

August 27, 2019



City of Yamhill
205 S Maple Street
PO Box 9
Yamhill, OR 97148

RE: Camellia Street Subdivision and Zone Change Application - Engineering Design Review

AKS has reviewed the Camellia Street Subdivision and Zone Change application materials provided by Emerio Design LLC. (TLID 3404 00300). Below is a summary of public works / engineering comments. The following application materials were reviewed:

- Zone Change Application Narrative – Dated 7/9/2019
- Preliminary Plans – Dated 7/3/2019
- Preliminary Stormwater Report – Dated 6/13/2019

Project Background: The applicant is proposing a 61-lot residential subdivision of 12.15-acres. The existing zoning is R-1 (7,000-SF minimum lot size) the applicant is requesting a zone change to R-2 (6,000-SF minimum lot size).

Sanitary Sewer:

The applicant is proposing to route all sanitary sewer to an existing manhole located at the intersection of N Elm and E Camellia. The capacity of the City's sanitary sewer system was evaluated and documented in the City's Wastewater Facilities Planning Study (WFPS) dated December 2015. Figure 12 from the WFPS shows the approximate number of additional equivalent dwelling units (EDU's) that can be constructed in the area upstream of the pipe segment before the system needs to be upsized. One pipe segment on E Main St between N Fir and N Elm is shown with no additional capacity to support upstream development. This was due to a mapping error in the master plan and the belief that this segment had a reverse slope. The slope of the pipe has since been verified and this pipe segment does not present a capacity constraint. The conveyance system has the capacity to support the development.

The WFSP identifies the existing influent pipe from the Influent lift station to the headworks is unable to pass the current peak instantaneous flow rate of 820 gpm and the future 2035 peak instantaneous flow rate of 1,025 gpm. The influent pumps are not able to pump 1,025 gpm, and lack sufficient redundancy. Peak instantaneous flow accounts for the peak hourly system demand plus the 5-year storm during high groundwater periods. Improvements to the influent lift station are the highest ranked priority in the City's sanitary sewer Capital Improvement Plan.

Furthermore, since the issuance of the WFSP, the City has made efforts to reduce stormwater related inflow and infiltration (I&I) into the sanitary sewer system. This effort will reduce the PIF and will in-part reduce the likelihood of a capacity deficiency.

Given that the City has made efforts towards reducing this deficiency and has a planned Capital Improvement to correct the deficiency, this constraint should not be cause to deny the application.

Water:

The applicant is proposing to connect the City's existing 10" water main located at the intersection of N Elm Street and E Camellia. The capacity of the City's water system was evaluated and documents in

the City's Water System Master Plan (WSMP) dated June 2018. There are five components of the water system which need to be evaluated with respect to development:

1. **Supply** – The WSMP indicates the City's water rights and source (Turner Creek) will meet the 2037 demands. Variable creek levels can at time limit the City's ability to intake water to meet the City's demand.
2. **Treatment** – Per the WSMP the City's treatment plant has the capacity to meet the 2037 peak demands however the WSMP includes recommendations for operational changes in the chlorine contact time to meet future peak demands.
3. **Storage** – The WSMP identifies an existing storage capacity of approximately 1.0 – million gallons and makes a recommendation to increase the capacity to approximately 2.6-million gallons (total) to meet the 2037 demands; leaving the system 1.6-million gallons short of the recommended storage volume. The storage recommendations are based on emergency storage equal to 3x maximum daily demand (MDD) + Operational/Equalization (0.25x Average Daily Demand (ADD)) + fire flow at 2,750 gpm for 3-hours. The WSMP includes a recommended capital improvement for the construction of new 1.6-million gallon storage tank to address the deficiency. While this additional storage is recommended it is also valuable to understand how the existing 1-million gallons could serve the future need. Assuming a fire flow of 1,000-gpm for 4-hours (240,000-gal) and operational/equalization of 0.25xADD (78,466-gal) the system can provide storage of 1.0xMDD (672,000-gal) under 2037 build-out conditions.
4. **Distribution** – Per the WSMP most areas of town have sufficient pressures during normal operation year-round. Static system pressures at the point of the connection for the proposed development have been observed from 65 to 70-PSI.
5. **Fire Flow** – Two fire flow tests have been completed by AKS at the existing fire hydrant located at the intersection of N Elm and E Camellia. Estimated fire flows range from approximately 1,000-gpm to 1,100-gpm at 20-PSI residual. The WSMP identifies a capital improvement for the transmission main replacement and upsizing from the reservoirs to the City. This improvement is in design and construction is expected to be completed by December 2020. The transmission main upgrade will significantly improve fire flows throughout town and fire flow at E Camellia is estimated to be in excess of 2,400-gpm.

While the existing water system has several constraints, the City's adopted capital improvement plan outlines recommendations for all upgrades needed to support this development, and therefore the water system can meet the demands of the proposed development.

Stormwater:

The applicant is proposing to collect and route all stormwater runoff to a new stormwater facility located near the existing cul-de-sac on E Camellia. The stormwater facility will provide both stormwater quality treatment and quantity management. The outfall of the stormwater facility will be routed to the existing pipe in E Camellia and ultimately to an open channel drainage located west of the proposed development. The stormwater report submitted as part of this application references the City of Newberg public works standards as a baseline for stormwater management.

- **Water Quality** – The City of Yamhill does not require stormwater quality treatment. The applicant may provide water quality treatment at the applicant's discretion.
- **Water Quantity** – The applicant shows stormwater detention for the 2, 10, and 25-year events, however the post developed flow rates are slightly higher than the pre-developed rates. The facility design shall be modified to match post development flows to rates equal to or less than pre-developed rates.

- **Downstream Analysis** – The applicant is proposing to connect to the existing stormwater system located in E Camellia. The existing system routes to an existing stormwater facility and outfalls to an open channel drainage. The applicant did not provide a downstream analysis and it is unknown if the storm main in E Camellia and the downstream facility have capacity to convey stormwater runoff from the proposed development. The applicant shall submit a downstream analysis.

The applicant has provided a stormwater conveyance and management system which is generally compliant with the City standards and can be made full compliant with some modifications.

Streets:

The applicant is proposing 50-ft right-of-way with 37-ft roadways, mountable curb, and curb-tight 5-ft wide sidewalks. Standard curb and gutter should be utilized on E Camellia to match the existing improvements on the south side of the road; mountable curb will be acceptable in all other areas. The City Municipal Code specifies 60-ft right-of-way. Based on discussions with public works, the proposed 50-ft right-of-way is acceptable.

From a transportation standpoint, the proposed development is isolated from the adjacent properties and pedestrian circulation would benefit from a connection to the school site. We recommend providing a pedestrian path from the end of E Dahlia to N Hemlock. Otherwise the proposed development meets the City's street standards.

Recommended Conditions of Approval:

1. All public improvements shall be constructed in accordance with the City of Yamhill Municipal Code. Where the City Municipal Code is silent, improvements shall meet the 2018 Oregon Standard Specifications for Construction and ODOT design standards.
2. All sanitary sewer pipe shall be minimum 8".
3. The applicant shall extend a 10" water line from the connection at E Camellia through the proposed N Elm and N Fir Loop, and the emergency access through lot 33 to the HWY 47 right-of-way. The upsizing of the line from 8" to 10" shall be SDC eligible based on the pipe material cost difference for upsizing. All other water mains throughout the development shall be 8".
4. Prior to issuance of construction permits the applicant shall submit a DSL concurrence letter of the wetland delineation.
5. Prior to issuance of construction permits the applicant shall submit and obtain a 1200-C permit from DEQ.
6. Prior to issuance of the construction permits the applicant shall demonstrate the stormwater facility is designed to attenuate post-development stormwater flows to rates equal to or less than pre-developed rates. Stormwater management shall be in accordance with the 2015 City of Newberg Public Works Design and Construction Standards.
7. Prior to issuance of construction permits the applicant shall submit a hydraulic grade profile for all stormwater main lines including the existing line at the point of connection in E Camellia. The applicant shall show that the existing stormwater facility located at the end of E Camellia has capacity to convey stormwater runoff being routed to it as part of this development.
8. Catch basin leads shall be routed within the public right-of-way, storm sewer easements are not acceptable.
9. Prior to issuance of construction permits the applicant shall submit a site specific geotechnical investigation and recommendations report.

10. A photometric plan shall be submitted for the review of the illumination plan. Lighting levels shall meet ANSI/IES RP-8 American National Standard Practice for Roadway Lighting. Luminaires shall be LED and dark sky compliant.
11. The applicant shall provide a minimum 5-ft wide pedestrian path from the terminus of E Dahlia to N Hemlock, located within a dedicated 10-ft easement. The path shall meet the requirements of Section 16.2 of the ADAAG Outdoor Developed Areas Standards.
12. The applicant shall provide standard curb and gutter on E Camellia Street. All other streets can be improved with mountable curb.
13. All streets shall be designed to meet 2011 PROWAG guidelines.
14. Prior to issuance of construction permits the applicant shall submit and obtain an approach permit from ODOT for the proposed emergency access connection to HWY 47.
15. The building setback for lot 33 shall be measured from the 20-ft emergency vehicle access easement.

Sincerely,



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Attachments:

- WFPS Figure 12
- Hydrant Flow Tests dated 10/13/2018 and 8/20/2019