

0.0 Environmental

0.1 Wetlands/ Ponds

Chad Fradette with Evergreen Consultants completed a wetland and pond delineation for the project to determine the location and boundary of wetlands and ponds onsite. The delineation was conducted on October 24th, 25th, and 29th. The site design avoids regulated wetland to the maximum extent practical and keeps buildings out of the City of Pewaukee's (city) required 25' building setback. Included with the submittal is a plan showing the wetlands that were delineated. The US Army Corps of Engineers (USACE) have reviewed the wetland report and provided an Approved Jurisdictional Determination (AJD) for the project. Wetland and pond exemptions for artificial and non-federal wetland have been submitted to Wisconsin Department of Natural Resources (WDNR) for approval prior. Any necessary wetland fill permits will be submitted to WDNR and USACE prior to construction. The ponds within the multi-family area of the site have received an AJD from USACE and are expected to be exempted from WDNR requirements since the ponds are artificial water bodies excavated between 1970- 1990.

0.2 Floodplain

The FEMA floodplain map for the site indicates that no regulated floodplain exists on the property. The proposed property has a Zone X flood hazard. The navigable waterway and wetlands located toward the southwest corner of the property will be parceled off into an outlot to protect the area.

0.3 Groundwater

Seasonal high groundwater is expected to be at the ground surface or below 870 +/-'. The single family for rent houses and multi-family buildings will not have basements and will be constructed with floor elevations at or above 871.00. The single family for sale houses will have basements. The grading for the single family lots has been designed assuming a basement height of 9' and 3' of separation from basement floor to estimated seasonal high groundwater elevation.

1.0 Utility Design

1.1 Sanitary Sewer

Sanitary sewer flow information has been provided to the city of Pewaukee engineering department. The engineering department will use the information to analyze the downstream infrastructure and determine if any downstream improvements are required for the project. Table 1 and Table 2 contain the sanitary flow information that was provided to the city of Pewaukee. Sanitary sewer will have 9' of cover in areas adjacent to houses without basements and will have 11' of cover in areas adjacent to houses with basements. Sanitary sewer will flow to a proposed public lift station located just east of E. Fieldhack Drive.

Table 1: Allowable Sanitary Flow based on Population per unit based on Lake Country Commons Report

SOURCE	POPULATION/ UNIT	UNITS	POPULATION	UNIT FLOW RATE (GPD)	PROJECTED FLOW (GPD)	PROJECTED FLOW (GPM)
MULTI-FAMILY – JUNIOR	1.5	36	54	125	6,750	4.69
MULTI-FAMILY 1 BEDROOM	1.5	104	156	125	19,500	13.54
MULTI-FAMILY – 2 AND 3 BEDROOM	2.63	143	376	125	47,000	32.64
SINGLE FAMILY FOR LEASE	2.63	27	72	125	9,000	6.25
SINGLE FAMILY FOR SALE	2.63	160	421	125	52,625	36.55
PROPOSED TOTAL					134,875	93.66
				400% Peaking Factor	539,500	374.65

Table 2: Allowable Sanitary Flow based on Population per unit based on Land By Label Data

SOURCE	POPULATION/ UNIT	UNITS	POPULATION	UNIT FLOW RATE (GPD)	PROJECTED FLOW (GPD)	PROJECTED FLOW (GPM)
MULTI-FAMILY – JUNIOR	1	36	36	125	4,500	3.13
MULTI-FAMILY 1 BEDROOM	1.5	104	156	125	19,500	13.54
MULTI-FAMILY – 2 AND 3 BEDROOM	2	143	286	125	35,750	24.83
SINGLE FAMILY FOR LEASE	2.63	27	72	125	9,000	6.25
SINGLE FAMILY FOR SALE	2.63	160	421	125	52,625	36.55
PROPOSED TOTAL					121,375	84.29
				400% Peaking Factor	485,500	337.15

1.2 Water Distribution Service

The integration of looped water mains throughout the development is essential to maintain adequate water pressure and volume, meeting safety and operational standards. These mains are strategically located within public rights-of-way to ensure accessibility for routine maintenance and emergency services.

It is a City of Pewaukee requirement that there to be two points of connection to the existing water main system. The proposed two locations will match the roadway access points, which are at Golf Road to the south and Milkweed Lane to the northwest. Watermain will also be looped through the single family for lease sites to provide water for each house.

Only one tap into the public main will be used for the multi-family development but the private water main will be looped within the multi-family complex.

1.3 Storm Sewer

Storm sewer and inlets will be installed along the proposed road to convey stormwater to the various proposed and existing wet ponds. Inlets along the proposed road will be spaced at 300' maximum. All storm sewer will be designed using the City of Pewaukee technical standards.

1.4 Stormwater Management

The multi-family area of the project will consist of a 32.29 ac parcel at the north end of the site. The multi-family complex will include 13 two story garden style buildings, 12 garages, a club house with an outdoor pool, off street parking, and driveways throughout the site. Stormwater management practices will be installed along the north and south sides of the site to treat stormwater and reduce the peak flows. Stormwater management practices will include a wet pond along the south property line, a wet pond in the northeast corner of the site, a wet pond toward the northwest corner of the site and a wet pond in the southwest corner of the site. The wet pond in the southwest corner of the site is proposed to be shared with the single family for lease site. An easement will be provided around the southwest pond to allow both sites to drain into the pond. All wet ponds onsite will be designed to meet the city and WDNR requirements. The proposed wet ponds will discharge to the wetlands on the north, east, and west sides of the site.

Single-family houses that will be leased will be constructed in the northwest corner of the site. The single-family houses will consist of 21 one-story houses and 21 two-story houses. Eight (8) of the houses will have direct access onto the proposed public street. The remaining houses will have access to the public right-of-way using private drives. The single-family houses north of the public road will drain to the wet pond that will be shared with the multi-family complex and the existing wet pond on the west side of the property. The existing wet pond will be expanded to accommodate the additional flow from the added impervious area. The single-family houses on the south side of the public ROW will drain to the south into an existing wet pond. The wet pond will be analyzed during final design to determine if modification to the wet pond will be required due to comply with city and WDNR requirements.

A future phase of the project will be the construction of additional public streets for single-family lots for sale. Stormwater for the additional roads and houses will be constructed when the future roads are constructed. Wet ponds are currently planned along the east property line, in the middle of the subdivision south of the multi-family complex, and west of the subdivision west of the main road. It is also expected that the existing pond on the west side of the property would be utilized for stormwater management. The single-family for sale development will be designed to meet city and WDNR requirements.

1.5 Site Lighting

A photometric plan (PXP) is included with the submittal to show the lighting level through the multi-family site. See sheet C3.1 and C3.2 of the plan set for the PXP plan. Sheet C3.2 has the light pole detail that is proposed for the multi-family site. The city requires light poles to be less than 20' tall and the proposed light poles are 12' tall. The single-family for lease houses will not include any pole lighting. Each house will have a porch light near the front entry to the house.

2.0 Roadway Design

A new public road will be constructed for the project. The road will connect to Milkweed Lane and Golf Road. The proposed road will have 11.5' wide drive lanes with 30" mountable curb and gutter on each side. The ROW for the road will be 60' wide. The proposed road will be crowned with a 2% cross slope toward the curb and gutter. The road will be designed using the City of Pewaukee technical standards. The road ROW for the south end of the road is proposed to be 15' west of the east property line to protect a portion of wetland. Shifting the south end of the road to the west will require less wetlands to be filled. The connection to Golf Road is designed to have an island for the development's monument sign.