

EXECUTIVE SUMMARY

SR9/US2, LLC submitted a Comprehensive Plan Amendment Application to Snohomish County on July 31, 2006, which effectively presented a 371 acre area for proposed annexation into the City of Snohomish Urban Growth Area (UGA). The proposed expansion is bounded on the west by 87th Avenue SE, on the north by 36th Street SE (as projected east and west), and on the east by SR9. Additionally, the site does include lands near the northeast corner of the SR9/US2 intersection as shown in Figure 1-2 Proposed UGA Expansion Area Map. SR9/US2, LLC currently controls 140-150 acres within the boundary.

The Preliminary Utility Availability Study had three main focal points. First, a thorough background review was conducted within the SR9/US2, LLC proposed expansion boundary to identify existing utility systems including storm drainage, domestic water, wastewater, and dry utilities (power, natural gas, telephone, and cable). The second study item was to create an internal utility network for each of the four systems based on general capacity sizing criteria and the Proposed Land Use Plan (Figure 1-3) as presented in the original Comprehensive Plan Amendment Application. The final emphasis of the study dealt with offsite utility availability such as: (1) determining the most efficient future connection and service route, and (2) generally identifying existing and proposed system capacities based on the Proposed Land Use Plan (Figure 1-3).

Sources from the City of Snohomish, Snohomish County, Snohomish County Public Utility District No. 1, and the Lake Stevens Sewer District were scrutinized to extract all current and publicly available information concerning the existing utility networks. Applicable figures are included at the end of this summary for reference. Keep in mind, due to the general intent of this study, the following preliminary conclusions and recommendations do not take into account onsite wetlands identified by the National Wetland Inventory (NWI) or the Snohomish County Wetland Survey. Also, the 16 acres of land east of SR9 was not included in the analysis at this time, but may be added at a later date.

STORM DRAINAGE SYSTEM

The SR9/US2, LLC proposed expansion boundary was divided into four separate basins which were delineated using the current Snohomish County Geographical Information System (GIS) topographic database (see Figure 3-7). Three of these basins are directly affected by the Proposed Land Use Map: Bunk Foss Creek, Cemetery Creek, and Mosher Creek. (The remaining basin, Blackman's Lake/Swifty Creek is not affected by the Proposed Land Use Map and is mentioned for reference only.) As part of the Preliminary Utility Availability Study, a series of recommendations were made in an attempt to develop a future storm drainage network which is consistent with the Proposed Land Use Plan (Figure 1-3) and the 3 affected basins:

- 1) Bunk Foss Creek – A 24" closed pipe system would bypass Upstream Area No. 2 flows through the northern half of the basin south to US 2. Upstream Area No. 3 on the other hand, would be enhanced and upgraded as mitigation for develop-

mental impacts. In addition, a detention/water quality facility and a pipe and catch basin system are recommended;

- 2) Cemetery Creek - The Cemetery Creek basin accounts for under 10% of the overall SR9/US2 Proposed Land Use Map. A detention/water quality facility and a pipe and catch basin system are the only improvements suggested for this basin.
- 3) Mosher Creek - The main stem of Mosher Creek enters the proposed expansion area along the site's northern boundary. The main creek system will be enhanced and upgraded as mitigation for developmental impacts. An 18" closed bypass system however, would be installed along 87th Avenue SE to divert complex offsite flows in this area northerly to the main stream channel. A detention/water quality facility would then be installed onsite to detain and treat the larger flows resulting from increased impervious surfaces. With close monitoring, the facility could be adjusted to strictly mirror the natural hydrologic patterns of the Mosher Creek basin.

The aforementioned recommendations are based on an extensive background review of readily available information. It is important to point out, that as the annexation process progresses the Proposed Land Use Plan will be updated as dictated by additional studies including an onsite/offsite environmental study and a geotechnical analysis. A future storm drainage report addressing this new information will be required. Based on the facts and figures presented to date all increased runoff can be mitigated for onsite per the latest 2005 Department of Ecology Surface Water Management Manual (2005 DOE SWMM).

DOMESTIC WATER SYSTEM

SR9/US2, LLC's proposed expansion area is currently served by the Snohomish County Public Utility District No. 1 Lake Stevens Pressure Zone (100-430 feet at 30-173psi). The Snohomish County GIS Topography database shows the expansion area ranges in elevation from roughly 160-360 feet. Existing onsite water main lines include: 8" and 12" ductile iron (DI) mains in 87th Avenue SE; a 4" asbestos concrete (AC) line in 36th Street SE; an 8" DI system in Tom Marks Road; and, 4" AC and 8" DI lines in the Joywood Subdivision (45th Place SE).

Future improvements as shown on the Proposed Land Use Map (Figure 1-3) were estimated to create an additional 2,700 to 3,500 ERUs. With this in mind, the future onsite domestic water system will mainly consist of 8" DI loops along the interior roadways and a 12" distribution main along the entire length of 87th Avenue SE (see Figure 4-1).

Significant offsite improvements to the existing Snohomish County PUD system will be required based on the Proposed Land Use Map. Preliminary phone conversations with the existing purveyor suggest the replacement of roughly 7,000LF of 6" DI main line with 12" DI main may be necessary (southwesterly along S. Lake Stevens Road from 103rd to 87th). For this reason, alternative options were researched.

The Everett Transmission Main Line #5 is located less than ½ mile south of US2 and parallels the proposed expansion area's southern boundary. The City of Snohomish and other entities have tapped into this main in several places over the years to support an increasing water demand. For instance, public records show roughly 35 customers from the onsite Joywood estates tapped Transmission Main #5 with a 4" line and routed domestic water under US2 in a 12" line. (The connection has since been abandoned) More recently the City of Snohomish has tapped Transmission Main #5 near the intersection of Bickford Avenue and 87th Ave SE. The maximum and minimum service elevations and the overall operating pressures for these locations are unknown to ESM at this time, but the potential exists for these closer sources to serve the site

WASTEWATER SYSTEM

SR9/US2, LLC's proposed expansion area is zoned rural/urban transition and does not currently lie in a designated sewer service area. All parcels located within the proposed expansion boundary are serviced by onsite septic systems. In addition, the Growth Management Act (GMA) mentions no utility districts can extend into rural areas except under limited circumstances (i.e. school).

Sewer improvement locations are dictated by topography and the Proposed Land Use Plan (Figure 1-3). The future onsite wastewater system will consist mainly of 8" and 12" PVC pipes interconnected by Type I manholes. Sewage gravity flows to an onsite pump station and will then be tight-lined to a nearby purveyor (see Figure 5-3)

Two offsite alternatives were researched in the Preliminary Utility Availability Study:

- (1) Lake Stevens Sanitary Sewer District (LSSD); and,
- (2) City of Snohomish Wastewater Treatment Plant (WWTP)
(see Figures 5-1 and 5-2, respectively)

At this time the City of Snohomish WWTP is considered a superior alternative due to not only its proximity to the site, but also to its minimal change in vertical elevation. Choosing Alternative No. 2 would mean the onsite pump station mentioned earlier is required to convey 2,700 to 3,500 ERUs roughly 40 vertical feet in 2/3 mile along 87th Avenue SE (100% public right-of-way). The LSSD route however, stretches 140 vertical feet in roughly 1 mile and would likely require several right-of-way permits and easements along with a series of pump stations to convey this level of flow. (Note: The LSSD estimated length is based on full operation of the Southwest Interceptor line mentioned in their 2006 Draft Wastewater Treatment Plan.) Although the southerly alternative may result in future capacity problems for the City of Snohomish WWTP, these issues can be addressed through separation of the storm/sewer conveyance systems in the City's combined district

The southerly alternative appears to be a distinctively better service provider at this time based on the background review. However, should the Lake Stevens Sewer District provide an intermittent tie-in (i.e. pump station roughly ½ mile north of the site) which is capable of serving the Proposed Land Use Map in the next 2-3 years, it would certainly be in SR9/US2 LLC's best interest to reassess improvements necessary for each offsite system

DRY UTILITY SYSTEM

For the purpose of the Preliminary Utility Availability Study, dry utilities are limited to: power, natural gas, telephone, and cable. Power is provided by the Snohomish County Public Utility District and is currently located onsite via above ground poles. With regards to phone service however, Verizon was unable to provide the resources needed to verify the exact onsite line location. (Due to current privacy laws a request for information must be issued to the entity on governmental letterhead.) A site visit suggests the telephone lines, provided by Verizon, are located on the same above ground power poles mentioned earlier. Underground locations of the phone lines therefore, are also assumed to correspond with the underground power lines. Cable is provided by Viacom within the City of Snohomish. The closest connection to the site is unknown to ESM at this time. Natural gas for the region is provided by Puget Sound Energy (PSE). No natural gas lines exist onsite at the time of this study. The closest site with natural gas is located at the residence on the corner of 109th Street and 44th Street. Figure 6-1 illustrates the existing location of the nearest dry utility source.

The proposed service network for the dry utility system is shown in Figure 6-2. It is assumed that all dry utilities listed will be placed underground in a dry utility trench system that parallels the roadway, either inside the right-of-way or in a 10' easement outside the right-of-way. Changes in topography and slope will eventually be used by PSE to size the natural gas lines throughout the Proposed Lane Use Area.

CONCLUSION

The Preliminary Utility Availability Study addressed four main utilities vital to the infrastructure of SR9/US2, LLC's Proposed Land Use Plan: storm drainage, domestic water, wastewater, and dry utilities (power, natural gas, telephone, and cable).

All utilities mentioned in this Preliminary Utility Availability Study are available either onsite or within a reasonable distance of the site. It should be noted however, that due to the high cost of extending these utilities to the site the entire Proposed Land Use Plan becomes a "package deal". For instance, areas of designated commercial property which parallel SR9 would need the support of the proposed residential infrastructure to broaden the customer base and thereby spread the cost of upgrades across a wider spectrum. Likewise, in regards to storm drainage the project is far enough ahead in the planning stage to implement a regional detention facility and thereby eliminate the costly design and implementation of several smaller detention/water quality structures. Finally, a single lift station would be designed to service the entire Proposed Land Use Plan. The ultimate location and size of this facility is crucial to service the entire expansion area without isolating individual properties.

The SR9/US2, LLC's Comprehensive Plan Amendment Application, submitted to Snohomish County on July 31, 2006, included a Proposed Land Use Plan which is serviceable by all utilities mentioned in this report.