EXHIBIT G



Real-World Geolechnical Solutions

- · Investigation
- Design
- · Construction Support

August 16, 2005

Project No. 05-9266

Cascade Communities, Inc. 13535 SE 145th Avenue Clackamas, OR 97015

Attention: Don Oakley (Fax 503-658-4544)

RE: GEOTECHNICAL AND SLOPE STABILITY INVESTIGATION
VISTA LOOP NORTH AND VISTA LOOP SOUTH SUBDIVISIONS

SANDY, OREGON

This report presents the results of our geotechnical and slope stability investigation of the proposed Vista Loop Planned Development in the City of Sandy, Clackamas County, Oregon. The purpose of our investigation was to evaluate subsurface conditions and slope stability at the site, and provide geotechnical recommendations for site development and construction. Our work was performed in accordance with GeoPacific Engineering, Inc.'s (GeoPacific) proposal letter No. P2463, dated May 4, 2005. The scope of our work included extensive investigation of Vista Loop North with particular attention to slopes on northern portion of the site. On Vista Loop South, the scope of our work was limited to a localized several acre area where slopes exceed 15% grade.

1.0 PROJECT INFORMATION

Location:

The subject property is approximately 25.14 acres located in the City of

Sandy, Clackamas County, Oregon (Figure 1).

Owner/

Cascade Communities, Inc.

Developer:

13535 SE 145th Avenue, Clackamas, OR 97015

Civil

Don Oakley, P.E.

Engineer:

13535 SE 145th Avenue, Clackamas, OR 97015

Jurisdictional

Agency:

City of Sandy, Oregon

2.0 SITE DESCRIPTION AND PROPOSED DEVELOPMENT

The subject property includes approximately 25.14 acres that is divided by Highway 26 and is located in the City of Sandy, Clackamas County, Oregon (Figure 1). Vista Loop North, which is bordered on the south by the street right of way for Highway 26, consists of approximately 9.14 acres. Vista Loop South, which is bordered by Highway 26 on the north, consists of approximately 15.57 acres. These proposed residential developments are situated on the margin of an upland

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plateau with Vista Loop North at the top of an approximately 300 foot high slope that forms the southern portion of the Cedar Creek drainage. Slopes on the upland plateau portion of the site generally incline to the west at about 5% to 15% grade. Slopes on the northern portion of Vista Loop North are moderately sleep inclining at 40% to 70% grade. An old logging road is present at the top of this slope. Vegetation consists of low grasses, brush, and young to mature trees.

The proposed subdivision layout and grading plan for Vista Loop North and Vista Loop South are shown in Figure 2 and Figure 4, respectively. On Figure 2, the plan also shows conservation easement limits which set the northerly extend of building foundations on Lots 6 through 16. We presume that underground utilities will generally be constructed at depths of less than 10 feet.

3.0 SITE GEOLOGY

The subject property lies on the far eastern margin of the Willamette Valley/Puget Sound physiographic province, a broad structural depression situated between the Coast Range on the west and the Cascade Range on the east. Underlying the site vicinity is the Plio-Pleistocene age (about 2 million years ago) Springwater Formation, a broad fluvial/alluvial fan deposit of outwash sediment derived from the Cascade Range (Schlicker and Finlayson, 1979). Regionally, the Springwater Formation consists of fluvial conglomerate, volcaniclastic sandstone, siltstone and debris flows. The conglomerate typically consists of deeply weathered to decomposed, well-rounded pebbles to cobbles of basalt, andesite and dacite with a sand matrix composed of feldspathic and volcanic lithics. Siltstone units typically consist of quartzofeldspathic silt, volcanic ash and clay. The estimated thickness of the Springwater Formation in the site vicinity based on mapped thicknesses exposed in the Sandy River drainage is 150 to 200 hundred feet.

Underlying the Springwater Formation is the Pliocene age (3 to 5 million years ago) Troutdale Formation, which is informally divided into an upper and lower member (Schlicker and Finlayson, 1979). The upper member consists primarily of indurated sandstone and conglomerate with localized clay seams. In the site vicinity, the estimated thickness of the upper member is 100 to 150 feet. The lower member, also known as the Sandy River Mudstone, consists of moderately-well indurated siltstone, claystone, very-fine-grained sandstone and some volcanic lapilli tuff layers with a total estimated thickness of about 725 feet. In the site vicinity, these strata are generally horizontally bedded with maximum dip angles on the order of 2 degrees (Schlicker and Finlayson, 1979).

4.0 SUBSURFACE CONDITIONS

In order to characterize subsurface conditions on the subject property, GeoPacific conducted a two phase program of subsurface exploration. The first phase consisted of 12 test pits excavated to depths of 8 to 12 feet with an 8-ton trackhoe. The second phase consisted of drilling 3 exploratory borings with a track-mounted drill rig to depths of 51.5 and 61.5 feet below the ground surface, using mud-rotary drilling techniques. Exploration locations shown in Figure 2 were located in the field by pacing distances from apparent property corners and other site features, and as such should be considered approximate.

The following section presents generalized discussions of soil, rock and groundwater conditions anticipated on site based on subsurface explorations performed for the project. Each of the geologic deposits encountered is discussed separately below. For additional details regarding conditions at specific exploration locations, refer to the attached test pit and boring logs.

4.1 Soil

Fill: A localized fill wedge is present on the outboard edge of the existing logging road which skirts the top of the moderately steep slope on the northern portion of the site (see Figure 3). This fill consists of organic silt and clayey silt soil that is poorly compacted. In test pits (TP-4, TP-5, & TP-7), the fill ranges between 2 and 5 teet thick.

Topsoil: Over most of the site, the ground surface is directly underlain by topsoil consisting of dark brown, organic SILT (OL) with common fine roots in grassland areas and many roots in forested areas. The observed thickness of topsoil generally varies from about 12 to 18 inches.

Native Soil Horizon/Colluvium: On the gently sloping portions of the site, the topsoil is underlain by a native soil horizon, while on the more steeply sloping portions the topsoil is underlain by colluvial soil. The native soil horizon generally consists of brown to red-brown, clayey SILT (ML) derived from in-place weathering and mineral decomposition. In general, this soil horizon has a stiff to very-stiff consistency. Pocket penetrometer measurements indicate an approximate unconfined compressive strength of 1.5 to greater than 3.0 tons/ft². The thickness of this layer ranges between 2 and 3 feet. Colluvial soil underlying the topsoil in sloping areas is derived from weathering, mineral decomposition, erosion and soil creep. The colluvial soil consists of brown to red-brown, clayey SILT (ML) to sandy SILT (ML) with fragments of weathered volcanic rocks and cobbles. In general, the consistency of the colluvial soil ranges from stiff with loose pockets to very-stiff. Pocket penetrometer measurements indicate approximate unconfined compressive strengths of 0.5 to 3.5 tons/ft². In test pits, the thickness of colluvial soil ranges between 2.5 and 4 feet.

Residual Soil: Underlying the native and colluvial soil is residual soil derived from in-place decomposition of the Springwater Formation. The residual soil consists of red-brown, clayey SILT (ML), sandy SILT (ML), and silty CLAY (CL) with some sand and weathered rock fragments. In general, this soil horizon has a stiff to very-stiff consistency. Pocket penetrometer measurements indicate an approximate unconfined compressive strength of 1.5 to 3.0 tons/ft². In test pits, the thickness of this layer ranges from about 3 feet to greater than 7 feet thick, while in some sloping areas, the residual soil is absent.

Springwater Formation: Underlying the above soil units is the Springwater Formation. In test plts, the Springwater Formation consists of multi-colored, sandy SILT (ML) with clay and abundant weathered volcante lithics and decomposed rounded cobbles. The consistency is generally medium-stiff to very-stiff but is variable depending on the original sediment mineralogy and degree of weathering and decomposition. In borings, Standard Penetration Test (SPT) N-values generally range between N=5 and N=greater than 50 consistent with a medium-stiff to hard consistency. Springwater Formation extends below the maximum depth explored of 60 feet below the ground surface.

4.2 Soll Moisture and Groundwater

In May of 2005, near surface soil moisture conditions observed in test pits generally ranged from damp to moist. Minor groundwater seepage was observed in test pits TP-1 and TP-3 at a depth of 7 feet below the ground surface.

Seasonal springs are common in the Springwater Formation and tend to occur in localized areas in a variety of topographic settings. No springs or geomorphic evidence of scasonal springs was observed during our reconnaissance of the site. However, we anticipate that minor seasonal perching of infiltrating surface water and localized groundwater seepage may be encountered in cuts and in shallow excavations during the wet weather season. Because mud-rotary drilling techniques do not permit measurement of groundwater, the exploratory borings provided no information regarding groundwater conditions.

5.0 SLOPE STABILITY

For the purpose of evaluating slope stability, we: (1) performed a review of published geologic literature, (2) performed a series of field reconnaissance traverses of the subject property and adjacent areas, (3) conducted a program of subsurface exploration, (4) constructed geologic cross sections and slope stability models, and (5) performed a quantitative analyses of slope stability.

5.1 Regional Landslide Hazard Mapping

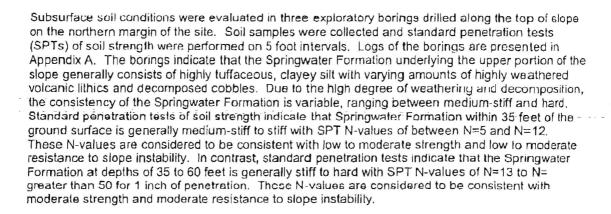
Regional slope instability mapping identifies the slopes on the northern margin of the site as a moderate to high relative slope hazard zone based primarily on slope gradient (Hofmeister et al., 2003). Regional geologic hazard mapping of the westward projection of these slopes identifies numerous "landslide topography" features (Schlicker and Finlayson, 1979). Common slope instability in this area is attributed to weak horizons in the Troutdale Formation underlying the lower portion of the slope and erosional oversteeping of slopes by stream undercutting. The mapped "landslide topography" closest to the subject site lies approximately 2,000 feet to the west. Based on our review of 1:24,000 scale topographic mapping, there appears to be a possible landslide feature expressed as benched topography located approximately 500 feet east of the site (see Figure 1).

These mapped hezard zone designations are general in nature based largely on prevailing slopes, and are intended to indicate the need for site-specific geotechnical investigation such as this report.

5.2 Slope Geomorphology and Subsurface Soil Structure

We performed a series of slope reconnaissance traverses of the moderately steep slope on the northern margin the subject site and adjacent property. This north-facing slope is approximately 300 feet high and extends to the bottom of the Cedar Creek drainage, a small tributary to the Sandy River (See Figure 1). Based on review of the site topographic survey (see Figure 2) and clinometer measurements collected during our reconnaissance traverses, the upper portion of this slope inclines at 40% to 70% grade and includes both concave and slightly convex slope geometries. In contrast the lower portion of the slope, inclines at grades of less than 40% with a concave geometry becoming more gentle towards the toe of the slope at Cedar Creek. Figure 3 presents a slope profile constructed using hand-held clinometer and cloth tape techniques.

Based on observations made during our reconnaissance traverses, slope geomorphology on and directly below the site is generally smooth and uniform consistent with relatively stable slope conditions. No geomorphic evidence of significant slope movement, such as benches, closed depressions, scarps, ground cracks, etc., was observed during our reconnaissance.



5.3 Slope Stability - Lower Slope

We performed a qualitative geologic evaluation of the potential for deep scated slope instability in the Troutdale Formation underlying the lower portion of the slope that extends beyond the northern limits of the subject site. Regionally, the lower section of the Troutdale Formation has a relatively high susceptibility to slope instability due to the presence of weak bedding plane layers and a low internal strength. Because reported bedding planes in the Troutdale Formation generally incline gently to the west at approximate dips of 2 to 3 degrees (Schlicker and Finlayson, 1979), weak bedding planes are unlikely to provide potential failure planes slope movement. Regional distribution patterns indicate that slope failures in the lower section of the Troutdale Formation are triggered more by oversteepening of slopes due to undercutting by stream erosion.

In our assessment, the presence of Troutdale Formation underlying the lower portion of the slope beyond the northern boundary of the subject property does not appear to present a significant instability hazard on the subject site, because: (1) the lower slope inclines at relatively gentle grades (about 10% to 40% grade), (2) the slope is not significantly undercut by Cedar Creek, (3) the Troutdale Formation is somewhat buttressed by deposition of colluvial and alluvial sediments at the toe the slope, and (4) we observed no geomorphic evidence of prior, deep-seated slope instability on the lower slope directly below the subject site.

5.4 Slope Stability Modeling and Quantitative Stability Analysis - Upper Slope

Our slope profile and relevant subsurface data was compiled and used to construct a representative geologic cross section of the slope geometry on and adjacent to the northern portion of the site (Figure 3). A quantitative slope model was then constructed and stability analyses performed to evaluate local slope stability under future conditions with the proposed development cuts at the top of slope. Our analysis presumes that a substantial cut is made at the top of the slope as shown in the project grading plan (Figure 2).

The slope was modeled as a multi-layered system with each layer being an isotropic medium. For the stability evaluation, the most critical circular failure surface was found by analyzing 100 potential failure surfaces. Shear strength parameters used in the model were selected based on correlations

with field SPT N-value measurements and our local experience with similar soil and geologic conditions. The parameters assumed in the slope stability calculations are summarized in Table 1.

Table 1 - Summary of Assumed Soil Strength Parameters

Geologic Unit	Moist Unit Weight (pcf)	Friction Angle	Cohesion (psf)	
Weathered Springwater Fm.	125	33°		
Springwater Fm.	130	36°	500	
Troutdale Formation	125	32°	250	

Slope stability analyses were performed using the SLOPE/W computer program developed by Geo-Slope International of Calgary, Canada. This numerical analysis program utilizes a two-dimensional limiting equilibrium method to calculate the factor of safety of a potential slip surface and incorporates search routines to identify the most critical potential failure surfaces for the cases analyzed. Factors of safety were calculated using Spencer's method of slices. Potential seismic forces were also incorporated into the enalysis using a pseudostatic approach. The pseudostatic analysis used a horizontal ground acceleration of 0.1 g, which is approximately 50 percent of our maximum estimated acceleration for a design seismic event (10 percent probability of exceedence in 50 years). Due to the inherent conservatism of the pseudostatic methodology, it is standard engineering practice to utilize one-half to two-thirds of the expected horizontal accelerations in pseudostatic slope stability calculations.

Results of the slope stability factor of safety calculations are presented in Table 2. Graphic plots of the slope model and analysis output are presented in Appendix B.

Table 2 - Summary of Slope Stability Analysis Results

Cross Section	Slope Conditions	Factor of Safety (Static Conditions)	Factor of Safety (Pseudostatic Conditions)
A-A'	Preliminary Plan Finish Grade	1.46	•
A-A	Preliminary Plan Finish Grade	-	1.19

Our slope stability analysis indicates that a factor of safety of 1.46 is achieved under post development, static conditions with a finish grade setback from the top of the slope of 40 feet (see Appendix B). Pseudostatic stability calculations indicate that the factor of safety under seismic loading during the maximum probable event is 1.1. Potential failure surfaces closer than 40 feet to the top of slope (finish grade) will have reduced factors-of-safety.

In our opinion, the factors of safety presented in Table 2 against slope instability for both static and pseudostatic conditions are adequate for conventional foundation construction that maintains a minimum 40 foot horizontal setback from the top of the moderately-steep slope on the northern margin of Vista Loop North (Lots 6 through 16). Structures located closer than 40 feet horizontal from the top of slope will need to be evaluated individually and will likely require deepened

foundations and/or soil anchors. For the purpose of determining setbacks from the top of slope, "top of slope" refers to the top of slope resulting after the project grading cuts shown on Figure 2 are made.

6.0 CONCLUSIONS AND RECOMMENDATIONS

Our geotechnical investigation indicates that the proposed residential development is geotechnically feasible provided that the site is developed and constructed in accordance with our recommendations. The potential for damaging deep-seated slope instability is considered to be low for conventional house foundations that maintain a minimum setback of 40 feet from the top of the moderately-steep slope on the northern portion of Vista Loop North. Houses on Vista Loop North Lots 6 through 16 that are situated closer than 40 feet from the top of the slope will likely require deep foundations such as drilled piers or driven piles and soil anchors.

Appendix C contains an itemized checklist of soil testing and inspection procedures that are recommended to help guide the project to completion.

6.1 Slope Stability

The northern margin of Vista Loop North is situated at the top of a moderately-steep, 300-foot-high, north-facing slope. In our opinion, the primary slope instability hazard is the potential for localized slope failure on the steeper upper portion of the slope where grades incline up to 70%. Quantitative slope stability modeling and analysis indicates that at distances of less than 40 feet from the top of the slope, the upper slope has a factor of safety against movement of less than 1.46. We recommend that houses supported on conventional shallow foundations maintain a minimum setback of 40 feet from the top of the moderately-steep slope on the northern portion of the property. Houses on Vista Loop North Lots 6 through 16 situated closer than 40 feet from the top of the slope will likely require deep foundations such as drilled piers or driven piles and soil anchors. These foundations will need to be evaluated and designed individually. For maintaining slope stability, stormwater runoff from the development should not be allowed to flow onto the moderately-steep slopes on the northern margin of the development.

Slope gradients on Vista Loop South are generally gentle except for a localized approximately 20 foot high slope inclining at about 35% to 50% grade on the east-central portion of the site (Figure 4). Exploratory test pits indicate that this slope is undertain by relatively competent soils that have a moderate to high resistance to instability on moderate slopes. The preliminary grading plan specifies that 8 feet of structural fill will be placed at the toe of this slope. In our opinion, the potential for damaging slope instability on this slope is low and no special mitigating measures are necessary for slope stability.

6.2 Site Preparation

All areas to be graded should first be cleared of debris, trees, stumps, vegetation, etc., and all debris from clearing should be removed from the site. Organic-rich topsoil should then be stripped. We anticipate that an average stripping depth of 8 to 10 inches will be necessary to remove organic-rich

topsoil. Localized deeper stripping, or tilling and root-picking, to depths of 12 to 24 inches may be necessary to remove thick topsoil and abundant roots around trees. The final depth of stripping removal will be determined on the basis of a site inspection after the initial stripping has been performed. Stripped topsoil should be stockpiled only in designated areas and stripping operations should be observed and documented by GeoPacific.

Once stripping is approved, the area should be aerated, and/or ripped or tilled to a depth of 8 inches, moisture conditioned, and compacted in-place prior to the placement of engineered fill or crushed aggregate base for pavement (dry weather only). Exposed subgrade soils should be evaluated by the geotechnical engineer. For large areas, this evaluation is normally performed by proof-rolling the exposed subgrade with a fully loaded scraper or dump truck. For smaller areas where access is restricted, the subgrade should be evaluated by probing the soil with a steel probe.

Old fill, subsurface structures, etc, in future structural areas should be demolished, removed from the site, and the excavations backfilled with fill compacted to engineered fill specifications. We anticipate that some old fill may be present on Vista Loop North in the vicinity of Lots 49 through 58.

6.4 Rough Grading

Grading for the proposed development should be performed as engineered grading in accordance with Appendix Chapter 33 of the 1997 Uniform Building Code (UBC) with the exceptions and additions noted herein. Proper test frequency and earthwork documentation usually requires daily observation and testing during stripping, rough grading, and placement of engineered fill. Imported fill material must be approved by the geotechnical engineer prior to its arrival on site.

Engineered fill should be compacted in horizontal lifts not exceeding 8 inches using standard compaction equipment. We recommend that engineered fill be compacted to at least 95% of the maximum dry density determined by Standard Proctor AASHTO T-99 or equivalent. Field density testing should conform to ASTM D2922 and D3017, or D1556. Engineered fill should be observed and tested by GcoPacific. Typically, one density test is performed for at least every 2 vertical feet of fill placed or every 500 yd³, whichever requires more testing. Because the standard of practice is to perform testing on an on-call basis, we recommend that the earthwork contractor be held contractually responsible for test scheduling and frequency.

Earthwork is usually performed in the summer months, generally mid-June to mid-October, when warm dry weather is available for proper moisture conditioning of soils. Earthwork performed during the wet-weather season will probably require expensive measures such as cement treatment or imported granular material to compact fill to the recommended engineering specifications.

The preliminary grading plan for VIsta Loop South specifies an approximately 10 foot thick fill in the bottom of a broad drainage swale extending through the site (Figure 4). We anticipate that soft soils and shallow groundwater may be present in the drainage bottom such that subgrade stabilization measures may be necessary to construct structural fills for lots and streets. We recommend that this area be evaluated in construction prior to fill placement. Recommended subgrade stabilization measures may include imported rock stabilization layers, subdrains, drying out ("baking") of exposed subgrade during hot weather conditions, etc.

6.5 Landscaping Fill

Landscaping fill not supporting structures may consist of organic soils (such as topsoil strippings) that are free of large woody debris and/or other deleterious material. To limit settlement and shifting, landscaping fill should be compacted to a firm, unyielding state as determined by GeoPacific (typically 90% of standard proctor AASHTO T-99 or equivalent).

6.6 Erosion Control Considerations

Due to the presence of gentle to moderate slope gradients, we consider the potential for adverse erosion during construction to be moderate. Erosion at the site during construction can be minimized by implementing the project erosion control plan specified by the civil engineer, which typically includes the use of straw bales, bio-bags, and silt fonces. Where used, these erosion control devices should be in place and remain in place throughout site preparation and construction.

Areas of exposed soil requiring immediate and/or temporary protection against exposure should be covered with either mulch or erosion control netting/blankets. Areas of exposed soil requiring permanent stabilization should be seeded with an approved grass seed mixture, or hydrosecded with an approved seed-mulch-fertilizer mixture. Cut and fill slopes should be seeded or planted as soon as possible after construction, so that vegetation has time to become established before the onset of the next wet-weather season.

6.7 Excavating Conditions and Temporary Excavations

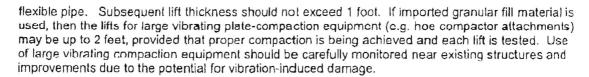
Based on subsurface test pit exploration, we anticipate that the planned excavation depths will generally be achievable with conventional heavy equipment. Some boulders may be encountered, particularly in deeper excavations. All temporary cuts in excess of 4 feet in helpht should be sloped in accordance with U.S. Occupational Safety and Heath Administration (OSHA) regulations (29 CFR Part 1926), or be shored. At the time of our exploration, native soils at the site were generally classified as Type A and Type B Soil. Temporary excavation side slope inclinations as steep as ½:1 (Type A) and 1H:1V (Type B) may be assumed for planning purposes. This cut slope inclination is applicable to excavations above the water table only. Maintenance of safe working conditions, including temporary excavation stability, is the responsibility of the contractor. Actual slope inclinations at the time of construction should be determined based on safety requirements and actual soil and groundwater conditions.

Vibrations created by traffic and construction equipment may cause some caving and raveling of excavation walls. In such an event, lateral support for the excavation walls should be provided by the contractor to prevent loss of ground support and possible distress to existing or previously constructed structural improvements.

6.8 Utilities

PVC pipe should be installed in accordance with the procedures specified in ASTM D2321. We recommend that structural trench backfill be compacted to at least 95% of the maximum dry density determined by Standard Proctor AASHTO T-99 or equivalent. Initial backfill lift thickness for a ¾"-0 crushed aggregate base may need to be as great as 4 feet to reduce the risk of flattening underlying





Adequate density testing should be performed during construction to verify that the recommended relative compaction is achieved. Typically, one density test is taken for every 4 vertical feet of backfill on each 200-lineal-foot section of trench. Franchise utility trenches are generally not compacted unless they are located near a structural area. Trench spoils spread over lots should be kept to a minimum.

6.9 Pavement Construction

It is our understanding that the project will incorporate the standard City pavement section for dry weather construction consisting of 2.5 inches of asphaltic concrete over 8 inches of crushed aggregate (1 ½"-0 or ¾"-0) compacted to at least 95% of AASHTO T-180 or equivalent. For the purpose of evaluating native soil strength for support of pavement, we performed Portable Dynamic Cone Penetrometer (PDCP) field tests which approximate the California Bearing Ratio (CBR) of insitu soils (see Appendix A). Using a CBR of 10 for In-situ, native soil at damp to dry moisture conditions, and empirical correlations between CBR and resilient modulus (M_r), in-situ native soil strength is considered adequate for support of the standard pavement section assuming a light duty traffic index of 4.0 and a design life of 20 years.

Areas of yielding, native soll subgrade should be filled to a minimum depth of 12 to 24 inches, aerated, and recompacted in-place to at least 95% of the maximum dry density obtained by AASHTO T-99 or equivalent. GeoPacific recommends that subgrade strength be verified visually by proof-rolling directly on soil subgrade with a loaded dump truck during dry weather and on top of base course in wet weather. Soft areas which rut, pump, or weave by more than ½ inch on soil and 1/6 inch on base course should be stabilized prior to paving. Generally, one subgrade, one base course, and one asphalt compaction test is performed for every 100 to 200 linear feet of paving.

If pavement areas are to be constructed during wet weather, GeoPacific should review the subgrade and proposed construction methods immediately prior to the placement of base course so that specific recommendations can be provided. Wet-weather pavement construction is likely to require soil amendment, or woven geotextile fabric and a minimum additional 6 inches of crushed aggregate base.

6.10 Anticipated House Foundations

The majority of the subject site to within 40 feet of the top of slope on Vista Ridge North is suitable for shallow foundations bearing on stiff, native soil and/or engineered fill. Foundation design, construction, and setback requirements should conform to the applicable code at the time of permitting. For protection against trost heave, spread footings should be embedded at a minimum depth of 18 inches below exterior grade. The recommended minimum widths for continuous footings supporting wood-framed walls without masonry are presented in Table 3. Minimum reinforcement consisting of three horizontal No. 4 bars, two in the footing and one in the stem wall, is

recommended. Actual fooling widths, sizing, and reinforcement should be determined by the house designer, architect- or engineer-of-record.

Table 3 - Recommended Minimum Width of Continuous Spread Footings

Number of Stories	Minimum Width of Continuous Spread Footings			
1-Story	12 inches			
2-Story	15 inches			
3-Slory	18 inches			

The recommended allowable soll bearing pressure is 1,500 lbs/ft² for footings on stlff, native soil and engineered fill. A maximum chimney and column load of 35 kips is recommended for the site. For heavier loads, GeoPacific should be consulted. The coefficient of friction between on-site soil and poured-in-place concrete may be taken as 0.40 (no factor of safety included). The maximum anticipated total and differential footing movements (generally from soil expansion and/or settlement) are 1 inch and ¾ inch over a span of 20 feet, respectively. Excavations near structural footings should not extend within a 1H:1V plane projected downward from the bottom edge of footings.

Footing excavations should penetrate through topsoil and any loose soil to stiff subgrade that is suitable for bearing support. All footing excavations should be trimmed neat, and all loose or softened soil should be removed from the excavation bottom prior to placing reinforcing steel bars. Due to the moisture sensitivity of on-site native soils, foundations constructed during the wet weather season may require overexcavation of footings and backfill with compacted, crushed aggregate.

6.11 House Foundations Incorporating Retaining Walls

Lateral soil pressures recommended by GeoPacific for design of permanent retaining structures with adequate drainage can be calculated using the equivalent fluid unit weights provided in Table 4. The effect of surcharges or live loads on lateral pressures has not been included. The recommended values assume that adequate drainage measures are incorporated, and that no hydrostatic pressures develop behind the walls. The unit weights in Table 4 are for backfill consisting of free-draining granular material such as crushed aggregate; on-site soils are not recommended for use as retaining wall backfill. Wall backfill should be compacted to at least 95% of the maximum dry density determined by ASTM D698 or equivalent.

The average allowable bearing pressure for retaining walls may be taken as 2,000 lbs/ft² with a maximum allowable toe pressure of 2,500 lbs/ft². The coefficient of friction between native soil or engineered granular fill and poured-in-place concrete may be taken as 0.45 (no factor of safety added).

Subdrains should be installed behind all retaining walls to prevent the build-up of adverse hydrostatic pressure. We recommend that subdrains consist of ADS Highway Grade (or equivalent), perforated, plastic pipe enveloped in a minimum of 3 ft³ per lineal foot of 2" ½", open-graded gravel (drain rock) wrapped with geofabric filter (Amoco 4545, Trevia 1120, or equivalent). A minimum 0.5 percent fall should be maintained throughout the drain and non-perforated pipe outlet.

Table 4 - Recommended Equivalent Fluid Lateral Earth Pressures

	Unrestra	ained Wall	Restrained Wall		
Type	Level Profile	2H:1V Upslope	Level Profile	2H:1V Upslope	
Active Pressure (lbs/ft²/ft)	32	45	-		
At-Rest Pressure (lbs/ft²/ft)		2.2.2.2.2.1	50	65	
Passive Pressure * (lbs/ft²/ft)	280	280	250	250	

^{*} Passive pressure values are allowable and include a factor of safety of 1.5. For passive pressure calculations, the upper 6 inches of embedment should be ignored.

For concrete retaining walls in living spaces, waterproofing and a geocomposite wall drain such as Tuff-N-Dry and Warm-N-Dry or CONTECH C-DRAIN 11K, or equivalent are recommended to minimize the potential for interior moisture problems.

6.12 Footing Subdrains, Roof Drains, and Drainage

Footing subdrains constructed as standard practice should consist of a minimum 3-inch diameter ADS Highway Grade (or equivalent), perforated, plastic pipe enveloped in a minimum of 1 ft³ per lineal foot of 2"- ½", open, graded gravel (drain rock) wrapped with geofabric filter (Amoco 4545, Trevia 1120, or equivalent). Subdrains should be connected to the storm drain system or daylight to a suitable outfall location. A minimum 0.5% fall should be maintained throughout all subdrains and non-perforated pipe outlets. Footing subdrains are normally installed for mitigating detrimental effects of water on foundations only, and are not intended for elimination of all potential sources of water beneath the house or within crawl spaces.

Additional subdrains such as cut-off trenches or blanket drains may be necessary to facilitate drainage of springs encountered during construction. If springs are encountered during construction, GeoPacific Engineering should be contacted to make site-specific recommendations.

Surface water drainage should be directed away from structures. In no case should roof drains be connected to footing drains.

6.13 Seismic Design

The subject site is located in a region of moderate selsmic risk, and moderate levels of earthquake shaking should be anticipated during the design life of the proposed structures and improvements. Probabilistic assessments of the seismic shaking hazard in Oregon predict that in the next 50 years bedrock underlying the subject site has a 10% probability of experiencing a peak ground acceleration (PGA) of 0.18 g, a 5% probability of experiencing a PGA of 0.22 g, and a 2% probability of experiencing a PGA of 0.34 g (Geomatrix, 1995).

Seismic design requirements for single-family homes are included in the Oregon One- and Two-Family Dwelling Specialty Code, which specifies the site location as being in Seismic Design Category D₁. Structures not governed by the One- and Two- Family Dwelling Specialty Code should be designed to resist earthquake loading in accordance with the methodology described in section 1615 of the State of Oregon 2004 Structural Specialty Code (OSSC) Amendments to the 2003 International Building Code (IBC). The maximum considered earthquake ground motion for short period and 1.0 second period spectral response may be determined from map Figures 1615(1) and 1615(2) of the State of Oregon 2004 Structural Specialty Code (OSSC) or the 2003 National Earthquake Hazard Reduction Program (NEHRP)—Recommended Provisions-for Seismic—————Regulations for New Buildings and Other Structures" published by the Building Seismic Safety Council. We recommend Site Class D be used for design per the OSSC, Table 1615.1.1. Using this information, the structural engineer can select the appropriate site coefficient values (F_a and F_v) from Tables 1615.1.2(1) and 1615.1.2(2) of the 2003 IBC to determine the maximum considered earthquake spectral response acceleration for design of the project.

In our opinion, the potential for liquefaction or liquefaction-related ground failure at the subject site is very low, and no special mitigating measures are recommended against liquefaction.

7.0 UNCERTAINTY AND LIMITATIONS

We have prepared this report for the developer and designers, for use on this project only. The report should be provided in its entirety to prospective contractors for bidding and estimating purposes; however, the conclusions and interpretations presented in this report should not be construed as a warranty of the subsurface conditions. Inconsistent conditions can occur between explorations that may not be detected by a geotechnical study. If, during future site operations, subsurface conditions are encountered which vary appreciably from those described herein, GeoPacific should be notified for review of the recommendations of this report, and revision of such if necessary.

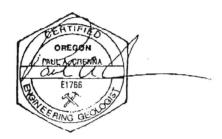
We recommend that GeoPacific perform sufficient geotechnical monitoring, testing and consultation during construction to confirm that the conditions encountered are consistent with those indicated by explorations, and to verify that the geotechnical aspects of construction comply with the contract plans and specifications. Recommendations for design changes will be provided should conditions revealed during construction differ from those anticipated. The checklist attached to this report (Appendix C) outlines the minimum recommended geotechnical observations and testing for the project.

Within the limitations of scope, schedule and budget, GeoPacific attempted to execute these services in accordance with generally accepted professional principles and practices in the fields of geotechnical engineering and engineering geology at the time the report was prepared. No warranty, express or implied, is made. The scope of our work did not include environmental assessments or evaluations regarding the presence or absence of wetlands or hazardous or toxic substances in the soil, surface water, or groundwater at this site.

We appreciate this opportunity to be of service.

Sincerely,

GEOPACIFIC ENGINEERING, INC.



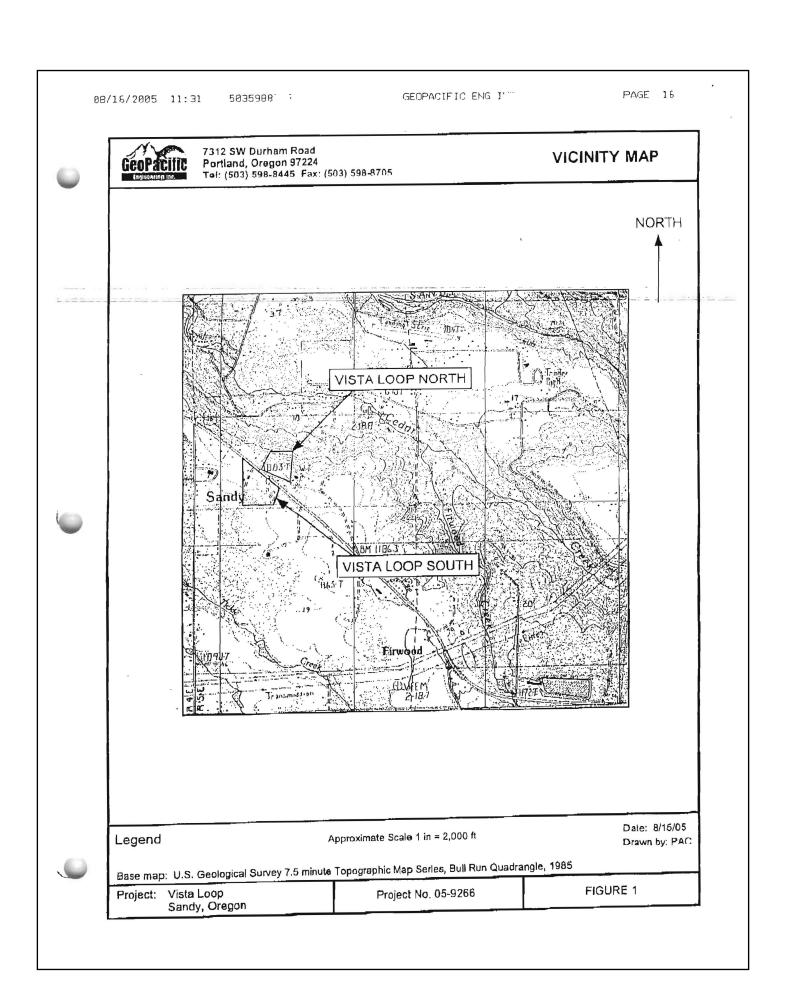
Paul A. Crenna, C.E.G. Engineering Geologist

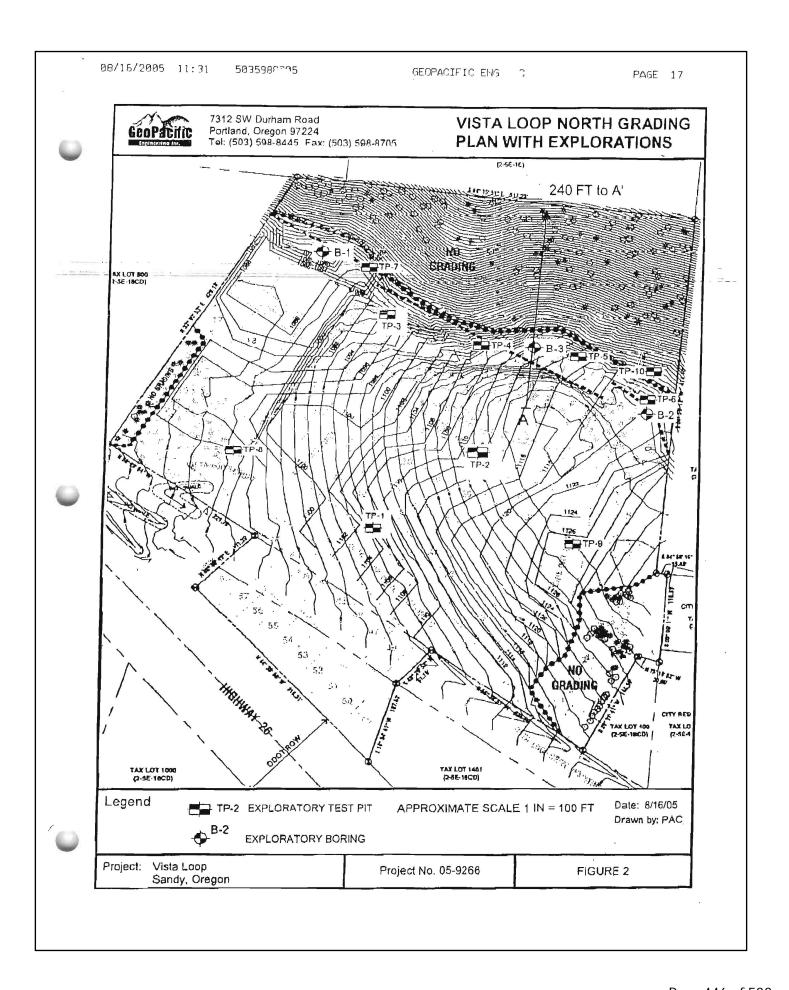


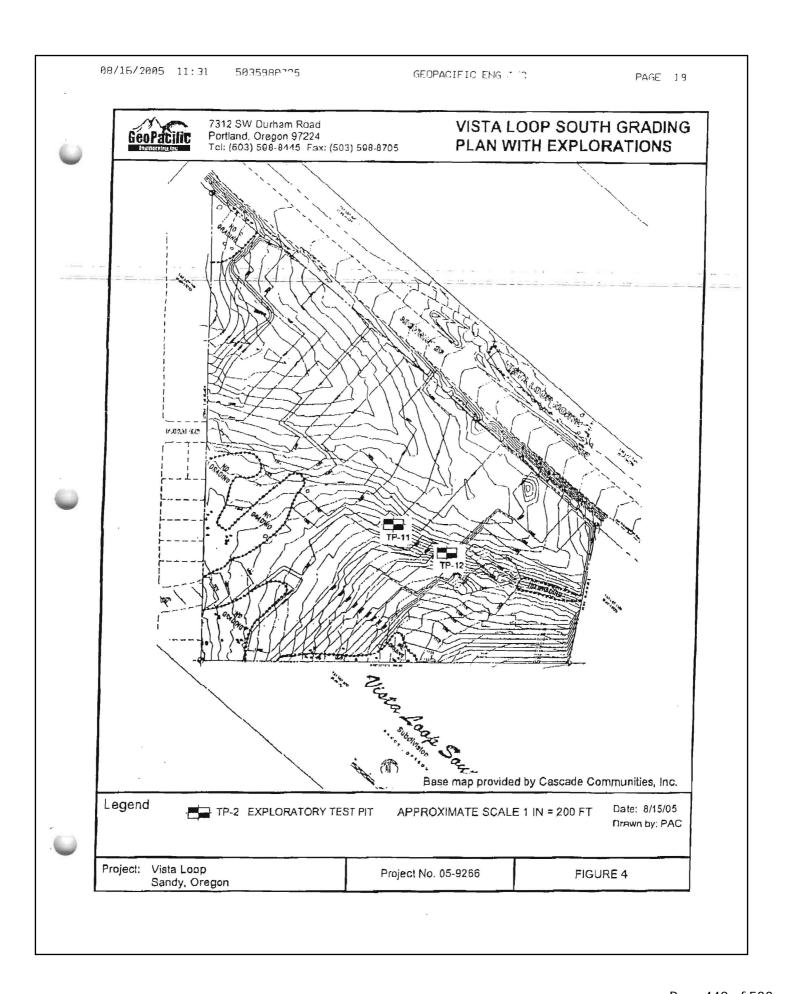
James D. Imbrie, P.E., C.E.G Geotechnical Engineer

8.0 REFERENCES CITED

- Geomatrix Consultants, 1995, Seismic Design Mapping, State of Oregon: unpublished report prepared for Oregon Department of Transportation, Personal Services Contract 11688, January 1995.
- Hofmeister, R.J., Hasenberg, C.S., Madin, I.P., and Wang, Y., 2003, Relative earthquake and ———-fandslide=hazards-in Clackamas=County: Oregon Department of Geology and Mineral Industries Open File Report O-03-09, map scale 1:100,000.
- Schlicker, H.G. and Finlayson, C.T., 1979, Geology and Geologic Hazards of northwestern Clackamas County, Oregon: Oregon Department of Geology and Mineral Industries, Bulletin No. 99, 79 p., scale 1:24,000.







APPENDIX A

FIELD EXPLORATIONS, SAMPLING, LABORATORY AND FIELD TESTING

On May 18, 2005, twelve exploratory test pits were excavated on the subject property to depths of 8 to 12 teet. On May 31 and June 1 of 2005, three exploratory borings were advanced to depths of 51.5 to 61.5 feet. The approximate exploration locations are shown on Figure 2. A GeoPacific Engineering Geologist evaluated and logged the explorations with regard to soil type, moisture content, relative strength, groundwater content, etc. and collected representative samples. Logs of the explorations are presented in this Appendix. The borings were drilled with track-mounted drill-rigs operated by Geotechnical Explorations, Inc. of Tualatin, Oregon. Standard penetration tests were performed on 5-foot intervals using a standard 2-inch O.D., split-spoon sampler driven with a 140 pound auto-hammer. The test pits were excavated with a 16,000 lbs. trackhoe operated by Dan Fisher Excavating of Banks, Oregon using a 30-inch-wide bucket. All excavations were backfilled immediately after completion of logging and sampling. At the completion of the test pit logging, the test pits were backfilled with the excavated spoils and tamped with the backhoe bucket. This backfill should not be expected to behave as compacted structural fill and some minor settling of the ground surface may occur.

Classification, Moisture Content, and Unit Weights

Soil samples were evaluated, described, and classified in accordance with the Unified Soil Classification System. Rock hardness was characterized using a modified version of the Oregon Department of Transportation (ODOT) Soil and Rock Classification Manual (Table A2). All natural moisture samples were collected in plastic bags, and tested in accordance with the methods outlined in ASTM D2216. Moisture content is expressed as a percentage of the mass of water lost during oven drying to the dry weight of soil.

Moisture-Density Relationship

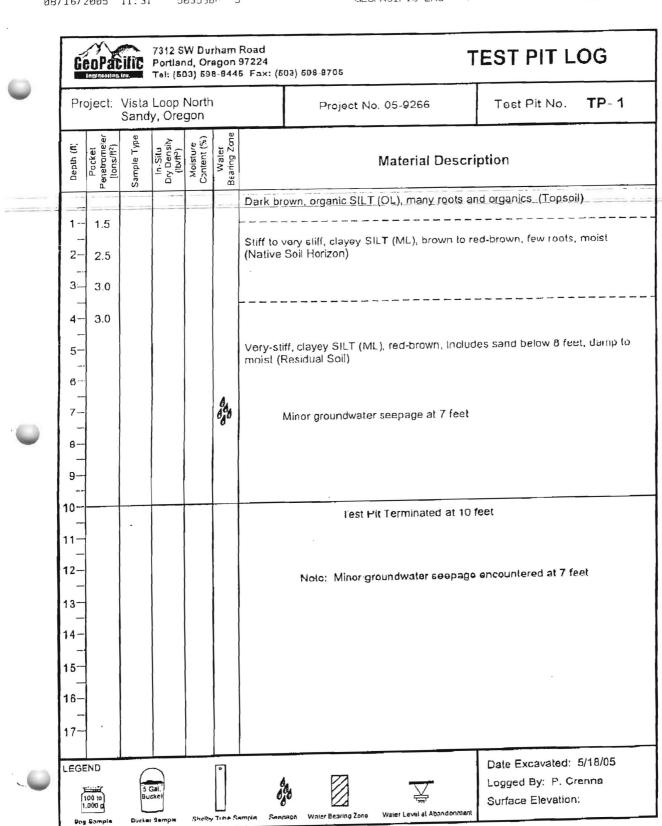
A Standard Proctor compaction test was performed on one bulk sample from the site to determine the moisture-density relationship of native soils. The test was conducted in accordance with AASHTO T-99. The results obtained may be compared with field densities for the purpose of evaluating relative compaction of fill and native soils. The test results are summarized in Table B1.

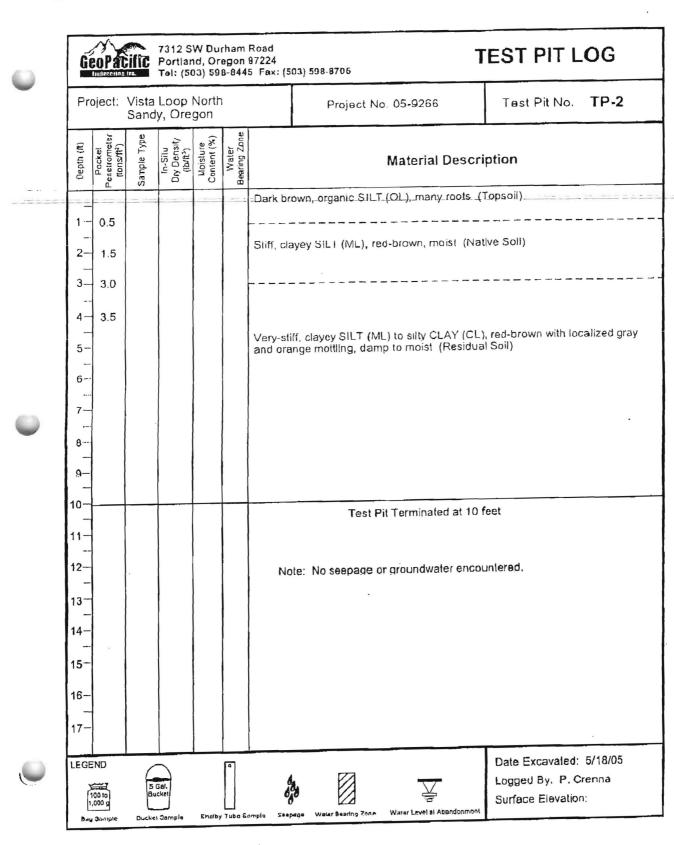
Table B1 - Proctor Test Results (AASHTO T-99)

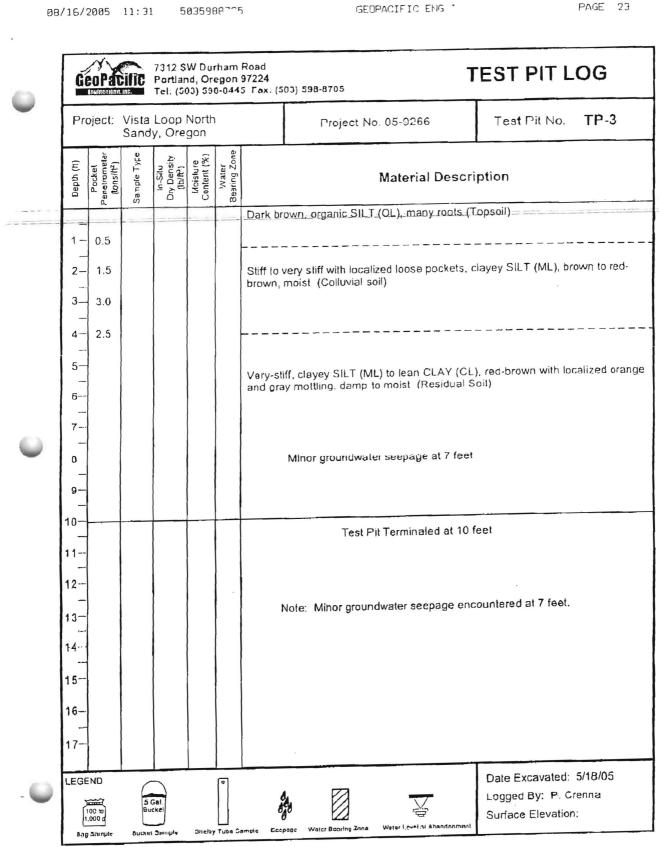
Material Description	Maximum Dry Density (lbs/ft ³)	Optimum Moisture Content
Ciayey SILT (ML)	88.0	30.8%

Portable Dynamic Cone Penetrometer Tests

Field tests were conducted with a Portable Dynamic Cone Penetrometer (PDPC) to determine the strength parameters of the native soil for support of pavement.







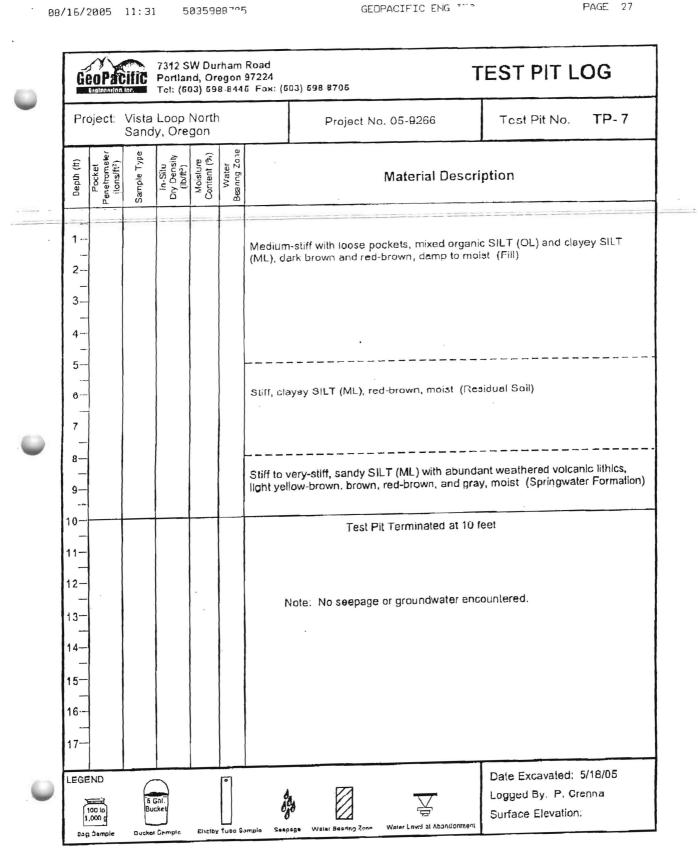
	Sec	Pat	fir	7312 S Portlar Tel: (5	d. Or	egon	97224	TEST PIT LOG		
F	Project: Vista Loop North Sandy, Oregon							Project No. 05-9266 Test Pit No. TP-4		
Depth (ft)	Pocket	Penetrometer (10ns/ff²)	Sample Type	In-Silu Ory Densit/ (Ib/ft²)	Moisture Content (%)	Waler Bearing Zone		Material Description		
1 2 3							Variabl SILT (N	le consistency with loose pockets, mixed organic SILT (OL) and clayey ML), dark brown to red-brown (Poorly Compacted Fill)		
5	4 5 1.5 6 7		Stiff to very-stiff, clayey SILT (ML) to silty CLAY (CL), red-brown, moist (Residual Soil)							
Stiff to very-stiff, s orange, gray and to (Springwater Form	very-stiff, sandy SILT (ML), multi-colored light yellow-brown, red, brown, gray and black, highly tuffaceous with relict volcanic lithics, moist gwater Formation)									
12 13	3				l est Pit Terminated at 12 feet . Note: No seepage or groundwater encountered.					
15 16	-							NOTE. NO SECRETE OF STOURISMENT STOURS.		
LE	GEN	= (Gal.	la	٩		Date Excavated: 5/18/05 Lugged By: P. Crenna Surface Elevation:		



7312 SW Durham Road ConDerific Portland, Oregon 97224

TEST PIT LOG

	Géor	Pacific Portland, Oregon 97224 Tel: (503) 598-8445 Fex: (503) 508-8705											
F	Project: Vista Loop North Sandy, Oregon							Project No. 05-9266	Test Pit No. TP-5				
Georgia (#)	Pocket Pocket (unstf?) Sample Type In-Situ Dy Density (lbff?) Moisture Content (%) Water Bearing Zone							Material Description					
	-		= =				Mariable consistency with loose packets, mixed organic SILT (OL) and clayey — SILT (ML), dark brown to red-brown (Poorly Compacted Fill)						
3							Stiff, cla	Stiff, clayey SILT (ML), red-brown, contains abundant fragments of decomposed volcanic lithics, moist (Colluival Soil)					
5	-	5					red bro	ery-sliff, sandy SILT (ML) with clay. n wn, orange, gray and black, highly tuf lithics, moist (Springwater Formation	nulli-colored light yellow-brown, faceous, includes abundanl relict				
9													
11 12	-							Test Pit Terminated at 10	feet				
13	-			,			١	Note: No seepage or groundwater end	countered.				
15	-												
17	GEND								Date Excavated: 5/18/05				
	100 to 1,000 p	ole.	5 (Budice		Shelby	Tube 3s	ample Stop	Water Caval at Abandonment	Logged By: P. Crenna Surface Elevation:				



LEGEND

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Dag Campic

Shalby Tuba Sample Raspage

Date Excavated: 5/18/05

Logged By: P. Cronna

Surface Elevation:

Water Level et Abandonment

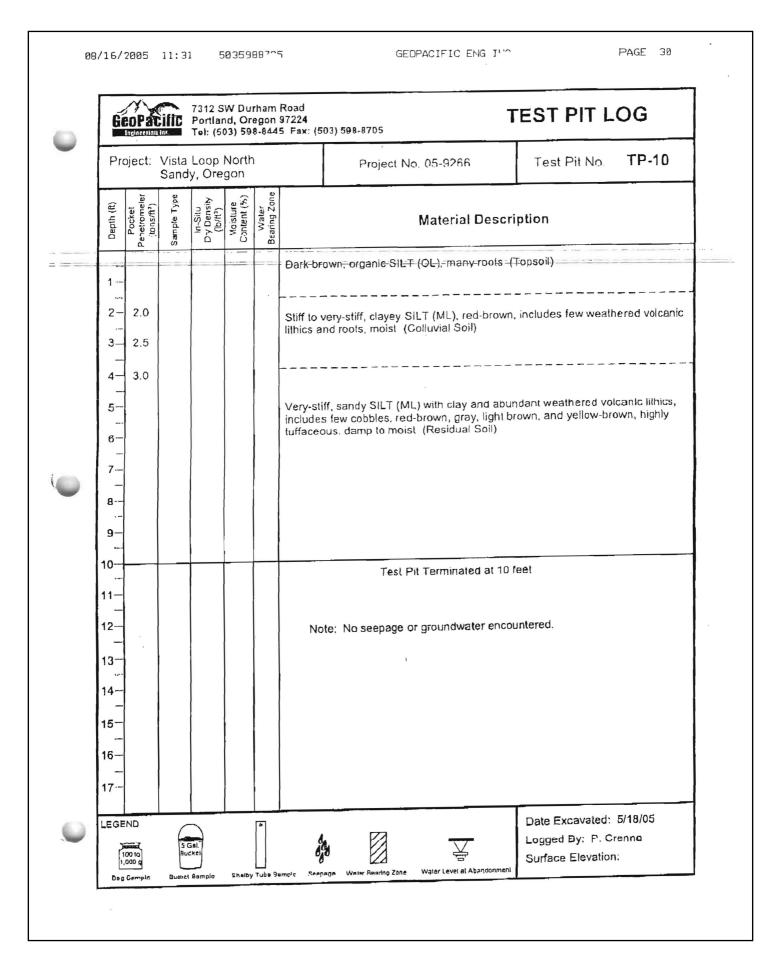
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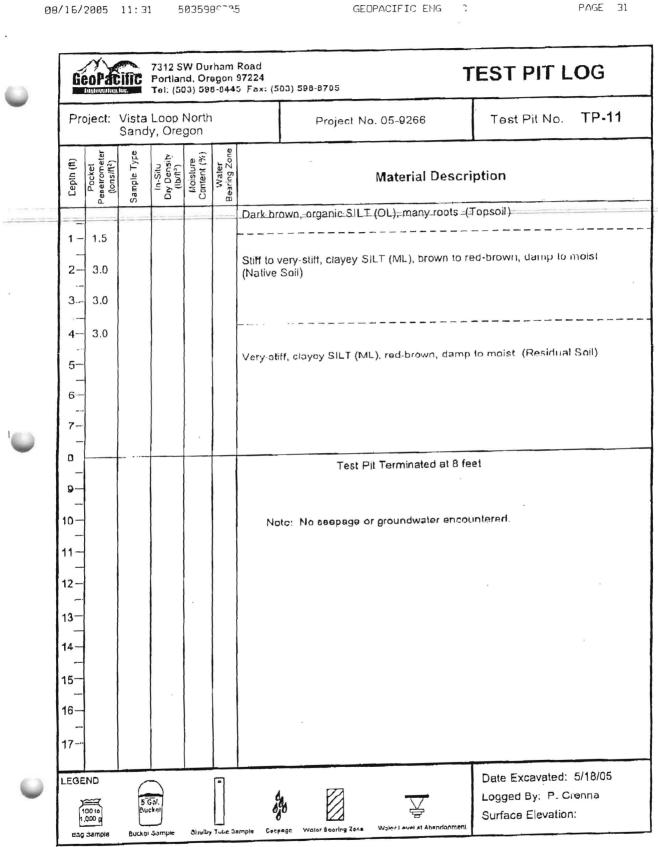
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Page 458 of 533

Logged By: P. Crenna

Surface Elevation:



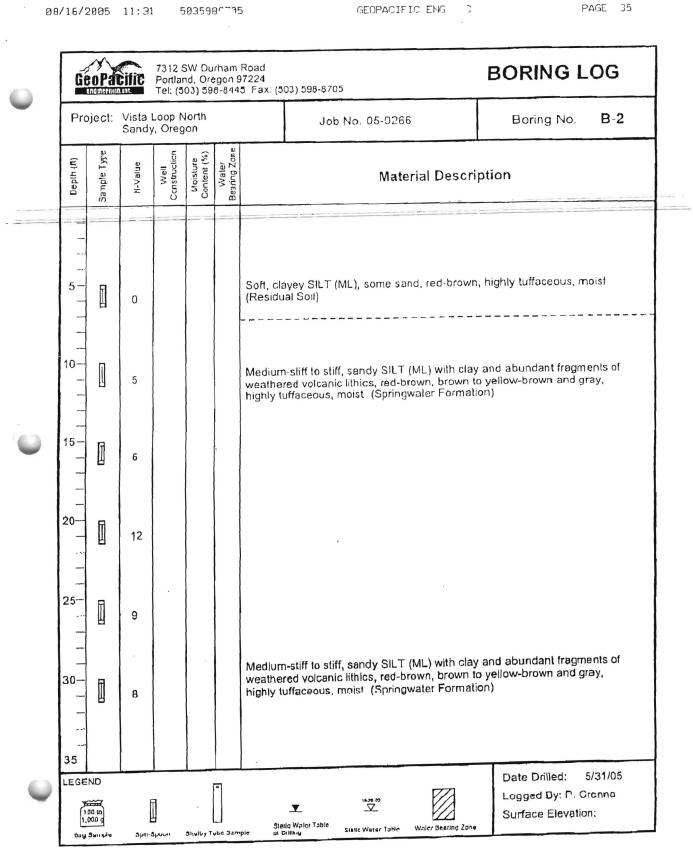


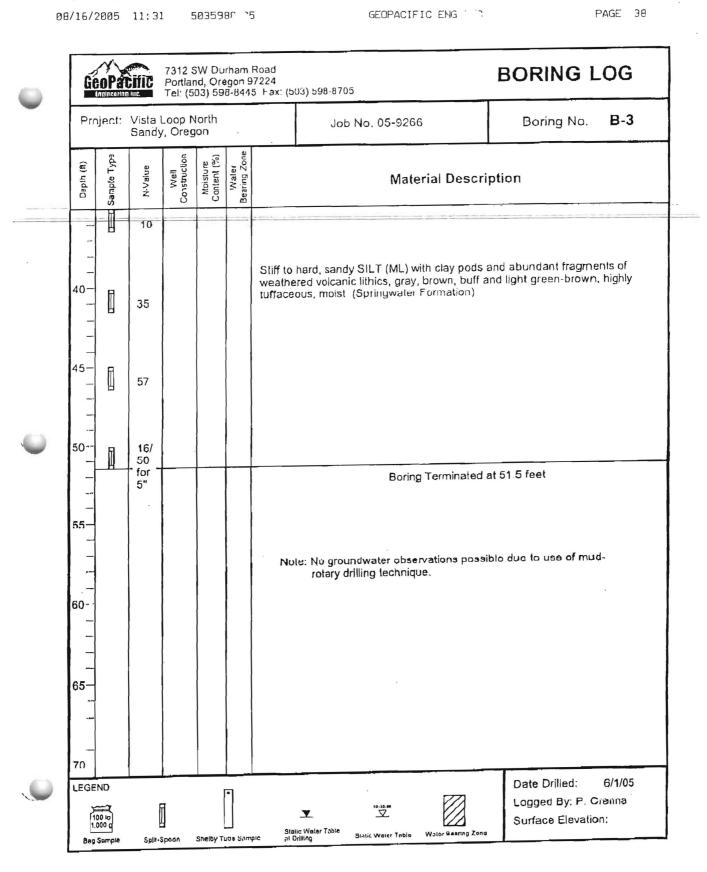
Static Water Table

Sticiby Tube Sample

Static Water Tuble

Weier Beating Zone





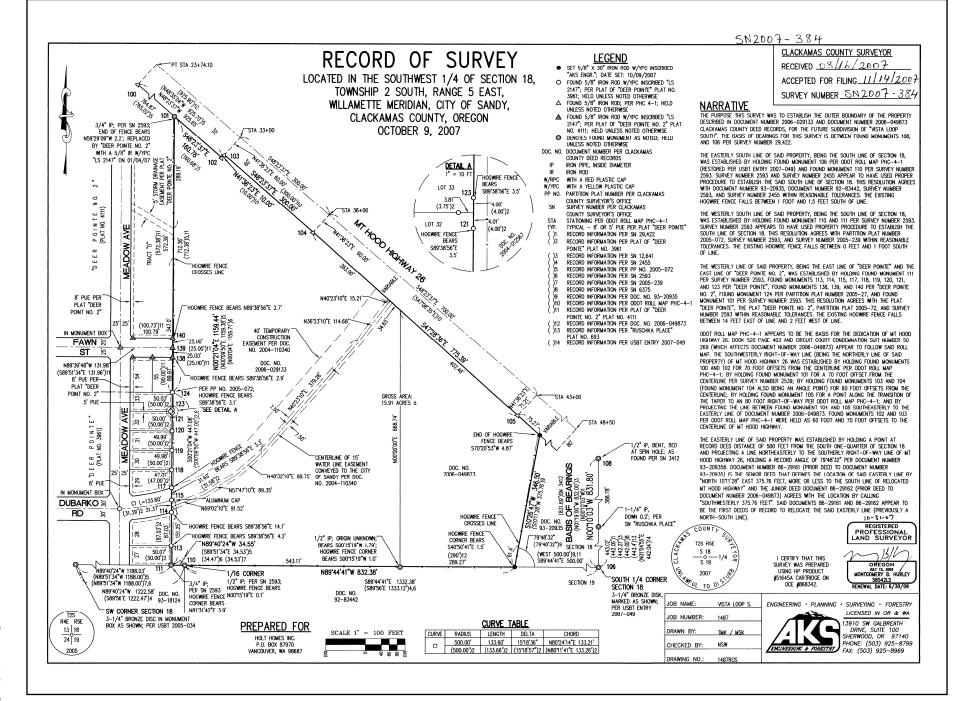
08/16/2005 11:31 503598c-35 GEOPACIFIC ENG ? PAGE 39 Project No. U5-9266 Vista Loop APPENDIX B SLOPE STABILITY QUANTITATIVE MODELING ANALYSIS **GRAPHIC PLOTS AND OUTPUT RESULTS** - 17 -

Project No. 05-9286 Vista Loop

APPENDIX C

CHECKLIST OF RECOMMENDED SOIL TESTIING & INSPECTIONS

Item No.	Procedure	Timing	By Whom	Done
1	Pre-construction meeting	Prior to beginning site work	Contractor, Developer, Civil and Geotechnical Engineers	
2	Stripping, aeration, and root-picking operations	During stripping	Soil Technician	
3	Compaction testing of engineered fill (95% of Standard Proctor)	During filling, tested every 2 vertical feet per lot	Soil Technician	
4	Compaction testing of trench backfill (95% of Standard Proctor)	During backfilling, tested every 4 vertical feet for every 200 lineal feet	Soll Technician	
5	Street subgrade compaction (95% of Standard Proctor)	Prior to base course every 200 lineal feet	Soil Technician	
6	Base course compaction (95% of Modified Proctor)	Prior to paving, tested every 200 lineal feet	Soil Technician	
7	AC Compaction (91% (bottom lift) / 92% (top lift) of Rice)	During paving, tested every 200 lineal feet	Soll Technician	
8	Final Geotechnical Engineer's certification	Completion of project	Geotechnical Engineer	





May 3, 2019

EXHIBIT H

Carey Sheldon PO Box 883 Fairview, OR 97024

RE: Dubarko Road Subdivision – Wetland Determination

Carey:

This letter provides findings of a wetlands determination conducted by Environmental Science & Assessment, LLC (ES&A) at 40808 & 41010 Highway 26 in Sandy, Oregon (TL# 25E18CD00900 & TL#25E18CD01000) to evaluate the existing conditions. The 16.12-acre site is located directly east of a subdivision near Dubarko Road and Meadows Avenue and south of Highway 26 in the east end of Sandy, Oregon (Figure 1; Attachment A). The parcel boundaries and base topographic survey were provided by All County Surveyors and Planners, Inc.

A 6-lot subdivision and 216-unit condominium complex site is planned for the project. The project developer contracted ES&A to determine the presence of jurisdictional resources on site and determine the presence or absence of potential stream or wetland within the site.

METHODOLOGY

Potential wetland areas on the parcel were evaluated using the methodology provided in the Army Corps of Engineers Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region, (U.S. Army Corps of Engineers, 2010). This methodology defines criteria for hydrology, soils, and vegetation to identify wetland areas.

Two levels of investigation were used to evaluate the presence or absence of Sensitive Areas. The first level included a review of existing and available background data. The second level consisted of an on-site field investigation.

Reviewed background data included the following information:

- Aerial Photography (Google Earth, 2018)
- City of Sandy Local Wetland Inventory (Sri/Shapiro AGCO Inc., 1997)
- USFWS National Wetland Inventory (NWI) (USFWS, 2019)
- Natural Resource Conservation Service (NRCS) Soil Survey of Clackamas County, Oregon (Web Soil Survey, 2019)
- Topography (Metro Data Resource Center's MetroMap, 2018)

The lots within site are currently undeveloped, but a small structure was located on TL 1000 in 2012 based on the available 2012 aerial photos (Figure 2). The only evidence of water or wetland resources on site is an intermittent stream mapped on the City of Sandy Local Wetland Inventory (LWI) extending east to west through the site. The USFWS NWI does not map wetland or waters within the site (Figure 3) and the NRCS soil survey does not map hydric soils on site (Figure 4).

107 SE Washington Street, #249 Portland, OR. 97214 v 503.478.0424 www.esapdx.com

ES&A wetland scientist, Jack Dalton, conducted the site assessment on March 23, 2019, with a preliminary site visit on June 8, 2018. Three (3) wetland determination data plots were established to document existing conditions on-site (Figure 5). The data sheets are included in Appendix C of this report. Data plot locations were mapped in the field using a hand-held resource grade GPS unit and transferred to a base topographic survey provided by All County Surveyors and Planners, Inc. (Attachment A).

EXISTING CONDITIONS

The 16.12-acre site located at 40808 & 41010 Highway 26, Sandy, Oregon (TL# 25E18CD00900 & TL#25E18CD01000) is bordered by Highway 26 to the north and a neighborhood to the west. Agricultural land is located east of the site and a single-family residence is located on the lot directly east (Figure 1). A stub for Dubarko Road and a second road stub for Fawn Street are located along the west site boundary (Figure 2).

The investigation found no water feature at the mapped location in the middle of the site. While there is a narrow linear depression extending roughly east to west through the site, no defined channel bed or bank is present, as documented by site data plot locations (Figure 5). No evidence of ponding was observed in the lowest points in the west end of the site and no evidence of seasonal surface water flow was observed in the area of the mapped stream. The plant community is primarily a weedy cleared field dominated by Himalayan blackberry (*Rubus armeniacus*, FAC) and pasture grasses. The tree groves on site are primarily Douglas fit (*Pseudotsuga menziesii*, FACU) with small clusters of western red-cedar (*Thuja plicata*, FAC). No wetland vegetation is present on site. Soils sampled at the three data plots all lacked hydric soil indicators and showed no evidence of sub-surface saturation, high seasonal groundwater, saturation or other hydrology indicators. Photos documenting the existing conditions and plant community are provided in Attachment B. Detailed plant and soil data is provided in Attachment C.

It is my conclusion that the intermittent stream feature mapped on the LWI mapping is not longer accurate and no stream feature or wetland is currently present on site. Any historic drainage that may have extended through the site has is no longer present and was altered by past land use or a change in the surrounding basin hydrology up slope of site. There is no evidence of any surface water entering the site from the east and no evidence of wetland or seasonal ponded water features was observed in the lowest topographic point of site where wetland or were most likely to be located.

If you have any questions about the findings presented in this letter, I would be happy to discuss the determination findings further.

Sincerely,

Jack Dalton

Environmental Science & Assessment, LLC

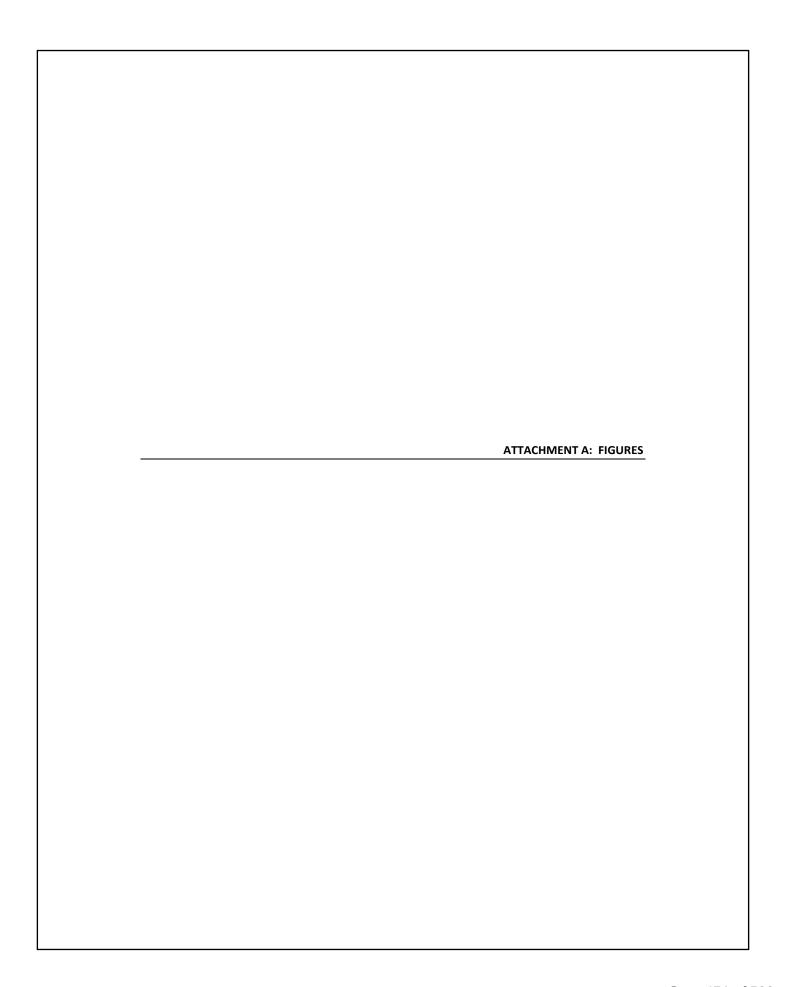
Cc: Alex Reverman (via email)
Ray Moore (via email)

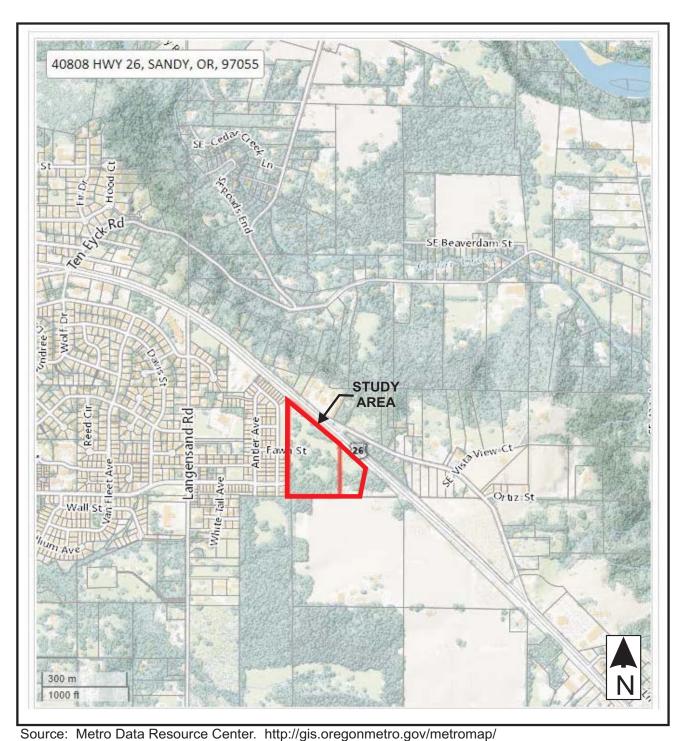
Attachments

 $\mathsf{A}-\mathsf{Figures}$

B – Site Photos

C - Wetland Determination Data





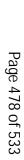
Environmental Science & Assessment, LLC



Vicinity Map Dubarko Road Subdivision Sandy, Oregon

Figure 1

Approx. Scale: 1in. = 100 ft.





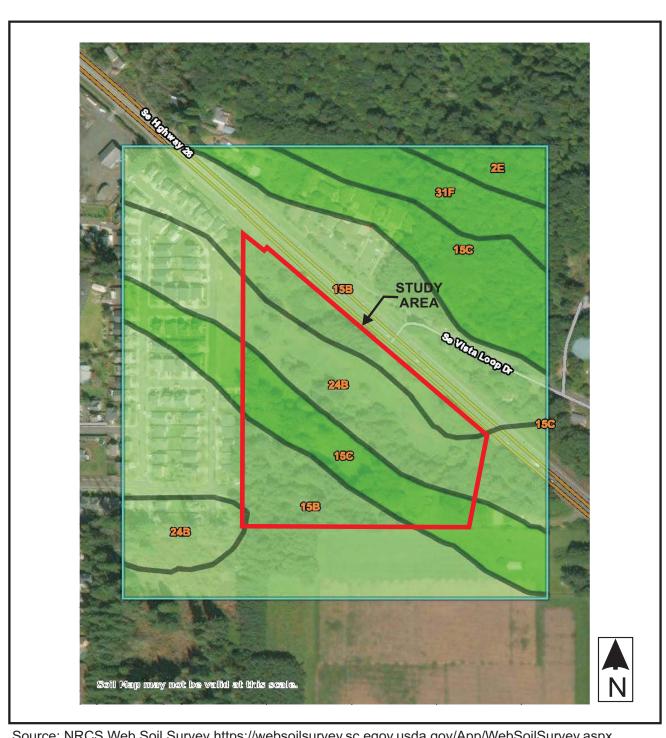
Environmental Science & Assessment, LLC



Aerial Photograph Dubarko Road Subdivision Sandy, Oregon

Approx. Scale: 1in. = 345ft.

Figure 2



Source: NRCS Web Soil Survey https://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx

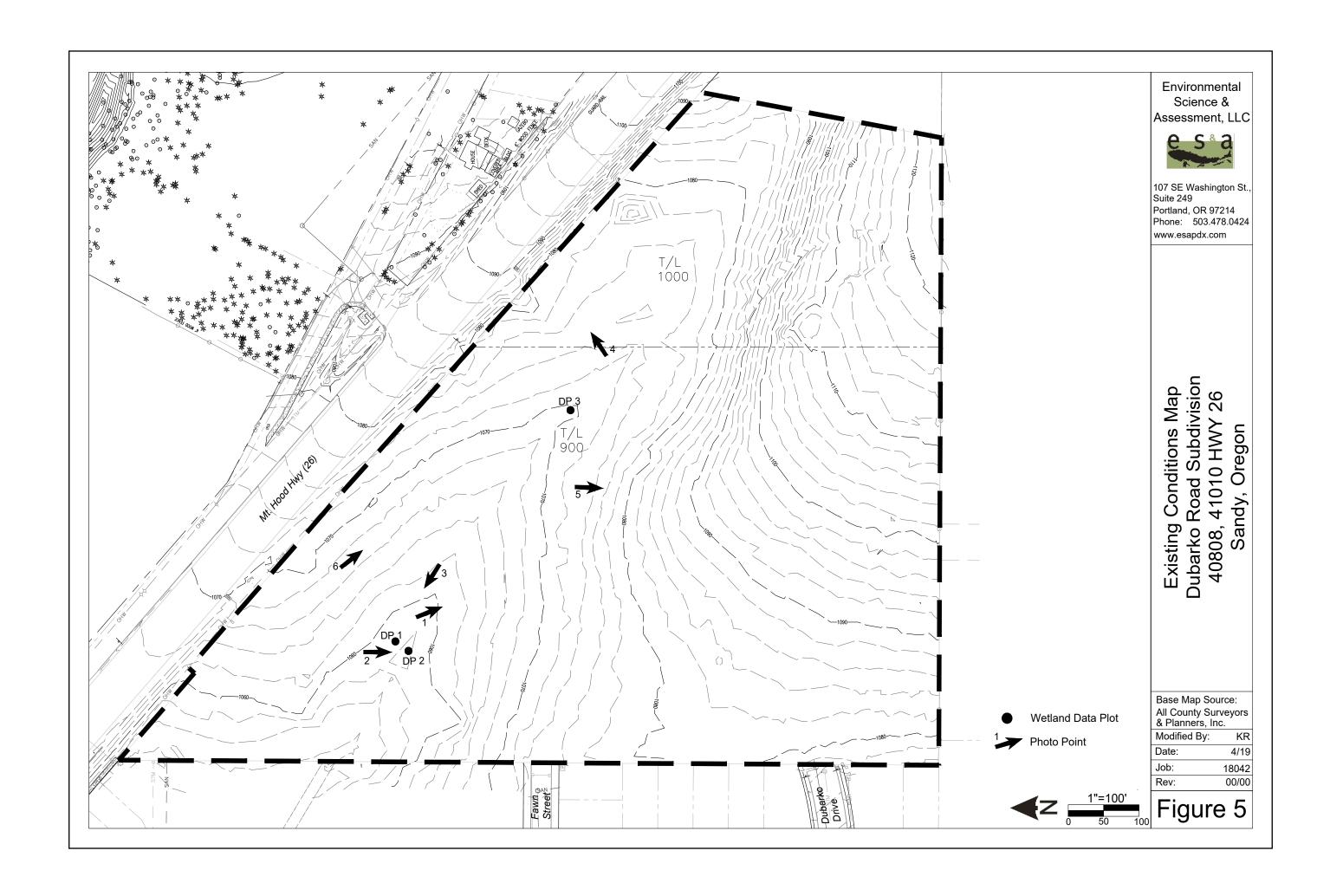
Environmental Science & Assessment, LLC



NRCS Soil Map Dubarko Road Subdivision Sandy, Oregon

Figure 4

Not to Scale



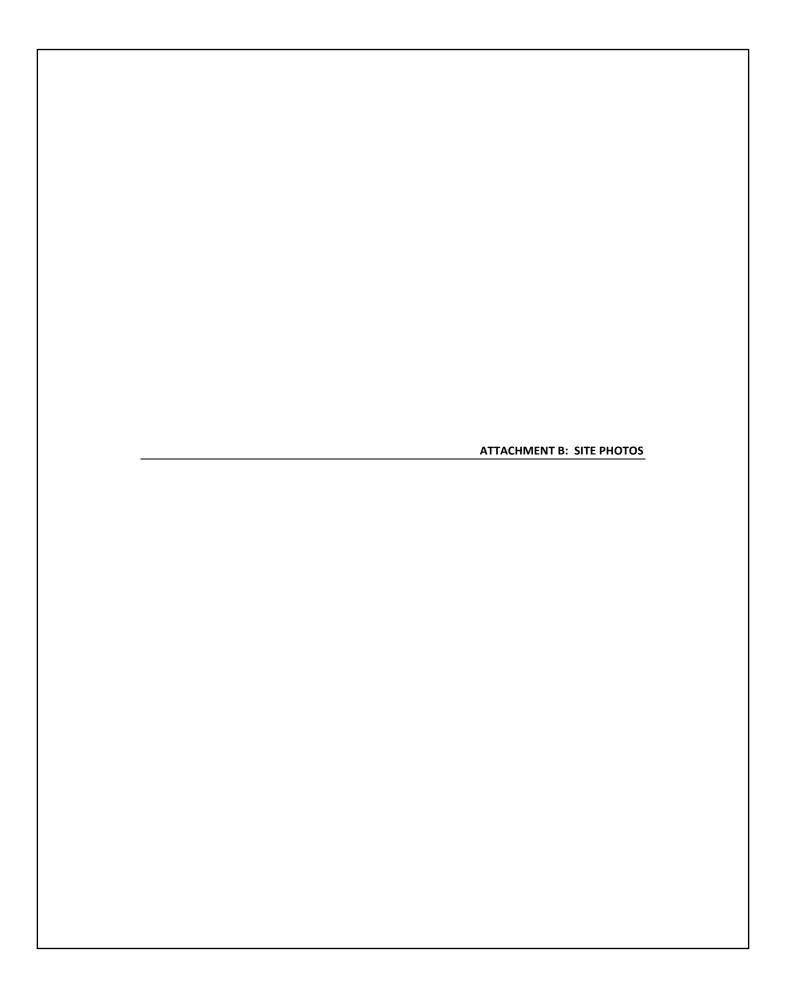




Photo 1: View SE of low point in the middle of the site.



Photo 2: View S by DP-1 and DP-2. Shallow swale with no offsite connection.



Photo 3: View NW of the middle of the site.



Photo 4: View NE of overgrown blackberry area.



Photo 5: View S of Doug fir forest in SW corner.



Photo 6: View NE of doug fir grove at N end.

	ATTACHMENT C: WETLAND DETERMINATION DATA SHEET	S
		_

WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys, and Coast Region Project/Site: _Dubarko Road Subdivision City/County: Sandy/Clackamas Sampling Date: 3/28/19 Applicant/Owner: Roll Tide Properties Corp State: OR Sampling Point: DP-1 Investigator(s): Jack Dalton Section, Township, Range: S18 T2S R5E Landform (hillslope, terrace, etc.): Local relief (concave, convex, none): none Slope (%): Subregion (LRR): A-Northwest Forests and Coasts Lat: 45.392061° Long: -122.244803° Datum: N/A NWI classification: N/A Soil Map Unit Name: Cottrell silty clay loam (24B) Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.) Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X No Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.) SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc. Yes No X Hydrophytic Vegetation Present? Is the Sampled Area within a Wetland? Is the Sampled Area Hydric Soil Present? Wetland Hydrology Present? Yes_____ No X Yes _____ No __X__ Remarks: Data point taken at grassy, flat area in the lower topo in west end. **VEGETATION** – Use scientific names of plants. Absolute Dominant Indicator Dominance Test worksheet: Tree Stratum (Plot size: 30' diameter) % Cover Species? Status Number of Dominant Species That Are OBL. FACW, or FAC: Total Number of Dominant Species Across All Strata: Percent of Dominant Species _____ = Total Cover That Are OBL, FACW, or FAC: Sapling/Shrub Stratum (Plot size: _____) Prevalence Index worksheet: 1. Rubus armeniacus Total % Cover of: Multiply by: OBL species ___ ___ x 1 = ___ FACW species _ x 2 = FAC species ___ 45 x 4 = ___ FACU species ____ UPL species ______ x 5 = _____ 100 Herb Stratum (Plot size: 1. Schedonorus arundinaceus Column Totals: <u>125</u> (A) <u>460</u> (B) FAC UPL Agrostis sp. Prevalence Index = B/A = 20 yes FACU Dactylis glomerata Hydrophytic Vegetation Indicators: 4. Poa sp. __ 1 - Rapid Test for Hydrophytic Vegetation ___ 2 - Dominance Test is >50% __ 3 - Prevalence Index is ≤3.0¹ 4 - Morphological Adaptations (Provide supporting data in Remarks or on a separate sheet) ___ 5 - Wetland Non-Vascular Plants¹ _ Problematic Hydrophytic Vegetation¹ (Explain) ¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. 100 = Total Cover Woody Vine Stratum (Plot size: _____) Hydrophytic Vegetation Present? Yes ____ No X ____= Total Cover % Bare Ground in Herb Stratum __ Remarks:

US Army Corps of Engineers

SOIL Sampling Point: DP-1 Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.) Matrix Redox Features Color (moist) (inches) Color (moist) Type¹ Loc2 Texture 0-12 7.5 YR 3/2 100 silt loam 12-16 7.5YR 4/4 7.5YR 4/6 silt loam 7.5YR 4/6 99 16-20 7.5YR 3/4 silt clav loam ¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix. Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Indicators for Problematic Hydric Soils³: __ Sandy Redox (S5) ___ 2 cm Muck (A10) Histosol (A1) Histic Epipedon (A2) Stripped Matrix (S6) ___ Red Parent Material (TF2) Loamy Mucky Mineral (F1) (except MLRA 1) Black Histic (A3) Very Shallow Dark Surface (TF12) Hydrogen Sulfide (A4) Loamy Gleyed Matrix (F2) __ Other (Explain in Remarks) Depleted Below Dark Surface (A11) Depleted Matrix (F3) Thick Dark Surface (A12) Redox Dark Surface (F6) ³Indicators of hydrophytic vegetation and Sandy Mucky Mineral (S1) Depleted Dark Surface (F7) wetland hydrology must be present, Sandy Gleyed Matrix (S4) Redox Depressions (F8) unless disturbed or problematic. Restrictive Layer (if present): Type: Depth (inches): Hydric Soil Present? Yes Remarks: **HYDROLOGY** Wetland Hydrology Indicators: Primary Indicators (minimum of one required; check all that apply) Secondary Indicators (2 or more required) Surface Water (A1) ___ Water-Stained Leaves (B9) (except __ Water-Stained Leaves (B9) (MLRA 1, 2, ___ High Water Table (A2) MLRA 1, 2, 4A, and 4B) 4A, and 4B) ___ Saturation (A3) _ Salt Crust (B11) ___ Drainage Patterns (B10) ___ Dry-Season Water Table (C2) ___ Water Marks (B1) _ Aquatic Invertebrates (B13) Sediment Deposits (B2) ___ Hydrogen Sulfide Odor (C1) Saturation Visible on Aerial Imagery (C9) _ Drift Deposits (B3) __ Oxidized Rhizospheres along Living Roots (C3) ___ Geomorphic Position (D2) Algal Mat or Crust (B4) Presence of Reduced Iron (C4) Shallow Aquitard (D3) ___ Recent Iron Reduction in Tilled Soils (C6) ___ FAC-Neutral Test (D5) Iron Deposits (B5) Surface Soil Cracks (B6) ___ Stunted or Stressed Plants (D1) (LRR A) ___ Raised Ant Mounds (D6) (LRR A) ___ Other (Explain in Remarks) ___ Frost-Heave Hummocks (D7) Inundation Visible on Aerial Imagery (B7) Sparsely Vegetated Concave Surface (B8) Field Observations: Yes ____ No <u>√</u> Depth (inches): Surface Water Present? Yes _____ No __ ✓ Depth (inches): ___ Water Table Present? Yes ____ No _✓ Depth (inches): __ Wetland Hydrology Present? Yes ____ Saturation Present? (includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: Remarks: No saturation/O.R. or evidence of surface flow. US Army Corps of Engineers Western Mountains, Valleys, and Coast - Version 2.0

WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys, and Coast Region Project/Site: _Dubarko Road Subdivision City/County: Sandy/Clackamas Sampling Date: 3/28/19 Applicant/Owner: Roll Tide Properties Corp State: OR Sampling Point: DP-2 Investigator(s): Jack Dalton Section, Township, Range: S18 T2S R5E Landform (hillslope, terrace, etc.): Local relief (concave, convex, none): none Slope (%): Subregion (LRR): A-Northwest Forests and Coasts Lat: 45.392061° Long: -122.244803° Datum: N/A NWI classification: N/A Soil Map Unit Name: Cottrell silty clay loam (24B) Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.) Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X No Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.) SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc. Yes X No Hydrophytic Vegetation Present? Yes X No X Yes No X Yes No X Is the Sampled Area within a Wetland? Yes No X Hydric Soil Present? Wetland Hydrology Present? Remarks: Data point taken at low point in linear swale in the west end - no evidence of wetland hydrology. **VEGETATION** – Use scientific names of plants. Absolute Dominant Indicator Dominance Test worksheet: Tree Stratum (Plot size: 30' diameter) % Cover Species? Status Number of Dominant Species That Are OBL. FACW, or FAC: Total Number of Dominant Species Across All Strata: Percent of Dominant Species _____ = Total Cover That Are OBL, FACW, or FAC: Sapling/Shrub Stratum (Plot size: _____) Prevalence Index worksheet: 1. Rubus armeniacus Total % Cover of: Multiply by: OBL species __ ____ x 1 = ____ FACW species _ 115 FAC species ___ FACU species _____5 x 4 = ____ 50 ___ = Total Cover UPL species ______ x 5 = _____ 150 Herb Stratum (Plot size: 1. Schedonorus arundinaceus Column Totals: <u>150</u> (A) <u>515</u> (B) FAC 30 <u>yes</u> UPL Agrostis sp. Prevalence Index = B/A = ____ 3.43 15 3. Holcus lanatus FAC Hydrophytic Vegetation Indicators: 4. Galium aparine _ 1 - Rapid Test for Hydrophytic Vegetation ✓ 2 - Dominance Test is >50% __ 3 - Prevalence Index is ≤3.0¹ 4 - Morphological Adaptations (Provide supporting data in Remarks or on a separate sheet) 5 - Wetland Non-Vascular Plants¹ _ Problematic Hydrophytic Vegetation¹ (Explain) ¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. 100 __= Total Cover Woody Vine Stratum (Plot size: _____) Hydrophytic Vegetation Yes X No ___ Present? % Bare Ground in Herb Stratum Remarks: Veg meets dominance test, but fails prevalence index test - marginal FAC dominated community that lacks FACW or OBL veg.

US Army Corps of Engineers

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SOIL Sampling Point: DP-2 Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.) Matrix Redox Features Color (moist) (inches) Color (moist) Type¹ Loc² Texture 0-9 7.5 YR 3/2 100 silt loam no redox, 10% pebbles silt loam 9-12 7.5YR 3/2 7.5YR 3/4 7.5YR 3/2 С 80 12-16 7.5YR 4/4 18 Μ 7.5YR 3/4 2 С M 7.5YR 4/4 7.5YR 4/6 Μ 16-20 90 С 10 ¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix. Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Indicators for Problematic Hydric Soils³: __ Sandy Redox (S5) ___ 2 cm Muck (A10) Histosol (A1) Histic Epipedon (A2) Stripped Matrix (S6) ___ Red Parent Material (TF2) Loamy Mucky Mineral (F1) (except MLRA 1) Black Histic (A3) Very Shallow Dark Surface (TF12) Hydrogen Sulfide (A4) Loamy Gleyed Matrix (F2) __ Other (Explain in Remarks) Depleted Below Dark Surface (A11) Depleted Matrix (F3) Thick Dark Surface (A12) Redox Dark Surface (F6) ³Indicators of hydrophytic vegetation and Sandy Mucky Mineral (S1) Depleted Dark Surface (F7) wetland hydrology must be present, Sandy Gleyed Matrix (S4) Redox Depressions (F8) unless disturbed or problematic. Restrictive Layer (if present): Type: Depth (inches): Hydric Soil Present? Yes No Remarks: **HYDROLOGY** Wetland Hydrology Indicators: Primary Indicators (minimum of one required; check all that apply) Secondary Indicators (2 or more required) Surface Water (A1) ___ Water-Stained Leaves (B9) (except __ Water-Stained Leaves (B9) (MLRA 1, 2, ___ High Water Table (A2) MLRA 1, 2, 4A, and 4B) 4A, and 4B) ___ Saturation (A3) _ Salt Crust (B11) ___ Drainage Patterns (B10) ___ Dry-Season Water Table (C2) ___ Water Marks (B1) _ Aquatic Invertebrates (B13) Sediment Deposits (B2) ___ Hydrogen Sulfide Odor (C1) Saturation Visible on Aerial Imagery (C9) _ Drift Deposits (B3) __ Oxidized Rhizospheres along Living Roots (C3) ___ Geomorphic Position (D2) Algal Mat or Crust (B4) Presence of Reduced Iron (C4) Shallow Aquitard (D3) ___ Recent Iron Reduction in Tilled Soils (C6) ___ FAC-Neutral Test (D5) Iron Deposits (B5) Surface Soil Cracks (B6) ___ Stunted or Stressed Plants (D1) (LRR A) ___ Raised Ant Mounds (D6) (LRR A) ___ Other (Explain in Remarks) ___ Frost-Heave Hummocks (D7) Inundation Visible on Aerial Imagery (B7) Sparsely Vegetated Concave Surface (B8) Field Observations: Yes ____ No <u>√</u> Depth (inches): Surface Water Present? Yes _____ No _✓ Depth (inches): __ Water Table Present? Yes ____ No <u>√</u> Depth (inches): _ Wetland Hydrology Present? Yes ____ _ No <u>×</u> Saturation Present? (includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: Remarks: No saturation, O.R. or evidence of surface flow.

US Army Corps of Engineers

WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys, and Coast Region Project/Site: _Dubarko Road Subdivision City/County: Sandy/Clackamas Sampling Date: 3/28/19 Applicant/Owner: Roll Tide Properties Corp State: OR Sampling Point: DP-3 Investigator(s): Jack Dalton Section, Township, Range: S18 T2S R5E Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): _____ Slope (%): ____ Subregion (LRR): A-Northwest Forests and Coasts Lat: 45.392061° Long: -122.244803° Datum: N/A NWI classification: N/A Soil Map Unit Name: Cottrell silty clay loam (24B) Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.) Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____ Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.) SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc. Yes No X Hydrophytic Vegetation Present? Is the Sampled Area within a Wetland? Hydric Soil Present? Yes No X Wetland Hydrology Present? Yes No X Remarks: Data point taken up linear depression in middle of site - no wetland hydrology evident. **VEGETATION** – Use scientific names of plants. Absolute Dominant Indicator Dominance Test worksheet: Tree Stratum (Plot size: 30' diameter) % Cover Species? Status Number of Dominant Species That Are OBL. FACW, or FAC: Total Number of Dominant Species Across All Strata: Percent of Dominant Species _____ = Total Cover That Are OBL, FACW, or FAC: Sapling/Shrub Stratum (Plot size: _____) Prevalence Index worksheet: 1. Rubus armeniacus Total % Cover of: Multiply by: OBL species ___ ____ x 1 = ____ FACW species _ x 2 = FAC species ___ FACU species ____ ____ = Total Cover UPL species ______30 ___ x 5 = ____150 Herb Stratum (Plot size: 35 Column Totals: <u>150</u> (A) <u>590</u> (B) Holcus lanatus 30 ____ 2. Anthoxanthum odoratum **FACU** Prevalence Index = B/A = ___ 3.9 30 yes Agrostis sp. UPL Hydrophytic Vegetation Indicators: Schedonorus arundinaceus __ 1 - Rapid Test for Hydrophytic Vegetation ___ 2 - Dominance Test is >50% __ 3 - Prevalence Index is ≤3.0¹ 4 - Morphological Adaptations (Provide supporting data in Remarks or on a separate sheet) ___ 5 - Wetland Non-Vascular Plants¹ _ Problematic Hydrophytic Vegetation¹ (Explain) ¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. 100 = Total Cover Woody Vine Stratum (Plot size: _____) Hydrophytic Vegetation Present? Yes ____ No X % Bare Ground in Herb Stratum Remarks: Marginal degraded plant community - lacks FACW or greater plants.

US Army Corps of Engineers

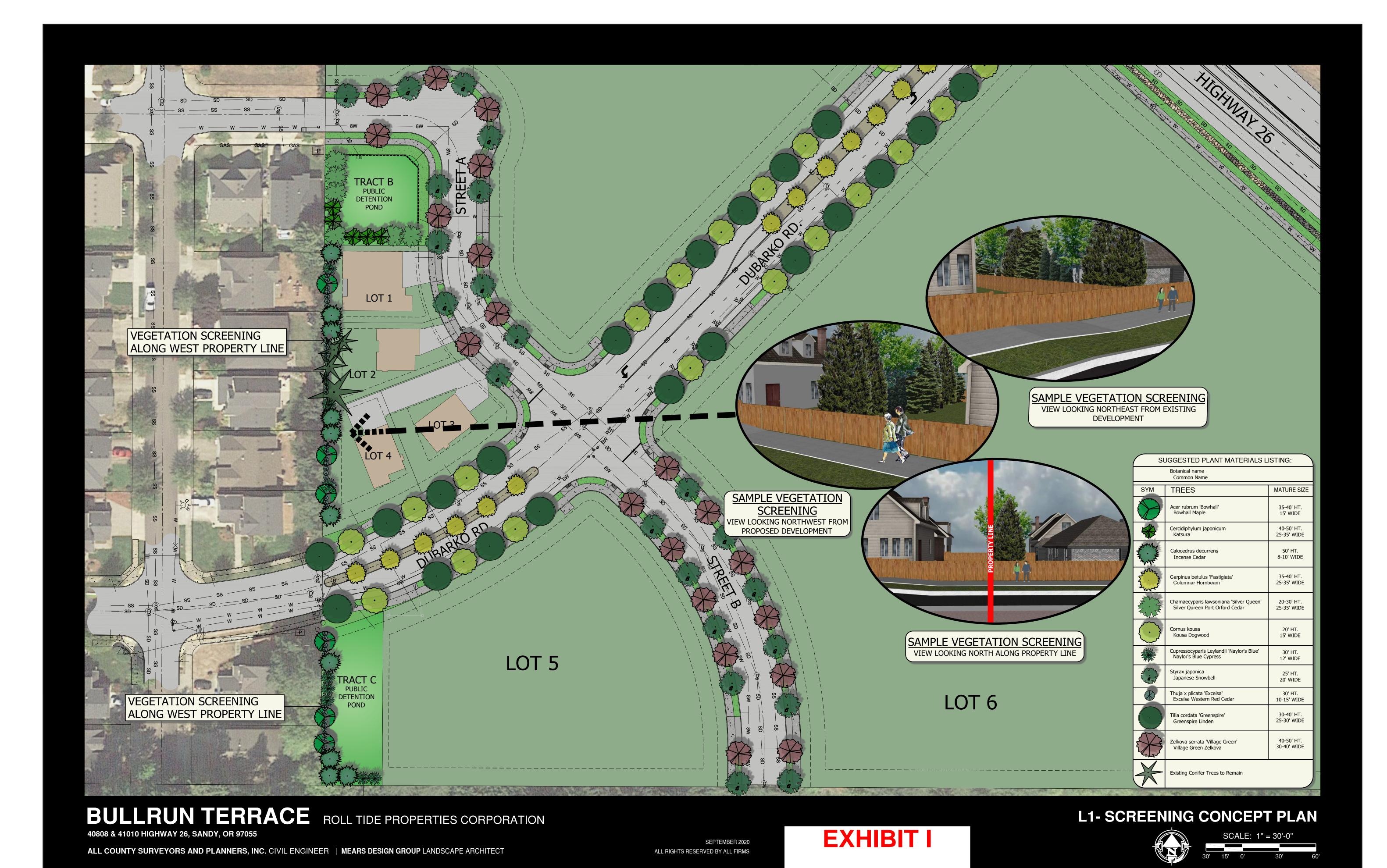
SOIL Sampling Point: DP-3 Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.) Depth Matrix Redox Features Color (moist) (inches) Color (moist) Type¹ Texture 0-10 7.5 YR 3/3 100 silt loam 10-13 7.5YR 4/3 2 С 10YR 3/6 7.5YR 4/6 С 10YR 4/4 95 13-15 5 80 7.5YR 4/6 10YR 4/3 10 С Μ 15-20 10YR 4/4 10 ¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix. Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Indicators for Problematic Hydric Soils³: __ Sandy Redox (S5) ___ 2 cm Muck (A10) Histosol (A1) Histic Epipedon (A2) Stripped Matrix (S6) ___ Red Parent Material (TF2) Loamy Mucky Mineral (F1) (except MLRA 1) Black Histic (A3) Very Shallow Dark Surface (TF12) Hydrogen Sulfide (A4) Loamy Gleyed Matrix (F2) __ Other (Explain in Remarks) Depleted Below Dark Surface (A11) Depleted Matrix (F3) Thick Dark Surface (A12) Redox Dark Surface (F6) ³Indicators of hydrophytic vegetation and Sandy Mucky Mineral (S1) Depleted Dark Surface (F7) wetland hydrology must be present, Sandy Gleyed Matrix (S4) Redox Depressions (F8) unless disturbed or problematic. Restrictive Layer (if present): Type: Depth (inches): Hydric Soil Present? Yes Remarks: **HYDROLOGY** Wetland Hydrology Indicators: Primary Indicators (minimum of one required; check all that apply) Secondary Indicators (2 or more required) Surface Water (A1) ___ Water-Stained Leaves (B9) (except __ Water-Stained Leaves (B9) (MLRA 1, 2, ___ High Water Table (A2) MLRA 1, 2, 4A, and 4B) 4A, and 4B) ___ Saturation (A3) _ Salt Crust (B11) ___ Drainage Patterns (B10) ___ Dry-Season Water Table (C2) ___ Water Marks (B1) _ Aquatic Invertebrates (B13) Sediment Deposits (B2) ___ Hydrogen Sulfide Odor (C1) Saturation Visible on Aerial Imagery (C9) _ Drift Deposits (B3) __ Oxidized Rhizospheres along Living Roots (C3) ___ Geomorphic Position (D2) Algal Mat or Crust (B4) Presence of Reduced Iron (C4) Shallow Aquitard (D3) ___ Recent Iron Reduction in Tilled Soils (C6) ___ FAC-Neutral Test (D5) Iron Deposits (B5) Surface Soil Cracks (B6) ___ Stunted or Stressed Plants (D1) (LRR A) ___ Raised Ant Mounds (D6) (LRR A) ___ Other (Explain in Remarks) ___ Frost-Heave Hummocks (D7) Inundation Visible on Aerial Imagery (B7) Sparsely Vegetated Concave Surface (B8) Field Observations: Yes ____ No <u>√</u> Depth (inches): Surface Water Present? Yes _____ No _✓ Depth (inches): __ Water Table Present? Yes ____ No _✓ Depth (inches): _ Wetland Hydrology Present? Yes ____ _ No <u>×</u> Saturation Present? (includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: Remarks: faint O.R. at 13" US Army Corps of Engineers Western Mountains, Valleys, and Coast - Version 2.0

OFFSITE WETLAND DETERMINATION REPORT OREGON DEPARTMENT OF STATE LANDS

BATCH WD#: 2019-0386

775 Summer Street NE, Suite 100, Salem OR 97301-1279 Phone: (503) 986-5200

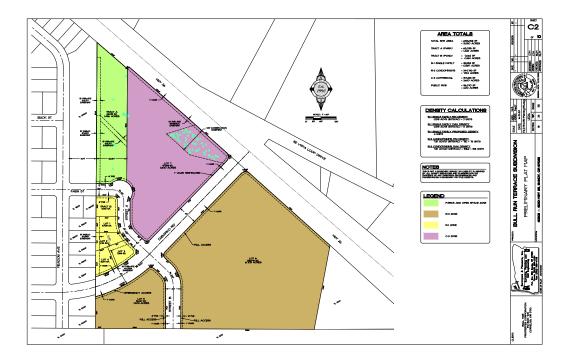
County: Clackamas City: Sandy					
Agent Name & Address: Tracy Brown, Tracy Brown Planning Consultants, LLC, 17075 Fir Dr., Sandy, OR 97055					
Township: 2S Range: 5E Section: 18 Q/Q: CD Tax Lot(s): 900, 1000					
Project Name: Site Evaluation					
Site Address/Location: 40808 and 41010 Highway 26, Sandy, OR					
☐ The National Wetlands Inventory or Local Wetlands Inventory shows a wetland on the property.					
☐ The county soil survey shows hydric (wet) soils on the property. Hydric soils indicate that there may be wetlands.					
It is unlikely that there are jurisdictional wetlands or waterways on the property based upon a review of wetlands maps, the county soil survey and other information. An onsite investigation by a qualified professional is the only way to be certain that there are no wetlands.					
☐ There may be wetlands/waterways on the property that are subject to the state Removal-Fill Law.					
\triangle A state permit is required for ≥ 50 cubic yards of fill, removal, or ground alteration in the wetlands or waterways.					
A state permit may be required for any amount of fill, removal, or other ground alteration in the Essential Salmonid Habitat and hydrologically associated wetlands.					
☐ A state permit will be/will not be required for project because/if .					
☐ The proposed parcel division may create a lot that is largely wetland and thus create future development problems.					
A wetland delineation by a qualified wetland consultant is recommended prior to site development. The wetland delineation report should be submitted to DSL for review and approval.					
☐ A permit may be required by the Army Corps of Engineers: (503) 808-4373					
Note: This report is for the state Removal-Fill Law only. City or County permits may be required for the proposed activity.					
<u>Comments:</u> Based on a review of the available information, there are no jurisdictional wetlands or waters on the property.					
Determination by: Date: 7/03//9					
Determination by: Date: 7/03//9 This jurisdictional determination is valid for five years from the above date, unless new information necessitates a revision. Circumstances under which the Department may change a determination and procedures for renewal of an expired determination are found in OAR 141-090-0045 (available on our web site or upon request). The applicant, landowner, or agent may submit a request for reconsideration of this determination in writing within six months from the above date.					
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□ This jurisdictional determination is valid for five years from the above date, unless new information necessitates a revision. Circumstances under which the Department may change a determination and procedures for renewal of an expired determination are found in OAR 141-090-0045 (available on our web site or upon request). The applicant, landowner, or agent may submit a request for reconsideration of this determination in writing within six months from the above date. □ This is a preliminary jurisdictional determination and is advisory only. Copy To: □ Other □ Enclosures: email: tbrownplan@gmail.com □ City of Sandy FOR OFFICE USE ONLY Entire Lot(s) Checked? □ Yes □ No Waters Present □ Yes □ No □ Maybe Request Received: 6/27/2019					
□ This jurisdictional determination is valid for five years from the above date, unless new information necessitates a revision. Circumstances under which the Department may change a determination and procedures for renewal of an expired determination are found in OAR 141-090-0045 (available on our web site or upon request). The applicant, landowner, or agent may submit a request for reconsideration of this determination in writing within six months from the above date. □ This is a preliminary jurisdictional determination and is advisory only. Copy To: □ Other □ Enclosures: email: tbrownplan@gmail.com □ City of Sandy FOR OFFICE USE ONLY Entire Lot(s) Checked? □ Yes □ No Waters Present □ Yes □ No □ Maybe Request Received: 6/27/2019 LWI Area: Sandy LWI Code: N/A Latitude: 45.390763 Longitude: -122.244278 Related DSL File # N/A					
□ This jurisdictional determination is valid for five years from the above date, unless new information necessitates a revision. Circumstances under which the Department may change a determination and procedures for renewal of an expired determination are found in OAR 141-090-0045 (available on our web site or upon request). The applicant, landowner, or agent may submit a request for reconsideration of this determination in writing within six months from the above date. □ This is a preliminary jurisdictional determination and is advisory only. Copy To: □ Other □ Enclosures: email: tbrownplan@gmail.com □ City of Sandy FOR OFFICE USE ONLY Entire Lot(s) Checked? □ Yes □ No Waters Present □ Yes □ No □ Maybe Request Received: 6/27/2019					
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EXHIBIT J





PUBLIC NEED ANALYSIS FOR ROLLTIDE PROPERTY

RESIDENTIAL LANDS CITY OF SANDY

JULY, 2020

621 SW ALDER, SUITE 605, PORTLAND, OR 97205

503/295-7832

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SITE SUITABILITY FOR PROPOSED USES	5
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INTRODUCTION

Johnson Economics was asked to prepare an assessment of the public need for residential as well as commercial uses in the City of Sandy. This work is in support of a comprehensive plan and zone change application for a 15.91acre site located south of Highway 26 at the future intersection with Dubarko Road.

LOCATION OF SUBJECT SITE Fawn St

SOURCE: Clackamas Maps

Current zoning on the site include 2.84 acres of C-3 (Village Commercial), 8.05 acres designated R-1 (Low Density Residential), and 5.01 acres designated R-2 (Medium Density Residential). The proposed change in zoning would increase the C-3 zoned area to 3.61 acres, reduce the R-1 zoned property to 0.59 acres, and rezone 7.91 acres to R-3 (High Density Residential). In addition, 1.43 acres would be set aside as POS (Parks and Open Space), 2.21 would be right of way, and 0.16 would be a public stormwater tract. The change in designation would allow for up to 158 rental apartment units on the R-3 property, while reducing density in the R-1 and R-2 tracts from a current max of 101 units to a max of 5 units. The net impact assuming development at maximum allowed density would increase residential capacity on the site by 62 units, with a shift from low- and medium-density product to rental apartments. The commercial/employment capacity on the site would be increased by roughly 1.5 net acres.



Area Comparison of Existing to Proposed Zoning

	Existing (gross acres)	Existing (net acres)*	Proposed (net acres)
C-3, Village Commercial	2.84	2.13	3.61
R-1, Low Density Residential	8.05	6.04 (48 units max.)	0.59 (5 units max.)
R-2, Medium Density Residential	5.01	3.76 (53 units max.)	0.00
R-3, High Density Residential	0.00	0.00	7.91 (158 units max.)
POS, Parks and Open Space	0.00	0.00	1.43
Rights of Way	0.00	3.98	2.21
Public Tracts (stormwater tract)	0.00	0.00	0.16
Total Area	15.91	15.91	15.91

* - Net acres assumes 25% reduction for public roads

This analysis addresses the public need for the requested change. In addition, the analysis will discuss whether the proposed change on the property represents an appropriate zoning boundary modification and the degree to which the development represents a sound, stable, and desirable development proposal. Following is a brief summary of the designations from the City of Sandy's Development Code:

Sandy's C3 zone "The Village Commercial (C-3) district is primarily oriented to serve residents of the village and the immediately surrounding residential area. The Village Commercial area is intended to help form the core of the villages. Allowing a mixture of residential uses beside and/or above commercial uses will help create a mixed-use environment which integrates uses harmoniously and increases the intensity of activity in the area. The orientation of the uses should integrate pedestrian access and provide linkages to adjacent residential areas, plazas and/or parks, and amenities."

The "High Density Residential (R-3) district is intended for high density residential development at 10 to 20 dwelling units per net acre. Intended uses are apartments, row houses, and townhouses, duplexes, single-family planned developments, and manufactured home parks including existing developed areas and areas suitable for development at this density.

High density residential areas are generally located immediately adjacent to village commercial centers or the Central Business District. Commercial development, including home businesses and limited neighborhood retail, is considered appropriate in high density residential developed in conjunction with villages or immediately north of the Central Business District. High density residential areas are generally located nearby Village Commercial Centers, the Central Business District and/or public facilities such as schools or parks. The HDR Plan designation encompasses one zoning district designation."

The proposed R3 zoning allows a range of multi-family residential uses, including duplexes, townhomes, and residential facilities. The minimum allowed residential density is 10 units per acre with a maximum of 20 units per acre. The predominant use on the site is likely to be common wall multi-family and/or rental apartments.



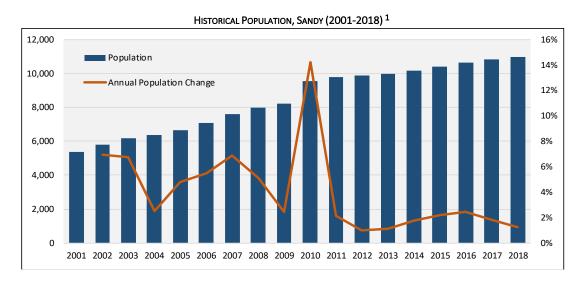
This analysis relies on employment data provided by the US Census, assessment of developed and vacant land provided by Metro's RLIS, the City of Sandy Urbanization Study (2015), and Portland State University's Population Research Center's population estimates. This analysis supports the following findings:

- The change in use would provide capacity for additional housing options, which may alleviate local housing affordability issues while providing increased demographic support for the proximate commercial concentrations in central Sandy.
- The entitlement change would be expected to bring the property into active urban use and be supportive
 of the City's planning policies.

RESIDENTIAL LAND NEEDS

POPULATION

Portland State University's Population Research Center provides intercensal population estimates for the State of Oregon, which are considered to be more accurate than Census Bureau estimates. The Center estimates that in 2001 Sandy's population was 5,380 and grew to 10,990 by 2018. This represents an increase of 104% since 2001 and an average growth rate of 4.3% over this same period. However, much of this growth took place before 2011. From 2011 through 2018 average annual growth was only 1.7%. Portland State University's population forecast programs most recent forecast for the Sandy UGB projected average annual growth of 2.7% through 2040.



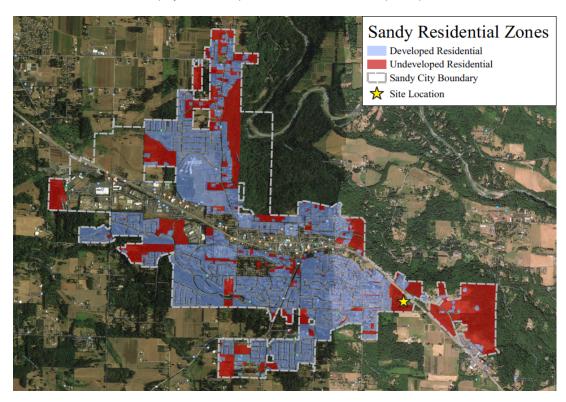
POPULATION AND HOUSING

As mentioned earlier, Portland State University's Center estimates that in 2001 Sandy's population was 5,380 and grew to 10,990 by 2018. This represents an increase of 104% since 2001 and an average growth rate of 4.7% over this same period. For the purposes of this study, assuming that levels of residential density in Sandy remain constant, the demand for residential land will likely follow the city's forecasted population within the UGB of 2.7%. According to Metro's RLIS, Sandy currently has 865.7 acres of residentially zoned, developed land. Projecting 20

Portland State University Population Research Center



years forward to 2038, the city will likely need an additional 609.2 acres to meet a total need of 1,474.9 acres of residential land. Currently, the city has a total of 1,295.6 acres of land zoned for residential uses. This amount of land is 178.6 acres short of the projected need by 2038 based on historic development patterns.



SUMMARY OF RESIDENTIAL ZONED LAND SUPPLY, CITY OF SANDY²

Zone	Developed		Undeveloped		% Developed	
Zone	Parcels	Acres	Parcels	Acres	Parcels	Acres
R1	74	137.5	30	39.4	71.2%	77.7%
R2	76	194.1	31	71.4	71.0%	73.1%
R3	58	125.8	29	53.0	66.7%	70.4%
SFR	114	408.3	53	266.9	68.3%	60.5%
Total Residential	322	865.7	143	430.6	69.2%	66.8%

The City has developed just over 70% of its land for multifamily and 66.8% for residential more broadly. While additional capacity is expected to be available through redevelopment, this is inherently more difficult and typically more expensive to deliver. Increasing the City's multifamily residential land inventory would increase local capacity for residential products that can meet a broad range of price points. Affordability of housing has become a major

Metro, RLIS system



concern during the recent expansion cycle and provision of higher density housing options is seen as a major tool in addressing affordability concerns.

SITE SUITABILITY FOR PROPOSED USES

The subject site does not have any significant physical development constraints and enjoys visibility from Highway 26. The proposed use pattern will place a public park and the low density residential uses on the western edge of the property, providing a buffer between more intensive uses on the remainder of the site and the R-3 zoned property to the east and south. The proposed development pattern allows for a relatively efficient utilization of the site, with an efficiency of 84% (net developable area divided by total area, excluding park dedication). This is significantly higher than would be achievable with the current zoning designation, and supports more efficient land utilization.

Clustering residential density along Highway 26 and at the future intersection with Dubarko will provide excellent access to the residents, including to the commercial development on the site and the extensive commercial options in the city's downtown core (roughly a mile and a half west and three minutes away) as well as larger format retailers to the west of downtown. The intersection of Dubarko and Highway 26 is expected to collect the bulk of traffic from commercial and multi-family development on the site.

CONCLUSIONS REGARDING THE PROPOSED ZONE CHANGE

The proposed zone change is responsive to the City's projected need for additional residential capacity. Lennar Corporation, who previously controlled the site, spent a decade and significant investment trying to generate a viable development program for the site. The cost of the connection to Highway 26 and the infrastructure investment requirements in the village overlay were too great to be offset by the value of the underlying property. While technically capable of supporting development, these economic constraints make the site effectively undevelopable under the current zoning designation.

A key criteria in the City of Sandy is the degree to which the development represents a sound, stable, and desirable development proposal. Increasing the allowed residential density as proposed will provide the ability of the site to support necessary infrastructure investments to open up development. Under the current zoning the economic constraints outlined preclude a "sound, stable" development program for the site.

Allowing the proposed change in zoning will accelerate the development of the property while better addressing the City of Sandy's land use needs and public policy objectives. Dubarko's connection to Highway 26 can't be completed unless this site is developed, which has a significant impact on the City's broader street system. In addition, development of the site will provide more tax revenue as well as providing needed park space. The proposed use will also provide a "middle housing" product in the market that will address the local need for more low-cost housing choices.

Deer Point Neighborhood Park

Deer Point is an existing, undeveloped 1.41-acre park located on the east side of Sandy, just south of Highway 26 and Sandy Vista apartments. The long, narrow, gently sloping parcel is bounded by neighborhood streets on two sides, Highway 26 on a third, and fields with clusters of mature trees to the east. The concept provides standard neighborhood park amenities including an accessible looped path, playground, multi-use field, picnic shelters and tables, and a sport court with the option to expand east into the undeveloped parcel identified as NP 7, Deer Point Expansion on **Figure 8**.



Figure 11Deer Point Neighborhood Park Concept

City of Sandy 45 ESA
Amended Parks and Trails Master Plan Update May 2022



EXHIBIT L

38348 Pioneer Blvd., Sandy, OR 97055 503-668-5569

To: City of Sandy, Mayor, and City Council

Date: October 27th, 2022

From: Don Robertson, Parks & Trails Advisory Board Chair

Subject: Bull Run Terrace Reconsidered

Attachments: None

I am sending this communication on behalf of the Parks & Trails Advisory Board.

We understand that the Council will be reviewing this project during a public hearing on November 21st, 2022.

The applicant, Roll Tide Properties Corp, is now proposing to dedicate 1.755 acres for the eventual construction of Deer Pointe Park and zone this land as Parks and Open Space (POS).

We find the new proposal to be consistent with our two previous positions:

- 1. This new proposal supports the previous recommendation of Parkland dedication. As stated in a previous staff report (dated August 30, 2021) "It is the hope of the board that the city and the developer can reach an agreement that includes land dedication that is adjacent to the existing city owned property in the Deer Pointe neighborhood. This would allow the development of a true neighborhood park in an underserved area of the community."
- 2. It meets the objectives as listed in the 2022 Parks and Trails Master Plan.

The Parks Board requests that the applicant shall work with the City of Sandy to create a mutually agreed upon engineer estimate for the Deer Pointe parkland improvements. The final engineer's estimate shall be used as the basis for an agreement to calculate Park SDC credits for the applicant.

Parkland improvements should be based on the concept found in the 2022 Parks and Trails Master Plan; including public meeting(s) to solicit neighborhood input. If the applicant and City agree to the applicant/developer completing parkland improvements, the park improvements shall be completed prior to final plat approval or as otherwise established in a development agreement.

Thank you for your consideration of this matter.

Sincerely,

Don Robertson, Parks & Trails Advisory Board Chair

Staff Contact:

Rochelle Anderholm-Parsch 503-489-2157 randerholmparsch@ci.sandy.or.us



EXHIBIT M

Sandy Transit 16610 Champion Way Sandy, OR 97055

Memorandum

Date: October 28, 2022

To: Kelly O'Neill, Planning Director; Emily Meharg, Senior Planner,

Marisol Martinez, Permit Technician I

From: Andi Howell, Transit Director

Re: Transit Request Bull Run Terrace Development

Per review of the Bull Run Terrace Development Proposal, the Transit Department is requesting a pull out stop on Highway 26 after the intersection of Dubarko to serve Eastbound transit services along Highway 26 (within Lot 6) as well as a 2 complimentary transit stops to support a future, in-town circulator service. These complementary stops would be located: 1. at the intersection of Dubarko Rd and Street B in Lot 6; 2. Dubarko Rd and Street A in Lot 3 (or lot 1 if preferrable). The complimentary stops should provide a transit pad and bench.

Support for these requests can be found on pages 35,36 of the Transit master Plan (TMP), the identification of two new roads as described in the 2011 Transportation System Plan. The plan discusses long term future plans of a circulator that will allow transit to serve Dubarko Road, Vista Loop and Proctor Blvd.

Pg. 35,36 TMP also illustrates the importance of recognizing possible future development and the importance of planning for transit service that provides transportation Eastbound as Well as Westbound along Highway 26.

Pg. 45-47 of the TMP, referring to the City's Comprehensive Plan as envisioning village area designation as having "housing, retail shops, public uses, a village green or park, and, potentially, a transit stop." Development proposals, such as this one, with high density and village development should provide transit access along highway 26 to support useful and high ridership transit.

Please contact the Transit Department for specific location, amenity information and pad engineering specifications at 503-489-0925 or ahowell@ci.sandy.or.us.

Andi Howell

Transit Director



EXHIBIT N

SANDY FIRE DISTRICT NO. 72 Fire Prevention Division

E-mail Memorandum

To: Marisol Martinez

From: Gary Boyles

Date: October 24, 2022

Re: City Council Reconsideration of Bull Run Terrace Subdivision

This review is not intended to be a comprehensive analysis of all applicable code sections, nor shall this review nullify code requirements that are determined necessary during building permit review. Review and comments are based upon the current version of the Oregon Fire Code (OFC) as adopted by the Oregon Office of State Fire Marshal. The scope of this review is typically limited to fire apparatus access and water supply, although the applicant shall comply with all applicable OFC requirements. When buildings are completely protected with an approved automatic fire sprinkler system, the requirements for fire apparatus access and water supply may be modified as approved by the fire code official. References, unless otherwise specified, include provisions found in the Metro Code Committee's Fire Code Applications Guide, OFC Chapter 5 and Appendices B, C and D.

COMMENTS:

General

- All future construction activities shall comply with the applicable Oregon Fire Code and the <u>Fire Code Application Guide</u>. Construction documents detailing compliance with fire apparatus access and fire protection water supply requirements shall be provided to the Sandy Fire District for review and approval concurrently with building permit submittal.
- Where fire apparatus access roads or a water supply for fire protection are required to be installed, such protection shall be installed and made serviceable prior to and during the time of construction except where approved alternative methods of protection are provided.

1 | P a g e

Fire Apparatus Access

FIRE APPARATUS ACCESS ROAD (as defined by the OFC). A road that provides fire apparatus access from a fire station to a facility, building or portion thereof. This is a general term inclusive of all other terms such as *fire lane*, public street, private street, parking lot lane and access roadway.

- 1. Dead-end streets in excess of 150 ft., resulting from a phased project, are to be provided with an approved temporary turnaround. (Street B).
- 2. Not less than two approved means of fire apparatus access will be required for multiple-family residential projects having more than 100 dwelling units.

Exception: Projects having up to 200 dwelling units will be approved with only one means of fire apparatus access where all buildings, including nonresidential occupancies, are equipped throughout with an approved automatic sprinkler system installed in accordance with OFC Section 903.3.1.1 or 903.3.1.2.

If more than 200 dwelling units, not less than two approved means of fire apparatus access will be required.

- 3. Commercial and industrial buildings exceeding three stories or 30 feet in height shall have not fewer than two means of fire apparatus access for each building.
- 4. Commercial and industrial buildings having a gross building area of more than 62,000 square feet (124,000 square feet if equipped throughout with an approved automatic sprinkler systems) shall be provided with two separated and approved fire apparatus access roads.
- 5. Where two access roads are required, they shall be placed a distance apart equal to not less than one half of the length of the maximum overall diagonal dimension of the property or area to be served, measured in a straight line between accesses.
- 6. Fire apparatus access roadway grades shall not exceed 10 percent. Intersections and turnarounds shall be as level as possible and have a maximum of 5 percent grade with the exception of crowning for water run-off.
- 7. Fire apparatus access roads shall have an unobstructed driving surface width of not less than 20 feet (26 feet adjacent to a fire hydrant, exclusive of shoulders) and an unobstructed vertical clearance of 13 feet 6 inches.

2|Page

- 8. When the vertical distance between the grade plane and a building's highest roof surface exceeds 30 feet, approved aerial fire apparatus access roads shall be provided. For purposes of this requirement, the highest roof surface shall be determined by measurements to the eave of a pitched roof, the intersection of the roof to the exterior wall, or the top of parapet walls, whichever is greater. If buildings are more than 30 feet in height, as measured above, the following requirements apply:
 - a. Aerial fire apparatus access roads shall be provided and have a minimum unobstructed width of 26 feet, exclusive of shoulders or parking, in the immediate vicinity of the building or portion thereof that will accommodate aerial operations.
 - b. The aerial fire apparatus access road shall be located not less than 15 feet nor greater than 30 feet from the building and shall be positioned parallel to one entire side of the building.
 - c. The side of the building on which the aerial fire apparatus access road is positioned shall be approved by the fire code official.
 - d. Overhead utility and power lines shall not be located within the aerial fire apparatus access road or between the aerial fire apparatus access road and the building.
- 9. The inside turning radius and outside turning radius for fire apparatus access roads shall be not less than 28 feet and 48 feet respectively, measured from the same center point.
- 10. Streets and roads shall be identified with approved signs. Temporary signs shall be installed at each street intersection when construction of new roadways allows passage by vehicles.

Firefighting Water Supplies

- 1. The minimum available fire-flow and flow duration for commercial and industrial buildings shall be as specified in OFC Appendix B. In no case shall the resulting fire-flow be less than 1,500 gpm at 20 psi residual.
- 2. The minimum available fire flow for one- and two-family dwellings served by a municipal water supply shall be 1,000 gpm at 20 psi residual provided the fire area of the dwelling(s) does not exceed 3,600 square feet. For dwellings that exceed 3,600 square feet, the required fire-flow shall be determined in accordance with OFC Appendix B, Table B105.1(2).
- 3. For one- and two-family dwellings served by a municipal water system, all portions of the dwellings shall be located within 600 feet from a fire hydrant on a fire apparatus

- access road, as measured in an approved route that is approved by the fire code official.
- 4. For commercial and industrial buildings served by a municipal water system where a portion of the building is more than 400 feet from a fire hydrant on a fire apparatus access road (600 feet for buildings equipped throughout with an approved automatic sprinkler system), as measured in an approved route around the exterior of the building, on-site fire hydrants and mains shall be provided.
- 5. If applicable, fire department connections (FDC) shall be remote from the structure they serve and located within 100 feet of a fire hydrant. All FDC's shall be permanently labeled with appropriate address in which it serves and shall be accessible and visible from the fire apparatus access road.
- 6. Prior to the start of combustible construction, required fire hydrants shall be operational and accessible.
- 7. Fire hydrants installed within the Sandy Fire District shall comply with the following requirements:
 - a. Flow requirements and location of fire hydrants will be reviewed and approved by Sandy Fire upon building permit submittal.
 - b. Each new fire hydrant installed shall be <u>ordered in an OSHA safety</u> <u>red finish</u> and have a 4-inch non-threaded metal faced hydrant connection with cap installed on the steamer port (4 ½-inch NST x 4-inch Storz Adaptor). If a new building, structure, or dwelling is already served by an existing hydrant, the existing hydrant shall also be OSHA safety red and have a 4-inch non-threaded metal faced hydrant connection with cap installed.
- 8. The minimum number and distribution of fire hydrants shall be in accordance with City of Sandy requirements and OFC Appendix C.

NOTE:

Sandy Fire District comments may not be all inclusive based on information provided. A more detailed review may be needed for future development to proceed.

Please do not hesitate to contact Fire Marshal Gary Boyles at 503-891-7042 or fmboyles.sandyfire@gmail.com should you have any questions or concerns.

EXHIBIT O

October 27, 2022

CURRAN-MCLEOD, INC. CONSULTING ENGINEERS

> 6655 S.W. HAMPTON STREET, SUITE 210 PORTLAND, OREGON 97223

Mr. Kelly O'Neill City of Sandy 39250 Pioneer Blvd. Sandy, OR 97055

RE: CITY OF SANDY

BULL RUN TERRACE SUBDIVISION RECONSIDERATION PRELIMINARY REVIEW 22-038 CPA/ZC/SAP/SUB/TREE

Dear Kelly:

We have reviewed the revised submittal for the Bull Run Terrace subdivision and have the following comments related to the public improvements:

- 1. The Preliminary Storm Drainage and Calculations report is acceptable; however, an upstream and downstream capacity analysis needs to be included in the report and the design modified as needed.
- 2. The developer will need to secure ODOT approval of all highway frontage and intersection improvements. The developer needs to also review the conclusions contained in the ARD Engineering September 28, 2020, Traffic Impact Study with the City to determine which conclusions are applicable to the revised submittal. Truck turning movements should be addressed for the intersection with the highway.
- 3. Street A is acceptable as a local with 28 foot width and 5 foot sidewalks. Street A will have parking allowed on both sides.
- 4. Street B is acceptable as a collector with 36 foot width and 6 foot sidewalks. No parking is permitted on a collector street less than 40 feet wide. Note the minimum street width for a collector street without parking is 32 feet.
- 5. Dubarko Road is classified by the City Transportation System Plan as a minor arterial which requires a minimum of 40 foot width and 6 foot sidewalks. Actual width on the preliminary plans is 43 or 44 feet with 5 or 6 foot sidewalks and includes a raised median in areas. One concern with the median is the paved width for access from the Highway is only 16 feet, which is less than the width required by the fire department access standards. No parking will be allowed on Dubarko Road.
- 6. The developer needs to coordinate with the City to review the Traffic Impact Study recommendations and how those are incorporated into the design.

Mr. Kelly O'Neill October 27, 2022 Page 2 7. All public improvements must comply with the requirements of the public works department. Let me know if you have questions. Very truly yours, CURRAN-McLEOD, INC. Curt McLeod, PE





39250 Pioneer Blvd Sandy, OR 97055 503-668-5533

Memorandum

To: Kelly O'Neill Jr, Development Services Director

From: AJ Thorne, Assistant Public Works Director

RE: Bull Run Terrace Review

Date: 10/28/2022

Kelly,

See Public Works comments below:

WATER:

Existing line must be replaced with a line of the same size within city depth requirements.

An 18 inch water line must be extended through the project area connecting the existing 18" line to the 12 inch line up at HWY 26. This line will be high flow, low pressure and used as a fire line.

SANITARY SEWER:

Sewer connections will be permitted as proposed.

STORM:

All site runoff (including new runoff from the widened surfaces of US 26) shall be detained such that post-development runoff does not exceed the pre-development runoff rate for the 2, 5, 10 and 25 year storm events. Stormwater quality treatment shall be provided for all site drainage per the standards in the City of Portland Stormwater Management Manual (COP SWMM).

TRANSPORTATION:

The proposed street and utility plan depicts Dubarko Rd. between its current eastern terminus and proposed Street A with a 76 ft. wide right-of-way consisting of a 0.5 ft. monumentation strip, a six-foot sidewalk, a five-foot planter strip, a 0.5 ft. curb, a five-foot bike lane, a 17-foot travel lane and half of an 8 ft. median for a total half section equaling 38 feet and a full section equaling 76 feet. The standard section for an arterial street in the TSP consists of 11-foot travel lanes with 5-foot bike lanes. It is not clear why the proposed travel lanes are so wide.

The portion of Dubarko Rd. between Street A west to the west boundary of the development should be used to provide a transition from the proposed three lane section with median to a two lane section with median to match the existing section. The proposed 17-foot wide travel lanes will be confusing to motorists.

The applicant shall submit a revised cross-section for this portion of Dubarko Rd. with the public improvement plans for the project for City Engineer review and approval.

The traffic analysis makes several references to a right-in/right-out intersection at Dubarko Rd. and US 26. These references are in the context of analysis of the performance of other study intersections examined in the TIS and not a proposal to construct a right-in/right-out intersection at this location.

The adopted Transportation System Plan (TSP) does not contemplate a right-in/right-out intersection at US 26 and Dubarko Rd. The intersection of US 26 and Dubarko Rd. shall be constructed as a full-access intersection in compliance with the TSP.

The alignment of Street B and Dubarko Rd. does not provide the minimum 100 ft. of tangent alignment (as measured from the curb line on Dubarko extended) on Street B as required by section 17.84.50 H.5.a of the Sandy Municipal Code (SMC). The alignment of this intersection shall be revised to provide the minimum 100 ft. tangent section to comply with the Code.

The applicant shall provide a 40 ft. x 40 ft. right-of-way dedication or permanent traffic signal easement at the northeast corner of lot 7 to accommodate a future traffic signal.

The widening of Dubarko Rd. to accommodate the section recommended in the TSP is eligible for Transportation System Development Charge credits. The difference in cost between the required minor arterial improvements and a standard local street section is eligible for credits. Estimated costs shall be submitted to City and reviewed and approved by the City Engineer. The City and the Applicant shall enter into an agreement defining the eligible improvements and estimated costs prior to plat approval. SDC credits shall be based on final audited costs.

Any ODOT-required improvements on and adjacent to the US 26 frontage of the site are not included in the City's TSP or capital plans and as such are not eligible for SDC credits or reimbursement.



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EXHIBIT Q

DATE: Oct 31, 2022

REQUEST: Bull Run Terrace Subdivision, Transportation Review

FILE NO: 19-050 CPA/ZC/SAP/SUB/TREE

REVIEWER: Dock Rosenthal, PE, DKS Associates

DKS Associates has reviewed the traffic impact analysis¹ and site plan for the Bull Run Terrace subdivision. The proposed zone change would reduce the amount of R-1 and R-2 zoned property, increase the amount of C-3 zoned property and add R-3 zoned property. The proposed development application would construct 192 apartment dwelling units, eight (8) duplex dwelling units and a 5,000 square foot general office. The project site is located south of US 26 near Dubarko Road on the east side of Sandy and will connect to the transportation system via an extension of Dubarko Road through the property.

The general comments and listing of recommended conditions of approval are based on a review of the impact study and site plan.

DEVELOPMENT TRANSPORTATION IMPACT REVIEW

Key comments and issues related to the proposed development's transportation impact analysis include:

Existing

- Study Intersections
 - 。 US 26 at SE Ten Eyck Road
 - 。 US 26 at SE Langensand Road
 - 。 US 26 at SE Vista Loop Drive (Dubarko Road future connection)
 - 。 US 211 at Dubarko Road
 - Dubarko Road at SE Langensand Road

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¹ Bull Run Terrace Subdivision Traffic Impact Study, Ard Engineering, September 29, 2022.

- Existing traffic volumes on US 26 were seasonally adjusted but the methodology applied deviates from ODOT's Analysis Procedures Manual (APM). Updating the TIA with the appropriate AMP methodology is not anticipated to change the finding and recommendations. The APM methodology should be followed in future TIAs.
- All study intersections operate at an acceptable volume to capacity ratios during the 2021 AM and PM peak hours.
- Crash data from January 2016 to December 2020 was analyzed, the intersection of Dubarko Road and Highway 211 was found to have a high crash rate.

Future (2024) Background Condition

- A growth rate of 1.93 percent per year was applied to the existing 2019 volumes to account for background growth for highway volumes on US 26. An annual growth rate of 3.16 percent per year was applied to the existing 2019 volumes on Highway 211. A rate of 2 percent per year was applied for other (non-highway) movements.
- Both study intersections operate at an acceptable volume to capacity ratios during the 2024 AM and PM peak hours

Future (2024) With Project Condition

- ITE Trip Generation Code 215 single-family housing, 220 multi-family housing, and 565 daycare center were used for the trip generation estimate.
- The proposed project would result in additional vehicle trips: 94 (28 in/66 out) AM peak hour vehicle trips, 115 (69 in/46 out) PM peak hour vehicle trips and 1418 weekday trips.
- 2024 Total Traffic Conditions All study intersections would operate at an acceptable volume to capacity ratios and LOS (level of service) standards with the addition of vehicle trips from the proposed project except for the intersection of Highway 211 and Dubarko Road in the PM peak hour which operates at LOS F. The City's standard is LOS D.
- · All-way stop control warrants were met at the Highway 211 and Dubarko Road intersection based on crash history criteria. Conversion of the intersection to all-way stop control would improve operations to LOS C in the AM peak hour and LOS D in the PM peak hour.
- Signal warrants were met at the intersection of Highway 211 and Dubarko Road. A signal is not recommended by the applicant as a condition of approval due to the low proportion of vehicles from the development contributing to the total volume.
- Installation of a roundabout at the Highway 211 and Dubarko Road intersection would improve operations to LOS A during the AM and PM peak hours. Roundabout control is not recommended by the applicant due to the 6% grade on Highway 211 at Dubarko Road which exceeds the FHA guidelines of 4% or less.
- Turn warrants were met at the intersection of US 26 and Dubarko Road. A northbound left turn lane and southbound right turn lane are warranted.
- Intersection sight distance requirements are met at the Dubarko Road extension at US 26. Stopping sight distance was not evaluated.

Mitigation

- 1. The TPR (Transportation Planning Rule) analysis for the zone change recommended applying a 340 PM peak trip cap to ensure adequate operation of the future transportation system.
- 2. The Dubarko Road and Highway 211 intersection is recommended to be converted to an allway stop controlled intersection to mitigate existing safety issues. The city does not support



this intersection control change due to concerns with vehicles on Dubarko Road stopping on the grade during icy weather conditions.

- 3. A northbound left turn lane is warranted for US 26 to the future Dubarko Road Extension.
- 4. A southbound right turn lane is warranted for US 26 to the future Dubarko Road Extension.

SANDY TRANSPORTATION SYSTEM PLAN

The 2011 Sandy Transportation System Plan identifies the following improvements:

- Highway 211 and Dubarko Road (Project M9) Construct a traffic signal, northbound right turn lane, southbound left turn lane and northbound left turn lane
- US 26 and Dubarko Road (Project M20) Extend Dubarko Road to US 26 opposite Vista Loop Drive (West)

These project should be incorporate into the conditions of approval.

RECOMMENDED CONDITIONS OF APPROVAL

The following conditions of approval are recommended based on a review of the traffic impact study and site plan:

- 1. A trip cap of 340 PM peak hour trips shall be applied to the development to ensure adequate operation of the future transportation system. The applicant shall conduct a trip generation survey for the proposed development between six and twelve months after full buildout of the development and submit the findings to the city to confirm the trip cap has not been exceeded. If the development exceeds the trip cap, the city will reassess the need for additional transportation mitigations, proportionate share fees and Transportation System Development Charges for the application.
- 2. The development shall contribute Transportation System Development Charges toward citywide impacts.
- 3. Applicant shall contribute a proportional share fee of \$268,351 towards constructing future capacity improvements at the Highway 211/Dubarko Road intersection. The cost per PM peak hour trip is \$15,785. The development adds 17 PM peak hour trips.
- 4. The applicant shall construct the extension of Dubarko Road to US 26 per City street standards. The new US 26 and Dubarko Road intersection shall operate with full access and provide a northbound left turn lane with 150-feet of vehicle storage at the.
- 5. Stopping sight distance shall be verified at the intersection of US 26 and the Dubarko Road extension in the final engineering/construction stages.
- Minimum sight distance requirements shall be met at all site driveways. Sight distances 6. should be verified in the final engineering/construction stages of development.
- 7. Trips included in the summary trip generation table on page 13 do not match the values in the appendix. The analysis shall be updated as needed, this may include discussion of pass-by or diverted trip assumptions.





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TECHNICAL MEMORANDUM

DATE: October 27, 2022

TO: Kelly O'Neill | City of Sandy

FROM: Reah Flisakowski | DKS

SUBJECT: Highway 211/Dubarko Road Proportionate Share Funding Plan

This memorandum summarizes the development of a proportionate share funding plan to construct improvements at the Highway 211/Dubarko Road intersection. Additional vehicle capacity will be needed at the intersection to adequately accommodate the anticipated growth from multiple developments in the eastern portion of the city.

A proportionate share funding plan was established to allow the City to collect financial contributions from multiple developments. The fees will fund specific capacity improvement that are needed to mitigate a traffic operation deficiency that is triggered by the impact of new trips from nearby growth. All developments will be conditioned to contribute financially to the improvements based on the number of trips their development adds to the location. A transportation study conducted by a development applicant will be required to estimate the number of new trips that would be added to the location by the proposed development.

PROPOSED IMPROVEMENTS

The need for future improvements at this intersection was identified in the adopted 2011 Sandy Transportation System Plan. The TSP project details are summarized in Table 1.

TABLE 1: SUMMARY OF LONG-TERM IMPROVEMENT PROJECTS

PLAN	IMPROVEMENT	PROJECT COST ESTIMATE
SANDY TRANSPORTATION SYSTEM PLAN	Highway 211/Dubarko Road – Construct a traffic signal, northbound right turn lane, southbound left turn lane, and northbound left turn lane	\$10,150,000

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PROPORTIONATE SHARE FEE CALCULATION

The proportionate share fee is based on the cost of capacity improvements at the Highway 211/Dubarko Road intersection needed to mitigate future growth impacts and the number of new trips that can be adequately accommodated with the additional capacity. The fee estimate applies the following formula:

$$\textit{Cost per Trip} = \frac{\textit{Improvement Cost Attributable to Development}}{\textit{Net Growth in Trips Accommodated}}$$

A summary of the proportionate share fee calculation is provided in Table 3. Recent traffic count data¹ was used to establish current volumes at the intersection. Future year 2029 volumes were obtained from the 2011 TSP. The city will require all new development to pay \$15,785 per PM peak hour trip their development generates through the intersection towards capacity improvements that are triggered by future traffic growth. The project cost estimate, future volumes and the fee calculation will be updated with information provided in future adopted TSP Updates.

TABLE 3: PROPORTIONATE SHARE FEE ANALYSIS RESULTS

PROPORTIONATE SHARE METHOD	SHORT-TERM (5 YEARS)	
PROPOSED IMPROVEMENT	Traffic signal + turn lanes	
PROJECT COST	\$10,150,000	
YEAR 2020 ENTERING VOLUME	907	
YEAR 2029 ENTERING VOLUME	1,550	
NET GROWTH IN TRIPS ACCOMMODATED	643	
COST FOR DEVELOPMENT	\$15,785 per PM peak hour trip	

NOTE: VOLUMES REPRESENT PM PEAK HOUR

¹ All Traffic Data intersection count, conducted Thursday, October 22, 2020.





Department of Transportation

Region 1 Headquarters 123 NW Flanders Street Portland, Oregon 97209 (503) 731.8200 FAX (503) 731.8259

11/2//22 ODOT #10566

ODOT Updated Response

Project Name: Bull Run Terrace Subdivision	Applicant: ARD Engineering
Reconsideration	
Jurisdiction: City of Sandy	Jurisdiction Case #: 22-
	038CPA/ZC/SAP/SUB/TREE
Site Address: No Situs: US 26 and Dubarko	State Highway: US 26
Road, Sandy, OR	

The site of this proposed land use action is adjacent to US 26. ODOT has permitting authority for this facility and an interest in ensuring that this proposed land use is compatible with its safe and efficient operation. Please direct the applicant to the District Contact indicated below to determine permit requirements and obtain application information.

COMMENTS/FINDINGS

The applicant proposes to subdivide the property in such a way to develop 192 multi-family dwellings, 8 duplexes and some commercial development. The proposed development requires amendments to the Comprehensive Plan Map and Zoning Map.

EXISTING ZONING DISTRICT DESIGNATION: Low-Density Residential (R-1), Medium-Density Residential (R-2), and Village Commercial (C-3)

PROPOSED ZONING DISTRICT DESIGNATION: Low-Density Residential (R-1), Medium-Density Residential (R-2), High-Density Residential (R-3), Village Commercial (C-3), and Parks and Open Space (POS)

Traffic Impact Study and Transportation Planning Rule (TPR) Findings

ODOT has reviewed the September 2022 Update Traffic Impact Study (TIS) for the Bull Run Terrace Subdivision prepared by ARD Engineering. The analysis shows that operations at ODOT intersections are expected to marginally improve primarily due to diversion from US 26 to Dubarko Rd. The new street connection will implement the city's TSP and improve street connectivity in the vicinity of the highway.

The TPR analysis doesn't include the correct mobility standards from the Oregon Highway Plan (OHP) and the "future" year analysis is for 2024. OHP Action 1F2 requires that the planning horizon in the adopted TSP or 15 years from the proposed date of amendment adoption, whichever is greater be used for the analysis. The trip generation comparison between the existing and proposed zoning shows the proposed trip generation, which is shown to increase PM Peak Hour trips by 50. ODOT has determined that this level of increased trips would not have a significant effect on State highway facilities.

US 26 and Dubarko Rd Intersection

The proposed subdivision includes a new public road connection of Durbako Rd to US 26 consistent with the City of Sandy Transportation System Plan. The location for the proposed public road connection is access controlled. ODOT has acquired and owns access rights along the subject property's frontage. Therefore, in order to construct the new public road connection to US 26, the City is required to apply for and obtain a "Grant of Access" for the public approach (OAR 731-051-2020). As part of the application process, the City must address the criteria outlined in the rule including provide the following information:

- 1. Traffic Impact analysis for 20 years from the year of construction
- 2. Demonstrate a committed funding source for the US 26 improvements
- 3. Demonstrate a benefit to the highway (OAR 731-051-4030)
- 4. 100% Construction Plans for highway improvements

For information on the Grant of Access process, please contact Tony Rikli, P.E. at Anthony.RIKLI@odot.oregon.gov.

Note: It may take 6 months to a year to process a Grant of Access.

The subdivision relies on the new Dubarko Rd connection to US 26 for access to the transportation system. Therefore, the subdivision should be conditioned to obtain the Grant of Access including the ODOT Permit to Occupy or Perform Operations upon a State Highway prior to the recording of the plat and the issuance of Building Permits. All improvements that are conditioned as part of the Grant of Access must be constructed and accepted by ODOT prior to the City issuing approval for Occupancy.

All alterations within the State highway right of way are subject to the ODOT Highway Design Manual (HDM) standards. Alterations along the State highway but outside of ODOT right-of-way may also be subject to ODOT review pending its potential impact to safe operation of the highway. If proposed alterations deviate from ODOT standards a Design Exception Request must be prepared by a licensed engineer for review by ODOT Technical Services. Preparation of a Design Exception request does not guarantee its ultimate approval. Until more detailed plans have been reviewed, ODOT cannot make a determination whether design elements will require a Design Exception.

Note: Design Exception Requests may take up to 3 months to process.

All ODOT permits and approvals must reach 100% plans before the District Contact will sign-off on a local jurisdiction building permit, or other necessary requirement prior to construction.

ODOT RECOMMENDED SUBDIVISION CONDITIONS OF APPROVAL

The Dubarko Rd public road connection to US 26 shall be constructed. A Grant of Access (OAR 731-051-2020) shall be obtained from ODOT for the new public road connection to US 26 prior to recording the plan for the subdivision. Prior to issuance of Building Permits, the Grant of Access including the ODOT Permit to Occupy or Perform Operations Upon a State Highway for all improvements highway improvement shall be obtained. All improvements that are conditioned as part of the Grant of Access must be constructed and accepted by ODOT prior to the City issuing approval for Occupancy.

Note: It may take 6 months to a year to process a Grant of Access.

Curb, sidewalk, cross walk ramps, bikeways and road widening along the US 26 frontage shall constructed as necessary to be consistent with local, ODOT and ADA standards. ODOT Permit to Occupy or Perform Operations Upon a State Highway for all improvements highway improvement shall be obtained.

Please send a copy of the Notice of Decision including conditions of approval to:

ODOT Region 1 Planning Development Review 123 NW Flanders St Portland, OR 97209

ODOT_R1_DevRev@odot.state.or.us

Development Review Planner: Marah Danielson	503.731.8258,
	marah.b.danielson@odot.state.or.us
Traffic Contact: Avi Tayar, P.E.	503.731.8221
	Abraham.tayar@odot.state.or.us
District Contact: Robbie Cox	D2CAP@odot.oregon.gov
Region Access Management Engineer: Tony Rikli, P.E	Anthony.RIKLI@odot.oregon.gov

City of Sandy Mail - Bull Run Development



EXHIBIT T

Rebecca Markham <rmarkham@ci.sandy.or.us>

Bull Run Development

Gary Roche <groche51@gmail.com>
To: planning@cityofsandy.com

Fri, Oct 21, 2022 at 1:09 PM

File # 22-038 CPA/ZC/SAP/SUB/TREE

Comments regarding this proposed development:

- 1. There needs to be a signal at Hwy 26 and Debarko Rd. This will be a dangerous intersection with the majority of cars leaving Bull Run turning left across two lanes. Cars and trucks routinely travel 45-50 mph on this section of Hwy 26.
- 2. Fawn St is a narrow street with children playing in the street daily. Traffic should be directed toward Debarko Rd.
- 3. High density housing and commercial too close to single family homes.
- 4. Proposal states C-3 lot will be a mix of both residential and commercial. Why is a lot zoned commercial allowed to have residential?

Thank you
Gary and Val Roche
Deer Pointe

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EXHIBIT U OCT. OCT.	/
We oppose any development that includes high density housing R-3 and this is almost half of the latest proposal. Such a huge increase in housing in our neighborhood would have a knae	
negative impacti	
David : Nancy Allan 503-826-0282 Your Name 18417 Meadow Ave, Sanday OR 97155 Address	

APPLICABLE CRITERIA: Sandy Municipal Code: 17.12 Procedures for Decision Making; 17.18 Processing Applications; 17.20 Public Hearings; 17.22 Notices; 17.24 Comprehensive Plan Amendment Procedures; 17.26 Zoning District Amendments; 17.30 Zoning District Amendments; 17.32 Parks and Open Space (POS); 17.36 Low Density Residential (R-1); 17.38 Medium Density Residential (R-2); 17.40 High Density Residential (R-3); 17.46 Village Commercial (C-3); 17.54 Specific Area Plan Overlay; 17.80 Additional Setbacks on Collector and Arterial Streets; 17.82 Special Setbacks on Transit Streets; 17.84 Improvements Required with Development; 17.86 Parkland and Open Space; 17.92 Landscaping and Screening; 17.98 Parking, Loading, and Access Requirements; 17.100 Land Division; 17.102 Urban Forestry; 15.30 Dark Sky; and, 15.44 Erosion Control Regulations.

Page 4 of 4

COMMENT SHEET FOR FILE No. 22-038 CPAZC/SAP/SUB/TREE: RECEIVE NOV 14 2022 D Bull Run Textace City of Sandy We are pleased that city planning will have Debarco intersect with Hwy 26. Lot * should be commedial and no residenctial, as the east end has no neighborhood Services, the ablity to walk or ride for Local needs, would make the more Livable.	EXHIBIT V
City of Sandy We are pleased that city planning will have Debarco intersect with Hwy 26. Lot * should be commedial and no residenctial, as the east end has no neighborhood Services, the abolity to walk or ride for Local needs, would make the more Livable.	COMMENT SHEET for File No. 22-038 CPA/ZC/SAP/SUB/TREE: NOV 14 2022
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THE CONTRACTOR SAFER.	Not to mention safer!
Dave Cartes 503 534-6123 Your Name Phone Number 41248 SE 1) 514 000 2 5 5 5 5 5	Phone Number

APPLICABLE CRITERIA: Sandy Municipal Code: 17.12 Procedures for Decision Making; 17.18 Processing Applications; 17.20 Public Hearings; 17.22 Notices; 17.24 Comprehensive Plan Amendment Procedures; 17.26 Zoning District Amendments; 17.30 Zoning District Amendments; 17.32 Parks and Open Space (POS); 17.36 Low Density Residential (R-1); 17.38 Medium Density Residential (R-2); 17.40 High Density Residential (R-3); 17.46 Village Commercial (C-3); 17.54 Specific Area Plan Overlay; 17.80 Additional Setbacks on Collector and Arterial Streets; 17.82 Special Setbacks on Transit Streets; 17.84 Improvements Required with Development; 17.86 Parkland and Open Space; 17.92 Landscaping and Screening; 17.98 Parking, Loading, and Access Requirements; 17.100 Land Division; 17.102 Urban Forestry; 15.30 Dark Sky; and, 15.44 Erosion Control Regulations.

Page 4 of 4

Address



Exhibit W

MEMORANDUM FOR PUBLIC HEARING

DATE: November 17, 2022

SUBJECT: Bull Run Terrace Reconsideration condition modifications

TO: Mayor Pulliam and City Councilors

FROM: Kelly O'Neill Jr.

After publication of the staff report on November 14, 2022, and additional discussions with City Attorney Soper, we have proposed modifications to three findings and two conditions as detailed in track changes below and reflected in both the conditions and findings as revised in the revised staff report and Attachment C for Ordinance No. 2022-27. **Bold blue underline** signifies additions and red strikethrough signifies deletions.

Finding 27. Goal 12.

Finding 92.

Condition B.

The applicant shall dedicate the proposed 1.755 acres of parkland to the City through a dedication deed process, separate from the subdivision plat process. Prior to dedication, the applicant shall provide a Phase I Environmental Assessment for Tract A. This dedication shall occur within 180 days after approval of Ordinance No. 2022-27.

Finding 56.

Condition G. 7.

The subject property shall be subject to a trip cap of 340 PM net new peak hour trips. Each application for development of a lot within the subject property shall include a report from a licensed traffic engineer stating the number of net new PM peak hour trips expected to be generated by the proposed development, and this number of trips will be deducted from the total trip cap of 340 net new PM peak hour trips upon approval of the application. No development application will be approved that would cause the total net new PM peak hour trips to exceed said cap unless the applicant agrees to pay additional proportionate share fees for the intersection of Highway 211 and Dubarko Road, in an amount determined by the City based on the number of trips in excess of the cap. The applicant shall conduct a trip generation survey for the proposed development between six and twelve months after full buildout of the development and submit the findings to the City to confirm the trip cap has not been exceeded. If the development exceeds the trip cap, the City will reassess the need for additional transportation mitigations, proportionate share fees, and Transportation System Development Charges for the application.

Memo for Bull Run Terrace Reconsideration with condition edits

Exhibit X



21370 SW Langer Farms Pkwy Suite 142, Sherwood, OR 97140

Technical Memorandum

To: Dave Vandehey, Roll Tide Properties Corporation

From: Michael Ard, PE

Date: November 21, 2022

Re: Deer Meadows Subdivision - DKS Associates Review Comment Responses

Following submittal of the Bull Run Terrace Subdivision Traffic Impact Study (September 2022 Update), we have received review comments from DKS Associates as the city's on-call transportation engineer. This memorandum is written in response to review comments dated October 31, 2022 by Dock Rosenthal PE and October 27, 2022 by Reah Flisakowski, PE.

The transportation review memo (Exhibit Q) by Dock Rosenthal, PE largely summarized the report, but included a few references to concerns that merit additional discussion.

1) "Existing traffic volumes on US 26 were seasonally adjusted but the methodology applied deviates from ODOT's Analysis Procedures Manual (APM). Updating the TIA with appropriate APM methodology is not anticipated to change the finding and recommendations. The APM methodology should be followed in future TIAs."

The seasonal adjustment methodology used in this report was consistent with the methodology used in prior traffic impact studies prepared for development in the City of Sandy over the last 5 years. The methodology was previously reviewed and approved for multiple traffic studies by John Replinger, PE (the city's prior on-call consultant) and by ODOT staff. However, we are happy to work with DKS Associates staff to come to agreement regarding how seasonal adjustments will be made on future reports.

2) "Intersection sight distance requirements are met at the Dubarko Road extension at US 26. Stopping sight distance was not evaluated."

Intersection sight distance requirements are generally in excess of stopping sight distance requirements. In this instance, the required intersection sight distance was calculated to be 1,195 feet in each direction in order to account for large trucks that would be expected to use the intersection and a design speed of 65 mph. In contrast, the required stopping sight distance for a 65-mph design speed is just 645 feet in each direction (slightly more than half what is required for intersection sight distance). We do not anticipate any difficulty in achieving stopping sight distance requirements in addition to intersection sight distance requirements, and this appears to be largely a matter of ensuring technical completeness rather than pointing at a potential design flaw.



DKS Review Comment Responses November 21, 2022 Page 2 of 4

3) "The Dubarko Road and Highway 211 intersection is recommended to be converted to an all-way stop controlled intersection to mitigate existing safety issues. The city does not support this intersection control change due to concerns with vehicles on Dubarko Road stopping on the grade during icy weather conditions."

The recommendation for installation of all-way stop control was made both to reduce the current high crash rates at the intersection and ensure the intersection meets the operational performance standards established by the City of Sandy.

Although installation of a traffic signal is also warranted and may also adequately address the operational and safety concerns, the cost of signalization (and lane additions) contemplated in the city's current TSP is several orders of magnitude higher than installation of stop signs, with an estimated cost of about \$10 million. It is unclear when a traffic signal can be funded at this intersection, and failure to implement mitigation will mean continued operation with the existing safety deficiencies.

Notably, the city's concerns with stopping under icy conditions would likely be worsened by installation of a traffic signal since southbound vehicles traveling down the hill approaching a stop sign know that they will need to stop (and we can install permanent stop signs at the stop bar, "stop ahead' signs in advance, and even rumble strips and speed feedback signs to ensure that drivers are aware of their speed and the need to stop. In contrast, drivers approaching a traffic signal will often see a green display and not be sure whether they will need to stop prior to entering the intersection. As such, initial speeds prior to braking would be likely to be higher with signalization, and the required rate of braking on the hill would be increased.

Based on these considerations, it remains our recommendation that the intersection be converted to all-way stop control.

4) "Trips included in the summary trip generation table on page 13 do not match the values in the appendix. The analysis shall be updated as needed, this may include discussion of pass-by or diverted trip assumptions."

The reported values in the table were confirmed to precisely match the values in the appendix. It is likely that this comment arose due to the fact that the trip generation calculations in the technical appendix included more than one page for the same land use categories, albeit with different sizes. These differences were intentional (e.g., the maximum size for a Supermarket under the existing zoning was 18,433 sf, while the maximum size under the proposed zoning increased to 25,720 sf.) No revisions to the trip generation calculations are needed to address this review comment.



DKS Review Comment Responses November 21, 2022 Page 3 of 4

The Dubarko Road Proportionate Share Funding Plan memo (Exhibit R) by Reah Flisakowski, PE utilized information from the City's 2011 Transportation System Plan to calculate a proportionate share contribution payable toward planned improvements at the intersection of Highway 211 and Dubarko Road. However, the analysis contains several problematic assumptions and conclusions.

First, the analysis takes for granted that installation of the improvements contemplated in 2011 will be necessary under year 2029 traffic conditions. However, the need for these improvements was predicated on outdated traffic volume projections and the assumption that the intersection would operate under the jurisdiction of the Oregon Department of Transportation (i.e., needing to meet ODOT rather than City of Sandy performance standards and subject to ODOT approval of any installed traffic control devices). These assumptions are no longer applicable at this location.

Regarding traffic volumes, the memo outlines that the year 2020 entering traffic volumes totaled 907 vehicles. Under year 2029 it was projected that there would be 1,550 entering vehicles. This represents a 70 percent growth in volumes in just 9 years. This equates to a linear growth rate of 7.77 percent per year, which is more than double ODOT's projections of 3.16 percent per year growth on this highway. It is therefore unlikely that the intersection will experience those design volumes under year 2029 traffic conditions. It is also likely that re-analysis with more reasonable traffic volumes would lead to a finding that improvements with lesser costs would be sufficient for the actual projected traffic volumes. Installation of a traffic signal without lane additions, for instance, would have project costs in the range of \$500,000, about 5 percent of the \$10 million cost projected in the memo. Further, installation of all-way stop control would address the immediate concern and would have negligible construction costs.

Second, the analysis accounts for growth between 2020 and 2029, but ignores that the TSP was created in 2011. If the city intended to fund installation of these improvements based on contributions from new development, per-trip fees should have been assessed for all projects dating back to when this project was anticipated. Since this was not done, application of the suggested fee of \$268,345 for the 17 trips this project will generate at the intersection represents a significant deviation from past practice and unequal treatment with respect to this developer and this project as compared to other (and prior) development within the City of Sandy.

Installation of all-way stop control is expected to address the immediate concerns regarding safety and operation of the intersection and was projected to result in using only 79 percent of intersection capacity, providing some ability to accommodate growth prior to construction of further intersection improvements. Further, installation of stop signs on the Highway 211 approaches does not result in greater overall risks even under ice and snow conditions than installation of a traffic signal. Based on these factors, the request for payment of \$268,345 may not be a reasonable condition of approval.



DKS Review Comment Responses November 21, 2022 Page 4 of 4

Finally, the proportionate share calculation is subject to the constitutional standards for exactions as expressed in *Nollan v. California Coastal Com.*, 483 U.S. 825, 836–37 (1987) and *Dolan v. City of Tigard*, 512 U.S. 374, 391-395 (1994). *Dolan* is particularly relevant here, because it requires any exactions to be "roughly proportional" to the impacts which the exactions are intended to offset. Given that DKS's proportionate share calculation relies on flawed assumptions, the City has likely not carried its burden to demonstrate the rough proportionality of that required contribution to the actual traffic impacts likely to be created by the project.

If you have any questions regarding these comment responses, please feel free to contact me at (503)537-8511 at any time.





EXHIBIT Y

Rebecca Markham <rmarkham@ci.sandy.or.us>

File No. 22-038 CPA/ZC/SUB/SAP/TREE (Bull Run Terrace); Applicant's Response to Updated Condition B

Stephenson, Garrett H. < GStephenson@schwabe.com>

Mon, Nov 21, 2022 at 3:36 PM

To: "Kelly O'Neill Jr." <koneill@ci.sandy.or.us>, Planning <planning@ci.sandy.or.us> Cc: Jeff Aprati <japrati@ci.sandy.or.us>, Josh Soper <josh@gov-law.com>, Dave Vandehey <dave.vandehey@rolltideproperties.com>, Tracy Brown <tbrownplan@gmail.com>

Kelly:

As you know, this office represents Roll Tide Properties Corp. I understand that you and Dave Vandehey had a good discussion this morning about Condition B. To be on the safe side, I wanted to register a protective objection against a certain component of that condition, which requires dedication of the parkland within 180 days and not as part of the subdivision plat. Among the primary reasons for this, as I explain below, is the ongoing sewer moratorium that could significantly impact our development timing, and we think that this condition should be revised to reflect this.

Please place this email into the record on the above-referenced casefile and place it before the Council.

The Applicant objects to the last sentence of revised Condition B (which we received only last Thursday afternoon), which provides as follows:

"The applicant shall dedicate the proposed 1.755 acres of parkland to the City through a dedication deed process, separate from the subdivision plat process. Prior to dedication, the applicant shall provide a Phase I Environmental Assessment for Tract A. <u>This dedication shall occur within 180 days after approval of Ordinance</u> No. 2022-27."

The parkland dedication is required under SDC 17.86. SDC 17.86.10.A. provides as follows:

"The required parkland shall be dedicated as a condition of approval for the following:

- 1. Single-family and duplex building permits;
- 2. Tentative plat for a subdivision or partition;
- 3. Design review for a multi-family development or manufactured home park;
- 4. Design review for a multi-family development accessory to commercial or industrial development; and,
- 5. Replat or amendment of any site plan for multi-family development or manufactured home park where dedication has not previously been made or where the density of the development involved will be increased."

The Code requires parkland dedication only in connection with residential development, and plainly does not support a requirement to dedicate land as a condition of a plan amendment/zone change and in a manner unrelated to the timing of completion of the final plat or other "residential development."

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11/21/22, 3:43 PM

City of Sandy Mail - File No. 22-038 CPA/ZC/SUB/SAP/TREE (Bull Run Terrace); Applicant's Response to Updated Condition B

The proposed requirement also raises practical problems. First, the City has imposed a six-month sewer connection moratorium. Res. 2022-024. Financing for the Bull Run Terrace project is unlikely to be available until the moratorium has expired, as neither investors nor banks will typically lend on a project that cannot connect to sewer when the financial commitments are made.

Second, depending on market conditions, it may take more than 180 days for the Applicant to achieve the financing necessary to make the project work. If the project cannot be financed within the 180-day period set forth in the condition, the dedication will not occur. Thus, the 180-day deadline serves to put the project at unnecessary timing risk and as a consequence, put the City's desired parkland at the same unnecessary risk.

If the City Council wishes to impose a specific timeframe not associated with the subdivision itself during which parkland dedication must occur, the Applicant requests that Condition B be revised as follows:

"The applicant shall dedicate the proposed 1.755 acres of parkland to the City through a dedication deed process, separate from the subdivision plat process. Prior to dedication, the applicant shall provide a Phase I Environmental Assessment for Tract A. This dedication shall occur within 180 days after approval of Ordinance No. 2022-27 or within 180 days after the termination of any development moratoria, whichever occurs last."

Finally, tying the parkland dedication to an arbitrary timeframe after the effective date of the zone change likely violates the 5th Amendment of the US Constitution. Requiring a landowner to dedicate its private property rights or pay money for public improvements in exchange for development approval is a compensable taking unless there is an "essential nexus" between the condition and the government interest. *Nollan v. California Coastal Com.*, 483 U.S. 825, 836–37 (1987). Additionally, such exactions must be "roughly proportional" to the expected impacts caused by the <u>proposed development</u>. *Dolan v. City of Tigard*, 512 U.S. 374, 391-395 (1994) (emphasis added). The City carries the burden of proof to demonstrate that the proposed public improvements have the required nexus, and must make an "individualized determination" of rough proportionality and "some effort to quantify" a project's impacts to support its conclusions. *Dolan*, 512 U.S. at 391.

As written, Condition B turns on the plan amendment/zone change proposal and is "separate from the subdivision plat process." The plan amendment/zone change itself does not allow the proposed development; the subdivision plat and subsequent design reviews are required for constructions of any residential units. Rather, the plan amendment/zone change is a *predicate* for future development. As a result, the City is unable to find that a requirement to dedicate and improve the parkland within six months of the plan amendment/zone change has an "essential nexus" or is "roughly proportional" to the plan amendment/zone change itself, which if divorced from the residential development proposed in the application, causes no physical impacts whatsoever.

Obviously, this constitutional issue arises only if the final plat is not recorded, but I am required under ORS 197.796(b) and ORS 197.797(5)(c) to raise the issue. For this reason, the Applicant accepts this condition to the extent it must do so under ORS 197.796(1), but also reserves its rights to the remedies under that statute.

Best regards,

Garrett

Garrett H. Stephenson

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11/21/22, 3:43 PM City of Sandy Mail - File No. 22-038 CPA/ZC/SUB/SAP/TREE (Bull Run Terrace); Applicant's Response to Updated Condition B Shareholder Direct: 503-796-2893 Mobile: 503-320-3715 gstephenson@schwabe.com Schwabe Williamson & Wyatt Please visit our COVID-19 Resource page NOTICE: This email may contain material that is confidential, privileged and/or attorney work product for the sole use of the intended recipient. Any review, reliance or distribution by others or forwarding without express permission is strictly prohibited. If you are not the intended recipient, please contact the sender and delete all copies.

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EXHIBIT Z

from: 'RaynRoo Ruehrdanz' via Planning planning@ci.sandy.or.us

Date: Mon, Nov 21, 2022, 5:10 PM Subject: Bull Run Terrace Rebuttal

To: planning@ci.sandy.or.us <planning@ci.sandy.or.us>

Dear Planning Commission, City Planning Staff, and City Councilors:

I have lived in the Deer Pointe neighborhood for the past 11 years. I moved to the City of Sandy because of its small town feel and the lower population compared to many other cities in the Urban Growth Boundary. We, as a community, have seen more and more cars and homeless people moving into the area. The traffic in this area has gotten severely worse over the last few years. There are times when you have to wait several minutes just to get onto 26. This is not acceptable and is only going to get worse when you add in more neighborhoods like the proposed one at the Bull Run Terrace Subdivision. You all need to think about the ramifications on the residents that currently live here and not the ones that will be moving here. I have no problem with the city growing, but make sure it is done correctly. Please make sure that the builders will adhere to the original plans and not build any apartment complexes. I have no problems with single family dwellings or low density housing.

Also, when we built here, we were told that the park across the street was going to be doubled in size. There was a plan to have a walking path, basketball courts, and a playground in the park. The new plans by the builders don't have a park at all and have houses built there instead. With every other neighborhood in the area, there is a park in the middle of it for the kids and families to use. The original plans should still be intact and not be replaced by more houses.

I don't understand why the citizens of the City of Sandy have to argue against building new subdivision housing areas. The amount of traffic that is going to be in the neighborhood of Deer Pointe is going to be at dangerous levels. The cars in the neighborhoods across the city are already packing the side streets to get away from Highway 26. With the new proposal of Deer Meadows it is going to be a problem with no outlet to Highway 26. All the houses in that neighborhood will have to all go through Deer Pointe. This is going to increase the traffic to an already congested neighborhood. There is no outlet on Dubarko because of the expense that the builders will have to incur. There has to be other outlets out of the neighborhood. Please take in consideration the citizens and their concerns and not just focus on the money that will be coming into the city.

Scott Ruehrdanz 40498 Fawn Street Sandy, Oregon 715-703-0839

Sent from Mail for Windows