



H. Lee & Associates, PLLC

Civil Engineering, Traffic Engineering, and Planning

MEMORANDUM

To: City of Camas Staff

From: H. Lee & Associates, PLLC

Date: October 21, 2022

Subject: 18th Avenue Subdivision Explanation Letter



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10/21/22

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PROJECT DESCRIPTION

The proposed 18th Avenue Subdivision is located at 3010 NW 18th Avenue in Camas, Washington and is comprised of tax lots 127439000, 127359000, and 127356000. The project site is vacant. Figure 1 shows the project vicinity.

The proposed project will subdivide approximately 9.28 acres into 33 new single-family detached lots. One single-family detached home exists on-site and will be retained as part of the subdivision totaling the overall lot count to 34. Access to the proposed project will be from connections to NW Hancock Drive and a newly constructed roadway onto NW Hood Street. It should be noted that the connection to NW Hood Street will create the east leg of the preliminarily approved Hood Street Subdivision access intersection which is located directly across NW Hood Street from the proposed 18th Avenue Subdivision. The proposed roadway onto NW Hood Street is approximately 310 feet from the NW 18th Avenue/NW Hood Street intersection and approximately 350 feet from the NW 16th Avenue/NW Hood Street intersection as measured from centerline to centerline. Figure 2 shows the project site plan.

EXCEPTION EXPLANATION

Per COC 17.19.030.D.6, *the restrictions imposed shall be in accordance with Camas Design Standards.*

b. The city engineer may grant exceptions to the access restriction policies and standards when no other feasible access alternative exists.

The proposed 18th Avenue Subdivision project is requesting an exception to the access spacing standards along NW Hood Street. The proposed roadway onto NW Hood Street will not meet the 660-foot spacing requirement shown in the COC *Engineering Design Standards for Streets, Table 3 – Access Spacing Standards* for arterial roadways. Figure 3 shows the access spacing along NW Hood Street between NW 18th Avenue and NW 16th Avenue. As shown in Figure 3, the proposed roadway is 310 feet from the NW 18th Avenue/NW Hood Street intersection and approximately 350 feet from the NW 16th Avenue/NW Hood Street intersection as measured from centerline to centerline.

ENGINEERING ANALYSIS

Access Considerations and Existing Constraints

As previously shown in Figure 3, the length of NW Hood Street between NW 18th Avenue and NW 16th Avenue is approximately 670 feet. Therefore it is not possible to locate the proposed project access intersection along the site frontage in a location that meets the 660-foot access spacing standard. Figure 3 shows the location of the proposed project access intersection which is aligned with the preliminarily approved Hood Street Subdivision project access location and that the proposed 18th Avenue Subdivision project access will be creating the east leg of the future intersection. The proposed 18th Avenue Subdivision project access location is located in the best location possible within the existing access spacing constraints along the project site frontage by not creating another intersection but merely adding another leg to an approved intersection.

Safety Considerations

The 18th Avenue Subdivision traffic study dated October 21, 2022 showed a crash rate of 0.00 accidents per million entering vehicles at the proposed NW Hood Street/Project Access intersection. The crash analysis is summarized in Table 1.

Generally, an accident rate of less than 1.00 accidents per million entering vehicles is considered acceptable and no further analysis is necessary. As shown in Table 1, all of the accident rates at the study area intersections are below 1.00 accidents per million entering vehicles, so no further analysis was conducted.

Based on the historical accident data, a safety problem does not appear to exist at the proposed NW Hood Street/Project Access intersection.

**Table 1. Summary of Traffic Crash History at the
 NW Hood Street/Project Access Intersection**

Intersection	Average Annual Accidents				acc/mev ²
	PDO ¹	Injury	Fatal	Total	
NW Hood Street/Project Access	0.0	0.0	0.0	0.0	0.00

¹ PDO = property damage only

² acc/mev = accidents per million entering vehicles

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The minimum corner sight distance was analyzed for the proposed 18th Avenue Subdivision. The minimum corner sight distance required for the proposed NW Hood Street/Project Access intersection is based on the City of Camas' Design Standard Manual. Per the City of Camas' Design Standard Manual, public and private streets must comply with the sight distance requirements contained in the current "A Policy on Geometric Design on Highways and Streets," published by AASHTO (American Association of State Highway and Transportation Officials." The most recent edition of this reference is the 2018 – 7th Edition.

From AASHTO, the following intersection sight distances are relevant to the project's site access intersections:

- Case B1 – left turn from minor road
- Case B2 – right turn from minor road
- Case F – left from major road

The required sight distance for Case B1 based on a posted speed limit of 35 mph along NW Hood Street is 390 feet. This requirement can be found in Table 9-7 of the "A Policy on Geometric Design on Highways and Streets," page 9-46.

The required sight distance for Case B2 based on a posted speed limit of 35 mph along NW Hood Street is 335 feet. This requirement can be found in Table 9-9 of the "A Policy on Geometric Design on Highways and Streets," page 9-48.

The required sight distance for Case F based on a posted speed limit of 35 mph NW Hood Street is 285 feet. This requirement can be found in Table 9-17 of the "A Policy on Geometric Design on Highways and Streets," page 9-57.

The corner sight distance at the proposed NW Hood Street/Project Access intersection was field measured and compared to the minimum acceptable AASHTO standards described above. Based on field measurements conducted by H. Lee & Associates, PLLC, all of the AASHTO sight distance requirements can be met at the proposed NW Hood Street/Project Access intersection as long as any vegetation within the sight distance triangles is properly maintained and no obstructions that obscure the driver's sight distance are located within the sight distance triangles. The corner sight distances should be re-verified in the final engineering/construction stages of development.

NW Hood Street has a straight alignment along the project frontage and there are no safety issues associated with the existing roadway geometrics.

Capacity Considerations

As previously shown in Figure 1, the existing ADT traffic volumes along NW Hood Street is estimated to be 5,700 based on assuming that P.M. peak hour traffic volume is eight (8) percent of the ADT. The existing ADT was increased by using a compounded 2% annual growth factor to obtain the 2027 projected ADT. The 2027 ADT along NW Hood Street at the proposed project access is estimated at 6,293 vehicles per day.

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The proposed 18th Avenue Subdivision only generates 311 daily, 23 A.M. peak hour (6 in, 17 out), and 31 P.M. peak hour (19 in, 12 out) net new trips as summarized in Table 2. Based on the project's trip generation, only nominal traffic impacts to NW Hood Street would be created which is also substantiated in the project's traffic study. With the project's average daily trip impact the 2027 ADT only increases to 6,604.

Because the 18th Avenue Subdivision has minimal daily traffic impact, the more relevant capacity analysis is a HCM level of service analysis at the project access. The development's traffic study shows that the proposed NW Hood Street/Project Access intersection is projected to operate at LOS B or better in the 2027 "With Project" condition. Table 3 summarizes these results.

There are no daily (ADT) and peak hour capacity concerns along NW Hood Street.

Table 2. Trip Generation Summary for 18th Avenue Subdivision

	Amount	Average Daily	A.M. Peak			P.M. Peak		
			In	Out	Total	In	Out	Total
Single-Family Detached Homes (ITE Code 210)								
Rate per dwelling Unit		9.43	0.18	0.52	0.70	0.59	0.35	0.94
Trips	33 new units	311	6	17	23	19	12	31

Table 3. 2027 "With Project" Level of Service

Unsignalized Intersection	A.M. Peak Hour		P.M. Peak Hour	
	LOS	Average Delay (sec)	LOS	Average Delay (sec)
NW Hood Street/Hood St Subdivision Access/Project Access				
Eastbound Approach	B	10.4	B	10.5
Westbound Approach	B	12.2	B	13.0
Northbound Left	A	7.8	A	7.6
Southbound Left	A	0.0	A	0.0

CONCLUSION

The access exception should be granted because it has the least impact to the adjacent street system and it will not create a new intersection. The proposed access will be the east leg of the previously approved Hood Street Subdivision project access intersection.

18th Avenue Subdivision TIA
Camas, WA

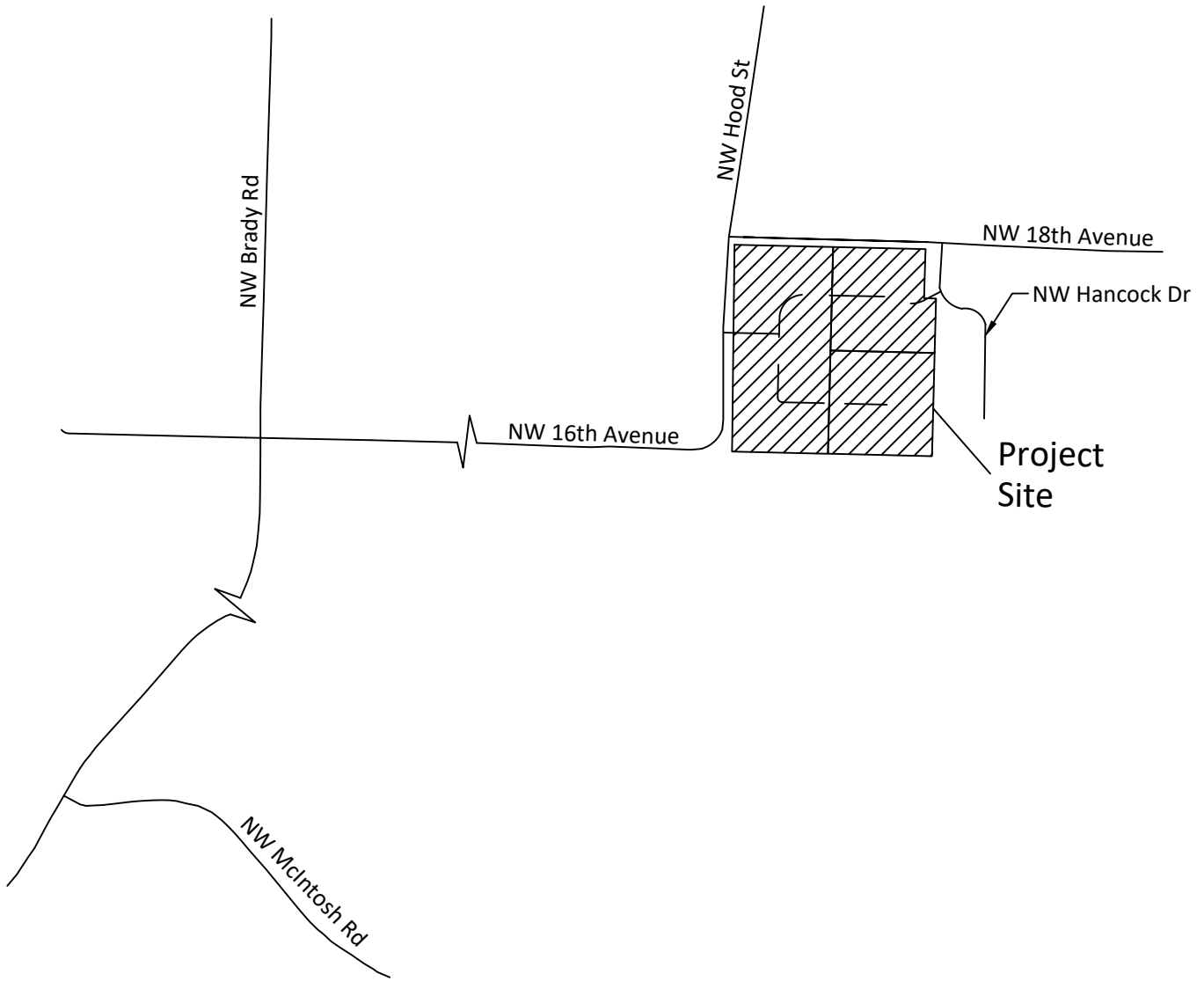


FIGURE 1
Site Vicinity Map

18th Avenue Subdivision TIA Camas, WA

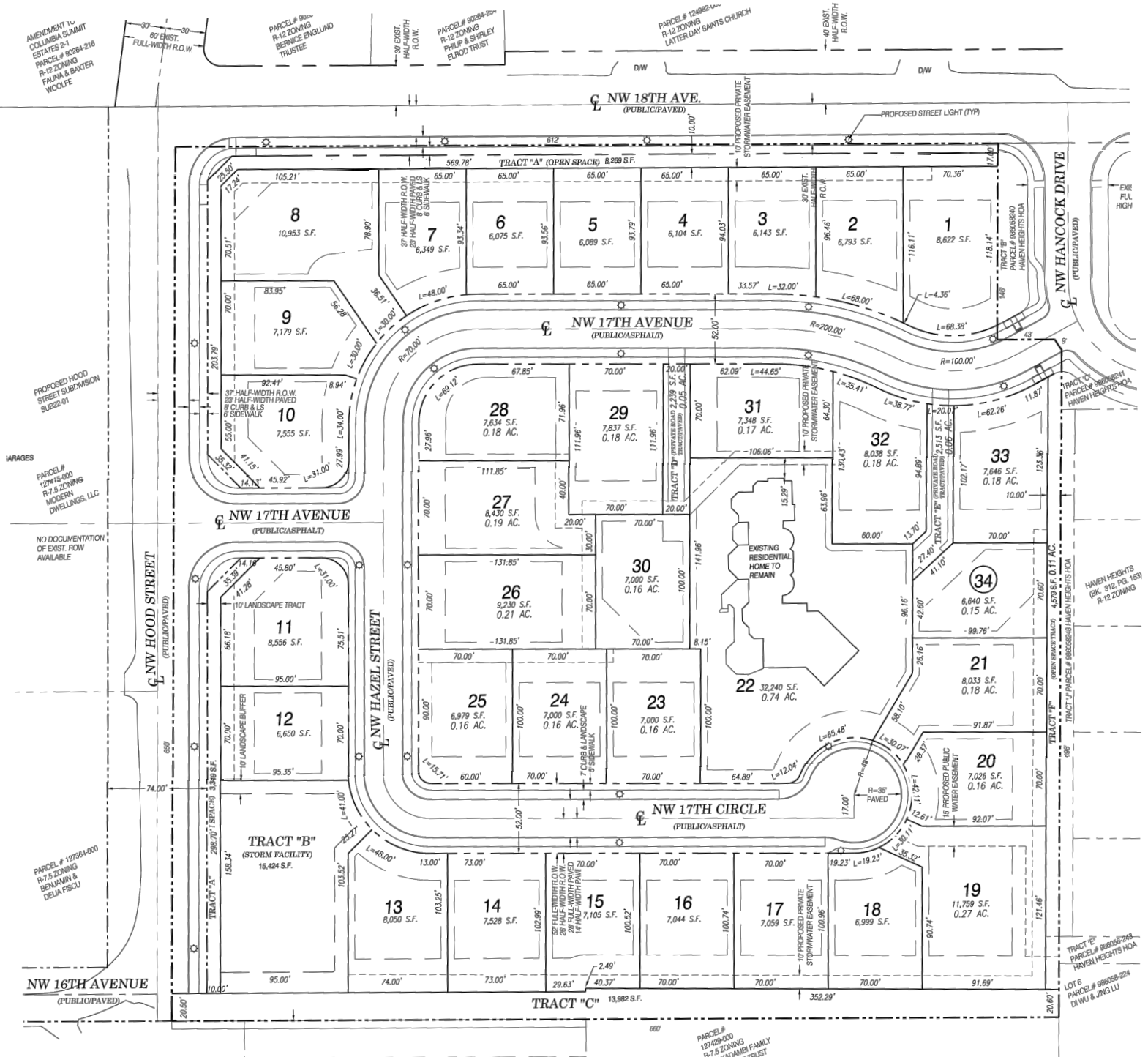


FIGURE 2
Site Plan

NOT TO SCALE

