Gray & Osborne, Inc.
CONSULTING ENGINEERS

MEMORANDUM

TO:	ADAM SMEE, CITY ADMINISTRATOR KELLY RASMUSSEN, PUBLIC WORKS DIRECTOR JOHN FLOYD, CONSULTING PLANNER
FROM:	MIKE JOHNSON, P.E. KERRI SIDEBOTTOM, P.E.
DATE:	NOVEMBER 7, 2018
SUBJECT:	SUNSET TERRACE PRELIMINARY PLAT REVIEW CITY OF KALAMA, COWLITZ COUNTY, WASHINGTON G&O #17273.06

The applicant proposes to subdivide a 17.03-acre parcel into a 65-lot residential subdivision. The proposal includes both detached single-family lots and townhome lots. The proposed project is located on the southwest side of Old Pacific Highway near 6445 Old Pacific Highway. The information submitted for review included a Preliminary Plat, Preliminary Engineering Plans, Preliminary Stormwater Technical Information Report, Geotechnical Report, Traffic Impact Analysis, and Critical Areas Report. We have reviewed the submittal for compliance with City standards, codes, and policies. A summary of the comments follows.

STREET DESIGN AND ACCESS

The applicant proposes to provide access to the site by constructing two new street connections off the south side of Old Pacific Highway. The location of the southerly site access should be coordinated with the location for the proposed Cedar Springs Loop entrance to the proposed Cedar Springs development on the north side of Old Pacific Highway. A network of interior streets is proposed to provide access to the lots within the subdivision. Although several lots will have frontage along Old Pacific Highway, these lots will also have frontage to an interior street and will be provided with vehicular access to the interior street. This is consistent with the City's Development Guidelines and Public Works Standards.

Kalama Municipal Code (KMC) Section 16.10.060A and the Development Guidelines and Public Works Standards (DGPWS) Section 6.02 require that streets be designed where practical to allow future extension to serve adjacent properties or subdivisions. Reviewing the topography of the surrounding area, it appears that extending a road to the

south from the proposed site might be feasible and would provide access to additional properties to the south. The proposed southerly cul-de-sac should be extended to the south property line to allow potential future extension of this road. At the north end of the project, there are a couple of lots that might have some additional development potential; however, due to the topography of these lots, this development potential appears limited. All of these lots currently have access from Old Pacific Highway. Therefore, it does not appear that an extension of a roadway to the north would be necessary to provide access to any of the adjacent properties.

It appears that all of the interior roads would be classified as Local Access Streets per Section 6.03 of the DGPWS. The preliminary plat shows all of the proposed interior roads with a 50-foot right-of-way width, 32-foot paved width, curb and gutter, and a 5-foot-wide sidewalk on both sides of the roads. The proposed roads appear to be mostly consistent with the Local Access Street standard. The following items should be revised during preparation of engineering plans prior to construction:

1. The cul-de-sac bulb right-of-way radius must be 60 feet per Section 6.02B.16 of the DGPWS.

2. The vertical curves must be at least 50 feet in length per Section 6.02B.15 of the DGPWS. The crest vertical curve must be designed to provide a minimum sight distance of 300 feet per Section 6.02B.15 of the DGPWS.

The westernmost road and cul-de-sac are shown as approximately 800 feet long. Per Section 6.02B.15.d of the DGPWS cul-de-sacs for residential streets shall not be longer than 400 feet without a variance. Although the applicant has not specifically requested a modification to the DGPWS, it is apparent that the cul-de-sac must be longer than 400 feet due to the topography of the site. Due to this topographical constraint, we would recommend that the longer cul-de-sac be approved as shown on the preliminary plat.

On the preliminary plat, the applicant has shown widening of Old Pacific Highway to a paved width of 33 feet with approximately 20 feet of paved half-width. This would be consistent with improving Old Pacific Highway to the Collector standard in Section 6.03 of the DGPWS. However, since Old Pacific Highway has a fairly consistent paved width of 28 feet without on-street parking for most of its length, including along the frontage of the recently constructed Stone Forest development, it would be reasonable for the applicant to request a modification to the standard and leave the existing 14-foot paved half-width and not provide on-street parking as allowed in Note 2 of the Minimum Street Design Standards table on page 6-9 of the DGPWS.

LOT CONFIGURATION

KMC Section 16.10.040F discourages flag lots except where topography makes standard design or more frontage impractical or impossible. On the preliminary plat, Lots 21 and 22 are shown as flag lots. The applicant has requested a design modification from this standard. It is apparent that the flag lots are necessary due to the topography of site. As a condition of approval, screening should be required along the stem portions of Lots 21 and 22 per KMC Section 16.10.040.

TRAFFIC IMPACT ANALYSIS

The applicant has submitted a Traffic Impact Analysis prepared by Kelly Engineering. The Traffic Impact Analysis evaluated the impact of traffic to be generated by this site on several adjacent intersections. The Traffic Impact Analysis concluded that all of the intersections evaluated would function at acceptable Levels of Service. No off-site mitigations are recommended.

STORMWATER

The applicant submitted a Preliminary Stormwater Technical Information Report (TIR) describing how stormwater would be managed for this project. The applicant proposes to collect stormwater from the roadways with a system of catch basins and pipes. Stormwater runoff is proposed to be treated in a biofiltration swale located at the northwest corner of the site. The applicant proposes to either provide a detention pond for flow control at the northwest corner of the site or to potentially provide a direct discharge to the Big Lake basin system if allowed by WSDOT. It appears that the applicant has set aside adequate space on the site to provide detention on site if required. Specific issues that will need to be addressed by the applicant during preparation of engineering plans and prior to construction include the following:

1. If WSDOT approves the discharge to Big Lake pond without flow control, the applicant must demonstrate that the increased runoff tributary to the pond does not increase discharge rates from the pond or otherwise increase the potential for downstream erosion.

2. Conveyance calculations must be provided demonstrating that the manmade conveyance is adequate to convey site runoff without surcharging or causing damage to adjacent properties.

3. The curve number for the developed pervious areas used in the report is stated to be 75. Table III-1.3 of the *Stormwater Management Manual for Western Washington* (SWMMWW) dictates a curve number of 80 or 85.

4. In the stormwater model, the predeveloped scenario and the developed scenario have different rainfall amounts for each of the design storms. The same rainfall amount must be used in each scenario.

5. The bioretention swale must be designed to comply with the SWMMWW's requirements. The SWMMWW specifies a minimum slope of 2 percent (which may be reduced if an underdrain is provided), a minimum length of 200 feet, and a maximum depth of flow during the water quality event of 5 inches. Please refer to BMP RB.05.

6. The bioretention swale is shown at the bottom of the detention pond. The swale must be situated at an elevation above the water quality storm water level in the pond in order to provide adequate treatment.

WATER

According to the 2017 *Water System Plan*, the City had available water capacity for 1,593 equivalent residential units (ERUs). This project would add a demand of approximately 65 ERUs. Therefore, the City currently has water capacity to serve this project.

Water is available along Old Pacific Highway from the City's 430 Pressure Zone. The applicant proposes to extend water service from this water main to the lots within the subdivision using 8-inch-diameter water mains.

The water main is shown terminating at the ends of the north and south cul-de-sacs. Per Section 4.03K of the DGPWS, dead-end waterlines in cul-de-sacs should extend to the far property line for future service extension. Blowoffs should be installed at each dead end.

Four fire hydrants are shown on the preliminary plans. The proposed plan does not appear to meet the 400-foot minimum hydrant spacing requirement of Section 4.03G of the DGPWS. The locations of fire hydrants should be verified with the local fire authority prior to construction as a condition of approval.

SEWER

The City of Kalama Wastewater Treatment Plant (WWTP) has a design maximum month flow capacity of 0.8 million gallons per day (mgd). The maximum month flow at the WWTP is approximately 0.530 mgd. This project would add approximately 0.026 mgd of flow to the WWTP. Therefore, the City currently has sewer capacity to serve this project.

Sanitary sewer service is not currently proposed at the site. There is an existing 8-inch sanitary sewer stub-out from the Stone Forest Lift Station adjacent to Old Pacific Highway approximately 450 linear feet to the south of the project that could provide sewer service to this project. The applicant proposes to collect sanitary sewer on the site using an 8-inch gravity sewer collection system. This gravity system would drain to a new lift station to be built near the northwest corner of the site. The applicant proposes to pump wastewater from the lift station to the Stone Forest Lift Station through a 6-inch force main. The Stone Forest Lift Station currently has capacity to accept wastewater from this development. If the proposed Cedar Springs development is built on the north side of Old Pacific Highway, the proposed 6-inch force main from this development could connect to the 8-inch gravity main that is proposed to be constructed with the Cedar Springs development.

The sewer collection system is shown terminating at the ends of the north and south cul-de-sacs. Per Section 5.02A of the DGPWS, if future extensions of the system are deemed probable by the City, the system shall be designed to be extended to the far property line. Due to the topography of the adjacent site, it does not appear that gravity sanitary sewer can be feasibly extended to the south. It does appear that gravity sanitary sewer can be feasibly extended to the north, so it should be extended from the north cul-de-sac to the north property line.

The applicant appears to be proposing a 4-inch-diameter pressure sanitary sewer line from Station 51+55 south to the south cul-de-sac. Gravity sewer appears feasible in this location, so gravity sewer should be extended to at least Station 53+25.

GRADING AND EROSION CONTROL

Prior to construction, the applicant will need to obtain a construction stormwater NPDES permit from the Department of Ecology. An erosion control plan will need to be submitted in accordance with the DGPWS prior to beginning construction.

RECOMMENDATION

We recommend conditional approval of the plat to the Planning Commission and City Council. The conditions include the following:

1. All infrastructure shall be designed and constructed in accordance with the Development Guidelines and Public Works Standards.

2. The location of the southerly site access shall be coordinated with the location of the proposed Cedar Springs Loop access to the proposed Cedar Springs subdivision.

3. The proposed south cul-de-sac shall be extended south to the south property line to facilitate potential future road connections.

4. Frontage improvements along Old Pacific Highway shall include curb, gutter, sidewalk, storm drainage, and street lights. The existing 28-foot pavement width may be maintained.

5. Screening shall be provided on the flag stems for Lots 21 and 22.

6. Water mains shall be extended to the north and south property lines from the cul-de-sacs. Blowoffs shall be installed at each end.

7. Fire hydrant location and spacing shall be consistent with the DGPWS. Final hydrant locations shall be verified with the local fire authority.

8. Sewer main shall be extended to the north property line from the north cul-de-sac.

9. Prior to construction, the applicant shall provide evidence of coverage by a Department of Ecology construction stormwater NPDES permit.

MBJ/hh