

MEMORANDUM

Cara Geheren, P.E. 651.300.4261
Jack Griffin, P.E. 651.300.4264
Ryan Stempski, P.E. 651.300.4267
Chad Isakson, P.E. 651.300.4283

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To: Stephen Wensman, Planning Director
Ben Gozola, Senior Planner, Sambatek
From: Jack Griffin, P.E., City Engineer

Re: Legends of Lake Elmo – OP Concept Plan Review

Engineering received a revised Concept Plan submittal on 01.25.2016 for the above referenced development proposal consisting of the following exhibits/documentation prepared by Erickson Civil:

- Concept Plans dated January 25, 2016, Sheets 1-4.
- Concept Narrative dated January 25, 2016.

The following engineering review comments are provided for your consideration.

All public improvements constructed to support the development must be designed and constructed in accordance with the City Engineering Design Standards Manual available on the City website.

STREETS AND TRANSPORTATION

- The Plat must dedicate sufficient R/W along 50th Street North to ensure 40 feet of R/W north of the existing centerline of the road (a total of 80 foot R/W for collector roadway).
- Right and left turn lanes must be incorporated along 50th Street per the City design standards to maintain safety along the roadway. Right and left turn lanes shall be constructed at the developer's expense.
- The City's Transportation Plan identifies 50th Street N. as a major east-west collector roadway and Municipal State Aid route. Traffic concerns and complaints have increased along 50th Street over the past few years and will continue to increase as traffic volumes grow. There are two ways that the City can help manage and mitigate these growing traffic issues:
 - Improve access management along the corridor when opportunities arise.
 - Improve pedestrian facilities along the corridor, at a minimum, completing the bituminous trail along the north boulevard from Old TH 5 (CSAH 14) to Lake Elmo Avenue.
- Access Management: The development access point along 50th Street meets the City's Transportation Plan access spacing guidelines for Collector Roadways (every 660 ft. to residential streets and commercial driveways) unless the adjacent westerly property becomes commercial use.
 - The proposed access is 900 feet from Linden Trail to the east. Condition met.
 - The proposed access is 725 feet from Lily Avenue to the west. Condition met.
 - The proposed access is 450 feet from the adjacent farm driveway (Hecker property) to the west. Condition not met if this becomes a commercial use property.
 - From a brief field review the proposed access to 50th Street N. appears to provide adequate sight distances for safe ingress and egress.

- The development access road connection to 50th Street is properly located to balance the various conflict points, however the following access management recommendations should be required to improve safety and access management along the road corridor:
 - The existing farm (Hecker parcel) should be required to connect to the new roadway internal to the development to eliminate the driveway access to 50th Street N, especially if this property becomes a commercial use.
 - A new driveway for Lot 40 should be further reviewed as proper sight distances may not be available. Consideration should be made to create shared driveways when possible.
- Pedestrian facilities: A bituminous trail must be incorporated along the north boulevard of 50th Street N. to improve pedestrian safety and work toward future trail connectivity. Segments of a bituminous trail currently exist along 50th Street N. alternating from the north to south side of the road. As traffic continues to increase on 50th Street N. it is critical for the City to create a continuous bituminous trail along the north side of 50th Street, from Old TH5 (CSAH 14) to Lake Elmo Avenue.
- A residential street connection is required as shown to Linden Avenue in the Sanctuary subdivision.
- A residential street stub is required as shown between lots 28 and 29 to extend to the westerly plat limits for future connection. A temporary cul-de-sac must be provided. A trail should be extended along this road segment for future trail connectivity.
- The center roadway median at the cul-de-sac intersection for lots 2-7 must be revised to allow two way ingress/egress to the cul-de-sac.
- All streets must be designed to meet the City's Engineering Design Standards including R/W width, street width and cul-de-sac radii. Street intersections must approximate 90 degrees and maintain 50 feet of tangent with maximum slopes of 2.5%. Residential maximum longitudinal grade is 8% with no sidewalks, 6% where there are sidewalks.
- Parkway or divided roadways must be a minimum of 18 feet wide from back or curb to back of curb. The development street plan indicates five segments with divided one-way streets. The specific geometry of each divided street area will require detailed review in the preliminary plat phase.
- Ten (10) foot utility easements are required on either side of all right-of-ways.

MUNICIPAL WATER SUPPLY

- Municipal water service is readily available in two locations. The applicant is responsible to extend municipal water into the development to serve the proposed properties.
- Two connection points to the existing City system will be required:
 - 1) A connection to the existing 16-inch watermain at Linden Avenue in the Sanctuary subdivision.
 - 2) A connection to the existing 12-inch watermain at 50th Street N.
- A watermain lateral stub will be required to the westerly plat limits between lots 28 and 29.
- No trunk watermain oversizing is anticipated for this development.

MUNICIPAL SANITARY SEWER / WATEWATER MANAGEMENT

- The proposed development is located outside of the City designated Municipal Urban Service Area (MUSA) for sanitary sewer service. The developer is proposing private individual on-site septic systems for each Lot. Individual on-site septic systems are permitted by Washington County and must contain both a primary and secondary site for each Lot. The Concept Narrative further proposes the use of open space for the placement of private individual on-site septic systems for some Lots.
- The Open Space Ordinance does not allow private individual on-site septic systems to be placed within open space areas. Staff has concerns with this proposal because it will be difficult, both technically and from a legal access right perspective, to ensure that these areas are protected and reserved specifically for use by each specific property. Any plan approved for development with the use of private individual on-site septic systems must demonstrate that both a primary and secondary private individual on-site septic system exists and is dedicated to each Lot including septic tanks, service lines and drainfields.

- The Concept Plan does not detail the proposed wastewater management plan including the location of each primary and secondary private individual on-site septic system or the supporting percolation testing to verify the existence of adequate supporting soils. Therefore, the Concept Plan approval must be contingent upon a Preliminary Plat submittal that addresses a comprehensive wastewater management plan and all Lot locations and sizes must be subject to revision as needed to accommodate a properly designed primary and secondary private individual on-site septic system.
 - Septic system sites must be placed where soil investigations demonstrate suitable soils and demonstrate that sufficient land is available to support both a primary and secondary septic system site for each proposed Lot.
 - The plans must clearly show that no individual septic system area will be located within the floodplain, wetland or wetland buffer.
- City Comprehensive Wastewater Management Strategies: It is important to note that the allowance of private individual on-site septic systems for the Legends OP development (no public sewer system) may economically prohibit the Sanctuary subdivision to be able to connect to the municipal sewer system in the event of a community system failure.

STORMWATER MANAGEMENT

- The site plan is subject to a storm water management plan meeting State, VBWD and City rules and regulations. No proposed storm water management plan was provided as part of the Concept Plans.
- Storm water facilities proposed as part of the site plan to meet State and VBWD permitting requirements must be constructed in accordance with the City Engineering Design Standards Manual available on the City website.
- The general drainage system should mimic the natural topography of the site in order to ensure a drainage system that provides positive storm water drainage across the development. Overland emergency overflows or outlets will be required as part of the site plan.
- Storm water pond facilities should be combined together to the greatest extent possible to ensure adequate hydrology for efficient facility treatment operations.
- The ultimate discharge rate and location will be an important consideration to avoid negative impacts to downstream properties. The storm water management plan will need to address changes to the downstream drainage system to the extent alterations are proposed. To the extent adjacent properties are impacted, written permission from those properties must be submitted as part of the development applications.
- Per City requirements, all storm water facilities, infiltration basins, wetlands and wetland buffers must be placed in Outlots deeded to the City for maintenance purposes. The Stormwater Facility Outlots must fully incorporate the 100-year HWL, 10 foot maintenance bench and all maintenance access roads.
- It is unclear from the concept plan if the proposed ponding and infiltration is on Outlots that will be dedicated to the City. It is also unclear from the concept plan if all wetlands and required wetland buffers are located on Outlots. Future plan submittals must address this information and requirements.
- The plans must include the 100-year HWL for all adjacent wetlands and water bodies and must demonstrate that the 100-year HWL does not encroach onto any proposed Lot.
- The plans must also demonstrate that the minimum floor elevations for each Lot are in compliance with the VBWD rules providing a minimum 2-foot separation from any adjacent 100-year HWL.
- The storm sewer system shall be designed to maintain the City standard **minimum** pipe cover of 3 feet. Drain tile is required as part of the City standard street section at all localized low points in the street. Drain tile considerations may impact the storm sewer design and depth requirements at low points.
- Per City requirements all storm sewer pipe easements must be a minimum 30-feet in width.

ADDITIONAL CONSIDERATIONS

- The Phasing plan indicates that the street pavement and home construction will begin in the northeast adjacent to the Sanctuary subdivision and move south. The developer proposes to control site access by requiring all construction traffic and deliveries to access from 50th Street along gravel roads, with all home buyers and new home owners accessing the site from Linden Avenue through the Sanctuary. It is recommended that the Phasing

plan be revised for all traffic to access from 50th Street until all phases are completed. Managing traffic access for workers and deliveries from 50th Street when a secondary paved access is available will be difficult at best and will result in construction traffic accessing the site through the Sanctuary.