



Planning & Development Division
Planning & Economic Development Department

Room 160
 411 West First Street
 Duluth, Minnesota 55802

218-730-5580

planning@duluthmn.gov

File Number	PL 22-141	Contact	Kyle Deming	
Type	Preliminary Plat	Planning Commission Date		September 13, 2022
Deadline for Action	Application Date	August 9, 2022	60 Days	October 8, 2022
	Date Extension Letter Mailed	August 26, 2022	120 Days	December 7, 2022
Location of Subject	South and east of the intersection of Anderson Rd. and Decker Rd. (Piedmont Heights)			
Applicant	HNH LLC (Lon Hovland – Owner) and Michael and Kathleen Wilson (owners)	Contact	Available, on file	
Agent	Northland Consulting Engineers – David Bolf; Alta Land Survey Co. – David	Contact	Available, on file	
Legal Description	See Attached Map			
Site Visit Date	August 26, 2022	Sign Notice Date		August 29, 2022
Neighbor Letter Date	August 26, 2022	Number of Letters Sent		59

Proposal: Approval of the preliminary plat of REARRANGEMENT OF PART OF WESTERN WOODS DIVISION to provide for re-platting of 17 lots and a 3 acre unplatted parcel totaling 11.3 acres into 19 lots on a shortened street. The proposal includes construction of a new public street with sidewalk and utilities.

Staff Recommendation: Approval of the preliminary plat, subject to included conditions and contingent upon approval of the requested street and utility easement vacation in PL21-158.

	<i>Current Zoning</i>	<i>Existing Land Use</i>	<i>Future Land Use Map Designation</i>
Subject	R-1	Vacant	Traditional Neighborhood
North	R-1	Dwellings	Traditional Neighborhood
South	R-1	Dwelling on large lot	Traditional Neighborhood
East	R-1	Dwellings and wetland	Traditional Neighborhood
West	R-1	Dwellings	Traditional Neighborhood

Summary of Code Requirements

The planning commission shall approve the application, or approve it with modifications if it determines that:

- (a) Is consistent with the comprehensive land use plan;
- (b) Is consistent with all applicable requirements of MSA 462.358 and Chapter 505;
- (c) Is consistent with all applicable provisions of this Chapter;
- (d) Is consistent with any approved district plan covering all or part of the area of the preliminary plat;
- (e) Is located in an area with adequate police, fire and emergency facilities available to serve the projected population of the subdivision within the City's established response times, or the applicant has committed to constructing or financing public facilities that will allow police, fire or emergency service providers to meet those response times;
- (f) Will not create material adverse impacts on nearby properties, or if material adverse impacts may be created they will be mitigated to the extent reasonably possible;

Comprehensive Plan Governing Principle and/or Policies and Current History (if applicable):

Governing Principles

The following Imagine Duluth 2035 Governing Principles should be considered when reviewing the request:

- Governing Principle #7 – Create and maintain connectivity. This subdivision provides pedestrian connectivity through the end of the cul du sac and road connectivity to Decker Rd.
- Governing Principle #12- Create efficiencies in delivery of public services. This subdivision provides space for public utilities serving the surrounding neighborhood to flow through to an existing sanitary sewer, which is at a lower cost to the alternative disconnected systems.
- Housing Policy #2 - Provide affordable, attainable housing opportunities. Two of the lots in the subdivision will be smaller and, therefore, more affordable.
- Housing Policy #4 – Improve the quality of the city’s housing stock and neighborhoods. This subdivision will provide lots for new housing development.

Future Land Use

Characterized by grid or connected street pattern, houses oriented with shorter dimension to the street and detached garages, some with alleys. Includes many of Duluth’s older neighborhoods, infill projects, neighborhood extensions, and new traditional neighborhood areas. Densities of 4 -8 units/acre. Development types include a mix of housing types (i.e. town homes and 4-plexes) at corners and conservation development an option.

Zoning

Residential-Traditional (R-1): traditional neighborhoods of single-family, duplexes and townhouses on moderately sized lots. Intended to be used primarily in established neighborhoods. Dimensional standards require development and redevelopment to be consistent with development patterns, building scale, and building location of nearby areas.

Site History or Previous Studies

The site is a portion of the original plat of Western Woods Division, recorded in 1960.

Wetland Delineation approved 12/20/2016 (file no. PL 16-133) and updated delineation approved 8/24/2022 (PL 22-127).

Pre-application concept review 1/27/2020 and 2/3/2020. Preliminary Plat of Rearrangement of Western Woods approved 10/12/2021 (file no. PL 21-156). No Final Plat was filed for this version of the plat.

Vacation of streets and easements in a portion of Western Woods Division (PL 21-158) was recommended for approval by Planning Commission 10/12/2021 with the condition “the vacation must be recorded within 90 days of final approval by City Council, or such approval will lapse.” The vacation resolution is being held until the final plat is approved so that they can be recorded in close succession.

Review and Discussion Items

- 1) Request. The applicant is seeking Planning Commission approval of a preliminary plat. The proposal is to re-plate 17 lots and associated streets and easements along with a 3-acre unplatted parcel into 19 lots each with access to a new 1,900-foot-long public street (Westwood Cir.) connected to Decker Rd. The proposed lot sizes and widths conforms to the basic requirements of the R-1 zoning district. The proposed re-plate is generally consistent with the intent of the original plat, but re-orientes the rights-of-way and location of utilities to make development of the site practical.
- 2) Character of Area. This re-plate will create lots sized 0.14 acres to 1.67 acres with most lots approximately 0.5 acres. The proposed development is consistent with the lot configuration in the surrounding single family area, which is generally low density.
- 3) Area Transportation System. Decker Rd. and Anderson Rd. are paved municipal state aid streets with sidewalks on one side (and street trees in the case of Anderson Rd.) Anderson Rd. includes a striped bike lane and Decker Rd. is slated to include future bike facilities. The nearest transit route is ¼ mile away at Trinity Rd.
- 4) Site Access. The proposed plat includes dedication of a 66-foot-wide street, “Westwood Circle,” extending from Decker Rd. and ending in a cul du sac. Final street design details will be determined by the City Engineer, but plans include a 28-foot-wide street with curb and gutter and sidewalk on one side. To comply with site connectivity requirements, staff recommends the development agreement include the requirement for conveyance of a pedestrian easement connecting

the cul du sac to Anderson Rd. and the outlot in Sackette Division to the east.

- 5) Natural Features. The site is wooded and undeveloped with the land sloping downward from northwest to southeast to a wetland corridor containing approximately 1.3 acre of Type 7 (hardwood swamp) wetland (Wetland 1 and A). An additional wetland (Wetland B) appears to be an excavated wildlife pond. The site eventually drains to a tributary to Miller Creek, a trout stream, approximately 210 feet south of the site.
- 6) Wetlands. A complete wetland delineation is on file (PL 22-127). A wetland corridor crosses Lots 12-16. There is sufficient space for development on Lot 12 without impacting wetlands, but there are concerns about Lots 13 and 14 detailed in the "Storm Water" section below. Lot 15 development will necessitate a driveway crossing the wetland corridor, which staff recommends be in the same location as the sanitary sewer pipe. Lot 16 development will also necessitate a driveway across the wetland corridor. Staff recommends the driveway crossing be made in the narrowest portion of the wetland corridor. Staff recommends the development agreement include a requirement that wetland boundaries be permanently marked to prevent accidental impact and that a drainage and utility easement be placed on wetlands. Development of Lot 17 may result in the partial or complete impact to Wetland B which may be permitted by the Wetland Conservation Act with appropriate permits. This wetland appears to be an excavated wildlife pond. Development on Lots 9 and 10 should be possible without need to impact Wetland 2.
- 7) Tree Inventory and Replacement Plans. A tree replacement plan is required for this re-plat. Staff recommends the tree inventory be completed and approved by the City before application for the Final Plat is made and that the tree replacement plan be approved by the City prior to issuance of any permits for land disturbing activities on the site.
- 8) Utilities. The site will be connected to City water in Anderson Rd. via an existing platted, but unbuilt, street right of way at the northeast corner of the site. Municipal water pipe will be installed in the entire length of Westwood Cir. creating a looped system when connected to an existing municipal water pipe in Decker Rd. Municipal sanitary sewer pipes were installed in the proposed streets and are gravity flow draining to an existing municipal sewer pipe in Denim Dr. They were installed at the time that the City-initiated sanitary sewer was installed connecting Decker Rd. to Denim St. in 2021. Additional sanitary sewer main pipe is planned to extend in front of Lots 16, 17, and 18. Natural gas, electricity, and communications utilities can be extended to the site from Decker Rd. adjacent to the proposed Westwood Cir. or from Anderson Rd.
- 9) Storm Water. A preliminary drainage report and storm water system layout has been provided by the civil engineer and is not yet approved by City Engineering. Two storm water detention basins are planned for the east side of Westwood Cir., discharging to the wetland corridor in Lots 12-16. The City Engineer commented that these facilities need to be located in utility easements, which is a recommended condition of approval of the plat. Additional study is requested to document existing drainage patterns compared to proposed drainage patterns so the size of the detention basins can be calculated and verified by the City's storm water engineer. Additional BMPs may be needed to capture and treat areas not draining to the storm water basins shown. Lots 15 and 16 will require driveways that cross the wetland corridor. Lastly, because the site drains to Miller Creek, a trout stream, the wetlands are critically important for stream viability and there is concern that development on Lots 13 and 14 will result in wetland impacts due to the depth of the lots. Any wetland impacts need to be accounted for in the sizing of the storm water treatment basins.
- 10) Conformance with UDC and State Statute. The preliminary plat is consistent with the comprehensive land use plan designation of this site, which is for a traditional neighborhood development. The preliminary plat is located in an area of the city with adequate police, fire, and emergency facilities to serve the anticipated housing development. Staff finds that, other than the items addressed above and referenced in the recommendations below, the preliminary plat conforms to the requirements of Sec 50-37.5. and is consistent with all applicable requirements of MSA 462.358 and Chapter 505.
- 11) Development Agreement. A development agreement for the improvement of public streets and dedication of needed pedestrian easements is required, and shall be reviewed by City staff and approved by the City Council prior to initiating site work for the project.
- 12) Public Comments. No citizen comments have been received to date.

- 13) City Staff Comments. The City Engineering division has reviewed the proposed stormwater management systems and the proposed public street, and provided feedback. The City's property services specialist commented that the plat boundaries extend to Anderson Rd. and Decker Rd. covering existing platted streets, which may not be necessary. This will be resolved for the final plat.
- 14) The approval of the Preliminary Plat of REARRANGEMENT OF PART OF WESTERN WOODS DIVISION is contingent on the City Council's approval of the vacation of existing streets and utility easements in the area to be re-platted (file no. PL21-158).

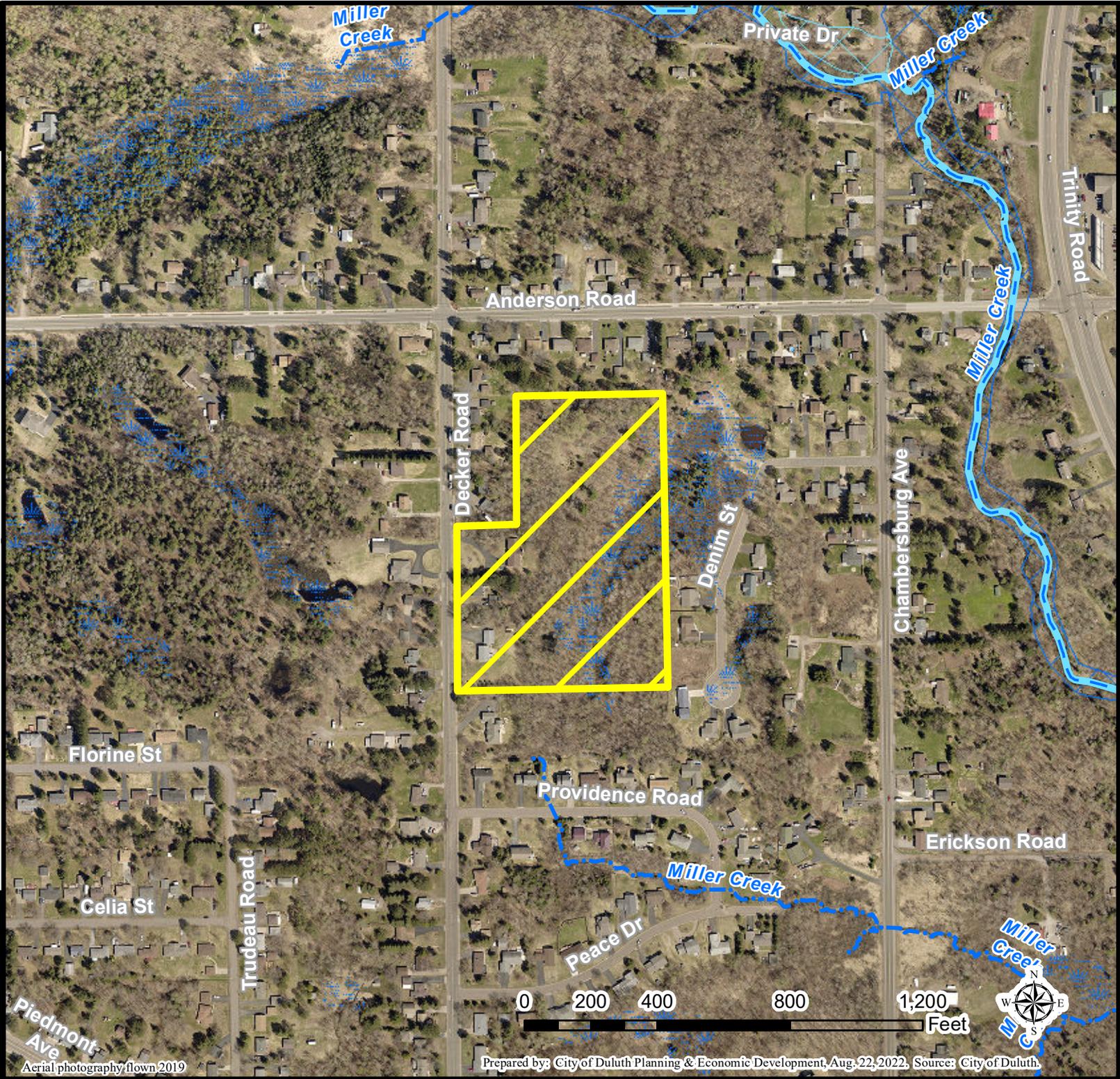
Staff Recommendation

Based on the above findings, staff recommends that Planning Commission approve the application with the following conditions:

1. The approval is conditioned upon the City Council's approval of the vacation of existing streets and utility easements in the plat area (file no. PL21-158).
2. The final plat shall be drafted with modifications to the following elements depicted on the preliminary plat:
 - a. Drainage and utility easements shall be provided over wetlands on those portions of Lots 12-16. Permanent metallic markers on rigid metal posts shall be placed at the location of wetland boundaries with signs indicating the presence of wetlands to be left in a natural state.
 - b. Stormwater treatment facilities shall be sized and located in utility easements as approved by City Engineering.
 - c. Plat boundaries be adjusted in the area of existing streets relative to surveying and legal requirements.
3. Prior to undertaking any tree or land disturbing work, the following conditions shall be met:
 - a. The developer shall enter into a development agreement addressing applicable development terms as identified by City staff in this report and as further identified in the review of the Final Plat. The development agreement shall be approved by City Council and recorded with the appropriate St. Louis County offices.
 - b. A pedestrian easement through Lot 11 connecting the cul du sac to Anderson Rd. shall be conveyed to the public and its presence noted on the Final Plat.
 - c. The Final Plat shall be recorded.



PL 22-141
 Preliminary Plat
 Rearrangement of Part
 of Western Woods



Legend

Floodplain (UDC)

- Flood Way
- Flood Fringe
- Trout Stream (GPS)
- Other Stream (GPS)
- Wetlands (NRR1)

The City of Duluth has tried to ensure that the information contained in this map or electronic document is accurate. The City of Duluth makes no warranty or guarantee concerning the accuracy or reliability. This drawing/data is neither a legally recorded map nor a survey and is not intended to be used as one. The drawing/data is a compilation of records, information and data located in various City, County and State offices and other sources affecting the area shown and is to be used for reference purposes only. The City of Duluth shall not be liable for errors contained within this data provided or for any damages in connection with the use of this information contained within.

Aerial photography flown 2019

Prepared by: City of Duluth Planning & Economic Development, Aug. 22, 2022, Source: City of Duluth.

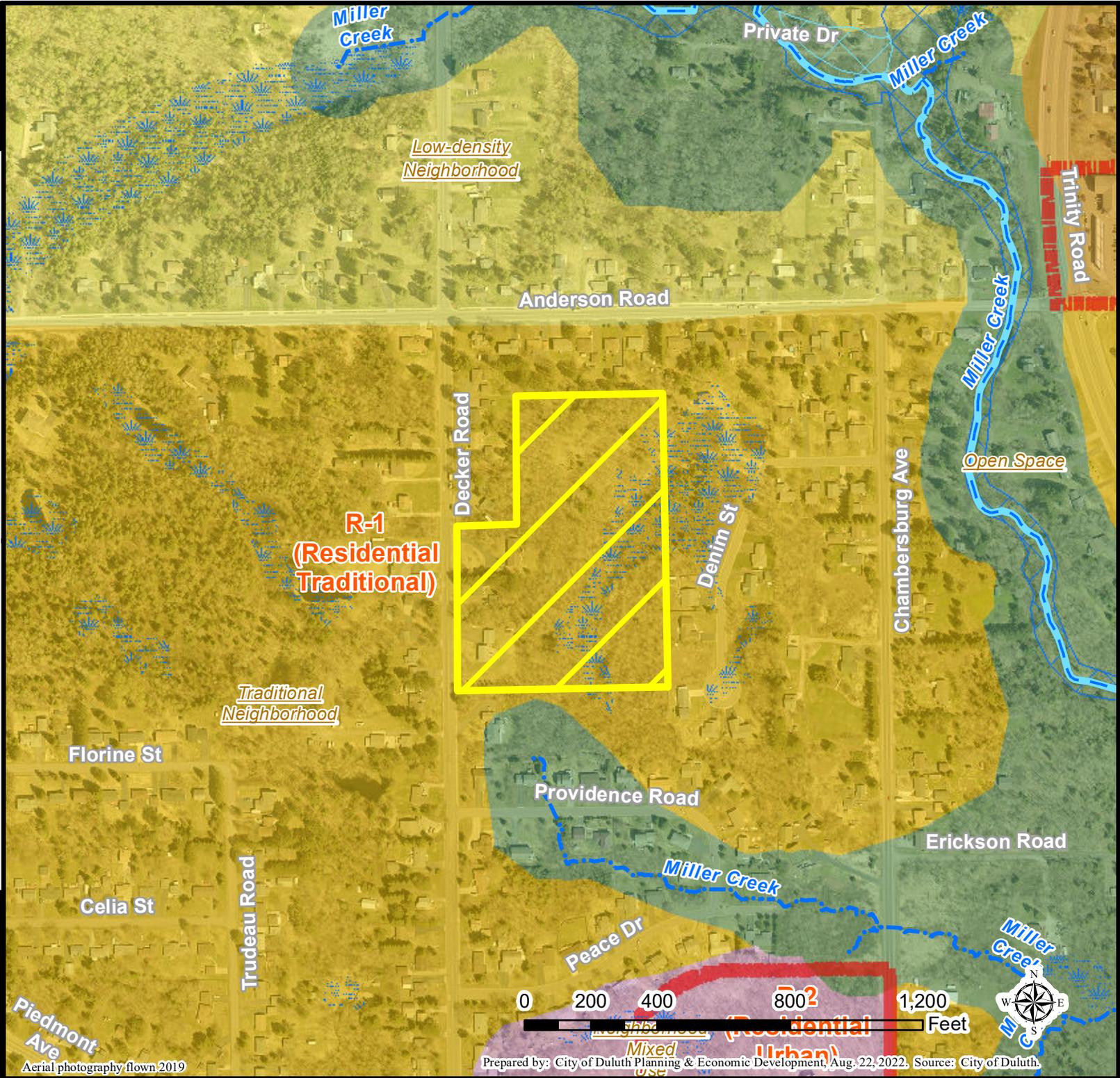


PL 22-141
Preliminary Plat
Rearrangement of Part
of Western Woods

Legend

- Zoning Boundaries
- Floodplain (UDC)**
 - Flood Way
 - Flood Fringe
 - Trout Stream (GPS)
 - Other Stream (GPS)
 - Wetlands (NRR1)
 - Open Space
 - Low-density Neighborhood
 - Traditional Neighborhood
 - Urban Residential
 - Neighborhood Mixed Use

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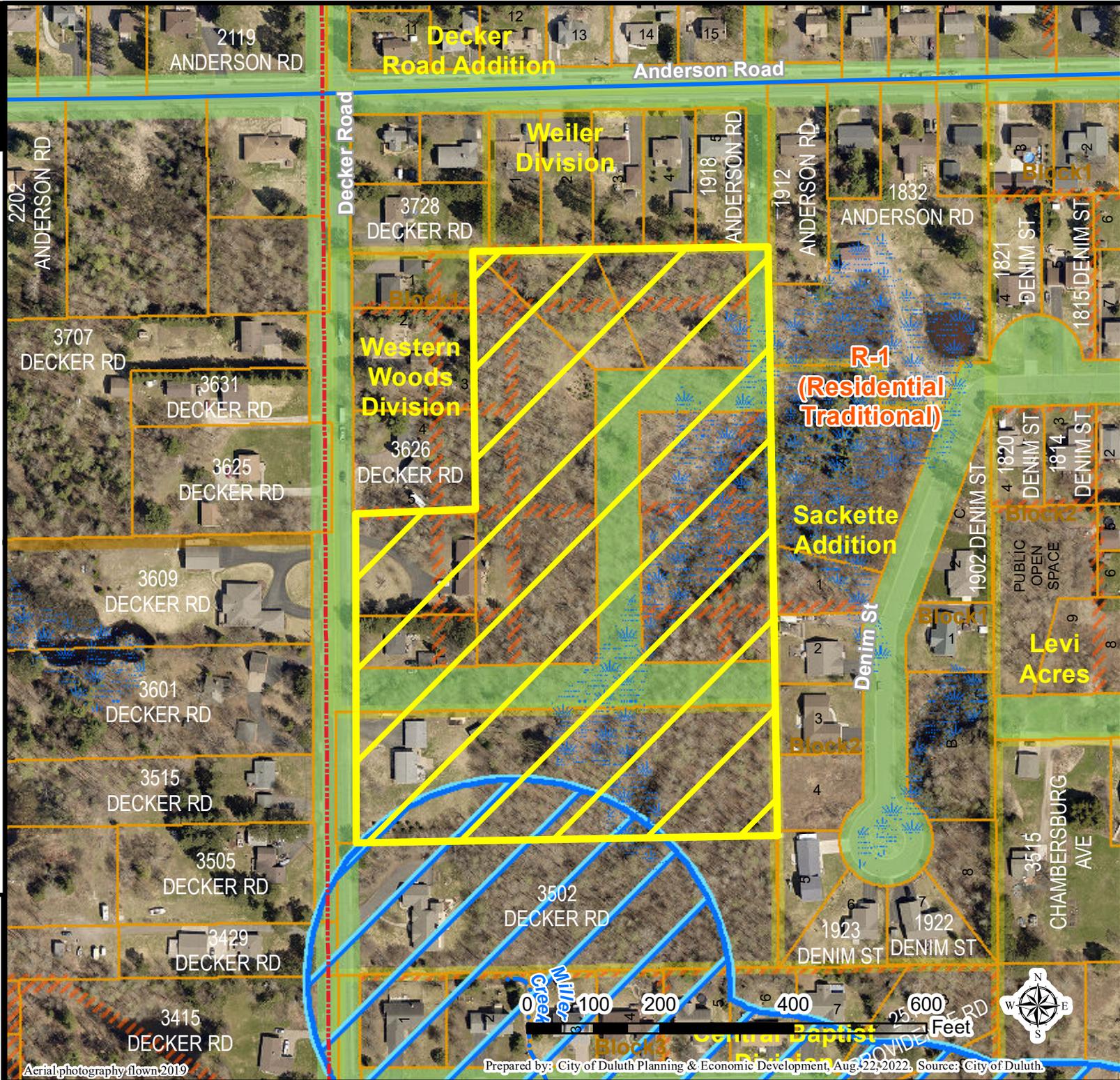


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PL 22-141
Preliminary Plat
Rearrangement of Part
of Western Woods



Legend

Bike_Facil

- Future Bike Facility (Red dashed line)
- Signed Bikeable Shoulder (Blue line)

Blocks

- Lots (Orange outline)
- Parcels (Orange outline)

ROW

- <all other values> (Brown)

SUBTYPE, ROW_STATUS

- Utility, Active (Green)
- Road, Active - currently in use (Light Green)
- Utility, Vacated - vacated via recorded document (Yellow)

Subdivision Boundaries (Yellow outline)

Zoning Boundaries (Red outline)

Shoreland (UDC)

- Cold Water (Blue)
- Other Stream (GPS) (Blue dashed)
- Wetlands (NRR1) (Blue wavy)

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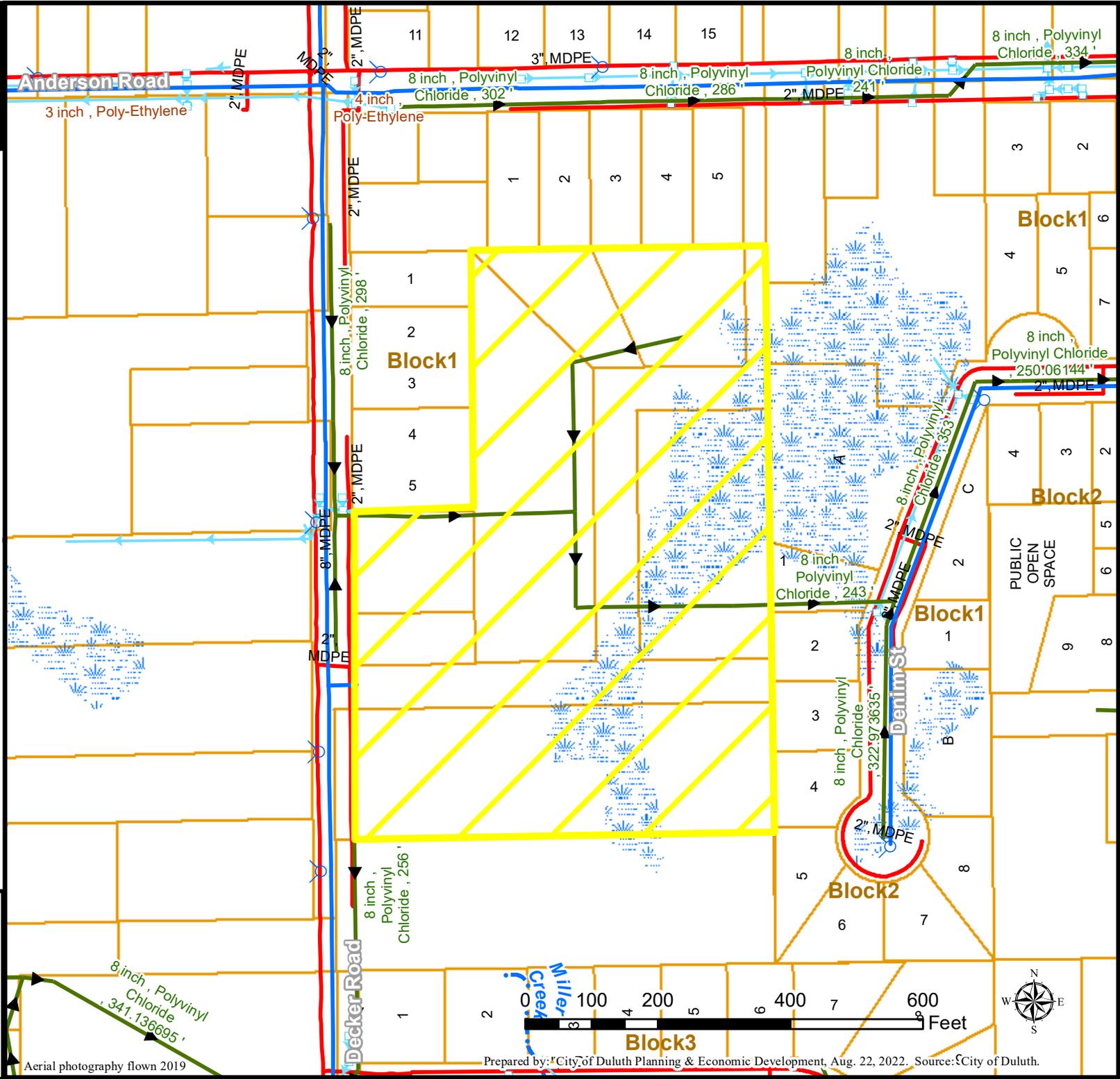


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PL 22-141
Preliminary Plat
Rearrangement of Part
of Western Woods

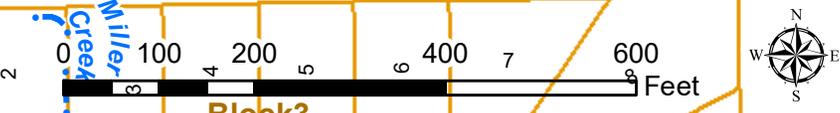


Legend

- Gas Main
- Water Main
- Hydrant
- Sanitary Sewer Mains**
- CITY OF DULUTH
- Storm Sewer Mains**
- Storm Sewer Pipe
- Storm Sewer Catch Basin
- Blocks**
- Lots**
- Parcels
- Other Stream (GPS)
- Wetlands (NRR1)

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Aerial photography flown 2019



PRELIMINARY PLAT OF REARRANGEMENT OF PART OF WESTERN WOODS

LOCATED IN PART OF THE NORTHWEST QUARTER OF THE NORTHEAST
QUARTER SECTION 30, TOWNSHIP 50 NORTH, RANGE 14 WEST OF THE
FOURTH PRINCIPAL MERIDIAN, ST. LOUIS COUNTY, MINNESOTA

LEGEND	
	CONCRETE SURFACE
	BITUMINOUS SURFACE
	PAVER SURFACE
	PROPOSED STREET
	LANDSCAPED SURFACE
	GAS METER
	HYDRANT
	WATER VALVE
	TELECOM PEDESTAL
	SIGN
	CONFIROUS TREE
	SET REBAR RLS. 49505
	EXIST SANITARY MANHOLE
	PROPOSED SANITARY MANHOLE
	ELEC METER
	UTILITY POLE
	TREE/BRUSH LINE
	FENCE LINE
	OVERHEAD UTILITIES
	SANITARY SEWER
	WATER MAIN
	WET LAND LINE BASED ON EXISTING FLAGS BY OTHERS AND AS SHOWN ON THE PLAT OF SACKETTE ADDITION
	EXISTING BUILDING LINE
	SECTION SUBDIVISION LINE
	CENTER LINE
	RIGHT OF WAY LINE
	EXISTING EASEMENT LINE
	BOUNDARY LINE AS SURVEYED
	PROPOSED EASEMENT LINE
	SANITARY SEWER LINE
	WATERMAIN LINE
	STORM SEWER LINE
	UNDERGROUND GAS LINE
	CONTROL POINT
	FOUND IRON PIPE
	FOUND CAPPED REBAR RLS. NO. 15294
	FOUND REBAR
	FOUND CAPPED REBAR RLS. NO. 14374
	FOUND IRON ROD
	ELEC PEDESTAL
	SANITARY MANHOLE
	SQUARE GRATE CATCH BASIN
	CULVERT

OWNER/DEVELOPER
LON HOVLAND
3612 DECKER ROAD
DULUTH, MN 55811
EMAIL: lon@hovlandinc.com

ENGINEER
NCE CONSULTING ENGINEERS, LLP
DAVID BOLF, P.E.
MINNESOTA STATE REG. NO. 40926
P.O. BOX 161138
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DULUTH, MN 55806
PHONE: (218) 727-5995
EMAIL: david@nce-duluth.com

SURVEYOR
ALTA LAND SURVEY COMPANY, PC
DAVID R. EVANSON
MINNESOTA STATE REG. NO. 49505
P.O. BOX 161138
102 S. 21ST AVE. W. SUITE 4
DULUTH, MN 55816-1138
PHONE: (218) 727-5211
EMAIL: davee@altasurveyduluth.com

TABLE 50-14.5-1 R-1 DISTRICT DIMENSIONAL STANDARDS	
Minimum lot area per family (One-family) [1]	The smaller of 4,000 sq. ft. or average of developed 1-family lots on the block face.
Minimum lot area per family (Two-family) [2]	The smaller of 3,000 sq. ft. or average of developed 2-family lots on the block face.
Minimum lot area per family (Townhouse) [3]	3,000 sq. ft.
Minimum lot frontage (one-family) [1]	The smaller of 40 ft. or average of developed lots with similar uses on the block face.
Minimum lot frontage (two-family and townhouse) [2]	The average of developed lots with similar uses on the block face, but not less than 40 feet.
Minimum width of front yard	The smaller of 25 ft. or average of adjacent developed lots facing the same street.
Minimum depth of side yard	5 ft.
Minimum width of side yard (one- and two-family)	Lots with less than 30 ft. frontage and garage
Minimum width of side yard (Townhouse)	10 ft. if adjacent to another lot 25 ft. if adjacent to platted street
Corner lot width of front side yard	15 ft.
Corner lot width of front side yard	Detached accessory building 20 ft. Attached residential building 25 ft.
Minimum depth of rear yard	25 ft.
Minimum length of building	30 ft.



AREA SUMMARY

Total Acreage	11.50 AC
Total Lot Acreage - R/W	8.20 AC
Total R/W Acreage	3.30 AC
Number of Lots	19
Largest lot in Sq. ft.	72,953 SQ. FT
Smallest lot in Sq. ft.	6,083 SQ. FT
Average Lot (total lot Sq. ft./# of lots)	26,365 SQ. FT

LEGAL DESCRIPTION PER CERTIFICATE OF TITLE NO. 344559
Lots 9 thru 17 Block 1 WESTERN WOODS DIVISION
Lots 1 thru 5 Block 2 WESTERN WOODS DIVISION

LEGAL DESCRIPTION PER CERTIFICATE OF TITLE NO. 344558
Lot 6 Block 1 WESTERN WOODS DIVISION
Lot 7 Block 1 WESTERN WOODS DIVISION

LEGAL DESCRIPTION PER CERTIFICATE OF TITLE NO. 278724
Lot 8 Block 1 WESTERN WOODS DIVISION

LEGAL DESCRIPTION OF ADDITIONAL PROPERTY TO BE INCLUDED WITHIN PLAT

And: All of Westwood Street, as delineated and dedicated in WESTERN WOODS DIVISION, according to the recorded plat thereof, St. Louis County, Minnesota.
And: All of Wildwood Lane, as delineated and dedicated in WESTERN WOODS DIVISION, according to the recorded plat thereof, St. Louis County, Minnesota.
And: All of the Platted Road, lying adjacent to Lot 5, WEILER DIVISION, according to the recorded plat thereof, St. Louis County, Minnesota.

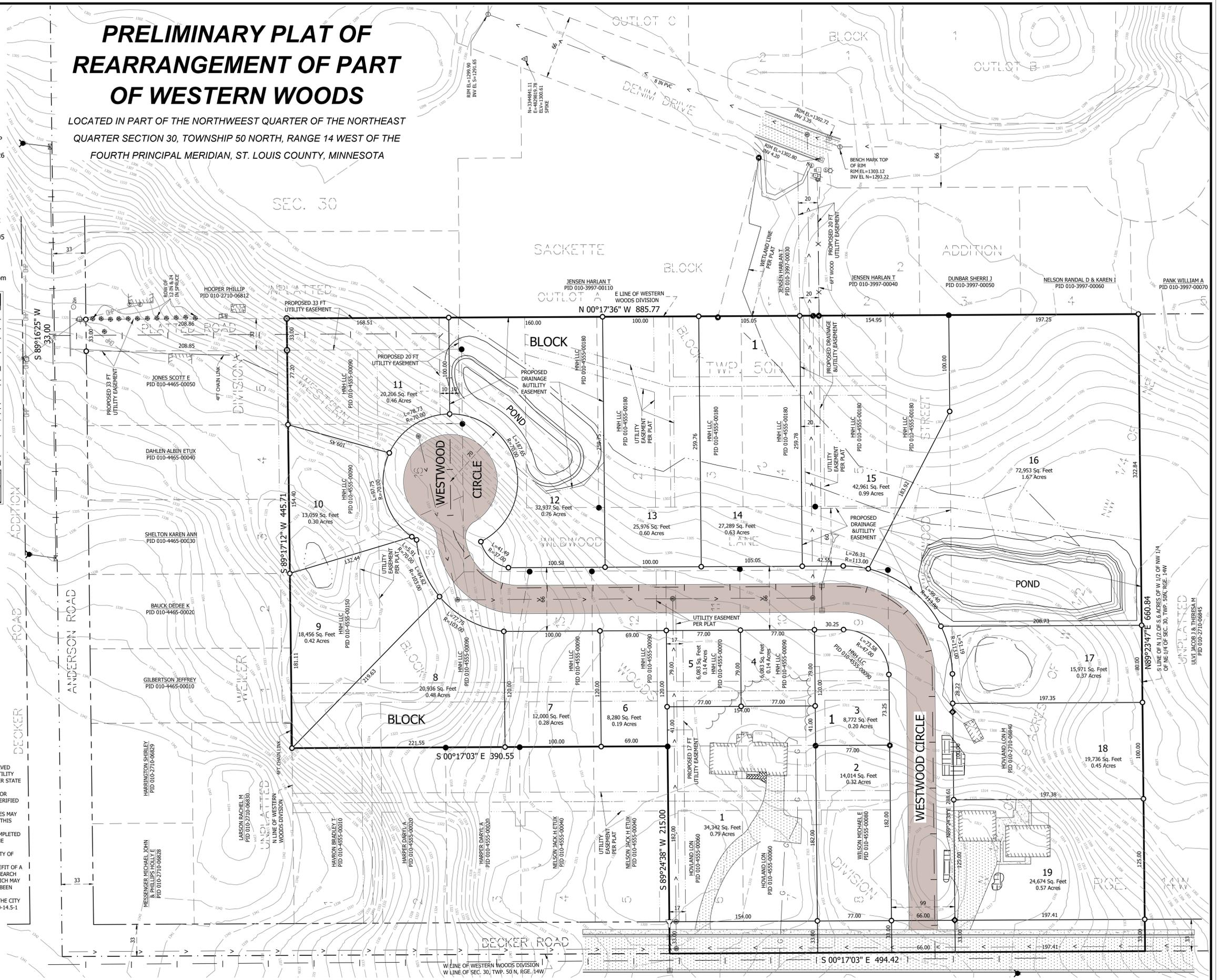
LEGAL DESCRIPTION PER DOC. NO. 1442152

North One-Half of South 6 Acres of West One-Half of Northwest One-Quarter of Northeast One-Quarter (N1/2 of S 6 of W 1/2 of NW 1/4 of NE 1/4, Section Thirty (30), Township Fifty (50) North of Range Fourteen (14), St. Louis County, Minnesota.

- SURVEYORS NOTES**
- UTILITIES WERE LOCATED IN THE FIELD BY OBSERVED EVIDENCE, BY UTILITY SKETCHES PROVIDED BY UTILITY COMPANIES AND THE CITY OF DULUTH PER GOPHER STATE ONE CALL TICKET NO. 173630085.
 - UTILITIES SHOWN ON THIS SURVEY ARE SHOWN FOR APPROXIMATE LOCATION ONLY AND SHOULD BE VERIFIED BEFORE ANY EXCAVATION OR CONSTRUCTION.
 - DUE TO SNOW AND ICE COVERAGE, SOME FEATURES MAY HAVE NOT BEEN VISIBLE DURING THE COURSE OF THIS SURVEY.
 - NO SPECIFIC SOILS INVESTIGATION HAS BEEN COMPLETED ON THIS LOT BY ALTA LAND SURVEY COMPANY. THE SUITABILITY OF SOILS TO SUPPORT THE SPECIFIC STRUCTURE PROPOSED IS NOT THE RESPONSIBILITY OF ALTA LAND SURVEY COMPANY OR THE SURVEYOR.
 - THIS SURVEY HAS BEEN PREPARED WITHOUT BENEFIT OF A TITLE COMMITMENT OR TITLE OPINION. A TITLE SEARCH FOR RECORDED OR UNRECORDED EASEMENTS WHICH MAY BENEFIT OR ENCUMBER THIS PROPERTY HAS NOT BEEN COMPLETED BY ALTA LAND SURVEY COMPANY.
 - SITE ZONED R-1 RESIDENTIAL TRADITIONAL PER THE CITY OF DULUTH PLANNING AND ZONING. SEE TABLE 50-14.5-1 FOR STANDARDS.
 - BENCHMARK SHOWN ON SURVEY.

ALTA
LAND SURVEY COMPANY
PHONE: 218-727-5211
WWW.ALTA-SURVEY.COM

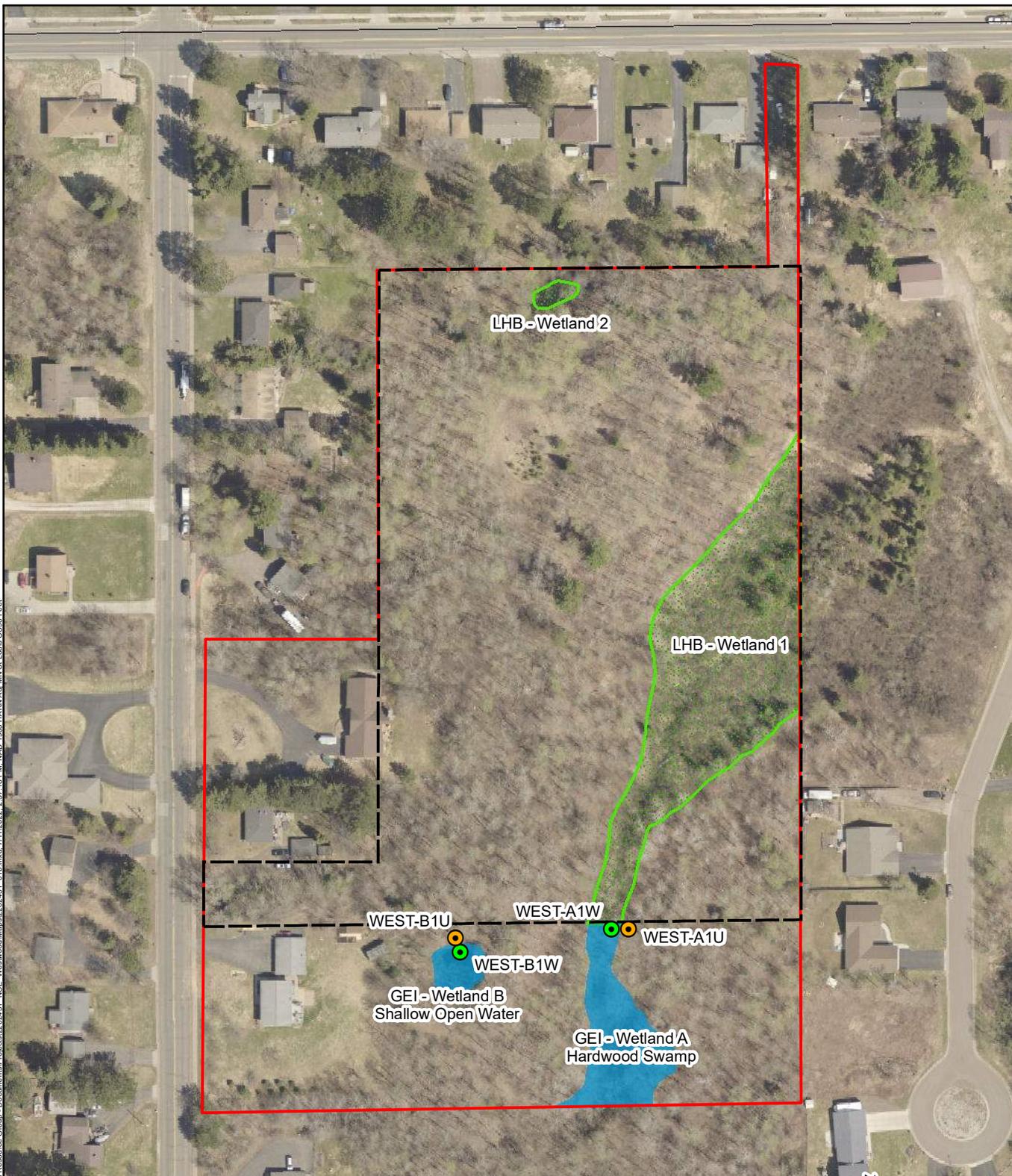
REVISED 8-5-2022 ADD POND & EASEMENT
REVISED 8-3-2022 NEW LOT LAYOUT
REVISED 8-26-2021 NEW LOT LAYOUT



LINE OF N 1/2 OF S 6 ACRES OF W 1/2 OF NW 1/4 OF NE 1/4 OF SEC. 30, TWP. 50N, RGE. 14W

W LINE OF WESTERN WOODS DIVISION
W LINE OF SEC. 30, TWP. 50 N, RGE. 14W

MSP:Office-Duluth, MN | Source: C:\Users\kpatras@GEI\OneDrive\Documents\Projects\2024\24-1_NCE_Westwood\Mapa\2024\24-1_01h.mxd, 7/11/2022, 2:57:18 PM, NAD 1983 HARN, 44, MN, SI, Louis, CS98, Feet



-  GEI Delineation Area 2022
-  GEI Wetland Boundary 2022
-  LHB Wetland Boundary 2016
-  LHB Delineation Area 2016
-  Upland Sampling Point
-  Wetland Sampling Point



WESTWOOD
DULUTH, MINNESOTA

PREPARED FOR
HOVLAND INC.

FIGURE 02
WETLAND BOUNDARIES
AND SAMPLE POINT LOCATIONS
JULY, 2022

Westwood Circle Subdivision Drainage Memo (8/8/22)

Northland Consulting Engineers is assisting a land owner in subdividing their parcel of property with access off of Decker Road. The parcel is currently undeveloped and completely wooded. The proposed subdivision would create (18) lots accessed by the construction of a 24' wide roadway meeting City of Duluth standards. The road will be constructed privately and turned over to the City of Duluth upon as built and final acceptance.

Existing Site Drainage Conditions

The site is 9.44 acres according to the boundary survey provided by ALTA Land Survey Company. As mentioned above, the site is completely undeveloped and wooded. The site sits within the Miller Creek watershed. This watershed ultimately enters the St. Louis River. The site is situated between Decker and Denim Road just south of Anderson Road. The site currently flows from north to south through a wetland complex. Currently, there are no BMP's on-site treating storm water.

Post-Construction Site Drainage Conditions

The subdivision development proposes (18) lots with (16) new buildable lots. Lots will range in size from 0.14 acres to 1.67 acres meeting the requirements of the R-1 zoning. The expected user is a single-family home development. It is estimated that each home will develop an average of 4,200 square feet of impervious surface between the driveway, home and garage. This results in approximately 67,200 square feet of impervious area outside the public road. The 950 linear feet of public road will be 24' wide with a 5' concrete walk generating about 33,500 square feet of impervious area. The roadway will be constructed as an urban section so the roadway will have curb and gutter on both sides to convey road runoff and any runoff from outside the right of way.

The curb and gutter and subsequent storm sewer will convey stormwater runoff to a BMP to treat the runoff. Storm sewer will then flow into one of two filtration basins located along the east side of the road. The filtration basins will drain via perforated PVC pipes set below a sand filter layer. The BMP will treat the stormwater for total suspended solids and will be constructed with live storage and an outlet structure to manage the discharge rates per the City of Duluth UDC requirements. It is understood that the site sits above the bluff line and may be required to meet more restrictive peak discharge rate requirements.

The site and stormwater design has been designed to meet the requirements of the City of Duluth UDC and Engineering Guidelines. Prior to the issuance of building permits, an MS4 Statement of Compliance will be issued when the stormwater management plan is approved. The stormwater conveyance and treatment system will be ultimately be constructed in a drainage easement dedicated to the City of Duluth for ownership and maintenance. The Certificate of Occupancy will be issued after the record drawing for the stormwater management BMPs have been issued to the City.

Area Summary

	Pre-Development		Post-Development	
	Area (SF)	% of Total Site	Area (SF)	% of Total Site
<u>Total Site Area</u>	411,360	100%	411,360	100%
Impervious Area	0	0%	100,532	24%
-Bit./Conc.	0	0%	33,332	8%
-Roof	0	0%	67,200	16%
Pervious Area	411,360	100%	310,828	76%
-Woods/Grass	0	0%	310,828	76%
-Woods	411,360	100%	0	0%

Narrative Prepared by: Adam Zwak, P.E.