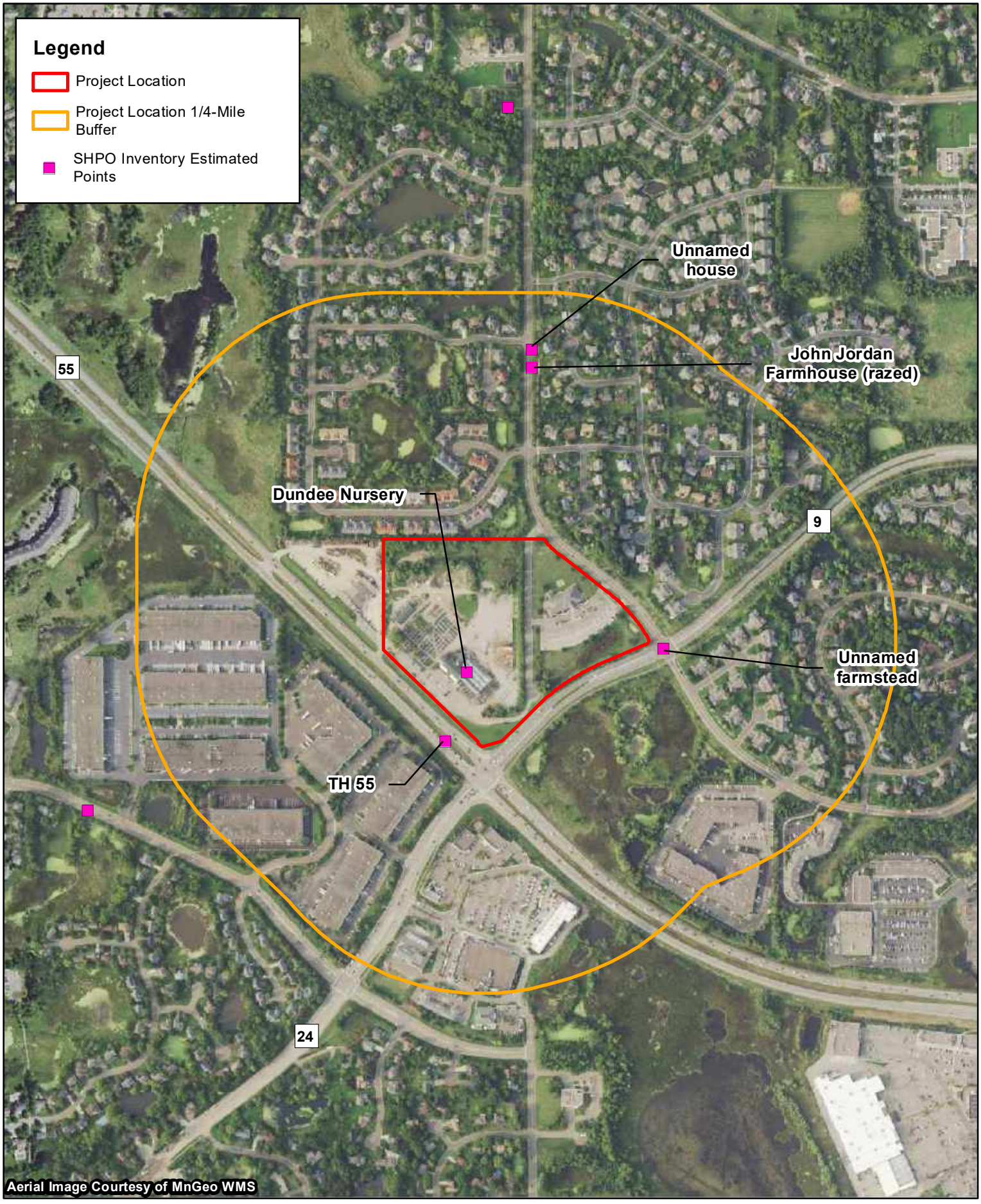
Kimley-Horn, on behalf of CIP, requests a database search for the redevelopment project at the Dundee Nursery located in Plymouth, MN. The site is located in the SW ¼ of Section 17, TWP 118N, Range 22W. Attached are the following exhibits: Project Location and USGS Topographical Map.

Please let me know if you have any questions.

Thank you!

Ashley

Ashley Payne, CWD
Kimley-Horn | 767 Eustis Street, Suite 100, Saint Paul, MN 55114
Direct: 507 216 0763 | Mobile: 507 216 0763



Kimley»Horn

0 0.125 0.25 Miles

Attachment 5. SHPO Historical Data

Dundee Nursery Redevelopment
Environmental Assessment Worksheet

COUNTY	CITYTWP	PROPNAME	ADDRESS	TOWNSHIP	RANGE	SECTION	QUARTER	USGS	REPORTNUM	NRHP	CEF	DOE	INVENTNUM
Hennepin													
	Multiple												
		Minneapolis, St. Paul & Sault St. Marie (Soo Line) Railroad		118	22	17					Y		HE-XXX-0001
	Plymouth												
		farmstead	16530 Rockford Rd.	118	22	17		Osseo					HE-PLC-011
		John Jordan Farmhouse (razed)	3830 Dunkirk Lane	118	22	17		Osseo					HE-PLC-023
		house	3855 Dunkirk Lane	118	22	17	SE-NE-SW	Osseo					HE-PLC-025
		house	4215 Dunkirk Lane	118	22	17	NE-SE-NW	Osseo					HE-PLC-026
		house	17430 Medina Rd.	118	22	17	SW-SW-SW	Hamel					HE-PLC-059
		house	16000 Co. Rd. 9	118	22	17	NE-SW-NE	Osseo					HE-PLC-119
		commercial building	16800 TH 55	118	22	17	SE-SW	Osseo	XX-2006-1H				HE-PLC-173
		commercial building		118	22	17	SE-SW	Osseo	XX-2006-2H				HE-PLC-173
		house	1xxxx TH 55	118	22	17	NW-SW	Osseo	XX-2006-1H				HE-PLC-182
		house		118	22	17	NW-SW	Osseo	XX-2006-2H				HE-PLC-182
Multiple													
	Albion Twp.												
		Trunk Highway 55	from Dakota County to Wilkin County	118	22	17	SW-SW						XX-ROD-043
		Trunk Highway 55		118	22	17	NW-SW						XX-ROD-043
		Trunk Highway 55		118	22	17	SE-SW						XX-ROD-043
Multiple													
	Annandale												
		Trunk Highway 55	from Dakota County to Wilkin County	118	22	17	SW-SW						XX-ROD-043
		Trunk Highway 55		118	22	17	NW-SW						XX-ROD-043
		Trunk Highway 55		118	22	17	SE-SW						XX-ROD-043
	Bangor Twp.												
		Trunk Highway 55	from Dakota County to Wilkin County	118	22	17	NW-SW						XX-ROD-043
		Trunk Highway 55		118	22	17	SE-SW						XX-ROD-043
		Trunk Highway 55		118	22	17	SW-SW						XX-ROD-043
	Barrett												
		Trunk Highway 55	from Dakota County to Wilkin County	118	22	17	NW-SW						XX-ROD-043
		Trunk Highway 55		118	22	17	SE-SW						XX-ROD-043
		Trunk Highway 55		118	22	17	SW-SW						XX-ROD-043
	Belgrade												
		Trunk Highway 55	from Dakota County to Wilkin County	118	22	17	NW-SW						XX-ROD-043
		Trunk Highway 55		118	22	17	SE-SW						XX-ROD-043
		Trunk Highway 55		118	22	17	SW-SW						XX-ROD-043
	Ben Wade Twp.												
		Trunk Highway 55	from Dakota County to Wilkin County	118	22	17	SW-SW						XX-ROD-043
		Trunk Highway 55		118	22	17	SE-SW						XX-ROD-043
		Trunk Highway 55		118	22	17	NW-SW						XX-ROD-043
Multiple													
	Brooten												
		Trunk Highway 55	from Dakota County to Wilkin County	118	22	17	SE-SW						XX-ROD-043
		Trunk Highway 55		118	22	17	SW-SW						XX-ROD-043
		Trunk Highway 55		118	22	17	NW-SW						XX-ROD-043
	Buffalo												
		Trunk Highway 55	from Dakota County to Wilkin County	118	22	17	NW-SW						XX-ROD-043
		Trunk Highway 55		118	22	17	SE-SW						XX-ROD-043
		Trunk Highway 55		118	22	17	SW-SW						XX-ROD-043
	Buffalo Twp.												
		Trunk Highway 55	from Dakota County to Wilkin County	118	22	17	NW-SW						XX-ROD-043
		Trunk Highway 55		118	22	17	SE-SW						XX-ROD-043
		Trunk Highway 55		118	22	17	SW-SW						XX-ROD-043
	Campbell Twp.												
		Trunk Highway 55	from Dakota County to Wilkin County	118	22	17	NW-SW						XX-ROD-043
		Trunk Highway 55		118	22	17	SE-SW						XX-ROD-043
		Trunk Highway 55		118	22	17	SW-SW						XX-ROD-043
	Champion Twp.												
		Trunk Highway 55	from Dakota County to Wilkin County	118	22	17	NW-SW						XX-ROD-043
		Trunk Highway 55		118	22	17	SE-SW						XX-ROD-043
		Trunk Highway 55		118	22	17	SW-SW						XX-ROD-043
Multiple													
	Chatham Twp.												
		Trunk Highway 55	from Dakota County to Wilkin County	118	22	17	NW-SW						XX-ROD-043
		Trunk Highway 55		118	22	17	SE-SW						XX-ROD-043
		Trunk Highway 55		118	22	17	SW-SW						XX-ROD-043
	Chippewa Falls Twp.												
		Trunk Highway 55	from Dakota County to Wilkin County	118	22	17	NW-SW						XX-ROD-043
		Trunk Highway 55		118	22	17	SE-SW						XX-ROD-043
		Trunk Highway 55		118	22	17	SW-SW						XX-ROD-043
	Corcoran												
		Trunk Highway 55	from Dakota County to Wilkin County	118	22	17	NW-SW						XX-ROD-043
		Trunk Highway 55		118	22	17	SE-SW						XX-ROD-043
		Trunk Highway 55		118	22	17	SW-SW						XX-ROD-043
	Corinna Twp.												
		Trunk Highway 55	from Dakota County to Wilkin County	118	22	17	SW-SW						XX-ROD-043
		Trunk Highway 55		118	22	17	NW-SW						XX-ROD-043
		Trunk Highway 55		118	22	17	SE-SW						XX-ROD-043
	Crow Lake Twp.												
		Trunk Highway 55	from Dakota County to Wilkin County	118	22	17	SW-SW						XX-ROD-043
		Trunk Highway 55		118	22	17	NW-SW						XX-ROD-043
		Trunk Highway 55		118	22	17	SE-SW						XX-ROD-043
Multiple													
	Crow River Twp.												
		Trunk Highway 55	from Dakota County to Wilkin County	118	22	17	NW-SW						XX-ROD-043
		Trunk Highway 55		118	22	17	SE-SW						XX-ROD-043

	Trunk Highway 55		118	22	17	SW-SW	XX-ROD-043
	Eagan						
	Trunk Highway 55	from Dakota County to Wilkin County	118	22	17	NW-SW	XX-ROD-043
	Trunk Highway 55		118	22	17	SE-SW	XX-ROD-043
	Trunk Highway 55		118	22	17	SW-SW	XX-ROD-043
	Eden Lake Twp.						
	Trunk Highway 55	from Dakota County to Wilkin County	118	22	17	NW-SW	XX-ROD-043
	Trunk Highway 55		118	22	17	SE-SW	XX-ROD-043
	Trunk Highway 55		118	22	17	SW-SW	XX-ROD-043
	Eden Valley						
	Trunk Highway 55	from Dakota County to Wilkin County	118	22	17	SE-SW	XX-ROD-043
	Trunk Highway 55		118	22	17	SW-SW	XX-ROD-043
	Trunk Highway 55		118	22	17	NW-SW	XX-ROD-043
	Elbow Lake						
	Trunk Highway 55	from Dakota County to Wilkin County	118	22	17	SE-SW	XX-ROD-043
	Trunk Highway 55		118	22	17	SW-SW	XX-ROD-043
Multiple	Trunk Highway 55		118	22	17	NW-SW	XX-ROD-043
	Elk Lake Twp.						
	Trunk Highway 55	from Dakota County to Wilkin County	118	22	17	NW-SW	XX-ROD-043
	Trunk Highway 55		118	22	17	SE-SW	XX-ROD-043
	Trunk Highway 55		118	22	17	SW-SW	XX-ROD-043
	Fair Haven Twp.						
	Trunk Highway 55	from Dakota County to Wilkin County	118	22	17	NW-SW	XX-ROD-043
	Trunk Highway 55		118	22	17	SE-SW	XX-ROD-043
	Trunk Highway 55		118	22	17	SW-SW	XX-ROD-043
	Farwell						
	Trunk Highway 55	from Dakota County to Wilkin County	118	22	17	NW-SW	XX-ROD-043
	Trunk Highway 55		118	22	17	SE-SW	XX-ROD-043
	Trunk Highway 55		118	22	17	SW-SW	XX-ROD-043
	Forest Prairie Twp.						
	Trunk Highway 55	from Dakota County to Wilkin County	118	22	17	NW-SW	XX-ROD-043
	Trunk Highway 55		118	22	17	SE-SW	XX-ROD-043
	Trunk Highway 55		118	22	17	SW-SW	XX-ROD-043
	Fort Snelling						
	Trunk Highway 55	from Dakota County to Wilkin County	118	22	17	NW-SW	XX-ROD-043
	Trunk Highway 55		118	22	17	SE-SW	XX-ROD-043
	Trunk Highway 55		118	22	17	SW-SW	XX-ROD-043
Multiple	Glenwood						
	Trunk Highway 55	from Dakota County to Wilkin County	118	22	17	NW-SW	XX-ROD-043
	Trunk Highway 55		118	22	17	SE-SW	XX-ROD-043
	Trunk Highway 55		118	22	17	SW-SW	XX-ROD-043
	Glenwood Twp.						
	Trunk Highway 55	from Dakota County to Wilkin County	118	22	17	NW-SW	XX-ROD-043
	Trunk Highway 55		118	22	17	SE-SW	XX-ROD-043
	Trunk Highway 55		118	22	17	SW-SW	XX-ROD-043
	Golden Valley						
	Trunk Highway 55	from Dakota County to Wilkin County	118	22	17	SW-SW	XX-ROD-043
	Trunk Highway 55		118	22	17	NW-SW	XX-ROD-043
	Trunk Highway 55		118	22	17	SE-SW	XX-ROD-043
	Greenfield						
	Trunk Highway 55	from Dakota County to Wilkin County	118	22	17	SW-SW	XX-ROD-043
	Trunk Highway 55		118	22	17	NW-SW	XX-ROD-043
	Trunk Highway 55		118	22	17	SE-SW	XX-ROD-043
	Hastings						
	Trunk Highway 55	from Dakota County to Wilkin County	118	22	17	NW-SW	XX-ROD-043
	Trunk Highway 55		118	22	17	SE-SW	XX-ROD-043
	Trunk Highway 55		118	22	17	SW-SW	XX-ROD-043
Multiple	Hoffman						
	Trunk Highway 55	from Dakota County to Wilkin County	118	22	17	NW-SW	XX-ROD-043
	Trunk Highway 55		118	22	17	SE-SW	XX-ROD-043
	Trunk Highway 55		118	22	17	SW-SW	XX-ROD-043
	Independence						
	Trunk Highway 55	from Dakota County to Wilkin County	118	22	17	NW-SW	XX-ROD-043
	Trunk Highway 55		118	22	17	SE-SW	XX-ROD-043
	Trunk Highway 55		118	22	17	SW-SW	XX-ROD-043
	Inver Grove Heights						
	Trunk Highway 55	from Dakota County to Wilkin County	118	22	17	SE-SW	XX-ROD-043
	Trunk Highway 55		118	22	17	SW-SW	XX-ROD-043
	Trunk Highway 55		118	22	17	NW-SW	XX-ROD-043
	Kensington						
	Trunk Highway 55	from Dakota County to Wilkin County	118	22	17	NW-SW	XX-ROD-043
	Trunk Highway 55		118	22	17	SE-SW	XX-ROD-043
	Trunk Highway 55		118	22	17	SW-SW	XX-ROD-043
	Kimball						
	Trunk Highway 55	from Dakota County to Wilkin County	118	22	17	NW-SW	XX-ROD-043
	Trunk Highway 55		118	22	17	SE-SW	XX-ROD-043
	Trunk Highway 55		118	22	17	SW-SW	XX-ROD-043
Multiple	Lake Henry Twp.						
	Trunk Highway 55	from Dakota County to Wilkin County	118	22	17	NW-SW	XX-ROD-043
	Trunk Highway 55		118	22	17	SE-SW	XX-ROD-043
	Trunk Highway 55		118	22	17	SW-SW	XX-ROD-043
	Land Twp.						
	Trunk Highway 55	from Dakota County to Wilkin County	118	22	17	NW-SW	XX-ROD-043
	Trunk Highway 55		118	22	17	SE-SW	XX-ROD-043
	Trunk Highway 55		118	22	17	SW-SW	XX-ROD-043

	Lawrence Twp.							
		Trunk Highway 55	from Dakota County to Wilkin County	118	22	17	NW-SW	XX-ROD-043
		Trunk Highway 55		118	22	17	SE-SW	XX-ROD-043
		Trunk Highway 55		118	22	17	SW-SW	XX-ROD-043
	Leven Twp.							
		Trunk Highway 55	from Dakota County to Wilkin County	118	22	17	NW-SW	XX-ROD-043
		Trunk Highway 55		118	22	17	SE-SW	XX-ROD-043
		Trunk Highway 55		118	22	17	SW-SW	XX-ROD-043
	Lien Twp.							
		Trunk Highway 55	from Dakota County to Wilkin County	118	22	17	NW-SW	XX-ROD-043
		Trunk Highway 55		118	22	17	SE-SW	XX-ROD-043
Multiple		Trunk Highway 55		118	22	17	SW-SW	XX-ROD-043
	Lowry							
		Trunk Highway 55	from Dakota County to Wilkin County	118	22	17	NW-SW	XX-ROD-043
		Trunk Highway 55		118	22	17	SE-SW	XX-ROD-043
		Trunk Highway 55		118	22	17	SW-SW	XX-ROD-043
	Maine Prairie Twp.							
		Trunk Highway 55	from Dakota County to Wilkin County	118	22	17	SW-SW	XX-ROD-043
		Trunk Highway 55		118	22	17	NW-SW	XX-ROD-043
		Trunk Highway 55		118	22	17	SE-SW	XX-ROD-043
	Manannah Twp.							
		Trunk Highway 55	from Dakota County to Wilkin County	118	22	17	SW-SW	XX-ROD-043
		Trunk Highway 55		118	22	17	SE-SW	XX-ROD-043
		Trunk Highway 55		118	22	17	NW-SW	XX-ROD-043
	Maple Lake							
		Trunk Highway 55	from Dakota County to Wilkin County	118	22	17	NW-SW	XX-ROD-043
		Trunk Highway 55		118	22	17	SE-SW	XX-ROD-043
		Trunk Highway 55		118	22	17	SW-SW	XX-ROD-043
	Maple Lake Twp.							
		Trunk Highway 55	from Dakota County to Wilkin County	118	22	17	NW-SW	XX-ROD-043
		Trunk Highway 55		118	22	17	SE-SW	XX-ROD-043
Multiple		Trunk Highway 55		118	22	17	SW-SW	XX-ROD-043
	Medina							
		Trunk Highway 55	from Dakota County to Wilkin County	118	22	17	NW-SW	XX-ROD-043
		Trunk Highway 55		118	22	17	SE-SW	XX-ROD-043
		Trunk Highway 55		118	22	17	SW-SW	XX-ROD-043
	Mendota Heights							
		Trunk Highway 55	from Dakota County to Wilkin County	118	22	17	SE-SW	XX-ROD-043
		Trunk Highway 55		118	22	17	SW-SW	XX-ROD-043
		Trunk Highway 55		118	22	17	NW-SW	XX-ROD-043
	Minneapolis							
		Trunk Highway 55	from Dakota County to Wilkin County	118	22	17	SE-SW	XX-ROD-043
		Trunk Highway 55		118	22	17	SW-SW	XX-ROD-043
		Trunk Highway 55		118	22	17	NW-SW	XX-ROD-043
	Nashua							
		Trunk Highway 55	from Dakota County to Wilkin County	118	22	17	NW-SW	XX-ROD-043
		Trunk Highway 55		118	22	17	SE-SW	XX-ROD-043
		Trunk Highway 55		118	22	17	SW-SW	XX-ROD-043
	Nininger Twp.							
		Trunk Highway 55	from Dakota County to Wilkin County	118	22	17	NW-SW	XX-ROD-043
		Trunk Highway 55		118	22	17	SE-SW	XX-ROD-043
Multiple		Trunk Highway 55		118	22	17	SW-SW	XX-ROD-043
	Nora Twp.							
		Trunk Highway 55	from Dakota County to Wilkin County	118	22	17	NW-SW	XX-ROD-043
		Trunk Highway 55		118	22	17	SE-SW	XX-ROD-043
		Trunk Highway 55		118	22	17	SW-SW	XX-ROD-043
	Paynesville							
		Trunk Highway 55	from Dakota County to Wilkin County	118	22	17	NW-SW	XX-ROD-043
		Trunk Highway 55		118	22	17	SW-SW	XX-ROD-043
		Trunk Highway 55		118	22	17	SE-SW	XX-ROD-043
	Paynesville Twp.							
		Trunk Highway 55	from Dakota County to Wilkin County	118	22	17	NW-SW	XX-ROD-043
		Trunk Highway 55		118	22	17	SE-SW	XX-ROD-043
		Trunk Highway 55		118	22	17	SW-SW	XX-ROD-043
	Plymouth							
		Trunk Highway 55	from Dakota County to Wilkin County	118	22	17	NW-SW	XX-ROD-043
		Trunk Highway 55		118	22	17	SE-SW	XX-ROD-043
		Trunk Highway 55		118	22	17	SW-SW	XX-ROD-043
	Pomme de Terre Twp.							
		Trunk Highway 55	from Dakota County to Wilkin County	118	22	17	NW-SW	XX-ROD-043
		Trunk Highway 55		118	22	17	SE-SW	XX-ROD-043
Multiple		Trunk Highway 55		118	22	17	SW-SW	XX-ROD-043
	Regal							
		Trunk Highway 55	from Dakota County to Wilkin County	118	22	17	SW-SW	XX-ROD-043
		Trunk Highway 55		118	22	17	NW-SW	XX-ROD-043
		Trunk Highway 55		118	22	17	SE-SW	XX-ROD-043
	Reno Twp.							
		Trunk Highway 55	from Dakota County to Wilkin County	118	22	17	SW-SW	XX-ROD-043
		Trunk Highway 55		118	22	17	NW-SW	XX-ROD-043
		Trunk Highway 55		118	22	17	SE-SW	XX-ROD-043
	Rockford							
		Trunk Highway 55	from Dakota County to Wilkin County	118	22	17	NW-SW	XX-ROD-043
		Trunk Highway 55		118	22	17	SE-SW	XX-ROD-043
		Trunk Highway 55		118	22	17	SW-SW	XX-ROD-043
	Rockford Twp.							

		Trunk Highway 55	from Dakota County to Wilkin County	118	22	17	NW-SW	XX-ROD-043
		Trunk Highway 55		118	22	17	SE-SW	XX-ROD-043
		Trunk Highway 55		118	22	17	SW-SW	XX-ROD-043
	Rosemount							
		Trunk Highway 55	from Dakota County to Wilkin County	118	22	17	NW-SW	XX-ROD-043
		Trunk Highway 55		118	22	17	SE-SW	XX-ROD-043
		Trunk Highway 55		118	22	17	SW-SW	XX-ROD-043
Multiple								
	Roseville Twp.							
		Trunk Highway 55	from Dakota County to Wilkin County	118	22	17	SE-SW	XX-ROD-043
		Trunk Highway 55		118	22	17	SW-SW	XX-ROD-043
		Trunk Highway 55		118	22	17	NW-SW	XX-ROD-043
	Sanford Twp.							
		Trunk Highway 55	from Dakota County to Wilkin County	118	22	17	NW-SW	XX-ROD-043
		Trunk Highway 55		118	22	17	SE-SW	XX-ROD-043
		Trunk Highway 55		118	22	17	SW-SW	XX-ROD-043
	Sedan							
		Trunk Highway 55	from Dakota County to Wilkin County	118	22	17	NW-SW	XX-ROD-043
		Trunk Highway 55		118	22	17	SE-SW	XX-ROD-043
		Trunk Highway 55		118	22	17	SW-SW	XX-ROD-043
	Solem Twp.							
		Trunk Highway 55	from Dakota County to Wilkin County	118	22	17	NW-SW	XX-ROD-043
		Trunk Highway 55		118	22	17	SE-SW	XX-ROD-043
		Trunk Highway 55		118	22	17	SW-SW	XX-ROD-043
	South Haven							
		Trunk Highway 55	from Dakota County to Wilkin County	118	22	17	NW-SW	XX-ROD-043
		Trunk Highway 55		118	22	17	SE-SW	XX-ROD-043
		Trunk Highway 55		118	22	17	SW-SW	XX-ROD-043
Multiple								
	Southside Twp.							
		Trunk Highway 55	from Dakota County to Wilkin County	118	22	17	NW-SW	XX-ROD-043
		Trunk Highway 55		118	22	17	SE-SW	XX-ROD-043
		Trunk Highway 55		118	22	17	SW-SW	XX-ROD-043
	Stony Brook Twp.							
		Trunk Highway 55	from Dakota County to Wilkin County	118	22	17	NW-SW	XX-ROD-043
		Trunk Highway 55		118	22	17	SE-SW	XX-ROD-043
		Trunk Highway 55		118	22	17	SW-SW	XX-ROD-043
	Union Grove Twp.							
		Trunk Highway 55	from Dakota County to Wilkin County	118	22	17	NW-SW	XX-ROD-043
		Trunk Highway 55		118	22	17	SE-SW	XX-ROD-043
		Trunk Highway 55		118	22	17	SW-SW	XX-ROD-043
	Watkins							
		Trunk Highway 55	from Dakota County to Wilkin County	118	22	17	NW-SW	XX-ROD-043
		Trunk Highway 55		118	22	17	SE-SW	XX-ROD-043
		Trunk Highway 55		118	22	17	SW-SW	XX-ROD-043
	Wendell							
		Trunk Highway 55	from Dakota County to Wilkin County	118	22	17	SW-SW	XX-ROD-043
		Trunk Highway 55		118	22	17	NW-SW	XX-ROD-043
		Trunk Highway 55		118	22	17	SE-SW	XX-ROD-043
Multiple								

Attachment 7

Traffic Study

Memorandum

SRF No. 13483.00

To: Chris LaBounty, PE
City of Plymouth

From: Matt Pacyna, PE, Principal
Zach Toberna, EIT, Engineer

Date: March 4, 2021

Subject: Dundee Nursery Redevelopment Traffic Study

Introduction

SRF has completed a traffic study for the proposed redevelopment of the Dundee Nursery, generally located in the northwest quadrant of the Trunk Highway 55 (TH 55)/Rockford Road (CSAH 9) intersection in Plymouth, Minnesota (see Figure 1: Project Location). The main objectives of this study are to review existing operations within the study area, evaluate transportation impacts to the adjacent roadway network, and recommend any necessary improvements to accommodate the proposed development and ensure safe and efficient operations for all transportation users. The following sections provide the assumptions, analysis, and study conclusions offered for consideration.

Existing Conditions

The existing conditions were reviewed to establish a baseline to identify any future impacts associated with the proposed development. The evaluation of existing conditions included collecting traffic volumes, observing roadway characteristics, conducting an intersection capacity analysis and reviewing access compliance, all of which are outlined in the following sections.

Traffic Volumes

Vehicle turning movement and pedestrian/bicyclist counts were collected by SRF during the a.m. and p.m. peak periods of the week of February 24, 2020 at the following intersections:

- TH 55 and Rockford Road/CSAH 9
- TH 55 and Tri-State/Dundee Access
- TH 55 and Tri-State Drilling Access
- Dunkirk Lane and Old Rockford Road *
- Dunkirk Lane and Dunkirk Court
- Dunkirk Lane and Rockford Road/CSAH 9

* Historical vehicular turning movement and pedestrian/bicyclist counts at the Dunkirk Lane/ Old Rockford Road intersection from the *Hollydale Golf Course Redevelopment Traffic Study,* dated September 2019 were used for the analysis. Traffic counts that are less than 2-years old typically remain valid for traffic study purposes.

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February 2021

Project Location

Dundee Nursery Redevelopment Traffic Study
Plymouth, MN

Figure 1

In addition to the intersection counts, short-duration (i.e. 30-minute) counts were completed at the two existing access locations to the Plymouth Presbyterian Church along Dunkirk Lane. These counts were conducted to understand the number of vehicles using the existing park-and-ride facility within the church parking lot and the level of activity associated with the Bloom Early Learning & Child Care Center. These short-duration counts were then modified to reflect peak hour conditions based on adjacent intersection counts. Note that the church access to Dunkirk Court was closed during the data collection phase of this study.

Observations

Observations were completed to identify roadway characteristics (i.e. roadway geometry, speed limits, and traffic controls) within the study area. Currently, TH 55 is a four-lane divided principal arterial highway with select turn lanes and a 55-mile per hour (mph) speed limit, while Rockford Road (CSAH 9) is a four-lane divided A-minor expander with select turn lanes and a 45-mph speed limit. Old Rockford Road is a two-lane undivided major collector roadway with select turn lanes and a 45-mph speed limit. Dunkirk Lane is a two-lane undivided local road with a 40-mph speed limit, while Dunkirk Court is a two-lane undivided local road with a 30-mph speed limit.

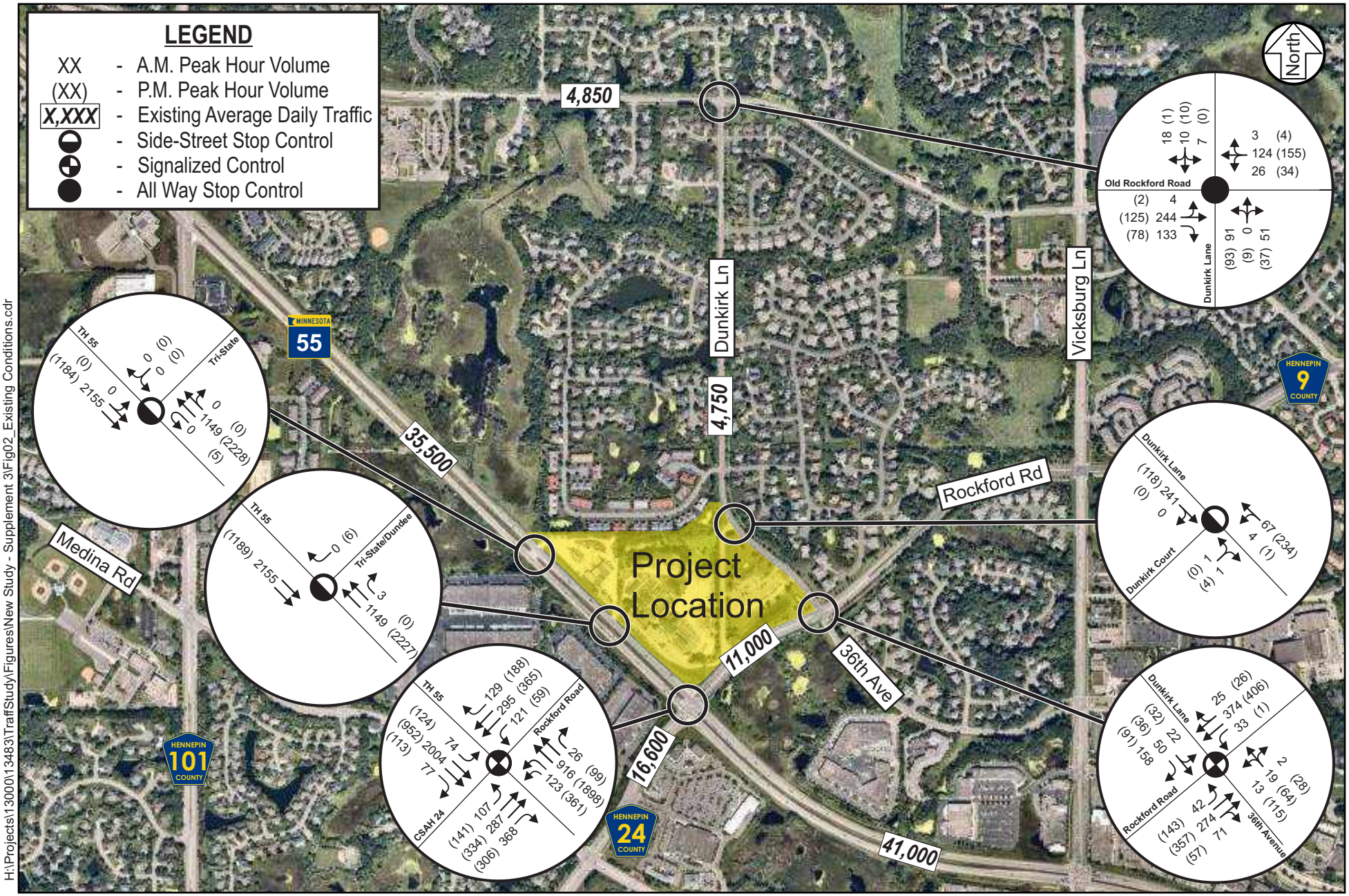
The Rockford Road (CSAH 9) intersections at TH 55 and Dunkirk Lane are both signalized. The other study intersections are side-street stop controlled, except for the Old Rockford Road and Dunkirk Lane intersection, which is all-way stop controlled. Existing geometrics, traffic controls, and volumes within the study area are shown in Figure 2.

Intersection Capacity Analysis

An existing intersection capacity analysis was completed using Synchro/SimTraffic software (V11) and the Highway Capacity Manual, *6th Edition* to establish a baseline condition to which future traffic operations could be compared. Capacity analysis results identify a Level of Service (LOS) which indicates how well an intersection is operating. Intersections are graded from LOS A through LOS F. The LOS results are based on average delay per vehicle, which correspond to the delay threshold values shown in Table 1. LOS A indicates the best traffic operation, while LOS F indicates an intersection where demand exceeds capacity. Overall intersection LOS A though LOS D is generally considered acceptable in the Twin Cities area.

Table 1. Level of Service Criteria for Signalized and Unsignalized Intersections

LOS Designation	Signalized Intersection Average Delay/Vehicle (seconds)	Unsignalized Intersection Average Delay/Vehicle (seconds)
A	≤ 10	≤ 10
B	> 10 - 20	> 10 - 15
C	> 20 - 35	> 15 - 25
D	> 35 - 55	> 25 - 35
E	> 55 - 80	> 35 - 50
F	> 80	> 50



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Existing Conditions

Dundee Nursery Redevelopment Traffic Study
Plymouth, MN

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February 2021

Figure 2

For side-street stop-controlled intersections, special emphasis is given to providing an estimate for the level of service of the side-street approach. Traffic operations at an unsignalized intersection with side-street stop control can be described in two ways. First, consideration is given to the overall intersection level of service. This takes into account the total number of vehicles entering the intersection and the capability of the intersection to support these volumes.

Second, it is important to consider the delay on the minor approach. Since the mainline does not have to stop, the majority of delay is attributed to the side-street approaches. It is typical of intersections with higher mainline traffic volumes to experience high-levels of delay (i.e. poor levels of service) on the side-street approaches, but an acceptable overall intersection level of service during peak hour conditions.

Results of the existing intersection capacity analysis shown in Table 2 indicates that all study intersections currently operate at an overall LOS D or better during the a.m. and p.m. peak hours, except for the TH 55 and Rockford Road (CSAH 9) intersection during the p.m. peak hour, which operates at an overall LOS E. At this intersection, 95th percentile queues along Rockford Road (CSAH 9) extend approximately 800 feet, which limits access to the left- and right-turn lanes approximately 25 percent and 15 percent of the p.m. peak hour, respectively. Additionally, queues along CSAH 24 limit access to the right-turn lane approximately 15 percent of the a.m. peak hour. The queues at this location are tied to MnDOT's signal timing of the intersection, which generally favors TH 55 and results in more delay/queueing for the minor approaches.

Table 2. Existing Intersection Capacity Analysis

Intersection	A.M. Peak Hour		P.M. Peak Hour	
	LOS	Delay	LOS	Delay
TH 55 and Rockford Road/CSAH 9 (1)	D	53 sec.	E	66 sec.
TH 55 and Tri-State/Dundee Access (2)	A/B	14 sec.	A/D	27 sec.
TH 55 and West Tri-State Access (2)	A/C	24 sec.	A/F	59 sec.
Dunkirk Lane and Old Rockford Road (3)	B	10 sec.	A	9 sec.
Dunkirk Lane and Dunkirk Court (2)	A/B	10 sec.	A/A	9 sec.
Dunkirk Lane and Rockford Road/CSAH 9 (1)	B	10 sec.	B	15 sec.

(1) Indicates a signalized intersection, where the overall LOS is shown.

(2) Indicates an unsignalized intersection with side-street stop control, where the overall LOS is shown followed by the worst approach LOS. The delay shown represents the worst side-street approach delay.

(3) Indicates an unsignalized intersection with all-way stop control, where the overall LOS is shown.

Note that LOS E operations along TH 55 intersections is common during the peak hours. To improve the intersection operations to LOS D or better, significant infrastructure changes would be needed and may not provide enough benefit to justify the cost. However, turn lane modifications, such as extending the southbound left-turn lane along Rockford Road at TH 55 (to 550 feet), would reduce queuing impacts.

Observations and the capacity analysis also identified that side-street access from the West Tri-State Access to TH 55 is difficult during both peak periods, and especially during the p.m. peak hour. This can be attributed to the amount of westbound TH 55 motorists and the limited number of available gaps to access and/or cross TH 55. However, the West Tri-State Access is relatively low volume and does not warrant immediate changes. Further discussion regarding existing and future access to TH 55 is provided later in this document.

Access Compliance

MnDOT and Hennepin County have access management guidelines intended to maintain a safe flow of traffic while accommodating the access needs of adjacent development. The specific access management guidelines which pertain to the primary roadways adjacent to the proposed development area are outlined as follows.

1) TH 55 (MnDOT Jurisdiction)
    a. Primary Full-Movement Intersection at 1/2-Mile Spacing (2,640 feet)
    b. Secondary Intersection at 1/4-Mile Spacing (1,320 feet)
2) Rockford Road/CSAH 9 (Hennepin County Jurisdiction)
    a. Full-Movement allowed at 1/4-Mile Spacing (1,320 feet)
    b. Limited Access allowed at 1/8-Mile Spacing (660 feet)

Based on this guidance, the existing Tri-State/Dundee Access along TH 55 does not conform to current guidance. This access is located approximately 800 feet from the primary intersection at TH 55 and Rockford Road (CSAH 9). Further complicating the Tri-State/Dundee Access is the channelized right-turn movement from southbound Rockford Road (CSAH 9) to westbound TH 55, which results in a short merge/weave area between Rockford Road (CSAH 9) and the Tri-State/ Dundee Access. The West Tri-State Access along TH 55 is approximately 1,600 feet west of the Rockford Road (CSAH 9) intersection and meets the guideline for a secondary intersection. The access guidelines are included in the Appendix for reference.

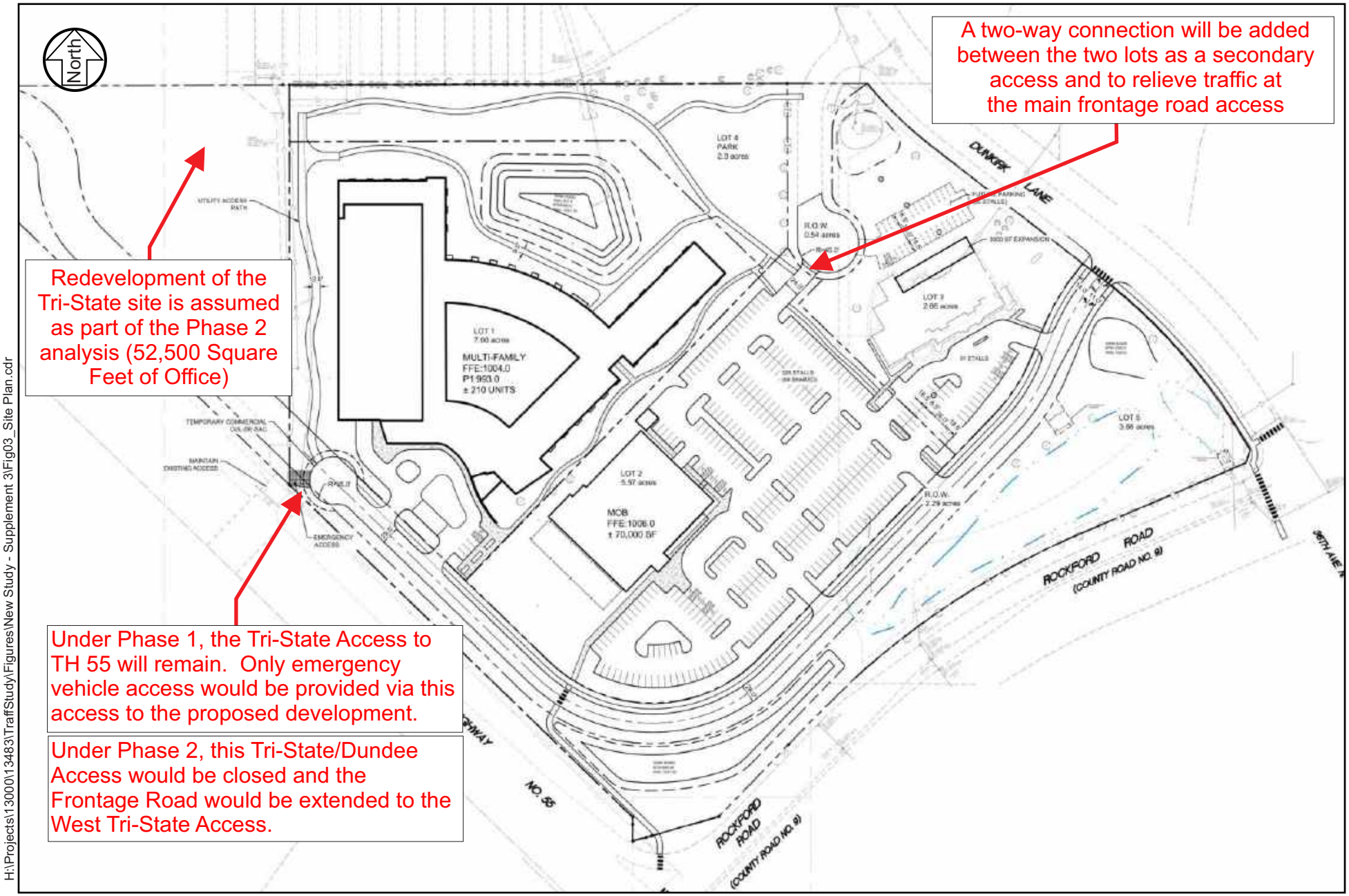
Proposed Development

The proposed development is generally bounded by TH 55, Rockford Road, Tri-State Drilling, and the Holly Creek Village neighborhood. The existing Dundee Nursery is proposed to be replaced with a 300-unit multi-family apartment complex and up to approximately 70,000 square feet (SF) of medical office building, as shown in Figure 3. Construction was assumed to be completed by the end of year 2023. A total of 326 parking spaces are planned for the medical office building, which is assumed to accommodate a portion of the existing Dunkirk Park-and-Ride as well as the adjacent Presbyterian Church through a shared parking agreement. Approximately 69 parking spaces will be shared. Based on information provided by the project team, the agreement between the Plymouth Presbyterian Church and the Dunkirk Park-and-Ride may be terminated. However, to provide a conservative assessment, the park-and-ride was assumed to remain for analysis purposes.

Note that the Church is eventually planning on a 3,000 SF sanctuary expansion at some time in the future (the specific timeline to be determined), that will increase seating capacity from 250 to 375 attendees. The existing Plymouth Presbyterian Church parking lot would be reconfigured resulting in approximately 31 parking spaces remaining. There are 30 parking spaces planned just north of the Church, with access via Dunkirk Court. These parking spaces are considered proof of parking and are not expected to be constructed as part of the project.

Most traffic to/from the proposed development would be via a new frontage road, which would connect with Dunkirk Lane approximately 375 feet to the northwest of Rockford Road (CSAH 9). The frontage road would end with a cul-de-sac in the southwest corner of the proposed development, near the existing Tri-State/Dundee access. The existing Tri-State/Dundee access to TH 55 will continue to provide access to the Tri-State site, as well as emergency vehicle only access to the new frontage road/proposed development, via the cul-de-sac. A connection between the medical office building parking lot and the parking lot north of the church is also planned. This connection will be used as a secondary access for emergency vehicles and to relieve traffic at the primary frontage road access, if necessary. This connection is not expected to be highly utilized. This access and development condition is referred to as Phase 1.

Under Phase 2, redevelopment of the Tri-State Drilling site was considered, although there are no redevelopment plans at this time. This phase was reviewed to ensure that if the Tri-State Drilling site were to redevelop, the infrastructure planned as part of the proposed development could support the additional redevelopment. For purposes of this study, potential redevelopment of the Tri-State Drilling site could accommodate an approximate 52,000 square foot office building. Therefore, this level of redevelopment was assumed since it represents a worst-case condition as compared to a multifamily residential development for future traffic volumes along the new frontage road. Note that under Phase 2, the existing Tri-State/Dundee access would be closed, and the frontage road would be extended to the West Tri-State access.



Site Plan

Dundee Nursery Redevelopment Traffic Study

Plymouth, MN

02113483

March 2021

Figure 3

Traffic Forecasts

Traffic forecasts were developed for year 2023 conditions, which represents full build out of the site. These forecasts include general background growth and trip generation from adjacent developments as well as each proposed development phase. This information, as well as a trip generation comparison to the Dundee Nursery operations is provided in the following sections.

Background Growth

To account for general background growth in the area, an annual growth rate of one (1) percent was applied to the existing peak hour traffic volumes to develop year 2023 background forecasts. This growth rate was developed using a combination of historical average daily traffic (ADT) volumes from surrounding roadways as published by MnDOT dating back to 2001, the 2040 City of Plymouth Transportation Plan traffic forecasts included in the City's 2040 Comprehensive Plan, and the recently completed *Hollydale Redevelopment Traffic Study*.

Adjacent Development

There are two known adjacent developments that were assumed to be completed or under construction by year 2023. These adjacent developments include the Timbers Edge development, located west of Holly Lane and north of Old Rockford Road, and the Hollydale Golf Course redevelopment, located east of Holly Lane and north of Old Rockford Road. For purposes of this study, both adjacent developments were assumed to be completed by year 2023, although it is unlikely that the Hollydale Golf Course redevelopment (assuming approvals are received) would be fully built by that timeframe. A summary of the adjacent development trip generation is provided in Table 3.

Table 3. Adjacent Development Trip Generation Estimate

Land Use Type *(ITE Code)*	Size	A.M. Peak Hour Trips		P.M. Peak Hour Trips		Daily Trips
		In	Out	In	Out	
Timbers Edge Development						
Single-Family Housing *(210)*	40 DU	7	22	25	15	378
Hollydale Golf Course Redevelopment						
Single-Family Housing *(210)* (1)	229 DU	34	123	136	72	1,862

(1) Shows the net change in trip generation; existing golf course trips counted during data collection were subtracted.

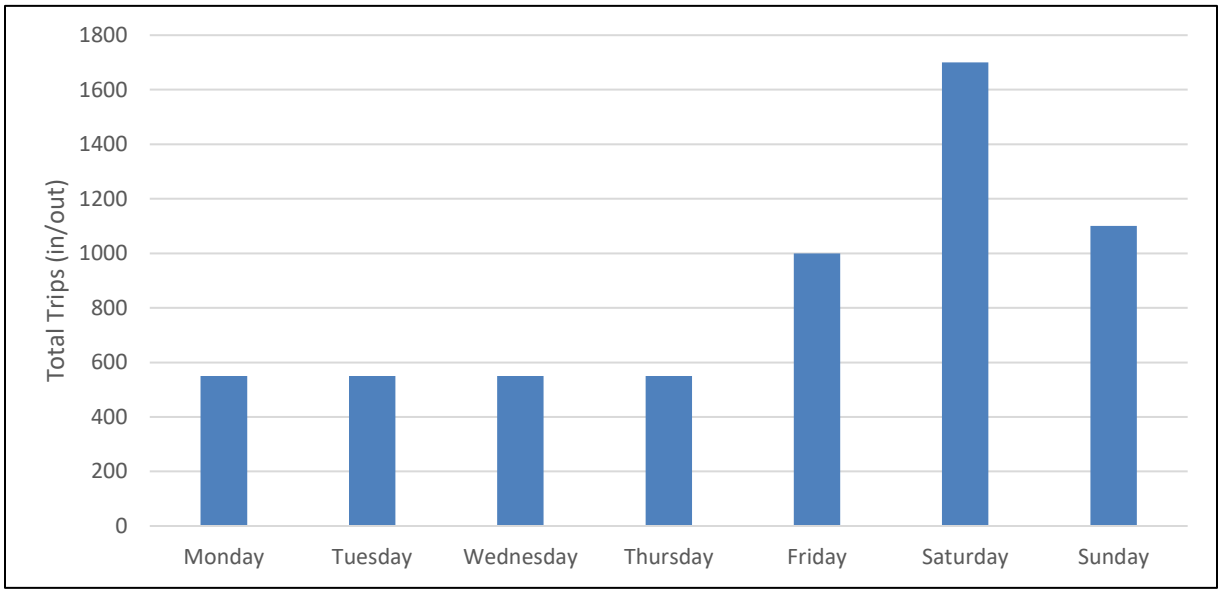
These trips were routed to the adjacent transportation network based on their respective traffic studies and are included in the future intersection capacity analysis for the proposed development. Trips from these adjacent developments will primarily use Old Rockford Road and/or Dunkirk Lane.

Dundee Nursery Trip Generation

Given the proposed development would replace the existing Dundee Nursery, a combination of resources were used to estimate the trip generation for the nursery and compared to the proposed development. These resources included monthly sales data for the past three years, employment data and observations, and trip generation data from the Institute of Transportation Engineers (ITE).

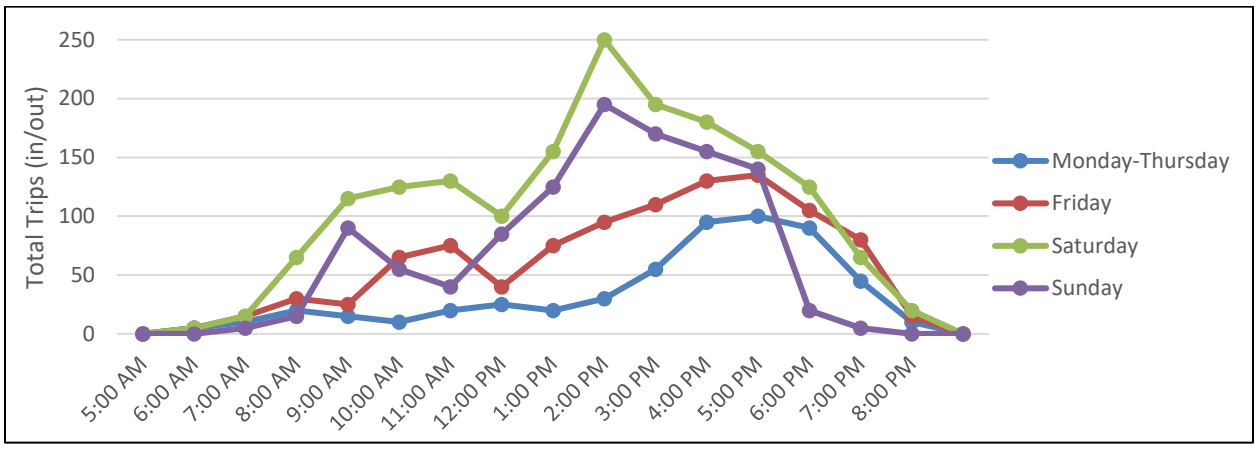
Based on the available data, trips generated by the existing Dundee Nursery fluctuate throughout the year depending on the season. Since turning movement counts were collected in February (i.e. the off-season), there was limited activity at that time. Note that the data indicates that May is typically the busiest month and therefore was the focus of the trip generation comparison. Input from project staff indicated that nursery activity was relatively consistent Monday through Thursday, but would increase on Fridays, Saturdays, and Sundays. A summary of the trip generation data from May 2019 for each day of the week is illustrated in Figure 4.

Figure 4. Nursery Trip Generation by Day of the Week (May 2019)



A summary of the hourly trip generation for a typical weekday (Monday through Thursday), Friday, Saturday, and Sunday in May is illustrated in Figure 5. The typical weekday and Friday peak trip generation occurs between 4:30 p.m. and 5:30 p.m., when approximately 100 and 140 total vehicles, respectively, enter/exit the site. The Saturday and Sunday peak hours occur between 1:30 p.m. and 2:30 p.m., when approximately 250 and 195 total vehicles, respectively, enter/exit the site.

Figure 5. Nursery Trip Generation by Time of Day (May 2019)



To illustrate how the nursery trip generation varies by month, a summary of the typical weekday (Monday through Thursday) a.m. and p.m. peak hour trip generation of the nursery is provided in Table 4. The a.m. and p.m. peak hours represent approximately 7:30 to 8:30 a.m. and 4:30 to 5:30 p.m., which coincides with the peak hours of the adjacent roadways. This will provide a comparison to the proposed development and how the change in volume relates to the nursery land use.

Table 4. Existing Dundee Nursery Trip Generation Estimates

Month	A.M. Peak Hour Trips		P.M. Peak Hour Trips		Daily Trips
	In	Out	In	Out	
January	1	1	2	2	20
February	1	1	3	3	35
March	1	1	2	2	25
April	3	3	8	8	90
May	20	20	50	50	550
June	10	10	25	25	270
July	5	5	12	12	135
August	4	4	9	9	95
September	4	4	10	10	105
October	2	2	5	5	60
November	4	4	10	10	120
December	3	3	6	6	65

Proposed Development

The trip generation estimate for the proposed development was developed using the *ITE Trip Generation Manual, Tenth Edition* and includes trips for typical weekday a.m. and p.m. peak hours, as well as on a daily basis. The proposed development, as shown in Table 5, is expected to generate approximately 290 a.m. peak hour, 359 p.m. peak hour, and 3,917 daily trips under Phase 1. When accounting for the estimated site trip generation in February 2020, the change in site generated trips is expected to be an additional 288 a.m. peak hour, 353 p.m. peak hour, and 3,882 daily trips.

Table 5. Proposed Development Trip Generation Estimate and Comparison

Land Use Type *(ITE Code)*	Size	A.M. Peak Hour		P.M. Peak Hour		Daily Trips
		In	Out	In	Out	
Proposed Development – Phase 1						
Mid-Rise Multifamily Housing *(221)*	300 DU	28	80	81	51	1,632
Church Expansion *(560)*	+125 Seats	1	1	2	2	55
Medical Office Building *(720)*	70,000 SF	152	43	68	174	2,436
Subtotal		**181**	**124**	**151**	**227**	**4,123**
5% Multi-Use/Transit Reduction		*(-9)*	*(-6)*	*(-8)*	*(-11)*	*(-206)*
Site Trip Generation (Phase 1)		**172**	**118**	**143**	**216**	**3,917**
Existing Dundee Site *(Collected)*	35 employees	*(-1)*	*(-1)*	*(-3)*	*(-3)*	*(-35)*
Change in Site Trips (Phase 1)		**171**	**117**	**140**	**213**	**3,882**
Phase 2 Development Assumption (Tri-State Site)						
General Office Building *(710)*	52,500 SF	52	9	10	51	511
5% Multi-Use/Transit Reduction		*(-2)*	*(-1)*	*(-1)*	*(-3)*	*(-25)*
Site Trip Generation (Phase 2)		**50**	**8**	**9**	**48**	**486**
Existing Tri-State Site *(Collected)*		*(-3)*	*(0)*	*(-0)*	*(-4)*	*(-50)*
Change in Site Trips (Phase 2)		**47**	**8**	**9**	**44**	**436**

The trip generation estimate includes a five (5) percent multi-use/transit reduction that was applied to the proposed development trips to account for interaction between the land uses and access to transit (via the park-and-ride). The peak activity at the Dundee Nursery equated to approximately 1,700 vehicles per day. The redevelopment of the Tri-State site would result in an additional 55 a.m. peak hour, 53 p.m. peak hour, and 436 daily trips to/from the site. Once again, this change accounts for a five (5) percent multi-use/transit reduction, as well as the removal of the existing Tri-State site trips. Upon completion of Phase 2, the entire site would be expected to generate an additional 343 a.m. peak hour, 406 p.m. peak hour, and 4,318 daily trips as compared to existing conditions.

Dunkirk Park-and-Ride Facility

Based on traffic counts at the driveways along Dunkirk Lane to Plymouth Presbyterian Church, which also serves the Dunkirk Park-and-Ride, there are approximately 130 a.m. peak hour and 100 p.m. peak hour trips generated by the existing park-and-ride facility. This coincides with ridership data from the *2018 Annual Regional Park-and-Ride System Report*, completed in January 2019 by MetroTransit. Based on information provided by the project team, the agreement between the Plymouth Presbyterian Church and the Dunkirk Park-and-Ride may be terminated. However, to provide a conservative assessment, the park-and-ride was assumed to remain for analysis purposes.

Traffic Forecast Summary

The trips generated by the proposed development were distributed throughout the study area based on the directional distribution outlined in Figure 6. This distribution was developed based on existing area travel patterns, data from the Hennepin County Regional Travel Demand Model, the 2040 Plymouth Transportation Plan, and engineering judgment. The resultant year 2023 build condition traffic forecasts for Phase 1 and Phase 2 build conditions are illustrated in Figure 7 and Figure 8, respectively. It is important to note that the routing was modified for each of these phases based on the access assumptions outlined in the proposed development section of this report.

Year 2023 Build Conditions

Intersection Capacity Analysis

To understand impacts associated with the proposed development, year 2023 build conditions were reviewed from an intersection capacity perspective. This evaluation included Phase 1 and Phase 2 levels of development. The analysis was completed using a combination of Synchro/SimTraffic software (V11) and the Highway Capacity Manual, *6th Edition*. Note that the capacity analysis assumed the extension of the southbound left-turn lane at the TH 55 and Rockford Road (CSAH 9) intersection to approximately 550 feet, as noted under the existing conditions section. Furthermore, the 2023 build capacity analysis assumed optimized left-turn phasing, as well as coordinated signal timing along Rockford Road (CSAH 9), which Hennepin County is planning to implement by 2023.

Results of the year 2023 build intersection capacity analysis, shown in Table 6 indicates that all study intersections are expected to operate at an overall LOS C or better during the a.m. and p.m. peak hours, except for the TH 55 and Rockford Road (CSAH 9) intersection during the a.m. and p.m. peak hours under both phase 1 and phase 2 conditions, which operates at an overall LOS E. As noted earlier, LOS E operations along TH 55 intersections is common during the peak hours and to improve the intersection operations to LOS D or better, significant infrastructure changes would be needed and may not provide enough benefit to justify the cost.

The primary difference between Phase 1 and Phase 2 operations is at the TH 55 and West Tri-State access. Under Phase 2, more development related traffic is expected to use the TH 55 and West Tri-State access, which increases the delay for motorists trying to access TH 55. Based on the difficulty to make a left-turn maneuver from the West Tri-State Access to eastbound TH 55, as well as the limited number of motorists that are expected to complete this maneuver, this access should be converted to a three-quarter access, right-in/right-out, or closed as the opportunity arises. If this access is to remain, an eastbound left-turn and westbound right-turn lane should be constructed. The removal of the westbound U-Turn movement/turn-lane could also be considered if the existing Tri-State/Dundee access is eliminated. With conversion of the TH 55 and West Tri-State access to a three-quarter access under Phase 2 conditions, intersection safety and operations are expected to improve by limiting or eliminating potential conflicts.

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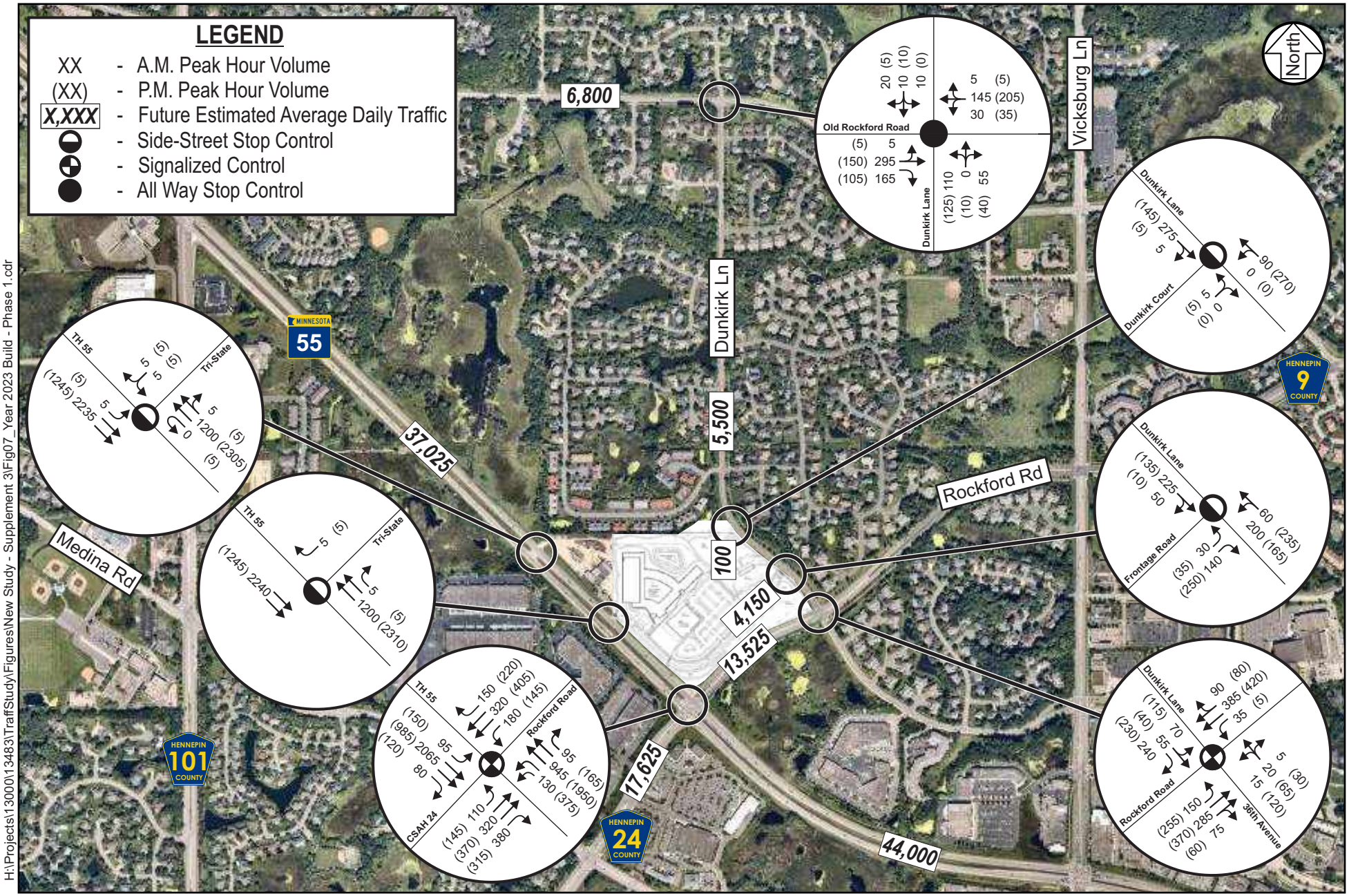
February 2021

Directional Distribution

Dundee Nursery Redevelopment Traffic Study
Plymouth, MN

Figure 6



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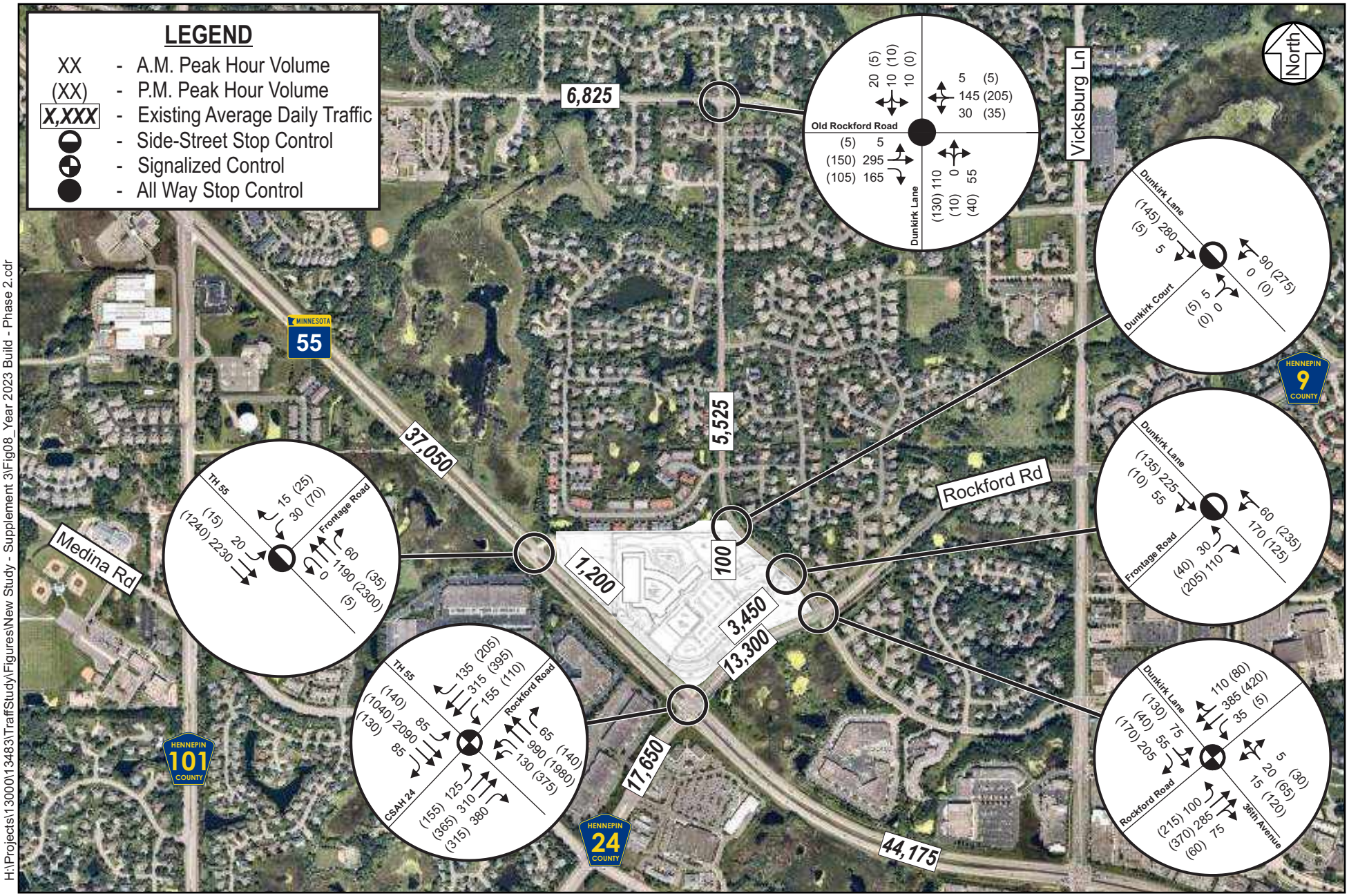
Year 2023 Build Condition - Phase 1

Dundee Nursery Redevelopment Traffic Study
Plymouth, MN

Figure 7



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Year 2023 Build Condition - Phase 2

Dundee Nursery Redevelopment Traffic Study
Plymouth, MN

Figure 8

Table 6. Year 2023 Build Condition Intersection Capacity Analysis

Intersection	Level of Service (Delay)			
	A.M. Peak Hour		P.M. Peak Hour	
	Phase 1	Phase 2	Phase 1	Phase 2
TH 55 and Rockford Road/CSAH 9 (1)	E (60 sec.)	E (58 sec.)	E (78 sec.)	E (78 sec.)
TH 55 and Tri-State/Dundee Access (2)	A/B (14 sec.)	---	A/D (28 sec.)	---
TH 55 and West Tri-State Access (2)	A/D (26 sec.)	A/E (40 sec.)	A/F (64 sec.)	B/F (> 3 min.)
Dunkirk Lane and Old Rockford Road (3)	B (12 sec.)	B (12 sec.)	B (11 sec.)	B (11 sec.)
Dunkirk Lane and Dunkirk Court (2)	A/B (11 sec.)	A/B (11 sec.)	A/B (11 sec.)	A/B (11 sec.)
Dunkirk Lane and Frontage Road (2)	A/B (12 sec.)	A/B (12 sec.)	A/B (12 sec.)	A/B (11 sec.)
Dunkirk Lane and Rockford Road/CSAH 9 (1)	B (12 sec.)	B (12 sec.)	C (20 sec.)	C (20 sec.)

(1) Indicates a signalized intersection, where the overall LOS is shown.

(2) Indicates an unsignalized intersection with side-street stop control, where the overall LOS is shown followed by the worst approach LOS. The delay shown represents the worst side-street approach delay.

(3) Indicates an unsignalized intersection with all-way stop control, where the overall LOS is shown.

From a queuing perspective, the 95th percentile queues along Rockford Road (CSAH 9) from TH 55 under Phase 1 conditions are expected to extend approximately 800 feet, which limits access to the left- and right-turn lanes approximately 20 percent of the p.m. peak hour. This represents approximately a 75 foot (i.e. a 10 percent) increase as compared to Phase 2 conditions, where the queues are expected to extend approximately 725 feet. This difference is relatively small, and these queues are similar to the existing conditions where extension of the southbound left-turn lane was identified as a need. Note that the queues at this location are tied to MnDOT's signal timing of the intersection, which generally favors TH 55 and results in more delay/queueing for the minor approaches. To improve the intersection operations to LOS D or better, significant infrastructure changes would be needed and may not provide enough benefit to justify the cost.

Other Considerations

Dunkirk Lane Design

Although not a significant capacity issue, the segment of Dunkirk Lane between Rockford Road (CSAH 9) and the proposed frontage road was reviewed to limit potential conflicts and ensure safe and efficient operations. As shown on the current site plan, the proposed frontage road is approximately 375 to the northwest of Rockford Road (CSAH 9). Based on the future capacity analysis, eastbound 95th percentile queues along Dunkirk Lane are expected to extend up to 200 feet during the peak periods under both Phase 1 and Phase 2 conditions. Westbound queues at the Dunkirk Lane and frontage road intersection are expected to extend up to 100 feet during the peak periods.

To help facilitate operations and limit queuing conflicts, the segment of Dunkirk Lane between Rockford Road (CSAH 9) and the proposed frontage road should be restriped to include:

1) A westbound left-turn lane along Dunkirk Lane to the frontage road
2) An eastbound right-turn lane along Dunkirk Lane to Rockford Road (CSAH 9)

The existing roadway width along Dunkirk Lane appears to be sufficient to accommodate these striping changes without any curb modifications. Potential restriping of Dunkirk Lane to the northwest of the frontage road could also be considered as part of this project to provide lane continuity. However, further design would be needed to confirm impacts.

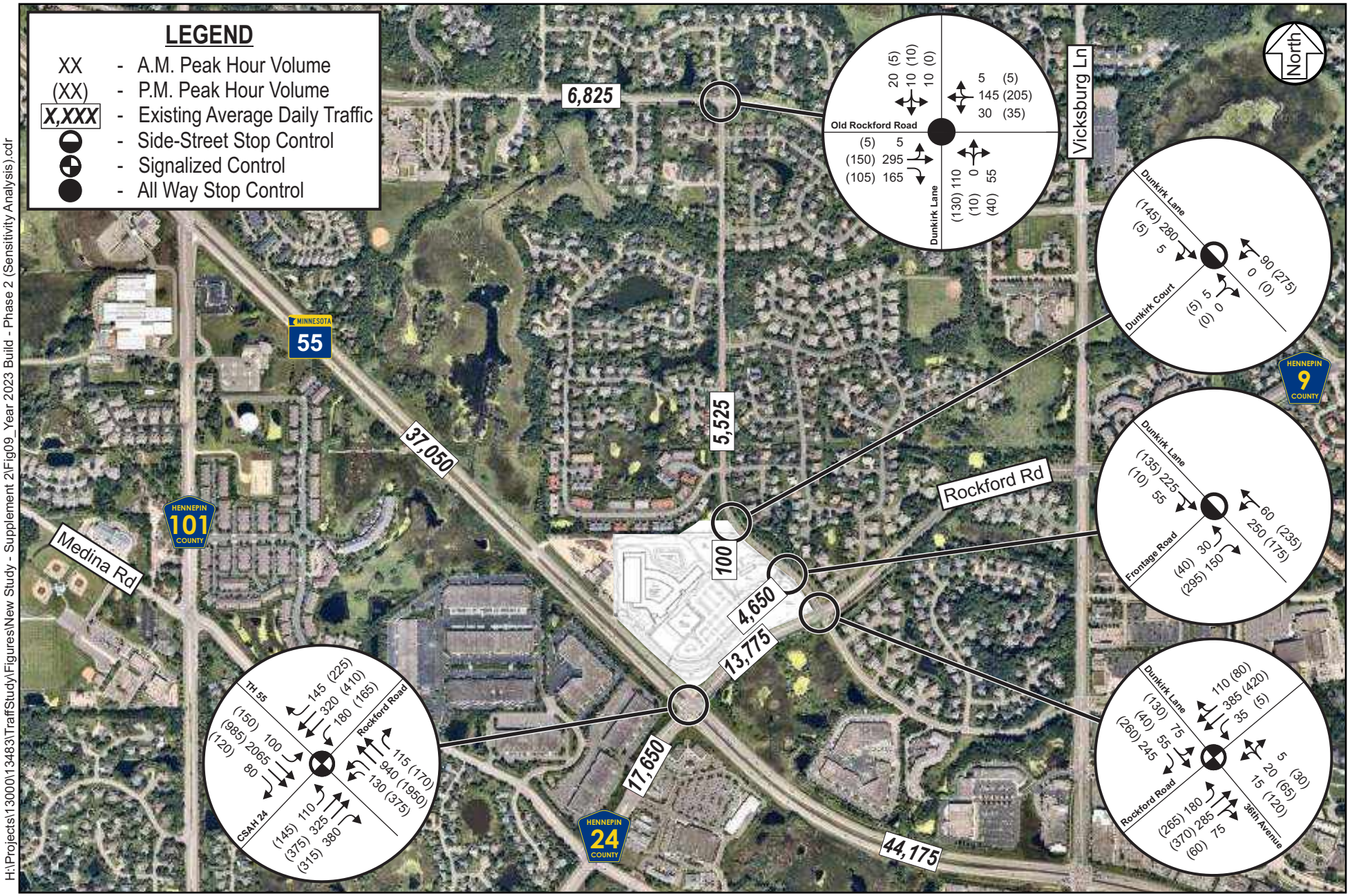
TH 55 Access Sensitivity Test

Based on discussion with project staff, there was a desire to understand potential impacts if all access to TH 55 from the proposed development and the Tri-State site was eliminated. This would route the majority of all development related traffic along the frontage road to Dunkirk Lane. Based on this sensitivity test, there is not expected to be a significant impact to intersection operations. The primary difference would be to the intersection of Dunkirk Lane and the frontage road, where average delays would be expected to increase by approximately one (1) second. Note that the frontage road is planned to have dedicated left- and right-turn lanes to minimize any operational impacts under this situation. Having site access to Dunkirk Court provides an additional access for site users, which further helps balance operations and travel patterns. The year 2023 build condition sensitivity test traffic forecasts are illustrated in Figure 9.

Site Plan Considerations

A sidewalk connection should be considered along the south side of Dunkirk Lane between the Frontage Road and Dunkirk Court. This connection would allow for easier pedestrian access to the adjacent park and other pedestrian facilities within the site. These facilities should be connected, if possible.

Two pedestrian/trail connections to TH 55 are shown from the proposed development. Based on a review of these two options, Trail Option 1 would provide the most direct route for users of the proposed development. Trail Option 2 would provide a more direct connection to users along Dunkirk Lane as well as fill some of the pedestrian facility gap along Rockford Road between TH 55 and Dunkirk Lane. If Trail Option 1 is selected, it should be shifted west to avoid being within the curve of the roadway and to better align with the sidewalk in front of the medical office building. There should also be a connection from the medical office building sidewalk to the sidewalk along the frontage road in this location.



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March 2021

Year 2023 Build Condition - Phase 2 Sensitivity

Dundee Nursery Redevelopment Traffic Study
Plymouth, MN

Figure 9

Summary and Conclusions

The following study summary, conclusions, and recommendations are offered for your consideration.

1) All study intersections currently operate at an overall LOS D or better during the a.m. and p.m. peak hours, except for the TH 55 and Rockford Road (CSAH 9) intersection during the p.m. peak hour, which operates at an overall LOS E; 95th percentile queues along Rockford Road (CSAH 9) extend approximately 800 feet, which limits access to the left- and right-turn lanes approximately 25 percent and 15 percent of the p.m. peak hour, respectively.
   a. Note that LOS E operations along TH 55 intersections is common during the peak hours.
   b. To improve intersection operations to LOS D or better, significant infrastructure changes would be needed and may not provide enough benefit to justify the cost. However, turn lane modifications, such as extending the southbound left-turn lane along Rockford Road at TH 55 (to 550 feet), would reduce queuing impacts.
2) The existing Tri-State/Dundee access along TH 55 does not conform to current guidance, while the West Tri-State access along TH 55 meets the guideline for a secondary intersection.
3) The existing Dundee Nursery is proposed to be replaced with a 300-unit multi-family apartment complex and up to approximately 70,000 square feet (SF) of medical office building. The following two development phases were evaluated.
   a. Phase 1 – most traffic to/from the proposed development would be via a new frontage road, which would connect with Dunkirk Lane approximately 375 feet northwest of Rockford Road (CSAH 9). The frontage road would end with a cul-de-sac in the southwest corner of the proposed development, near the existing Tri-State/Dundee access. The existing Tri-State/ Dundee access to TH 55 will continue to provide access to the Tri-State site, as well as emergency vehicle only access to the new frontage road/proposed development. A connection between the medical office building parking lot and the parking lot north of the church is also planned for use as a secondary access. This connection is not expected to be highly utilized.
   b. Phase 2 – assumes future redevelopment of the Tri-State Drilling site as a 52,500 square foot office building; the existing Tri-State/Dundee access would be closed, and the frontage road would be extended to the West Tri-State access.
4) Trips generated by the existing Dundee Nursery fluctuate throughout the year depending on the season. Since turning movement counts were collected in February (i.e. the off-season), there was limited activity at that time. The peak activity at the Dundee Nursery equates to approximately 1,700 vehicles per day, which occurs on Saturdays during May.

5) Traffic forecasts were developed for year 2023 conditions, which represents build out conditions for the site. These forecasts include general background growth and trip generation from adjacent developments (i.e. Timbers Edge and Hollydale Golf Course) to provide a conservative estimate. The forecasts also include the proposed development.
   a. The proposed development is expected to generate approximately 288 a.m. peak hour, 353 p.m. peak hour, and 3,882 daily trips under Phase 1.
   b. Redevelopment of the Tri-State site would result in an additional 55 a.m. peak hour, 53 p.m. peak hour, and 436 daily trips to/from the site.
   c. Upon completion of Phase 2, the entire site would be expected to generate an additional 343 a.m. peak hour, 406 p.m. peak hour, and 4,318 daily trips as compared to existing conditions.

6) Results of the year 2023 build intersection capacity analysis indicates that all study intersections are expected to operate at an overall LOS C or better during the a.m. and p.m. peak hours, except for the TH 55 and Rockford Road (CSAH 9) intersection during the a.m. and p.m. peak hours under both Phase 1 and Phase 2 conditions, which operates at an overall LOS E. These operations along TH 55 intersections are common during the peak hours and to improve the intersection operations to LOS D or better, significant infrastructure changes would be needed and may not provide enough benefit to justify the cost.

7) Based on the difficulty to make a left-turn maneuver from the West Tri-State Access to eastbound TH 55, as well as the limited number of motorists that are expected to complete this maneuver, the West Tri-State access should be converted to a three-quarter access, right-in/right-out, or closed as the opportunity arises. If this access is to remain, an eastbound left-turn and westbound right-turn lane should be constructed. The removal of the westbound U-Turn movement/turn-lane could also be considered if the existing Tri-State/Dundee access is eliminated.

8) The segment of Dunkirk Lane between Rockford Road (CSAH 9) and the proposed frontage road should be restriped to include a westbound left-turn lane along Dunkirk Lane to the frontage road and an eastbound right-turn lane along Dunkirk Lane to Rockford Road (CSAH 9). Potential restriping of Dunkirk Lane to the northwest of the frontage road could also be considered as part of this project to provide lane continuity.

9) A sidewalk connection should be considered along the south side of Dunkirk Lane between the Frontage Road and Dunkirk Court to allow for pedestrian access to the adjacent park and other pedestrian facilities within the site; these facilities should be connected, if possible.

10) Two pedestrian/trail connections to TH 55 are shown from the proposed development. If Trail Option 1 is selected, it should be shifted west to avoid being within the curve of the roadway and to better align with the sidewalk in front of the medical office building. There should also be a connection from the medical office building sidewalk to the sidewalk along the frontage road in this location.

Appendix

Hennepin County Tranportation systems plan

Exhibit 7-5

Access spacing guidelines

Access type	Movements allowed	Rural			Urban & Urbanizing			
		Arterial		Collector	Arterial		Collector	Urban core
		Greater than 7,500 ADT	Less than 7,500 ADT		Undivided	Divided		
Single Family Residential Driveway	Full Movements allowed	1/4 mile (1,320 feet)	1/8 mile (660 feet)	1/8 mile (660 feet)			1/8 mile (660 feet)	
or Farm Field Entrance	Limited Access						1/16 mile (330 feet)	
Low Volume Driveway	Full Movements allowed	1/4 mile (1,320 feet)	1/8 mile (660 feet)	1/8 mile (660 feet)			1/8 mile (660 feet)	1/16 mile (330 feet)
(less than or equal to 500 trips per day)	Limited Access					1/8 mile (660 feet)	1/16 mile (330 feet)	1/16 mile (330 feet)
High Volume Driveway	Full Movements allowed	1/4 mile (1,320 feet)	1/4 mile (1,320 feet)	1/8 mile (660 feet)	1/4 mile (1,320 feet)	1/4 mile (1,320 feet)	1/8 mile (660 feet)	1/8 mile (660 feet)
(greater than 500 trips per day)	Limited Access					1/8 mile (660 feet)		1/16 mile (330 feet)
Low Volume Public Street	Full Movements allowed	1/4 mile (1,320 feet)	1/4 mile (1,320 feet)	1/8 mile (660 feet)	1/4 mile (1,320 feet)	1/4 mile (1,320 feet)	1/8 mile (660 feet)	1/8 mile (660 feet)
(less than or equal to 2,500 ADT)	Limited Access					1/8 mile (660 feet)		1/16 mile (330 feet)
High Volume Public Street	Full Movements allowed	1/2 mile (2,640 feet)	1/4 mile (1,320 feet)	1/4 mile (1,320 feet)	1/4 mile (1,320 feet)	1/4 mile (1,320 feet)	1/4 mile (1,320 feet)	1/4 mile (1,320 feet)
(greater than 2,500 ADT)	Limited Access					1/8 mile (660 feet)		1/8 mile (660 feet)

Definitions & Notes:

- *Non-Applicable or Not Allowed. Residential driveways in urban & urbanizing settings should be oriented to the local street system.*
- *There is recognition that non-conforming driveways currently existing along the county roadway system - these will be reviewed for removal if and when redevelopment opportunities occur.*
- *If conformance to guidelines does not appear feasible, further justification, evaluation, and analysis may be required. Formal traffic studies may be required for large projects.*
- *Existing median channelization will not be opened or broken even under circumstances where the above guidelines would suggest that full access could be allowed.*
- *Other criteria are also reviewed for access requests such as entering sight distances, speeds, traffic volumes, and other elements (truck traffic, land use activities, etc.).*
- *Access spacing is measured from centerline to centerline*
- *Street spacing applies between street entrances, driveway spacing applies between all access types*
- *If the roadway is divided - access spacing is measured on just one side of the roadway.*
- *Rural - areas where agriculture, forestry, or very low density residential uses predominate. Local street networks are widely spaced*
- *Urban / Urbanizing - areas with either fully matured development or continued development is occurring.*
- *Urban Core - areas that are fully developed with a tightly woven network of public streets. Public street spacing is based on block length - usually between 300-660 feet.*
- *ADT - Average Daily Traffic - volumes should be based on the 20-year forecasts.*
- *Limited access means some intersection movements are restricted. Examples include; 1) Designs limiting turns to right-in / right-out, or 2) Movements restricted by median channelization.*

Figure 3.1 – Summary of Recommended Street Spacing for IRCs

Category	Area or Facility Type	Typical Functional Class	Public Street Spacing		Signal Spacing
			Primary Full-Movement Intersection	Secondary Intersection	
1	**High-Priority Interregional Corridors & Interstate System (IRCs)**				
1F	Interstate Freeway	Principal Arterials	Interchange Access Only		⊘
1AF	Non-Interstate Freeway		Interchange Access Only (see Section 3.2.7 for interim spacing)		See Section 3.2.5 for Signalization on Interregional Corridors
1A	Rural		1 mile	1/2 mile	
1B	Urban/ Urbanizing		1/2 mile	1/4 mile	
1C	Urban Core		300-660 feet dependent upon block length		
2	**Medium-Priority Interregional Corridors**				
2AF	Non-Interstate Freeway	Principal Arterials	Interchange Access Only (see Section 3.2.7 for interim spacing)		See Section 3.2.5 for Signalization on Interregional Corridors
2A	Rural		1 mile	1/2 mile	
2B	Urban/ Urbanizing		1/2 mile	1/4 mile	
2C	Urban Core		300-660 feet, dependent upon block length		1/4 mile
3	**Regional Corridors**				
3AF	Non-Interstate Freeway	Principal and Minor Arterials	Interchange Access Only (see Section 3.2.7 for interim spacing)		Interim
3A	Rural		1 mile	1/2 mile	See Section 3.2.5
3B	Urban/ Urbanizing		1/2 mile	1/4 mile	1/2 mile
3C	Urban Core		300-660 feet, dependent upon block length		1/4 mile