

City of Richland Resolution No. 100-20 temporarily designates virtual locations for all municipal meetings. This meeting will be held remotely via Zoom. Members of the public may attend this meeting by selecting the Zoom link or by calling the phone numbers provided.



Agenda
Hearing Examiner Meeting
Monday, August 9, 2021
Join the Zoom meeting [here](#)
Public Telephone Access: (206) 337-9723 or (253) 215-8782
Meeting ID No. 872 2126 7401

Hearing Examiner: Gary McLean

Liaisons: Staff Liaison: Planning Manager Stevens

Public Hearing - 6:00 p.m.

Public Hearing Explanation:

New Business - Public Hearing:

1. S2021-103 Fairhaven Townhome Estates
Bethel Church
2. S2021-105 Quail Ridge II, Phases I-3
Pahlisch Homes

Adjournment

The next Hearing Examiner Meeting will be scheduled as needed.

This meeting is broadcast live on CityView Channel 192 and online at ci.richland.wa.us

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HEARING EXAMINER AGENDA ITEM COVERSHEET

Meeting Date: 8/9/2021

Agenda Category: New Business - Public Hearing

Prepared By: Shane O'Neill, Senior Planner

Subject:

S2021-103 Fairhaven Townhome Estates

Bethel Church

Department:

Development Services

Recommended Motion:

Approval subject to the conditions contained in the August 9 staff report

Summary:

The preliminary plat of Fairhaven proposes to divide approximately 10.2 acres into 70 single-family residential lots designed for attached townhome construction, together with one (1) tract. The subject site is comprised of two adjacent tax parcels located on the north side of Shockley Road, approximately 1,700 feet west of Keene Road. The request includes a formal request to deviate from the requirements of RMC 24.16.090 and general relief from 3 other conditions of approval put forth by the Public Works Department.

Attachments:

1. FULL Staff Report -Fairhaven 8.9.21

**CITY OF RICHLAND DEVELOPMENT SERVICES DIVISION
STAFF REPORT TO THE HEARING EXAMINER**

GENERAL INFORMATION:

PROPOSAL NAME: Fairhaven - Preliminary Plat

LOCATION: 666 & 686 Shockley Road

APPLICANT: Green Plan Construction, LLC c/o Stan Nuxall Jr.

PROPERTY
OWNER: Bethel Church

FILE NO.: S2021-103

DESCRIPTION: Request to divide approximately 10.2 acres into 70 single family residential lots designed for attached townhome construction. The application was amended to include a request to deviate from certain public roadway standards.

PROJECT TYPE: Type III Preliminary Plat

HEARING DATE: June 14 & August 9, 2021

REPORT BY: Shane O'Neill, Senior Planner

RECOMMENDED
ACTION: Approval subject to completion of proposed conditions



Figure 1 - Vicinity Map

DESCRIPTION OF PROPOSAL

Green Plan Construction, has filed a preliminary plat application (Exhibit 1) to divide approximately 10.2 acres of land into seventy (70) lots and one (1) tract known as the plat of Fairhaven. Proposed lot sizes range from 3,050 square feet to 10,891 square feet; with an average lot size of 5,110 square feet. Access to the plat of Fairhaven will come from two points on Shockley Road. The proposed subdivision survey is provided herein as Exhibit 2.

The application includes a formal deviation request in accordance with 24.24.010 RMC, to deviate from RMC Sections: 24.16.090 Streets – Jogs at intersections. The deviation further requests relief from certain approval conditions set forth by the Public Works office which do not qualify for relief through the deviation process. Said conditions relate to providing on-street parking and for the applicant to construct off-site improvements along the north side of Shockley Road. The written deviation request is provided as Exhibit 10 and Public Works responses thereto are provided as Exhibit 11. Further analysis of the qualifying deviation request is provided later in this report.

GENERAL INFORMATION

SURVEYOR: ASHLEY GARZA, PERMIT SURVEYING. INC.
ANNEXATION DATE: JULY 1, 1974
COMPREHENSIVE
PLAN: HIGH-DENSITY RESIDENTIAL (10.1 OR MORE
DWELLING UNITS PER ACRE)
CURRENT ZONING: R-3 (HIGH-DENSITY RESIDENTIAL)

PROJECT DATA

Gross Plat Area: 10.2 acres
Net Planning Area: 8.3 acres
Number of Lots: 70
Land for Streets/Other: 1.9 acres
Gross Density: 6.86 units/acre
Net Density: 8.43 units/acre

SITE DESCRIPTION & ADJACENT LAND USES

The site consists of two rectangular parcels located on the north side of Shockley Road, west of Keene Road. The site is nearly flat with the exception of the raised earthen KID irrigation pond located in the southeast corner which rises a few feet above the general site-grade.

The site was annexed into the City on July 1, 1974 through adoption of Ordinance No. 40-74.

Property to the west is an approximately five (5) acre, agriculturally zoned, parcel containing a single-family residence with two (2) accessory structures. Property to the north, also zoned agriculture (AG) contains a couple of single-family homes on large lots; one of which is surrounded by a fruit orchard. The 19-acre parcel to the west contains Bethel church in the R-1-12 (low-density residential) zone. Lands to the south are residentially zoned and are currently the subjects of residential subdivisions.

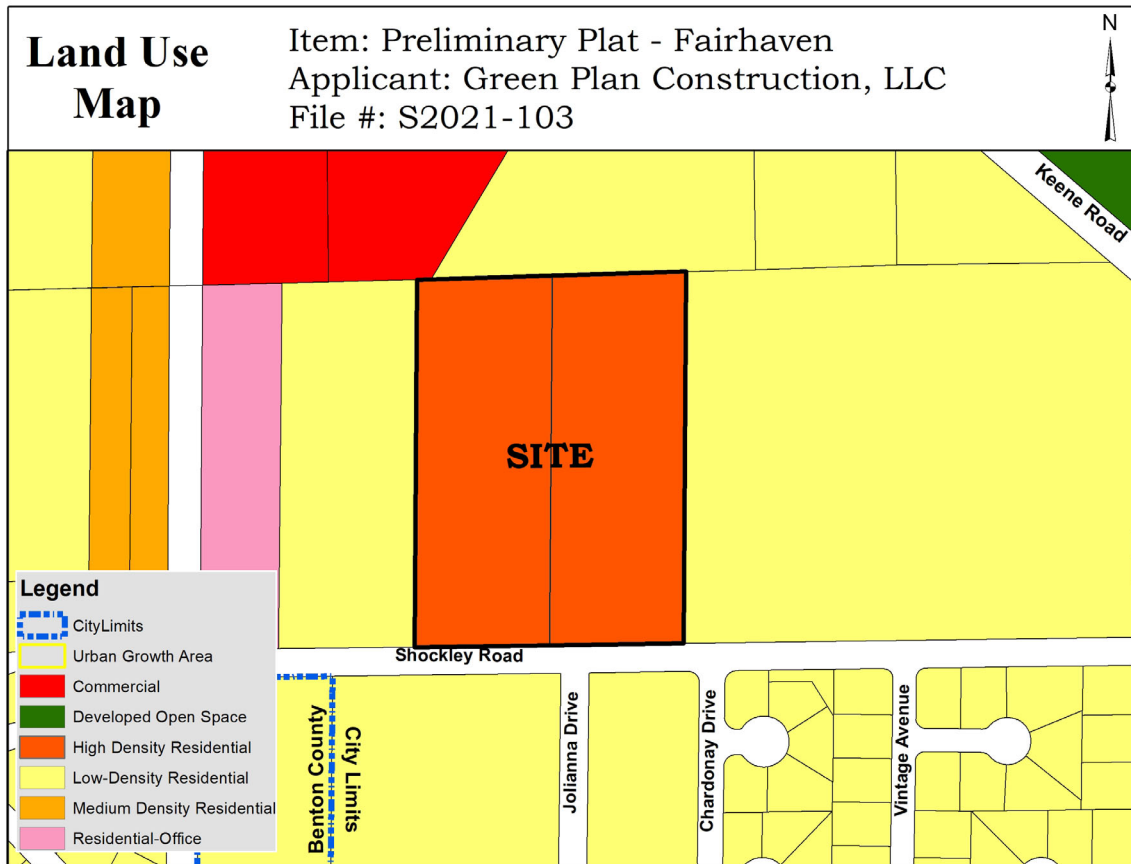


Figure 2 – Comprehensive Plan Map

COMPREHENSIVE PLAN

Richland's Comprehensive Plan designates the plat site for high-density residential development with an average allowable residential density of 10.1 or more dwelling units per acre. The plat of Fairhaven proposes a net residential density of 8.43 dwelling units/acre. Though under the residential density goal of the Comprehensive Plan the proposed residential density falls within the range of permitted residential density permitted in the R-3 zone.

Applicable Goals & Policies

Provided below is a set of Comprehensive Plan goals & policies which are particularly applicable to the subject residential subdivision.

Land Use Goal 3: Maintain a broad range of residential land use designations to accommodate a variety of lifestyles and housing opportunities.

Policy 1: Distribute residential uses and densities throughout the urban growth area consistent with the City's vision.

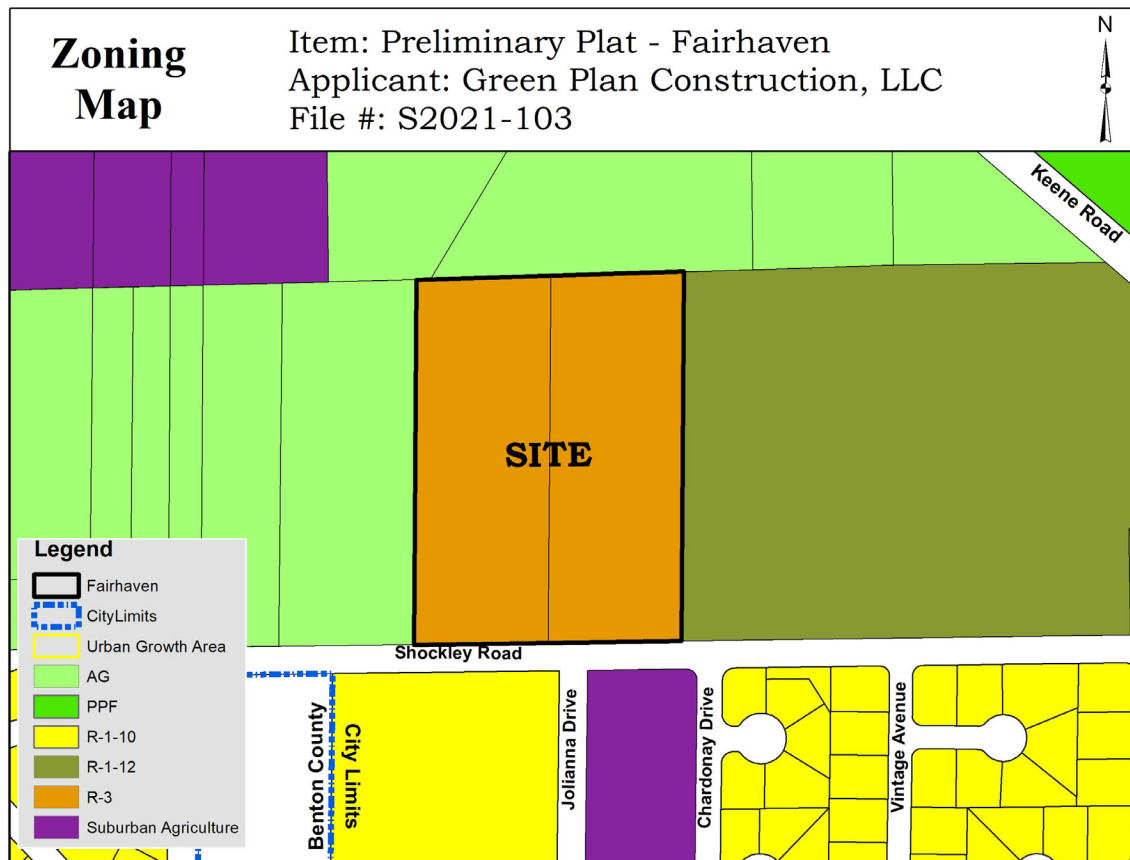
Policy 3: Innovative and non-traditional residential developments can occur through the use of planned unit developments, density bonuses, new types of housing, and multi-use or mixed-use developments.

Land Use Goal 8: Address unique land use situations in the urban area with policies specific to those situations that ensure compatibility between land uses without infringing on private property rights.

Policy 4: Identify and encourage the preservation of lands, sites, and structures that have historical or archaeological significance.

Natural Environment Goal 1: Promote the protection, conservation, and restoration of natural areas, shorelines, and critical areas as unique assets to the community, and provide public access for enjoyment of such facilities based on the ability of the resource to support the use.

Policy 1: Use the critical areas ordinance, SMP, the state environmental policy act (SEPA), and other ordinances, as applicable, to designate and protect the critical areas and natural environment.



ZONING

This preliminary plat site is zoned R-3 (High-Density Residential) allowing for each lot to be developed with detached single-family residences, attached single-family residences (townhomes), duplexes, multiple family dwellings (apartments

or condominiums). Fairhaven is designed to be developed with attached single-family residences (townhomes). This design involves attached homes with property lines separating each dwelling unit. Because the resulting development is one dwelling unit on its own tax parcel, it is a single-family residential land use. The smallest lot is 3,050ft² in size, while the largest lot is 10,891ft² acres in size.

Land Uses and Dimensional Standards

In the context of attached single family dwellings, R-3 zoning reverts to site requirements of the R-2S zone (23.18.040 footnotes 6 & 10). The following zoning dimensional standards apply to the proposed plat:

Uses Permitted:	Detached single family homes Attached single family homes (townhomes) Duplexes Multi-family dwellings (apartments/condominiums)
Minimum lot size:	3,000 square feet (attached single family dwellings)
Front yard setback:	20 feet minimum
Side yard setback:	6 feet minimum (attached single family dwellings)
Rear yard setback:	20 feet minimum (attached single family dwellings)
Maximum building height:	40 feet (mid-roof-point)
Maximum lot coverage:	50% (attached single family dwellings)

CRITICAL AREAS

The subject property does not contain any critical areas as identified by the city's critical areas regulations (Title 22.10).

CRITERIA FOR PRELIMINARY PLAT APPROVAL

Section 24.12.053 of the RMC sets forth the criteria that must be met before a preliminary plat application can be approved; it states:

The hearing examiner shall not recommend approval of any preliminary plat application, unless the approval is accompanied by written findings that:

- A. The preliminary plat conforms to the requirements of this title;*
- B. Appropriate provisions are made for the public health, safety and general welfare and for such open spaces, drainage ways, streets or roads, alleys, other public ways, transit stops, potable water supplies, sanitary wastes, parks and recreation, playgrounds, schools and school grounds and all other relevant facts, including sidewalks and other planning features that assure safe walking conditions for students who only walk to and from school;*
- C. The public use and interest will be served by the platting of such subdivision and dedication; and*
- D. The application is consistent with the requirements of RMC 19.60.095*

RMC Section 24.12.050 designates the Hearing Examiner as the hearing body responsible for conducting the review of preliminary plat applications.

PUBLIC NOTICE

Application Date:	March 31, 2021
Notice of Hearing/Optional DNS Mailed:	May 6 & July 20, 2021
Notice of Hearing/Optional DNS Posted:	May 4, 2021
Notice of Hearing/Optional DNS Published:	May 16 & July 25, 2021
DNS Issued:	June 4, 2021
Public Hearing:	June 14, August 9 2021

A combined notice of application and SEPA Optional DNS determination was provided by mailing notices to property owners within 300 feet. Public hearing notices were distributed through posting of the property, mailing of notice to property owners within 300 feet of the site and publication in the *Tri-City Herald* newspaper. Copies of the notices and affidavits are included in Exhibit 4. This process was repeated as part of the second public hearing.

SEPA

A SEPA checklist (Exhibit 5) addressing potential impacts of the proposed subdivision was included in the preliminary plat application. On Friday, June 4, 2021 staff issued a Determination of Non-Significance (DNS) (Exhibit 6) using the Optional DNS process available under the provisions of WAC 197-11-355.

No additional SEPA analysis was necessary due to the updated application with deviation request.

UTILITIES

All of the necessary public utilities are available on the site or very close to the site and available for extension as necessary.

Sewer

The nearest sewer main available to serve Fairhaven is an eight (8) inch main located within the right of way of Shockley Road immediately south of the site.

Water

Potable

The nearest water main available to serve Fairhaven is located within the adjacent Shockley Road right-of-way directly south of the site. This water main is 16-inches in diameter.

Irrigation

The project site is located within the irrigation district boundary of the Kennewick Irrigation District (KID). Irrigating lines exist on-site and on parcels surrounding the site. An irrigation source and distribution system, entirely separate from the

City's domestic water system, shall be provided for this development. It will be the developer's responsibility to obtain irrigation water to service the proposed subdivision. Conditions of approval related to irrigation service and delivery are included with the other conditions of approval at the end of this report.

There is currently a raised, earthen, open-air K.I.D. pond in the southwest corner of the Fairhaven site. The pond is enclosed by a 6-foot-tall chain-link fence with three strands of barbed-wire. Residential development of the site involves removal of this pond.

Electrical Power

A three-phase overhead electrical power distribution system currently extends the full length of Shockley Road and is available to serve the proposed development.

ACCESS/TRANSPORTATION

The proposed subdivision will be accessed via a new looped public roadway extending north from Shockley Road. Shockley Road is classified as a "major collector" street/roadway. Major collector streets distribute trips between the principal and minor arterials and the ultimate destination, or may collect traffic from the neighborhood streets and channel it into the arterial system. They carry a low portion of through traffic and a high portion of local traffic with an origin or destination within the area. Major collector streets provide both land access service and traffic mobility with more emphasis given to access. Spacing is approximately one-quarter mile. The average daily trip volume is typically in the range of 1,500 to 8,000 vehicles per day (12.02.050 RMC).

In regard to the level-of-service (LOS), pursuant to Sections 12.03.170 and 12.03.180 [RMC] this development proposal as submitted is in general conformance with the assumptions made for land use and scale/density. Through collection of impact fees, the project will comply with concurrency requirements of the Municipal Code.

Development proposals that are submitted in general conformance with the assumptions made for land uses and scale/density will be deemed to meet the concurrency requirements of the Growth Management Act by paying the appropriate transportation impact fee. A development proposal not meeting such may require additional review and studies to determine concurrency (12.03.180 RMC).

DEVIATION REQUEST

The applicant filed a single request for both deviations from certain code provisions (RMC 24.16.090) and from conditions of approval #'s 18, 21 & 23 as numbered in the original staff report and which have not been renumbered herein. The distinction between the two request types is that conditions 18, 21 & 23 are not explicitly derived from Title 24 code provisions and the deviation process is only available for

explicit requirements of Title 24. As such, the discussion below only addresses the request eligible for the deviation process as described in RMC 24.24.040. The Hearing Examiner should consider relief from conditions 18, 21 & 23 outside of the deviation process. Public Works' responses to all four of the requests are provided as Exhibit 11.

Condition #19 reads as follows:

"The proposed intersections with Shockley Road are acceptable for this project. The City is receptive to a variance request for the easterly intersection that could reduce or eliminate the reverse curves of the street within the project."

The applicant has requested a deviation from the requirements of RMC 24.16.090, which intends to limit roadway intersection centerline offsets of 125 feet or less. The Fairhaven plat proposes a 93.88-foot offset between proposed Road C and Jolianna Drive to the west. The original plat design conformed to this off-set regulation but in doing so created a non-conforming reverse (road) curve. The revised plat survey (Exhibit 2) eliminates the reverse curve in exchange for a deviation from the standards of RMC 24.16.090.

Deviation Criteria & Requirements

Pursuant to RMC 24.24.040, Deviations – Requirements, the hearing examiner may authorize deviations from the requirements of Title 24, Plats and Subdivisions, that will not be contrary to public interest; but only where, owing to special conditions pertaining to a specific subdivision, the literal interpretation and strict application of the provisions or requirements of Title 24 would cause undue and unnecessary hardship. No such deviation from the provisions or requirements of Title 24 shall be authorized by the hearing examiner unless the hearing examiner finds that all of the following facts and conditions exist:

- A. A written application for a deviation from subdivision standards, accompanied by an application fee as specified by the posted fee schedule, is submitted demonstrating all of the following:
 - 1. That special conditions and circumstances exist which are peculiar to the land involved and which are not applicable to other lands in the same area;

Staff Comment: The existing Jolianna Drive/Shockley Road intersection location together with the overall site width, cause the intersection alignment constraint. The intersection is slightly offset east of the center of the south site boundary. Said offset combined with site width, form the constraint. These particular circumstances are unique to the site in terms of specific dimensions. Granting a deviation from the minimum intersection offset will have greater benefits, such as eliminating a non-conforming reverse curve and to allow for a circular traffic pattern rather than a dead-end cul-de-sac.

2. That literal interpretation of the provisions of this title would deprive the applicant of rights commonly enjoyed by other properties in the same area or as necessary for the reasonable and acceptable development of the property;

Staff Comment: Without the granting of the requested deviation, the applicant would not enjoy the ability to design their plat using the most logical "horseshoe" roadway layout. Restricting use of an uninterrupted looped roadway layout may come at the cost of lost lots or other unforeseen restrictions due to irregular lot shapes.

3. That the special conditions and circumstances do not result from the actions of the applicant;

Staff Comment: The special conditions/circumstances result from the location of a roadway belonging to a previous plat (Jolianna Heights) and the configuration of underlying parent parcels in the vicinity, created by the prior generation.

4. That granting the deviation requested will not confer on the applicant any special privilege that is denied by this title to other lands in the same area;

Staff Comment: The requested deviation will not confer on the applicant a special privilege that would ordinarily be denied to other lands under the same circumstances. The proposed roadway intersection alignment will not result in any circumstance which would possibly be perceived a privilege. As indicated in their initial set of conditions, Public Works remains open to similar deviation requests.

5. That the deviation will not nullify the intent and purpose of the comprehensive plan or this title (Title 24);

Staff Comment: The subject property is designated as high-density residential by the Richland Comprehensive Plan. The requested deviation will allow the property to be subdivided in a manner consistent with the purpose and intent of the Richland Comprehensive Plan. Granting minor flexibility to road intersection alignment requirements will in no way nullify the purpose of Title 24 as stated in 24.24.020 RMC.

6. Deviations with respect to those matters requiring the approval of the city engineer may be granted by the hearing examiner only with the recommendation of the city engineer.

Staff Comment: The requested deviation from the requirements of RMC 24.16.090 Streets – Jogs at intersections, has been reviewed and

recommended for approval by the Richland Public Works Department (See Exhibit 11).

- B. The hearing examiner shall hold an open record hearing to consider the deviation application concurrently with the subdivision application.

FIRE SAFETY

The City of Richland Fire Department will provide fire protection services to the subject property and resulting development. Currently there are no existing fire hydrants along the adjacent segment of Shockley Road.

SCHOOLS

The plat falls within the boundaries of the Richland School District. The proposed plat was routed to the district for review and commenting as part of the standard referral process. No comments from the district were received by the City. Standard city streets with appropriate sidewalks will be constructed as part of the proposed development and it is anticipated that Richland School District will make the necessary arrangements to accommodate the pickup and delivery of students residing in the new subdivision.

PARKS

The site falls within Parks District 2. The public park nearest the site, Trailhead Park, lies one-half mile to the southwest. Trailhead Park contains a medium-sized parking lot, playground equipment, gazebo, bathrooms and it serves as the primary access-point to the hiking-trail network extending up to Badger Mountain peak and beyond.

The second closest public park, Gala Park, lies 0.8-miles to the southeast, on Westcliffe Blvd. This 3-acre park is mostly lawn with a small play area and gazebo.

The largest nearby public park is Badger Mountain Park which is located adjacent to Keen Road, 1-mile southeast of the Fairhaven pre-plat site. Badger Mountain Park is a 38.5-acre multi-facility park containing: 2 child-play areas, 1 tennis court, 1 basketball court, 1 football field, 1 soccer field, restrooms, 2 picnic shelters, parking, paths and 5 baseball diamonds.

The developer and/or builder will be required to pay Park Mitigation Fees as set forth in the City's adopted Fee Schedule. Fees received are used to construct and develop new city parks as well as to provide funding to maintain existing parks throughout the city.

AGENCY COMMENTS

A variety of public agencies and City departments were given an opportunity to comment on the proposal. Comments were received from the Kennewick

Irrigation District (KID), and a neutral comment from Badger Mountain Irrigation District. All comments received are provided herein as Exhibit 7. Comments from the City Public Works/Engineering Department and from KID are entered directly into the set of recommended approval conditions listed at the end of this report. No additional comments were received in response to the second round of notices.

PUBLIC COMMENTS

At the time this report was prepared, the City has not received any comments from the public at large in response to either the first or second notices.

ANALYSIS

The criteria for approval of a preliminary plat application (RMC 24.12.053) are reprinted here, with a summary of how the application complies with the requisite standard:

- A. *The preliminary plat conforms to the requirements of this title (RMC Title 24);*
- The City's subdivision regulations set forth specific requirements for the filing of an application, how notice of the application is to be provided and requires that the Hearing Examiner conduct a public hearing and make recommendation to the City Council. These steps have been followed to date.
- B. *Appropriate provisions are made for the public health, safety and general welfare and for such open spaces, drainage ways, streets or roads, alleys, other public ways, transit stops, potable water supplies, sanitary wastes, parks and recreation, playgrounds, schools and school grounds and all other relevant facts, including sidewalks and other planning features that assure safe walking conditions for students who only walk to and from school;*
- Several city parks and other recreational opportunities exist within approximately one mile of the project site. New homes within the proposed development will be required to pay Park Impact Fees, which are used to construct new parks and/or maintain existing park facilities within the city.
 - The site is not located along an existing bus route. The Ben Franklin Transit Authority provides bus service to the area along Keene Road approximately 0.25 miles to the east.
 - The plat will be served by City domestic water lines currently existing adjacent to the project site. Water lines have capacity to provide for the proposed project.
 - Sanitary sewer service will be extended to this project.
 - The plat will be served by Richland Energy Services electrical power by way of service line extension.
 - An irrigation source and distribution system, entirely separate from the City's domestic water system, shall be provided for this development.

- Kennewick Irrigation District indicated that the development site is within their district boundaries and has provided a comment letter advising the applicant of options for addressing the existing and future irrigation systems.
- In accordance with City development standards, storm water drainage will have to be retained and managed on-site. The proposed plat design includes provisions for retaining and managing on-site storm water. Project specific designs have not been created yet; however, prior to the city allowing construction of the subdivision to occur, the development will need to be designed by a licensed civil engineer and meet the requirements of the city and state storm water regulations.
- Richland School District was given the opportunity to comment, however chose not to. The Richland School District currently serves approximately 13,000 children within a multitude of school facilities some of which are new or have been recently remodeled to accommodate the increasing student enrollment seen as a result of new housing being built within the area.

C. The public use and interest will be served by the platting of such subdivision and dedication;

- The proposed project is consistent with the Comprehensive Plan in terms of the proposed density of the plat. The project is consistent with the City's zoning regulations. The additional housing units will contribute to meeting the housing demand experienced in the Tri-Cities thereby serving public interest.

D. The application is consistent with the requirements of RMC 19.60.095, which states: No development application for a Type II or Type III permit shall be approved by the city of Richland unless the decision to approve the permit application is supported by the following findings and conclusions:

1) The development application is consistent with the adopted Comprehensive Plan and meets the requirements and intent of the Richland Municipal Code.

The proposal is generally consistent with the intent of the Comprehensive Plan and as conditioned will meet requirements of the Municipal Code as outlined above.

2) Impacts of the development have been appropriately identified and mitigated under Chapter 22.09 RMC.

Chapter 22.09 is the City's adoption of the State Environmental Policy Act provisions. The applicant filed an environmental checklist (Exhibit 5) for which the City issued and distributed a Determination of Non-Significance (Exhibit 6) after utilizing the Optional DNS process.

3) The development application is beneficial to the public health, safety and welfare and is in the public interest.

The project is consistent with the City's Comprehensive Plan and development regulations and it therefore would be considered beneficial to public health, safety and welfare and would be in the public interest. As mentioned above, staff is recommending several requirements in the form of conditions, aimed at ensuring the development does not generate any significant impacts which would be detrimental to the peaceful enjoyment of existing land uses in the surrounding vicinity.

- E. *The development does not lower the level of service of transportation facilities below the level of service D, as identified in the Comprehensive Plan; provided, that if a development application is projected to decrease the level of service lower than level of service D, the development may still be approved if improvements or strategies to raise the level of service above the minimum level of service are made concurrent with development. For the purposes of this section, "concurrent with development" means that required improvements or strategies are in place at the time of occupancy of the project, or a financial commitment is in place to complete the required improvements within six years of approval of the development.*

The project would add 70 new residential lots to be accessed from newly constructed and existing roadways leading into the subdivision; serving each proposed lot. The north side of Shockley Road lacks sidewalks along the church property connecting to Keene Road. Condition #21 charges the Fairhaven development with completing this 320-foot off-site segment of pedestrian infrastructure, citing the provisions of 12.06.030 RMC - Complete streets infrastructure. Condition #21 is contested by the applicant on page 3 of Exhibit 10.

- F. *Any conditions attached to a project approval are as a direct result of the impacts of the development proposal and are reasonably needed to mitigate the impacts of the development proposal.*

The conditions of approval recommended for this project are a direct result of imposing City development standards as contained in City code and are directly related to the development proposal. Additional conditions have been included as a result of comments received by other agencies. Conditions 18, 19, 21 & 23 are being contested by the applicant (Exhibit 10).

FINDINGS AND CONCLUSIONS

Staff has completed its review the preliminary plat application for Fairhaven (S2021-103) and recommends approval of the preliminary plat and associated deviation, subject to conformance with the conditions of approval included below and based on the following findings:

Findings of Fact:

1. Richland's Comprehensive Plan designates the plat site for high-density residential development with an average allowable residential density of 15 units per acre, which could not be reached under the R-3 zoning lot size limits). The plat of Fairhaven proposes a net residential density of 8.43 dwelling units/acre.
2. R-3 (Multiple Family Residential) zoning is applied to the site. R-3 zoning regulations permit residential densities of up to 14.5 dwelling units per acre and a 3,000ft² min lot size.
3. Fairhaven preliminary plat consists of 70 residential lots. Proposed residential lot sizes range from 3,050 square feet to 10,891 square feet, with a 5,164ft² average lot size.
4. Section 24.12.053 of the RMC sets forth standards for review of preliminary plats that require the Hearing Examiner to consider whether appropriate provisions are made for the public health, safety and general welfare and for such open spaces, drainage ways, streets or roads, alleys other public ways, transit stops, potable water supplies, sanitary wastes, parks and recreation, playgrounds, schools and school grounds and all other relevant facts, including sidewalks and other planning features that assure safe walking conditions for students who only walk to and from school.
5. The proposed preliminary plat provides for the extension of streets consistent with the surrounding street network, includes provisions for the extension of public domestic water, sewer, irrigation water and electrical power lines.
6. Improvements proposed to serve the preliminary plat will be consistent with the City's development standards by applying municipal code provisions.
7. The Richland School District was invited to comment and expressed no concerns with the plat.
8. City staff and other utility providers reviewed the project and have recommended specific conditions of approval as set forth in this report.
9. The applicant filed an environmental checklist along with their preliminary plat application as required under the State Environmental Policy Act.
10. After review of the checklist, application materials and receipt of agency and public comments, staff issued a Determination of Non-Significance on Friday, June 4, 2021 after utilizing the Optional DNS process.
11. The site is not located within nor does it contain any critical areas as defined by the city's critical areas regulations contained within RMC 22.10.
12. RMC 19.60.095(D) requires that development not lower the level of service standard for transportation facilities below a level of service D.
13. The proposed project would add 70 single family lots that would have direct access onto roadways proposed in the plat.
14. Fairhaven is subject to RMC 12.03, the City's traffic impact fee program. Since this property is included within the traffic impact fee program it is exempt from the SEPA-related traffic study requirement (TIA).

15. During the June 14 public hearing, the Hearing Examiner remanded the plat back to staff to allow the applicant to properly file a deviation request and for staff to re-notice a second public hearing including the deviation request.
16. In accordance with 24.24.040 RMC the applicant filed a deviation request to the requirements of RMC 24.16.090, as applied in staff's recommended approval condition #19.
17. Pursuant to 24.24.050 RMC, the Hearing Examiner may enter conditions regarding the features of the deviation as deemed necessary to carry out the spirit and purposes of this title and in the public interest.
18. The applicant requests relief from approval conditions 18, 19, 21 & 23 as explained in Exhibit 10.
19. Richland Public Works Director, Pete Rogalsky, recommends approval of a deviation from the standards of RMC 24.16.090 Streets – Jogs at intersections. Mr. Rogalsky's responses to the applicant's requests for relief from conditions 18, 21 & 23 are presented in Exhibit 11.

Conclusions of Law:

1. The lots within the proposed subdivision are consistent with the provisions of the City's respective (R-3) zoning regulations.
2. The proposed preliminary plat conforms to the density and type of land use envisioned in the land use and transportation elements of the adopted Comprehensive Plan.
3. Pursuant to RMC Chapters 22.09 and 22.10, the procedures required under the State Environmental Policy Act have been completed.
4. As conditioned, the proposed preliminary plat makes appropriate provisions for the public health, safety and general welfare and for such open spaces, drainage ways, streets or roads, alleys, other public ways, transit stops, potable water supplies, sanitary wastes, parks and recreation, playgrounds, schools and school grounds and all other relevant facts, including sidewalks and other planning features that assure safe walking conditions for students who only walk to and from school.
5. Based on the above findings and conclusions, approval of the proposed preliminary plat of Fairhaven, subject to the recommended conditions listed in this report, is warranted because the project conforms to the City's adopted comprehensive plan and zoning regulations; has followed the required State Environmental Policy Act procedures; but contains some inconsistencies with the requirements of the City's subdivision regulations.

Overall Conclusion:

Based on the above findings and conclusions, approval of the proposed preliminary plat of Fairhaven and deviation request is warranted because subject to the recommended conditions listed below, the project conforms to the City's adopted Comprehensive Plan and zoning regulations; has followed the required State Environmental Policy Act procedures. As

proposed, the plat contains design details which are consistent with the requirements of the City's subdivision regulations.

RECOMMENDED CONDITIONS OF APPROVAL

1. All final, approved plans for public improvements shall be submitted prior to pre-con on a 24" x 36" hardcopy format and also electronically in .dwg format compatible with the City's standard CAD software. Addendums are not allowed, all information shall be supplied in full size (and electronic) format. Electronic copies of the construction plans are required prior to the pre-con meeting along with the multiple sets of paper drawings. When construction of the public infrastructure has been substantially completed, the applicant shall provide paper and electronic record drawings in accordance with the City's "Record Drawing Requirements". The electronic record drawings shall be submitted in an AutoCAD format compatible with the City's standard CAD software. The final record drawings shall be submitted and approved by the City before the final punchlist inspection will be performed. All final punchlist items shall be completed or financially guaranteed prior to recording of the final plat.
2. A copy of the construction drawings shall be submitted for review to the appropriate jurisdictions by the developer and his engineer. All required comments / conditions from all appropriate reviewing jurisdictions (e.g.: Benton County, any appropriate irrigation districts, other utilities, etc.) shall be incorporated into one comprehensive set of drawings and resubmitted (if necessary) for final permit review and issuance. Any and all necessary permits that may be required by jurisdictional entities outside of the City of Richland shall be the responsibility of the developer to obtain.
3. Any work within the public right-of-way or easements or involving public infrastructure will require the applicant to obtain a right-of-way construction permit prior to beginning work, per RMC Chapter 12.08. The applicant shall pay a plan review fee based on a cost-per-sheet of engineering infrastructure plans. This public infrastructure plan review fee shall apply each time a project is submitted for review. This fee will be different for commercial projects versus subdivision projects. Please visit the Public Works Private Development page on the City's webpage to find the current per-sheet fee. A permit fee in the amount equal to 3% of the construction costs of the work within the right-of-way or easement will be collected at the time the construction permit is issued. A stamped, itemized Engineers estimate (Opinion of probable cost) and a copy of the material submittals shall be submitted along with the approved plan submittal.
4. Public utility infrastructure located on private property will require recording of a City standard form easement prior to acceptance of the infrastructure and release of the final plat. The City requires preparation of the easement

- legal description by the developer two weeks prior to the scheduled date of plat acceptance. Once received, the City will prepare the easement document and provide it to the developer. The developer shall record the easement at the Benton County Assessor and return a recorded original document to the City prior to application for final plat acceptance.
5. A pre-construction conference will be required prior to the start of any work within the public right-of-way or easement. Contact the Public Works Engineering Division at 942-7500 to schedule a pre-construction conference.
 6. Site plan drawings which involve the construction of public infrastructure shall be drawn on a standard 24" x 36" drawing format to a scale which shall not be less than 1"=40'.
 7. All plan sheets involving construction of public infrastructure shall have the stamp of a current Washington State licensed professional engineer.
 8. All construction plan sheets shall include the note "CALL 811" or: <http://www.call811.com/>
 9. A copy of the preliminary plat shall be supplied to the Post Office and all locations of future mailbox clusters approved prior to final platting.

DESIGN STANDARDS:

10. Public improvement design shall follow the following general format:
 - a. All materials and workmanship shall be in conformance with the latest revision of the City of Richland Standard Specifications and Details, Public Infrastructure Design Guidelines and the current edition of the State of Washington Standard Specifications for Road, Bridge, and Municipal Construction. Please confirm that you have the latest set of standard specs and details by visiting the City's web page.
 - b. Water lines shall be aligned on the south and east side of street centerlines.
 - c. Sanitary sewer shall be aligned on the north and west side of street centerlines.
 - d. Storm sewer shall be aligned on the south and east side of street centerlines.
 - e. Any sewer or storm manholes that are installed outside of public Right of Way shall have an acceptable 12-foot wide gravel access road (minimum) provided from a public street for maintenance vehicles.
 - f. 10-foot horizontal spacing shall be maintained between domestic water and sanitary sewer mainlines and service lines.
 - g. Watermains larger than 8-inches in diameter shall be ductile iron.

- h. Watermains installed outside of the City Right of Way or in very rocky native material, shall be ductile iron and may need restrained joints.
- i. Fire hydrant location shall be reviewed and approved by the City Fire Marshal.
- j. Sewer mains over 15-feet deep shall be constructed out of SDR26 PVC.
- k. All utilities shall be extended to the adjacent property (properties) at the time of construction.
- l. The minimum centerline finish grade shall be no less than 0.30 % and the maximum centerline finish grade shall be no more than 10.0% for local streets. 12% can be allowed for local streets for short distances.
- m. The minimum centerline radius for local streets shall be 100-feet.
- n. Any filling of low areas that may be required within the public Right of Way shall be compacted to City standards.
- o. An overall, composite utility plan shall be included in the submitted plan set if the project is phased. This comprehensive utility plan benefits all departments and maintenance groups involved in the review and inspection of the project.
- p. A detailed grading plan shall be included in the submitted plan set.
- q. For public utilities not located within public street rights-of-way the applicant shall provide maintenance access acceptable to the City and the applicant shall provide an exclusive 10-foot wide public utility easement (minimum) to be conveyed to the City of Richland.
- r. Final design of the public improvements shall be approved at the time of the City's issuance of a Right-of-way Construction Permit for the proposed construction.
- s. All public improvements shall comply with the State of Washington and City of Richland requirements, standards and codes.
- t. All curb returns at minor intersections shall have a minimum radius of 25-feet. Curb returns at major intersections should have minimum radius of 30-feet but should be evaluated on a case by case basis.
- u. All public streets shall meet design requirements for sight distance (horizontal, vertical and intersectional).
- v. The final engineered construction plans shall identify locations for irrigation system, street lighting, gas service, power lines, telephone lines, cable television lines, street trees and mail boxes. All electrical appurtenances such as transformers, vaults, conduit routes, and street lights (including their circuit) need to be shown in the plan view.
- w. Construction plans shall reference all City of Richland standard details necessary to construct all public improvements which will be owned, operated, maintained by the City or used by the general public.
- x. The contractor shall be responsible for any and all public infrastructure construction deficiencies for a period of one year from the date of the letter of acceptance by the City of Richland.

11. If the project will be built in phases the applicant shall submit a master plan for the sanitary sewer, domestic water, storm drainage, electrical, street lighting and irrigation system for the entire project prior to submitting plans for the first phase to assure constructability of the entire project. This includes the location and size of any storm retention ponds that may be required to handle runoff.
12. If the City Fire Marshal requires a secondary emergency vehicle access, it shall be included in the construction plan set and be designed to the following standards:
 - 2-inches compacted gravel, minimum (temp. SEVAs only).
 - 2% cross-slope, maximum.
 - 5% slope, maximum. Any access road steeper than 5% shall be paved or be approved by the Fire Marshal.
 - Be 20-feet in width.
 - Have radii that are accommodating with those needed for City Fire apparatus.

Secondary emergency vehicles accesses (SEVA's) shall be 20-feet wide, as noted. Longer secondary accesses can be built to 12-feet wide with the approval of the City of Richland Fire Marshal, however turn-outs are required at a spacing acceptable to the Fire Dept. Temporary SEVA's shall be constructed with 2-inches of compacted gravel, at a minimum. Permanent SEVA's shall be paved with 2-inches of asphalt over 4-inches of gravel, at a minimum.

SURVEY MONUMENT DESTRUCTION:

13. All permanent survey monuments existing on the project site shall be protected. If any monuments are destroyed by the proposed construction, the applicant shall retain a professional land surveyor to replace the monuments and file a copy of the record survey with the City.
 - A. No survey monument shall be removed or destroyed (*the physical disturbance or covering of a monument such that the survey point is no longer visible or readily accessible*) before a permit is obtained from the Department of Natural Resources (DNR). WAC 332-120-030(2) states "It shall be the responsibility of the governmental agency or others performing construction work or other activity (including road or street resurfacing projects) to adequately search the records and the physical area of the proposed construction work or other activity for the purpose of locating and referencing any known or existing survey monuments." (RCW 58.09.130).
 - B. Any person, corporation, association, department, or subdivision of the state, county or municipality responsible for an activity that may cause a survey monument to be removed or destroyed shall be

responsible for ensuring that the original survey point is perpetuated. (WAC 332-120-030(2)).

- C. Survey monuments are those monuments marking local control points, geodetic control points, and land boundary survey corners. (WAC 332-120-030(3)).

When a monument must be removed during an activity that might disturb or destroy it, a licensed Engineer or Land Surveyor must complete, sign, seal and the file a permit with the DNR.

It shall be the responsibility of the designing Engineer to identify the affected monuments on the project plans and include a construction note directing them to the DNR permit.

TRAFFIC & STREETS:

14. The "Fairhaven Townhome Estates" preliminary plat is subject to the City's traffic impact fee program (RMC 12.03). Since this property is included within the traffic impact fee program, and since staff analysis indicates the project will create no unusual or unanticipated traffic impacts, it is exempt from the SEPA-related traffic study requirement (TIA).
15. The Shockley Road frontage shall be completed to City standards at the time that the phase which constructs the lots adjacent to it are developed.
16. A note will be shown on the face of the final plat stating that Shockley Road is classified as a "Major Collector street". Subsequently, no driveways accessing single family lots will be allowed onto it.
17. City standard local streets are intended to support on-street parking. This development will create a demand for parking off of the developed lots, which could be met if adequate parking is provided for on the City streets. Because of the density of the housing units and the number of proposed driveways there is a need to design available spaces for on-street parking. Driveway spacing and widths shall be designed to allow for a minimum of one on-street vehicle parking space per every two dwelling units.
18. The proposed intersections with Shockley Road are acceptable for this project. The City is receptive to a variance request for the easterly intersection that could reduce or eliminate the reverse curves of the street within the project.
19. Per Richland Municipal Code chapter 24.16, the minimum centerline radius for a local street shall be 100-feet. The proposed roadways in this pre-plat have several curves that are less than this and need correction.

20. Concurrent with phase 1 of this development the developer shall complete the street section immediately to the east of the site by installing approximately 320-feet of curb, gutter and sidewalk, asphalt widening as needed to complete the street, storm drainage facilities as needed, and street lighting to City standards across the neighboring property to connect to the existing sidewalk. This sidewalk connection is needed to connect this development, and its residents, with several services along Keene Road (transit, a recreation pathway, stores, etc.)
21. Sidewalks within the plat shall be installed along all public right-of-way frontages that building lots do not front on during construction of those phases (e.g., storm drainage ponds, parks, open space tracts, etc.).
22. The developer and his engineer shall demonstrate on the construction plans that all future driveway entrances, sidewalks and pedestrian ramps will meet City and ADA requirements, and also provide at least 5-feet of separation between driveways and/or pedestrian ramp transitions.
23. Pedestrian ramps shall be designed to current City standard details and A.D.A. standards. Adequate right-of-way shall be provided at corners to allow for at least 1-foot of ROW behind the ped. ramp landing. Crosswalks between pedestrian ramps shall be designed to City standards. Crosswalks at stop-controlled intersections shall have cross-slopes less than 2%. Crosswalks crossing thru-streets shall have cross-slopes less than 5%. The road profile shall be designed to accommodate this.
24. The vision-clearance triangle needs to be shown on all corner lots on both the construction plans and the final plat document, in accordance with RMC Chapter 12.11.020. If the intersection is in a curve, it will have to be evaluated per AASHTO guidelines. This information may need to be designed by the engineer of record and supplied to the surveyor of record for inclusion into the final plat document.
25. All roads shall be constructed to provide for adequate fire truck & solid waste collection truck access & turnaround movements.
26. If the project is to be constructed in phases, all dead-end streets longer than 150-feet that will be continued later need to have temporary turnarounds built at the end of them. If the temporary turnaround is not located within the final plat an easement with a 50-foot radius will be required.

Domestic Water:

27. The proposed preliminary plat is located within the "Tapteal 1" water pressure zone. The closest Tapteal 1 watermain is located in Shockley

- Road. It shall be the responsibility of the developer to extend a watermain west up Shockley Road to the western intersection ("Road A") and onto this property to serve domestic water at the time of plat construction. This water main shall be sized to adequately supply domestic water and fire flows to the proposed development. The water main shall be looped through the plat and connected to the pipeline in Shockley Road at two locations.
28. In accordance with municipal code, domestic water mains shall be extended to the adjoining properties adjacent to the preliminary plat, provided they are in the correct pressure zone. The domestic water main shall be extended to the north plat boundary to provide for an eventual loop to Keene Road.
29. The developer will be required to demonstrate that all phases are capable of delivering adequate fire flows prior to construction plans being accepted for review. This may require looping of the watermain from off-site locations, or oversizing of the main where needed.
30. The fire hydrant layout shall be approved by the City Fire Marshal.
31. In accordance with Richland Municipal Code Chapter 18.16.080, an irrigation source and distribution system, entirely separate from the City's domestic water system, shall be provided for this development. Construction plans will not be accepted for review until adequate and viable proof of an irrigation source is made available by the developer. The designing Engineer shall submit plans for the proposed irrigation system to the Irrigation District with jurisdiction over the property at the same time that they are submitted to the City for construction review. Plans shall be reviewed and accepted by said irrigation district prior to issuance of a Right-of-Way permit by the City. Easements shall be provided on the final plat for this system where needed.

SANITARY SEWER:

32. The closest sanitary sewer available for this development is located to the South in Shockley Road, or to the North in Keene Road. It shall be the responsibility of the developer to extend a sewer main to this property to serve sanitary sewer at the time of plat construction.
33. A 10-foot wide exclusive sanitary sewer easement shall be provided for any sewer main that is outside of the public Right-of-Way. Wider easements are required for mains that are buried deeper than 10-feet. If any manholes are located outside of the public Right-of-Way, maintenance truck access to said structure may be required.

GROUND WATER:

34. A master grading plan completed by a licensed engineer shall be submitted along with the first submission of construction plans. Given the amount of groundwater encountered in this area (in both developed and undeveloped areas), the possibility of an underdrain system being required exists. The geotechnical report for this project needs to address any potential groundwater impacts to existing properties downslope of the proposed preliminary plat. It shall also include a means for managing groundwater or subsurface springs if any are encountered during grading or construction. If groundwater is encountered within 5-feet of finished grade during plat construction, an underdrain system will be required.

STORM WATER:

35. All construction projects that don't meet the exemption requirements outlined in Richland Municipal Code, Section 16.06 shall comply with the requirements of the Washington State Department of Ecology issued Eastern Washington NPDES Phase II Municipal Stormwater Permit. The Developer shall be responsible for compliance with the permit conditions. All construction activities subject to this title shall be required to comply with the standards and requirements set forth in the Stormwater Management Manual for Eastern Washington (SWMMEW) and prepare a Stormwater Site Plan. In addition, a Stormwater Pollution Prevention Plan (SWPPP) or submission of a completed erosivity waiver certification is required at the time of plan submittal. The City has adopted revised standards affecting the construction of new stormwater facilities in order to comply with conditions of its NPDES General Stormwater Permit program. This project, and each phase thereof, shall comply with the requirements of the City's stormwater program in place at the time each phase is engineered. The project will require detailed erosion control plans.
36. All public storm drainage systems shall have their flow rate and storage capacity designed by a professional engineer following the core elements defined in the latest editions of the Stormwater Management Manual for Eastern Washington, the current Richland municipal codes, the Phase II Municipal Stormwater Permit, and the City's "Public Infrastructure Construction Plan Requirements and Design Guidelines". The storm water calculations shall be stamped by a professional engineer and shall include a profile of the storm system showing the hydraulic grade line. The calculations should include an accurate delineation of the contributing drainage area to accurately size the stormwater facilities. Passing the storm water downhill to an existing storm system will require an analysis of the downstream storm system to determine its capability of accepting the storm water without being overwhelmed. The applicant's design shall provide runoff protection to downstream property owners.

37. If any existing storm drainage or ground water seepage drains onto the proposed site, said storm drainage shall be considered an existing condition, and it shall be the responsibility of the property developer to design a system to contain or treat and release the off-site storm drainage.
38. If there are any natural drainage ways across the proposed pre-plat, the engineered construction plans shall address it in accordance with Richland Municipal code 24.16.170 ("Easements-watercourses").
39. Any proposed storm drainage retention facilities within the boundary of the proposed preliminary plat shall not adversely affect neighboring properties.
40. Prior to or concurrent with the submittal of the first phase the developer shall provide a Geotechnical report including the percolation rate of the soils in the area of any storm retention ponds. If the project constructs a storm retention pond then the engineer will need to demonstrate that the pond will drain itself within 72 hours after the end of a storm event, and not have standing water in it longer than that. Engineering solutions are available for retention ponds that do not percolate within 72 hours.
41. A segment of the 18-inch Shockley Storm Mainline Conveyance pipe, as indicated in the City's 2016 Stormwater Management Plan, shall be installed in Shockley Road. The pipeline has been determined essential to the effective operation of the stormwater system serving this property and others in this area of the City. This existing storm pipe currently ends very near the southeast corner of this property. It shall be the responsibility of the developer of this project to extend this storm main to and across the frontage of this property. This storm main may be used for overflow for storm events larger than the design storm.
42. The amount of post-development storm runoff from the proposed site shall be in compliance with RMC Chapter 16.06.
43. The parcel occupied by the stormwater basin shall be identified as a separate parcel or tract on the final plat and shall be dedicated to the City stormwater utility. The design of the basin shall include access features meeting the city's needs for maintenance.
44. The developer shall consider the long-term appearance of the storm basin, particularly if it will occupy a prominent location in the development. The City's typical storm pond maintenance practices consist of semi-annual vegetation trimming and silt and debris removal. If the pond location is visible to residents the City will require landscaping or fencing to mitigate the visual impact of the pond. If the City requires this type of treatment to the pond site the developer may propose landscaping

treatments consistent with the development and establish maintenance responsibilities to remain with the development. These maintenance responsibilities shall be noted on the final plat. Basins designed as detention and evaporative basins need to include plantings that will tolerate or thrive in standing water. Planting designs for areas not routinely exposed to water shall include plants that will thrive without irrigation unless the developer intends to maintain an irrigated pond site. At a minimum the landscaping plan should be consistent with the City's intended maintenance standard as described above.

45. The developer shall be responsible for landscaping the storm pond and for its maintenance and the plantings through the one-year infrastructure warranty period. At 11 months after the final acceptance date the developer shall clean the storm system and basin of all accumulated oil, sediment, and debris. After this maintenance is completed and inspected the City will begin routine maintenance of the system and basin. The developer shall replace any plantings that have failed to survive the warranty period. The developer shall also perform trimmings required to control weeds in excess of 18-inches in height for the 12-months following the date of final plat acceptance.

FINAL PLATTING / PROJECT ACCEPTANCE REQUIREMENTS:

46. When the construction is substantially complete a paper set of "record drawings" shall be prepared by a licensed surveyor and include all changes and deviations. Please reference the Public Works document "RECORD DRAWING REQUIREMENTS & PROCEDURES" for a complete description of the record drawing process. All final punchlist items shall be completed or financially guaranteed prior to recording of the final plat.
47. Public utility infrastructure located on private property will require recording of a City standard form easement prior to acceptance of the infrastructure and release of a certificate of occupancy. The City requires preparation of the easement legal description by the developer two weeks prior to the scheduled date of final acceptance. Off-site ("third party") easements or right-of-ways for City infrastructure are the responsibility of the developer to obtain. Once received, the City will prepare the easement document and provide it to the developer. The developer shall record the easement at the Benton County Assessor and return a recorded original document to the City prior to application for final occupancy.
48. Any off-site easements or permits necessary for this project shall be obtained and secured by the applicant and supplied to the City at the time of plat construction and prior to final plat acceptance by the City.

49. Ten-foot wide public utility easements will be required on the final plat along both sides of all Right-of-Ways within the proposed plat. In addition, a ten-foot public utility easement along the Shockley frontage shall also be provided on the face of the final plat.
50. The vision-clearance triangle needs to be shown on all corner lots on the final plat document, in accordance with RMC Chapter 12.11.020. If the intersection is in a curve, it will have to be evaluated per AASHTO guidelines. This information may need to be designed by the engineer of record and supplied to the surveyor of record for inclusion into the final plat document.
51. The final plat shall include notes identifying all common areas including tracts and acknowledging the ownership and maintenance responsibility of them. The intended use and ownership of all tracts within the plat shall be noted on the final plat.
52. Any roads narrower than 34-feet shall have parking restricted on one side, and any roads narrower than 27-feet shall have parking restricted on both sides. Street signs indicating restricted parking shall be installed prior to final platting at the developers expense. The restricted parking areas shall be indicated on the final plats.
53. All landscaped areas within the plat that are in the public Right of Way shall be the responsibility of the homeowners to maintain.
54. A one-foot "No access / screening easement" will be required along the Shockley Road Right of Way for Lots 1, 41, 42 and 70.
55. Property with an unpaid L.I.D. assessment towards it must be paid in full or segregated per Richland Municipal Code 3.12.095.
56. Any restricted parking areas shall be indicated on the final plats.

KENNEWICK IRRIGATION DISTRICT:

The properties identified on the proposed preliminary plat are located within the KID boundaries. The properties within this preliminary plat are classified as irrigable land and consist of 9.80 irrigable acres. Accordingly, KID provides the following comments to be included as required conditions of approval by the legislative authority under RCW 58.17.310(2):

57. The plat shall include the following irrigation easements consistent with KID requirements:

- a. Dedicate to KID an irrigation easement 10 feet in width via a recorded deed to match irrigation system components, centered on an irrigation pipe line.
- b. On all lots within the plat, dedicate to KID an irrigation easement 10 feet in width, or five (5) feet in width if adjacent to a utility easement, located along the road frontage of each lot. An irrigation easement may be included within the 'sidewalk and utility' easement if one is proposed, denoting the easement as a "Sidewalk, Utility, and Irrigation Easement."

58. The Applicant is required to install an irrigation system that conforms to the most recent edition of the KID Standard Specifications pursuant to Resolution 86-15-A. This includes providing distribution pipelines adequate to provide individual pressurized irrigation services to each lot within the preliminary plat. This system will be dedicated to the KID upon completion, at the time of final plat.

- c. KID Standard Specifications require a storage pond facility be constructed and sized appropriately for this plat application. Please dedicate this storage facility as a tract of land deeded to the KID. In addition, the KID Standard Specifications require a pump station facility be constructed and sized appropriately for this plat application.
- d. **As an alternative** to a pond, pump station, and other "on site" construction requirements per KID Standards Specifications, the Applicant and KID may mutually agree that it is in each of their best interests that other "off site" improvements may be made to allow for the delivery of pressurized irrigation water to the plat. This agreement is typically referred to as a Voluntary Mitigation Agreement (VMA). The other improvements would be proportionate and equal to the "on site" requirements and may include:
 - i. Contributions made towards a regional pump facility.
 - ii. The installation of pipelines off site.
 - iii. Upsizing of pipelines adjacent or within the subdivision. **KID plans to upsize the pipeline adjacent to Shockley Road in coordination with the project.**
 - iv. There is an existing KID Irrigation pond and pump station located within the pre plat boundaries. **Decommissioning of this facility will be contingent upon approval of a VMA. KID estimates the decommissioning and the other off-site improvements necessary to extend irrigation service from a neighboring system at \$116,051.04. This number is subject to change depending on timing of the VMA.**

59. Design of the required irrigation system must be approved by KID prior to installation. The Applicant is required to submit an irrigation plan designed by a professional engineer for review and approval by the KID. The plan may be hand drawn or computer drafted. The plan shall be accurate and to a scale not to exceed one (1) inch = 50 feet. This is a vital step of the approval process. In addition to compliance with Condition 2 above, the Plan must ensure all reasonable measures are taken to protect any easements, right-of-ways, and facilities. Please contact me at 586-6012 for more information regarding this irrigation plan.

- e. For single-family attached units (town homes or townhouses), service risers shall be installed no further than 300 feet apart, with a service riser to each side of a street right-of-way or access easement.**
 - i. Based on the information provided, irrigation distribution pipelines will need to be installed adjacent to the project along Shockley Road with a looped pipeline within the project itself. KID estimates approximately 12 service riser connections will be needed to service the project but actual service riser locations will be dependent upon town home layout.**
- f. Please note, there are existing irrigation pipelines within the project likely to be impacted due to grading and building/street layouts.**
 - i. Applicant is responsible for the relocations and reinstallation of these pipelines per KID Standards and they must be located within a designated irrigation easement if located outside of the street ROW.**

60. Completion of all the facilities, consistent with irrigation plan approved by KID, is required prior to KID signature on the Final Plat.

- g. In the event any KID facilities are damaged during construction, the damage must be fully repaired to KID's then-existing standards.**
- h. For each phase of the plat, KID review and approval of construction and grading plans is required to allow KID to assure all reasonable measures to protect any easements and right-of-ways. Such review and approval will be coordinated as part of City review and the Final Plat approval process.**
- i. The KID must inspect any new irrigation system installations or modifications. The Applicant shall contact the KID to arrange an inspection at least 48 hours in advance of the desired inspection date.**
- j. As an alternative to immediate construction prior to approval of the Final Plat, the Applicant may choose to delay installation of the irrigation system by entering into a facilities installation agreement with the KID. The Applicant must still provide the KID with an**

irrigation system design that conforms to the most recent addition of the KID standard specifications. This irrigation system may be bonded and delayed up to five years. The facility installation agreement charge is \$350.00. The Applicant must establish an approved bonding mechanism with the KID in an amount approved by KID.

In addition, pursuant to RCW 58.17.310 (1), KID would like to inform the City of the following information regarding the proposed preliminary plat upon the structural integrity, including lateral support, of KID's facilities, other risk exposures, and the safety of the public and irrigation district, and conditions of approval that KID deems to be necessary as a result:

61. For each phase of the Project, KID/USB R review and approval of grading and construction plans is required to allow KID to assure all reasonable measures to protect any easements and ROWs. Such review and approval will be coordinated as part of the City's review and Final Plat approval process.
62. The Applicant shall include the potential failure of KID system components in its public offering statement for the plat pursuant to RCW 58.19.055(1)(r), which requires a public offering statement to include "[a] list of any physical hazards known to the developer which particularly affect the development or the immediate vicinity in which the developer is located and which are not readily ascertainable by the purchaser."
63. The Applicant shall post signs in appropriate areas with KID's easements and ROW's identifying KID's facilities (with locations and design approved by KID).
64. The Applicant shall provide fencing for the protection of KID facilities, which shall include but not be limited to adjacent KID/USB R ROW, with fencing locations and design approved by KID.

Finally, KID requests the following additional conditions of final plat approval:

65. Prior to approval of each phase, the current year's assessment must be paid. If the final plat is submitted for review after May 31st of a given year or submitted for review prior to May 31st but not submitted for final approval prior to June 15th, the next year's estimated assessment (125% of the current year's assessment) must be paid prior to plat approval.
66. Prior to approval of the first phase, the USB R construction loan for **all parcels** owned by the property owner within the boundaries of the KID

must be paid and all other USBR requirements associated with this payout must be completed.

67. The Review and Inspection fees in place at the time of each review request must be paid. At the time of application the review fees are as follows:
- k. A Preliminary Plat review fee of **\$825.00** which must be paid prior to scheduling for final plat approval at a KID Board meeting for the first phase.
 - l. For each Phase an inspection fee **\$350** for the first 20 lots/tracts plus \$25 per lot/tract after 20 lots/tracts.
 - m. Final Plat review fee for each phase of **\$225.00**.
68. Per KID Policy 4.17, "Irrigable Land Recalibration Principles," as land within the plat is subdivided or developed; KID will remove the irrigation water allocation from the impermeable surfaces, such as streets, from the plats.
69. In order to receive KID irrigation water delivery, a water master (or point of contact) for the subdivision must be appointed. This water master can be appointed by the Homeowners Association (or similar organization) officers, or must be elected from among the property owners within the boundary of this proposed subdivision. If no HOA (or similar organization) is organized, then an election method similar to the attached document is required.
70. Prior to approval of each phase, an electronic file (AutoCAD 2004 format) and hard copy (6-mil mylar, sealed by a professional engineer) of construction as-builts must be provided to KID.
71. All subdivisions of land are required to be approved by the KID Board of Directors during a KID Board Meeting. KID Board Meetings are regularly scheduled on the first and third Tuesdays of each month. All conditions must be completed prior to submittal to KID for final approval. The submittal for final approval must be received by KID a minimum of two weeks prior to a regularly scheduled Board Meeting in order to be considered at that meeting.

KID reserves the following rights regarding future review of the plat:

72. KID reserves the right to provide review comments under RCW 58.17.330(1) and RCW 58.17.330(2) in response to future design submittals by the Applicant prior to final plat approval. The scope of these reviews will be limited to Phases that are adjacent to the District's Rights

of Way. KID review of construction plans will be consistent with the City of Kennewick's plan review timelines.

73. KID reserves the right to review and comment on the Applicant's plat line revisions for potential additional revisions to protect KID system components for Phases that are adjacent to KID's easements or ROWs.
74. KID reserves the right to review and comment on the Applicant's covenants, conditions, and restrictions to evaluate whether they should include any terms regarding protection of KID system components after construction and fencing requirements.
75. KID reserves the right to submit additional comments during the City's review process under the State Environmental Policy Act (SEPA).

EXHIBIT LIST

1. Application
2. Fairhaven Survey
3. Title Report
4. Public Notices & Affidavits
5. SEPA Environmental Checklist
6. Determination of Non-Significance
7. Agency Comments
8. Maps
9. Site Photos
10. Request for deviations and relief from conditions
11. Public Works responses to deviation request and relief from conditions



City of Richland
Development Services

Exhibit 1

625 Swift Blvd. MS-35
Richland, WA 99352
☎ (509) 942-7794
📠 (509) 942-7764

S2021-103

Preliminary Plat Application

Note: A Pre-Application meeting is required prior to submittal of an application.

PROPERTY OWNER INFORMATION

☐ Contact Person

Owner: Bethel Church Contact: Jim Dirks

Address: Bethel Church, 600 Shockley Rd, Richland, WA 99352

Phone: 509-374-4662

Email: jdirks@frontier.com

APPLICANT/CONTRACTOR INFORMATION (if different)

☒ Contact Person

Company: Green Plan Construction, LLC

UBI#: 45-4246148

Contact: Stan Nuxall Jr

Address: 101 N Morain St, Ste 100, Kennewick, WA 99336

Phone: 509.539.6323

Email: stan@nuxall.com

SURVEYOR INFORMATION

Contact: Ashley Garza

Address: 2245 Robertson Dr, Richland, WA 99354

Phone: 509.901.8753

Email: agarza3605@gmail.com

ENGINEER INFORMATION

Contact:

Address:

Phone:

Email:

PROJECT DESCRIPTION

Townhome Community, Multiple Floor Plans, 1 and 2 Story Units

Parcel #: 1-2298-300-0006-002 and 1-2298-300-006-003

PROPERTY INFORMATION

Parcel #: See Above

Zoning: R-3

Legal Description: Look up - Meets and Bounds

Proposed Subdivision Name: Fairhaven Townhome Estates

Gross Plat Acreage: 10

Number of Lots: 70

Smallest Lot Size: 2,891 sf

Net Lot Area Acreage: 358,836 sf

Avg. Lot Size: 5,126 sf

Largest Lot Size: 10,891 sf

Domestic Water Supply: ☒ City ☐ Private Well

Sewage Disposal: ☒ City ☐ Septic

Irrigation Source: ☐ City ☐ Private Well ☐ Columbia Irrig. District ☒ Kennewick Irrig. District ☐ Other

SEPA Checklist submitted? ☒ Yes ☐ No

Title Report (Subdivision Guarantee) submitted? ☒ Yes ☐ No

APPLICATION MUST INCLUDE

1. Completed application and filing fee
2. 2 – Full-size copies of proposed survey
3. 1 – 11" x 17" copy of proposed survey
4. 1 – PDF file of proposed survey
5. Title Report showing ownership, easements, restrictions and accurate legal description of the property involved
6. SEPA Checklist
7. Other information as determined by the Administrator

I authorize employees and officials of the City of Richland the right to enter and remain on the property in question to determine whether a permit should be issued and whether special conditions should be placed on any issued permit. I have the legal authority to grant such access to the property in question.

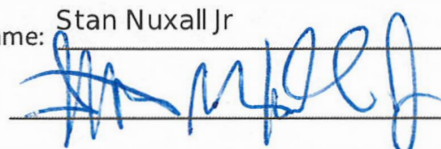
I also acknowledge that if a permit is issued for land development activities, no terms of the permit can be violated without further approval by the permitting entity. I understand that the granting of a permit does not authorize anyone to violate in any way any federal, state, or local law/regulation pertaining to development activities associated with a permit.

I hereby certify under penalty of perjury under the laws of the State of Washington that the following is true and correct:

1. I have read and examined this permit application and have documented all applicable requirements on the site plan.
2. The information provided in this application contains no misstatement of fact.
3. I am the owner(s), the authorized agent(s) of the owner(s) of the above referenced property, or I am currently a licensed contractor or specialty contractor under Chapter 18.27 RCW or I am exempt from the requirements of Chapter 18.27 RCW.
4. I understand this permit is subject to all other local, state, and federal regulations.

Note: This application will not be processed unless the above certification is endorsed by an authorized agent of the owner(s) of the property in question and/or the owner(s) themselves. If the City of Richland has reason to believe that erroneous information has been supplied by an authorized agent of the owner(s) of the property in question and/or by the owner(s) themselves, processing of the application may be suspended.

Applicant Printed Name: Stan Nuxall Jr

Applicant Signature: 

Date 3/29/21

APPLICATION MUST INCLUDE

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2. 2 – Full-size copies of proposed survey
3. 1 – 11" x 17" copy of proposed survey
4. 1 – PDF file of proposed survey
5. Title Report showing ownership, easements, restrictions and accurate legal description of the property involved
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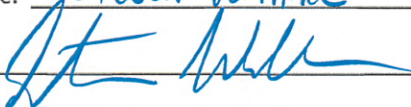
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1. I have read and examined this permit application and have documented all applicable requirements on the site plan.
2. The information provided in this application contains no misstatement of fact.
3. I am the owner(s), the authorized agent(s) of the owner(s) of the above referenced property, or I am currently a licensed contractor or specialty contractor under Chapter 18.27 RCW or I am exempt from the requirements of Chapter 18.27 RCW.
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Applicant Printed Name: Steven Wallace (agent of owner)

Applicant Signature:  Date 5/12/21



BETHEL CHURCH CONSTITUTION AND BYLAWS

CONSTITUTION

PREAMBLE

Placing our faith entirely in the Lord Jesus Christ for our salvation and believing the Bible to be our sole basis of authority and practice, we adopt this Constitution and Bylaws.

ARTICLE I – NAME

This organization shall be known as Bethel Church and includes all campuses.

ARTICLE II – PURPOSE

Our purpose is to build a community of whole people who, through devotion to Jesus Christ, are learning to live every day by the Word of God.

ARTICLE III – GOVERNMENT

Believing in the sovereignty of the local church as an autonomous body of believers under the leadership of the Holy Spirit, the government of this church shall be vested in its members who exercise the right of control in its affairs.

ARTICLE IV – STATEMENT OF FAITH

Section 1 – The Scripture – We believe the Bible and only the Bible to be God's infallible Word and the Christian's supreme authority in all matters of faith and practice. We affirm our belief in the verbal and plenary inspiration of the Scripture in their original autographs. (II Timothy 3:16-17; II Peter 1:20-21; I Peter 1:25)

Section 2 – God and the Trinity – We believe in one God, Creator of all things, infinitely perfect and eternally existing in three persons, Father, Son, and Holy Spirit. While its members possess individual, personal attributes, the Trinity is without division of nature, essence, or being. (Genesis 1:1; Matthew 28:19; John 10:30; 4:24; II Corinthians 13:14; I John 4:13).

Section 3 – Jesus Christ – We believe in the deity of our Lord Jesus Christ, God's only begotten Son, born of the Virgin Mary, sinless in life, who atoned for the sins of the world by His substitutionary death on the cross. We believe in His bodily resurrection, His ascension into heaven, and His High Priestly intercession for His people. (Matthew 1:18-25; Luke 1:35; John 1:1, 14; Acts 1:9-11; II Corinthians 5:21; Hebrews 4:15; 7:25; 9:24; I John 2:1-2)

Section 4 – The Holy Spirit – We believe the Holy Spirit to be the third person in the Trinity, whose ministry is to glorify the Lord Jesus Christ. During this age, the Holy Spirit draws men unto God; convicts men of sin, righteousness, and judgment; and indwells, guides, instructs, and empowers the believer for godly service. (John 14:16-17, 26; 16:8-15; Romans 5:5; 8:9-11; I Corinthians 3:16; 12:12-14; II Corinthians 13:14; Ephesians 1:13-14; Matthew 28:19-20)

Section 5 – Man – We believe that Adam was created in the image of God but fell into sin and that all men are sinners by nature and by choice and, therefore, are lost. However, we believe that "God so loved the world that He gave His only begotten Son that whosoever believeth in Him should not perish, but have everlasting life" (John 3:16). We believe that those who accept Christ as Savior and Lord shall be forever in God's presence and those who reject Christ as Savior and Lord will be forever separated from God and be cast into the lake of fire for eternal punishment. (Genesis 1:26-27; Mark 9:43-44; John 3:36; Romans 3:23; Romans 5:12; Ephesians 2:1-3, 12; II Thessalonians 1:9; Revelation 20:15)



BETHEL CHURCH CONSTITUTION AND BYLAWS

Section 6 – Salvation – We believe that the shed blood of Jesus Christ provides the only ground for justification and salvation for all who believe. Only those who receive Jesus Christ and are born of the Holy Spirit can thus become children of God. (John 1:12; 3:16; Acts 13:38-39; Romans 5:1; 8:14-17; Ephesians 1:7; Philippians 1:5-8; Hebrews 9:22; I Peter 1:18-19; 2:24)

Section 7 – Satan – We believe in the reality of Satan as a personal angelic being who has fallen from his original state of perfection and is now the prince of the corrupt, anti-God world-system. We believe in Satan's final and eternal judgment in the Lake of Fire. (Revelation 20:10; Ephesians 2:2; II Corinthians 4:4; Ezekiel 28:11-19; John 14:30; Job 1:12; 2:6)

Section 8 – The Church – We believe that the true Church is composed of all persons who, through saving faith in Jesus Christ, have been regenerated by the Holy Spirit. They are united together in the body of members of the true Church and shall be eligible for membership in the local church. (Acts 2:41; I Corinthians 12:12-13; II Corinthians 6:14; Ephesians 4:4-6, 15-16)

Section 9 – The Ordinances – We believe that baptism is the immersion of a believer in water in the name of the Father, and of the Son, and of the Holy Spirit, as a testimony of the person's faith in the crucified, buried, and risen Christ. It is a confession that the believer is dead to sin and risen to newness of life in Christ Jesus. We believe that the Lord's Supper is a commemoration of the Lord's death "until He come." (Matthew 28:19; 26:26-30; Acts 8:35-38; Romans 6:3-5; I Corinthians 11:23-26),

Section 10 – The Priesthood of the Believer – We believe all who are born of God have equal, direct access to God's ear and heart, and there is no distinction between believers in their exercise of that priesthood in their personal relationships with the Lord. (I Peter 2:5, 9; Hebrews 4:14-16; 2:10-18; Revelation 1:6)

Section 11 – The Last Things – We believe in "that blessed hope" (Titus 2:13) -- the personal, visible, pre-millennial return of our Lord and Savior Jesus Christ. We believe in the bodily resurrection of the just and the unjust, the everlasting blessedness of the saved and the everlasting conscious suffering of the lost. (Zechariah 14:4-11; Matthew 25:46; John 5:28-29; 11:25-26; Acts 1:11; I Thessalonians 4:16-18; Revelation 20:4-6, 11-15)

ARTICLE V – CHURCH COVENANT

We engage by the aid of the Holy Spirit to walk together in Christian love; to strive for the advancement of this church in knowledge of the Word and holiness; to promote its prosperity and spirituality; to sustain its worship, ordinances, discipline and doctrines; to contribute cheerfully and regularly to the support of the ministry, the expenses of the church and the spread of the gospel throughout all nations. We further engage to watch over one another in brotherly love and to remember each other in prayer.

ARTICLE VI – MEMBERSHIP

Membership in the church is granted on application of those who through faith in God's Son our Lord Jesus Christ, have been born anew to a living hope, have been baptized by immersion, desire to live a Christian life, and promise to support the total ministry of the church and to share its fellowship obligations.

ARTICLE VII – OFFICERS OF THE CHURCH

Section 1 – The officers of the church shall be the Church Chairman, Church Vice-Chairman, Secretary, and Treasurer. Where the law requires action by "trustees" the Officers of the Church shall be known as the "Board of Trustees" and its members as "Trustees".

Section 2 – The Trustees shall organize themselves in a manner specified by the Bylaws.



BETHEL CHURCH CONSTITUTION AND BYLAWS

ARTICLE VIII – ELDERS

Section 1 – For purposes of this document, whenever the term "Elder" is used, it refers to both Bethel Elders and Campus Elders. When the term "Bethel Elders" is used it is specific to Bethel Elders only. When the term "Campus Elders" is used it is specific to Campus Elders only. Elders shall be male members.

Section 2 – Bethel Elders are responsible for spiritual guidance and direction of the church and shall have such powers as are granted in the Bylaws. Bethel Elders will provide oversight and protection to the Campus Elders with ultimate authority resting with the Bethel Elders.

Section 3 – Campus Elders receive authority from the Bethel Elders and shall have such powers as are granted in the Bylaws.

ARTICLE IX – DEACONS AND COMMISSIONS FOR MINISTRY

Section 1 – For purposes of this document, whenever the term "Deacon" is used, it refers to both Bethel Deacons and Campus Deacons. When the term "Bethel Deacon" is used it is specific to Bethel Deacons only. When the term "Campus Deacons" is used it is specific to Campus Deacons only.

Section 2 – Commissions for ministry shall be entrusted with the programs and ministries of the church in accordance with the duties established in the Bylaws, or by the congregation. They shall be composed of a Deacon elected by the congregation and an unspecified number of appointed members.

Section 3 – Bethel Deacons serve the church with authority over multiple campuses. Campus Deacons serve with authority over a single, specific campus. Deacons shall have such power as are granted in the Bylaws.

ARTICLE X – BUSINESS MEETINGS

Regular business meetings of the congregation shall be held at stated intervals as provided in the Bylaws.

ARTICLE XI – PROPERTY

Section 1 – All property, real or personal, while owned by the Corporation shall be, and hereby is, irrevocably dedicated to Christian purposes and use. Historically (as the Church is currently at the time of writing this revision), the Corporation has been affiliated with CB Northwest. Regardless if the affiliation is active or not, in the event of liquidation, dissolution or abandonment of the Corporation, such property shall be distributed to CB Northwest, unless it is not then recognized as a tax-exempt organization under Section 501(c)(3) of the Internal Revenue Code. In the event that CB Northwest is unable or unwilling to accept these assets, the assets will not inure to the benefit of any private person, but instead will be passed on to a fund, foundation, or corporation organized and operated for evangelical, religious purposes within the limits of those specified in Section 501(c)(3) of the Internal Revenue Code.

Section 2 – In the event of schism within the church, the title of all the church property, real or personal, shall remain with the group which abides by this Constitution as determined by the Executive Board of CB Northwest.

ARTICLE XII – AMENDMENTS

This Constitution and Bylaws may be amended at any regular or special business meeting, the notice of which includes a statement of the time and place of the meeting at which the amendments will be considered; provided such proposed amendment has been presented at an informational meeting held at least two (2) weeks prior, and providing a copy of the proposed amendment has been made available to the membership. The vote required to amend the Constitution or Bylaws is a three-fourths (3/4) majority vote of members present and voting.



BETHEL CHURCH CONSTITUTION AND BYLAWS

BYLAWS

ARTICLE I – MEMBERSHIP

Section 1 – Admission into Membership

- A. Application for Membership – A request for membership shall be submitted to an Elder. The individual shall complete the prescribed membership preparation process, after which they shall appear before an Elder to give a confession of their Christian faith, according to Article VII of the Constitution. When an Elder has reviewed their application and received their testimony favorably, the applicant will be approved for membership.
- B. Staff Membership – Any nonmember who accepts a job to become a member of the ministry staff shall complete the membership process within six (6) months of joining staff. The Senior Pastor and his spouse, and the Executive Pastor and his spouse, will become members upon acceptance of the job. This requirement does not apply to Kids Express Preschool staff or childcare workers.

Section 2 – Responsibility of Membership – Every member shall assume the responsibilities and obligations placed on them by the Word of God and the Bethel Membership Covenant.

Section 3 – Discipline

- A. Negligent Members – A member who has willfully neglected their duties or who has not participated in the ministry and the services of the church for one year may be admonished by the Elders for their apparent lack of interest. If this admonition is not heeded, their membership shall be subject to termination. The Elders have the authority to dismiss a negligent member.
- B. Erring Members – A member known to err in doctrine (according to the Statement of Faith of Constitution Article IV) or conduct shall be counseled according to the procedure outlined in Matthew 18:15-18 and I Corinthians 5. If they do not heed the reproof and counsel of those who appealed to them, the matter shall be brought to the attention of the Elders, who shall in meekness and gentleness seek to restore them. If they fail to heed the counsel of the Elders, the error shall be communicated to the church body with the announcement that the erring member will be removed from membership in two (2) weeks if they do not express sincere repentance by testimony to the Elders. Forgiveness and restoration of fellowship and membership will be offered to any dismissed member who expresses and demonstrates sincere repentance.

Section 4 – Termination of Membership

- A. Membership will be terminated when the member moves from the area and/or joins another church.
- B. The membership of one who has willfully neglected their duties towards the church shall be subject to termination (see Article I Section 3).
- C. Membership may be terminated as part of discipline for unrepentant sin (see Article I Section 3).
- D. Membership will be terminated upon death of the member.
- E. Membership will be terminated at the member's request.



BETHEL CHURCH CONSTITUTION AND BYLAWS

ARTICLE II – CHURCH STAFF

Section 1 – General – The church staff shall consist of a Senior Pastor, Executive Pastor, and ministry staff. In addition to qualification for their specific assignment, they shall have demonstrated appropriate Christian character and values.

Section 2 – Qualifications

- A. Senior Pastor – The Senior Pastor of the church shall be a man who has been called by God and is equipped by natural and spiritual gifts, to preach the Gospel and teach the Word of God. He shall meet the New Testament requirements of his office (I Timothy 3:2-7; Titus 1:5-9; I Peter 5:1-4).
- B. Executive Pastor – The Executive Pastor shall be a man who has been called by God and is equipped by natural and spiritual gifts, to oversee the general administration of the church.
- C. Ministry Staff – The ministry staff shall be those who have been called by God and equipped by natural and spiritual gifts according to requirements of the church and their position. The ministry staff shall possess the professional and spiritual qualifications and personal motivation and skills to accomplish their assigned responsibilities.

Section 3 – Duties

- A. Senior Pastor – The Senior Pastor shall be devoted to the service of the church, preaching and teaching the Word of God, administering the ordinances, and faithfully giving himself to Pastoral work. All staff and deacons shall be subject to his supervision. He shall have the discretion to delegate his supervisory duties, as is necessary to allow him to perform his other duties. He shall be a member of the Bethel Elders, but may not serve as its Chairman, nor serve as any other church officer. He shall be a member of any commission for ministry or special committee(s) of his choosing.
- B. Executive Pastor – The Executive Pastor is responsible for the daily administration of the church. He shall be a member of any commission for ministry or special committee(s) of his choosing. He shall be responsible for motivation, supervision and direction of the ministry staff. He shall annually report on their performance to the Bethel Elders. He shall serve as Church Chairman and report to the Senior Pastor and/or Bethel Elders at the discretion of the Bethel Elders. Additional duties include:
 - 1. Ensure normal church operation in the absence of the Senior Pastor.
 - 2. Submit unforeseen expenditures not provided for in the budget to the Bethel Elders for approval, provided such approval will not cause the church to incur any additional indebtedness.
 - 3. Approve non-elected members of church wide (multi-campus) commissions and committees. Non-elected members of campus specific commissions and committees are approved by the respective Campus Pastor.
 - 4. Provide oversight of ongoing programs of the commissions for ministry.
 - 5. Submit proposed changes in church policy within the limits of the Constitution and Bylaws for Bethel Elder approval.
 - 6. Appoint a nominating committee for ministry staff excluding the Senior Pastor position.



BETHEL CHURCH CONSTITUTION AND BYLAWS

7. Supervise the performance of the ministry staff or designated ministry staff member to carry out such duties.
- C. Ministry Staff – The ministry staff shall consist of Pastors (other than the Senior Pastor and Executive Pastor), Directors, and others that the church employs to carry out the ministries of the church. The Executive Pastor or his designated ministry staff member shall supervise the performance of the ministry staff. Ministry staff shall be members of any commissions functioning in their areas of ministry.

Section 4 – Hiring

- A. The Senior Pastor shall be recommended by the Bethel Elders to the members at a regular or special church business meeting, the purpose of which shall be announced in writing at least two (2) weeks in advance. As a requirement for hiring, he shall be chosen by ballot with three fourths (3/4) majority vote of members present.
- B. The Executive Pastor shall be hired upon the recommendation of the Bethel Elders. A public forum shall be held for an Executive Pastor candidate who is not a member of the church prior to hiring.
- C. Campus Pastors and Senior Directors shall be hired by the Bethel Elders. All other ministry staff shall be hired by the Executive Pastor. A public forum shall be held for Campus Pastors, Senior Directors, and Directors who are not a member of the church prior to hiring.

Section 5 – Terminations

- A. Senior Pastor – Should a situation occur in which accusations arise against the Senior Pastor, such accusations must be supported by two or three witnesses and be presented in writing to the Bethel Elders. Should it be proved that he has erred in doctrine or conduct, he shall be lovingly admonished by the Bethel Elders. If this does not resolve the matter, the matter shall be presented to the church by the Bethel Elders at the annual or a special business meeting called for that purpose. Notice of such meeting shall be given from the pulpit on at least two (2) consecutive Sundays immediately prior to said meeting. The vote required to dismiss a Senior Pastor is a three fourth (3/4) majority of members present and voting.
- B. Executive Pastor – The Executive Pastor may be terminated by the Bethel Elders.
- C. Ministry Staff – Ministry staff may be terminated by the staff person assigned administrative authority over them with the approval of the Senior Pastor and Executive Pastor, or by the Bethel Elders. The termination of Campus Pastors and Senior Directors shall be approved by the Bethel Elders. The termination of other Pastors or Directors shall be reported to the Elders.

ARTICLE III – AUTHORITY OF THE CONGREGATION

Section 1 – Ultimate authority and responsibility for church decisions reside in the congregation, acting in a lawful business meeting as described in Article VIII of the Bylaws. The congregation may review, reverse, or modify any action or decision of the Elders, the Senior Pastor, the Executive Pastor, or any commission, committee, or officer of the church. The congregation shall have sole authority to:

- A. Adopt and amend the church budget.
- B. Authorize the incurring of indebtedness on the part of the church.



BETHEL CHURCH CONSTITUTION AND BYLAWS

- C. Elect Bethel Deacons and Bethel Elders (Campus Deacons are elected by the members of the respective campus).
- D. Hire or terminate the Senior Pastor.
- E. Establish or discontinue permanent commissions for ministry.
- F. Acquire or dispose of church real property or interest therein.
- G. Amend the Constitution and Bylaws.
- H. Resolve issues referred by the Bethel Elders.

ARTICLE IV – OFFICERS

Officers of the church shall consist of a Church Chairman, a Church Vice-Chairman, a Treasurer, and a Secretary. The Executive Pastor shall be the Church Chairman. The Chairman of the Bethel Elder Board shall be Church Vice Chairman. The Treasurer and Secretary shall be appointed by the Bethel Elders.

Section 1 – Church Chairman Duties – The Church Chairman’s duties shall include:

- A. Preside at all church business meetings.
- B. Preserve all official correspondence and legal documents of the church.

Section 2 – Church Vice-Chairman Duties – The Church Vice-Chairman’s duties shall include:

- A. Assist the Church Chairman in his duties.
- B. Assume the duties of the Church Chairman in his absence.

Section 3 – Treasurer Duties – The Treasurer’s duties shall include:

- A. Work with the appropriate staff to oversee the receiving, recording, and depositing of all funds contributed to the church.
- B. Work with the appropriate staff to prepare and distribute statements of contributions to the contributors at least annually.
- C. Work with the appropriate staff to oversee all disbursements as authorized by the church.
- D. Be a member of any ministry commission or directorship pertaining to church finances.
- E. Provide financial reports to the Elders as directed.
- F. Work with the Executive Pastor to submit an annual budget for approval.
- G. Submit a summary written financial report at each regular church business meeting.



BETHEL CHURCH CONSTITUTION AND BYLAWS

Section 4 – Secretary Duties – The Secretary’s duties shall include:

- A. Be responsible for maintaining and preserving the minutes of all business meetings of the church.
- B. Conduct and preserve all official correspondence as is delegated to them.
- C. Assist the Church Chairman to preserve all official correspondence and legal documents of the church.
- D. Maintain permanent church records, such as membership, terms and status of elected officers, baptisms, weddings, etc.
- E. Carry out duties as assigned by the Church Chairman or Church Vice-Chairman.

ARTICLE V – ELDERS

Section 1 – Bethel Elder Election – Bethel Elders are elected by church members. Names of prospective Bethel Elder candidates shall be submitted by any member of the church to a Bethel Elder at least two (2) months prior to a business meeting. The Bethel Elders will consider all names, and interview selected candidates. The Bethel Elders will then present selected candidates to the body two (2) weeks prior to said business meeting. The candidates must be approved at the business meeting by a three-fourths (3/4) majority vote of members present and voting.

Section 2 – Bethel Elder Number and Term – Bethel Elders shall serve a three (3) year term in such a manner that the terms of approximately one-third (1/3) of the Bethel Elders expire each year. There shall be a minimum of four (4) elected Bethel Elders, not more than one-half (1/2) of which are paid staff. The number of Bethel Elders shall be determined by the Bethel Elders. The Senior Pastor remains a Bethel Elder and is not subject to the three (3) year term.

Section 3 – Campus Elders Election – Campus Elders are appointed by the Bethel Elders. Names of prospective Campus Elder candidates shall be submitted by any member of the church to a Campus Elder on the candidate’s respective campus. The Campus Elders will consider all names and submit selected candidates to the Bethel Elders. The Bethel Elders will consider all names, and interview selected candidates. Approved candidates will then be presented by the Bethel Elders to the local campus for an affirmation vote by that campus’ members. This affirmation vote may take place at an all-church business meeting. The results of the affirmation vote will be considered by the Bethel Elders prior to appointment.

Section 4 – Campus Elder Number and Term – Campus Elders shall serve for terms of three years in such a manner that the terms of approximately one-third (1/3) of each campus’ Elders shall expire each year. The number of Campus Elders will be determined by the Bethel Elders based on the needs of the specific campus, not more than one-half (1/2) of which are paid staff.

Section 5 – Elder Board Chairman – Each Elder board shall select from among their members the Chairman of the Elder Board. The Chairman of the Bethel Elder Board will also serve as the Church Vice-Chairman. The Chairmen shall prepare the meeting agendas, direct the meeting discussion, and appoint sub-committees as needed. The Senior Pastor, Executive Pastor, and ministry staff cannot serve as Chairman of any Elder board.

Section 6 – Qualifications – Elders must meet the spiritual qualifications for their office contained in the Word of God (I Timothy 3:1-7; Titus 1:5-9; I Peter 5:1-4; Hebrews 13:17). Elders shall be male members.



BETHEL CHURCH CONSTITUTION AND BYLAWS

Section 7 – Meetings – In addition to frequent informal meetings for prayer and evaluation of the life of the congregation, the Elders shall conduct official meetings with minutes not less than once a month.

Section 8 – Quorum – If an Elder board consists of two (2) people, both must be present for a quorum. If an Elder board consists of three (3) or four (4) people, a minimum of three (3) must be present for a quorum. If an elder board consists of five (5) or more people, two-thirds (2/3) of the board must be present for a quorum.

Section 9 – Decisions and Voting – All Elder board decisions or actions must be by unanimous vote. Campus Elders may vote to refer a matter to the Bethel Elders. Bethel Elders may vote to refer a matter to the church members. An absent Elder may vote by proxy.

Section 10 – Bethel Elder Duties – The Bethel Elder Board shall fulfill the duties conferred on it by the Constitution and Bylaws including the following:

- A. Oversee the spiritual life of the congregation and provide pastoral care when needed.
- B. Develop and share with the congregation goals and plans relating to the ongoing life and ministry of the church.
- C. Supervise the church membership process and inform the congregation concerning discipline or removal of existing members.
- D. Review, evaluate, and encourage the ministry of the Senior Pastor and Executive Pastor.
- E. Make the final decision for hiring and termination of the Executive Pastor, Campus Pastors, and Senior Directors. Provide input for the hiring and termination of ministry staff.
- F. Monitor all commissions for ministry in areas where spiritual matters are concerned.
- G. Keep the staff and congregation informed of actions and decisions of the Elders.
- H. Approve policies as submitted by the Executive Pastor.
- I. Appoint Campus Elders.
- J. Delegate duties as required to the Campus Elders in order to maximize the spiritual health of the church.

ARTICLE VI – ELDER EMERITUS

The title of Elder Emeritus may be conferred upon a former Bethel Elder who is sixty five (65) years of age or more, has served a minimum of ten (10) years as a Bethel Elder, left the Bethel Elder Board in good standing, and has a desire to continue to serve the body in the role and with the authority of Elder Emeritus. Selection is by unanimous vote of the Bethel Elder Board to a three (3) year term. The term starts when the vote is affirmed by the Bethel Elders. Elder Emeritus status may be renewed at the end of each term following another vote by the Bethel Elders. Elder Emeritus status may be removed at any time by unanimous vote by the Bethel Elders. The requirements of the position include continuing the lifestyle of an elder as specified biblically and fulfilling the responsibilities of the Bethel Membership Covenant. Duties and privileges include receiving on-going confidential communication, praying with Elder authority corporately or privately, representing the church as an Elder in regard to spiritual matters, and other functions agreed on by both the Elder Emeritus and Bethel Elders. An Elder Emeritus does not have Bethel Elder decision-making authority.



BETHEL CHURCH CONSTITUTION AND BYLAWS

ARTICLE VII – DEACONS AND COMMISSIONS FOR MINISTRY

Section 1 – Deacon Requirements – Every commission for ministry established by the congregation shall have a Deacon serving as Chair. There may be additional Deacons who do not serve as the Chair of a commission. Deacons shall be men and women (Deaconess) of evident Christian commitment in both their personal and public lives, and must meet the qualifications for the office set forth in I Timothy 3:8-13 and Acts 6:2-6, as well as meet the requirements of the Bethel Membership Covenant.

Section 2 – Bethel Deacon Election and Term – Names of prospective Bethel Deacon candidates shall be submitted to the Executive Pastor one month prior to the annual business meeting by any member of the church. All names will be considered by the Executive Pastor and Bethel Elder Board. The selected candidate for each Bethel Deacon position will then be presented to the members two (2) weeks prior to a business meeting where they will be voted on. Approval is by a simple majority of those members present and voting. Bethel Deacons shall be elected to a three (3) year renewable term.

Section 3 – Campus Deacon Election and Term – Names of prospective Campus Deacon candidates shall be submitted to the appropriate Campus Pastor one month prior to the annual business meeting by any member of the respective campus. All names will be considered by the Campus Pastor and Campus Elder Board. The selected candidate for each Campus Deacon position will then be presented to the respective campus members two (2) weeks prior to a business meeting where they will be voted on. Approval is by a simple majority of those members present and voting. Campus Deacons shall be elected to a three (3) year renewable term.

Section 4 – Duties – The Deacon’s duties shall include:

- A. Chair the assigned commission, if applicable.
- B. Develop and implement programs and ministries to carry out assigned tasks.
- C. Meet as required with commission members (if applicable) and appropriate staff to carry out assigned tasks.
- D. If serving as Chair of a commission, appoint members to the commission as needed subject to the approval of the Executive Pastor for Bethel commissions or the appropriate Campus Pastor for campus commissions.

Section 5 – Removal from Office – If a Bethel Deacon or commission member willingly neglects their duties or is guilty of conduct that impairs their service in office, the Executive Pastor, with approval of the Bethel Elders, may remove such a person from their position. If a Campus Deacon or commission member willingly neglects their duties or is guilty of conduct that impairs their service in office, the respective Campus Pastor, with approval of the respective Campus Elders, may remove such a person from their position.

Section 6 – Vacancies – Vacancies in Deacon positions may be filled through appointment by the Executive Pastor and Bethel Elders for Bethel Deacons or by the respective Campus Pastor and the respective Campus Elders for Campus Deacons. This appointment shall expire at the next annual business meeting.

ARTICLE VIII – BUSINESS CONDUCT

Section 1 – Fiscal Year – The fiscal year shall be from August 1st through July 31st.

Section 2 – Regular Business Meetings – The regularly scheduled business meeting of the church will occur no later than two weeks prior to the end of the current fiscal year. As a minimum, the meeting will include election



BETHEL CHURCH CONSTITUTION AND BYLAWS

of officers, approval of the following year's budget, and an oral report on the previous year's activities and future goals by the Senior Pastor.

Section 3 – Special Business Meetings – Special business meetings may be called by the Senior Pastor, Executive Pastor, the Bethel Elders or by written request to the Bethel Elders by fifteen percent (15%) of the eligible voting membership of the church. Notice of such meeting and the purpose for which it is called must be given from the pulpit at least one (1) week prior to said meeting.

Section 4 – Quorum & Physical Presence – Twenty-five percent (25%) of the eligible voting membership shall constitute a quorum for the transaction of business. Voting by absentee ballot is allowed when approved by the Bethel Elders on a case-by-case basis. Absentee voting counts towards the minimum number of members present and voting for any decision outlined in the Constitution and Bylaws.

Section 5 – Voting Eligibility – The minimum age shall be eighteen (18) years.

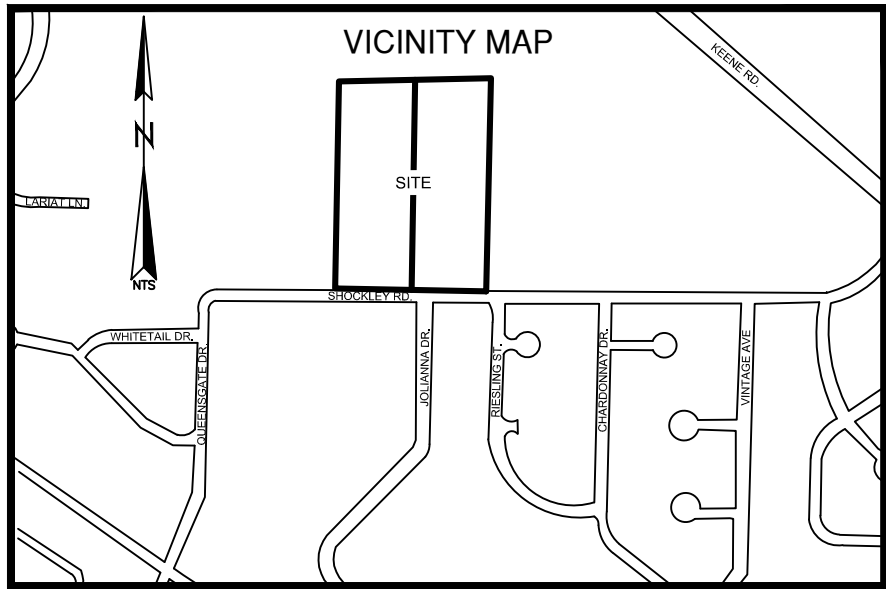
Section 6 – Secret Ballot – The secret ballot shall be used for hiring or termination of a Senior Pastor, for the annual election of officers, at the discretion of the Church Chairman, or at the request of a majority of voting members at any congregational business meeting.

Section 7 – Majority Rule – Unless specified elsewhere in the Constitution and Bylaws, a simple majority of members present and voting shall be sufficient to decide any question.

Section 8 – Order – All questions of order shall be guided by customary rules governing deliberative bodies as given in *Robert's Rules of Order, Revised*.

PRELIMINARY PLAT
OF FAIRHAVEN

PORTION OF THE S.W. 1/4 OF SECTION 22,
TOWNSHIP 9 NORTH, RANGE 28 EAST, WILLAMETTE MERIDIAN,
CITY OF RICHLAND, BENTON COUNTY, WASHINGTON



LAND USE NOTES

GROSS ACRES: 10.2 ACRES
NET LOT ACREAGE: 8.3 ACRES
NUMBER OF TRACTS: 0
AREA OF TRACTS: N/A
TOTAL NUMBER OF LOTS: 70
AVERAGE LOT AREA: 5,665 SF
MAXIMUM LOT AREA: 10,130 SF
MINIMUM LOT AREA: 3,045 SF
PRESENT ZONING: R-3 MULTIPLE-FAMILY RESIDENTIAL
TYPE OF WATER SERVICE: CITY WATER
TYPE OF SEWER SERVICE: CITY SEWER
AREA OF PUBLIC ROAD: 1.9 ACRES
GROSS DENSITY: 6.86 UNITS/ACRES
NET DENSITY: 8.43 UNITS/ACRE
EXISTING USE: VACANT
PROPOSED USE: SINGLE-FAMILY RESIDENTIAL SUBDIVISION

SURVEYOR'S NOTES

- DATE OF SURVEY/MONUMENTS VISITED: 12/15/2020
- BASIS OF BEARING: NAD83(11) WASHINGTON STATE PLANE COORDINATE SYSTEM, SOUTH ZONE.
- UNITS OF MEASURE: US SURVEY FEET GRID DISTANCES. MULTIPLY GRID DISTANCES BY A COMBINED SCALE FACTOR OF 1.000095201 TO ACHIEVE GROUND DISTANCES. REFERENCE SURVEY AND LOT AREAS ARE GROUND DISTANCES. MULTIPLY GROUND DISTANCES BY A COMBINED SCALE FACTOR OF 0.999904808 TO ACHIEVE SURVEYED GRID DISTANCES.
- EQUIPMENT/PROCEDURES: TOPCON GR3 GNSS, RTK METHOD. LINEAR CLOSURES MEET OR EXCEED STANDARDS CONTAINED IN WAC 332-130-090.
- FOUND AS NOTED.
- SET 5/8" REBAR & CAP STAMPED "PERMIT 54534"
- SET 2.5" BRASS CAP IN MONUMENT CASE "54534"
- CALCULATED POINT, NOT FOUND OR SET. REFERENCE SURVEY: RECORD OF SURVEY NO. 5204, AUDITOR'S FILE NO. 2019-020239.
- CONTOURS: 1' CONTOURS DERIVED FROM GROUND SURVEY WITH AN ACCURACY OF 1/10TH THE CONTOUR INTERVALS.
- THE PURPOSE OF THIS SURVEY IS FOR A PRELIMINARY PLAT APPLICATION. A BOUNDARY SURVEY WAS CONDUCTED AS PART OF THIS PRELIMINARY PLAT.
- VERTICAL DATUM: NAVD83 CITY OF RICHLAND DATUM.

PROPERTY NOTES

- OWNER: BETHEL CHURCH OF RICHLAND, A WASHINGTON NON-PROFIT CORPORATION
- PROPERTY ADDRESS: 600 SHOCKLEY RD, RICHLAND, WASHINGTON
- PARCEL NO. 122983000006002 & 122983000006003

DEVELOPER

STAN NUXALL
PHONE NUMBER: (509)539-6323
EMAIL: STAN@NUXALL.COM
ADDRESS: 101 N MORAIN ST #100,
KENNEWICK, WA 99336
GREEN PLAN CONSTRUCTION, LLC

ENGINEER

CALEB STROMSTAD, PE
PRINCIPAL ENGINEER, AQTERA ENGINEERING
PHONE NUMBER: (509)845-0208
ADDRESS: 2705 SAINT ANDREWS LOOP, SUITE C,
PASCO WA, 99301

DESCRIPTION

PARCEL A
THE WEST 286.37 FEET OF THE EAST 1131.63 FEET OF THAT PORTION OF THE WEST 2054.40 FEET OF THE SOUTHWEST QUARTER OF SECTION 22, TOWNSHIP 9 NORTH, RANGE 28 EAST, W.M., BENTON COUNTY, WASHINGTON, LYING SOUTH OF THE FOLLOWING DESCRIBED LINE:

BEGINNING AT A POINT ON THE WEST LINE OF SAID SECTION DISTANT 797.55 FEET NORTH OF THE SOUTHWEST CORNER THEREOF;
THENCE EAST PARALLEL WITH THE SOUTH LINE OF SAID SECTION 733 FEET;
THENCE EASTERLY IN A STRAIGHT LINE TO A POINT ON THE EAST LINE OF SAID WEST 2054.40 FEET WHICH IS 827.10 FEET NORTH OF THE SOUTH LINE OF SAID SECTION AND THE TERMINUS OF SAID DESCRIBED LINE;
EXCEPT THE SOUTH 30 FEET THEREOF FOR ROAD.

(DEPICTED AS PARCEL 2 ON RECORD OF SURVEY NO. 960)

PARCEL B
THE WEST 284.02 FEET OF THE EAST 845.31 FEET OF THAT PORTION OF THE WEST 2054.40 FEET OF THE SOUTHWEST QUARTER OF SECTION 22, TOWNSHIP 9 NORTH, RANGE 28 EAST, W.M., BENTON COUNTY, WASHINGTON, LYING SOUTH OF THE FOLLOWING DESCRIBED LINE:

BEGINNING AT A POINT ON THE WEST LINE OF SAID SECTION DISTANT 797.55 FEET NORTH OF THE SOUTHWEST CORNER THEREOF;
THENCE EAST PARALLEL WITH THE SOUTH LINE OF SAID SECTION 733 FEET;
THENCE EASTERLY IN A STRAIGHT LINE TO A POINT ON THE EAST LINE OF SAID WEST 2054.40 FEET WHICH IS 827.10 FEET NORTH OF THE SOUTH LINE OF SAID SECTION AND THE TERMINUS OF SAID DESCRIBED LINE;
EXCEPT THE SOUTH 30 FEET THEREOF FOR ROAD.

(DEPICTED AS PARCEL 3 ON RECORD OF SURVEY NO. 960)

Line Table		
Line #	Length	Direction
L9	10.25	S00°29'53"W
L10	6.55	S00°29'53"W
L11	20.25	S00°29'53"W
L12	11.62	N31°07'39"E
L13	1.99	N89°30'07"W
L14	12.34	N89°14'37"E

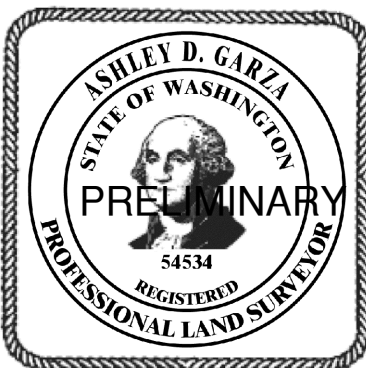
Curve Table						Curve Table					
CURVE #	LENGTH	RADIUS	DELTA	CHORD BEARING	CHORD DISTANCE	CURVE #	LENGTH	RADIUS	DELTA	CHORD BEARING	CHORD DISTANCE
C1	38.72	25.00	88°44'44"	N44°52'15"E	34.97	C14	30.09	127.00	13°34'33"	S43°51'07"W	30.02
C2	39.82	25.00	91°15'16"	S45°07'45"E	35.74	C15	28.71	127.00	12°57'12"	S57°06'59"W	28.65
C3	38.72	25.00	88°44'44"	N44°52'15"E	34.97	C16	28.71	127.00	12°57'12"	S70°04'11"W	28.65
C4	39.83	25.00	91°16'39"	S45°08'26"E	35.75	C17	30.30	127.00	13°40'19"	S83°22'57"W	30.23
C5	157.08	100.00	90°00'00"	N44°30'07"W	141.42	C18	0.62	127.00	0°16'47"	N89°38'30"W	0.62
C6	157.08	100.00	90°00'00"	S45°29'53"W	141.42	C19	6.00	127.00	2°42'17"	N0°51'16"W	5.99
C7	20.00	73.00	15°41'58"	S8°20'52"W	19.94	C20	30.50	127.00	13°45'33"	N9°05'11"W	30.42
C8	94.67	73.00	74°18'02"	S53°20'52"W	88.17	C21	24.65	127.00	11°07'13"	N21°31'33"W	24.61
C9	9.78	73.00	7°40'41"	N3°20'27"W	9.78	C22	23.54	127.00	10°37'20"	N32°23'50"W	23.51
C10	104.89	73.00	82°19'19"	N48°20'27"W	96.09	C23	30.08	127.00	13°34'10"	N44°29'35"W	30.01
C11	23.58	127.00	10°38'22"	S5°49'04"W	23.55	C24	28.24	127.00	12°44'33"	N57°38'56"W	28.19
C12	28.72	127.00	12°57'28"	S17°37'00"W	28.66	C25	28.24	127.00	12°44'33"	N70°23'29"W	28.19
C13	28.75	127.00	12°58'07"	S30°34'47"W	28.68	C26	28.24	127.00	12°44'21"	N83°07'56"W	28.18

SURVEYOR'S CERTIFICATION

I, ASHLEY D. GARZA, A REGISTERED LAND SURVEYOR, HEREBY CERTIFY THAT THE PLAT AS SHOWN HEREON IS BASED ON AN ACTUAL FIELD SURVEY OF THE LAND DESCRIBED AND THAT ALL CORNERS AND DIMENSIONS ARE CORRECTLY SHOWN AND THAT SAID PLAT IS STAKED ON THE GROUND AS INDICATED HEREON.

ASHLEY D. GARZA
CERTIFICATE NO. 54534

DATE



PERMIT SURVEYING NC
2245 Robertson Drive
Richland, Washington 99354
OFFICE 509-375-4123
FAX 509-371-0999

PROJECT NO. 20181

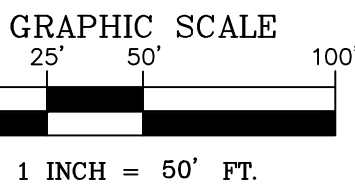
DRAWN BY: ADG

CHECKED BY: ADG

SCALE: 1" = 50'

06/30/2021

SHEET 1 OF 1



1 INCH = 50' FT.





510 N. COLORADO ST., STE B
KENNEWICK, WA 99336 Phone: 509-783-0661 Fax: 509-783-2256

**SUBDIVISION GUARANTEE
SECOND REPORT**

SCHEDULE A

Office File Number BF11967 Ref. No.:	Policy Number SGW-08004235	Date of Policy March 22, 2021 at 8:00 AM	Amount of Insurance \$450.00	Premium \$0.00
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NAME OF ASSURED:

Green Plan Construction

THE ASSURANCES REFERRED TO ON THE FACE PAGE ARE:

THAT, ACCORDING TO THOSE PUBLIC RECORDS WHICH, CONSTRUCTIVE NOTICE OF MATTERS RELATIVE TO THE DESCRIPTION OF WHICH IS FULLY SET FORTH IN UNDER THE RECORDING LAWS, IMPART FOLLOWING DESCRIBED REAL PROPERTY:

SEE ATTACHED EXHIBIT "A"

TITLE TO SAID REAL PROPERTY IS VESTED IN:

Bethel Church of Richland, Washington Non-Profit Corporation

SUBJECT TO THE MATTERS SHOWN BELOW UNDER EXCEPTIONS, WHICH EXCEPTIONS ARE NOT NECESSARILY SHOWN IN THE ORDER OF THEIR PRIORITY.

EXCEPTIONS:

1. GENERAL TAXES AND ASSESSMENTS, IF ANY, NO SEARCH HAVING BEEN MADE THEREOF; ALSO, TAXES OR ASSESSMENTS WHICH ARE NOT SHOWN AS EXISTING LIENS BY THE RECORDS OF ANY TAXING AUTHORITY THAT LEVIES TAXES OR ASSESSMENTS ON REAL PROPERTY OR BY THE PUBLIC RECORDS.
2. UNPATENTED MINING CLAIMS, RESERVATIONS OR EXCEPTIONS IN THE UNITED STATES PATENTS OR IN ACTS AUTHORIZING THE ISSUANCE THEREOF; WATER RIGHTS, CLAIMS OR TITLE TO WATER.
3. TITLE TO ANY PROPERTY BEYOND THE LINES OF THE REAL PROPERTY EXPRESSLY DESCRIBED HEREIN, OR TITLE TO STREETS, ROADS, AVENUES, LANES, WAYS OR WATERWAYS ON WHICH SUCH REAL PROPERTY ABUTS, OR THE RIGHT TO MAINTAIN THEREIN VAULTS, TUNNELS, RAMPS, OR ANY OTHER STRUCTURE OR IMPROVEMENT; OR ANY RIGHTS OR EASEMENTS THEREIN UNLESS SUCH PROPERTY, RIGHTS OR EASEMENTS ARE EXPRESSLY AND SPECIFICALLY SET FORTH IN SAID DESCRIPTION.

ADDITIONAL EXCEPTIONS:

1. GENERAL TAXES FOR 2021 IN THE ORIGINAL AMOUNT OF \$1,741.69. TAX ACCOUNT NO. 1-2298-300-0006-002. (AREA CODE R3 , FIRST HALF TAXES ARE DELINQUENT MAY 1. LAST HALF TAXES ARE DELINQUENT NOVEMBER 1.)
2. GENERAL TAXES FOR 2021 IN THE ORIGINAL AMOUNT OF \$2,689.95. TAX ACCOUNT NO. 1-2298-300-0006-003. (AREA CODE R3, FIRST HALF TAXES ARE DELINQUENT MAY 1. LAST HALF TAXES ARE DELINQUENT NOVEMBER 1.)
3. KENNEWICK IRRIGATION DISTRICT FOR 2021 IN THE ORIGINAL AMOUNT OF \$972.90. TAX ACCOUNT NO. 1-2298-300-0006-002. (FIRST HALF IS DELINQUENT MAY 1. LAST HALF IS DELINQUENT NOVEMBER 1.)
4. KENNEWICK IRRIGATION DISTRICT FOR 2021 IN THE ORIGINAL AMOUNT OF \$972.08. TAX ACCOUNT NO. 1-2298-300-0006-003. (FIRST HALF IS DELINQUENT MAY 1. LAST HALF IS DELINQUENT NOVEMBER 1.)
5. DELINQUENT KENNEWICK IRRIGATION DISTRICT FOR 2020 IN THE SUM OF \$525.15, PLUS INTEREST. TAX ACCOUNT NO. 1-2298-300-0006-002.
(FIRST HALF IS DELINQUENT MAY 1. LAST HALF IS DELINQUENT NOVEMBER 1.)
6. DELINQUENT KENNEWICK IRRIGATION DISTRICT FOR 2020 IN THE SUM OF \$524.75, PLUS INTEREST. TAX ACCOUNT NO. 1-2298-300-0006-003.
(FIRST HALF IS DELINQUENT MAY 1. LAST HALF IS DELINQUENT NOVEMBER 1.)
7. LIABILITY TO FUTURE ASSESSMENT BY KENNEWICK IRRIGATION DISTRICT.
8. EASEMENT, INCLUDING THE TERMS, COVENANTS AND PROVISIONS THEREOF;
RECORDED: FEBRUARY 21, 1957
RECORDING NO.: 368616
IN FAVOR OF: BENTON RURAL ELECTRIC ASSOCIATION
FOR: ELECTRIC POWER
9. RESERVATIONS BY THE UNITED STATES OF AMERICA IN PATENT RECORDED UNDER AUDITOR'S FILE NO. 514550, AS FOLLOWS:

EXCEPTING AND RESERVING, ALSO, TO THE UNITED STATES ALL THE OIL AND GAS IN THE LAND SO PATENTED, AND TO IT, OR PERSONS AUTHORIZED BY IT THE RIGHT TO PROSPECT FOR, MINE AND REMOVE SUCH DEPOSITS FROM THE SAME UPON COMPLIANCE WITH THE CONDITIONS AND SUBJECT TO THE PROVISIONS AND LIMITATIONS OF THE ACT OF JULY 17, 1914 (38 STAT. 509).

THERE IS ALSO RESERVED A RIGHT OF WAY FOR A FEDERAL AID HIGHWAY UNDER 23 U.S.C. 317.
10. TERMS, COVENANTS AND PROVISIONS OF THAT CERTAIN EASEMENT, AS DISCLOSED BY INSTRUMENT;
RECORDED: JUNE 2, 1969
RECORDING NO.: 601958
IN FAVOR OF: V. DEAN ALLEN AND BARBARA JEAN ALLEN
FOR: IRRIGATION WATER
11. TERMS, COVENANTS AND PROVISIONS OF THAT CERTAIN EASEMENT, AS RESERVED BY Subdivision Guarantee

Policy Number: **SGW-08004235**

INSTRUMENT;

RECORDED: APRIL 30, 1990

RECORDING NO.: 90-6812

IN FAVOR OF: LOREN COSENS AND THELMA LORRAINE COSENS

FOR: IRRIGATION

12. RIGHT-OF-WAY FOR SHOCKLEY ROAD, IF ANY, AND ANY EASEMENT RIGHTS OF ADJOINING PROPERTIES OR THE PUBLIC TO THAT PORTION OF THE LAND INCLUDED WITHIN SUCH ROAD.

13. MUNICIPAL SEWER FACILITIES ACT AGREEMENT AND THE TERMS AND CONDITIONS THEREOF:

REGARDING: A DOMESTIC SEWER MAIN

RECORDED: December 03, 2004

AUDITOR'S FILE NO.: 2004-042290

14. MUNICIPAL SEWER FACILITIES ACT AGREEMENT AND THE TERMS AND CONDITIONS THEREOF:

REGARDING: A DOMESTIC SEWER MAIN

RECORDED: December 03, 2004

AUDITOR'S FILE NO.: 2004-042291

15. MUNICIPAL SEWER FACILITIES ACT AGREEMENT AND THE TERMS AND CONDITIONS THEREOF:

REGARDING: A DOMESTIC SEWER MAIN

RECORDED: December 03, 2004

AUDITOR'S FILE NO.: 2004-042292

16. MUNICIPAL SEWER FACILITIES ACT AGREEMENT AND THE TERMS AND CONDITIONS THEREOF:

REGARDING: A DOMESTIC SEWER MAIN

RECORDED: March 09, 2005

AUDITOR'S FILE NO.: 2005-007279

17. EASEMENT AND THE TERMS AND CONDITIONS THEREOF:

GRANTEE: BETHEL CHURCH

PURPOSE: INGRESS AND EGRESS

RECORDED: December 12, 2005

AUDITOR'S FILE NO.: 2005-042552

18. DEED OF TRUST AND THE TERMS AND CONDITIONS THEREOF:

GRANTOR: BETHEL CHURCH

TRUSTEE: TRI-CITY TITLE & ESCROW

BENEFICIARY: BANNER BANK

AMOUNT: \$1,800,000.00

DATED: November 07, 2013

RECORDED: November 13, 2013

AUDITOR'S FILE NO.: 2013-037750 (INCLUDES OTHER PROPERTY)

MODIFICATION OF DEED OF TRUST AND THE TERMS AND CONDITIONS THEREOF:

DATED: May 03, 2016

RECORDED: May 06, 2016

AUDITOR'S FILE NO.: 2016-012418

PROVIDING FOR: ADDITIONAL ADVANCE

19. ASSIGNMENT OF LEASES AND/OR RENTS:

ASSIGNOR: BETHEL CHURCH

ASSIGNEE: BANNER BANK

RECORDED: November 13, 2013

Policy Number: **SGW-08004235**

AUDITOR'S FILE NO.: 2013-037751

20. FINANCING STATEMENT AND THE TERMS AND CONDITIONS THEREOF:

DEBTOR: BETHEL CHURCH OF RICHLAND, WASHINGTON

SECURED PARTY: BANNER BANK

RECORDED: November 13, 2013

AUDITOR'S FILE NO.: 2013-037752

21. AGREEMENT, INCLUDING THE TERMS, COVENANTS AND PROVISIONS THEREOF, ENTERED INTO;

BETWEEN: CITY OF RICHLAND

AND: BETHEL CHURCH

RECORDED: November 01, 2019

RECORDING NO.: 2019-034312

PURPOSE: PROPERTY USE AND DEVELOPMENT

22. MATTERS SHOWN ON RECORD SURVEY NO. 960.

END OF SCHEDULE A EXCEPTIONS.

Policy Number: **SGW-08004235**

NOTES:

AT THE REQUEST OF THE ASSURED THE FOLLOWING INFORMATION IS PROVIDED:

- a. THE ADDRESS OF THE SUBJECT PROPERTY IS:
VACANT LAND
BENTON COUNTY, WA
- b. ACCORDING TO THE RECORDS OF BENTON COUNTY ASSESSOR, THE CURRENT VALUE OF SAID PREMISES IS AS FOLLOWS:

TAX ACCOUNT NO.:	1-2298-300-0006-002
LAND:	\$151,000.00
IMPROVEMENTS:	\$0.00
TOTAL:	\$151,000.00

TAX ACCOUNT NO.:	1-2298-300-0006-003
LAND:	\$233,940.00
IMPROVEMENTS:	\$0.00
TOTAL:	\$233,940.00

- c. THE FOLLOWING ABBREVIATED LEGAL DESCRIPTION IS PROVIDED AS A COURTESY TO ENABLE THE DOCUMENT PREPARER TO CONFORM WITH THE REQUIREMENTS OF RCW 65.04.045, PERTAINING TO STANDARDIZATION OF RECORDED DOCUMENTS.

ABBREVIATED LEGAL DESCRIPTION: PTN SW 22-9-28

- a. GENERAL TAXES FOR 2020 IN THE SUM OF \$1,642.59, ARE PAID IN FULL. TAX ACCOUNT NO. 1-2298-300-0006-002. (FIRST HALF TAXES ARE DELINQUENT MAY 1. LAST HALF TAXES ARE DELINQUENT NOVEMBER 1.)
- b. GENERAL TAXES FOR 2020 IN THE SUM OF \$2,855.61, ARE PAID IN FULL. TAX ACCOUNT NO. 1-2298-300-0006-003. (FIRST HALF TAXES ARE DELINQUENT MAY 1. LAST HALF TAXES ARE DELINQUENT NOVEMBER 1.)

BENTON FRANKLIN TITLE COMPANY

Privacy Policy Notice

PURPOSE OF THIS NOTICE

Title V of the Gramm-Leach-Bliley Act (GLBA) generally prohibits any financial institution, directly or through its affiliates, from sharing nonpublic personal information about you with a nonaffiliated third party unless the institution provides you with a notice of its privacy policies and practices, such as the type of information that it collects about you and the categories of persons or entities to whom it may be disclosed. In compliance with the GLBA, we are providing you with this document, which notifies you of the privacy policies and practices of **BENTON FRANKLIN TITLE COMPANY**

We may collect nonpublic personal information about you from the following sources:

- Information we receive from you such as on applications or other forms.
- Information about your transactions we secure from our files, or from [our affiliates or] others.
- Information we receive from a consumer reporting agency.
- Information that we receive from others involved in your transaction, such as the real estate agent or lender.

Unless it is specifically stated otherwise in an amended Privacy Policy Notice, no additional nonpublic personal information will be collected about you.

We may disclose any of the above information that we collect about our customers or former customers to our affiliates as permitted by law.

WE DO NOT DISCLOSE ANY NONPUBLIC PERSONAL INFORMATION ABOUT YOU WITH ANYONE FOR ANY PURPOSE THAT IS NOT SPECIFICALLY PERMITTED BY LAW.

We restrict access to nonpublic personal information about you to those employees who need to know that information in order to provide products or services to you. We maintain physical, electronic, and procedural safeguards that comply with federal regulations to guard your nonpublic personal information.

ORT 287-C 5/07/01

EXHIBIT "A"

PARCEL A

THE WEST 286.37 FEET OF THE EAST 1131.63 FEET OF THAT PORTION OF THE WEST 2054.40 FEET OF THE SOUTHWEST QUARTER OF SECTION 22, TOWNSHIP 9 NORTH, RANGE 28 EAST, W.M., BENTON COUNTY, WASHINGTON, LYING SOUTH OF THE FOLLOWING DESCRIBED LINE:

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THENCE EAST PARALLEL WITH THE SOUTH LINE OF SAID SECTION 733 FEET;
THENCE EASTERLY IN A STRAIGHT LINE TO A POINT ON THE EAST LINE OF SAID WEST 2054.40 FEET WHICH IS 827.10 FEET NORTH OF THE SOUTH LINE OF SAID SECTION AND THE TERMINUS OF SAID DESCRIBED LINE;
EXCEPT THE SOUTH 30 FEET THEREOF FOR ROAD.

(DEPICTED AS PARCEL 2 ON RECORD SURVEY NO. 960)

PARCEL B

THE WEST 284.02 FEET OF THE EAST 845.31 FEET OF THAT PORTION OF THE WEST 2054.40 FEET OF THE SOUTHWEST QUARTER OF SECTION 22, TOWNSHIP 9 NORTH, RANGE 28 EAST, W.M., BENTON COUNTY, WASHINGTON, LYING SOUTH OF THE FOLLOWING DESCRIBED LINE:

BEGINNING AT A POINT ON THE WEST LINE OF SAID SECTION DISTANT 797.55 FEET NORTH OF THE SOUTHWEST CORNER THEREOF;
THENCE EAST PARALLEL WITH THE SOUTH LINE OF SAID SECTION 733 FEET;
THENCE EASTERLY IN A STRAIGHT LINE TO A POINT ON THE EAST LINE OF SAID WEST 2054.40 FEET WHICH IS 827.10 FEET NORTH OF THE SOUTH LINE OF SAID SECTION AND THE TERMINUS OF SAID DESCRIBED LINE;
EXCEPT THE SOUTH 30 FEET THEREOF FOR ROAD.

(DEPICTED AS PARCEL 3 ON RECORD SURVEY NO. 960)



CITY OF RICHLAND NOTICE OF APPLICATION, PUBLIC HEARING AND OPTIONAL DNS (S2021-103 & EA2021-121)

Notice is hereby given that Bethel Church c/o Green Plan Construction, LLC, has filed an application for a 70-lot residential subdivision named the Preliminary Plat of Fairhaven. The site is located immediately north of Shockley Road; approximately 1,700 feet west of Keene Road.

The Richland Hearings Examiner will conduct a virtual public hearing and review of the application at 6:00 p.m., Monday, June 14, 2021. All interested parties are invited to participate in the virtual public hearing by visiting the City of Richland website (www.ci.richland.wa.us).

Environmental Review: The proposal is subject to environmental review. The City of Richland is lead agency for the proposal under the State Environmental Policy Act (SEPA) and has reviewed the proposed project for probable adverse environmental impacts and expects to issue a determination of non-significance (DNS) for this project. The optional DNS process in WAC 197-11-355 is being used. This may be your only opportunity to comment on the environmental impacts of the proposed development. The environmental checklist and related file information are available to the public and can be viewed at www.ci.richland.wa.us.

Any person desiring to express their views or to be notified of any decisions pertaining to this application should notify Shane O'Neill, Senior Planner, 625 Swift Boulevard, MS-35, Richland, WA 99352. Comments may also be faxed to (509) 942-7764 or emailed to soneill@ci.richland.wa.us. Written comments received before 5:00 p.m. on Friday, June 4, 2021 will be incorporated into the staff report. Comments received after that time will be entered into the record during the hearing.

The application will be reviewed in accordance with the regulations in RMC Title 19 Development Regulations Administration and Title 24 Plats and Subdivisions. Appeal procedures of decisions related to the above referenced application are set forth in RMC Chapter 19.70. Contact the Richland Planning Division at the above referenced address with questions related to the available appeal process.



AFFIDAVIT OF POSTING

STATE OF WASHINGTON)
) ss.
COUNTY OF BENTON)

COMES NOW, **Shane O'Neill**, who, being first duly sworn upon oath deposes and says:

1. I am an employee in the Planning Division of the Development Services Department for the City of Richland.

2. On the 4th day of May, 2021, I posted the attached NOTICE OF PUBLIC HEARING, File Number S2021-103 (Preliminary Plat of Fairhaven) in the following location:

The north side of Shockley Road, approximately 1,700 feet west of the intersection of Shockley Road and Keene Road; immediately north of Jolianna Drive

Signed: Shane O'Neill

SIGNED AND SWORN to before me this 5th day of May, 2021, by Shane O'Neill.



Signature of Notary

Briana C. Ghbein
Printed Name

Notary Public in and for the State of Washington,
Residing in Benton county

My appointment expires: 4-25-23

AFFIDAVIT OF MAILING

STATE OF WASHINGTON)
) ss.
COUNTY OF BENTON)

COMES NOW, Briana Ghbein, who, being first duly sworn upon oath deposes and says:

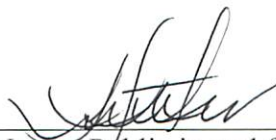
1. I am an employee in the Planning & Development Department for the City of Richland.

2. On the 6th day of May, 2021, I mailed a copy of the attached NOTICE OF APPLICATION, PUBLIC HEARING AND OPTIONAL DNS (S2021-103 & EA2021-121) to the attached list of individuals via regular USPS on the date indicated above. The Richland Hearing Examiner will conduct a virtual public hearing at 6:00 PM on Monday, June 14, 2021.


Signed: Briana Ghbein

SIGNED AND SWORN to before me this 6th day of May, 2021 by Briana Ghbein.




Notary Public in and for the State of Washington,

Jennifer Schuster
Print Name
Residing at 625 Swift Blvd, Richland
My appointment expires: 4-25-23

owner	addr_line1-mail	addr_state	addr_city	addr_zip
BERNIER CHERYL A	602 CHATEAU CT	WA	RICHLAND	99352
BETHEL CHURCH	600 SHOCKLEY RD	WA	RICHLAND	99352
CLIFF WILLIAM C & MARY HELEN	2109 KEENE RD	WA	RICHLAND	99352-7726
DICKINSON MICHAEL G & MICHELE R	609 CHATEAU CT	WA	RICHLAND	99352
FRIENDSHIP ENTERPRISES LLC	68 CANYON ST	WA	RICHLAND	99352-9420
GULLEY TRUSTEES ROBERT L & DALE LESLIE	665 SHOCKLEY RD	WA	RICHLAND	99352
PIPER R KIM & KATHRYN A	780 SHOCKLEY RD	WA	RICHLAND	99352-0000
R3T VENTURES LLC	2410 N 4TH AVE	WA	PASCO	99301
SON KYONGHO & KIM HYEONSEO	610 CHATEAU CT	WA	RICHLAND	99352
TAYLOR STEPHEN A & JANICE C	720 SHOCKLEY RD	WA	RICHLAND	99352-6715
TRAN PETER HOA	2001 PATTERSON RD	WA	PROSSER	99350
WATTS TRUSTEE KERRY LINDON	68 CANYON ST	WA	RICHLAND	99352
WY SOCK ANDREA QUINN	609 CHATEAU CT	WA	RICHLAND	99352

THANK YOU for your legal submission!

Your legal has been submitted for publication. Below is a confirmation of your legal placement. You will also receive an email confirmation.

ORDER DETAILS**Order Number:**

IPL0023185

Order Status:

Submitted

Classification:

Legals & Public Notices

Package:

TRI - Legal Ads

Final Cost:

135.78

Payment Type:

Account Billed

User ID:

IPL0024915

ACCOUNT INFORMATION

CITY OF RICHLAND/LEGALS IP

625 SWIFT BLVD. MS-11

RICHLAND, WA 99352

509-942-7547

AccountsPayable@ci.richland.wa.us

CITY OF RICHLAND/LEGALS

TRANSACTION REPORT**Date**

May 10, 2021 4:53:44 PM EDT

Amount:

135.78

SCHEDULE FOR AD NUMBER IPL00231850

May 16, 2021

Tri-City Herald

PREVIEW FOR AD NUMBER IPL00231850

**CITY OF RICHLAND
NOTICE OF APPLICATION,
PUBLIC HEARING, AND
OPTIONAL DNS**

Bethel Church c/o Green Plan Construction, LLC, has filed an application for a 70-lot residential subdivision named the Preliminary Plat of Fairhaven. The site is located immediately north of Shockley Road, approximately 1,700 feet west of Keene Road. The Richland Hearing Examiner will conduct a virtual public hearing and review of the application on Monday, June 14, 2021 at 6:00 p.m. All interested parties are invited to participate in the virtual public hearing by visiting the City of Richland website at www.ci.richland.wa.us. Environmental Review: The proposal is subject to environmental review. The City of Richland is lead agency for the proposal under the State Environmental Policy Act (SEPA) and has reviewed the proposed project for probable adverse environmental impacts and expects to issue a determination of non-significance (DNS) for this project. The optional DNS process in WAC 197-11-355 is being used. This may be your only opportunity to comment on the environmental impacts of the proposed development. The environmental checklist and related file information are available to the public and can be viewed at www.ci.richland.wa.us. Any person desiring to express their views or to be notified of any decisions pertaining to this application should notify Shane O'Neill, Senior Planner, 625 Swift Boulevard, MS-35, Richland, WA 99352. Comments may also be faxed to (509) 942-7764 or emailed to sonell@ci.richland.wa.us. Written comments should be received no later than 5:00 p.m. on Friday, June 4, 2021 to be incorporated into the staff report. Comments received after that date will be entered into the record at the hearing. Published: Sunday, May 16, 2021
W00000000
Publication Dates

[<< Click here to print a printer friendly version >>](#)



CITY OF RICHLAND NOTICE OF APPLICATION, PUBLIC HEARING AND OPTIONAL DNS (S2021-103 & EA2021-121)

Notice is hereby given that Bethel Church c/o Green Plan Construction, LLC, has filed an application for a 70-lot residential subdivision named the Preliminary Plat of Fairhaven. The site is located immediately north of Shockley Road; approximately 1,700 feet west of Keene Road.

The Richland Hearings Examiner will conduct a virtual public hearing and review of the application at 6:00 p.m., Monday, August 9, 2021. All interested parties are invited to participate in the virtual public hearing by visiting the City of Richland website (www.ci.richland.wa.us).

Environmental Review: The proposal is subject to environmental review. The City of Richland is lead agency for the proposal under the State Environmental Policy Act (SEPA) and has reviewed the proposed project for probable adverse environmental impacts and expects to issue a determination of non-significance (DNS) for this project. The optional DNS process in WAC 197-11-355 is being used. This may be your only opportunity to comment on the environmental impacts of the proposed development. The environmental checklist and related file information are available to the public and can be viewed at www.ci.richland.wa.us.

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The application will be reviewed in accordance with the regulations in RMC Title 19 Development Regulations Administration and Title 24 Plats and Subdivisions. Appeal procedures of decisions related to the above referenced application are set forth in RMC Chapter 19.70. Contact the Richland Planning Division at the above referenced address with questions related to the available appeal process.



AFFIDAVIT OF MAILING

STATE OF WASHINGTON)
) ss.
COUNTY OF BENTON)

COMES NOW, Briana Ghbein, who, being first duly sworn upon oath deposes and says:

1. I am an employee in the Planning & Development Department for the City of Richland.
2. On the 20th day of July 2021, I mailed a copy of the attached NOTICE OF APPLICATION, PUBLIC HEARING, AND OPTIONAL DNS (S2021-103 & EA2021-121) to the attached list of individuals via regular USPS on the date indicated above. The Richland Hearing Examiner will conduct a virtual public hearing at 6:00 PM on Monday, August 9, 2021.


Signed: Briana Ghbein

SIGNED AND SWORN to before me this 20th day of July 2021 by Briana Ghbein.




Notary Public in and for the State of Washington,

Print Name
Residing at 625 Swift Blvd
My appointment expires: 4-25-2023

AFFIDAVIT OF MAILING - 2
Notice of Application, Public Hearing, and Optional DNS attached.
Address list attached.

owner	addr_line1-mail	addr_state	addr_city	addr_zip
BERNIER CHERYL A	602 CHATEAU CT	WA	RICHLAND	99352
BETHEL CHURCH	600 SHOCKLEY RD	WA	RICHLAND	99352
CLIFF WILLIAM C & MARY HELEN	2109 KEENE RD	WA	RICHLAND	99352-7726
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**CITY OF RICHLAND
NOTICE OF APPLICATION,
PUBLIC HEARING, AND
OPTIONAL DNS**

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Published: Sunday, July 25, 2021

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Publication Dates

SEPA ENVIRONMENTAL CHECKLIST

Purpose of checklist:

Governmental agencies use this checklist to help determine whether the environmental impacts of your proposal are significant. This information is also helpful to determine if available avoidance, minimization or compensatory mitigation measures will address the probable significant impacts or if an environmental impact statement will be prepared to further analyze the proposal.

Instructions for applicants:

This environmental checklist asks you to describe some basic information about your proposal. Please answer each question accurately and carefully, to the best of your knowledge. You may need to consult with an agency specialist or private consultant for some questions. You may use "not applicable" or "does not apply" only when you can explain why it does not apply and not when the answer is unknown. You may also attach or incorporate by reference additional studies reports. Complete and accurate answers to these questions often avoid delays with the SEPA process as well as later in the decision-making process.

The checklist questions apply to all parts of your proposal, even if you plan to do them over a period of time or on different parcels of land. Attach any additional information that will help describe your proposal or its environmental effects. The agency to which you submit this checklist may ask you to explain your answers or provide additional information reasonably related to determining if there may be significant adverse impact.

Instructions for Lead Agencies:

Please adjust the format of this template as needed. Additional information may be necessary to evaluate the existing environment, all interrelated aspects of the proposal and an analysis of adverse impacts. The checklist is considered the first but not necessarily the only source of information needed to make an adequate threshold determination. Once a threshold determination is made, the lead agency is responsible for the completeness and accuracy of the checklist and other supporting documents.

Use of checklist for nonproject proposals:

For nonproject proposals (such as ordinances, regulations, plans and programs), complete the applicable parts of sections A and B plus the SUPPLEMENTAL SHEET FOR NONPROJECT ACTIONS (part D). Please completely answer all questions that apply and note that the words "project," "applicant," and "property or site" should be read as "proposal," "proponent," and "affected geographic area," respectively. The lead agency may exclude (for non-projects) questions in Part B - Environmental Elements –that do not contribute meaningfully to the analysis of the proposal.

A. Background **[HELP]**

1. Name of proposed project, if applicable:

Fairhaven Townhome Estates

2. Name of applicant:

Green Plan Construction, LLC

3. Address and phone number of applicant and contact person:

Stanley L Nuxall, Jr.
(509) 539-6323
101 N Morain, Suite 100
Kennewick, WA 99336

4. Date checklist prepared:

March 18, 2021

5. Agency requesting checklist:

City of Richland

6. Proposed timing or schedule (including phasing, if applicable):

Begin Construction: July, 2021

End Construction: December 2021

7. Do you have any plans for future additions, expansion, or further activity related to or connected with this proposal? If yes, explain.

No planned additions.

8. List any environmental information you know about that has been prepared, or will be prepared, directly related to this proposal.

None.

See attached wetland assessment report

wetland report
referenced below
3.a.1

9. Do you know whether applications are pending for governmental approvals of other proposals directly affecting the property covered by your proposal? If yes, explain.

No.

10. List any government approvals or permits that will be needed for your proposal, if known.

Building permits will be required from the City of Richland. city final plat approval, grading permit approval
stormwater permit approval, right-of-way construction approval

SEO

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11. Give brief, complete description of your proposal, including the proposed uses and the size of the project and site. There are several questions later in this checklist that ask you to describe certain aspects of your proposal. You do not need to repeat those answers on this page. (Lead agencies may modify this form to include additional specific information on project description.)

Parcels 1-2298-300-0006-002 and 1-2298-300-0006-003, a total of 10.2 acres, which will be subdivided and developed into approximately 70 lots for zero lot line townhomes with roads, utilities, etc. that comply with the City of Richland standard specifications and details.

12. Location of the proposal. Give sufficient information for a person to understand the precise location of your proposed project, including a street address, if any, and section, township, and range, if known. If a proposal would occur over a range of area, provide the range or boundaries of the site(s). Provide a legal description, site plan, vicinity map, and topographic map, if reasonably available. While you should submit any plans required by the agency, you

are not required to duplicate maps or detailed plans submitted with any permit applications related to this checklist.

Parcels 1-2298-300-0006-002 and 1-2298-300-0006-003

Address 600 Shockley Road, Richland, WA

Portion of the S.W. ¼ of Section 22, Township 9 North, Range 28 East, Willamette Meridan, City of West Richland, Benton County, Washington

B. Environmental Elements [\[HELP\]](#)

1. Earth [\[help\]](#)

a. General description of the site:

(circle one): ☒ Flat, rolling, hilly, steep slopes, mountainous, other _____

Generally flat, sloping north to south towards Shockley Road with about 10 to 15 feet of elevation change overall.

b. What is the steepest slope on the site (approximate percent slope)?

Approximately 10% at its steepest.

c. What general types of soils are found on the site (for example, clay, sand, gravel, peat, muck)? If you know the classification of agricultural soils, specify them and note any agricultural land of long-term commercial significance and whether the proposal results in removing any of these soils.

Silt with fine sand, generally greyish brown, loose to medium dense, and dry to moist.

Warden silt loam - Warden very fine sandy loam, slopes from 0 to 15% (USDA Soils map <https://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx>)

d. Are there surface indications or history of unstable soils in the immediate vicinity? If so, describe.

No.

e. Describe the purpose, type, total area, and approximate quantities and total affected area of any filling, excavation, and grading proposed. Indicate source of fill.

Site will be graded to create level building pads, and to balance cut and fill quantities.

Approximately 12,000 to 24,000 cubic yards of cut/fill

f. Could erosion occur as a result of clearing, construction, or use? If so, generally describe.

Unlikely, however erosion could occur during construction due to rain or wind on unstabilized soils.

g. About what percent of the site will be covered with impervious surfaces after project construction (for example, asphalt or buildings)?

Approximately 30%.

**h. Proposed measures to reduce or control erosion, or other impacts to the earth, if any: **

Best management practices such as silt fences and water trucks will be used on site during construction.

All disturbed areas will be stabilized on completion.

2. Air [\[help\]](#)

- a. What types of emissions to the air would result from the proposal during construction, operation, and maintenance when the project is completed? If any, generally describe and give approximate quantities if known.

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Emissions include dust and exhaust from construction activities.

b. Are there any off-site sources of emissions or odor that may affect your proposal? If so, generally describe.

None.

c. Proposed measures to reduce or control emissions or other impacts to air, if any:

The site will be kept damp to mitigate airborne dust.

3. **Water** [\[help\]](#)

a. Surface Water: [\[help\]](#)

- 1) Is there any surface water body on or in the immediate vicinity of the site (including year-round and seasonal streams, saltwater, lakes, ponds, wetlands)? If yes, describe type and provide names. If appropriate, state what stream or river it flows into.

Kennewick Irrigation District had previously operated a retention pond on the site. KID will retire this pond prior to the start of construction. The pond's earthen embankment walls will be graded flat and compacted. A wetlands assessment was recently conducted and concluded there are no wetland features or aquatic features associated with the site.

- 2) Will the project require any work over, in, or adjacent to (within 200 feet) the described waters? If yes, please describe and attach available plans.

None. Kennewick Irrigation District will retire the irrigation pond prior to any construction activities.

- 3) Estimate the amount of fill and dredge material that would be placed in or removed from surface water or wetlands and indicate the area of the site that would be affected. Indicate the source of fill material.

None.

- 4) Will the proposal require surface water withdrawals or diversions? Give general description, purpose, and approximate quantities if known.

No.

- 5) Does the proposal lie within a 100-year floodplain? If so, note location on the site plan.

No.

- 6) Does the proposal involve any discharges of waste materials to surface waters? If so, describe the type of waste and anticipated volume of discharge.

No.

b. Ground Water: [\[help\]](#)

- 1) Will groundwater be withdrawn from a well for drinking water or other purposes? If so, give a general description of the well, proposed uses and approximate quantities withdrawn from the well. Will water be discharged to groundwater? Give general description, purpose, and approximate quantities if known.

No.

- 2) Describe waste material that will be discharged into the ground from septic tanks or other sources, if any (for example: Domestic sewage; industrial, containing the following chemicals. . . ; agricultural; etc.). Describe the general size of the system, the number of such systems, the number of houses to be served (if applicable), or the number of animals or humans the system(s) are expected to serve.

All sewage will be discharged to the City of Richland sewer system.

c. Water runoff (including stormwater):

- 1) Describe the source of runoff (including storm water) and method of collection and disposal, if any (include quantities, if known). Where will this water flow? Will this water flow into other waters? If so, describe.

Storm water will be retained on site.

- 2) Could waste materials enter ground or surface waters? If so, generally describe.

No.

- 3) Does the proposal alter or otherwise affect drainage patterns in the vicinity of the site? If so, describe.

No.

d. Proposed measures to reduce or control surface, ground, and runoff water, and drainage pattern impacts, if any:

Features will be included in the future civil design of the development. These will include grading, road sloping, and other engineered features as be required.

4. Plants [help]

a. Check the types of vegetation found on the site:

- ☐ deciduous tree: alder, maple, aspen, other
☐ evergreen tree: fir, cedar, pine, other
☒ shrubs
☒ grass
☐ pasture
☐ crop or grain
☐ Orchards, vineyards or other permanent crops.
☐ wet soil plants: cattail, buttercup, bullrush, skunk cabbage, other
☐ water plants: water lily, eelgrass, milfoil, other
☒ other types of vegetation

b. What kind and amount of vegetation will be removed or altered?

Surface vegetation will be removed as part of grading the site.

Approximately 5-acres of dense mostly non-woody shrubs will be removed; approx. 3-acres of Russian Olive trees will also be removed; some sagebrush will be removed. Also, see attached wetland report.

c. List threatened and endangered species known to be on or near the site.

None.

d. Proposed landscaping, use of native plants, or other measures to preserve or enhance vegetation on the site, if any:

None indicated

None.

e. List all noxious weeds and invasive species known to be on or near the site.

None.

5. Animals [\[help\]](#)

a. List any birds and other animals which have been observed on or near the site or are known to be on or near the site.

Examples include:

birds: hawk, heron, eagle, songbirds, other:
mammals: deer, bear, elk, beaver, other:
fish: bass, salmon, trout, herring, shellfish, other _____

Songbirds, hawks. Rhodents

b. List any threatened and endangered species known to be on or near the site.

None.

c. Is the site part of a migration route? If so, explain.

Yes, it is part of the Pacific Flyway, as is most of Washington State.

d. Proposed measures to preserve or enhance wildlife, if any:

None.

e. List any invasive animal species known to be on or near the site.

None.

6. Energy and Natural Resources [\[help\]](#)

a. What kinds of energy (electric, natural gas, oil, wood stove, solar) will be used to meet the completed project's energy needs? Describe whether it will be used for heating, manufacturing, etc.

Electric for residential home heating and cooling.

b. Would your project affect the potential use of solar energy by adjacent properties?

If so, generally describe.

No.

c. What kinds of energy conservation features are included in the plans of this proposal?

List other proposed measures to reduce or control energy impacts, if any:

Future homes will comply with the recently updated Energy Code requirements.

7. Environmental Health [\[help\]](#)

a. Are there any environmental health hazards, including exposure to toxic chemicals, risk of fire and explosion, spill, or hazardous waste, that could occur as a result of this proposal?

If so, describe.

- 1) Describe any known or possible contamination at the site from present or past uses.

None.

- 2) Describe existing hazardous chemicals/conditions that might affect project development and design. This includes underground hazardous liquid and gas transmission pipelines located within the project area and in the vicinity.

None.

- 3) Describe any toxic or hazardous chemicals that might be stored, used, or produced during the project's development or construction, or at any time during the operating life of the project.

Construction equipment will have gasoline, diesel, anti-freeze, and hydraulic fluids.

- 4) Describe special emergency services that might be required.

None.

- 5) Proposed measures to reduce or control environmental health hazards, if any:

None.

b. Noise

- 1) What types of noise exist in the area which may affect your project (for example: traffic, equipment, operation, other)?

None.

- 2) What types and levels of noise would be created by or associated with the project on a short-term or a long-term basis (for example: traffic, construction, operation, other)? Indicate what hours noise would come from the site.

Typical construction noises during construction.

- 3) Proposed measures to reduce or control noise impacts, if any:

None.

8. Land and Shoreline Use [\[help\]](#)

- a. What is the current use of the site and adjacent properties? Will the proposal affect current land uses on nearby or adjacent properties? If so, describe.

Property is currently vacant and zoned residential. The project will not affect the land use of the adjacent properties. North & west - Agriculture, east - R-1-12 Single-family residential (church on-site)
south - R-1-10 Single-family residential (single family residential neighborhood)

- b. Has the project site been used as working farmlands or working forest lands? If so, describe. How much agricultural or forest land of long-term commercial significance will be converted to other uses as a result of the proposal, if any? If resource lands have not been designated, how many acres in farmland or forest land tax status will be converted to nonfarm or nonforest use?

No.

- 1) Will the proposal affect or be affected by surrounding working farm or forest land normal business operations, such as oversize equipment access, the application of pesticides, tilling, and harvesting? If so, how:

No.

c. Describe any structures on the site.

Kennewick Irrigation District had previously operated a retention pond on the site. KID will remove all equipment prior to the start of construction, and the pond will be leveled to grade.

d. Will any structures be demolished? If so, what?

No.

e. What is the current zoning classification of the site?

R-3.

f. What is the current comprehensive plan designation of the site?

HDR.

g. If applicable, what is the current shoreline master program designation of the site?

Not applicable.

h. Has any part of the site been classified as a critical area by the city or county? If so, specify.

No.

i. Approximately how many people would reside or work in the completed project?

Once townhomes are constructed, an estimated 200 people will reside there.

j. Approximately how many people would the completed project displace?

None.

k. Proposed measures to avoid or reduce displacement impacts, if any:

Not applicable.

l. Proposed measures to ensure the proposal is compatible with existing and projected land uses and plans, if any:

Project will be completed in accordance with all City of Richland codes and requirements.

m. Proposed measures to reduce or control impacts to agricultural and forest lands of long-term commercial significance, if any:

Not applicable.

9. Housing [\[help\]](#)

a. Approximately how many units would be provided, if any? Indicate whether high, middle, or low-income housing.

The project will developed approximately 70 lots, which would allow 70 mid-level homes to be constructed.

b. Approximately how many units, if any, would be eliminated? Indicate whether high, middle, or low-income housing.

None.

c. Proposed measures to reduce or control housing impacts, if any:

Not applicable.

10. Aesthetics [\[help\]](#)

a. What is the tallest height of any proposed structure(s), not including antennas; what is the principal exterior building material(s) proposed?

Homes will constructed to the Richland City municipal code and will be less than 35 feet in height.

b. What views in the immediate vicinity would be altered or obstructed?

None.

d. Proposed measures to reduce or control aesthetic impacts, if any:

None.

11. Light and Glare [\[help\]](#)

a. What type of light or glare will the proposal produce? What time of day would it mainly occur?

Street lighting will be included with the project and in accordance with Richland City code. Lights will on during night time hours.

b. Could light or glare from the finished project be a safety hazard or interfere with views?

No.

c. What existing off-site sources of light or glare may affect your proposal?

None.

d. Proposed measures to reduce or control light and glare impacts, if any:

Street lights will be shielded.

12. Recreation [\[help\]](#)

a. What designated and informal recreational opportunities are in the immediate vicinity?

There will be sidewalks along the perimeter road.

b. Would the proposed project displace any existing recreational uses? If so, describe.

No.

c. Proposed measures to reduce or control impacts on recreation, including recreation opportunities to be provided by the project or applicant, if any:

None.

13. Historic and cultural preservation [\[help\]](#)

a. Are there any buildings, structures, or sites, located on or near the site that are over 45 years old listed in or eligible for listing in national, state, or local preservation registers ? If so, specifically describe.

No.

b. Are there any landmarks, features, or other evidence of Indian or historic use or occupation?

This may include human burials or old cemeteries. Are there any material evidence, artifacts,

or areas of cultural importance on or near the site? Please list any professional studies conducted at the site to identify such resources.

No.

- c. Describe the methods used to assess the potential impacts to cultural and historic resources on or near the project site. Examples include consultation with tribes and the department of archeology and historic preservation, archaeological surveys, historic maps, GIS data, etc.

None.

- d. Proposed measures to avoid, minimize, or compensate for loss, changes to, and disturbance to resources. Please include plans for the above and any permits that may be required.

If any items of historic, cultural, or archaeological significance are uncovered during construction, the work will be stopped and the appropriate authorities notified.

14. Transportation [help]

- a. Identify public streets and highways serving the site or affected geographic area and describe proposed access to the existing street system. Show on site plans, if any.

Shockley Road is public road along the site's southern border which will provide access to the site.

- b. Is the site or affected geographic area currently served by public transit? If so, generally describe. If not, what is the approximate distance to the nearest transit stop?

Yes, there is a bus stop on Shockley Road.

- c. How many additional parking spaces would the completed project or non-project proposal have? How many would the project or proposal eliminate?

Each residential lot will provide a minimum of 2 off-street parking spaces. No parking will be eliminated.

- d. Will the proposal require any new or improvements to existing roads, streets, pedestrian, bicycle or state transportation facilities, not including driveways? If so, generally describe (indicate whether public or private).

Yes, there will be a new sidewalk along the north side of Shockley Road.

- e. Will the project or proposal use (or occur in the immediate vicinity of) water, rail, or air transportation? If so, generally describe.

No.

- f. How many vehicular trips per day would be generated by the completed project or proposal? If known, indicate when peak volumes would occur and what percentage of the volume would be trucks (such as commercial and nonpassenger vehicles). What data or transportation models were used to make these estimates?

Per ITE Code 210, single-family residences generate an average of 9.44 trips per days. With approximately 70 developed lots, this would generate approximately 660 trips per day.

- g. Will the proposal interfere with, affect or be affected by the movement of agricultural and forest products on roads or streets in the area? If so, generally describe.

No.

h. Proposed measures to reduce or control transportation impacts, if any:
None.

15. Public Services [help]

- a. Would the project result in an increased need for public services (for example: fire protection, police protection, public transit, health care, schools, other)? If so, generally describe.
Yes, the project will increase needs typically associated with residential areas, including fire, police, emergency, healthcare and schools.
- b. Proposed measures to reduce or control direct impacts on public services, if any.
None.

16. Utilities [help]

- a. Circle utilities currently available at the site:
electricity, natural gas, water, refuse service, telephone, sanitary sewer, septic system,
other _____
Electricity.
- b. Describe the utilities that are proposed for the project, the utility providing the service,
and the general construction activities on the site or in the immediate vicinity which might
be needed.
Sewer and Water will be provided by the City of Richland. Electricity will be provided by ~~Benton~~
~~PUD~~. Irrigation will be provided by Kennewick Irrigation District.

Richland Energy Services
will provide service

C. Signature [HELP]

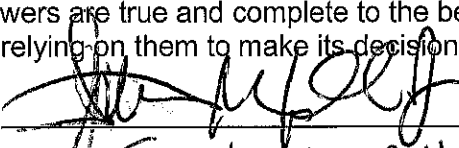
The above answers are true and complete to the best of my knowledge. I understand that the
lead agency is relying on them to make its decision.

Signature: _____

Name of signer _____

Position and Agency/Organization _____

Date Submitted: _____


STAN NUXALL JR.
OWNER/OPERATOR
3/29/21 GREEN PLAN

D. Supplemental sheet for nonproject actions [HELP]

(IT IS NOT NECESSARY to use this sheet for project actions)

Because these questions are very general, it may be helpful to read them in conjunction
with the list of the elements of the environment.

When answering these questions, be aware of the extent the proposal, or the types of
activities likely to result from the proposal, would affect the item at a greater intensity or

at a faster rate than if the proposal were not implemented. Respond briefly and in general terms.

1. How would the proposal be likely to increase discharge to water; emissions to air; production, storage, or release of toxic or hazardous substances; or production of noise?

Proposed measures to avoid or reduce such increases are:

2. How would the proposal be likely to affect plants, animals, fish, or marine life?

Proposed measures to protect or conserve plants, animals, fish, or marine life are:

3. How would the proposal be likely to deplete energy or natural resources?

Proposed measures to protect or conserve energy and natural resources are:

4. How would the proposal be likely to use or affect environmentally sensitive areas or areas designated (or eligible or under study) for governmental protection; such as parks, wilderness, wild and scenic rivers, threatened or endangered species habitat, historic or cultural sites, wetlands, floodplains, or prime farmlands?

Proposed measures to protect such resources or to avoid or reduce impacts are:

5. How would the proposal be likely to affect land and shoreline use, including whether it would allow or encourage land or shoreline uses incompatible with existing plans?

Proposed measures to avoid or reduce shoreline and land use impacts are:

6. How would the proposal be likely to increase demands on transportation or public services and utilities?

Proposed measures to reduce or respond to such demand(s) are:

7. Identify, if possible, whether the proposal may conflict with local, state, or federal laws or requirements for the protection of the environment.

Wetlands Assessment Report

(Pertaining to Benton County Parcels # 122983000006003 and
122983000006002)

[Located in the SW ¼ of Section 22, Township 9 North, Range 28 East]



October 2017

Prepared for: Richland School District
615 Snow Avenue
Richland, WA 99352

Prepared by: Vincent Barthels, Biologist
J-U-B ENGINEERS, Inc.
W. 422 Riverside, Suite 304
(509) 458-3727 (Office)
(509) 951-9564 (Cell)
(509) 458-3762 (Fax)
vbarthels@jub.com

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- Attachment 2 - Vicinity Map
- Attachment 3 - Photo Inventory
- Attachment 4 - National Wetland Inventory (NWI) Map
- Attachment 5 - Department of Natural Resources (DNR) Water Typing Map
- Attachment 6 - United States Department of Agriculture (USDA) Soil Survey Maps
- Attachment 7 - Badger Mountain USGS Quad Map

Introduction

This wetlands assessment report was authorized by the Richland School District, in order to properly define any wetland areas contained within Benton County Parcels # 122983000006003 and 122983000006002. The School District is looking into potentially purchasing these parcels to contain a future administration building. The Aerial Property Exhibit (Attachment 1) illustrates the approximate extents of the aforementioned parcels, which front Shockley Road. The two defined subject parcels encompass approximately 10 acres. The subject parcels are located within the southwest ¼ of Section 22, Township 9 North, Range 28 East, in Benton County, Washington (see Vicinity Map, Attachment 2). A Kennewick Irrigation District (KID) pond [#159] is located within the southwest corner of the western most subject parcel (see Photo Inventory, Attachment 3, specifically photo #1). This wetlands assessment was performed to determine the presence or absence of wetland areas and any associated buffer areas within the defined subject parcels. This assessment was conducted in accordance with the Richland Municipal Code (RMC) Title 22.10 with respect to defining any wetland areas and associated buffer areas contained within the subject parcels.

Methods

The subject property was walked and assessed on September 28, 2017, by Vincent Barthels, Biologist for J-U-B ENGINEERS, Inc. and a Qualified Wetland Specialist. A general site assessment was conducted, and photographs were taken to document the dominant plant communities and habitat present (see Attachment 3, Photo Inventory). The U.S. Fish and Wildlife Service (USFWS) National Wetlands Inventory (NWI), Department of Natural Resources (DNR) Water Typing Map, and U.S. Department of Agriculture (USDA)/Natural Resource Conservation Service (NRCS) Soil maps were referenced in order to identify any mapped waterway/aquatic systems within or adjacent to the subject parcels (see Attachments 4 through 6). No professional surveying services or geo-technical/subsurface explorations were provided by J-U-B ENGINEERS, Inc.

Discussion

Topography

The subject parcels consist of land that gently slopes approximately 2 to 15% toward a central crease. The elevation at the subject property is approximately 575 feet above sea level, plus or minus 20 feet (NGVD 29) [see Badger Mountain USGS Quad Map, Attachment 7].

Climate

The climate data used for this report was collected from the Richland, WA WETS weather station. Based on the climate data collected, the area has an average annual temperature of 53.6 degrees Fahrenheit. The average annual rainfall is 6.53 inches, and the average annual snowfall is 6.7 inches.

Plant Communities

Plant communities in the vicinity of the subject parcels primarily consist of assorted herbaceous plants and a couple shrubs/trees. The following table lists the wetland indicator status of the vegetative species that were encountered within the subject parcels (Lichvar 2016).

Table 1. Plant Species observed in proximity of the subject parcels.

Common Name	Scientific Name	Wetland Indicator Status
Bermuda grass	<i>Cynodon dactylon</i>	FACU
Cheat grass	<i>Bromus tectorum</i>	UPL
Creeping thistle	<i>Cirsium arvense</i>	FAC
Field mint	<i>Mentha arvensis</i>	FAC
Hard stem bulrush	<i>Scirpus acutus</i>	FACW
Horseweed	<i>Conyza canadensis</i>	FACU
Kochia	<i>Bassia scoparia</i>	FAC
Prickly lettuce	<i>Lactuca serriola</i>	FACU
Ragweed	<i>Ambrosia trifida</i>	FAC
Russian olive	<i>Elaeagnus angustifolia</i>	FAC
Russian thistle	<i>Salsola kali</i>	FACU
Siberian elm	<i>Ulmus pumila</i>	UPL
Skeleton weed	<i>Lygodesmia juncea</i>	UPL
Spotted knapweed	<i>Centaurea stoebe</i>	UPL
Stork's bill	<i>Erodium cicutarium</i>	UPL
Tall sagebrush	<i>Artemisia tridentata</i>	FACU
Virginia creeper	<i>Parthenocissus quinquefolia</i>	UPL
Witch grass	<i>Panicum capillare</i>	FAC

Hydrology

The western parcel (i.e. # 122983000006002) contains a constructed KID irrigation pond #159. No other aquatic features, wetlands, canal, or streams were observed.

Soils

Three different soil types make up the composition of the mapped soils within the two parcels. Approximately half of the soil in the subject parcels is Warden silt loam, 2 to 5 percent slopes (50.5%). The remaining soil composition is Warden silt loam, 8 to 15 percent slopes (45.9%) and Warden very fine sandy loam, 2 to 8 percent slopes, eroded (3.6%). The hydric rating for each soil type is 0 percent (see Attachment 6).

NWI Map and Wetland Classifications

No wetland features or other aquatic features are identified to be contained within the subject parcels on the NWI Map or the DNR Water Type Map (see Attachments 4 and 5). On the DNR Water Type Map, the nearest waterbody exists to the south of the subject parcels and is classified as "U" channel, which correlates to the Badger East Canal (a KID operated irrigation canal).

Findings

The KID pond coupled with the dense stands of Russian olive trees and the slight central depression (or crease) located west to east on the subject parcels are the contributing factors that triggered this wetland assessment. Per the site walk and a closer observation of the plant community present and topographic relief, it was determined that the subject parcels do not contain any wetland features. Moreover, the KID pond does not meet the definition of a wetland feature in accordance with RMC Title 22.10. The KID pond is a developed and established irrigation feature. Other than the hard stem bulrush that lines the outer limits of the KID pond, the vegetation assemblages contained within the subject parcels can be characterized as a FAC to FACU community. A high percentage of the vegetation assemblages observed were non-native, invasive, weedy species. The habitat within the subject parcels is considered to be highly disturbed. Irrigation practices associated with the Bethel Church (toward the east), a horse pasture (toward the west) and residential developments (toward the north) help to contribute lateral seepage and run-off (from higher adjacent elevations) to the subject parcels, which aids in the survival of the vegetation assemblages observed.

Conclusion

This wetland assessment was conducted to assist the Richland School District with the potential future site development plans contained on the subject parcels. The subject parcels do not contain any wetland features. It should be noted, however, that final authority with regard to the identification and categorization of the wetland area rests with the appropriate regulatory agencies.

Respectfully submitted by:



10/6/17

Vincent J. Barthels, Biologist
J-U-B ENGINEERS, Inc.

References

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Geotechnical Exploration Summary

Bethel Church Property
Shockley Road
Richland School District
Richland, Washington

PREPARED FOR:

Ms. Caren Johnson
c/o Mike Melling
Richland School District
615 Snow Avenue
Richland, Washington 99352



PREPARED BY:

GeoProfessional Innovation Corporation
6 O'Donnell Road
Pullman, Washington
Telephone (509) 339-2000

November 28, 2017

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Geotechnical Exploration Summary

Bethel Church Property
Shockley Road
Richland School District
Richland, Washington

INTRODUCTION

Our evaluation's purpose is to assess the site's subsurface conditions and prepare this report outlining preliminary geotechnical considerations to aid the Richland School District (RSD) with planning and establishing project design concepts for an Administrative Complex. This complex has long been sought by the RSD to consolidate and upgrade RSD administrative operations. The project area is shown on the attached Plate 1, *Exploration Map*. We performed our services referencing our proposal, dated September 20, 2017. The following text describes our project understanding, scope of services, as well as presents our exploration findings and test results.

SCOPE OF SERVICE

To initiate our geotechnical engineering evaluation with exploration and this preliminary summary, we accomplished the following:

1. Coordinated exploration with the Washington Utility Notification Center and RSD before performing exploration.
2. Explored the subsurface soil conditions via 6 soil borings and 8 exploratory test pits distributed at select locations across the site. Approximate exploration locations are shown on Plate 1.
3. Performed 2 field infiltration tests to evaluate the near surface soils' infiltration characteristics.
4. Installed 3 piezometers between 25 and 30 feet below the surface in the anticipated building areas.
5. Accomplished laboratory testing referencing *ASTM International* (ASTM) procedures to estimate soil engineering parameters.
6. Prepared and provided this geotechnical deliverable, summarizing our findings and preliminary opinions, including exploration logs and laboratory test results. Based on this data and the project concept, we provide preliminary geotechnical opinions to assist project concept development, including but not limited to:
 - α Potential geologic hazards
 - α Earthwork construction considerations
 - α Applicable foundation and construction considerations
 - α Site drainage and stormwater management considerations
 - α Development concepts and construction considerations
 - α Additional recommended services

We remain available to advance final design and consult with your team as necessary during planning and schematic design processes.

PROJECT UNDERSTANDING

Existing Conditions

RSD is in the process of purchasing an approximate 10-acre parcel (Parcel #s: 122983000006002 & 122983000006003) adjacent to Shockley Road in Richland, Washington. The parcel is being purchased

from the Bethel Church. This site is presumed undeveloped and contains moderate to significant vegetation and a pond. The pond appears to have been constructed between 1996 and 2003 based on a review of Google Earth aerial photograph and is believed to be associated with irrigation. Some grading occurred around 2009 near the site's center/east side when an adjacent structure on the Bethel Church property was constructed.

The site slopes north to south towards Shockley Road with about 10 to 15 feet of elevation change overall. A dry drainage channel exists on the southern third of the property, north of the irrigation pond. The extent water traverses through this drainage seasonally or during significant rain events is unknown. Some yard waste and organic debris has been wasted in this area.

Proposed Improvements

RSD desires to construct their administrative offices, maintenance facilities, and consolidate its various functions on this single site. Design has not advanced for specific structures or their location on the property. Further, grading plans are not established. It appears extensive cutting and filling (estimated 40,000 cubic yards) will be required to facilitate a relatively level site. Some grading concepts may require substantial import materials to achieve design grades. We expect development plans may ultimately include, but are certainly not limited to:

- α Single to 2-story structures comprised of wood or metal frames with masonry veneer, conventional foundations, and concrete slabs-on-grade.
- α Limited, if any, below grade useable space.
- α Maintenance facilities with floor drains and possibly hoists or lifts with below grade hydraulics.
- α Asphalt pavement to provide access and support for buses, landscape equipment, and passenger vehicles.
- α Storage areas for school materials.
- α Utilities will extend from Shockley Road and stormwater will be disposed via infiltration facilities (i.e. swales or drywells).
- α Stormwater across the property will need to be addressed and rerouted to avoid the potential for impounding water on adjacent properties.

FIELD EXPLORATION

GPI accomplished exploration on November 8 and 9, 2017, by observing 6 exploratory soil borings extending between 11 and 35 feet deep, throughout the site but with deeper borings positioned along the northern half where buildings are expected. Soil borings were accomplished with a track-mounted CME 850 drill equipped with hollow stem augers and standard penetration test (SPT) sampling equipment. During exploration, our geotechnical engineer visually classified, described, and logged the soil encountered the *Unified Soil Classification System* (USCS). We collected select in-place soil samples from various depths and locations for subsequent laboratory testing.

While on site, we performed infiltration testing in borings B-1 and B-2 and installed piezometers in borings B-3, B-4, and B-5. Infiltration testing was accomplished referencing the Boring Method outlined in Appendix 6B of the *Washington State Department of Ecology* (Ecology) Stormwater Management Manual for Eastern Washington. Piezometers each received 10 feet of screen and sand pack at the base with the balance of the piezometer established with solid pipe, bentonite plug, and a flush mount surface casing.

Piezometers will be monitored occasionally while the property is being evaluated. The balance of borings were loosely backfilled with site soil and a bentonite cap immediately following exploration.

Test pits were advanced with a Deere 35D, mini-excavator. Test pits advanced 8 to 11 feet below the surface while our geoprofessional logged and visually described the soil encountered. Select samples were collected during excavation for subsequent laboratory testing. Test pits were loosely backfilled with excavated soil.

The USCS is presented in *Appendix A* along with exploration logs and should be used to interpret the soil conditions in this report and on the individual exploration logs.

LABORATORY TESTING

We performed laboratory testing in reference to ASTM standards on select soil samples obtained during exploration. Laboratory testing included:

- α In-situ moisture content and unit weight (ASTM D 2216)
- α Atterberg limits (ASTM D 4318)
- α Grain size distribution for coarse grained soil (ASTM D 422)
- α Moisture density relationship- Proctor (ASTM D1557)
- α California Bearing Ratio (ASTM D3080)
- α pH resistivity and sulfates (ASTM G 51, G 57, D 516)

Laboratory test results are provided in Appendix B, and on the exploratory logs in Appendix A.

SUBSURFACE CONDITIONS

We encountered topsoil containing some to significant vegetation and organics extending 6 to 12 inches in the locations explored. Beneath topsoil we encountered the following soil units.

- α **Uncontrolled Fill: Mixed Silt and Sand (ML/SM):** grey brown, loose to medium dense, dry to moist. We encountered apparent fill near the east-central area of the site in test pits TP-2, 3 and 7. The approximate area where fill was encountered is delineated on Plate 1. Where encountered, fill wxtending between 3 and 6 feet below the surface. Significant debris or deleterious materials were not observed within the fill. From a review of aerial photographs, it appears these fill deposits coincide with a grading event potentially associated with the construction of a structure on the adjacent Bethel church property.
- α **Alluvium: Silt with Fine Sand (ML):** greyish brown, loose to medium dense, and dry to moist. We encountered alluvium in each exploration beneath fill or topsoil extending 5 to 13 feet below the surface. A layer of silt was also encountered in B-4 below Silty Sand (see below) about 30 feet below the surface. This low unit weight silt exhibits a high consolidation potential, though consolidation tests did not delineate a significant collapse potential.
- α **Alluvium: Silty Fine Sand (SM):** brown, medium dense to dense, and moist. We encountered this unit below silt in each exploration, generally extending to the termination depths excluding B-4. In B-4, the silty fine sand contained trace amounts of medium gravel about 26 feet below the surface before grading back to silt with fine sand at the termination depths.

We did not encounter bedrock or groundwater within our exploration locations at the time of exploration, but installed piezometers in borings B-3, B-4, and B-5 between 25 and 30 feet below the surface to help document future groundwater conditions. Since exploration, our monitoring detected groundwater at B-3 at 22.7 feet below the surface; the other 2 remain dry. To obtain additional subsurface information, we researched well logs within the project site vicinity published on the *Washington State Department of Ecology* (Ecology) website. These logs indicate basalt bedrock in the area may be located 50 to 100 feet below the existing ground surface, with consistent, static groundwater levels from 30 feet and deeper. However, localized perched groundwater tables may be encountered depending on variations in precipitation, irrigation, and infiltration characteristics over time and may be encountered at shallower or deeper depths.

PRELIMINARY GEOTECHNICAL CONSIDERATIONS

Potential Geologic Hazards

The following text presents our evaluation of potential geologic hazards for consideration by RSD as the project concept is refined. This summary is not exhaustive, but rather presents some common geologic hazards which should be considered by RSD and Design West Architects, project architect, based on our site exploration, mapping research, and preliminary project understanding. The items discussed below can provide RSD with a reasonable basis for progressing project design concepts.

Uncontrolled Fill

Uncontrolled fill was encountered near the east-central portion of the site extending 3 to 6 feet below the surface. The fill material is consistent with soil in the area, and barring other sources of the fill origin, we attribute the fill to grading on an adjacent Bethel Church project. Our estimate of the lateral fill extents based on test pit exploration and aerial photograph interpretation is outlined on Plate 1. Where fill is encountered, uncontrolled fill must be removed from beneath planned structures or improvements consistent with geotechnical practice standards.

Depending on how structures are sited on the property, we do not expect uncontrolled fill will have significant impacts to this project. Pending site grading concepts, it is conceivable that fill will be removed as part of achieving site grades. However, project grading concepts must be developed to remove fill below any building or parking area.

Slope Instability Potential

Although the existing ground surface slopes from north to south, the slope is gentle and the elevation difference is slight. During exploration, we traversed the site and observed no evidence of large or small-scale, current or prehistoric landslides. Therefore, our opinion is slope instability potential at this site will be directly related to site grading and drainage design, earthwork construction quality and ongoing constructed slope maintenance procedures. Finished or permanent slopes in native soil can typically remain stable with respect to deep-seated global failure at slope inclinations up to 2.5H:1V when the soil remains in a dry condition. However, 2.5H:1V slopes are typically prone to shallow erosional and surface failures during wet seasons, especially given the silt observed near the surface. Therefore, we recommend civil grading design utilize 3H:1V slopes.

Site Grading & Drainage

We presume site grading for this project will cut soil from the north and place it in lower areas on the south side of the project site; providing a gentle approach to Shockley Road. The process of placing and compacting fill in the low areas of the site will theoretically impede a natural drainage that traverses from northwest to southeast across the property. The adjacent Bethel Church property likely advanced some minor grading that flattened their site for a playfield and subtly filled in the shallow drainage. It is likely this drainage seldom carries any significant water. However, impeding the drainage would, in our opinion, create a geologic hazard off the property for adjacent land owners. The drainage exists because water occasionally, maybe even rarely flows through it. Should water be impounded once the drainage is blocked, it will be a hazard and a liability to RSD.

If site grading is advanced as envisioned, it would be wise to facilitate a culvert that conveys overland flow from west to east across the property. Further, we suspect the existing drainage acts as a pseudo infiltration gallery wherein most overland flow infiltrates into the subsurface naturally with limited surface flow. Thus, a subsurface drainage gallery could be constructed that provides infiltration and conveyance simultaneously. Either approach may require an easement with the Bethel Church for any water conveyed towards their property. A conceptual alignment of such a culvert or stormwater infiltration gallery is outlined on the attached site map (Plate 1) for civil design's consideration.

Cut and Fill Transitions

We expect the catch point between cut and fill will be near the site's center. If grading design can facilitate placing buildings entirely on cut soil, we expect they will perform better as it relates to differential settlement. Where structures span dissimilar materials (i.e. cuts into native soil vs. fill embankments) they have a higher propensity for realizing settlement at the transition between varying materials. Pending final structure position, building loads, the depths of cuts and fills and other criteria, foundations may require improvements to facilitate acceptable performance. We will evaluate these requirements once final site layout is complete.

Site Seismicity and Liquefaction Potential

Significant seismic activity has not been recorded in the area in geologically recent time. The presence of faults, fault rupture, or other such features were not observed via our field reconnaissance. Our geologic research of available *United States Geologic Survey* (USGS) data suggests at least 2 historically active faults are located within 5 miles from the project site. Engineering fault parameters from the USGS are provided in Table 1 below.

Table 1. Nearest Fault Parameters, Bethel Church Site (USGS 2008)

Fault	Characteristic Earthquake Magnitude	Recurrence Interval (years)
Horse Heaven Hills Structure	6.5 to 7.44	390-50,000
Wallula/Rattlesnake Hills Structure	6.5 to 7.14	250-12,500

Reference: <http://earthquakes.usgs.gov/hazards/qfaults>

Given the extremely low recurrence interval for seismic activity along these nearby faults, our opinion is probable seismic activity within the design period (approximately 2,475 years) prescribed by the 2015 *International Building Code* (IBC) will primarily be associated with regional background seismicity.

Subsurface conditions encountered during our exploration consist of silt and fine sand soil. We did not encounter basalt bedrock or groundwater in our explorations to about 30 feet below the site. Seismically induced settlement (i.e., due to soil densification from seismic vibration) could be realized on the order of 2 to 3.5 inches during a significant earthquake. For liquefaction to occur, soil profile must be saturated, the potential for such a seismic event to occur during the project's useful life, without groundwater near the surface, is relatively low. With the information we have presently, we estimate that an IBC Site Class D is appropriate.

Earthwork Construction Considerations

We expect earthwork for this project will be typical, without the need for special techniques or equipment. Earthwork construction should initiate by stripping an average of 0.7 feet of topsoil containing vegetation and organics. Depending on site layout, 3 to about 6 feet of uncontrolled fill will need removed near the site's east-central portion. Site stripping outside the fill area will expose native soil and the topsoil may be stockpiled for reuse or disposed offsite. After topsoil and fill (if necessary) stripping, the resulting subgrade comprising native alluvial silt with fine sand can be used to support typical site infrastructure or other developments pending final site civil design and loading conditions. We anticipate site soil may be reused as structural fill for site grading applications, but will require significant moisture conditioning to compact effectively and economically during good weather. The site soil is expected to realize significant shrinkage when excavated and recompacted as structural fill; potentially 24 to 30 percent. The soil will bulk when excavated and wasted between 16 and 22 percent.

Imported structural fill products will also be required for project construction. We recommend imported fill products reference *Washington State Department of Transportation (WSDOT) Standards for Road Bridge and Municipal Construction (Standards) for Select Borrow, Common Borrow, Crushed Surfacing*, or other products as needed.

Foundation and Development Considerations

For final design, important criteria such as the building's frame, number of stories, loading, foundation bearing elevations and other factors are necessary to help develop final geotechnical recommendations. The preliminary information below is based on speculative foundation loading conditions and provides only preliminary shallow foundation design and construction considerations for RSD and the design team. We do not recommend this data be relied upon for final foundation design or construction.

Founding as many of the buildings as possible on cut soil will improve the structure's performance and more efficient foundation design criteria can be provided. Conventional spread and continuous foundations appear appropriate based on what we anticipate from the planned development.

Preliminary Shallow Foundation Design Criteria

We expect allowable bearing pressures ranging from 1,500 to 3,000 pounds per square foot (psf) will be appropriate for shallow spread footing design. Granular soil improvements may be required if the structure spans cut and fill soil profiles. Conventional foundation systems should conform to the following design criteria and the current IBC addition:

1. Frost protection embedment depth: 24 inches below finished exterior surface
2. Estimated vertical settlement tolerances (to be verified by structural design):
 - a. Total settlement: 1-inch
 - b. Differential settlement: 0.75 inches in 30-foot, horizontal span
 - c. The site soil is low density and consolidation tests outline it is prone to large settlement at relatively light structural loads.
3. Lateral load resistance:
 - a. Foundation base friction coefficient 0.30 for foundations cast on native soil
 - b. Lateral passive resistance is available on foundation sides ranging from 200 to 350 pounds per cubic foot (pcf) equivalent fluid pressure (EFP), depending on backfill used and where/if $\frac{3}{4}$ inches of lateral movement can be tolerated.
4. Soil Corrosivity
 - a. Laboratory test results indicate the site soil exhibits a moderate to high corrosive environment:
 - i. pH = 8.1
 - ii. Resistivity = 909 ohms-cm
 - iii. Sulfates = 72 parts per million
 - b. Structural designers shall account for moderate corrosion potential in reinforcing steel spacing and clearances.
 - c. Soil is not expected to induce negative reactions with concrete. Concrete mix designs should demonstrate that aggregate does not have the potential for alkali-silica reactivity.
5. Site Class - 2015 IBC Section 1613
 - a. Based on our field exploration and current knowledge of the upper 100 feet of the soil profile, a Site Class D is appropriate for preliminary structural frame seismic design. A site-specific study of seismic response was not performed.

Surface Grading & Drainage

Site grading design should be accomplished such that runoff from precipitation, snowmelt, seeps, or springs is not allowed to infiltrate slopes, below foundations, pavement, and slab subgrades. Runoff or water migrating along the ground surface must be conveyed away from slopes and structures by an appropriately designed series of ditches, culverts, swales, or other surface water management procedures. This is especially important given the silt and fine sand is highly frost susceptible. This means that the presence of water in the soil can induce significant frost action (heave and contraction) during freeze-thaw cycles. As development plans advance, we recommend consideration to excavating the soil at entrances (entryways, maintenance doors, etc.) to the frost depth and replace it with non-frost-susceptible soil. This process should extend laterally at the exterior at least 5 feet.

Slope the ground surface outside structures to meet *Americans with Disabilities Act* (ADA) requirements at entrances and at least 5 percent away for a minimum of 10 feet in other areas to rapidly convey surface water or roof runoff away from foundations. Remaining landscapes should slope at least 2 percent away from structures. Provide roof gutters connected to downspouts, connect them to solid pipes placed away from the structure, and do not allow to infiltrate into the soil underlying the structure.

Wall and Foundation Drainage

Design and construct buildings with adequate drainage systems to reduce the potential for surface water to infiltrate beneath the structure and cause instability, leakage, or seepage. This is typically accomplished by installing a perimeter foundation drain system surrounding the building. Foundation drains should be installed with positive drainage and dispose of collected water in suitable locations at least 50 feet from structures. Historically, foundation drains have been deleted by RSD as part of final design. For buildings situated on the northern portion of the site, such deletion is a reasonable exchange of water intrusion risks for project cost savings. However, structures positioned within proximity of the existing drainage that may be filled, should consider the risks of eliminating foundation drainage.

At this time, we do not expect below-grade structures or retaining walls for this project. Thus, we do not elaborate on the specifications for below-grade wall drain systems.

Stormwater Management Considerations

Stormwater management concepts are not yet established for the project, but as is common in the area, will likely be managed via near surface infiltration swales with drywell overflows and possibly subsurface infiltration galleries. We recommend these facilities be established along the site's east and south sides. Design stormwater management facilities in accordance with Ecology's *Eastern Regional Stormwater Management Manual* (Stormwater Manual) and the City of Richland requirements.

The soil profile encountered in explorations was classified under the USCS as silt and fine sand. Infiltration tests in B-1 and B-2 during exploration yielded unfactored infiltration rates between 9 and 14 inches per hour. These are relatively good infiltration rates for soil of this type, although can be impacted at different times during the year depending on saturated and frozen conditions. Further, stormwater facility construction practices can impact the site soil's ability to infiltrate water. Thus, civil design should consider applying prescriptive safety factors between 4 and 6 to the measured infiltration rate based on infiltration facility configuration and the designer's experience with stormwater disposal in the region. It should be noted, that a highly permeable soil unit that may be desirable to establish drywell overflow disposal was not encountered. We recommend additional infiltration tests be advanced during the next round of exploration, ideally in specific anticipated stormwater disposal locations.

ADDITIONAL RECOMMENDED SERVICES

Final Geotechnical Design

This evaluation was performed to provide RSD with preliminary geotechnical site characteristics to assist project concept development. This deliverable does not constitute a final geotechnical engineering evaluation specific to earthwork, foundation design or construction, or any other site feature. Once these and other critical project design concepts are established, GPI will provide additional geotechnical engineering evaluation specific to actual design concepts. At this time, we expect the exploration and laboratory testing accomplished is adequate to advance final design.

Geotechnical Design Continuity

We base this report's information on our exploration results and observations, as well as preliminary site improvement concepts provided to us by RSD. Significant design concepts are yet to be established. The site layout, building configuration, final floor elevations, loading conditions, and many other aspects can significantly alter our opinions and design recommendations. This may be particularly important to help

the project team evaluate the existing drainage and ramifications to filling it as well as positioning buildings on the site to avoid cut and fill transitions. Therefore, it is critical that GPI provide geotechnical continuity for final planning and design for the planned construction as individual aspects become available during design development phases.

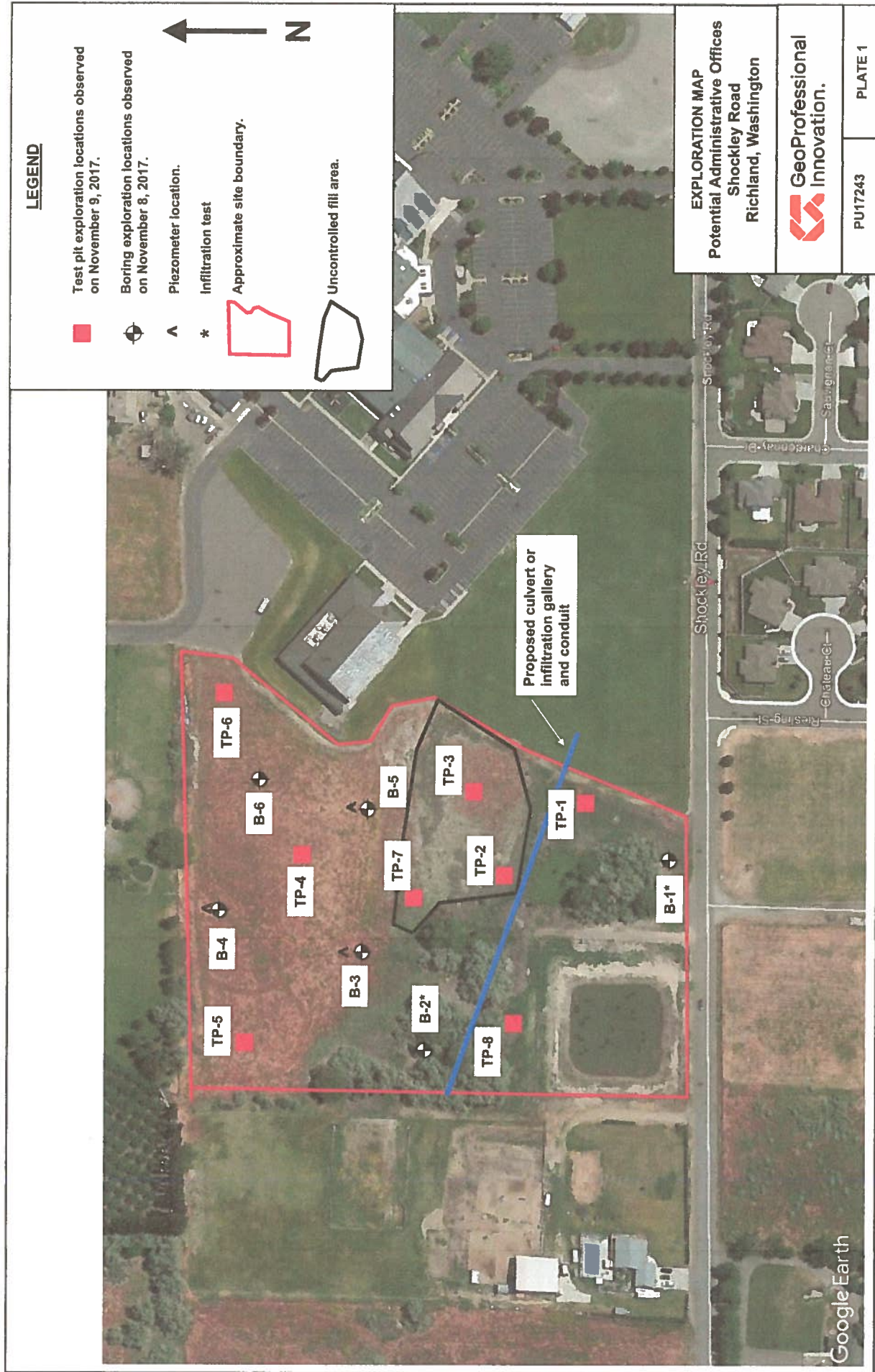
Our experience with similar projects suggests providing geotechnical continuity throughout design and construction is critical to project success. Often, precluding geotechnical involvement throughout the design process creates lost opportunities for efficiency between design iterations, project specifications, and plan drawing development.

EVALUATION LIMITATIONS

We provide the preliminary geotechnical considerations in this report to assist RSD with considering potential site development and design concepts. This information and the services we provided to date do not comprise a final geotechnical engineering evaluation for site or subgrade performance as it pertains to any future development or construction. Rather, we provide these considerations based on exploration advanced to date, experience with similar RSD developments, and typical earthwork standards of care that exist in the area at this time. Project design and construction professionals must apply appropriate judgment to the exploration findings presented herein to facilitate prudent design concept development. This acknowledgment is in lieu of any express or implied warranties.

The following accompany this report:

- Plate 1: Exploration Map
- Appendix A: Unified Soil Classification System (USCS) and Exploratory Boring Logs
- Appendix B: Laboratory Test Results



Reference: Google Earth Aerial Imagery, June 30, 2015. Not to scale.

UNIFIED SOIL CLASSIFICATION SYSTEM

MAJOR DIVISIONS			GRAPHIC SYMBOL	GROUP SYMBOL	TYPICAL NAMES
COARSE GRAINED SOIL	GRAVEL	CLEAN GRAVEL		GW	WELL-GRADED GRAVEL, GRAVEL-SAND MIXTURES.
				GP	POORLY-GRADED GRAVEL, GRAVEL-SAND MIXTURES.
		GRAVEL WITH FINES		GM	SILTY GRAVEL, GRAVEL-SAND-SILT MIXTURES.
				GC	CLAYEY GRAVEL, GRAVEL-SAND-CLAY MIXTURES.
	SAND	CLEAN SAND		SW	WELL-GRADED SAND, GRAVELLY SAND.
				SP	POORLY-GRADED SAND, GRAVELLY SAND.
		SAND WITH FINES		SM	SILTY SAND, SAND-SILT MIXTURES.
FINE GRAINED SOIL	SILT AND CLAY LIQUID LIMIT LESS THAN 50%			SC	CLAYEY SAND, SAND-CLAY MIXTURES.
				ML	INORGANIC SILT, SANDY OR CLAYEY SILT.
				CL	INORGANIC CLAY OF LOW TO MEDIUM PLASTICITY, SANDY OR SILTY CLAY.
				CL-ML	INORGANIC MIXED CLAY AND SILT.
	SILT AND CLAY LIQUID LIMIT GREATER THAN 50%			OL	ORGANIC SILT AND CLAY OF LOW PLASTICITY.
				MH	INORGANIC SILT, MICA-CEOUS SILT, PLASTIC SILT.
				CH	INORGANIC CLAY OF HIGH PLASTICITY, FAT CLAY.
				OH	ORGANIC CLAY OF MEDIUM TO HIGH PLASTICITY.
				PT	PEAT, MUCK AND OTHER HIGHLY ORGANIC SOILS.

BORING LOG SYMBOLS

STANDARD 2 INCH OD
SPLIT SPOON SAMPLE



CALIFORNIA MODIFIED 3 INCH
OD SPLIT SPOON SAMPLE



ROCK CORE



SHELBY TUBE 3 INCH OD
UNDISTURBED SAMPLE



TEST PIT LOG SYMBOLS

GRAB BAG SAMPLE

BG

BULK SAMPLE

BK

RING SAMPLE

RG

GROUNDWATER SYMBOLS

GROUND WATER AFTER 24
HOURS



GROUND WATER AT TIME OF
DRILLING



GROUND WATER AT THE END OF
DRILLING

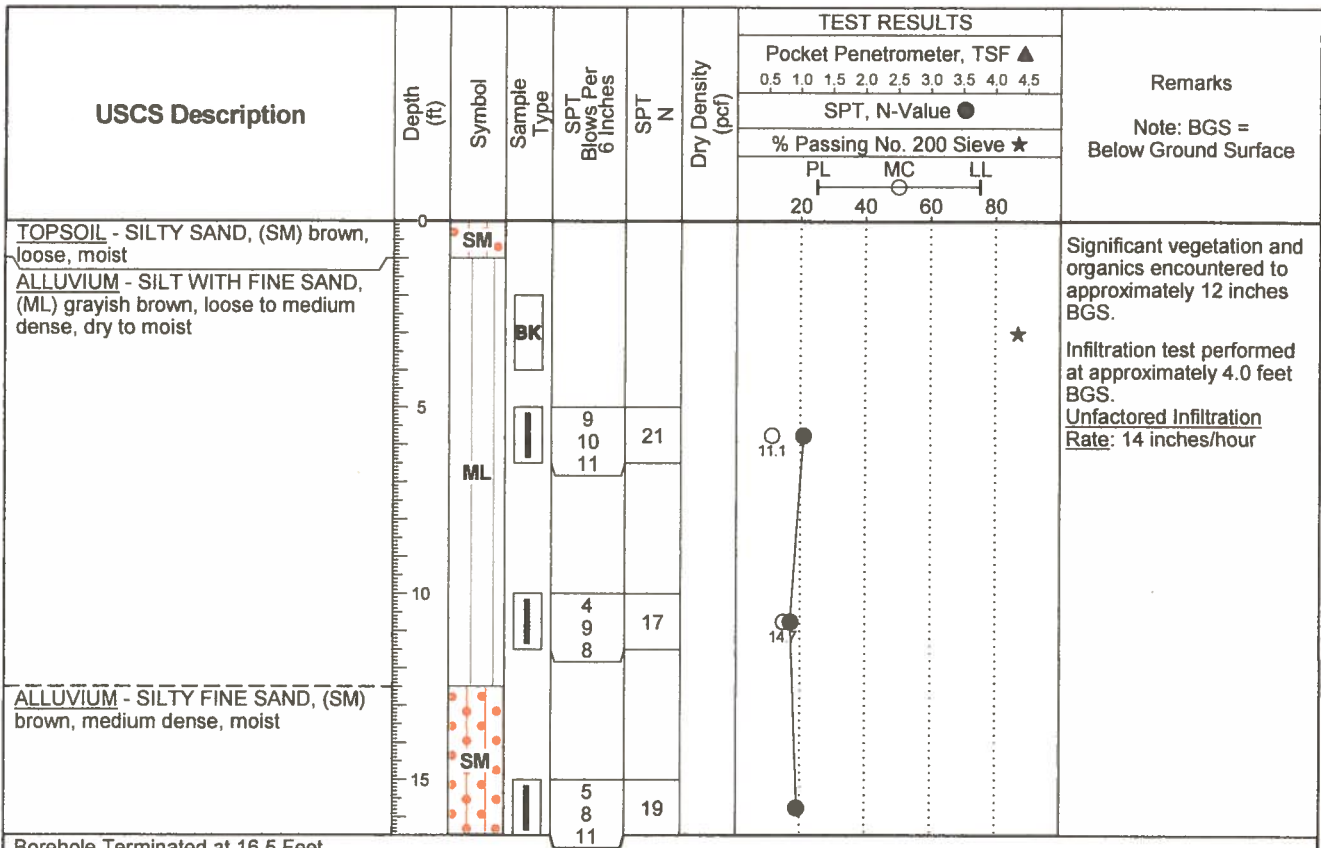


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GPI BORING - STRATA.GDT - 11/27/17 14:21 - \\STRPULS1\\MAIN\\ENGINEERING\\GINT FILES\\PU17243 BETHEL LOGS.GPJ

USCS Description	Depth (ft)	Symbol	Sample Type	SPT Blows Per 6 inches	SPT N	Dry Density (pcf)	TEST RESULTS					Remarks
							Pocket Penetrometer, TSF ▲					
							0.5 1.0 1.5 2.0 2.5 3.0 3.5 4.0 4.5					
							SPT, N-Value ●					
							% Passing No. 200 Sieve ★					
							PL	MC	LL			
							20	40	60	80		
TOPSOIL - SILTY SAND, (SM) brown, loose, moist	0	SM										Significant vegetation and organics encountered to approximately 12 inches BGS. Infiltration test performed at approximately 4.0 feet BGS. <u>Unfactored Infiltration</u> <u>Rate:</u> 9 inches/hour
ALLUVIUM - SILT WITH FINE SAND, (ML) grayish brown, loose, dry to moist	5	ML	BK	3 3 4	7						★	
ALLUVIUM - SILTY FINE SAND, (SM) brown, medium dense, moist	10	SM		2 5 6	11							
Borehole Terminated at 11.5 Feet.												Boring backfilled and plugged with bentonite.

Client: Richland School District	Boring Number: B-1		EXPLORATORY BORING LOG
Project: PU17243	Date Drilled: 11-08-2017		
Drill Rig: CME-850	Borehole Diameter: 8"		
Depth to Groundwater: N.E.	Logged By: TJW		
			Sheet 1 Of 1



Borehole Terminated at 16.5 Feet.

Boring backfilled and plugged with bentonite.

Client: Richland School District

Boring Number: B-2

Project: PU17243

Date Drilled: 11-08-2017

Drill Rig: CME-850

Borehole Diameter: 8"

Depth to Groundwater: N.E.

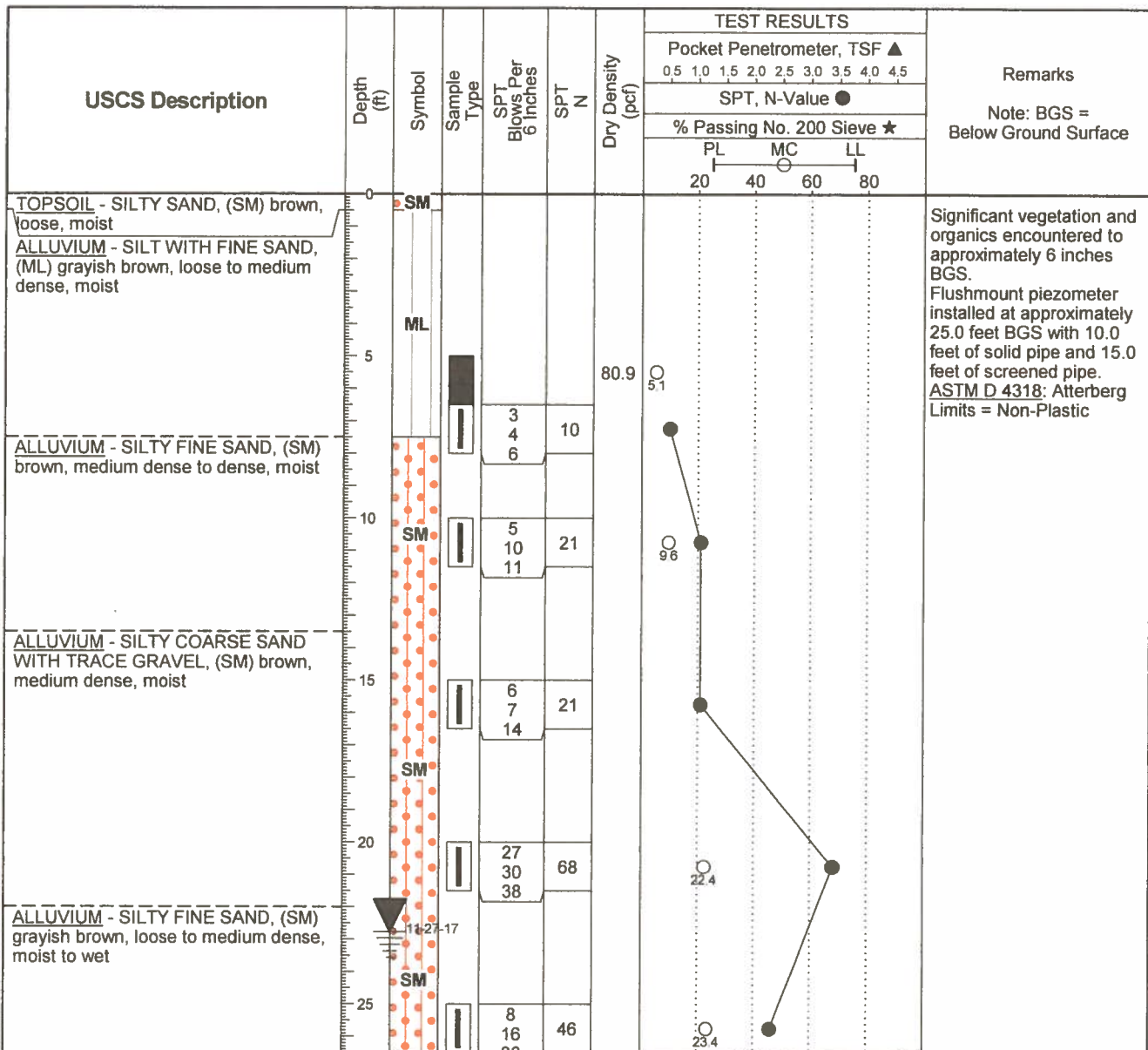
Logged By: TJW



**EXPLORATORY
BORING LOG**

Sheet 1 Of 1

GPI BORING - STRATA.GDT - 11/27/17 14:21 - \\STRPULS1\\MAIN\\ENGINEERING\\GINT FILES\\PU17243 BETHEL LOGS.GPJ



Borehole Terminated at 26.5 Feet.

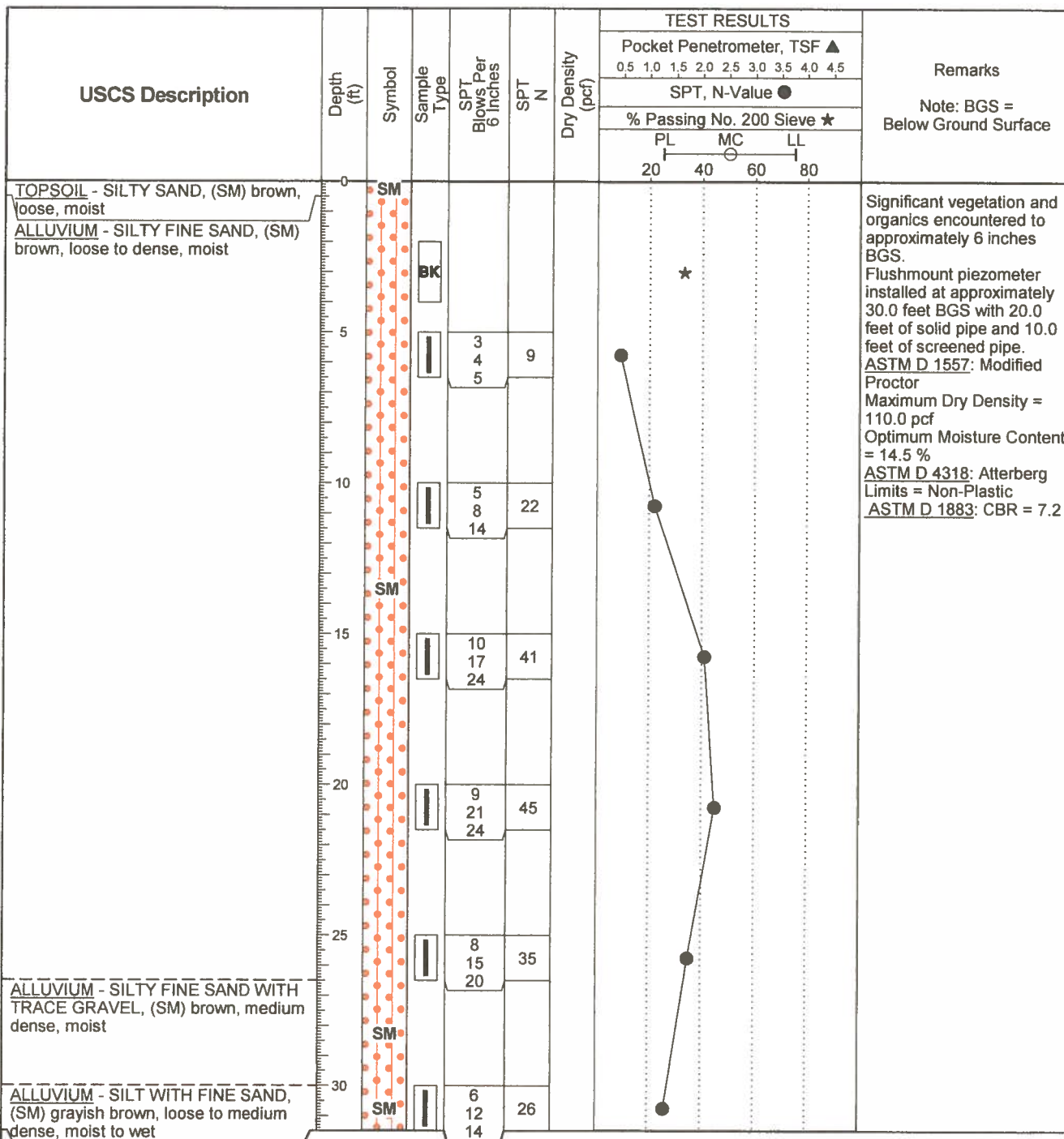
Boring backfilled and plugged with bentonite.

Client: Richland School District	Boring Number: B-3
Project: PU17243	Date Drilled: 11-08-2017
Drill Rig: CME-850	Borehole Diameter: 8"
Depth to Groundwater: N.E.	Logged By: TJW

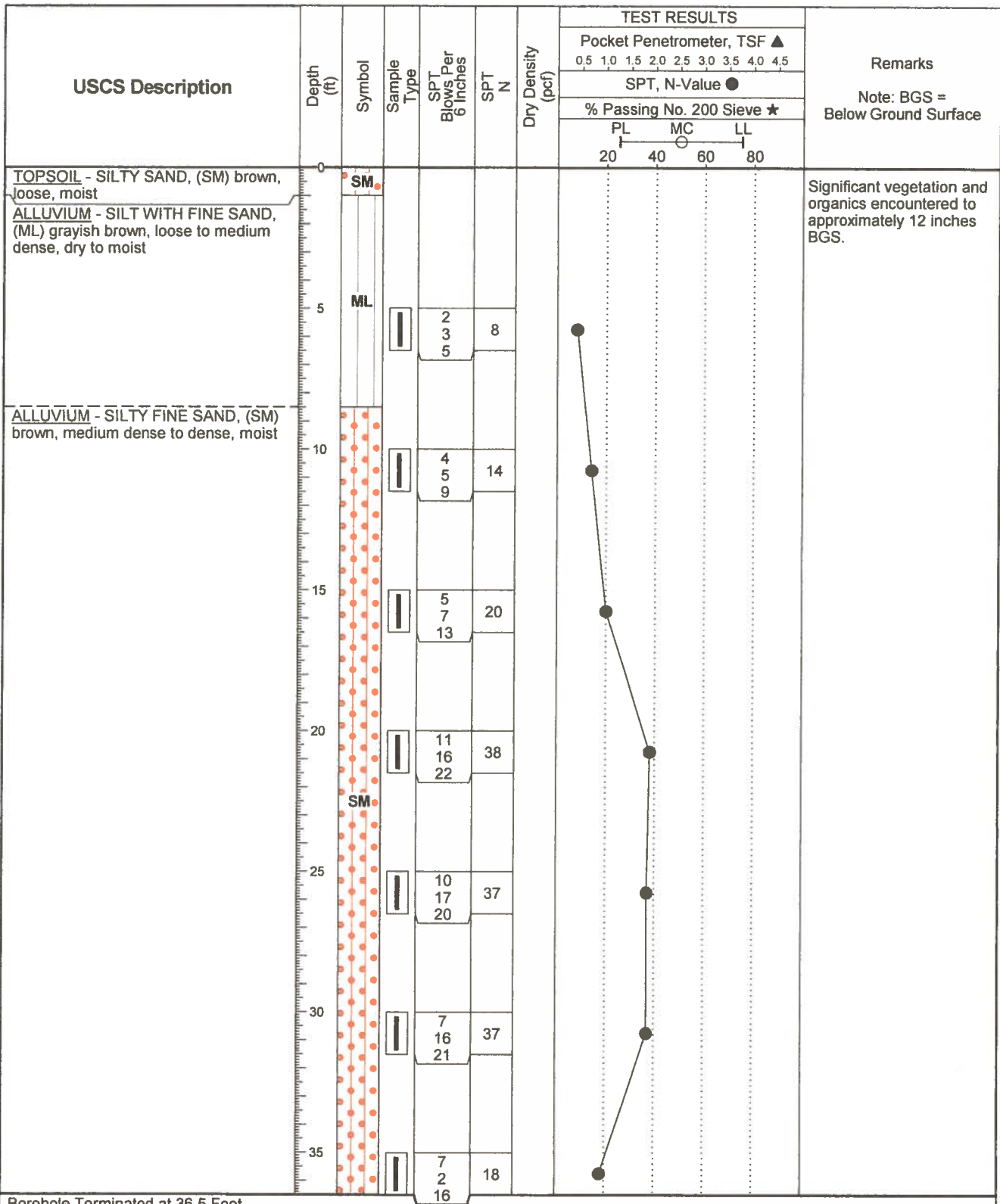


EXPLORATORY BORING LOG

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GPI BORING - STRATA.GDT - 11/27/17 14:21 - \\STRPULS1\MAIN\ENGINEERING\GINT FILES\PU17243 BETHEL LOGS.GPJ



Borehole Terminated at 36.5 Feet.

Boring backfilled and plugged with bentonite.

Client: Richland School District	Boring Number: B-6
Project: PU17243	Date Drilled: 11-08-2017
Drill Rig: CME-850	Borehole Diameter: 8"
Depth to Groundwater: N.E.	Logged By: TJW



EXPLORATORY BORING LOG

Sheet 1 Of 1

GPI TEST PIT - STRATA.GDT - 11/27/17 11:30 - \\STRPULS1\MAIN\ENGINEERING\GINT FILES\PU17243 BETHEL LOGS.GPJ

USCS Description	Depth (ft)	U.S.C.S. Class	Symbol	Sample Type	% Passing No. 200 Sieve	Dry Density (pcf)	Moisture Content (%)	Pocket Pen. (tsf)	Atterberg Limits	Remarks
									LL PI	Note: BGS = Below Ground Surface
TOPSOIL - SILTY SAND, (SM) brown, loose, moist	0	SM								Significant vegetation and organics encountered to approximately 12 inches BGS.
ALLUVIUM - SILT WITH FINE SAND, (ML) grayish brown, loose to medium dense, dry	5	ML								
ALLUVIUM - SILTY FINE SAND, (SM) brown, medium dense, moist		SM								
Test Pit Terminated at 9.5 Feet.										Test pit loosely backfilled with site soil.
Client: Richland School District		Test Pit Number: TP-1					EXPLORATORY TEST PIT LOG			
Project: PU17243		Date Excavated: 11-09-2017								
Backhoe: DEERE 35D		Bucket Width: 24"								
Depth to Groundwater: N.E.		Logged By: TJW								
										Sheet 1 Of 1

GPI TEST PIT - STRATA.GDT - 11/27/17 11:30 - \\STRPULS1\\MAIN\\ENGINEERING\\GINT FILES\\PU17243 BETHEL LOGS.GPJ

USCS Description	Depth (ft)	U.S.C.S. Class	Symbol	Sample Type	% Passing No. 200 Sieve	Dry Density (pcf)	Moisture Content (%)	Pocket Pen. (tsf)	Atterberg Limits	Remarks
									LL PI	Note: BGS = Below Ground Surface
TOPSOIL - SILTY SAND, (SM) brown, loose, moist	0	SM								Significant vegetation and organics encountered to approximately 6 inches BGS.
UNCONTROLLED FILL - MIXED SILT AND SAND, (ML-SM) gray brown, loose to medium dense, dry to moist		ML-SM								
ALLUVIUM - SILTY FINE SAND, (SM) brown, medium dense, moist	5	SM								
Test Pit Terminated at 9.0 Feet.										Test pit loosely backfilled with site soil.
Client: Richland School District		Test Pit Number: TP-2					EXPLORATORY TEST PIT LOG			
Project: PU17243		Date Excavated: 11-09-2017								
Backhoe: DEERE 35D		Bucket Width: 24"								
Depth to Groundwater: N.E.		Logged By: TJW								
										Sheet 1 Of 1

GP1 TEST PIT - STRATA.GDT - 11/27/17 11:30 - \\STRPULS1\\MAIN\\ENGINEERING\\GINT FILES\\PU17243 BETHEL LOGS.GPJ

USCS Description	Depth (ft)	U.S.C.S. Class	Symbol	Sample Type	% Passing No. 200 Sieve	Dry Density (pcf)	Moisture Content (%)	Pocket Pen. (tsf)	Atterberg Limits LL PI	Remarks Note: BGS = Below Ground Surface
TOPSOIL - SILTY SAND, (SM) brown, loose, moist	0	SM								Moderate vegetation and organics encountered to approximately 6 inches BGS.
UNCONTROLLED FILL - MIXED SILT AND SAND, (ML-SM) gray brown, loose to medium dense, dry to moist	5	ML-SM								
ALLUVIUM - SILTY FINE SAND, (SM) brown, medium dense, moist	10	SM								
Test Pit Terminated at 10.0 Feet. Test pit loosely backfilled with site soil.										

Client: Richland School District	Test Pit Number: TP-3		EXPLORATORY TEST PIT LOG Sheet 1 Of 1
Project: PU17243	Date Excavated: 11-09-2017		
Backhoe: DEERE 35D	Bucket Width: 24"		
Depth to Groundwater: N.E.	Logged By: TJW		

GPI TEST PIT - STRATA.GDT - 11/27/17 11:30 - \\STRPULS1\\MAIN\\ENGINEERING\\GINT FILES\\PU17243 BETHEL LOGS.GPJ

USCS Description	Depth (ft)	U.S.C.S. Class	Symbol	Sample Type	% Passing No. 200 Sieve	Dry Density (pcf)	Moisture Content (%)	Pocket Pen. (tsf)	Atterberg Limits	Remarks
TOPSOIL - SILTY SAND, (SM) brown, loose, moist ALLUVIUM - SILT WITH FINE SAND, (SM) grayish brown, medium dense, dry to moist	0	SM							LL PI	Note: BGS = Below Ground Surface
	5	SM								Moderate vegetation and organics encountered to approximately 6 inches BGS.
Test Pit Terminated at 10.5 Feet.										Test pit loosely backfilled with site soil.
Client: Richland School District Project: PU17243 Backhoe: DEERE 35D Depth to Groundwater: N.E. Test Pit Number: TP-4 Date Excavated: 11-09-2017 Bucket Width: 24" Logged By: TJW  EXPLORATORY TEST PIT LOG Sheet 1 Of 1										

USCS Description	Depth (ft)	U.S.C.S. Class	Symbol	Sample Type	% Passing No. 200 Sieve	Dry Density (pcf)	Moisture Content (%)	Pocket Pen. (tsf)	Atterberg Limits LL PI	Remarks Note: BGS = Below Ground Surface
TOPSOIL - SILTY SAND, (SM) brown, loose, moist	0	SM								Moderate vegetation and organics encountered to approximately 6 inches BGS. <u>Cond. Meter, ASA:</u> Resistivity = 909 ohms-cm <u>Electrode, ASA 12-2.6:</u> pH = 8.1 <u>IC: Sulfate = 72 ppm</u>
ALLUVIUM - SILT WITH FINE SAND, (ML) grayish brown, medium dense, dry		ML								
ALLUVIUM - SILTY FINE SAND, (SM) brown, medium dense, moist	5	SM		BK	29.0		38.0			
Test Pit Terminated at 9.0 Feet.										Test pit loosely backfilled with site soil.

Client: Richland School District	Test Pit Number: TP-5	 GeoProfessional Innovation.	EXPLORATORY TEST PIT LOG
Project: PU17243	Date Excavated: 11-09-2017		
Backhoe: DEERE 35D	Bucket Width: 24"		
Depth to Groundwater: N.E.	Logged By: TJW		
			Sheet 1 Of 1

GPI TEST PIT - STRATA.GDT - 11/27/17 11:30 - \\STRPULS1\MAIN\ENGINEERING\GINT FILES\PU17243 BETHEL LOGS.GPJ

USCS Description	Depth (ft)	U.S.C.S. Class	Symbol	Sample Type	% Passing No. 200 Sieve	Dry Density (pcf)	Moisture Content (%)	Pocket Pen. (tsf)	Atterberg Limits	Remarks
TOPSOIL - SILTY SAND, (SM) brown, loose, moist ALLUVIUM - SILT WITH FINE SAND, (ML) grayish brown, medium dense, dry to moist	0 5 10	SM ML	 	 	 	 	 	 	LL PI	Note: BGS = Below Ground Surface Moderate vegetation and organics encountered to approximately 6 inches BGS.

Test Pit Terminated at 10.5 Feet.

Test pit loosely backfilled with site soil.

Client: Richland School District	Test Pit Number: TP-6
Project: PU17243	Date Excavated: 11-09-2017
Backhoe: DEERE 35D	Bucket Width: 24"
Depth to Groundwater: N.E.	Logged By: TJW



EXPLORATORY TEST PIT LOG

GPI TEST PIT - STRATA.GDT - 11/27/17 11:30 - \\STRPULS1\MAIN\ENGINEERING\GINT FILES\PU17243 BETHEL LOGS.GPJ

USCS Description	Depth (ft)	U.S.C.S. Class	Symbol	Sample Type	% Passing No. 200 Sieve	Dry Density (pcf)	Moisture Content (%)	Pocket Pen. (tsf)	Atterberg Limits	Remarks
									LL PI	Note: BGS = Below Ground Surface
TOPSOIL - SILTY SAND, (SM) brown, loose, moist	0	SM	●●●●●							Moderate vegetation and organics encountered to approximately 6 inches BGS.
UNCONTROLLED FILL - MIXED SILT AND SAND, (ML-SM) gray brown, loose to medium dense, dry to moist		ML-SM	●●●●●							
ALLUVIUM - SILT WITH FINE SAND, (ML) grayish brown, loose to medium dense, dry to moist	5	ML	●●●●●							
ALLUVIUM - SILTY FINE SAND, (SM) brown, medium dense, moist		SM	●●●●●							
Test Pit Terminated at 9.5 Feet.										Test pit loosely backfilled with site soil.

Client: Richland School District	Test Pit Number: TP-7		EXPLORATORY TEST PIT LOG
Project: PU17243	Date Excavated: 11-09-2017		
Backhoe: DEERE 35D	Bucket Width: 24"		
Depth to Groundwater: N.E.	Logged By: TJW		
			Sheet 1 Of 1

GPI TEST PIT - STRATA.GDT - 11/27/17 11:30 - \\STRPULS\\MAIN\\ENGINEERING\\GINT FILES\\PU17243 BETHEL LOGS.GPJ

USCS Description	Depth (ft)	U.S.C.S. Class	Symbol	Sample Type	% Passing No. 200 Sieve	Dry Density (pcf)	Moisture Content (%)	Pocket Pen. (tsf)	Atterberg Limits	Remarks
									LL PI	Note: BGS = Below Ground Surface
TOPSOIL - SILTY SAND, (SM) brown, loose, moist	0	SM								Trace vegetation and organics encountered to approximately 6 inches BGS.
ALLUVIUM - SILT WITH FINE SAND, (ML) grayish brown, medium dense, dry to moist		ML								
ALLUVIUM - SILTY FINE SAND, (SM) brown, medium dense, moist	5	SM								
Test Pit Terminated at 8.0 Feet.										Test pit loosely backfilled with site soil.
Client: Richland School District Test Pit Number: TP-8 Project: PU17243 Date Excavated: 11-09-2017 Backhoe: DEERE 35D Bucket Width: 24" Depth to Groundwater: N.E. Logged By: TJW										 EXPLORATORY TEST PIT LOG Sheet 1 Of 1

Project No.: PU17243A
 Project Name: Bethel Church Property
 Client: Richland School District

Report Date: 11/27/2017

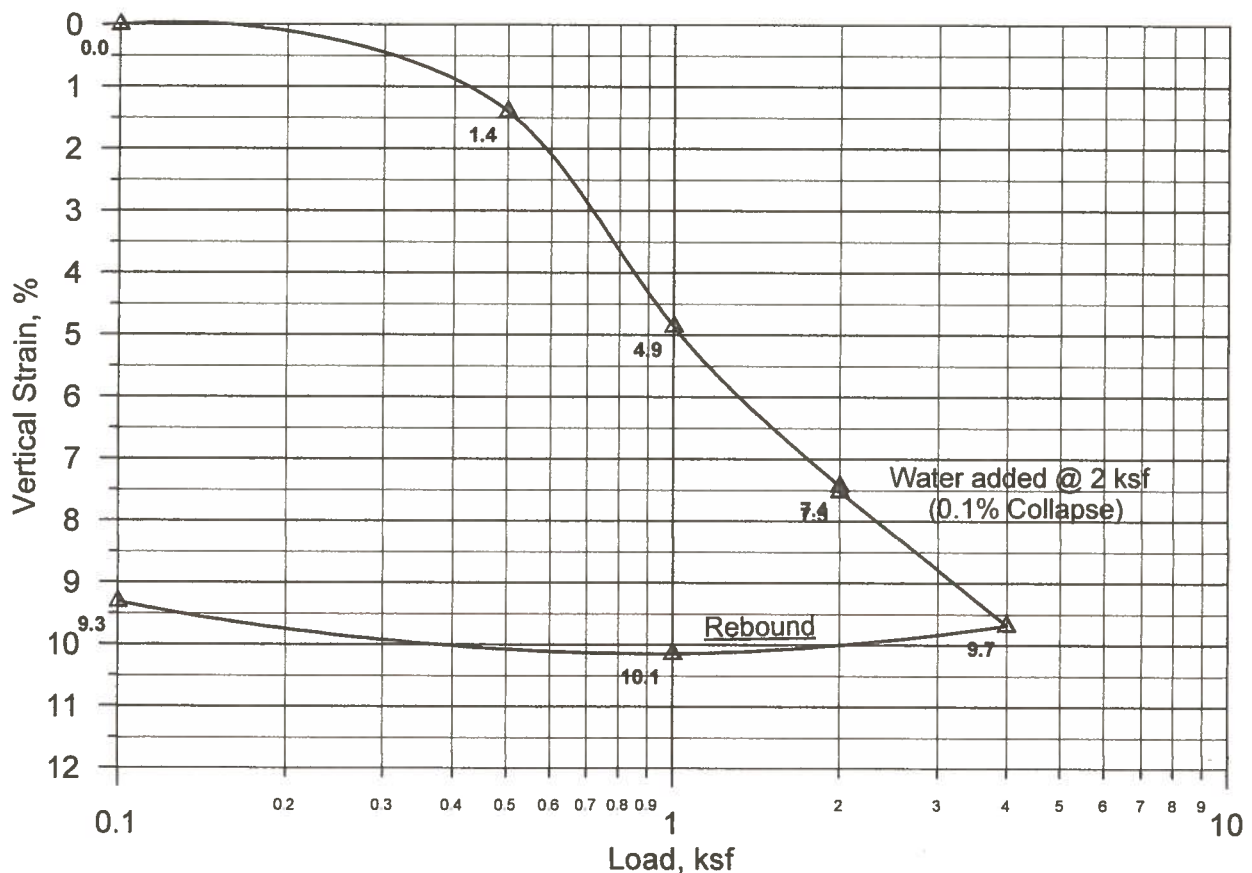
Test Results Summary													
Test Pit (TP) Boring (B)	Depth (feet)	Lab Number	Description (U.S.C.S. Classification)	In situ Moisture, %	In situ Density, pcf	Max Dry Density, pcf	Optimum Moisture, %	Atterberg Limits	#200 Sieve Passing, %	CBR	Resistivity Ohms-cm	pH	Sulfate ppm
B-1	2.0-4.0	PUL17-0332A	Silt with Fine Sand (ML)	-	-	-	-	-	83	-	-	-	-
B-2	2.0-4.0	PUL17-0333B	Silt with Fine Sand (ML)	-	-	-	-	-	87	-	-	-	-
B-2	5.0-6.5	PUL17-0332E	Silt with Fine Sand (ML)	11.1	-	-	-	-	-	-	-	-	-
B-2	10.0-11.5	PUL17-0332H	Silt with Fine Sand (ML)	14.7	-	-	-	-	-	-	-	-	-
B-3	5.0-6.0	PUL17-0334	Silt with Fine Sand (ML)	5.1	80.9	-	-	Non-plastic	-	-	-	-	-
B-3	10.0-11.5	PUL17-0332F	Silty Fine Sand (SM)	9.6	-	-	-	-	-	-	-	-	-
B-3	20.0-21.5	PUL17-0332G	Silty Coarse Sand with Trace Gravel (SM)	22.4	-	-	-	-	-	-	-	-	-
B-3	25.0-26.5	PUL17-0332J	Silty Fine Sand (SM)	23.4	-	-	-	-	-	-	-	-	-
B-4	2.0-4.0	PUL17-0332B	Silty Fine Sand (SM)	-	-	110.0	14.5	Non-plastic	33	7.2	-	-	-
B-5	5.5-6.0	PUL17-0332C	Silt with Fine Sand (ML)	2.9	84.3	-	-	-	-	-	-	-	-
B-5	6.5-8.0	PUL17-0332I	Silt with Fine Sand (ML)	5.7	-	-	-	-	-	-	-	-	-
TP-5	2.0-4.0	PUL17-0332D	Silty Fine Sand (SM)	-	-	-	-	-	29	-	909	8.1	72

Reviewed by: 

CONSOLIDATION TEST RESULTS

ASTM D 2435 (Method A)

Project: Bethel Church Property
Client: Richland School District
File Name: PU17243A
Lab Number: PUL17-0334
Sample Identification: B-3 @ 5.0-6.0 Feet BGS
Sample Classification: Silt with Fine Sand (ML)
Sample: In-Situ Tube (Condition: Good)
Date Tested: 11/13/17 By: JBM
Sample Dry Unit Weight: 80.9 pcf
In-Situ Moisture Content: 5.1%
Atterberg Limits: Non-plastic



Reviewed By: _____



GeoProfessional
Innovation.

CALIFORNIA BEARING RATIO ASTM D 1883

Project: Bethel Church Property
Client: Richland School District
Sample Identification: B-4 @ 2.0-4.0 feet BGS
Sample Classification: Silty Fine Sand (SM)

Project Number: PU17243A
Lab Number: PUL17-0332B
Date Tested: 11/19/17 By: MCM

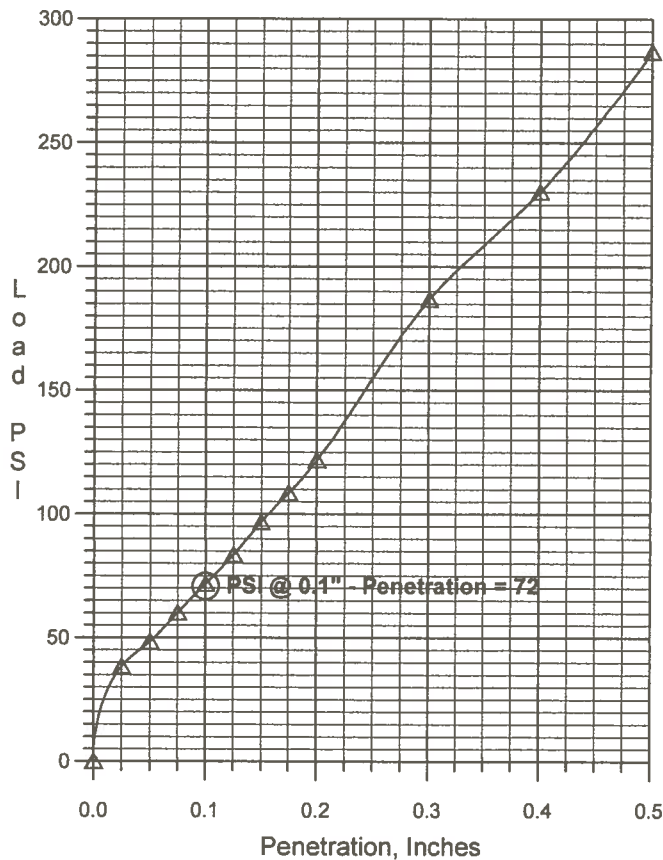
SOIL CONSTANTS

CBR = 7.2
Fines Classification: ML
Test Dry Density = 99.0 pcf
Test Specimen Remolded @ 14.7% Moisture
Remold Percentage of Proctor = 90%
Test Performed @ 21.9% Moisture (Top 1")
Percent Collapse = 0.4
Soak Time = 100 hrs
Surcharge = 50 psf

GRADING ANALYSIS

SCREEN SIZE	% PASSING
No. 200.....	33

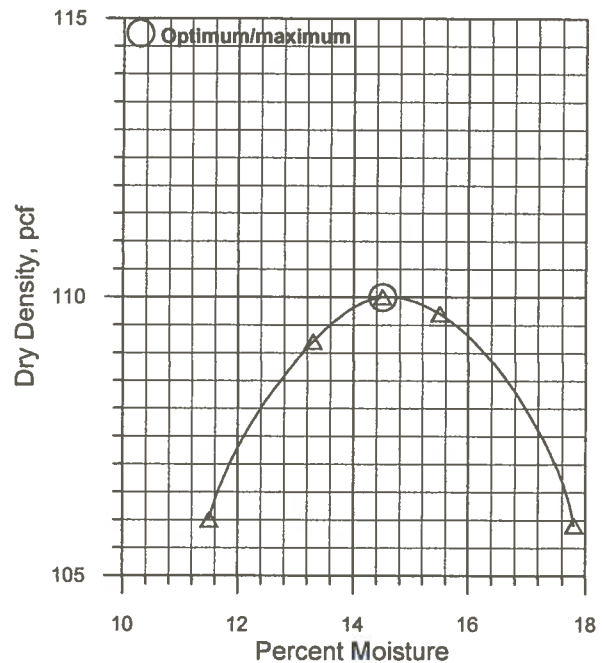
CBR CURVE



MOISTURE-DENSITY CURVE

ASTM D-1557 Method A

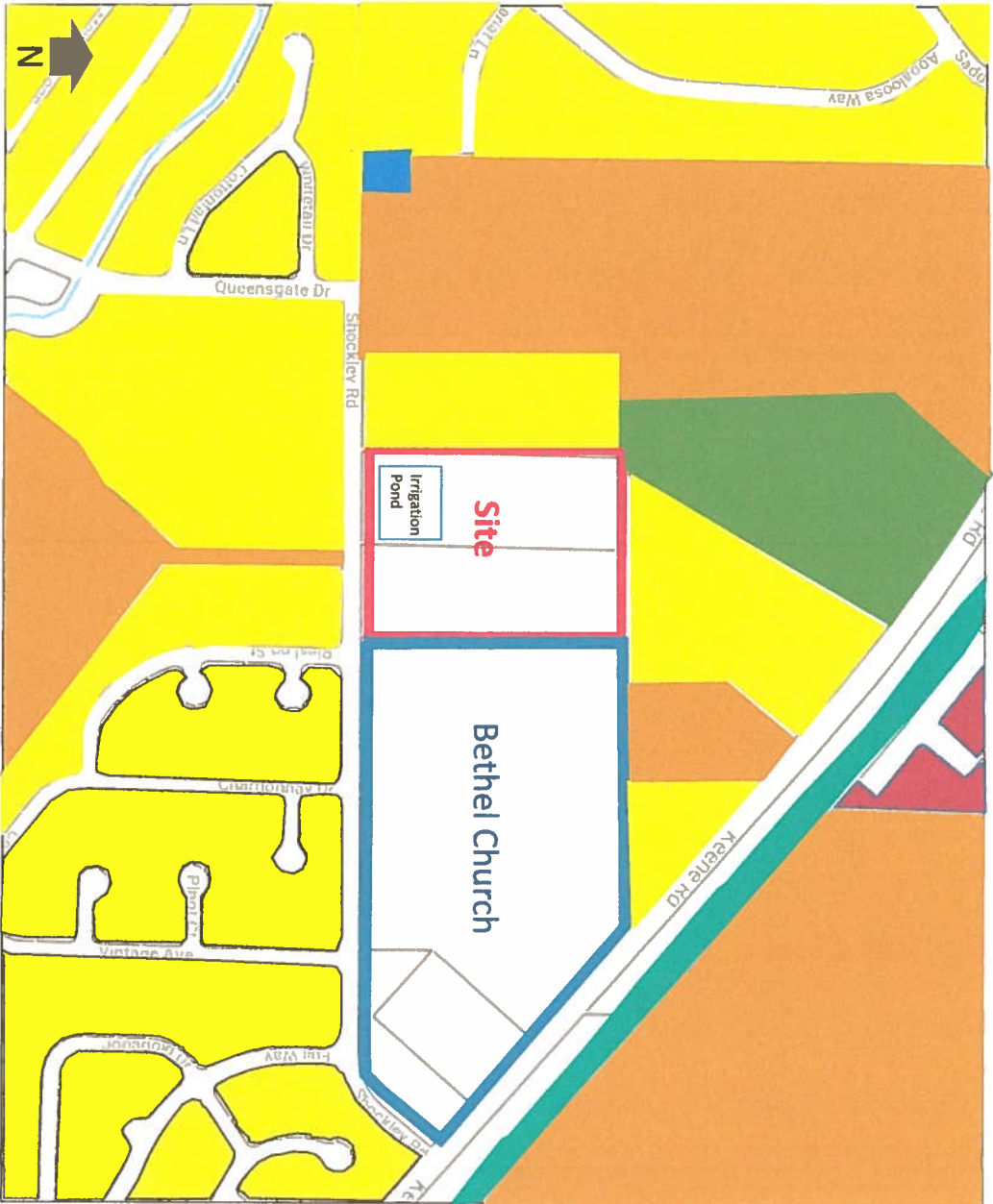
Maximum Dry Density, pcf: 110.0
Optimum Moisture Content, %: 14.5



Reviewed by: 

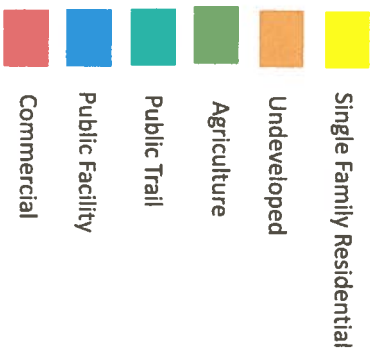


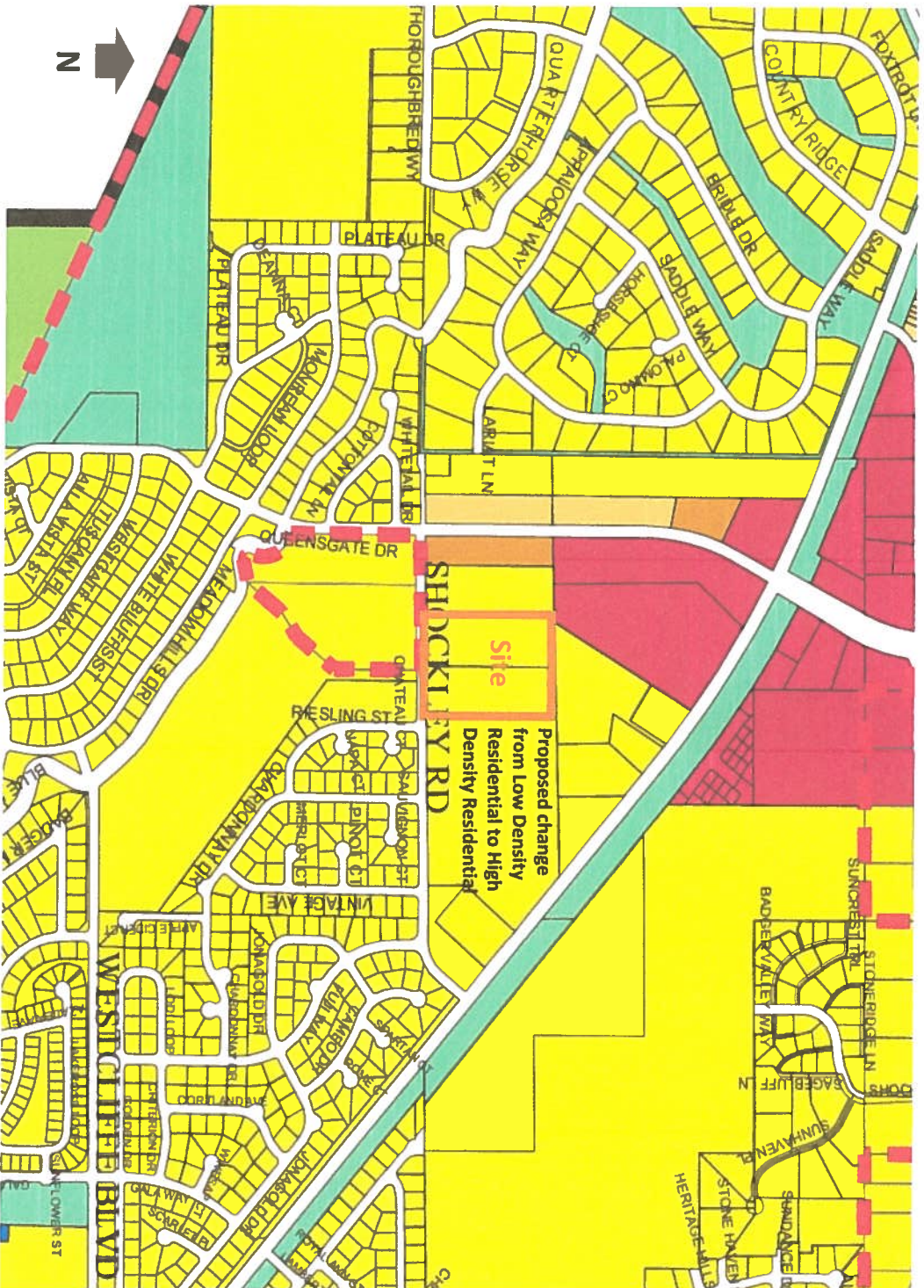
ATTACHMENT J
VICINITY MAP



ATTACHMENT K

EXISTING LAND USE

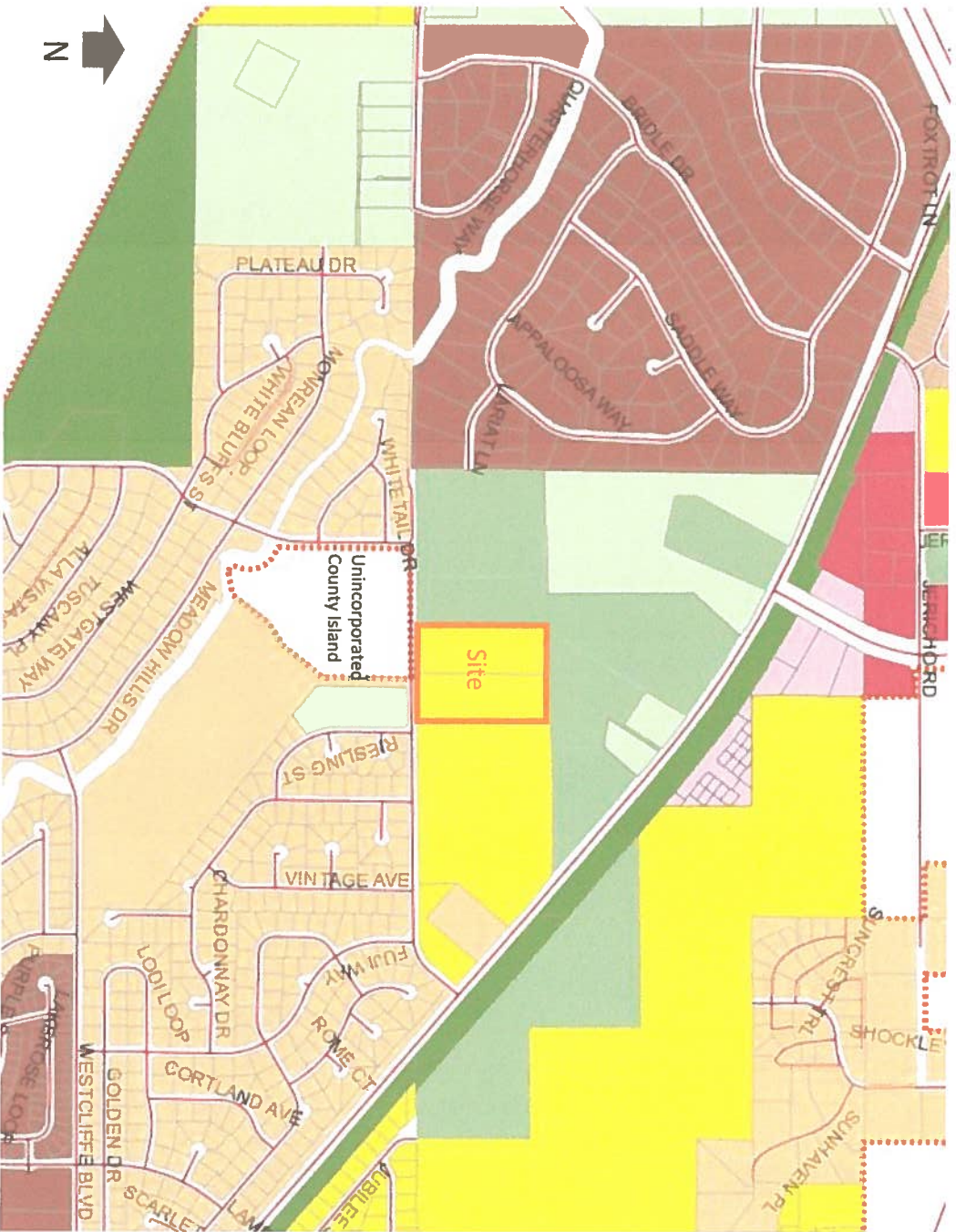




ATTACHMENT L

COMPREHENSIVE PLAN DESIGNATIONS

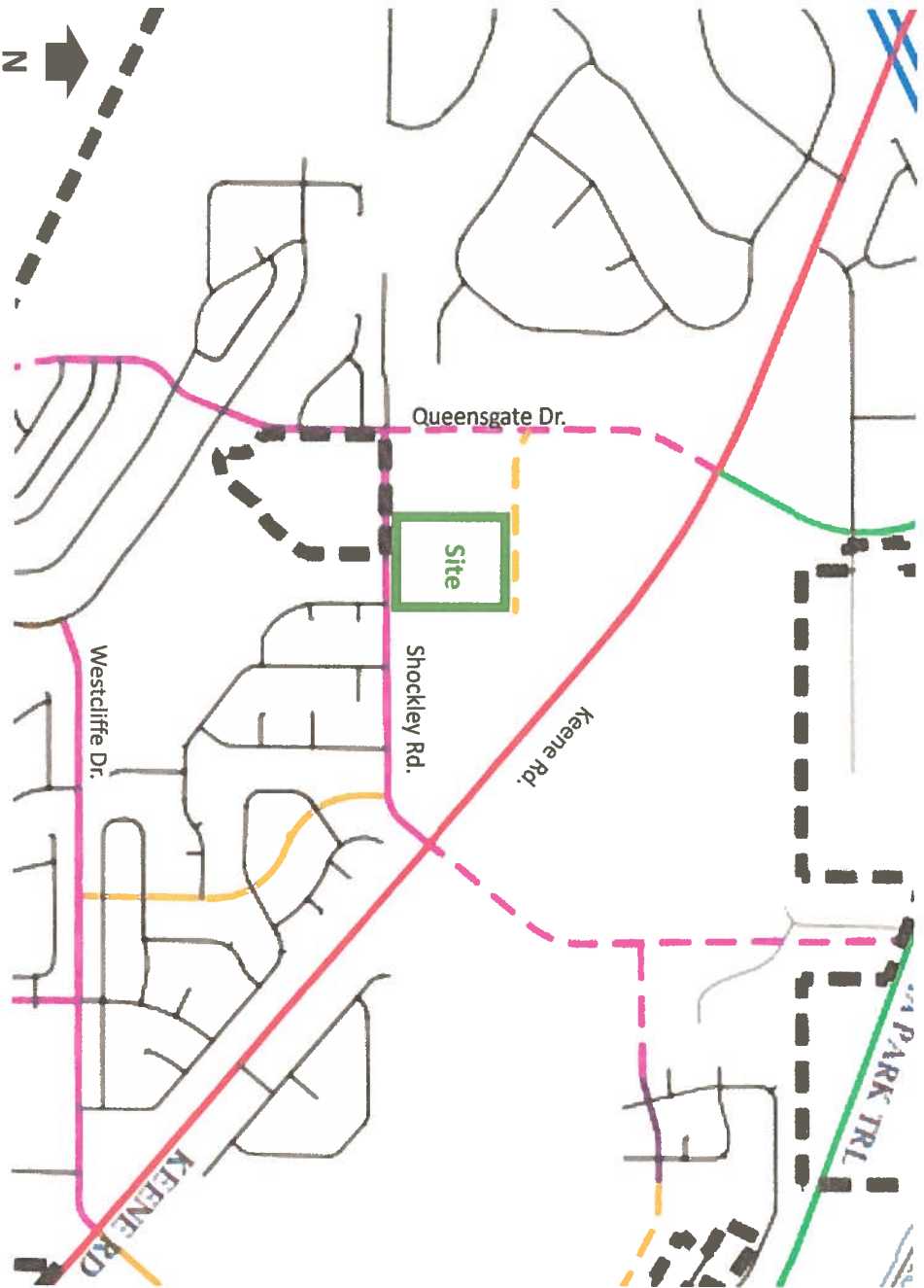
- LDR – Low Density Residential
- MDR – Medium Density Residential
- RES-OFF Multifamily Residential
- Office
- COM - Commercial
- DOS – Developed Open Space



ATTACHMENT M

ZONING

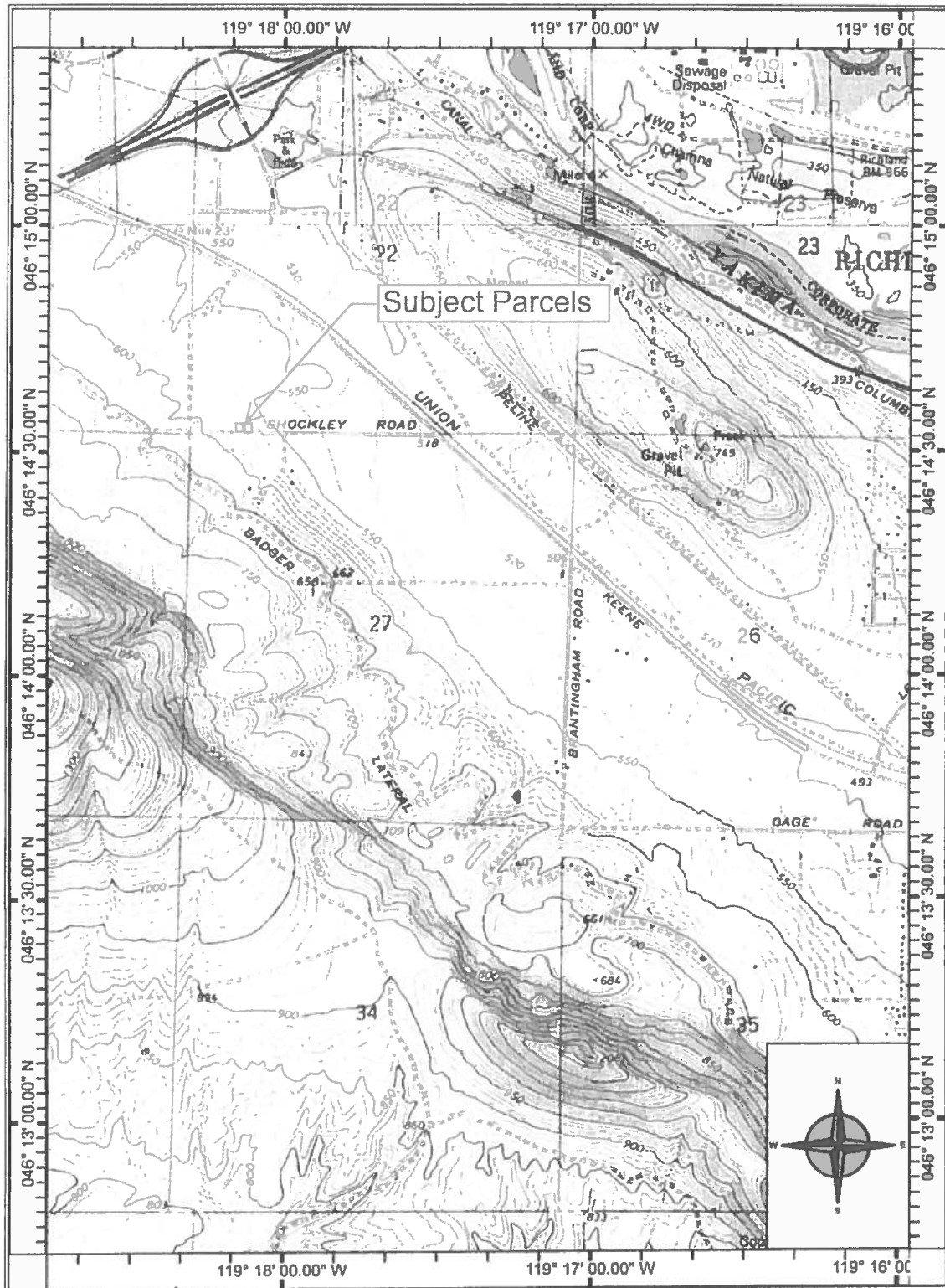
	R1-12 Single Family Residential
	R1-10 Single Family Residential
	PUD – Planned Unit Development
	SAG – Suburban Agriculture
	AG - Agricultural
	PPF – Parks & Public Facilities
	C-1 Neighborhood Retail Business
	C-2 Retail Business
	C-3 General Business



ATTACHMENT N

Street Classification

- Interstate
- Principal Arterial
- Minor Arterial
- Arterial Collector
- - - Proposed Arterial Collector
- Neighborhood Collector
- - - Proposed Neighborhood Collector



HORIZONTAL DATUM: NAD27

MAP: BADGER MT



0 1000 2000 3000 4000
FEET

1 inch = 2,000 ft.

CONTOUR INTERVAL: 10 Feet

VICINITY MAP

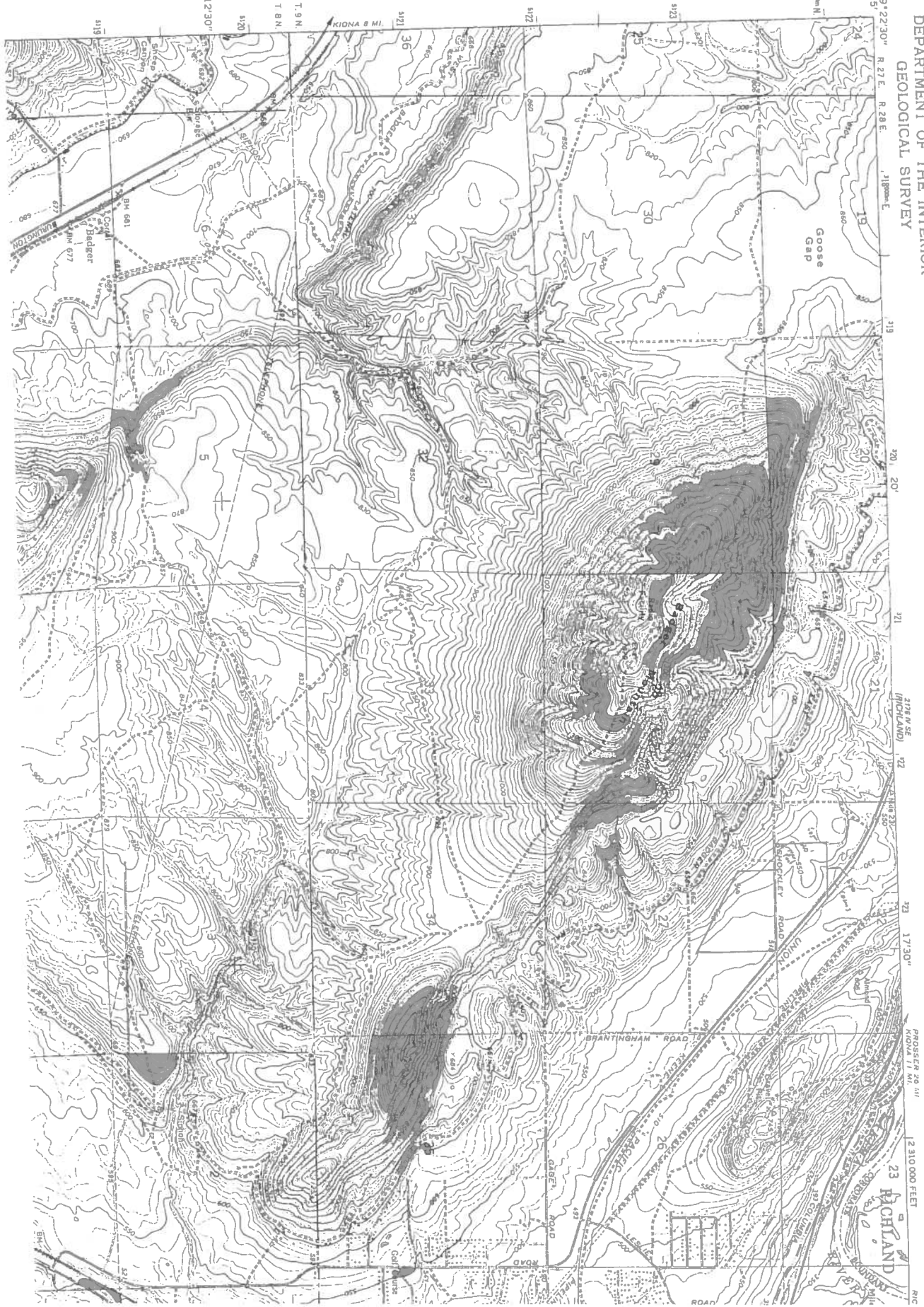
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UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

46°15' 119°22'30" R. 27 E. R. 28 E.
1827 1828 1829 1830 1831 1832 1833 1834 1835 1836 1837 1838 1839 1840 1841 1842 1843 1844 1845 1846 1847 1848 1849 1850 1851 1852 1853 1854 1855 1856 1857 1858 1859 1860 1861 1862 1863 1864 1865 1866 1867 1868 1869 1870 1871 1872 1873 1874 1875 1876 1877 1878 1879 1880 1881 1882 1883 1884 1885 1886 1887 1888 1889 1890 1891 1892 1893 1894 1895 1896 1897 1898 1899 1900 1901 1902 1903 1904 1905 1906 1907 1908 1909 1910 1911 1912 1913 1914 1915 1916 1917 1918 1919 1920 1921 1922 1923 1924 1925 1926 1927 1928 1929 1930 1931 1932 1933 1934 1935 1936 1937 1938 1939 1940 1941 1942 1943 1944 1945 1946 1947 1948 1949 1950 1951 1952 1953 1954 1955 1956 1957 1958 1959 1960 1961 1962 1963 1964 1965 1966 1967 1968 1969 1970 1971 1972 1973 1974 1975 1976 1977 1978 1979 1980 1981 1982 1983 1984 1985 1986 1987 1988 1989 1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000

Scale 1" = 2,000' 7 1/2 MINUTE SERIES

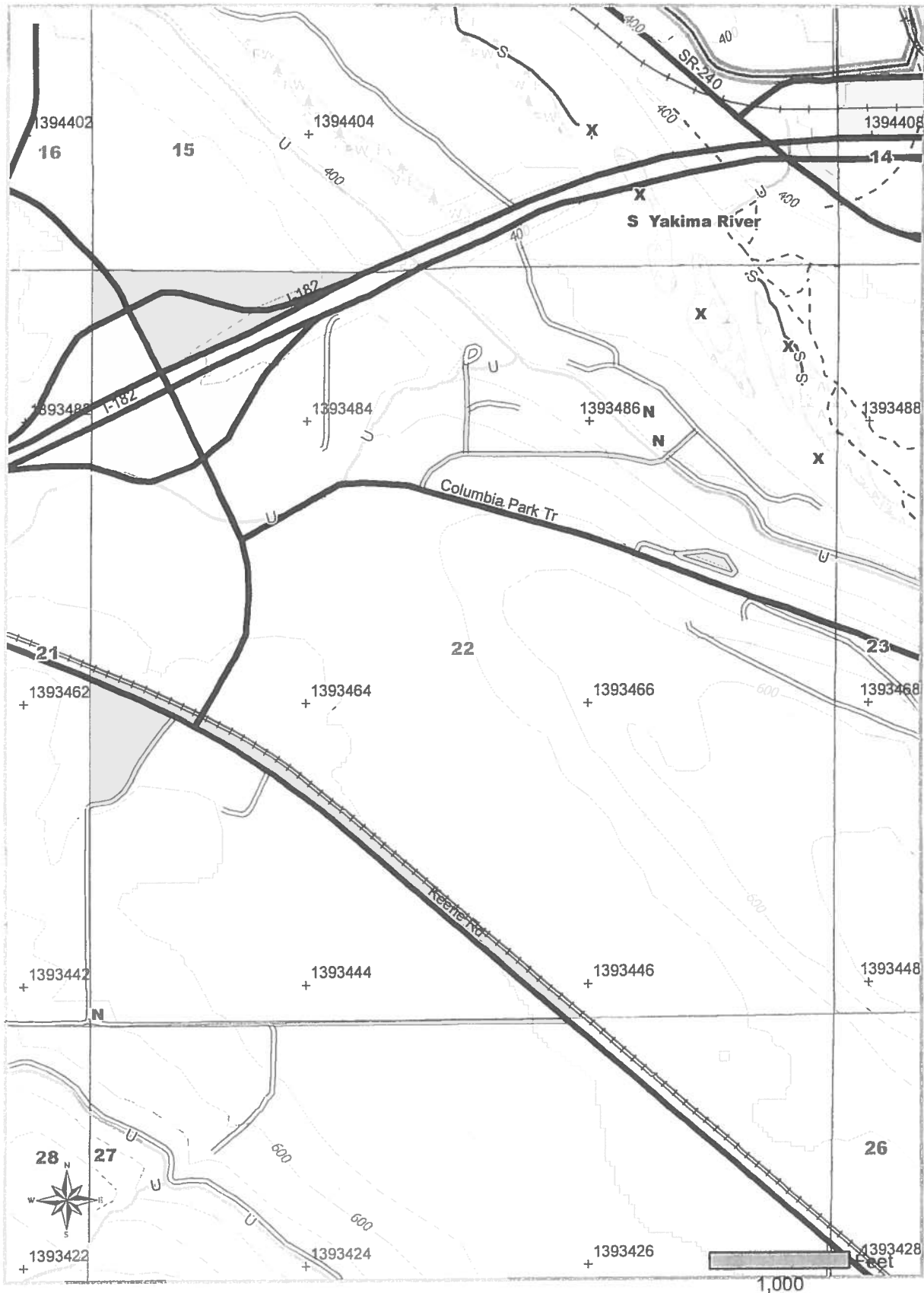
DAVULLEY MOUNTAIN, WASH. STATE
WASHINGTON-B
7.5 MINUTE SERIES
NEA BADER MTH. 15



FOREST PRACTICE WATER TYPE MAP

TOWNSHIP 09 NORTH HALF 0, RANGE 28 EAST (W.M.) HALF 0, SECTION 22

Application #: _____





CITY OF RICHLAND
Determination of Non-Significance

Description of Proposal: Preliminary Plat of Fairhaven Townhomes

Proponent: Green Plan Construction, LLC

Location of Proposal: The north side of Shockley Road, approximately 1,700 feet west of the intersection of Shockley Road and Keene Road; immediately north of Jolianna Drive, tax parcel #'s 1-22983000006003 & 1-22983000006002

Lead Agency: City of Richland

The lead agency for this proposal has determined that it does not have a probable significant adverse impact on the environment. An environmental impact statement (EIS) is not required under RCW 43.21C.030(2)(c). This decision was made after review of a completed environmental checklist and other information on file with the lead agency. This information is available to the public on request.

() There is no comment for the DNS.

() This DNS is issued under WAC 197-11-340(2); the lead agency will not act on this proposal for fourteen days from the date of issuance.

(X) This DNS is issued after using the optional DNS process in WAC 197-11-355. There is no further comment period on the DNS.

Responsible Official: Mike Stevens

Position/Title: Planning Manager

Address: 625 Swift Blvd., MS #35, Richland, WA 99352

Date: June 4, 2021

Signature 

Exhibit 7



2015 South Ely Street
Kennewick, WA 99337
Customer Service 509-586-9111
Business 509-586-6012
FAX 509-586-7663
www.kid.org

May 26, 2021

Shane O'Neill
City of Richland – Development Services
625 Swift Blvd. MS-35
Richland, WA 99352

Subject: Review Comments Pre Plat S2021-103

Dear Mr. O'Neill:

This letter provides Kennewick Irrigation District (KID) review comments on Pre Plat No. S2021-103 submitted by Green Plan Construction LLC on behalf of Bethel Church, 600 Shockley Rd., Richland, WA ("Applicant"¹). **These comments are preliminary and subject to KID Board Action on June 1st, 2021. A final comment letter will be provided to the City on June 2nd, 2021.** The properties are generally located at the intersection of Shockley Rd and Jolianna Dr. and includes the following parcels:

- 1-2298-300-0006-003 (**4.82** irrigable acres)
- 1-2298-300-0006-002 (**4.98** irrigable acres)

The properties identified on the proposed preliminary plat are located within the KID boundaries. The properties within this preliminary plat are classified as irrigable land and consist of 9.80 irrigable acres. Accordingly, KID provides the following comments to be included as required conditions of approval by the legislative authority under RCW 58.17.310(2):

- 1) The plat shall include the following irrigation easements consistent with KID requirements:
 - a. Dedicate to KID an irrigation easement 10 feet in width via a recorded deed to match irrigation system components, centered on an irrigation pipe line.
 - b. On all lots within the plat, dedicate to KID an irrigation easement 10 feet in width, or five (5) feet in width if adjacent to a utility easement, located along the road frontage of each lot. An irrigation easement may be included within the 'sidewalk and utility' easement if one is proposed, denoting the easement as a "Sidewalk, Utility, and Irrigation Easement."

¹ Reference to the "Applicant" throughout this comment letter shall refer to the property owner and/or developer of the proposed plat.

- 2) The Applicant is required to install an irrigation system that conforms to the most recent edition of the KID Standard Specifications pursuant to Resolution 86-15-A. This includes providing distribution pipelines adequate to provide individual pressurized irrigation services to each lot within the preliminary plat. This system will be dedicated to the KID upon completion, at the time of final plat.
- a. KID Standard Specifications require a storage pond facility be constructed and sized appropriately for this plat application. Please dedicate this storage facility as a tract of land deeded to the KID. In addition, the KID Standard Specifications require a pump station facility be constructed and sized appropriately for this plat application.
 - b. **As an alternative** to a pond, pump station, and other “on site” construction requirements per KID Standards Specifications, the Applicant and KID may mutually agree that it is in each of their best interests that other “off site” improvements may be made to allow for the delivery of pressurized irrigation water to the plat. This agreement is typically referred to as a Voluntary Mitigation Agreement (VMA). The other improvements would be proportionate and equal to the “on site” requirements and may include:
 - i. Contributions made towards a regional pump facility.
 - ii. The installation of pipelines off site.
 - iii. Upsizing of pipelines adjacent or within the subdivision. **KID plans to upsize the pipeline adjacent to Shockley Road in coordination with the project.**
 - iv. There is an existing KID Irrigation pond and pump station located within the pre plat boundaries. **Decommissioning of this facility will be contingent upon approval of a VMA. KID estimates the decommissioning and the other off-site improvements necessary to extend irrigation service from a neighboring system at \$116,051.04. This number is subject to change depending on timing of the VMA.**
- 3) Design of the required irrigation system must be approved by KID prior to installation. The Applicant is required to submit an irrigation plan designed by a professional engineer for review and approval by the KID. The plan may be hand drawn or computer drafted. The plan shall be accurate and to a scale not to exceed one (1) inch = 50 feet. This is a vital step of the approval process. In addition to compliance with Condition 2 above, the Plan must ensure all reasonable measures are taken to protect any easements, right-of-ways, and facilities. Please contact me at 586-6012 for more information regarding this irrigation plan.
- a. **For single-family attached units (town homes or townhouses), service risers shall be installed no further than 300 feet apart, with a service riser to each side of a street right-of-way or access easement.**
 - i. **Based on the information provided, irrigation distribution pipelines will need to be installed adjacent to the project along Shockley Road with a**

looped pipeline within the project itself. KID estimates approximately 12 service riser connections will be needed to service the project but actual service riser locations will be dependent upon town home layout.

- b. Please note, there are existing irrigation pipelines within the project likely to be impacted due to grading and building/street layouts.**
 - i. Applicant is responsible for the relocations and reinstallation of these pipelines per KID Standards and they must be located within a designated irrigation easement if located outside of the street ROW.**
- 4) Completion of all the facilities, consistent with irrigation plan approved by KID, is required prior to KID signature on the Final Plat.
- a. In the event any KID facilities are damaged during construction, the damage must be fully repaired to KID's then-existing standards.
 - b. For each phase of the plat, KID review and approval of construction and grading plans is required to allow KID to assure all reasonable measures to protect any easements and right-of-ways. Such review and approval will be coordinated as part of City review and the Final Plat approval process.
 - c. The KID must inspect any new irrigation system installations or modifications. The Applicant shall contact the KID to arrange an inspection at least 48 hours in advance of the desired inspection date.
 - d. As an alternative to immediate construction prior to approval of the Final Plat, the Applicant may choose to delay installation of the irrigation system by entering into a facilities installation agreement with the KID. The Applicant must still provide the KID with an irrigation system design that conforms to the most recent addition of the KID standard specifications. This irrigation system may be bonded and delayed up to five years. The facility installation agreement charge is \$350.00. The Applicant must establish an approved bonding mechanism with the KID in an amount approved by KID.

In addition, pursuant to RCW 58.17.310 (1), KID would like to inform the City of the following information regarding the proposed preliminary plat upon the structural integrity, including lateral support, of KID's facilities, other risk exposures, and the safety of the public and irrigation district, and conditions of approval that KID deems to be necessary as a result:

- 5) For each phase of the Project, KID/USBR review and approval of grading and construction plans is required to allow KID to assure all reasonable measures to protect any easements and ROWs. Such review and approval will be coordinated as part of the City's review and Final Plat approval process.
- 6) The Applicant shall include the potential failure of KID system components in its public offering statement for the plat pursuant to RCW 58.19.055(1)(r), which requires a public offering statement to include "[a] list of any physical hazards known to the developer which particularly affect the development or the immediate vicinity in which the developer is located and which are not readily ascertainable by the purchaser."

- 7) The Applicant shall post signs in appropriate areas with KID's easements and ROW's identifying KID's facilities (with locations and design approved by KID).
- 8) The Applicant shall provide fencing for the protection of KID facilities, which shall include but not be limited to adjacent KID/USBR ROW, with fencing locations and design approved by KID.

Finally, KID requests the following additional conditions of final plat approval:

- 9) Prior to approval of each phase, the current year's assessment must be paid. If the final plat is submitted for review after May 31st of a given year or submitted for review prior to May 31st but not submitted for final approval prior to June 15th, the next year's estimated assessment (125% of the current year's assessment) must be paid prior to plat approval.
- 10) Prior to approval of the first phase, the USBR construction loan for **all parcels** owned by the property owner within the boundaries of the KID must be paid and all other USBR requirements associated with this payout must be completed.
- 11) The Review and Inspection fees in place at the time of each review request must be paid. At the time of application the review fees are as follows:
 - a. A Preliminary Plat review fee of **\$825.00** which must be paid prior to scheduling for final plat approval at a KID Board meeting for the first phase.
 - b. For each Phase an inspection fee **\$350** for the first 20 lots/tracts plus \$25 per lot/tract after 20 lots/tracts.
 - c. Final Plat review fee for each phase of **\$225.00**.
- 12) Per KID Policy 4.17, "Irrigable Land Recalibration Principles," as land within the plat is subdivided or developed; KID will remove the irrigation water allocation from the impermeable surfaces, such as streets, from the plats.
- 13) In order to receive KID irrigation water delivery, a water master (or point of contact) for the subdivision must be appointed. This water master can be appointed by the Homeowners Association (or similar organization) officers, or must be elected from among the property owners within the boundary of this proposed subdivision. If no HOA (or similar organization) is organized, than an election method similar to the attached document is required.
- 14) Prior to approval of each phase, an electronic file (AutoCAD 2004 format) and hard copy (6-mil mylar, sealed by a professional engineer) of construction as-builts must be provided to KID.

- 15) All subdivisions of land are required to be approved by the KID Board of Directors during a KID Board Meeting. KID Board Meetings are regularly scheduled on the first and third Tuesdays of each month. All conditions must be completed prior to submittal to KID for final approval. The submittal for final approval must be received by KID a minimum of two weeks prior to a regularly scheduled Board Meeting in order to be considered at that meeting.

KID reserves the following rights regarding future review of the plat:

- 16) KID reserves the right to provide review comments under RCW 58.17.330(1) and RCW 58.17.330(2) in response to future design submittals by the Applicant prior to final plat approval. The scope of these reviews will be limited to Phases that are adjacent to the District's Rights of Way. KID review of construction plans will be consistent with the City of Kennewick's plan review timelines.
- 17) KID reserves the right to review and comment on the Applicant's plat line revisions for potential additional revisions to protect KID system components for Phases that are adjacent to KID's easements or ROWs.
- 18) KID reserves the right to review and comment on the Applicant's covenants, conditions, and restrictions to evaluate whether they should include any terms regarding protection of KID system components after construction and fencing requirements.
- 19) KID reserves the right to submit additional comments during the City's review process under the State Environmental Policy Act (SEPA).

Please provide notice to KID of any Public meeting or hearing where this project will be an agenda item. If you have any questions regarding these comments, please contact me at the address/phone number listed below.

Sincerely,



Jason McShane, P.E.
Engineering/Operations Manager

Sample Watermaster Election Process

That the Water Users are deemed to agree as a condition of water delivery as follows::

- i. The LID participants will elect a Watermaster from among themselves, as follows:
 - a. Election of First Watermaster. The first Watermaster shall be elected prior to April 1, 2011, and shall be elected as described in paragraph d. below.
 - b. Resignation of Watermaster. If the Watermaster resigns, the parties shall meet at a place and time designated by the resigning Watermaster in a written notice and elect a new Watermaster, or if the Watermaster does not designate a time and a place for such a meeting, the parties shall meet at a time and a place first designated in writing by two of the parties hereto to elect a new Watermaster.
 - c. Death or Incapacity of Watermaster. If the Watermaster dies or becomes incapacitated, the parties shall meet at a time and a place first designated in writing by two of the parties hereto to elect a new Watermaster.
 - d. Elections and Replacement of Watermaster. The Watermaster shall be assigned by the elected members of the Royal Ann Estates Homeowner Association Board of Directors. If the Homeowner's Association defaults or stops functioning, the Watermaster shall be elected by and may be replaced by a sixty percent (60%) majority of the Water Users participating in the LID at an election called for by a majority of the properties that are subject hereto. Each property shall have one (1) vote. If more than one person owns a property, the owners of the property shall designate in writing the person who shall have the right to vote for that property. If the owners of the property cannot agree on the person who shall vote for the property, that property shall have no vote in the election. The owners' properties which are calling for an election or replacement of a new Watermaster shall give or cause the other parties to be given a written notice stating the place and time of the election. Any notice required under this paragraph, which notice shall be mailed by U.S. Mail as certified mail to the common address identified above for the property not more than thirty days and not less than ten days

prior to the election. Any election held hereunder shall be held in Benton County, Washington, between 6:00 p.m. and 9:00 p.m.

- ii. Powers and Duties of Watermaster. The Watermaster shall have the power and it shall be his or her duty to take all actions reasonably necessary to fulfill the purposes of this agreement, including but not limited to:
 - a. Provide a primary point of contact for KID to communicate system problems, outages, schedules, drought mitigation measures, etc.
 - b. Assist KID in providing the LID participants information regarding system problems, outages, water schedules, drought mitigation measures, etc.
- iii. Qualified Immunity of Watermaster from Liability. The Watermaster shall not be liable for any damages caused to the parcels or persons subject hereto so long as the Watermaster acts in good faith.
- iv. No water delivery unless a Watermaster is performing duties. If at any time a Watermaster no longer is performing his/her duties, as outlined above, for more than 30 days, KID will stop water delivery to the participants of the LID until a new Watermaster has been elected.
- v. Alternate Watermaster. An alternate Watermaster may be elected in the same manner as described above for the Watermaster. This alternate Watermaster can function as Watermaster for a limited time, not to exceed 60 days, in case of the elected Watermaster being unavailable.



Department of Energy

Bonneville Power Administration
2211 North Commercial Avenue
Pasco, WA 99301

TRANSMISSION SERVICES

May 17, 2021

In reply refer to: Preliminary Plat Review (S2021-103) Fairhaven
Located within a Portion of Section 15, Township 9 North, Range 28 East,
W.M., Benton County, Washington

Shane O'Neill
Senior Planner
City of Richland
625 Swift Boulevard, MS-35
Richland, WA 99352

Dear Shane:

Bonneville Power Administration (BPA) has had the opportunity to review Preliminary Plat Review (S2021-103) Fairhaven. The application is to divide 10 acres into 70 residential lots. The subject site is generally located on Shockley Road located in Richland, WA.

In researching our records, we have found that this proposal will not directly impact BPA facilities approximately .34 miles NE of the subject property. BPA does not have any objections to the approval of this request at this time.

Thank you for the opportunity to review this application. If you have any questions regarding this request or need additional information, please feel free to contact me. I can be reached at (509) 544-4747 or by email at jecottrell@bpa.gov.

Sincerely,

A handwritten signature in blue ink that reads "Joseph E. Cottrell II".

Joseph E. Cottrell II
BPA Field Realty Specialist



2015 South Ely Street
Kennewick, WA 99337
Customer Service 509-586-9111
Business 509-586-6012
FAX 509-586-7663
www.kid.org

June 11, 2021

Shane O'Neill
City of Richland – Development Services
625 Swift Blvd. MS-35
Richland, WA 99352

Subject: Review Comments Pre Plat S2021-103

Dear Mr. O'Neill:

This letter provides Kennewick Irrigation District (KID) review comments on Pre Plat No. S2021-103 submitted by Green Plan Construction LLC on behalf of Bethel Church, 600 Shockley Rd., Richland, WA ("Applicant"¹). The properties are generally located at the intersection of Shockley Rd and Jolianna Dr. and includes the following parcels:

- 1-2298-300-0006-003 (**4.82** irrigable acres)
- 1-2298-300-0006-002 (**4.98** irrigable acres)

The properties identified on the proposed preliminary plat are located within the KID boundaries. The properties within this preliminary plat are classified as irrigable land and consist of 9.80 irrigable acres. Accordingly, KID provides the following comments to be included as required conditions of approval by the legislative authority under RCW 58.17.310(2):

- 1) The plat shall include the following irrigation easements consistent with KID requirements:
 - a. Dedicate to KID an irrigation easement 10 feet in width via a recorded deed to match irrigation system components, centered on an irrigation pipe line.
 - b. On all lots within the plat, dedicate to KID an irrigation easement 10 feet in width, or five (5) feet in width if adjacent to a utility easement, located along the road frontage of each lot. An irrigation easement may be included within the 'sidewalk and utility' easement if one is proposed, denoting the easement as a "Sidewalk, Utility, and Irrigation Easement."

¹ Reference to the "Applicant" throughout this comment letter shall refer to the property owner and/or developer of the proposed plat.

- 2) The Applicant is required to install an irrigation system that conforms to the most recent edition of the KID Standard Specifications pursuant to Resolution 86-15-A. This includes providing distribution pipelines adequate to provide pressurized irrigation service to each lot within the preliminary plat. This system will be dedicated to the KID upon completion, at the time of final plat.
 - a. **For single-family attached units (town homes or townhouses), service risers shall be installed no further than 300 feet apart, with a service riser to each side of a street right-of-way or access easement.**
 - i. **Based on the information provided, irrigation distribution pipelines will need to be installed adjacent to the project along Shockley Road with a looped pipeline within the project itself. KID estimates approximately 12 service riser connections will be needed to service the project but actual service riser locations will be dependent upon town home layout.**
 - b. **Please note, there are existing irrigation pipelines within the project likely to be impacted due to grading and building/street layouts.**
 - i. **Applicant is responsible for the relocations and reinstallation of these pipelines per KID Standards and they must be located within a designated irrigation easement if located outside of the street ROW.**
 - c. **Upsizing of pipelines adjacent or within the subdivision. KID plans to upsize the pipeline to 16-inch adjacent to Shockley Road in coordination with the project. The increased costs due to this upsizing will be at the KID's option and expense.**
- 3) There is an existing KID Irrigation pond and pump station located within the pre plat boundaries. This pre-plat application proposal depicts the decommissioning and removal of KID's 159 Pond and Pump Station. This facility has historically provided irrigation service to this property and surrounding areas. KID is open to the decommissioning and removal of the pond provided adequate mitigation is agreed upon by KID and Applicant. **Decommissioning of this facility will be contingent upon approval of an agreed upon amount of mitigation. The decommissioning and removal of the facility will be \$95,580, a mutually agreed upon amount between KID and the Applicant.**
- 4) Design of the required irrigation system must be approved by KID prior to installation. The Applicant is required to submit an irrigation plan designed by a professional engineer for review and approval by the KID. The plan may be hand drawn or computer drafted. The plan shall be accurate and to a scale not to exceed one (1) inch = 50 feet. This is a vital step of the approval process. In addition to compliance with Condition 2 above, the Plan must ensure all reasonable measures are taken to protect any easements, right-of-ways, and facilities. Please contact me at 586-6012 for more information regarding this irrigation plan.
- 5) Completion of all the facilities, consistent with irrigation plan approved by KID, is required prior to KID signature on the Final Plat.

- a. In the event any KID facilities are damaged during construction, the damage must be fully repaired to KID's then-existing standards.
- b. For each phase of the plat, KID review and approval of construction and grading plans is required to allow KID to assure all reasonable measures to protect any easements and right-of-ways. Such review and approval will be coordinated as part of City review and the Final Plat approval process.
- c. The KID must inspect any new irrigation system installations or modifications. The Applicant shall contact the KID to arrange an inspection at least 48 hours in advance of the desired inspection date.
- d. As an alternative to immediate construction prior to approval of the Final Plat, the Applicant may choose to delay installation of the irrigation system by entering into a facilities installation agreement with the KID. The Applicant must still provide the KID with an irrigation system design that conforms to the most recent addition of the KID standard specifications. This irrigation system may be bonded and delayed up to five years. The facility installation agreement charge is \$350.00. The Applicant must establish an approved bonding mechanism with the KID in an amount approved by KID.

In addition, pursuant to RCW 58.17.310 (1), KID would like to inform the City of the following information regarding the proposed preliminary plat upon the structural integrity, including lateral support, of KID's facilities, other risk exposures, and the safety of the public and irrigation district, and conditions of approval that KID deems to be necessary as a result:

- 6) For each phase of the Project, KID/USBR review and approval of grading and construction plans is required to allow KID to assure all reasonable measures to protect any easements and ROWs. Such review and approval will be coordinated as part of the City's review and Final Plat approval process.
- 7) The Applicant shall include the potential failure of KID system components in its public offering statement for the plat pursuant to RCW 58.19.055(1)(r), which requires a public offering statement to include "[a] list of any physical hazards known to the developer which particularly affect the development or the immediate vicinity in which the developer is located and which are not readily ascertainable by the purchaser."
- 8) The Applicant shall post signs in appropriate areas with KID's easements and ROW's identifying KID's facilities (with locations and design approved by KID).
- 9) The Applicant shall provide fencing for the protection of KID facilities, which shall include but not be limited to adjacent KID/USBR ROW, with fencing locations and design approved by KID.

Finally, KID requests the following additional conditions of final plat approval:

- 10) Prior to approval of each phase, the current year's assessment must be paid. If the final plat is submitted for review after May 31st of a given year or submitted for review prior to May 31st but not submitted for final approval prior to June 15th, the next year's estimated assessment (125% of the current year's assessment) must be paid prior to plat approval.
- 11) Prior to approval of the first phase, the USBR construction loan for **all parcels** owned by the property owner within the boundaries of the KID must be paid and all other USBR requirements associated with this payout must be completed.
- 12) The Review and Inspection fees in place at the time of each review request must be paid. At the time of application the review fees are as follows:
 - a. A Preliminary Plat review fee of **\$825.00** which must be paid prior to scheduling for final plat approval at a KID Board meeting for the first phase.
 - b. For each Phase an inspection fee **\$350** for the first 20 lots/tracts plus \$25 per lot/tract after 20 lots/tracts.
 - c. Final Plat review fee for each phase of **\$225.00**.
- 13) Per KID Policy 4.17, "Irrigable Land Recalibration Principles," as land within the plat is subdivided or developed; KID will remove the irrigation water allocation from the impermeable surfaces, such as streets, from the plats.
- 14) In order to receive KID irrigation water delivery, a water master (or point of contact) for the subdivision must be appointed. This water master can be appointed by the Homeowners Association (or similar organization) officers, or must be elected from among the property owners within the boundary of this proposed subdivision. If no HOA (or similar organization) is organized, than an election method similar to the attached document is required.
- 15) Prior to approval of each phase, an electronic file (AutoCAD 2004 format) and hard copy (6-mil mylar, sealed by a professional engineer) of construction as-builts must be provided to KID.
- 16) All subdivisions of land are required to be approved by the KID Board of Directors during a KID Board Meeting. KID Board Meetings are regularly scheduled on the first and third Tuesdays of each month. All conditions must be completed prior to submittal to KID for final approval. The submittal for final approval must be received by KID a minimum of two weeks prior to a regularly scheduled Board Meeting in order to be considered at that meeting.

KID reserves the following rights regarding future review of the plat:

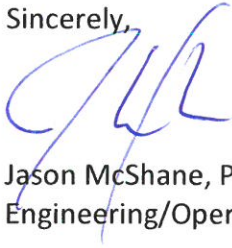
- 17) KID reserves the right to provide review comments under RCW 58.17.330(1) and RCW 58.17.330(2) in response to future design submittals by the Applicant prior to final plat

approval. The scope of these reviews will be limited to Phases that are adjacent to the District's Rights of Way. KID review of construction plans will be consistent with the City of Kennewick's plan review timelines.

- 18) KID reserves the right to review and comment on the Applicant's plat line revisions for potential additional revisions to protect KID system components for Phases that are adjacent to KID's easements or ROWs.
- 19) KID reserves the right to review and comment on the Applicant's covenants, conditions, and restrictions to evaluate whether they should include any terms regarding protection of KID system components after construction and fencing requirements.
- 20) KID reserves the right to submit additional comments during the City's review process under the State Environmental Policy Act (SEPA).

Please provide notice to KID of any Public meeting or hearing where this project will be an agenda item. If you have any questions regarding these comments, please contact me at the address/phone number listed below.

Sincerely,



Jason McShane, P.E.
Engineering/Operations Manager

Enc: Sample Water Master Information
C: LB\correspondence\File: [14-8-29]

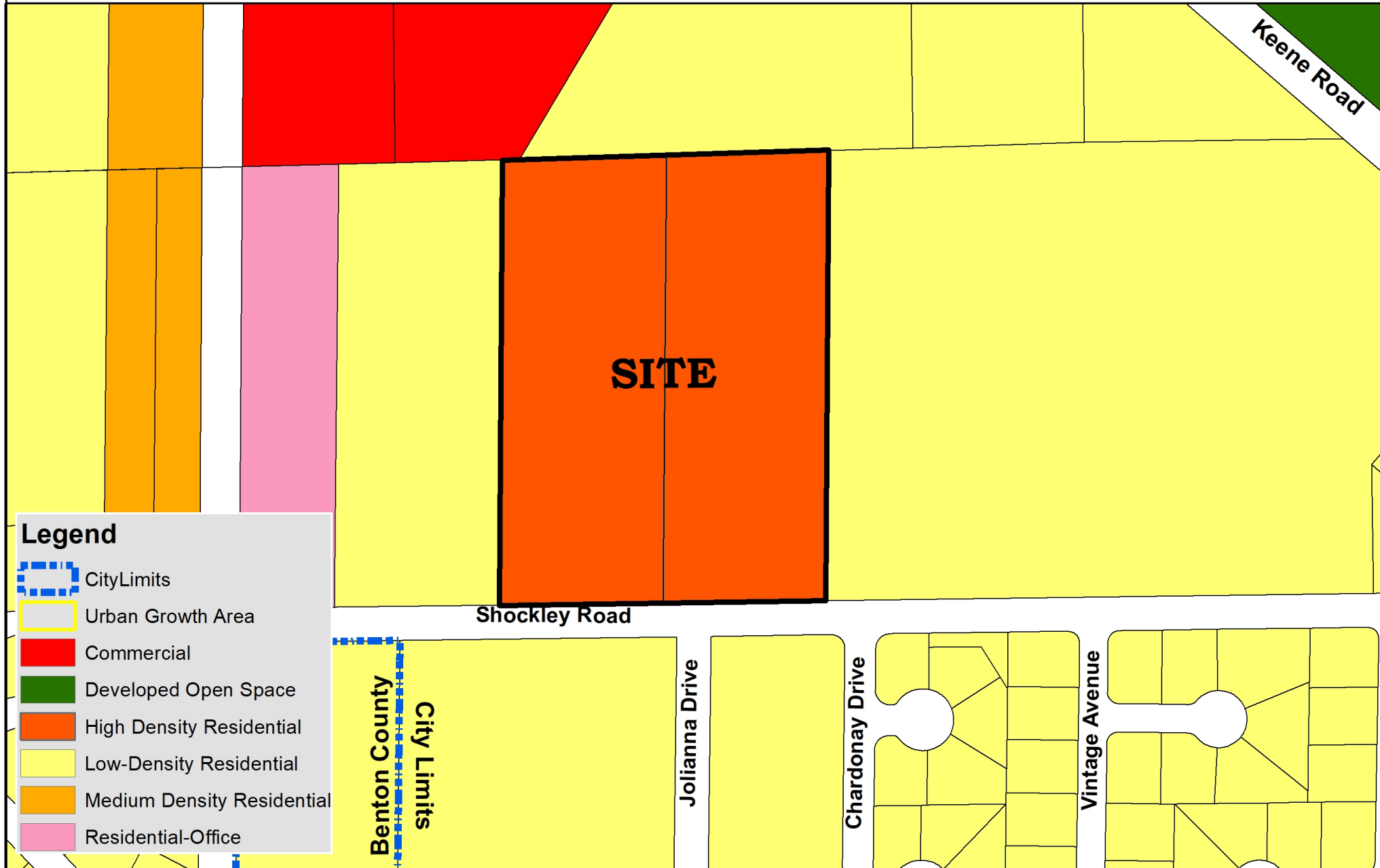
Vicinity Map

Item: Preliminary Plat - Fairhaven
Applicant: Green Plan Construction, LLC
File #: S2021-103



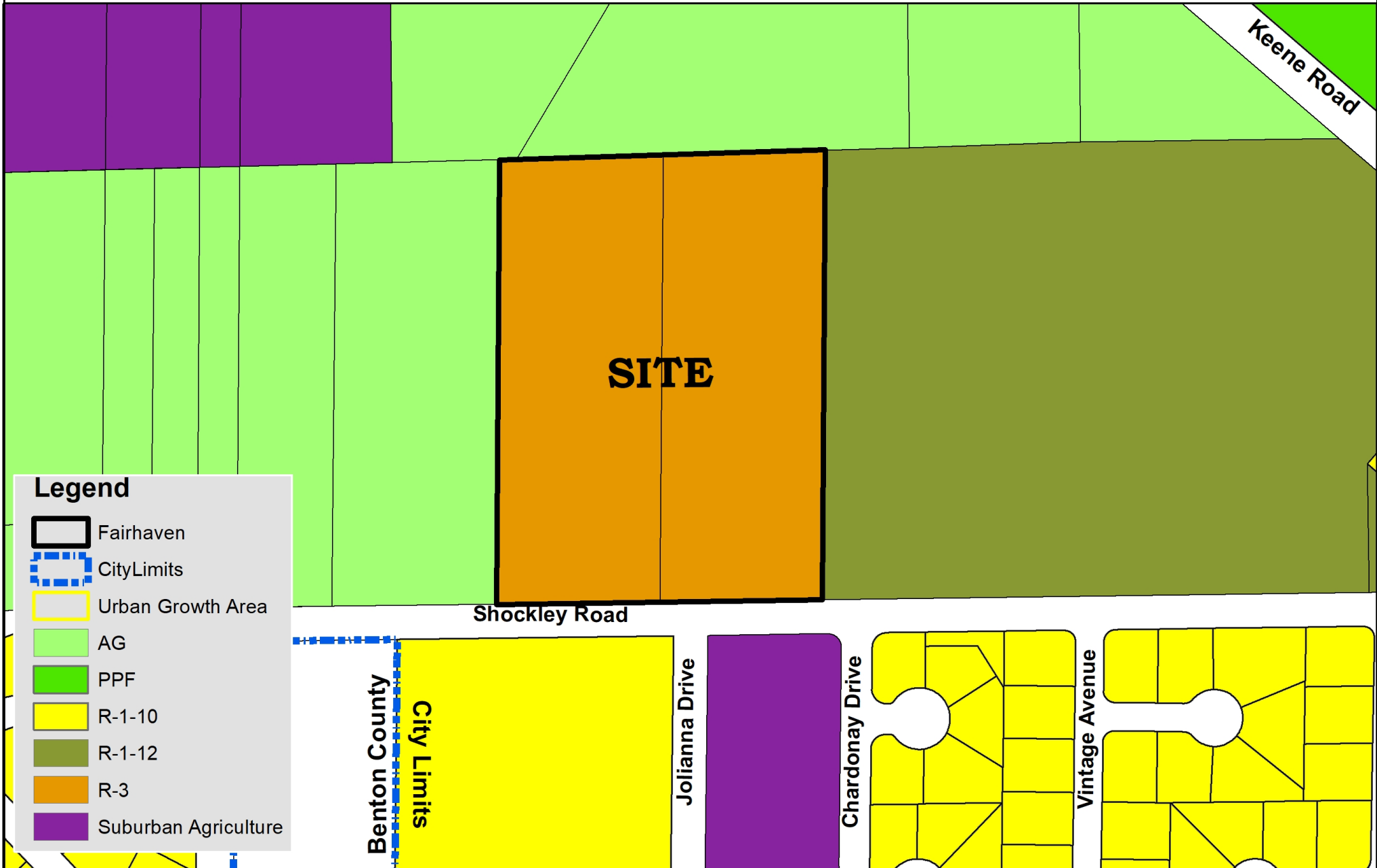
Land Use Map

Item: Preliminary Plat - Fairhaven
Applicant: Green Plan Construction, LLC
File #: S2021-103



Zoning Map

Item: Preliminary Plat - Fairhaven
Applicant: Green Plan Construction, LLC
File #: S2021-103



Looking West

SITE



Looking East

Approx. property line



Looking North

SITE



Looking East

On-site KID irrigation pond
(to be removed)



Looking South

SITE



Fairhaven Preliminary Plat
Request for Deviations and Relief of Proposed Conditions of Approval

The City's Staff Report (June 14, 2021) for the Fairhaven Preliminary Plat has two proposed Conditions of Approval that the applicant requests relief from (Conditions #18 and #21) and two conditions for which the applicant hereby submits a deviation request (Conditions #19 and 23). The requests are presented below in the same order they are listed in the Staff Report.

Code Section:

23.54.020 Standards and requirements (Off-Street parking).

The minimum required parking spaces for the respective uses shall be as follows:

<i>Residential Uses</i>	<i>Number of Parking Stalls Required</i>
<i>1. Single-family attached and detached dwellings, manufactured homes, condominiums and duplexes</i>	<i>2 spaces per dwelling unit.</i>

City's Proposed Plat Condition of Approval:

18. City standard local streets are intended to support on-street parking. This development will create a demand for parking off of the developed lots, which could be met if adequate parking is provided for on the City streets. Because of the density of the housing units and the number of proposed driveways there is a need to design available spaces for on-street parking. Driveway spacing and widths shall be designed to allow for a minimum of one on-street vehicle parking space per every two dwelling units.

Relief of Plat Condition Request:

The City doesn't have any code requirements for on-street parking. The proposed streets will be standard width with on-street parking permitted on both sides of the street. Zero lot-line developments, such as this proposed preliminary plat, reduce the amount of available curb area without driveways making it difficult to get 1 on-street space per 2 units.

Each unit has a 2-car garage with a 2-car driveway, a total of 4 spaces per dwelling unit. That exceeds the city's code requirement of 2 off-street parking spaces per dwelling unit.

A specific requirement for on-street parking is unnecessary and not required by the City's code. We request that the on-street parking requirement be eliminated.

Code Section

24.16.090 Streets – Jogs at intersections.

Street jogs with centerline offsets of less than 125 feet shall be avoided. [Ord. 73 § 4.09].

City's Proposed Condition

19. The proposed intersections with Shockley Road are acceptable for this project. The City is receptive to a variance request for the easterly intersection that could reduce or eliminate the reverse curves of the street within the project.

Deviation Request:

We request a deviation on the minimum intersection spacing from 125 ft to 93.88 ft so that the east leg of the loop road can be straight. In support of this deviation request and in accordance with RMC 24.24.040:

1. This property has special conditions that are peculiar to this land. The property fronts the north side of Shockley opposite Jolianna Dr. The intersection of Jolianna Dr. is located 223.18 ft to the west of the east property line and the intersection of Riesling St. is located 68.75 ft east of the east property line.
2. To space the street intersections along Shockley at least 125 ft apart would make the depth of the lot fronting Shockley only 71.18 ft, resulting in needing a reverse curve to realign the street internally to make the lot depth useable along the east side of the property. That reverse curve near the intersection is more difficult for vehicles to navigate.
3. The conditions resulting in this deviation request are not the result of actions of the applicant because the street network is existing; and
4. Granting this request will not confer any special privilege denied by this title to other lands in the same area because other properties do not have this same issue and the locations of the road intersections for this development will not affect the ability of other properties to develop.

Code Section

12.06.030 Complete streets infrastructure.

The city shall incorporate complete streets infrastructure into existing public streets, as feasible and recommended by professional engineer design professionals, to create a comprehensive, integrated, connected transportation network that balances access, mobility, health and safety needs of pedestrians, bicyclists, transit users, motorists, emergency responders, freight and users of all ages and abilities.

“Complete streets infrastructure” means design features that contribute to a safe, convenient, or comfortable travel experience for users, including but not limited to features such as: sidewalks; shared-use paths; bicycle lanes; automobile lanes of appropriate width; paved shoulders; street trees and landscaping; planting strips; curbs; accessible curb ramps; bulb-outs; crosswalks; refuge islands; pedestrian and traffic signals; signage; street furniture; bicycle parking facilities; public transportation stops and facilities in coordination with Ben Franklin Transit; traffic calming devices; and raised medians. [Ord. 33-17 § 1].

City’s Proposed Plat Condition of Approval:

21. Concurrent with phase 1 of this development the developer shall complete the street section immediately to the east of the site by installing approximately 320-feet of curb, gutter and sidewalk, asphalt widening as needed to complete the street, storm drainage facilities as needed, and street lighting to City standards across the neighboring property to connect to the existing sidewalk. This sidewalk connection is needed to connect this development, and its residents, with several services along Keene Road (transit, a recreation pathway, stores, etc.)

Relief of Plat Condition Request:

The applicant is prepared to construct the frontage improvements on Shockley and the interior streets for the development as required by Richland Municipal Code 12.06.030. Constructing improvements along the 320-ft section of Shockley that is east of the proposed development is not a reasonable request and is not based on code. Other nearby development has not had this requirement as a condition of approval. Portions of the adjacent property could be developed in the future and improvements made at that time. Therefore, we request relief of the proposed condition of approval to improve 320-ft of off-site frontage improvements along the north side of Shockley.

Code Section

12.04.090 Width of driveways – Residential.

The width of any driveway at the curb shall not exceed 35 feet, nor be less than 10 feet, both exclusive of the transitions in the curb sections except as otherwise provided in this chapter. If no curb has been installed, then the width of the driveway shall be measured at the line where a curb would be required to be placed under ordinances of the city then in force governing the location of curbs. Except as provided in RMC 12.04.120, the total width of all driveways for any one ownership along the street shall not exceed 50 percent of the frontage of that ownership along the street, unless the frontage is less than 60 feet. If the frontage is less than 60 feet, then there may be one driveway not more than 30 feet in width. [Ord. 166 § 1.09; Ord. 40-83 § 1.01; Ord. 04-11 § 1.01].

City's Proposed Plat Condition of Approval:

23. The developer and his engineer shall demonstrate on the construction plans that all future driveway entrances, sidewalks and pedestrian ramps will meet City and ADA requirements, and also provide at least 5-feet of separation between driveways and/or pedestrian ramp transitions.

Deviation Request:

We request that the city allow either: 1) mountable curbs so that driveways don't need to be dropped (similar to the City of Kennewick curb at roundabout, see Figure 1), or 2) continuous depressed curbs for driveways where there is insufficient frontage to have an 18-ft wide driveway with transitions on each side and 5 ft between adjacent transitions (see figure 2 for an example).

In support of this deviation request and in accordance with RMC 24.24.040:

1. This property has special conditions that are peculiar to this land. The zero-lot-line development results in driveways that are very close together. Providing separate driveways for each lot with 5-feet of separation between driveway ramp transitions will necessitate changing the driveways and garages from 2-car to 1-car. That would result in losing 2 off-street parking spaces on each affected lot, placing a greater demand for on-street parking, which is limited.
2. The code does not provide a specific description of continuous adjacent driveways or using mountable curbs for attached single-family homes. The code just indicates that the driveway for lots less than 60 ft in width shall not be wider than 30 ft. Making the entire frontage of a 30-ft wide lot depressed would not exceed the maximum of 30 ft for that lot and the additional width for the adjacent driveways would be under separate ownership.
3. The conditions resulting in this deviation request are not the result of actions of the applicant; and
4. Granting this request will not confer any special privilege denied by this title to other lands in the same area because other properties have been developed with

Fairhaven Preliminary Plat
Request for Deviations and Relief of Proposed Conditions of Approval

detached single-family homes. The sidewalks, driveways, and transitions will meet ADA requirements, which is the underlying requirement. The City's code does not indicate that driveways on adjacent lots cannot be continuous.

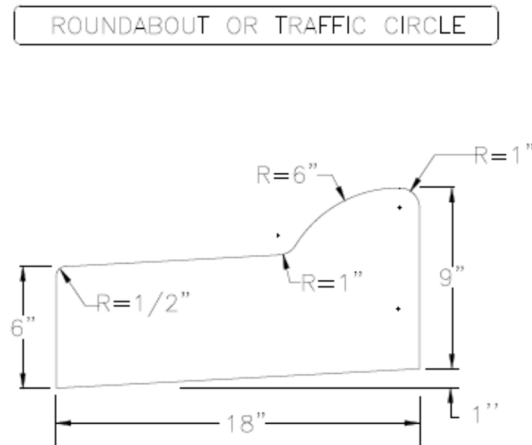


Figure 1 - City of Kennewick - Standard Drawing 2-10 sheet 1 of 9 (partial)

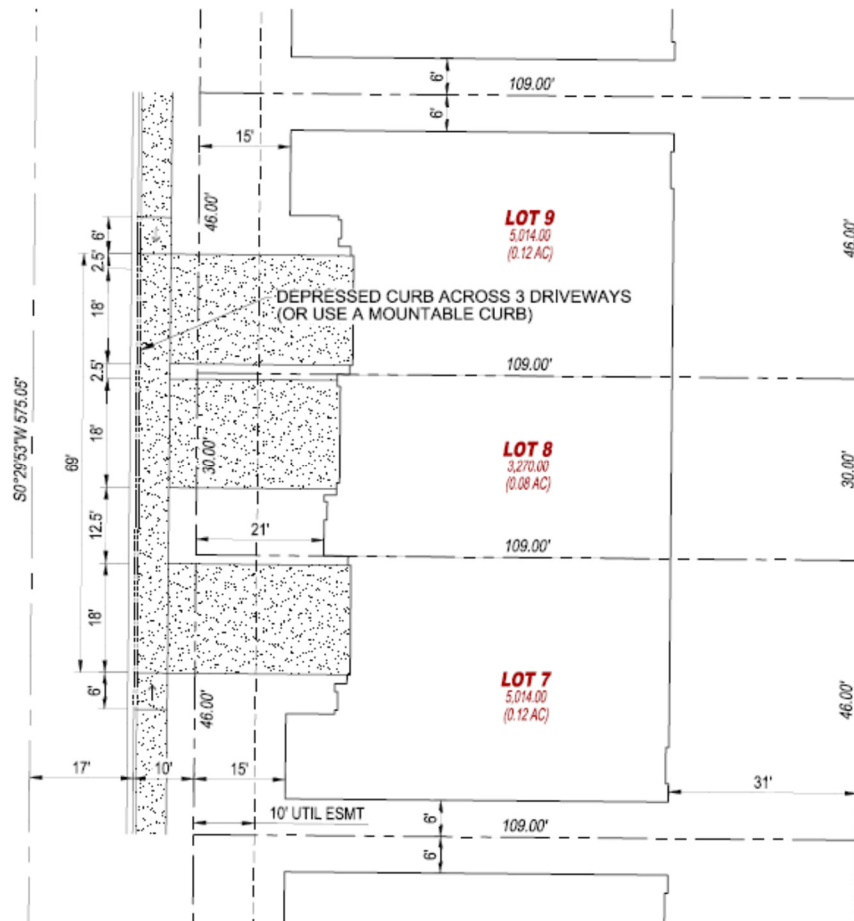


Figure 2 - Driveways for attached units (similar situations on corner buildings)

Exhibit 11

From: Rogalsky, Pete <PRogalsky@CI.RICHLAND.WA.US>

Sent: Friday, July 9, 2021 5:49 PM

To: Deskins, John <jdeskins@CI.RICHLAND.WA.US>; Reathaford, Jason

<JReathaford@CI.RICHLAND.WA.US>; DAlessandro, Carlo <cdalessandro@ci.richland.wa.us>

Cc: Stevens, Mike <mstevens@CI.RICHLAND.WA.US>; O'Neill, Shane <soneill@CI.RICHLAND.WA.US>

Subject: RE: Fairhaven Pre-Plat (S2021-103)

Condition 18 – Recommend denial of requested relief, although I propose some replacement wording as follows. The City's local street standard is based on providing adequate width to support a clear travelled way as required by the Fire Code plus width to support on-street parking. The development will create demand for on-street parking. The applicant states that they intend to have on-street parking permitted on both sides of the street, which aligns with the intent and dimensions of the City standard local street. The applicant's application does not include any information about how they intend to enable on-street parking and how much on-street parking will be provided. It is not possible for the City, with the available information from the applicant, to designate a precise number of on-street parking spaces that will be available. Provision of on-street parking is needed to enable the street to function as designed and avoid undesirable uses, such as driving at excessive speed. To the maximum extent practicable the applicant shall use narrow driveways and combine driveways for adjacent lots at the lot boundary so that available on-street curb length for on-street parking can be maximized.

Condition 19 – Public Works supports this deviation request to RMC 24.16.090. As written RMC 24.16.090 is not a strict prohibition against the proposed intersection spacing including in this variance request. The City's Public Works engineering staff believes that the intersections created by this proposed variance will not experience the traffic volume nor the number of conflicting turning movements that are behind the code guidance.

Condition 21 – Recommend denial of requested relief. The applicant correctly notes that RMC 12.06.030 requires street construction to support the needs of various users, including pedestrians, transit users, and bicyclists. RMC 12.10.050 allows the Public Works Director to modify the requirements of this code section such that mitigation for new construction is roughly proportional to the potential impacts of the proposed development. The proposed development will create 70 occupied residences on the north side of Shockley Road. Shockley Road is a major collector street connecting traffic from multiple developments to Keene Road. As such Shockley Road is not designed for a large volume of pedestrians to cross to the south side of the street to use the completed sidewalks on that side of the street. Keene Road includes a highly used and attractive trail system providing access to multiple commercial properties, transit routes, and City parks. The 70 lots created by this development will generate substantial pedestrian travel. The Public Works Director believes that filling the approximately 320-foot gap in off-site sidewalk connectivity is roughly proportional to the impact anticipated from this development in terms of pedestrian traffic.

Condition 23 – I recommend supporting option 2 in the deviation request, meaning enabling combining the depressed driveway access point for adjacent lots without a transition up to normal sidewalk in between. This approach will generate the ability to identify and support a certain number on on-street parking spots, which enables my position on Condition 18.



HEARING EXAMINER AGENDA ITEM COVERSHEET

Meeting Date: 8/9/2021

Agenda Category: New Business - Public Hearing

Prepared By: Shane O'Neill, Senior Planner

Subject:

S2021-105 Quail Ridge II, Phases I-3
Pahlisch Homes

Department:

Development Services

Recommended Motion:

Approval subject to the set of approval conditions listed in the August 9 staff report.

Summary:

The preliminary plat of Quail Ridge II, Phases I-3 proposes to divide 62.9 acres into 124 single family residential lots and ten (10) tracts. The plat site involves four parcels located within the Horn Rapids master planned community.

Attachments:

1. FULL Staff Report Quail Ridge II

**CITY OF RICHLAND DEVELOPMENT SERVICES DIVISION
STAFF REPORT TO THE HEARING EXAMINER**

GENERAL INFORMATION:

PROPOSAL NAME: Preliminary Plat of *Quail Ridge II, Phases 1-3*

LOCATION: Southeast of the intersection of Highway SR-240 and Twin Bridges Road

APPLICANT: Pahlisch Homes

FILE NO.: S2021-106

DESCRIPTION: Request to divide 62.9 acres into 124 single family residential lots and ten (10) tracts.

PROJECT TYPE: Type III Preliminary Plat

HEARING DATE: August 9, 2021

REPORT BY: Shane O'Neill, Senior Planner

RECOMMENDED ACTION: Approval subject to completion of proposed conditions

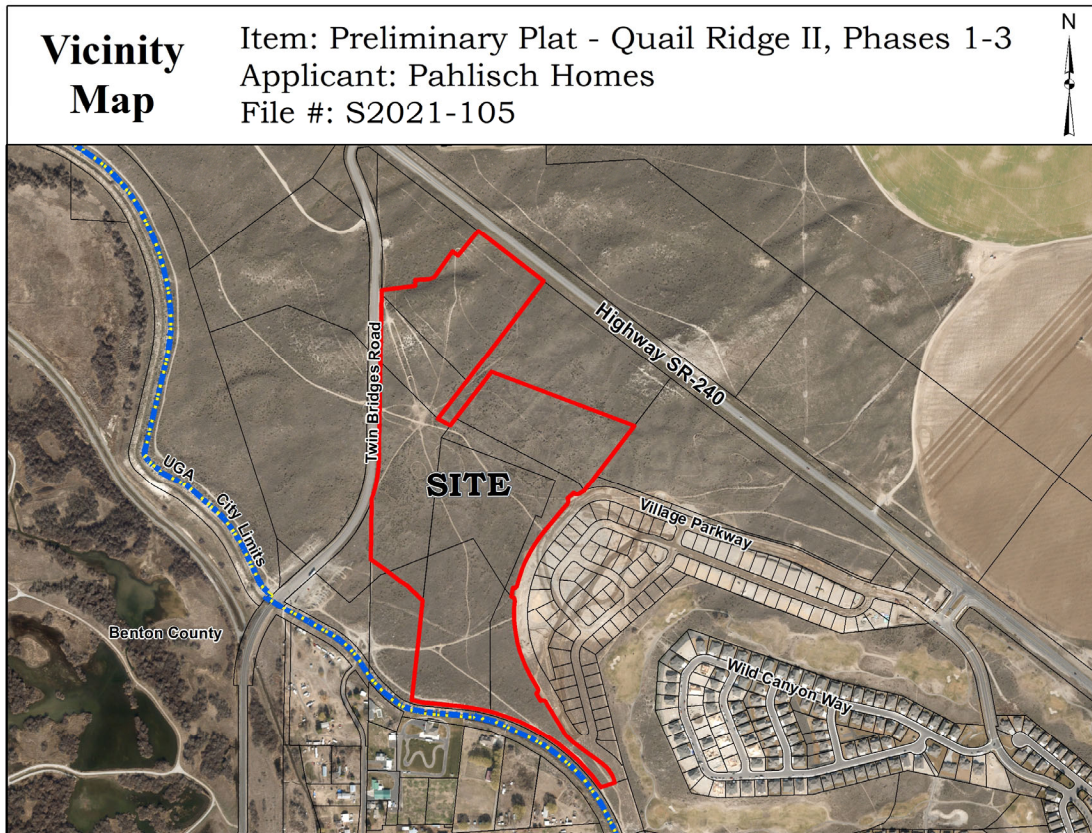


Figure 1 - Vicinity Map

DESCRIPTION OF PROPOSAL

Pahlisch Homes filed a preliminary plat application (Exhibit 1) proposing to divide approximately 62.9-acres into 124 single family residential lots and ten (10) tracts, known as the plat of Quail Ridge II, Phases 1-3. The plat would be accessed from three points on Village Parkway, which extends to the proposed subdivision from the residential plat of Quail Ridge Phase 3-6 to the east. Individual lots, would be accessed from other roadways internal to the proposed plat. Village Parkway will be the only means of ingress/egress until the adjacent surrounding parcels are platted and developed. A copy of the proposed Quail Ridge II, Phases 1-3 plat is included herein as Exhibit 2. Because the plat survey lacks a table identifying the size and proposed use of each tract, such table is provided separately as Exhibit 3.

Though zoned for medium and high-density residential development (R-2S & R-3), the plat application indicates development will be limited to detached single-family residences. This limitation does not appear as a note anywhere on the survey documents and cannot be required pursuant to permitted uses in each zone.

The site marginally abuts SR-240 along its northern boundary, however that portion abutting the highway is a tract (Tract C) slated for “future residential development”.

The interior road system would consist of a series of two-way streets, providing access to lots on both sides of the street. The overall plat design forms seven (7) blocks and several one-lot-wide linear blocks around the plat border, some of which will be added on to during future platting actions. Blocks therein are not orthogonal rectangles; instead the block shapes appear organic with curvilinear borders. All lots would be served with city water, sewer and electrical power.

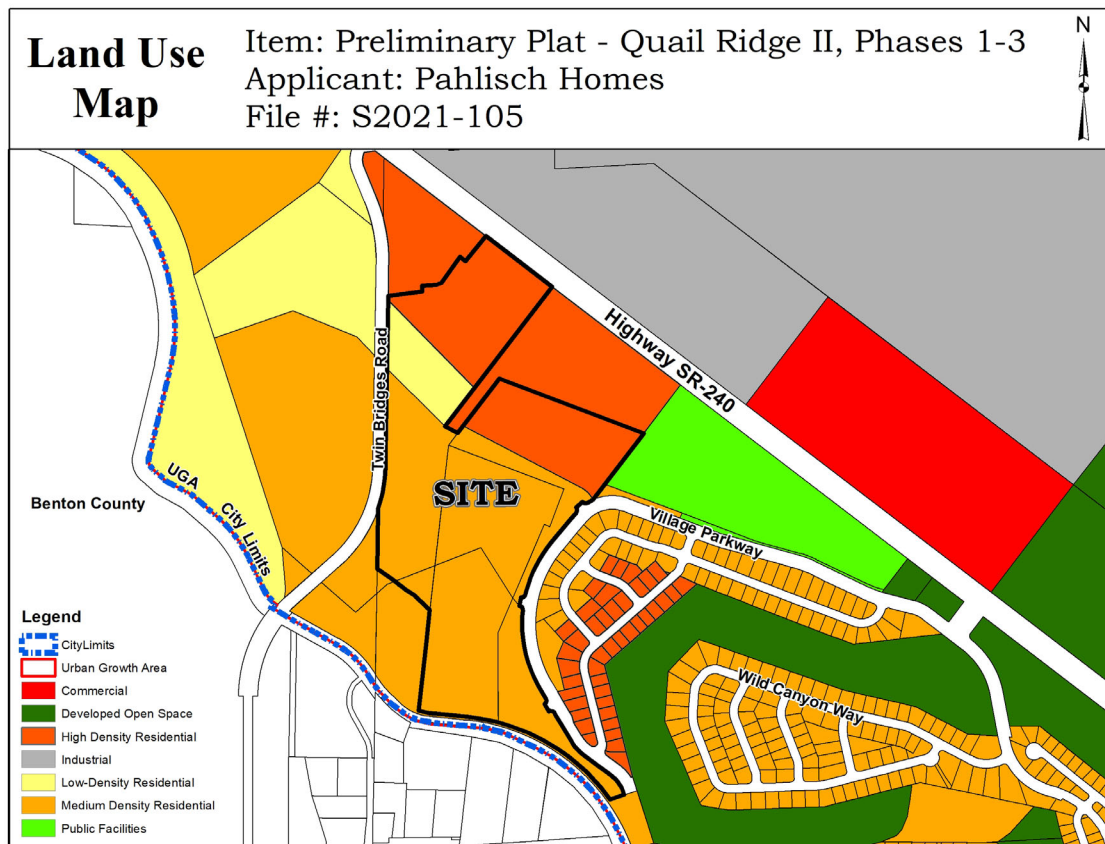


Figure 2 – Comprehensive Plan

COMPREHENSIVE PLAN

Three (3) distinct land use designations from the comprehensive plan are applied to the 62.9-acre site; high-density residential, medium-density residential and low-density residential. The following table provides a gross and approximate land-area breakdown for each land use designation within the site boundaries.

Land Use Designation	Area of Land Use	% Area of Site
High-Density Residential	19.5 acres	31%
Medium-Density Residential	39 acres	61%
Low-Density Residential	4.4 acres	6.9%

The gross density of the proposed plat is 1.97 lots/acre. The proposed gross density (1.97 dwelling units per acre) is well below the density limit allowed under medium and high-density land use designations.

GOALS & POLICIES

The City's Comprehensive Plan Land Use (LU) element includes the following applicable goals policy statements:

LU Goal 1: Plan for growth within the urban growth area and promote compatible land use.

Policy 2: Facilitate planned growth and infill developments within the City.

LU Goal 3: Maintain a broad range of residential land use designations to accommodate a variety of lifestyles and housing opportunities.

Policy 1: Distribute residential uses and densities throughout the urban growth area consistent with the City's vision.

LU Goal 5: Ensure connectivity that enhances community access and promotes physical, social, and overall well-being so residents can live healthier and more active lives.

Policy 2: Promote pedestrian and bicycle circulation throughout the community by connecting with the infrastructure and the City's network of parks and trail system.

The City's Comprehensive Plan Transportation element (TE) includes the following applicable goals policy statements:

TE Goal 1: Provide an efficient and multimodal transportation network including road, trail, rail, water, and air, to support the City's land use vision and existing needs.

Policy 1: Plan new street segments and consider modifying existing streets to provide comfortable and safe elements for bicyclists, pedestrians, and transit users in addition to vehicles.

Policy 2: Identify and secure the rights of way for new and/or expanded transportation corridors.

Policy 5: Plan and implement transportation system improvements that meet the needs of all areas and residents.

Policy 6: Plan transportation facilities that are compatible with adjacent land uses.

Policy 7: Plan and implement an appropriately classified and designed roadway system that provides for efficient movement of people and goods and the comfort and safety of residential neighborhoods.

TE Goal 2: Improve safety, connectivity, and operating efficiency of the transportation system.

Policy 2: Link local street networks through subdivisions to provide efficient local circulation, as appropriate, and provide additional collector arterial access for major residential areas.

TE Goal 3: Encourage the use of transportation modes that promote energy conservation, circulation efficiency, and an active lifestyle.

Policy 1: Support increased use of transit, bicycling, and pedestrian travel.

Policy 2: Plan facilities for non-motorized travel across jurisdictional boundaries.

Policy 3: Require sidewalks, improved shoulders, appropriate signage, or off street trails within new developments to accommodate internal bicycle and pedestrian circulation within and between neighborhoods.

Policy 4: Encourage new developments to be pedestrian-friendly and compatible with the public transportation system.

Policy 5: Design a circulation system to become a bicycle-friendly community with complete streets.

TE Goal 4: Ensure that the road network is sensitive to the natural and built environment and offers a sense of the community.

Policy 1: Use appropriate streetscape and gateway features along the major entryways into the City.

Policy 2: Implement landscaping and other types of buffers along major transportation corridors.

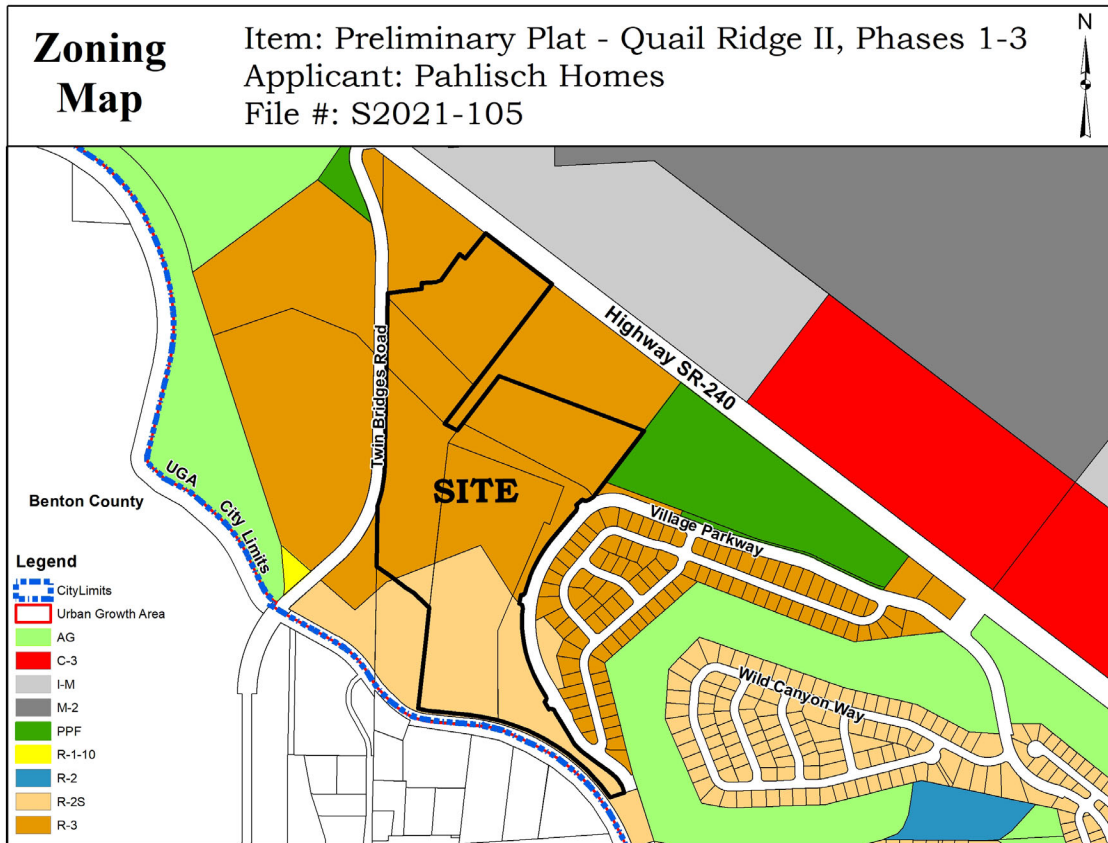


Figure 3 – Zoning

ZONING

The surrounding vicinity of this site is applied with a diverse patchwork of zoning districts. The *Quail Ridge II, Phases 1-3* site is overlain by three zoning districts; R-3, R-2S, and PPF. A vacant site to the east is zoned Parks & Public Facilities (PPF). Other vacant lands surrounding the site are likewise slated for further residential subdivision; continuing the Horn Rapids community.

Land Uses and Dimensional Standards

As illustrated in figure 3 (above), a bulk of the site is assigned R-3 zoning. In the Zoning Code, there is a provision which defers to the R-2S zoning standards for instances where detached single-family developments are proposed in the R-3 zone. For that reason the following R-2S standards apply to the proposed *Quail Ridge II, Phases 1-3* plat:

Uses Permitted:	(see 23.18.030 RMC)
Front yard setback(s):	15 feet minimum in front of living areas; 18 feet in front of garages
Side yard setback:	6 feet minimum
Rear yard setback:	25 feet minimum
Maximum building height:	20 feet

The preliminary plat application volunteers the single-family development design. Standards of the R-2S zone (above) apply to all areas in the plat.

SITE DESCRIPTION & ADJACENT LAND USES

The site consists of vacant arid sagebrush steppe/grassland with gentle rolling slopes but is predominately flat. The highest point of the property located in the north portion of the site (Tract B), near SR-240, which is at approximately 475 feet in elevation above sea-level. The lowest point, near the east boundary, adjacent to Village Parkway, is at approximately 423 feet in elevation. The site experiences approximately 52 feet of elevation difference site-wide. Site photos are included in Exhibit 11.

Existing uses in the vicinity include vacant land slated for residential development to the north and to the west. The south site boundary is only marginally separated from the UGA/city limits by a vacant linear parcel. To the east lies a strip of the Horn Rapids Golf Course fairway followed by the proposed Wild Canyon residential plat (currently vacant as well) and a vacant site lies to the east/northeast. This vacant site, adjacent to highway SR-240, is the subject of a Comprehensive Plan amendment to convert the land use designation from Parks & Public Facilities (PPF) to High-Density Residential with the intent to zone it R-3; and with the ultimate plan of using the site for a City fire station. The Comp. Plan amendment is a pending application slated for action in the fall of 2021.

CRITERIA FOR PRELIMINARY PLAT APPROVAL

Section 24.12.053 of the RMC sets forth the criteria that must be met before a preliminary plat application can be approved; it states:

The hearing examiner shall not recommend approval of any preliminary plat application, unless the approval is accompanied by written findings that:

- A. The preliminary plat conforms to the requirements of this title;
- B. Appropriate provisions are made for the public health, safety and general welfare and for such open spaces, drainage ways, streets or roads, alleys, other public ways, transit stops, potable water supplies, sanitary wastes, parks and recreation, playgrounds, schools and school grounds and all other relevant facts, including sidewalks and other planning features that assure safe walking conditions for students who only walk to and from school;
- C. The public use and interest will be served by the platting of such subdivision and dedication; and
- D. The application is consistent with the requirements of RMC 19.60.095

Section 19.60.095 of the RMC is repeated below for the reader's convenience:

No development application for a Type II or Type III permit shall be approved by the city of Richland unless the decision to approve the permit application is supported by the following findings and conclusions:

- A. The development application is consistent with the adopted comprehensive plan and meets the requirements and intent of the Richland Municipal Code.
- B. Impacts of the development have been appropriately identified and mitigated under Chapter 22.09 RMC.
- C. The development application is beneficial to the public health, safety and welfare and is in the public interest.
- D. The development does not lower the level of service of transportation facilities below the level of service D, as identified in the comprehensive plan; provided, that if a development application is projected to decrease the level of service lower than level of service D, the development may still be approved if improvements or strategies to raise the level of service above the minimum level of service are made concurrent with development. For the purposes of this section, "concurrent with development" means that required improvements or strategies are in place at the time of occupancy of the project, or a financial commitment is in place to complete the required improvements within six years of approval of the development.
- E. Any conditions attached to a project approval are as a direct result of the impacts of the development proposal and are reasonably needed to mitigate the impacts of the development proposal.

RMC Section 24.12.050 designates the Hearing Examiner as the hearing body responsible for conducting the review of preliminary plat applications.

PUBLIC NOTICE

Application Date:	May 5, 2021
Notice of Hearing Mailed:	July 16, 2021
Notice of Hearing Posted:	July 14, 2021
Notice of Hearing Published:	July 25, 2021
Public Hearing:	August 9, 2021

A combined notice of application, SEPA determination and notice of hearing was provided through posting of the property, mailing of notice to property owners within 300 feet of the site and publication in the *Tri-City Herald* newspaper. Copies of the notices and affidavits are provided as Exhibit 10.

Regarding the public notice, staff inadvertently used the notice of application and optional DNS template rather than just the basic notice of application template. Since the project is part of the Horn Rapids Master Plan, staff has determined that the original FEIS, adopted in 1993 is still in effect and additional SEPA

review/analysis is not necessary. Additional details about the environmental review are included in the SEPA section below.

UTILITY AVAILABILITY

Municipal domestic water and sewer mains are located in the Village Parkway alignment that runs along the eastern boundary of the site. These lines were installed to provide services to the Quail Ridge Phase 3-6 plat lying to the southeast of the site. These lines were sized to accommodate development of the project site. Electrical power lines are also located in the Village Parkway right-of-way. The City also provides irrigation water to the Horn Rapids community and has lines in the immediate vicinity of the proposed plat.

TRANSPORTATION

Lots within the plat will have direct access onto the small network of new roadways proposed therein. These roads connect to the greater Horn Rapids community via three pre-planned intersections with Village Parkway; all along the plat's easterly boundary. Direct access will be restricted from any lot bordering Village Parkway onto said roadway through the application of a 1-foot no-access easement.

A secondary access point into the Horn Rapids community via SR-240 has recently been completed. From this point vehicles are able to turn left onto Village Parkway toward the Wild Canyon neighborhood or right on Village Parkway to the Quail Ridge neighborhood.

Except for Road B, all of the proposed roadways are 54' standard city streets allowing for on-street parking on both sides. Road B is a 72' right-of-way also precluded from having direct access thereto. Public Works requests Road B be widened to 84-feet-wide as a condition of approval (#15).

SEPA

Horn Rapids is a master planned community benefitting from an environmental impact statement completed in 1993. The applicant submitted a SEPA checklist (Exhibit 7) which was routed for review and comment. However, the City of Richland hereby adopts the final environmental impact statement (Exhibit 13) adopted in 1993. For this reason, Planning staff did not issue a SEPA determination. Cities are not required to make a threshold determination and may not require additional environmental review, for proposals determined to be consistent with the development described in the planned action ordinance (43.21C.440.3.b RCW).

AGENCY COMMENTS

A variety of public agencies and City departments were given an opportunity to comment on the proposal. Comments received were from the City Engineering Department and the Washington State Department of Transportation (WSDOT).

A few 'no comment' comments are included for the record. All comments are provided as Exhibit 12. The "pending land use actions" indicated thereon reference past project applications.

PUBLIC COMMENTS

At the time this report was prepared, one public comment was received from Lauri Ness/Patrick Paulson. This comment is critical of staff's approach to environmental review and of the quality of the SEPA checklist. Because all land divisions in Horn Rapids benefit from a FEIS matters relating to the SEPA checklist itself are moot pursuant to 43.21C.440.3.b RCW.

CRITICAL AREAS

Washington Department of Fish and Wildlife (WDFW) Priority Habitat & Species (PHS) mapping resources (<https://geodataservices.wdfw.wa.gov/hp/phs/>) indicate a portion of the plat site as potentially containing suitable habitat able to support Ferruginous Hawks and Burrowing Owls. Richland's Critical Areas Ordinance (CAO) considers priority habitats as regulated critical areas. Plat application materials include a Critical Area Assessment, dated April 26, 2021, aimed at fulfilling reporting requirements of 22.10.200 RMC. The critical areas report was provided due to the WDFW online PHS map indicating the project as containing Ferruginous Hawk habitat. In previous correspondence with WDFW Biologist, Michael Ritter, the department provided clarification on the PHS mapping in the Horn Rapids vicinity; this written clarification is provided herein as Exhibit 14.

Generally, the critical areas report indicates no evidence of suitable Ferruginous Hawk habitat on-site. The report indicates potential habitat for Burrowing Owls on-site but indicates no evidence of the site being used by owls.

Again, the environmental review considerations discussed above are moot due to the planned action FEIS completed as part of the Horn Rapids Master Plan.

ANALYSIS

The approval criteria for preliminary plats are reprinted here, with a summary of how the application complies with the standard:

A. The preliminary plat conforms to the requirements of this title;

The City's subdivision regulations set forth specific requirements for filing preliminary plat applications, how notice of the application is to be provided and requires that the Hearing Examiner conduct a public hearing and make recommendation to the City Council. These steps have been followed to date.

B. Appropriate provisions are made for the public health, safety and general welfare and for such open spaces, drainage ways, streets or roads, alleys, other public ways, transit stops, potable water supplies, sanitary wastes, parks and

recreation, playgrounds, schools and school grounds and all other relevant facts, including sidewalks and other planning features that assure safe walking conditions for students who only walk to and from school;

- The proposed plat provides four (4) small open space tracts. Tract H is planned to contain some sort of recreational amenity, such as: club house, off-street parking, swimming pool or picnic area (Sheet 5, Exhibit 2). These tracts would be maintained by the Horn Rapids Homeowners Association. The original Horn Rapids Master Plan calls for the development of a series of smaller neighborhood parks, playgrounds, trails and open space areas that would serve the residents of the community. Additionally, the golf course provides generous amounts of open space throughout the community. In terms of City park facilities, the Hanford Legacy Park is located east of the site, on the opposite side of SR 240.
- All streets located within the proposed plat would include curbs, gutters and sidewalks for pedestrian access to the adjacent neighborhood. There are no schools located within walking distance of the plat site.
- The site is not located along an existing bus route. The Ben Franklin Transit Authority, which provides bus service to the community does not presently provide service into Horn Rapids. The nearest existing transit stop is at Stevens Center, approximately 5 miles from site. The transit service was given an opportunity to comment on the preliminary plat proposal but did not provide any comments to the City. The Richland School District does provide school bus service to Horn Rapids.
- The plat would be served by City domestic water and sewer lines that are located in Village Parkway close to the project site. Said lines have capacity to provide for the proposed project.
- The plat would be served by existing Richland Energy Services electrical power.
- The plat would be served by the City irrigation water system that serves the Horn Rapids community.
- In accordance with City development standards, storm water drainage would have to be retained on-site. The proposed plat design includes two tracts (tracts I & J) for use as a storm water drainage facilities.
- The site is located approximately 3 miles from the nearest elementary school, which is Sacajawea Elementary. The City has reserved property immediately east of the site for a future school site. The Richland School District was given an opportunity to comment on the preliminary plat proposal, but did not provide any comments to the City.

C. The public use and interest will be served by the platting of such subdivision and dedication;

The proposed project is consistent with the Comprehensive Plan, both in terms of the proposed density of the plat and with the proposed access, which provides for a second entrance into the Horn Rapids community and so avoids directing

traffic from the project onto existing local streets. Further, the project is consistent with the City's zoning regulations, and would be consistent with development pattern in the surrounding neighborhood.

D. The application is consistent with the requirements of RMC 19.60.095, which states: *No development application for a Type II or Type III permit shall be approved by the city of Richland unless the decision to approve the permit application is supported by the following findings and conclusions:*

a. The development application is consistent with the adopted Comprehensive Plan and meets the requirements and intent of the Richland Municipal Code.

The proposal is consistent with the Comprehensive Plan by furthering certain goals and policies listed herein. The proposed plat meets the requirements of the Municipal Code as outlined above.

b. Impacts of the development have been appropriately identified and mitigated under Chapter 22.09 RMC.

Chapter 22.09 is the City's adoption of the State Environmental Policy Act provisions. The applicants filed an environmental checklist and the City issued and distributed Determination of Non-Significance, which completed the SEPA review process.

c. The development application is beneficial to the public health, safety and welfare and is in the public interest.

The project is consistent with the City's Comprehensive Plan and development regulations and it therefore would be considered beneficial to public health, safety and welfare and would be in the public interest.

d. The development does not lower the level of service of transportation facilities below the level of service D, as identified in the Comprehensive Plan; provided, that if a development application is projected to decrease the level of service lower than level of service D, the development may still be approved if improvements or strategies to raise the level of service above the minimum level of service are made concurrent with development. For the purposes of this section, "concurrent with development" means that required improvements or strategies are in place at the time of occupancy of the project, or a financial commitment is in place to complete the required improvements within six years of approval of the development.

The project would add 124 new residential lots to be accessed from newly constructed roadways proposed as part of the *Quail Ridge II, Phases 1-3* subdivision. The subdivision would gain connection to other roadways by way of extensions from Village Parkway which functions as a collector street but is not identified as such in the Comprehensive Plan. Village Parkway is identified as a collector street in the Horn Rapids Master Plan. The trip accounting letter (Exhibit4) submitted with the application, indicates the development will generate

and average of 1,258 daily vehicle trips (ADT). Note, the letter is based on a 123 dwelling unit count where 124 units are proposed. This discrepancy means the ADT estimate is a bit low. After reviewing said letter, Richland's Traffic Engineer indicated the proposal will not lower any of the affected roadways below Level of Service (LOS) D.

- e. Any conditions attached to a project approval are as a direct result of the impacts of the development proposal and are reasonably needed to mitigate the impacts of the development proposal.*

The conditions of approval recommended for this project are as a direct result of imposing City development standards as contained in City code and are directly related to the development proposal. Language relating to implementation of the R2-S zone development regulations are entered into the set of approval conditions.

FINDINGS AND CONCLUSIONS

Staff has completed its review the preliminary plat application of *Quail Ridge II, Phases 1-3* (S2021-105) and recommends approval of the request subject to conformance with the conditions of approval listed herein. Staff's recommendation is based on the following findings:

Findings of Fact:

1. The Richland Comprehensive Plan designates the project site as suitable for high, medium and low density residential development styles with an approximate average allowable density of 11 units per acre.
2. The proposed preliminary plat consists of 124 lots averaging 8,663 square feet in area, representing a gross density of 1.97 units per acre.
3. Village Parkway would act as a collector street bordering the subdivision but without providing direct access to individual lots.
4. The proposed project would direct all traffic onto the Village Parkway; exiting onto SR-240 or heading back into the Horn Rapids road network.

Conclusion of Law

The proposed preliminary plat is consistent with and would provide for development of the subject property in conformance with the density and type of land use envisioned in the land use and transportation elements of the adopted comprehensive plan.

Findings of Fact:

5. Two residential zoning districts are applied to the site; they are R-2S & R-3. *Quail Ridge II, Phases 1-3* proposes a gross residential density of 1.97 units per acre.
6. The 124 lots proposed have an average lot size of 8,663 square feet with the smallest lot being 6,927 square feet. The minimum lot size(s) of the underlying zoning districts is 4,000 square feet for detached single-family homes.

7. The subject preliminary plat application (Exhibit 2) indicates the intent to develop proposed lots with “detached single-family dwellings”.
8. The underlying zoning districts do not impose minimum average lot size limitations.

Conclusion of Law

The lots within the proposed subdivision are consistent with the provisions of the City’s residential zoning regulations.

Findings of Fact:

9. Section 24.12.053 of the RMC sets forth standards for review of preliminary plats that require the Hearing Examiner to consider whether appropriate provisions are made for the public health, safety and general welfare and for such open spaces, drainage ways, streets or roads, alleys other public ways, transit stops, potable water supplies, sanitary wastes, parks and recreation, playgrounds, schools and school grounds and all other relevant facts, including sidewalks and other planning features that assure safe walking conditions for students who only walk to and from school.
10. The proposed preliminary plat provides for the extension of streets that are consistent with the surrounding street network, includes provisions for the extension of public domestic water, sewer, irrigation water and electrical power lines.
11. The proposed improvements to serve the preliminary plat are consistent with the City’s development standards.
12. The project is located approximately 4 miles from an existing elementary school in the Richland School District (Sacajawea Elementary School). The District was given an opportunity to comment on the proposal but did not provide any comments.
13. City staff and other utility providers reviewed the project and have recommended specific conditions of approval as set forth in the conditions listed in this report.

Conclusion of Law

As conditioned, the proposed preliminary plat makes appropriate provisions for the public health, safety and general welfare and for such open spaces, drainage ways, streets or roads, alleys, other public ways, transit stops, potable water supplies, sanitary wastes, parks and recreation, playgrounds, schools and school grounds and all other relevant facts, including sidewalks and other planning features that assure safe walking conditions for students who only walk to and from school.

Findings of Fact:

14. The City of Richland has adopted the Horn Rapids final environmental impact statement from 1993, thereby fulfilling environmental review requirements (43.21C.440.3.b RCW).

Conclusion of Law

Pursuant to Chapter 22.09 of the RMC, the procedures required under the State Environmental Policy Act have been completed.

Findings of Fact:

15. RMC 19.60.095(D) requires that development not lower the level of service standard for transportation facilities below a level of service D.
16. The City of Richland Traffic Engineer anticipates the vehicle trip volumes generated by the plat will not lower any of the affected roadways below the level of service D.
17. The proposed project would add 124 single family lots that would have direct access onto public roadways internal to the proposed plat.
18. The Horn Rapids area is not subject to municipal traffic impact fees

Conclusion of Law

The proposed project would not result in a decline of transportation service levels within the area surrounding the project and so is consistent with the provisions of RMC 19.60.095.

Overall Conclusion

Based on the above findings and conclusions, approval of the proposed preliminary plat of *Quail Ridge II, Phases 1-3* subject to the recommended conditions listed herein is warranted because the project conforms to the City's adopted comprehensive plan and zoning regulations; has followed the required State Environmental Policy Act procedures; and is consistent with the requirements of the City's subdivision regulations.

PLAT-SPECIFIC STAFF COMMENTS:

1. Road F is mislabeled on Sheet 3 of the pre-plat.
2. Some of the road corridors on sheets 2 & 3 are missing widths.

RECOMMENDED CONDITIONS OF APPROVAL:

1. All final, approved plans for public improvements shall be submitted prior to pre-con on a 24" x 36" hardcopy format and also electronically in .dwg format compatible with the City's standard CAD software. Addendums are not allowed, all information shall be supplied in full size (and electronic) format. Electronic copies of the construction plans are required prior to the pre-con meeting along with the multiple sets of paper drawings. When construction of the public infrastructure has been substantially completed, the applicant shall provide paper and electronic record drawings in accordance with the City's "Record Drawing Requirements". The electronic record drawings shall be submitted in an AutoCAD format compatible with the City's standard CAD software. The final record drawings shall be submitted and approved by the City before the final punchlist inspection will

- be performed. All final punchlist items shall be completed or financially guaranteed prior to recording of the final plat.
2. A copy of the construction drawings shall be submitted for review to the appropriate jurisdictions by the developer and his engineer. All required comments / conditions from all appropriate reviewing jurisdictions (e.g.: Benton County, any appropriate irrigation districts, other utilities, etc.) shall be incorporated into one comprehensive set of drawings and resubmitted (if necessary) for final permit review and issuance. Any and all necessary permits that may be required by jurisdictional entities outside of the City of Richland shall be the responsibility of the developer to obtain.
 3. Any work within the public right-of-way or easements or involving public infrastructure will require the applicant to obtain a right-of-way construction permit prior to beginning work, per RMC Chapter 12.08. The applicant shall pay a plan review fee based on a cost-per-sheet of engineering infrastructure plans. This public infrastructure plan review fee shall apply each time a project is submitted for review. This fee will be different for commercial projects versus subdivision projects. Please visit the Public Works Private Development page on the City's webpage to find the current per-sheet fee. A permit fee in the amount equal to 3% of the construction costs of the work within the right-of-way or easement will be collected at the time the construction permit is issued. A stamped, itemized Engineers estimate (Opinion of probable cost) and a copy of the material submittals shall be submitted along with the approved plan submittal.
 4. Public utility infrastructure located on private property will require recording of a City standard form easement prior to acceptance of the infrastructure and release of the final plat. The City requires preparation of the easement legal description by the developer two weeks prior to the scheduled date of plat acceptance. Once received, the City will prepare the easement document and provide it to the developer. The developer shall record the easement at the Benton County Assessor and return a recorded original document to the City prior to application for final plat acceptance.
 5. A pre-construction conference will be required prior to the start of any work within the public right-of-way or easement. Contact the Public Works Engineering Division at 942-7500 to schedule a pre-construction conference.
 6. All plan sheets involving construction of public infrastructure shall have the stamp of a current Washington State licensed professional engineer.
 7. A copy of the preliminary plat shall be supplied to the Post Office and all locations of future mailbox clusters approved prior to final platting.

Design Standards:

8. Public improvement design shall follow the following general format:
 - A. All materials and workmanship shall be in conformance with the latest revision of the City of Richland Standard Specifications and Details, Public Infrastructure Design Guidelines and the current edition of the State of Washington Standard Specifications for Road, Bridge, and Municipal Construction. Please confirm that you have the latest set of standard specs and details by visiting the City's web page.
 - B. Fire hydrant location shall be reviewed and approved by the City Fire Marshal.
 - C. All utilities shall be extended to the adjacent property (properties) at the time of construction.
 - D. The minimum centerline radius for local streets shall be 100-feet.
 - E. Any filling of low areas that may be required within the public Right of Way shall be compacted to City standards.
 - F. An overall, composite utility plan shall be included in the submitted plan set if the project is phased. This comprehensive utility plan benefits all departments and maintenance groups involved in the review and inspection of the project.
 - G. A detailed grading plan shall be included in the submitted plan set.
 - H. For public utilities not located within public street rights-of-way the applicant shall provide maintenance access acceptable to the City and the applicant shall provide an exclusive 10-foot wide public utility easement (minimum) to be conveyed to the City of Richland.
 - I. Final design of the public improvements shall be approved at the time of the City's issuance of a Right-of-way Construction Permit for the proposed construction.
 - J. All public improvements shall comply with the State of Washington and City of Richland requirements, standards and codes.
 - K. All curb returns at minor intersections shall have a minimum radius of 25-feet. Curb returns at major intersections should have minimum radius of 30-feet but should be evaluated on a case by case basis.
 - L. All public streets shall meet design requirements for sight distance (horizontal, vertical and intersectional).
 - M. The final engineered construction plans shall identify locations for irrigation system, street lighting, gas service, power lines, telephone lines, cable television lines, street trees and mail boxes. All electrical appurtenances such as transformers, vaults, conduit routes, and street lights (including their circuit) need to be shown in the plan view.
 - N. Construction plans shall reference all City of Richland standard details necessary to construct all public improvements which will be owned, operated, maintained by the City or used by the general public.

- O. The contractor shall be responsible for any and all public infrastructure construction deficiencies for a period of one year from the date of the letter of acceptance by the City of Richland.
9. If the project will be built in phases the applicant shall submit a master plan for the sanitary sewer, domestic water, storm drainage, electrical, street lighting and irrigation system for the entire project prior to submitting plans for the first phase to assure constructability of the entire project. This includes the location and size of any storm retention ponds that may be required to handle runoff.
10. If the City Fire Marshal requires a secondary emergency vehicle access, it shall be included in the construction plan set and be designed to the following standards:
- A. 2-inches compacted gravel, minimum (temp. SEVAs only).
 - B. 2% cross-slope, maximum.
 - C. 5% slope, maximum. Any access road steeper than 5% shall be paved or be approved by the Fire Marshal.
 - D. Be 20-feet in width.
 - E. Have radii that are accommodating with those needed for City Fire apparatus.

Secondary emergency vehicles accesses (SEVA's) shall be 20-feet wide, as noted. Longer secondary accesses can be built to 12-feet wide with the approval of the City of Richland Fire Marshal. Temporary SEVA's shall be constructed with gravel, at a minimum. Permanent SEVA's shall be paved.

Survey Monument Destruction:

11. All permanent survey monuments existing on the project site shall be protected. If any monuments are destroyed by the proposed construction the applicant shall retain a professional land surveyor to replace the monuments and file a copy of the record survey with the City.
- A. No survey monument shall be removed or destroyed (*the physical disturbance or covering of a monument such that the survey point is no longer visible or readily accessible*) before a permit is obtained from the Department of Natural Resources (DNR). (WAC 332-120-030(2) and RCW 58.09.130).
 - B. Any person, corporation, association, department, or subdivision of the state, county or municipality responsible for an activity that may cause a survey monument to be removed or destroyed shall be responsible for ensuring that the original survey point is perpetuated. (WAC 332-120-030(2)).

- C. Survey monuments are those monuments marking local control points, geodetic control points, and land boundary survey corners. (WAC 332-120-030(3)).

When a monument must be removed during an activity that might disturb or destroy it, a licensed Engineer or Land Surveyor must complete, sign, seal and the file a permit with the DNR. It shall be the responsibility of the designing Engineer to identify the affected monuments on the project plans and include a construction note directing them to the DNR permit.

Traffic & Streets:

12. Street names are not reviewed or vested until construction plans are submitted for review. The street names included on the pre-plat may not be approved or available during the construction plan review process.
13. City of Richland Municipal Code Chapter 12.03 establishes a traffic impact fee to fund road projects needed to support increased traffic due to new developments. The City intends to update the Chapter 12.03 fee program to include the Horn Rapids area. If and when the code is updated to include this area, lots in this development will be subject to its terms.
14. A note will be shown on the face of the final plat(s) stating that Village Parkway and "Road B" are classified as collector streets. Subsequently, no driveways accessing single family lots will be allowed directly onto them.
15. The "Road B" right-of-way width needs to be changed to 84-feet wide, which is the standard ROW width for all other collector roads in the Horn Rapids residential neighborhood.
16. If incomplete at the time of construction, the Village Parkway frontage shall be completed to current City standards at the time that the phase which constructs the lots adjacent to it is developed.
17. The "phase line" across the north side of Sheet 2 of the preliminary plat appears to cut through Lot 25 and also the intersection of "Road L" and "Road J". This road intersection shall be constructed in its entirety to the northern curb returns of Road J. This may require an adjustment of the north pre-plat boundary to encompass this additional ground, or an easement for this road construction that is outside of the pre-plat boundary.
18. Sidewalks shall be installed along all public right-of-way frontages that building lots do not front on during construction of those phases (e.g., storm drainage ponds, parks, HOA tracts, etc.).

19. The developer and his engineer shall demonstrate on the construction plans that all future driveway entrances, sidewalks and pedestrian ramps will meet City and ADA requirements.
20. Pedestrian ramps shall be designed to current City standard details and ADA standards. Adequate right-of-way shall be provided at corners to allow for at least 1-foot of ROW behind the ped. ramp landing. Crosswalks at stop-controlled intersections shall have cross-slopes less than 2%. Crosswalks crossing thru-streets shall have cross-slopes less than 5%. The road profile shall be designed to accommodate this.
21. The vision-clearance triangle needs to be shown on all corner lots on both the construction plans and the final plat document, in accordance with RMC Chapter 12.11.020. If the intersection is in a curve, it will have to be evaluated per AASHTO guidelines. This information may need to be designed by the engineer of record and supplied to the surveyor of record for inclusion into the final plat document.
22. Any roads narrower than 34-feet shall have parking restricted on one side, and any roads narrower than 27-feet shall have parking restricted on both sides. Street signs indicating restricted parking shall be installed prior to final platting at the developer's expense. The restricted parking areas shall be indicated on the construction plans and the final plat. All street signage will be installed by the developer prior to final platting.
23. All roads shall be constructed to provide for adequate fire truck & solid waste collection truck access & turnaround movements.
24. If the project is to be constructed in phases, all dead-end streets longer than 150-feet that will be continued later need to have temporary turnarounds built at the end of them. If the temporary turnaround is not located within the final plat an easement with a 50-foot radius will be required.

Domestic Water:

25. It shall be the responsibility of the developer to extend a watermain to and through this property to serve domestic water at the time of plat construction. This water main shall be sized to adequately supply domestic water and fire flows to the proposed development.
26. Looping of the water system provides redundancy and helps to eliminate stagnant water.
27. In accordance with the Horn Rapids master water plan, an oversized water main is designed to run through this parcel. This water main shall be extended to the western boundary of the pre-plat.

28. In accordance with municipal code, domestic water mains shall be extended to all adjoining properties adjacent to the preliminary plat, provided they are in the correct pressure zone.
29. The developer will be required to demonstrate that all phases are capable of delivering adequate fire flows prior to construction plans being accepted for review. This may require looping of the watermain from off-site locations, or oversizing of the main where needed.
30. The fire hydrant layout shall be approved by the City Fire Marshal.
31. In accordance with Richland Municipal Code Chapter 18.16.080, an irrigation distribution system, entirely separate from the City's domestic water system, shall be provided for this development. Easements shall be provided on the final plat for this system where needed.

Sanitary Sewer:

32. It shall be the responsibility of the developer to extend a sewer main to and through this property to serve sanitary sewer at the time of plat construction.
33. A 10-foot wide exclusive sanitary sewer easement shall be provided for any sewer main that is outside of the public Right-of-Way. Wider easements are required for mains that are buried deeper than 10-feet. If any manholes are located outside of the public Right-of-Way, maintenance truck access to said structure may be required.
34. Sanitary sewer shall be extended to any adjoining properties adjacent to the preliminary plat, where appropriate and where grade allows.

Storm Water:

35. All construction projects that don't meet the exemption requirements outlined in Richland Municipal Code, Section 16.06 shall comply with the requirements of the Washington State Department of Ecology issued Eastern Washington NPDES Phase II Municipal Stormwater Permit. The Developer shall be responsible for compliance with the permit conditions. All construction activities subject to this title shall be required to comply with the standards and requirements set forth in the Stormwater Management Manual for Eastern Washington (SWMMEW) and prepare a Stormwater Site Plan. In addition, a Stormwater Pollution Prevention Plan (SWPPP) or submission of a completed erosivity waiver certification is required at the time of plan submittal. The City has adopted revised standards affecting the construction of new stormwater facilities in order to comply with conditions of its NPDES General Stormwater Permit program. This project, and each phase thereof, shall comply with the requirements

of the City's stormwater program in place at the time each phase is engineered. The project will require detailed erosion control plans.

36. All public storm drainage systems shall have their flow rate and storage capacity designed by a professional engineer following the core elements defined in the latest editions of the Stormwater Management Manual for Eastern Washington, the current Richland municipal codes, the Phase II Municipal Stormwater Permit, and the City's "Public Infrastructure Construction Plan Requirements and Design Guidelines". The storm water calculations shall be stamped by a professional engineer and shall include a profile of the storm system showing the hydraulic grade line. The calculations should include an accurate delineation of the contributing drainage area to accurately size the stormwater facilities. Passing the storm water downhill to an existing storm system will require an analysis of the downstream storm system to determine its capability of accepting the storm water without being overwhelmed. The applicant's design shall provide runoff protection to downstream property owners.
37. Any proposed storm drainage retention facilities within the boundary of the proposed preliminary plat shall not adversely affect neighboring properties.
38. Prior to or concurrent with the submittal of the first phase the developer shall provide a Geotechnical report including the percolation rate of the soils in the area of any storm retention ponds. If the project constructs a storm retention pond then the engineer will need to demonstrate that the pond will drain itself within 72 hours after the end of a storm event, and not have standing water in it longer than that. Engineering solutions are available for retention ponds that do not percolate within 72 hours.
39. The amount of post-development storm runoff from the proposed site shall be in compliance with RMC Chapter 16.06.
40. The parcel occupied by the stormwater basin shall be identified as a separate parcel or tract on the final plat and shall be dedicated to the City stormwater utility. The design of the basin shall include access features meeting the city's needs for maintenance.
41. The developer shall consider the long-term appearance of the storm basin, particularly if it will occupy a prominent location in the development. The City's typical storm pond maintenance practices consist of semi-annual vegetation trimming and silt and debris removal. If the pond location is deemed by City staff as being in a prominent location the developer shall design and install fencing and/or landscaping to mitigate the pond's visible character for the surrounding properties. If the City requires this type of treatment to the pond site the developer may propose

landscaping treatments consistent with the development and establish maintenance responsibilities to remain with the development. These maintenance responsibilities shall be noted on the final plat. Basins designed as detention and evaporative basins need to include plantings that will tolerate or thrive in standing water. Planting designs for areas not routinely exposed to water shall include plants that will thrive without irrigation unless the developer intends to maintain an irrigated pond site. At a minimum the landscaping plan should be consistent with the City's intended maintenance standard as described above.

42. The developer shall be responsible for landscaping the storm pond and for its maintenance and the plantings through the one-year infrastructure warranty period. At 11 months after the final acceptance date the developer shall clean the storm system and basin of all accumulated oil, sediment, and debris. After this maintenance is completed and inspected the City will begin routine maintenance of the system and basin. The developer shall replace any plantings that have failed to survive the warranty period. The developer shall also perform trimmings required to control weeds in excess of 18-inches in height for the 12-months following the date of final plat acceptance.

Final Platting Requirements:

43. The following notes shall appear on the face of all subsequent final plats:
 - *"Development of lots within this plat shall be performed in accordance with the Geotechnical Engineering Report for Quail Ridge prepared by PBS Engineering (Project No. 66118.002, dated 9/15/2020)."*
 - *"This area is designated as Section 3B of the Emergency Planning zone. Residents may be subject to evacuation in the event there is a radiological emergency at the Columbia Generation Station, additional information can be found at www.bces.wa.gov or by calling 509-628-2600."*
44. When the construction is substantially complete a paper set of "record drawings" shall be prepared by a licensed surveyor and include all changes and deviations. Please reference the Public Works document "RECORD DRAWING REQUIREMENTS & PROCEDURES" for a complete description of the record drawing process. All final punchlist items shall be completed or financially guaranteed prior to recording of the final plat.
45. Public utility infrastructure located on private property will require recording of a City standard form easement prior to acceptance of the infrastructure and release of a certificate of occupancy. The City requires preparation of the easement legal description by the developer two weeks prior to the

- scheduled date of final acceptance. Off-site ("third party") easements or right-of-ways for City infrastructure are the responsibility of the developer to obtain. Once received, the City will prepare the easement document and provide it to the developer. The developer shall record the easement at the Benton County Assessor and return a recorded original document to the City prior to application for final occupancy.
46. Any off-site easements or permits necessary for this project shall be obtained and secured by the applicant and supplied to the City at the time of plat construction and prior to final plat acceptance by the City.
 47. Ten-foot wide public utility easements will be required on the final plat along both sides of all right-of-ways within the proposed plat. They will also be required where the plat is adjacent to an existing right-of-way.
 48. The vision-clearance triangle needs to be shown on all corner lots on the final plat document, in accordance with RMC Chapter 12.11.020. If the intersection is in a curve, it will have to be evaluated per AASHTO guidelines. This information may need to be designed by the engineer of record and supplied to the surveyor of record for inclusion into the final plat document.
 49. The final plat shall include notes identifying all common areas including the tracts and acknowledging the ownership and maintenance responsibility by the homeowners association.
 50. Any restricted parking areas shall be indicated on the final plats.
 51. All landscaped areas within the plat that are in the public Right of Way shall be the responsibility of the property owners to maintain.
 52. A "No access / screening easement" will be required along the Village Parkway and "Road B" Right of Ways.
 53. The intended use and ownership of all tracts within the plat shall be noted on the final plat.
 54. Property with an unpaid L.I.D. assessment towards it must be paid in full or segregated per Richland Municipal Code 3.12.095.

EXHIBIT LIST

1. Application
2. Preliminary Plat Map
3. Tract Table
4. Vehicle Trip Accounting Letter
5. Cultural Resources Report
6. Critical Areas Assessment
7. Environmental Checklist
8. Inadvertent Discovery Plan
9. Utility Plan
10. Public Notices & Affidavits
11. Site Photos
12. Comments
13. Horn Rapids Environmental Impact Statement
14. WDFW Ferruginous Hawk Habitat Mapping Information



City of Richland
Development Services

Exhibit 1

625 Swift Blvd. MS-35
Richland, WA 99352
☎ (509) 942-7794
📠 (509) 942-7764

S2021-105
Preliminary Plat Application

Note: A Pre-Application meeting is required prior to submittal of an application.

PROPERTY OWNER INFORMATION

☒ Contact Person

Owner: Pahlisch Homes, Chad Bettsworth

Address: 210 SW Wilson Ave, Ste 100; Bend, OR 97702

Phone: 541.280.6242

Email: chadb@pahlisch.com

APPLICANT/CONTRACTOR INFORMATION (if different)

☐ Contact Person

Company: Same

UBI#:

Contact: Same

Address:

Phone:

Email:

SURVEYOR INFORMATION

Contact: Alex Matarazzo, PBS Engineering and Environmental

Address: 400 Bradley Boulevard, Suite 106; Richland, WA 99352

Phone: 509.942.1600

Email: alex.matarazzo@pbsusa.com

ENGINEER INFORMATION

Contact: Jason Mattox, PBS Engineering and Environmental

Address: 400 Bradley Boulevard, Suite 106; Richland, WA 99352

Phone: 509.942.1600

Email: jason.mattox@pbsusa.com

PROJECT DESCRIPTION

Project proposes to subdivide approximately 62.90 acres into a total of 124 residential lots in a series of 3 phases. The site is zoned R-3 and R-2S. Lots will be for future construction of detached single-family dwellings. A 22.06 future development tract will be included as part of the site.

PROPERTY INFORMATION

Parcel #: 120083020006000, 120083000009008, 9015, 9012, 9008, and 9013 Zoning: R-3 and R-2S

Legal Description: Portion of SW 1/4, Section 20, T10N, R28E, WM, City of Richland, Benton County, Washington - see title report for full legal descriptions

Proposed Subdivision Name: Quail Ridge II

Gross Plat Acreage: 62.90 acres

Number of Lots: 124

Smallest Lot Size: 6,927 sq. ft.

Net Lot Area Acreage: 23.28 acres

Avg. Lot Size: 8,663 sq. ft.

Largest Lot Size: 14,399 sq. ft.

Domestic Water Supply: ☒ City ☐ Private Well

Sewage Disposal: ☒ City ☐ Septic

Irrigation Source: ☒ City ☐ Private Well ☐ Columbia Irrig. District ☐ Kennewick Irrig. District ☐ Other

SEPA Checklist submitted? ☒ Yes ☐ No

Title Report (Subdivision Guarantee) submitted? ☒ Yes ☐ No

APPLICATION MUST INCLUDE

1. Completed application and filing fee
2. 2 – Full-size copies of proposed survey
3. 1 – 11" x 17" copy of proposed survey
4. 1 – PDF file of proposed survey
5. Title Report showing ownership, easements, restrictions and accurate legal description of the property involved
6. SEPA Checklist
7. Other information as determined by the Administrator

I authorize employees and officials of the City of Richland the right to enter and remain on the property in question to determine whether a permit should be issued and whether special conditions should be placed on any issued permit. I have the legal authority to grant such access to the property in question.

I also acknowledge that if a permit is issued for land development activities, no terms of the permit can be violated without further approval by the permitting entity. I understand that the granting of a permit does not authorize anyone to violate in any way any federal, state, or local law/regulation pertaining to development activities associated with a permit.

I hereby certify under penalty of perjury under the laws of the State of Washington that the following is true and correct:

1. I have read and examined this permit application and have documented all applicable requirements on the site plan.
2. The information provided in this application contains no misstatement of fact.
3. I am the owner(s), the authorized agent(s) of the owner(s) of the above referenced property, or I am currently a licensed contractor or specialty contractor under Chapter 18.27 RCW or I am exempt from the requirements of Chapter 18.27 RCW.
4. I understand this permit is subject to all other local, state, and federal regulations.

Note: This application will not be processed unless the above certification is endorsed by an authorized agent of the owner(s) of the property in question and/or the owner(s) themselves. If the City of Richland has reason to believe that erroneous information has been supplied by an authorized agent of the owner(s) of the property in question and/or by the owner(s) themselves, processing of the application may be suspended.

Applicant Printed Name: Chad Bettsworth

Applicant Signature: _____



Date _____

4-29-21

QUAIL RIDGE II - PHASES 1-3

PRELIMINARY PLAT

SURVEY BENCHMARK:

1" BRASS CAP IN CASE AT INTERSECTION OF RIVER PARK DRIVE & SONORAN DRIVE, CITY OF RICHLAND NAVD 88 ELEVATION IS 459.05

ALTERNATE MONUMENT IS A 5/8" REBAR WITH YELLOW PLASTIC CAP: "LS 16216" IN CASE AT THE CENTERLINE OF TWIN BRIDGES ROAD, BETWEEN SR 240 & THE FORMER RICHLAND IRRIGATION DISTRICT CANAL, BEING THE 1/4 CORNER COMMON TO SECTIONS 20 & 19, ALSO BEING CITY OF RICHLAND PROVIDED GPS CONTROL POINT NO. 1032, CITY OF RICHLAND NAVD 88 ELEVATION IS 431.40

BASIS OF BEARINGS:

WASHINGTON STATE PLANE, SOUTH ZONE GRID N86°44'36"E ALONG THE SOUTH LINE OF SECTION 20 OF TOWNSHIP 10 NORTH IN RANGE 28 EAST OF THE WILLAMETTE MERIDIAN, BETWEEN FOUND MONUMENTS. DISTANCES SHOWN ARE TRUE GROUND LENGTHS.

LAND USE TABLE	
PRE-PLATTED SITE AREA:	62.90 ACRES
R-2S RESIDENTIAL ZONED AREA:	16.60 ACRES
R-3 RESIDENTIAL ZONED AREA:	46.30 ACRES
TOTAL SINGLE FAMILY RESIDENTIAL ZONED AREA:	24.66 ACRES
RIGHT OF WAY DEDICATION:	10.36 ACRES
TRACTS A,B,D,E,F,G,H,I,J TOTAL AREA:	5.82 ACRES
TRACT C FUTURE DEVELOPMENT AREA:	22.06 ACRES
SINGLE FAMILY RESIDENTIAL LOT COUNT:	124 LOTS
MINIMUM LOT AREA:	6,927 SF
MAXIMUM LOT AREA:	14,399 SF
AVERAGE LOT AREA:	8,663 SF

RESIDENTIAL LOT COUNTS BY PHASE		
PHASE #	R/W AREA (IN ACRES)	LOT COUNT
1	6.83	76
2	1.37	16
3	2.16	32

OWNER/DEVELOPER:

PAHLISCH HOMES
CONTACT: CHAD BETTESWORTH
210 SW WILSON AVE, #100
BEND, OR 97702

ENGINEER:

PBS ENGINEERING AND ENVIRONMENTAL
CONTACT: JASON MATTOX, PE
400 BRADLEY BLVD, SUITE 106
RICHLAND, WA 99352
(509) 942-1600

SURVEYOR:

PBS ENGINEERING AND ENVIRONMENTAL
CONTACT: ALEX MATARAZZO, PLS
400 BRADLEY BLVD, SUITE 106
RICHLAND, WA 99352
(509) 942-1600

ZONING CLASSIFICATIONS:

MEDIUM DENSITY RESIDENTIAL SMALL LOT (R-2S)
MULTIPLE FAMILY RESIDENTIAL (R-3)

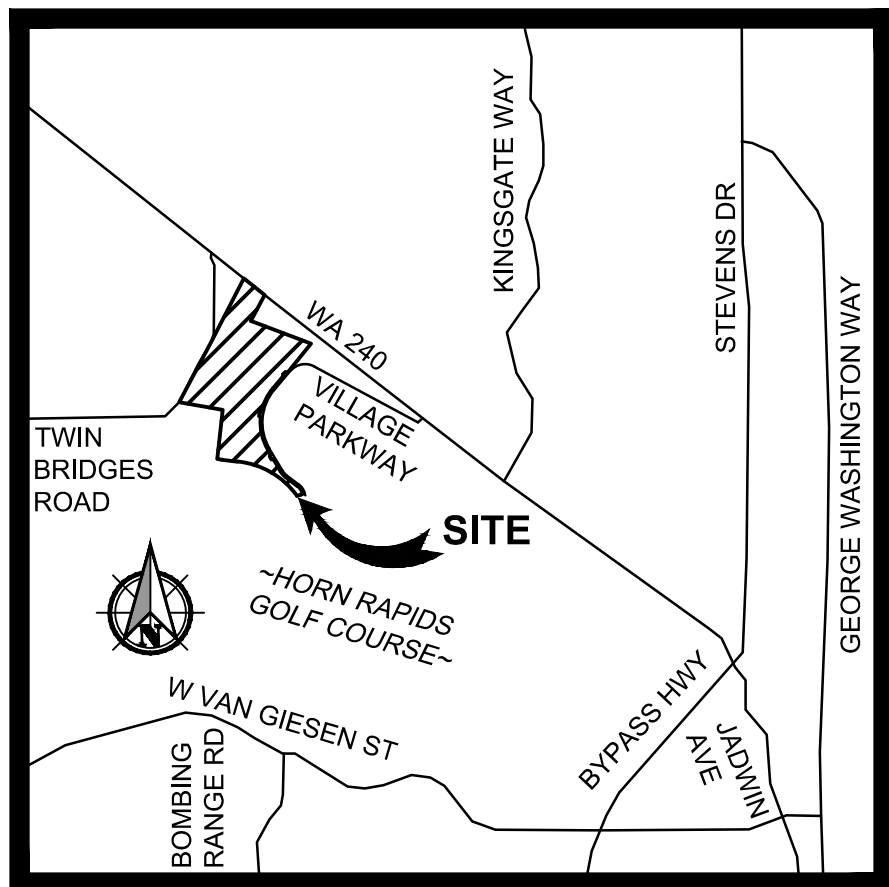
NOTES:

- ALL LOTS SHALL HAVE A 10' UTILITY EASEMENT ABUTTING STREET RIGHT-OF-WAYS.

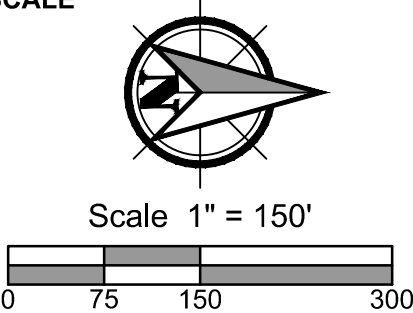
SHEET INDEX

- PRELIMINARY PLAT - OVERALL PLAN
- PRELIMINARY PLAT - PHASES 1 AND 2 PLAN
- PRELIMINARY PLAT - PHASE 3 PLAN
- PRELIMINARY PLAT - TRACT C PLAN
- LANDSCAPE PLAN

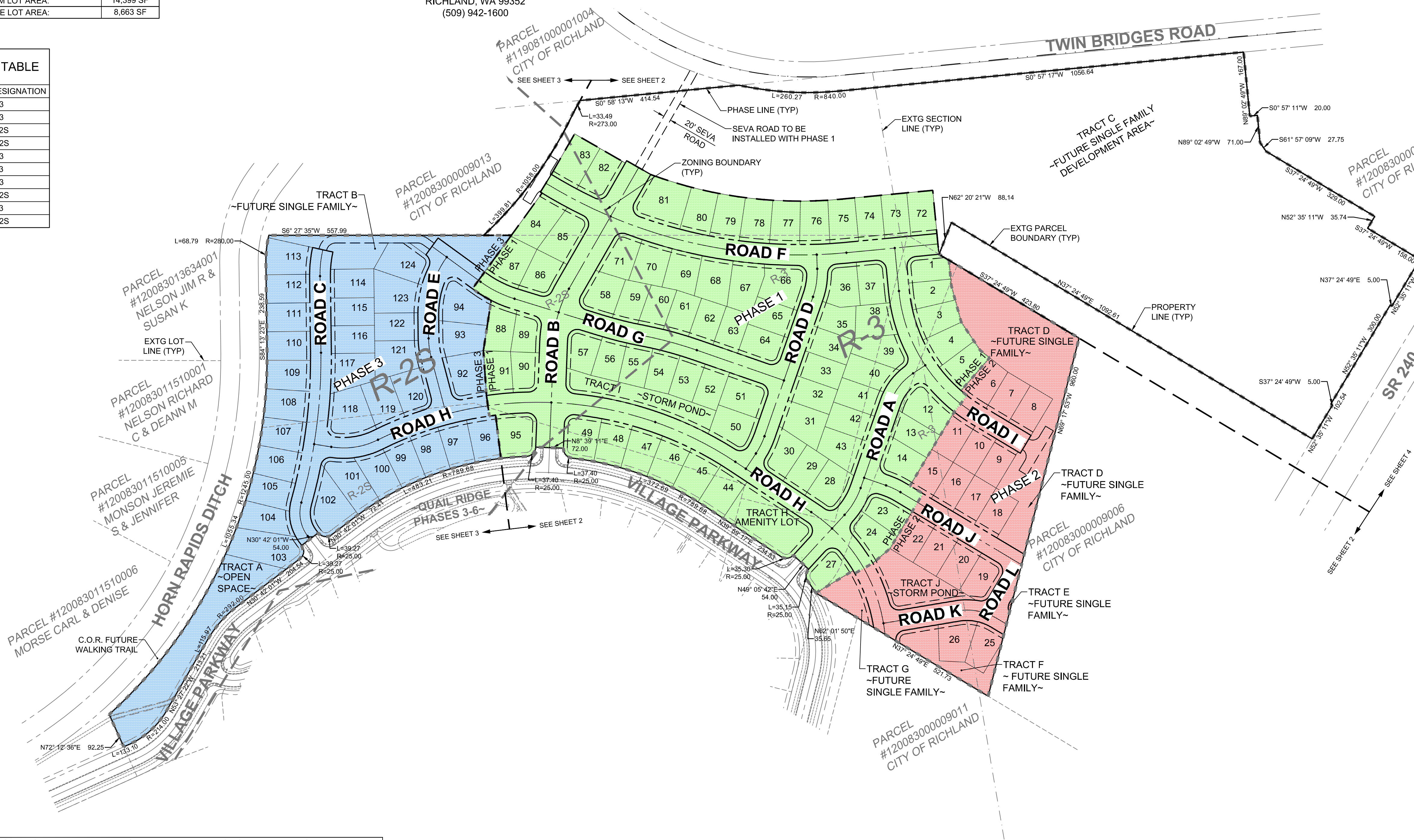
Exhibit 2



VICINITY MAP
NOT TO SCALE



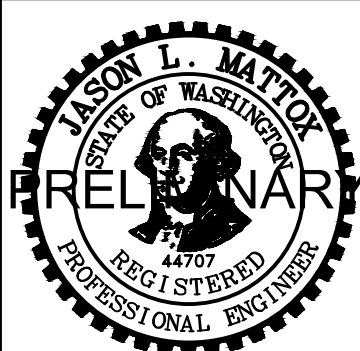
LOT ZONING TABLE	
LOT #	ZONING DESIGNATION
49	R-3
54	R-3
55	R-2S
59	R-2S
60	R-3
61	R-3
70	R-3
71	R-2S
82	R-3
83	R-2S



PRELIMINARY PLAT - OVERALL PLAN FOR:

QUAIL RIDGE II - PHASES 1-3

A SUBDIVISION LOCATED IN THE CITY OF RICHLAND, WASHINGTON



DESIGNED:

BMW

CHECKED:

JLM

APRIL 2021

66118.003

SHEET ID

SHEET 1 OF 5

File Name: L:\Projects\66000066118-03\Civil\CAD\Working\Sheets\Plan\66118-003_PrelimPlan2-03.dwg User: Brandon Woods CAD Plot Date/Time: 4/30/2021 9:51:28 AM Layout Tab: C02



- GENERAL NOTES:
- ALL LOTS SHALL HAVE A 10' UTILITY EASEMENT ABUTTING STREET RIGHT-OF-WAYS.
 - TRACT H SHALL BE RECREATIONAL TRACT WITH THE FOLLOWING POTENTIAL AMENITIES:
 - CLUB HOUSE
 - OFF STREET PARKING
 - SWIMMING POOL
 - PICNIC AREA

PBS Engineering and Environmental Inc.
106
Richland, WA 99362
509.942.1600
pbsusa.com

PBS

PRELIMINARY PLAT - PHASES 1 AND 2 PLAN FOR:

QUAIL RIDGE II - PHASES 1-3

A SUBDIVISION LOCATED IN THE CITY OF RICHLAND, WASHINGTON

811

Know what's below.
Call before you dig.

JASON L. MATTHEWS
PROFESSIONAL ENGINEER
REG. NO. 14707
STATE OF WASHINGTON

DESIGNED: BMW

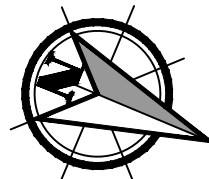
CHECKED: JLM

APRIL 2021
66118.003

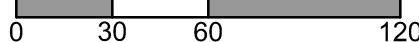
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SHEET 2 OF 5

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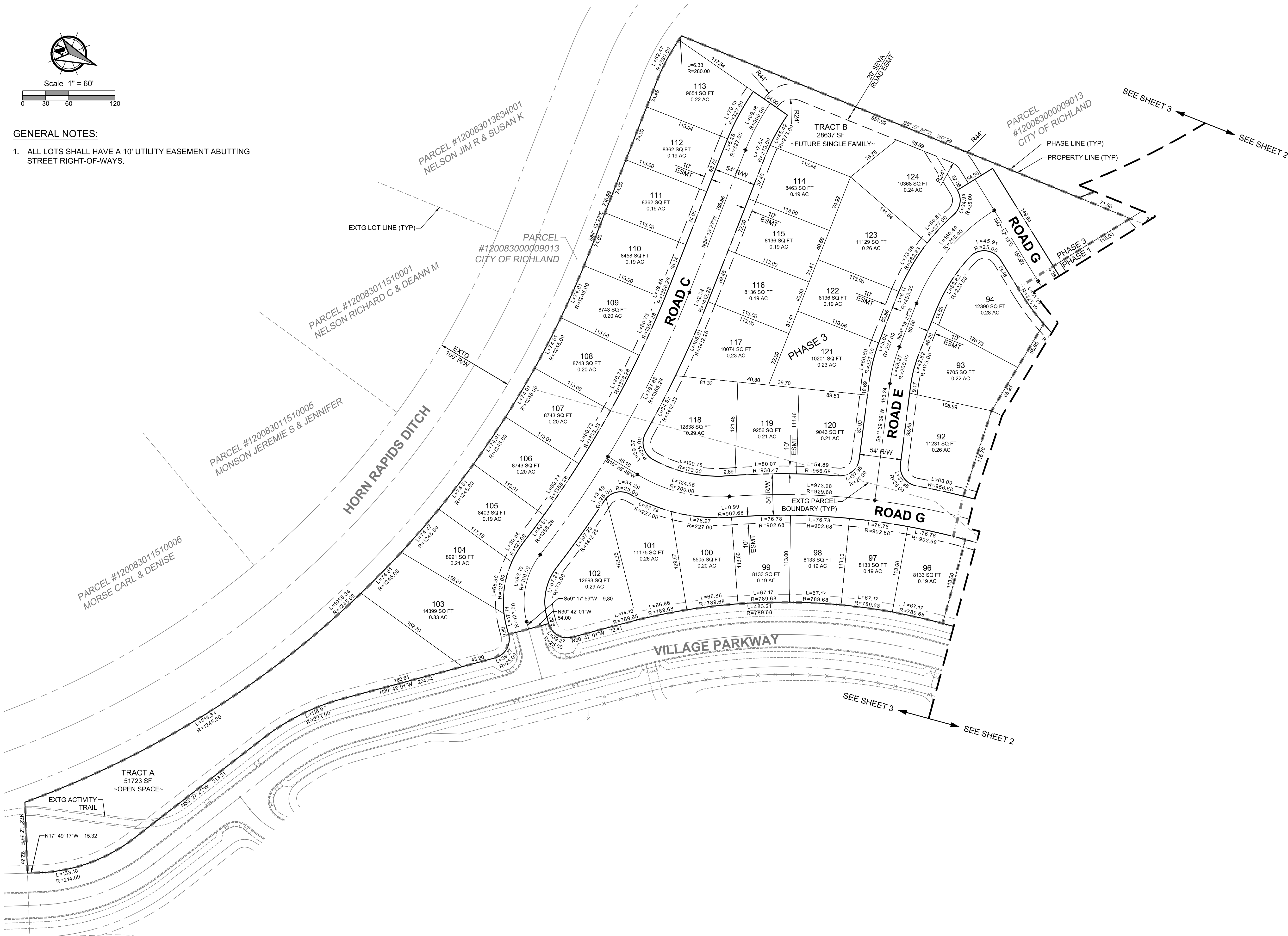


Scale 1" = 60'



GENERAL NOTES:

1. ALL LOTS SHALL HAVE A 10' UTILITY EASEMENT ABUTTING STREET RIGHT-OF-WAYS.



Full Size Sheet Format Is 22x34; If Printed Size Is Not 22x34, Then This Sheet Format Has Been Modified & Indicated Drawing Scale Is Not Accurate.

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Environmental Inc.
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Richland, WA 99362
509.942.1600
pbsusa.com



PRELIMINARY PLAT - PHASE 3 PLAN FOR:

QUAIL RIDGE II - PHASES 1-3

A SUBDIVISION LOCATED IN THE CITY OF RICHLAND, WASHINGTON



Know what's below.
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CHECKED:
JLM

APRIL 2021
66118.003

SHEET ID



- TWIN BRIDGES ROAD

PARCEL
#1200830000090013
CITY OF RICHLAND

PARCEL
#120083000009006
CITY OF RICHLAND

SEE SHEET 2  SEE SHEET 4

SEE SHEET 4 ← → SEE SHEET 2

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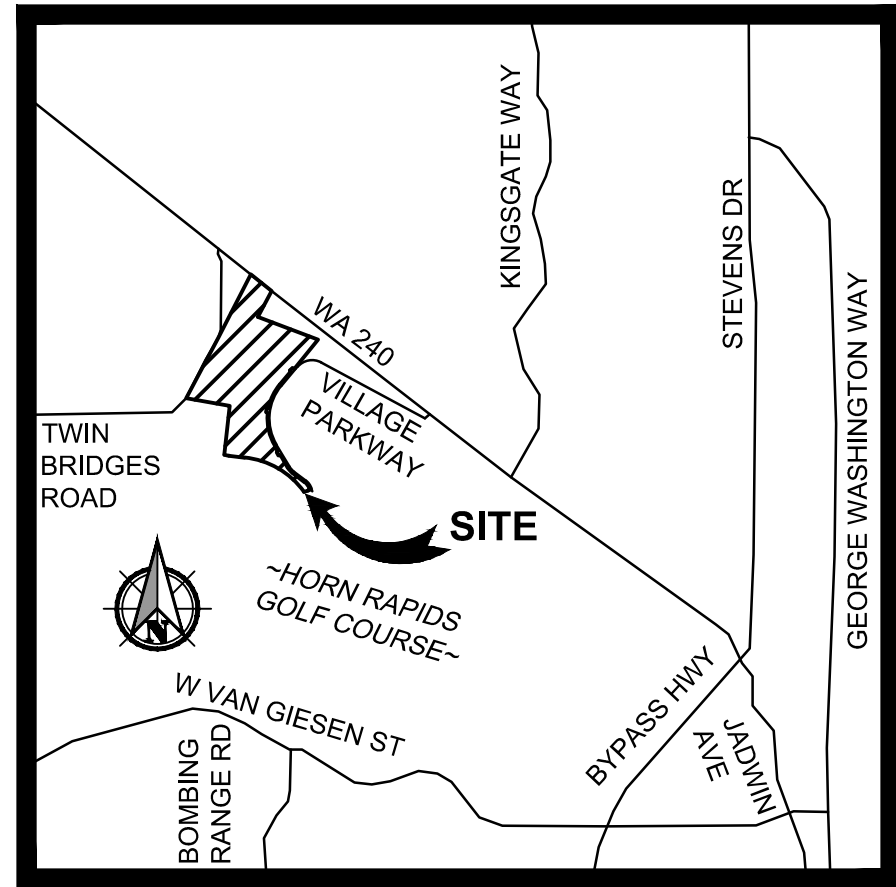
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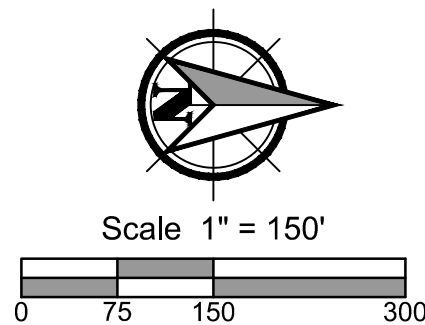
VICINITY MAP
NOT TO SCALE

LANDSCAPE AREAS

PLANTER STRIPS	14,909 SF
TRACT A	52,162 SF
TRACT H	20,383 SF
TRACT I	16,556 SF
TRACT J	16,967 SF

NOTES:
ALL PLANTING STRIPS ALONG ROAD B TO BE FULLY LANDSCAPED WITH STREET TREES, SPACED ACCORDING TO CITY OF RICHLAND STANDARDS AS APPROVED BY CITY OF RICHLAND.

TRACT H SHALL BE RECREATIONAL TRACT WITH THE FOLLOWING POTENTIAL AMENITIES:
-CLUB HOUSE
-OFF STREET PARKING
-SWIMMING POOL
-PICNIC AREA



Full Size Sheet Format Is 22x34; If Printed Size Is Not 22x34, Then This Sheet Format Has Been Modified & Indicated Drawing Scale Is Not Accurate.

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Environmental Inc.
106
Richland, WA 99352
509.942.1600
pbsusa.com



PRELIMINARY PLAT - LANDSCAPE PLAN FOR:

QUAIL RIDGE II - PHASES 1-3

A SUBDIVISION LOCATED IN THE CITY OF RICHLAND, WASHINGTON



Know what's below.
Call before you dig.

DESIGNED:
OAG

CHECKED:
RWP

APRIL 2021
66118.003

SHEET ID

L-01

SHEET 5 OF 5

Exhibit 3

Quail Ridge II Phases 1-3 Tract Areas

Name	Area	Use
Tract A	51,723 sq ft	Open Space
Tract B	28,637 sq ft	Future Single Family Development Area
Tract C	9,609,334 sq ft	Future Single Family Development Area
Tract D	84,351 sq ft	Future Single Family Development Area
Tract E	182 sq ft	Future Single Family Development Area
Tract F	14,364 sq ft	Future Single Family Development Area
Tract G	9,529 sq ft	Future Single Family Development Area
Tract H	23,516 sq ft	Amenity Lot
Tract I	20,930 sq ft	Storm Pond Tract
Tract J	20,302 sq ft	Storm Pond Tract



April 20, 2021

Exhibit 4

John Deskins, Traffic Engineer
City of Richland
625 Swift Boulevard
Richland, Washington 99352

Via email: jdeskins@CI.RICHLAND.WA.US

Regarding: Trip Accounting Letter
Horn Rapids – Quail Ridge II
Southeast of Twin Bridges Road and SR 240 Intersection
Richland, Washington 99354
PBS Project 66118.003

Dear Mr. Deskins:

PBS Engineering and Environmental Inc. (PBS) has prepared this trip accounting letter estimating the number of trips generated by the proposed Quail Ridge II subdivision of the Horn Rapids development. This letter supports the Quail Ridge II preliminary land use application to the City of Richland and documents the status of the vested trips for the overall Horn Rapids development.

The proposed Quail Ridge II site is located along the southwest side of State Route 240 (SR 240) between Twin Bridges Road and Village Parkway in Richland, Washington; see Figure 1 for the vicinity map. The development proposes 123 dwelling units of single-family residential housing; see Figure 2 for the site plan.

The master plan trip accounting is based on the March 1993, J-U-B Engineers, Inc., "Horn Rapids Development" traffic impact study. See Figure 3 for the original conceptual site plan and trip estimate table from the 1993 traffic impact study. This trip accounting subtracts the Quail Ridge II subdivision and existing land uses' trips from the total project trips of the original Horn Rapids development. The existing land uses were estimated using the ArcGIS¹ online image services from 2020 and verified with a site survey performed by PBS staff. See Figure 4 for the overall Horn Rapids site survey map that shows the areas that are existing, under construction, and proposed.

TRIP GENERATION

The following sections rely on data provided in the Institute of Transportation Engineers' (ITE) *Trip Generation Manual*, 10th Edition (*Manual*), and the ITE *Trip Generation Handbook* (*Handbook*), 3rd Edition, both published in 2017. Detailed trip generation calculations are provided in the attachments.

Proposed Land Use

Trip generation estimates for the Quail Ridge II subdivision are based on the ITE *Manual* regression equations for 123 single-family dwelling units and using ITE land use code 210 – Single-Family Detached Housing. Table 1 presents the trip generation estimates.

¹ https://tiles.arcgis.com/tiles/5g4JcCVJwbhPOszb/arcgis/rest/services/COR_Imagery_2020_tpkX/MapServer

Table 1. Trip Generation for Proposed Quail Ridge II Site

Proposed Land Use (ITE Code)	Single-Family Detached Housing (210)	
Independent Variable	Dwelling Units	
Size	123	
Average Daily Trips	1,258	
Peak Hour Trips	AM	PM
Entering	23	78
Exiting	69	46
Total Trips	92	124

The Quail Ridge II subdivision is anticipated to generate 1,258 new vehicle trips on a typical weekday, including 92 new trips during the AM peak hour and 124 new trips during the PM peak hour, which will be subtracted from the original trip allocation in the trip accounting section in this letter.

Existing Land Uses

Since no prior trip accounting documents were provided to PBS for the prior phases of the Horn Rapids development, trip generation estimates for the existing and under-construction uses at the overall Horn Rapids site are based on the ITE regression equations for 1,235 single-family dwelling units and ITE weighted average trip rates for an 18-hole golf course based on the ITE *Manual* data for land use codes 210 and 430, respectively. These are the only land uses developed on the Horn Rapids site to date. Other uses anticipated with the original Horn Rapids traffic impact study, including apartments, townhouses, winery, hotel, elementary school, day care, parks, office, church, retail, restaurant, and bank, have not yet been developed on the site.

Following the ITE *Handbook*, no internal trips were calculated between the 18-hole recreational golf course and existing residential uses on the site. The Horn Rapids Golf Course manager mentioned in a phone conversation that about 10% of the existing homeowners in the Horn Rapids community are members of the golf course. For the purpose of this trip accounting letter, no internal capture reductions were applied as a conservative approach. In addition, a significant number of remaining trips are available after subtracting the Quail Ridge II and existing land uses' trips from the total project trips. This finding is shown in the trip accounting section in this letter.

PBS recommends that an informal reduction to account for the internal trips between the residential uses and the golf course be applied at full buildout of the overall Horn Rapids site. This will supply the maximum number of trips available at full buildout.

The recreational vehicle storage and recreation center that includes a swimming pool and tennis courts are assumed to be open for the Horn Rapids residents only. Trips generated are internal, therefore no independent trip generation calculations were performed for these uses.

Following the ITE *Handbook* data, no pass-by trip rate was applied to the peak hour trips. No adjustments were made for transit, pedestrian, or diverted linked trips. Table 2 presents the trip generation estimates.

Table 2. Trip Generation for Existing Uses at the Horn Rapids Site

Existing Land Use (ITE Code)	Single-Family Detached Housing (210)		Golf Course (430)		Total	
Independent Variable	Dwelling Units		Holes			
Size	1,235 ^a		18			
Average Daily Trips	10,502		547		11,049	
Peak Hour Trips	AM	PM	AM	PM	AM	PM
Entering	221	715	25	28	246	743
Exiting	661	420	7	24	668	444
Total Trips	882	1,135	32	52	914	1,187

^a 213 of the single-family dwelling units are currently under construction.

The existing land uses at the overall Horn Rapids site are anticipated to generate 11,049 average weekday trips, including 914 vehicle trips during the AM peak hour and 1,187 trips during the PM peak hour, which will be subtracted from the original trip allocation in the trip accounting below.

HORN RAPIDS TRIP ACCOUNTING

The overall Horn Rapids development approved 33,158 daily trips, 2,512 AM peak hour trips, and 3,661 trips during the weekday PM peak hour. The existing land uses have claimed trips from these vested trips, and this Quail Ridge II project proposes to do the same. Table 3 provides an accounting of the available trips remaining for the Horn Rapids development. The detailed trip generation estimate for the original Horn Rapids development is provided in the attachments as well as the trip accounting calculation.

Table 3. Horn Rapids Development Trip Accounting

Trip Accounting Element (Applicable Document Date)	Daily Trips	Weekday AM Peak Hour			Weekday PM Peak Hour		
		In	Out	Total	In	Out	Total
Original Horn Rapids Vested Trips (March 1993)	33,158	928	1,584	2,512	2,124	1,537	3,661
Existing Land Uses' Trips (April 20, 2021)	(11,049)	(221)	(661)	(882)	(715)	(420)	(1,135)
Remaining Available Trips Prior to the Proposed Quail Ridge II Subdivision	22,109	682	916	1,598	1,381	1,093	2,474
Quail Ridge II Subdivision (April 20, 2021)	(1,258)	(23)	(69)	(92)	(78)	(46)	(124)
Remaining Available Trips After the Proposed Quail Ridge II Subdivision	20,851	659	847	1,506	1,303	1,047	2,350

Negative values are shown in parentheses.

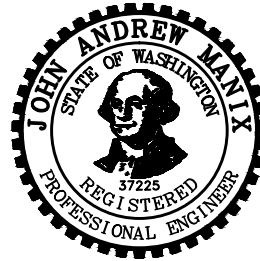
Following the development of Quail Ridge II, the Horn Rapids development will have 20,851 daily trips, including 1,506 AM peak hour trips and 2,350 PM peak hour trips, remaining available for future development on other areas of the overall site.

CLOSING

Please feel free to contact me at 360.567.2117 or John.Manix@pbsusa.com with any questions or comments.

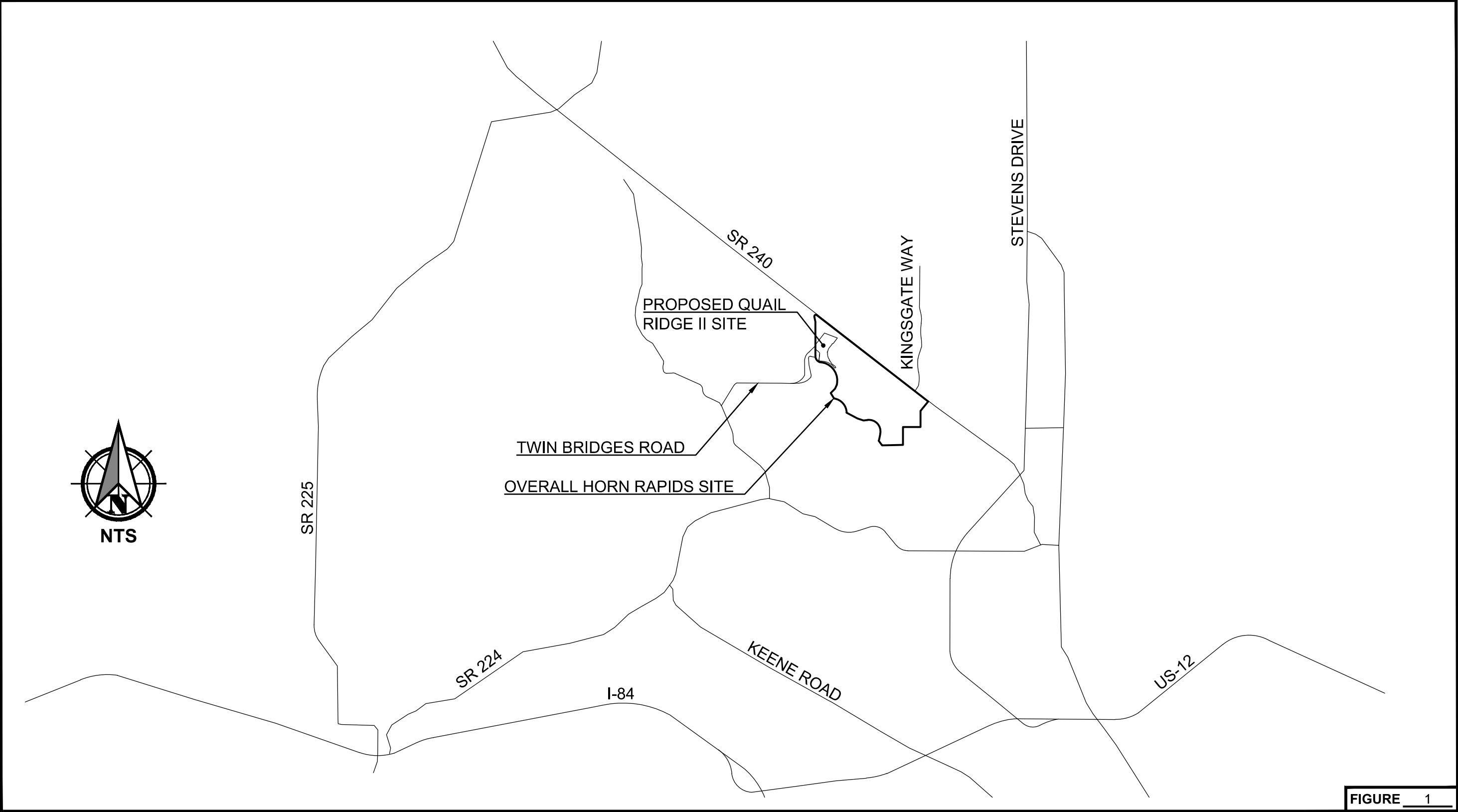
Sincerely,


John Manix, PE
Senior Traffic Engineer

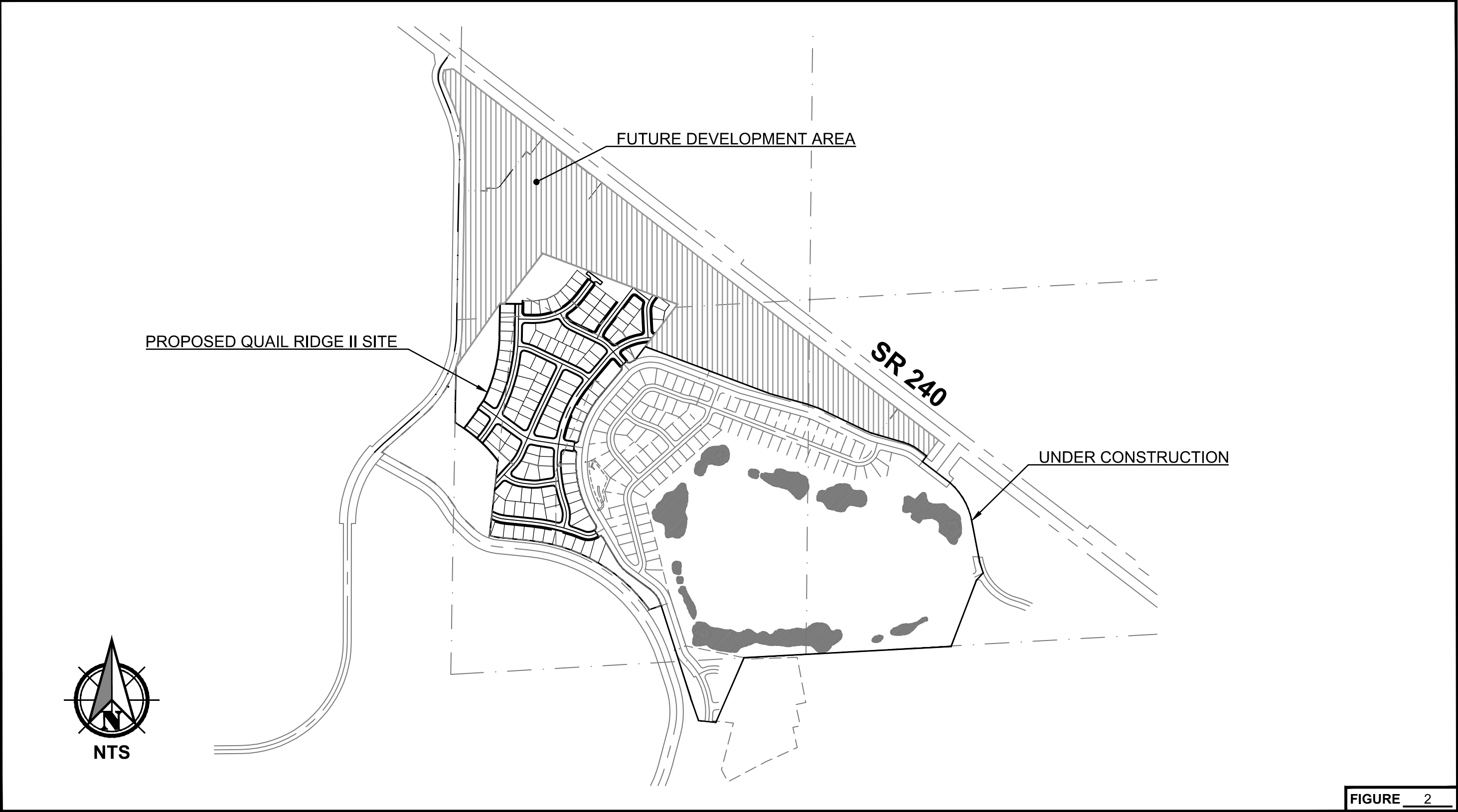


Attachments: Figure 1. Vicinity Map
Figure 2. Site Plan
Figure 3. Original Horn Rapids Conceptual Site Plan
Figure 4. Overall Horn Rapids Site Survey Map
Trip Generation Calculations for Proposed and Existing Land Uses
Trip Generation Table from 1993 J-U-B Engineers Traffic Impact Study for the Original Horn Rapids Development
Trip Accounting Calculations

BJ:JAM:DAH:rg



Vicinity Map
Horn Rapids - Quail Ridge II

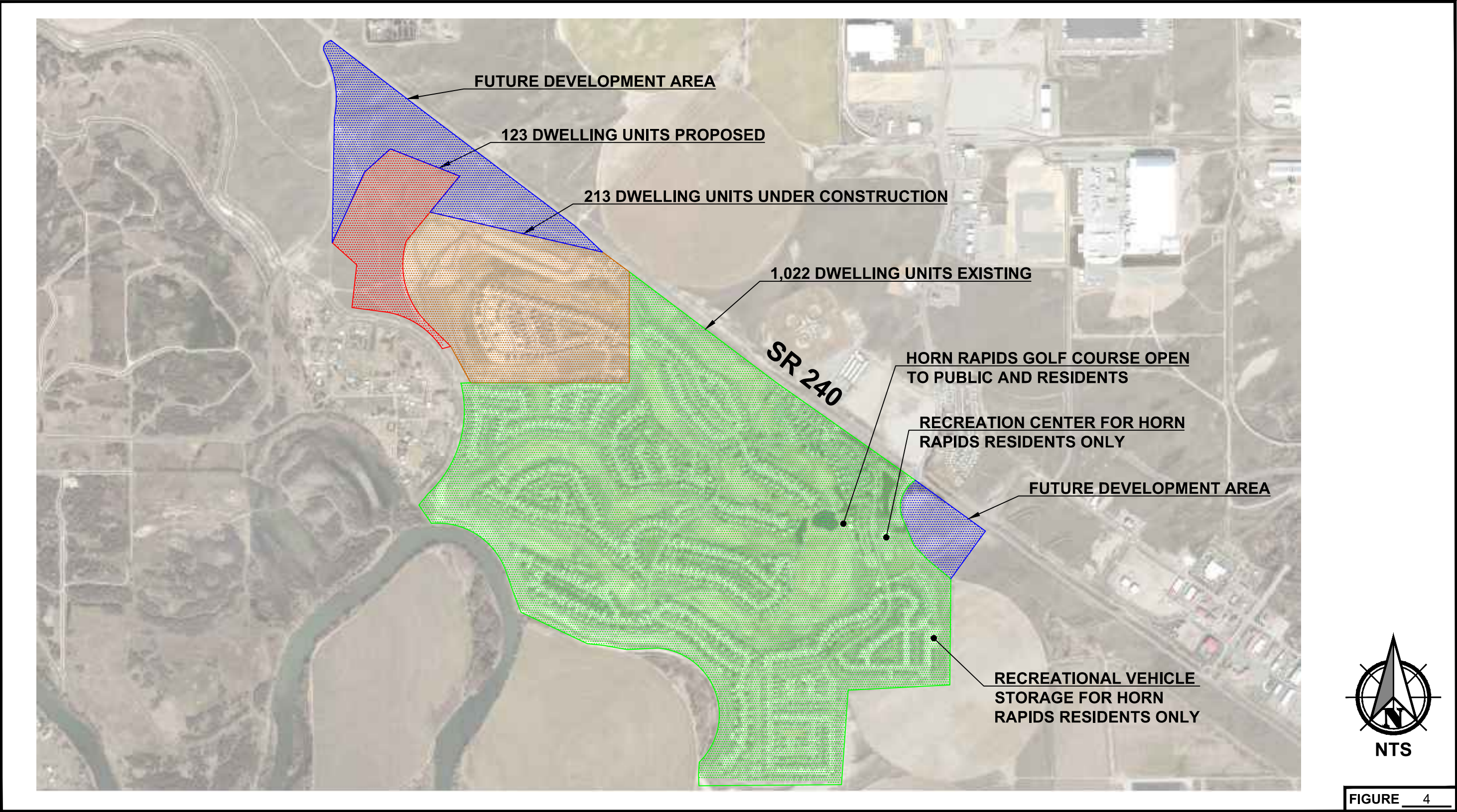


Site Plan
Horn Rapids - Quail Ridge II



FIGURE 3

Original Horn Rapids Conceptual Site Plan
Horn Rapids - Quail Ridge II



Overall Horn Rapids Site Survey Map
Horn Rapids - Quail Ridge II

TABLE 1
TRIP GENERATION VOLUMES

GENERATOR	UNITS	AREA (GFA)	AVERAGE DAILY TRIPS	A.M. PEAK HOUR DEPARTURES	P.M. PEAK HOURS	
					ARRIVALS	DEPARTURES
<u>DESIGN YEAR 1994 - SINGLE FAMILY</u>	200	---	1,954	109 (74%)	131 (65%)	71 (35%)
GOLF COURSE	18 HOLES	---	645	84 (83%)	31 (52%)	29 (48%)
<u>DESIGN YEAR 1999 - SINGLE FAMILY</u>	800	---	7,006	362 (74%)	457 (65%)	246 (35%)
APARTMENTS	200	---	1,256	508 (74%)	83 (68%)	39 (32%)
<u>DESIGN YEAR 2008 - SINGLE FAMILY</u>	1,182	---	10,037	99 (83%)	651 (65%)	351 (35%)
APARTMENTS	237	---	1,494	128 (83%)	97 (68%)	45 (32%)
TOWNHOUSE	403	---	2,130	0 (7%)	129 (66%)	66 (34%)
WINERY	---	19,000	61	13 (40%)	7 (53%)	28 (46%)
HOTEL	80 SUITES	---	645	8 (17%)	33 (54%)	28 (46%)
ELEMENTARY SCHOOL	---	38,000	449	50 (40%)	58 (56%)	47 (44%)
DAY CARE	---	12,000	951	43 (46%)	62 (46%)	73 (54%)
PARKS	31 ACRES	---	174	N/A	N/A	N/A
OFFICE	---	105,000	1,456	22 (11%)	33 (17%)	160 (83%)
CHURCH	---	7,000	65	5 (50%)	3 (54%)	2 (46%)
RETAIL	---	34,000	1,325	82 (50%)	82 (50%)	81 (50%)
RESTAURANT	---	9,000	1,848	71 (50%)	79 (54%)	67 (46%)
BANK	---	9,000	1,662	N/A	188 (48%)	204 (52%)
TOTAL			33,158	1584	2,124	1,537

Detailed Land Use Data
For 1235 Dwelling Units of SFHOUSE
(210) Single-Family Detached Housing

Project: Horn Rapids - Quail Ridge II

Open Date: 4/14/2021
Analysis Date: 4/14/2021

Day / Period	Total Trips	Pass-By Trips	Avg Rate	Min Rate	Max Rate	Std Dev	Avg Size	% Enter	% Exit	Use Eq.	Equation	R2
Weekday Average Daily Trips Source : Trip Generation Manual 10th Edition	10502	0	9.44	4.81	19.39	2.1	264	50	50	True	$\ln(T) = 0.92 \ln(X) + 2.71$	0.95
Weekday AM Peak Hour of Adjacent Street Traffic Source : Trip Generation Manual 10th Edition	882	0	0.74	0.33	2.27	0.27	219	25	75	True	$T = 0.71(X) + 4.8$	0.89
Weekday PM Peak Hour of Adjacent Street Traffic Source : Trip Generation Manual 10th Edition	1135	0	0.99	0.44	2.98	0.31	242	63	37	True	$\ln(T) = 0.96 \ln(X) + 0.2$	0.92

Detailed Land Use Data
For 18 Holes of GOLF 1
(430) Golf Course

Project: Horn Rapids - Quail Ridge II

Open Date: 4/14/2021
Analysis Date: 4/14/2021

Day / Period	Total Trips	Pass-By Trips	Avg Rate	Min Rate	Max Rate	Std Dev	Avg Size	% Enter	% Exit	Use Eq.	Equation	R2
Weekday Average Daily Trips Source : Trip Generation Manual 10th Edition	547	0	30.38	14.5	40.5	9.88	23	50	50	False	$T = 34.93(X) - 102.33$	0.72
Weekday AM Peak Hour of Adjacent Street Traffic Source : Trip Generation Manual 10th Edition	32	0	1.76	0.61	3.06	0.64	18	79	21	False	$\ln(T) = 0.91 \ln(X) + 0.77$	0.5
Weekday PM Peak Hour of Adjacent Street Traffic Source : Trip Generation Manual 10th Edition	52	0	2.91	1.67	5	0.93	19	53	47	False		

Detailed Land Use Data
For 123 Dwelling Units of SFHOUSE 1
(210) Single-Family Detached Housing

Project: Horn Rapids - Quail Ridge II

Open Date: 4/14/2021
Analysis Date: 4/14/2021

Day / Period	Total Trips	Pass-By Trips	Avg Rate	Min Rate	Max Rate	Std Dev	Avg Size	% Enter	% Exit	Use Eq.	Equation	R2
Weekday Average Daily Trips Source : Trip Generation Manual 10th Edition	1258	0	9.44	4.81	19.39	2.1	264	50	50	True	$\ln(T) = 0.92 \ln(X) + 2.71$	0.95
Weekday AM Peak Hour of Adjacent Street Traffic Source : Trip Generation Manual 10th Edition	92	0	0.74	0.33	2.27	0.27	219	25	75	True	$T = 0.71(X) + 4.8$	0.89
Weekday PM Peak Hour of Adjacent Street Traffic Source : Trip Generation Manual 10th Edition	124	0	0.99	0.44	2.98	0.31	242	63	37	True	$\ln(T) = 0.96 \ln(X) + 0.2$	0.92

Trip Generation Summary

Alternative: Proposed Land Use

Phase:

Open Date: 4/14/2021

Project: Horn Rapids - Quail Ridge II

Analysis Date: 4/14/2021

ITE	Land Use	Weekday Average Daily Trips				Weekday AM Peak Hour of Adjacent Street Traffic				Weekday PM Peak Hour of Adjacent Street Traffic			
		*	Enter	Exit	Total	*	Enter	Exit	Total	*	Enter	Exit	Total
210	SFHOUSE 1		629	629	1258		23	69	92		78	46	124
	123 Dwelling Units												
Unadjusted Volume			629	629	1258		23	69	92		78	46	124
Internal Capture Trips			0	0	0		0	0	0		0	0	0
Pass-By Trips			0	0	0		0	0	0		0	0	0
Volume Added to Adjacent Streets			629	629	1258		23	69	92		78	46	124

Total Weekday Average Daily Trips Internal Capture = 0 Percent

Total Weekday AM Peak Hour of Adjacent Street Traffic Internal Capture = 0 Percent

Total Weekday PM Peak Hour of Adjacent Street Traffic Internal Capture = 0 Percent

* - Custom rate used for selected time period.

Source: Institute of Transportation Engineers, Trip Generation Manual 10th Edition

TRIP GENERATION 10, TRAFFICWARE, LLC

P. 1

Trip Generation Summary

Alternative: Existing Land Use

Phase:

Open Date: 4/14/2021

Project: Horn Rapids - Quail Ridge II

Analysis Date: 4/14/2021

ITE	Land Use	Weekday Average Daily Trips				Weekday AM Peak Hour of Adjacent Street Traffic				Weekday PM Peak Hour of Adjacent Street Traffic			
		*	Enter	Exit	Total	*	Enter	Exit	Total	*	Enter	Exit	Total
210	SFHOUSE		5251	5251	10502		221	661	882		715	420	1135
	1235 Dwelling Units												
430	GOLF 1		274	273	547		25	7	32		28	24	52
	18 Holes												
Unadjusted Volume			5525	5524	11049		246	668	914		743	444	1187
Internal Capture Trips			0	0	0		0	0	0		0	0	0
Pass-By Trips			0	0	0		0	0	0		0	0	0
Volume Added to Adjacent Streets			5525	5524	11049		246	668	914		743	444	1187

Total Weekday Average Daily Trips Internal Capture = 0 Percent

Total Weekday AM Peak Hour of Adjacent Street Traffic Internal Capture = 0 Percent

Total Weekday PM Peak Hour of Adjacent Street Traffic Internal Capture = 0 Percent

* - Custom rate used for selected time period.

Source: Institute of Transportation Engineers, Trip Generation Manual 10th Edition

TRIP GENERATION 10, TRAFFICWARE, LLC

P. 1

TRIP GENERATION									
Horn Rapids - Quail Ridge II - Total Trips				ADT	AM			PM	
ITE Code	Land Use	Total	Unit		Enter	Exit	Total	Enter	Exit
Original Land Uses									
	Various			33,158	928	1,584	2,512	2,124	1,537
Existing Land Uses									
210	Single-Family Detached Housing	1235	DU	10,502	221	661	882	715	420
430	Golf Course	18	Holes	547	25	7	32	28	24
Total Existing Trips				11,049	246	668	914	743	444
Remaining Trips Available Prior to Quail Ridge II Subdivision				22,109	682	916	1,598	1,381	1,093
Proposed Land Use									
210	Single-Family Detached Housing	1235	DU	1,258	23	69	92	78	46
Total Proposed Trips				1,258	23	69	92	78	46
Remaining Available Trips After Quail Ridge II Subdivision				20,851	659	847	1,506	1,303	1,047

CULTURAL RESOURCES REPORT COVER SHEET

Author(s): Stacie J. Sexton and Molly E. Swords, GRAM Northwest, LLC

Title of Report: *Cultural Resource Survey Report for the Quail Ridge Development – Richland, Washington (DAHP Project Number: 2021-06-04006)*

Date of Report: June 2021

County(ies): Benton **Section:** 19, 20, & 29 **Township:** 10N **Range:** 28E

Quad: Richland, WA 7.5 **Acres:** 147.0

PDF of report submitted (REQUIRED): ☒ Yes

Historic Property Inventory Forms to be Approved Online? ☐ Yes ☒ No

Archaeological Site(s)/Isolate(s) Found or Amended? ☐ Yes ☒ No

TCP(s) found? ☐ Yes ☒ No

Replace a draft? ☐ Yes ☒ No

Satisfy a DAHP Archaeological Excavation Permit requirement?

☐ Yes (# _____) ☒ No

Were Human Remains Found?

☐ Yes (DAHP Case # _____) ☒ No

DAHP Archaeological Site #: None

- Submission of PDFs is required.
- Please be sure that any PDF submitted to DAHP has its cover sheet, figures, graphics, appendices, attachments, correspondence, etc., compiled into one single PDF file.
- Please check that the PDF displays correctly when opened.

**Cultural Resource Survey Report
for the Quail Ridge Development
Project – Richland, Washington (DAHP
Project Number: 2021-06-04006)**

Preface

This cultural resource review report (survey report) has been prepared by GRAM Northwest, LLC, for the construction of a housing development on a tract of land located in Richland, Washington. The project will not involve state or federal funding; however, the project is subject to compliance with the Washington State Environmental Policy Act (RCW 43.21, “State Environmental Policy”).

This report includes a literature review, a geomorphologic review, data from geographic information systems, and archaeological fieldwork. A pedestrian survey and installation of shovel test units throughout the project area were conducted May 11–20, 2021. No cultural resources were identified during fieldwork.

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1 Introduction

This cultural resource review (survey report) has been prepared by GRAM Northwest, LLC, for the construction of the Quail Ridge housing development on a tract of land located in Richland, Washington. The project will not involve state or federal funding; however, the project is subject to compliance with the Washington State Environmental Policy Act (SEPA) (RCW 43.21, “State Environmental Policy”).

1.1 Project Activities

The project includes the construction of a housing development on approximately 59.5 hectares (147 acres) of land located south of Washington State Route 240 between Twin Bridges Road and Village Parkway in Richland, Washington. Project activities including excavation and grading, as well as other general construction activities, that will take place throughout the project area. The anticipated maximum depth of excavation for this project is approximately 3 meters (10 feet).

The project area is approximately 59.5 hectares (147 acres) and is located in Benton County, Section 19, 20, and 29 of Township 10N, Range 28E (Figures 1 and 2). The property overlaps all or part of the following Benton County tax lots:

- #119081000001004
- #120083000009006
- #120083000009008
- #120083000009009
- #120083000009013
- #120084000001002
- #129082020003000
- #129082020000011
- #129082020000012
- #129082020000013
- #129082020000038
- #129082020002000
- #120083000009012
- #120083000009014
- #120083000009015

1.2 Regulatory Background

This survey report is intended to meet SEPA requirements (RCW 43.21).

1.3 Survey Personnel

The principal investigator for this project was Stacie Sexton of GRAM Northwest, LLC. Ms. Sexton meets the Secretary of the Interior’s professional qualification standards and oversaw the completion of all elements of this cultural resource survey.

1.4 Availability of Survey and Inventory Forms

Digital copies of the report and any additional documents (e.g., site and/or isolate forms) associated with this project are available via the Washington Information System for Architectural & Archaeological Records Data (WISAARD) (<https://fortress.wa.gov/dahp/wisaardp3/>), which is maintained by the Department of Archaeology and Historic Preservation (DAHP).

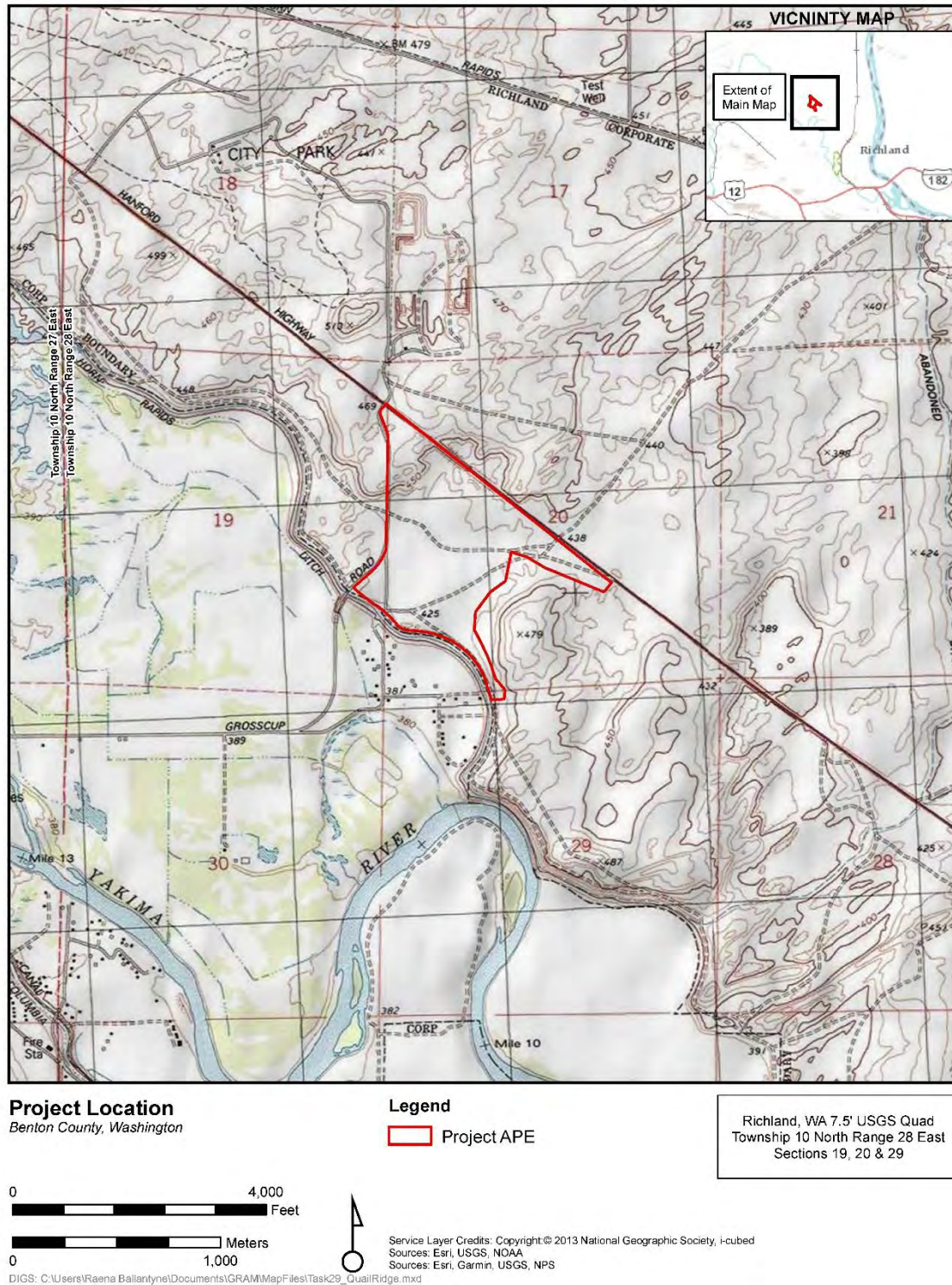


Figure 1. Project Area on USGS Quad Topography Map



Figure 2. Project Area – Aerial Imagery

2 Environmental Setting

2.1 Climate and Vegetation

The project area is located within the Columbia Plateau, a region characterized by a shrub-steppe ecosystem. This semiarid environment typically consists of perennial grasses and shrubs, including the following: Great Basin wild rye (*Leymus cinereus*), needle and thread grass (*Stipa comata*), antelope bitterbrush (*Purshia tridentate*), sagebrush (*Artemisia* sp.), and rabbitbrush (*Chrysothamnus* sp.). Native wildflowers include balsamroot (*Balsamorhiza* sp.), buckwheat (*Eriogonum* sp.), phloxes, desert parsleys, and lupines (Franklin and Dyrness, 1973). This area receives approximately 20 centimeters (8 inches) of rainfall annually, primarily during the winter months (Morgan et al., 2001).

2.2 Geomorphology

The geomorphology within and around the project area is composed largely of Pleistocene gravel and sandy gravel deposits with interbedded silt lenses, deposited as benches along the main stem of the Snake River resulting from rapid draining of glacial Lake Bonneville. The area also includes widespread silt, sand, gravel, and boulder deposits that were deposited during multiple catastrophic drainings of glacial Lake Missoula, including glaciolacustrine deposits. The northwestern and eastern corners of the project area are composed of Holocene fine to medium sand and silt deposits in active and stabilized dunes. The southwestern corner of the project area is composed of Pleistocene alluvial unconsolidated or semiconsolidated clay, silt, sand, gravel, and/or cobble deposits. These geological units are described as observed in the Washington Department of Natural Resources geologic information portal (<https://geologyportal.dnr.wa.gov/>).

3 Cultural Setting

3.1 Pre-Contact Cultural Sequence

Archaeological investigations conducted on the Columbia Plateau have enabled the creation of a cultural chronology dating to the end of the Pleistocene epoch. Table 1 summarizes the cultural sequence for the area (from Sharpe and Demaris, 2012 [used with permission]).

Table 1. Pre-Contact Cultural Sequence for Southeast Washington

Cultural Period	Years Before Present	Site Types	Architecture	Subsistence
General Columbia Plateau				
Windust Phase	11,000 – 8,000	Rock shelters, caves, game processing sites, lithic reduction sites; isolated lithic tools Examples include Marmes Rockshelter, Bernard Creek, Lind Coulee, Kirkwood Bar, Deep Gully, Granite Point, Fivemile Rapids, and Bobs Point	Rock shelters and caves; open habitation sites No evidence of constructed dwellings or storage features	Large mammals supplemented with small mammals and fish Toolset: Windust, Clovis, Folsom, and Scottsbluff points; contracting stemmed points and/or lanceolate points; cobble tools
Mid-Columbia Region — Vantage Area				
Cascade/Vantage Phase	8,000 – 4,500	Lithic scatters, quarry sites, resource processing sites, and temporary camps	Rock shelters and caves; open habitation sites	Mobile, opportunistic foragers subsisting on fish, mussels, seeds, and mammals Basalt leaf-shaped Cascade and stemmed projectile points, ovate knives, edge-ground cobble tools, microblades, hammerstones, core tools, and scrapers
Frenchman Springs Period	4,500 – 2,500	Habitation sites along major rivers, confluences, tributaries, canyons, and rapids Lithic scatters, quarry sites, resource processing sites, seasonal round of upland to lowland travel for resource procurement, and seasonal camps	House dwellings, including semi-subterranean	As earlier, but with increased use of upland resources, seeds, and roots Groundstone and cobble tools, mortars, pestles, contracting stemmed, corner notched, and stemmed projectile points, hopper mortar bases and pestles, knives, scrapers, and graters Wider tool material variety

Table 1. Pre-Contact Cultural Sequence for Southeast Washington

Cultural Period	Years Before Present		Site Types	Architecture	Subsistence
Cayuse Phase	I	2,500 – 1,200	Habitation sites at major rivers, confluences, tributaries, canyons, and rapids Lithic scatters, quarry sites, resource processing sites, and seasonal round camps Ideological and spiritual sites	Pithouses with wall benches	Reliance on riverine resources, fish, and botanicals; basal-notched and corner-notched projectile points (most corner-notched) Variety of tools including groundstone, scrapers, lanceolate and pentagonal knives, net weights, cobble tools, drills, etc.
	II	1,200 – 900	Same as Cayuse Phase I	Pithouses without wall benches	Same as Cayuse Phase I
	III	900 – 250	Increased mobility and hunting ability due to horse introduction Large village habitation sites along rivers, seasonal round camps Same site types as Cayuse Phases I & II	Pit longhouse village sites	Decrease in corner notched points, increase in stemmed and side-notched projectile points, fine pressure flaked tools Increase in trade goods
Sources: Morgan et al. (2001); Walker (1998); Sharpe and Marceau (2001); Swanson (1962); Nelson (1969); Galm et al. (1981); Benson et al. (1989); Thoms et al. (1983); Green (1975); and Rice (1980).					

3.2 Ethnographic Period

Native American groups in the region include the Wanapum, Yakama, Umatilla, Nez Perce, Walla Walla, Cayuse, Palouse, and other neighboring groups (Fagan, 2000; Schuster, 1998; Stern, 1998). The Southern Plateau groups did not have formal political unity under a permanent central influence; instead, they formed smaller, politically self-governing groups (villages). The groups were joined by bordering territory, language (Sahaptin), common culture, and frequent social interaction. Although the different groups within the Southern Plateau presided and had power over a specific territory, hunting and fishing grounds were shared amongst all, as cooperation between these groups was common.

During this period, local residents moved seasonally. Seasonal rounds included semi-permanent winter villages along major waterways, including the Columbia and Snake Rivers. In the spring, small groups would travel into canyons and river valleys in temporary camps to gather roots and other spring provisions. Summer food gathering centered on collecting berries and other mountain-based foods in the late summer and early fall (Chatters, 1980).

The *Handbook of North American Indians* (Walker, 1998) summarizes the ethnohistoric cultural pattern of the Columbia Plateau as follows:

- Riverine settlement patterns
- Reliance on a diverse subsistence base of anadromous fish and extensive game and root resources
- Mutual cross-utilization of subsistence resources among the various groups comprising the populations of the area
- Extension of kinship ties through extensive intermarriage
- Limited political integration, primarily at the village and band levels, until adoption of the horse
- Relatively uniform mythology, art styles, and religious beliefs and practices focused on the vision quest, shamanism, lifecycle observances, and seasonal celebrations of the annual subsistence cycle

Review of the project area described in *Čáw Pawá Láakni, They Are Not Forgotten: Sahaptian Place Names Atlas of the Cayuse, Umatilla, and Walla Walla* (Hunn et al., 2015) indicated the importance of Badger Mountain. Badger Mountain is part of a chain of hills known as Piyuušmaami Puštáy (the “hills of the snake”) which is a mythical snake that transformed into a portion of the hills in southwest Richland (Hunn et al., 2015). The project area is adjacent to but does not overlap Piyuušmaami Puštáy.

3.3 Euro-American Period

The Lewis and Clark Expedition of 1805 prompted large-scale Euro-American exploration and settlement of the region. Early explorers sought trade with Native Americans, and trade routes were established. Other settlers including miners, livestock producers, and homesteaders soon followed. By the 1860s, the discovery of gold north and east of the mid-Columbia region resulted in an influx of miners traveling through the area. The mining industry created a demand for beef, and the Columbia Basin was ideal for livestock production (Grundy et al., 1998).

Eastern Washington saw an increase in Euro-American settlement in the late 1800s, beginning with livestock producers. Ranchers relied on the abundant bunchgrass and open rangeland to graze thousands of cattle, and later sheep and horses. The open range lasted from the 1880s until about 1910, when homesteaders settled the area and plowed the rangeland to plant crops. However, livestock remained an important economic commodity to the area’s agricultural producers (Fridlund, 1985). The *Homestead Act of 1862* enabled legal land ownership to those 21 years of age or older who were willing to live on and develop the land. Around 1900, homesteaders moved west, and agricultural producers gradually replaced the open-range livestock operations that had dominated the area in the latter part of the 1800s and early 1900s. The Northern Pacific Railroad entered the area in the 1880s, creating transportation routes for agricultural commodities and an increase in settler traffic (Lewty, 1987).

In 1943, the Columbia Basin Project was authorized by the U.S. federal government as a project to control floods, regulate stream flow, improve navigation, and provide storage and delivery for irrigation water to approximately 202,343 hectares (500,000 acres) of land (Callum et al., 2005). The project began with the construction of Grand Coulee Dam, which provided irrigation water to convert large areas of desert into productive farmland (Meinig, 1995). The Columbia Basin Project initially authorized water

management for 443,131 hectares (1,095,000 acres); however, by the mid-1980s, only around half of this area was receiving irrigation water (Alwin, 1994).

3.4 City of Richland

A summary of the history of the city of Richland, Washington, is described by the City of Richland (2015) and Kershner (2008). The developmental history of Richland, as described in those texts, is summarized below:

- **1805:** Captain William Clark canoed up the Columbia River to the mouth of the Yakima River and observed the area that would eventually become Richland (Kershner, 2008).
- **1864:** The John B. Nelson family, the first settlers of what is now Richland, settled on the south side of the Yakima River (City of Richland, 2015).
- **1888:** Ben Rosencrance moved north across the Yakima River to what is now Richland and filed a homestead claim of 688 hectares (1,700 acres), with other farmers soon following. Irrigation canals were dug to provide water to the dry land (Kershner, 2008).
- **1894:** W.R. Amon and son Howard Amon created the Benton Water Company, along with other investors. The Benton Water Company provided water and electricity to the area, and the Amon's proposed building a town (Kershner, 2008).
- **1905:** The first post office opened, with the town name listed as Benton. Per the Postal Service's request, Benton was renamed "Richland" to avoid confusing it with another community in the state (City of Richland, 2015).
- **1910:** Richland was incorporated as a fourth-class town on April 28 (City of Richland, 2015).
- **1943:** The United States government began condemning farms, homes, and businesses in Richland for the eventual development of Richland as a government city to house workers at the Hanford Site. Richland was built into a bedroom community for some 16,000 Hanford workers. The Hanford Site eventually produced the plutonium used in the atomic bomb dropped on Nagasaki, Japan, that quickly brought an end to the second World War (Kershner, 2008).
- **1955:** Richland was directed by federal law to make the transition from a federal city to a self-governing city within 5 years. Local residents were unhappy with high housing appraisals that would make purchasing their homes and businesses back from the government more difficult. Appraisals were lowered to a more acceptable level (Kershner, 2008).
- **1958:** Richland was incorporated as a first-class city via popular vote by its inhabitants (Kershner, 2008). Nuclear weapons production during the Cold War and later environmental cleanup continued to draw Hanford Site workers and their families to Richland (City of Richland, 2015).

4 Literature Review

A literature review was conducted for all land within a 1.6-kilometer (1-mile) radius of the project area using the WISAARD and available historical maps.

4.1 Previously Recorded Archaeological Sites/Isolates

A review of WISAARD identified one previously reported site within the project area. Three sites/isolates were identified within 1.6 kilometers (1 mile) of the project area (Table 2).

Table 2. Previously Recorded Archaeological Sites/Isolates

Site Number	Type	Relative Age	Eligibility*	Description	In Project Area?*
45BN1403	Site	Historic	Unevaluated	Original Horn Rapids Road, debris	No
45BN1475	Isolate	Pre-contact	Unevaluated	Groundstone (netherstone)	No
45BN2124	Site	Historic	Unevaluated	Historic scatter, glassware, ceramic, steel can	Yes
*As identified in WISAARD.					

Site 45BN2124 is a historic debris scatter located within the northeastern quarter of the project area. The surficial debris scatter is approximately 50 square meters (538 square feet) and contains ceramic and glassware fragments, as well as one crushed steel can. One shovel test probe was excavated within the scatter, and no artifacts were found below ground surface. This site has been recommended as not eligible for the National Register of Historic Places.

4.2 Previously Conducted Archaeological Surveys

A review of WISAARD identified one previously conducted archaeological survey within the project area. Nine additional surveys were identified within 1.6 kilometers (1 mile) of the project area (Table 3).

Table 3. Previously Conducted Archaeological Survey

Report Number	Title	Reference	In Project Area?
1342318	<i>Letter to Gene Post Regarding Preliminary Report on the Cultural Resources File Search and Survey of the Precision Cast Parts Property</i>	Chatters (1997)	No
1350517	<i>Cultural Resources Survey for the Washington State Department of Transportation's SR 240, Beloit Road to Kingsgate Way Project</i>	Sharley (2007)	Yes
1351107	<i>Archaeological Survey for the Proposed Babe Ruth Baseball Complex, Richland</i>	Miller (2008)	No
1351223	<i>Cultural Resources Assessment and Monitoring for the Port of Benton Transload Facility Project</i>	Chobot and Harrison (2008)	No
1352450	<i>Cultural Resource Survey for the Horn Rapids .75 Mgal Reservoir, Richland</i>	Arthur and Hartmann (2009b)	No
1353206	<i>Cultural Resources Survey for the Robertson Drive Extension, Richland</i>	Arthur and Hartmann (2009c)	No

Table 3. Previously Conducted Archaeological Survey

Report Number	Title	Reference	In Project Area?
1353208	<i>Cultural Resources Survey for the First Street Construction, Kingsgate Way to Logston Boulevard, Richland</i>	Arthur and Hartmann (2009a)	No
1683164	<i>Letter Report to the City of Richland Regarding Monitoring of the Installation of Water and Electrical Lines in Horn Rapids ORV Park</i>	Miller (2012)	No
1689642	<i>Archaeological Assessment of the 40-Acre Parcel Being Considered for the Proposed Army National Guard Readiness Center, Richland</i>	Knobbs and Stapp (2017)	No
1694156	<i>Cultural Resources Reconnaissance for the Clubhouse Lane Roundabout and Road Extension, and Grading of Adjacent Lots Project, Richland, WA</i>	Stapp and Paul (2020)	No
N/A	<i>A Cultural Resources Review and Inventory of the Proposed Horn Rapids Future Fire Station Project, Richland, Benton County, Washington</i>	Landreau and Triplett (2021 [<i>in draft</i>])	Yes

Sharley (2007) conducted a pedestrian survey approximately 20 meters (66 feet) from the centerline of State Route 240 that passed along the northern edge of the project area. No sites or isolates were found within the project area during this pedestrian survey.

During fieldwork to support this project, a draft report and fieldwork completed by Reiss-Landreau Research (Landreau and Triplett, 2021) supporting construction of a fire station was identified as part of a final WISAARD search prior to subsurface testing. This report was in draft and, as such, was not identified during background research completed as part of Section 4 of this report. A copy of the report was obtained, which indicated that approximately 14 hectares (35 acres) of the current project area had been surveyed (pedestrian survey and subsurface testing) in February 2021 (Figure 5). One archaeological site (a historic debris scatter_ had been identified, recorded, and evaluated as part of this project. This site was recommended as not eligible for the National Register of Historic Places.

4.3 Historic Property Inventories

A total of three historic property inventories have been completed for standing structures within 1.6 kilometers (1 mile) of the project area. The inventories were completed for the following:

- Residence – 2898 Riverbend Drive, Richland, Washington
- Residence – 2898 Riverbend Drive, Richland, Washington
- Historic road – Horn Rapids Road, Richland, Washington

None of these structures have been evaluated for placement on state or national historic registers, and none overlap the project area.

4.4 Historic Maps

4.4.1 1883 General Land Office Map

Review of the 1880 General Land Office map (Figure 3) shows that the area had been surveyed, but no features fall within the project area. The Yakima River is to the south of the project area.

4.4.2 1917 U.S. Geological Survey Topographic Map

Review of the 1917 U.S. Geological Survey (USGS) topographic map (Figure 4) indicates very little development within the project area other than branching unimproved roads. An irrigation ditch is seen roughly forming the southern border of the project area.

1.1.1 Additional Maps

Additional USGS topographic maps were reviewed digitally as part of this project. Reviewed maps include the following:

- Pasco, Washington (1917)
- Richland, Washington (1951)
- Walla Walla, Washington (1953)
- Walla Walla, Washington (1958)
- Richland, Washington (1978)
- Richland, Washington (1992)
- Richland, Washington (2011)
- Richland, Washington (2014)
- Richland, Washington (2017)
- Richland, Washington (2020)

Review of historical USGS topographic maps indicates little development within the project area. Three unimproved roads were present in the 1917 map, branching out from near the southeast corner of the site. Beginning in the 1978 map, State Route 240 is present, forming the northern boundary of the project area, as well as the modern-day Twin Bridges Road forming the western boundary of the project area. Also beginning in the 1978 map, a road runs exactly north-south from what is now Twin Bridges Road; however, the road is no longer present on the 2011 map.

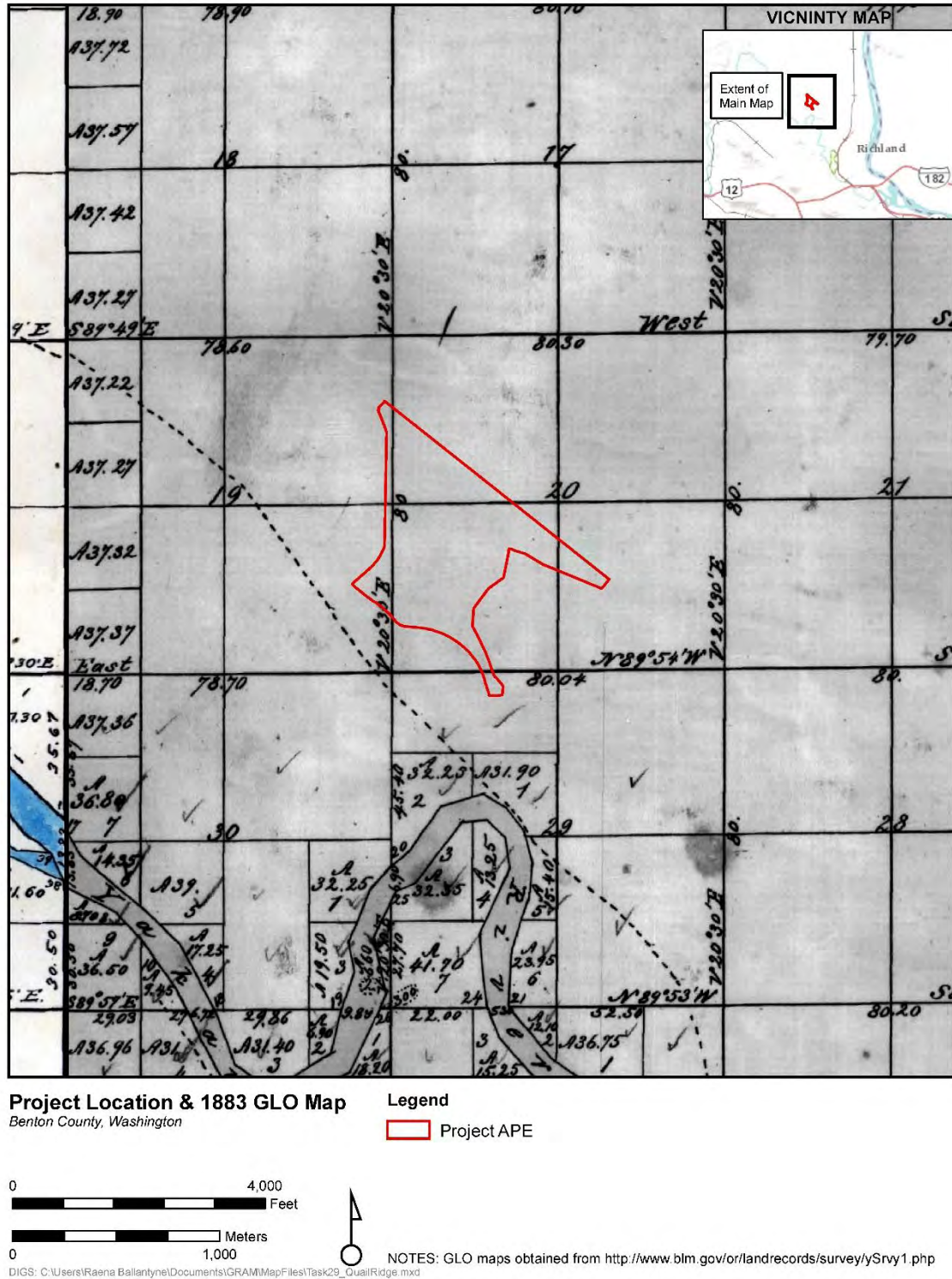


Figure 3. Map of Project Location and 1883 GLO Map

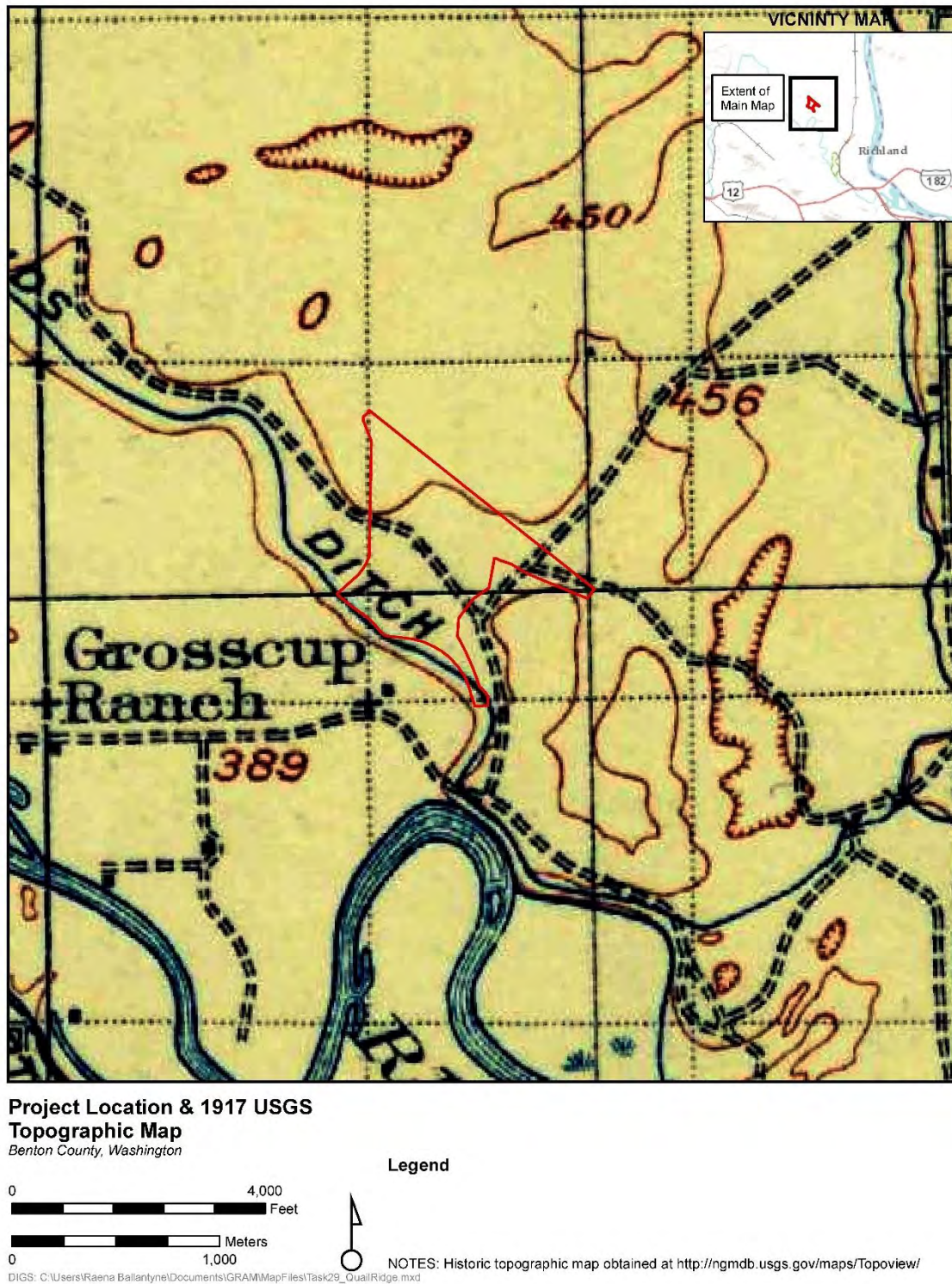


Figure 4. Map of Project Location and 1917 USGS Topographic Map

5 Research Design

5.1 Objectives and Expectations

The scope of this survey is limited to providing the client with relevant information to meet the requirements of SEPA (RCW 43.21) (checklist question 13). The components of question 13 are as follows:

- Are there any buildings, structures, or sites located on or near the site that are over 45 years old listed in or eligible for listing in national, state, or local preservation registers? If so, specifically describe.
- Are there any landmarks, features, or other evidence of Native American or historic use or occupation? This may include human burials or old cemeteries. Are there any material evidence, artifacts, or areas of cultural importance on or near the site? Please list any professional studies conducted at the site to identify such resources.
- Describe the methods used to assess the potential impacts to cultural and historic resources on or near the project site. Examples include consultation with the Tribes and DAHP, archaeological surveys, historic maps, geographic information system data, etc.
- Discuss proposed measures to avoid, minimize, or compensate for loss, changes to, and disturbance to resources. Please include plans for the above and any permits that may be required.

The goal of this research design was to determine if there are any constraints on development of the project area by identifying cultural resources, determining their extent, and evaluating their eligibility for listing in state or national historic registers.

Based on the information obtained from the literature review, there is a potential for both pre-contact and historic cultural materials. Pre-contact, the potential exists for isolated finds and small sites. Previous cultural resource investigations and a literature search in the general area have identified isolated finds and small sites (primarily near water sources). Historically, the project area has the potential to contain early settlement and agricultural related items such as can scatters, roads, or isolated finds.

5.2 Proposed Field and Laboratory Methods

Current project activities will occur throughout the project area. No previous archaeological fieldwork has been conducted at this location; therefore, pedestrian survey and subsurface testing are recommended to evaluate the potential for cultural resources to exist within the project area. A pedestrian survey and subsurface testing will occur throughout the project area.

5.2.1 Pedestrian Survey

A pedestrian survey will be conducted throughout the project area using transects spaced no more than 10 meters (32.8 feet) apart. Any potential cultural resources encountered will be recorded in the field and evaluated to determine eligibility as a recorded archaeological site. Recorded data will include a description of the items encountered (including dimensions), photographs, global positioning system (GPS) coordinates, environmental context, and any other relevant observations. All observations and data will be recorded in the field. Artifacts will not be collected as part of fieldwork.

5.2.2 Subsurface Testing

Given the absence of previously conducted fieldwork and the unknown extent of excavations within the project area, subsurface testing will use shovel test pits (STPs) to provide a systematic sample of the project area. A total of 74 STPs are planned within the project area. Appendix A presents a summary of data recovered from each STP.

Each STP will be hand-dug to approximately 30 centimeters (12 inches) in diameter and will be excavated to approximately 1 meter (39.3 inches) deep, if possible. All excavated soil will be screened through 1/4-inch hardware cloth. An STP may be moved or abandoned if environmental conditions (e.g., geologic conditions, construction activities, or other environmental hazards) prevent excavation. If an STP cannot be moved within an approximately 10-meter (30-foot) radius of the original location, that unit will be removed from the excavation plan.

If any artifacts are identified during the survey or shovel testing, they will be documented according to DAHP excavation reporting standards. The documentation will include careful descriptions of soil types and natural/cultural stratigraphic layers. For each STP, photographs and GPS coordinates will be collected. Artifacts will not be collected. Information obtained from this activity will be included in the survey report.

If positive shovel tests occur, additional STPs will be completed to determine if an archaeological site is present and to identify the spatial boundaries of the site, if possible. Shovel testing will only be conducted within the project area. Any artifacts identified during shovel testing will be documented for size, form, and function (if possible); will be photographed; and will then be returned to the STP. All observations and data will be recorded in the field. Artifacts will not be collected as part of fieldwork.

Subsurface testing at a depth greater than 1 meter (39.3 inches) (hand auger) was considered but was ultimately not included as part of the research design for this project because local geomorphology primarily consists of Pleistocene outburst flood deposits that will likely not extend beyond 1 meter (39.3 inches) in depth. Additionally, subsurface deposits are likely to relate to agricultural use of the property, which typically do not extend beyond 1 meter (39.3 inches) below ground surface. However, should artifacts be encountered near the termination depth of an STP, use of a hand auger will be reconsidered as a means of confirming the extent of cultural deposits at that location.

An inadvertent discovery plan was compiled for the field work component of this project and is provided in Appendix B of this report.

6 Survey Results

6.1 Survey

A pedestrian survey and subsurface testing within the project area were conducted May 11–20, 2021 (Figure 5). Fieldwork was led by Stacie Sexton (principal investigator for GRAM Northwest, LLC). Field conditions were generally sunny and breezy, with high temperatures reaching approximately 26°C to 32°C (80°F to 90°F).

During fieldwork to support this project, a draft report and fieldwork completed by Reiss-Landreau Research (Landreau and Triplett, 2021) supporting construction of a fire station was identified overlapping the current project area. This review was observed as part of a final WISAARD search prior

to subsurface testing. This report was in draft and, as such, was not identified during background research completed as part of Section 4 of this report. A copy of the report was obtained, which indicated that approximately 14 hectares (35 acres) of the current project area had been surveyed (pedestrian survey and subsurface testing) in February 2021 (Figure 5). One archaeological site (a historic debris scatter) had been identified, recorded, and evaluated as part of this project. This site was recommended “not eligible” for the National Register of Historic Places. Intensive fieldwork, including pedestrian survey and subsurface testing, had been conducted less than 6 months prior to fieldwork to support the current project. Therefore, subsurface testing was not conducted in areas overlapping the Reiss-Landreau Research survey.

Additionally, the survey area is adjacent to an active construction site (Figure 5). Pedestrian survey and subsurface testing within the construction site were avoided.

6.1.1 Pedestrian Survey

Survey transects were spaced 10 meters (32.8 feet) apart throughout the surveyed project area (Figure 5). The survey was generally conducted in parallel to State Route 240 (Figure 5). The survey area consisted of shrub stepped desert, bisected by active off-road driving/cycling and modern dumping. Most of the project area was comprised of a mixture of bare ground with low vegetation (weeds and grasses) and invasive shrubs (including Russian thistle). Various photos from the project area are presented in Figures 6 through 10.

Several concentrations of modern debris (including pallets, window screens, concrete, and PVC piping) were noted throughout the project area. Additionally, modern trash (including plastic food and beverage containers, mylar celebration balloons, golf balls, and plastic grocery bags) was also observed throughout the project area.

Two concentrations of debris potentially meeting the criterion for recordation as an archaeological site (50 years of age) were encountered during the pedestrian survey (Figure 5). These concentrations were temporarily recorded as “QR Debris 01” and “QR Debris 02” (Tables 3 and 4, respectively) for research and evaluation after fieldwork.

No other potential cultural resources were identified during the field survey for this project.

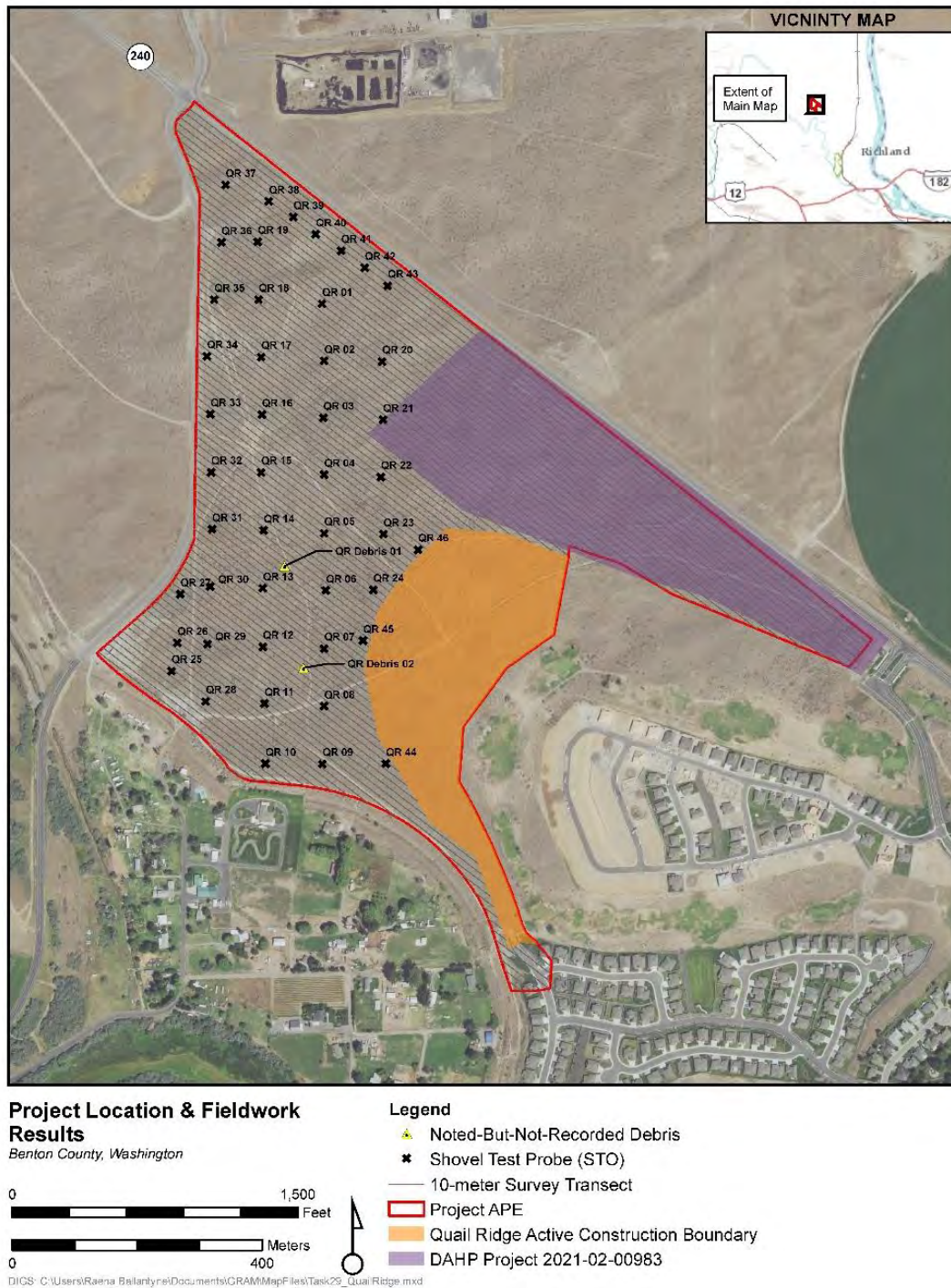


Figure 5. Surveyed Project Area

Table 3. QR Debris 01

Artifact	Description
Broken glass	Amber and clear glass (miscellaneous), nondiagnostic fragments
Sanitary cans	~20 count 4 ¾ inches by 2 ¾ inches Church-key opened Rolled/crimped seams Modern vertical seal May be oil cans
Sanitary cans	~6 count 2 inches by 2 ¾ inches (larger diameter than height)
Sardine tin	5 ¾ inches by 3 inches by 1 ¼ inches
Sanitary cans	~10 crushed cans of varying sizes
Bottle caps	Crown cap: 1 1/8 inches in diameter, ¼ inch in height Metal cap: White with red logo; 1 ¼ inches in diameter, ½ inch in height Plastic “Lux” liquid detergent cap: Plastic, red, embossed logo; 1 inch in diameter, ¾ inch in height Nalley cap: “If It’s Nalley’s, It’s good” logo; 2 inches in diameter, ¼ inches in height
Bottle bases	Brown Clorox base Clear Duraglass base with Owens, Illinois mark Clear grape embossed glass side and bottle base: “Des Pat Applied for... IDI: 54-47”
Leather glove	Crumpled and deteriorated leather glove: unknown side and size
Light bulb	Incandescent bulb screw base and filament
Rubber automotive hose	Embossed rubber (longitudinal ribbing): ~1/2 inches in inner diameter; marks from spring clamp on one end (clamp missing)
Broken plastic	Three pieces of broken yellow plastic; male/female molded connectors on each piece
Toilet paper roll holder	Fragment of white ceramic bathroom fixture: “STAE-FAST Vitreous China,” Willette’s, New York, NY
Broken ceramic	Miscellaneous pieces

Table 4. QR Debris 02

Artifact	Description
Sanitary cans	~30 cans of varying sizes Majority of cans approximately 4 $\frac{3}{4}$ inches by 2 $\frac{3}{4}$ inches
Oval tin	6 inches by 4 $\frac{1}{2}$ inches by 1 $\frac{1}{4}$ inches
Bottle bases	Two clear glass bases with embossing Two clear square bases
Ceramic kettle and cup	Small fragments with floral pattern
Blue glass fragment	Nondiagnostic fragment
Automotive part	Transmission mount from a 1966–1972 Volkswagen Beetle (Part #311-301-265)
Red/orange ceramic fragment	Nondiagnostic fragment



Figure 6. Overview from Northwest Corner of Project Area (Aspect: East)



Figure 7. Overview from South Central of Project Area (Aspect: Northeast)



Figure 8. Overview of the Southeast Corner of Project Area (Aspect: East)



Figure 9. Overview of Potential Cultural Resource QR Debris 01 (Aspect: Southeast)



Figure 10. Overview Potential Cultural Resource QR Debris 01 (Aspect: South)

6.1.2 Subsurface Testing

A total of 46 STPs were excavated within the project area. Three STPs (QR44, QR45, and QR46) were not excavated because they fell within the boundary of an active construction site. Field conditions at the site consisted of fine-grained sands and silts overlaying coarse-grained medium sands and gravels. Gravels were typically mixed river rock and gray basalts, including some vesicular basalt (10 centimeters [0.33 inches] maximum). Several units were truncated due to gravel concentrations.

Appendix A provides a summary of data recovered from each STP.

7 Analysis

Background research (including a review of archaeological site and survey data available in the WISAARD), analysis of historical maps and geographic information system data, and an assessment of local geology were conducted to identify any previously recorded cultural resources within the project area.

Sediments observed throughout the project area consisted of fine-grained sands and silts overlaying coarse-grained medium sands and gravels. Gravels were typically mixed river rock and gray basalts, including some vesicular basalt (10 centimeters [0.33 inches] maximum). These sediments are consistent with those observed in the Washington Department of Natural Resources geologic information portal (<https://geologyportal.dnr.wa.gov/2d-view>).

A review of literature via WISAARD identified one previously conducted survey (in draft) and one archaeological site (site form in process) within the project area. During fieldwork to support this project, a draft report and fieldwork completed by Reiss-Landreau Research (Landreau and Triplett, 2021) supporting construction of a fire station was identified overlapping the current project area. Since this report was in draft, it was not identified during background research completed as part of Section 4 of this report. One archaeological site (a historic debris scatter) had been identified, recorded, and evaluated as part of this project. This site was recommended as not eligible for the National Register of Historic Places. Additionally, a review of historical USGS topographic maps indicates little development within the project area.

A pedestrian survey and subsurface testing within the project area were conducted May 11–20, 2021. Survey transects were spaced 10 meters (32.8 feet) apart, and a total of 46 STPs were excavated within the project area. Three STPs (QR44, QR45, and QR46) were not excavated because they were within the boundary of an active construction site. Several units were truncated due to gravel concentrations. The project area consisted of shrub stepped desert, bisected by active off-road driving/cycling and modern dumping. Most of the project area was comprised of a mixture of bare ground with low vegetation (weeds and grasses) and invasive shrubs (including Russian thistle).

Two concentrations of debris potentially meeting the criterion for recordation as an archaeological site (50 years of age) were encountered during pedestrian survey (Figure 5). These concentrations were temporarily recorded as “QR Debris 01” and “QR Debris 02” for research and evaluation after fieldwork.

7.1 QR Debris 01

Potential cultural resources identified at QR Debris 01 included yellow plastic fragments with molded interlocking connectors, possibly from a children's toy (Figure 11). The vivid color and complex molding design suggest that this plastic is modern. The plastic fragments were intermixed with glass and other debris, indicating that they were deposited at the same time. Additionally, a metal cap observed within the debris scatter contained the logo and slogan "If it's Nalley's, It's Good" (Figure 12). The trademark filing date indicates that the cap was manufactured in 1978 or later (Justia Trademarks, 2001). The inclusion of modern (<50 years of age) debris at this potential site indicates that it was deposited during or after the late-1970s. Therefore, this debris scatter was not recorded as an archaeological site.

7.2 QR Debris 02

Potential cultural resources identified at QR Debris 02 included an automotive part (311-301-265) with the Volkswagen logo (Figure 13). The part number identified this debris as the transmission mount from a 1966–1972 Volkswagen Beetle (California Import Parts, Ltd. 2021). The part was likely deposited at the site after an initial use period, typically lasting several years after original manufacture. Additionally, the condition of the piece (pliable rubber fittings with easily identifiable markings) suggests that it may be a reproduction part, manufactured after the original production dates for the vehicle. The inclusion of modern (<50 years of age) debris at this potential site indicates that it was deposited during or after the mid-1970s. Therefore, this debris scatter was not recorded as an archaeological site.



Figure 11. Overview of Potential Cultural Resource (Yellow Plastic Fragment) QR Debris 01



Figure 12. Overview of Potential Cultural Resource (“If It’s Nalley’s, It’s Good” Jar Lid) QR Debris 01



Figure 13. Overview of Potential Cultural Resource
(1966–1972 Volkswagen Beetle Transmission Mount) QR Debris 02

No other potential cultural resources were identified during the fieldwork to support this project.

8 Conclusions and Recommendations

The findings of the literature review and archaeological investigation indicate that the project area has a low potential to contain archaeological materials. Based on the results of the archaeological survey and shovel testing, cultural resources monitoring is not recommended for this project.

This survey report was developed to answer all of the components of question 13 of the SEPA checklist (RCW 43.21). The components of question 13 are as follows:

- Are there any buildings, structures, or sites located on or near the site that are over 45 years old listed in or eligible for listing in national, state, or local preservation registers? If so, specifically describe.
 - No. Background research and fieldwork to support this project did not identify any historic buildings, structures, or sites.
- Are there any landmarks, features, or other evidence of Native American or historical use or occupation? This may include human burials or old cemeteries. Are there any material evidence, artifacts, or areas of cultural importance on or near the site? Please list any professional studies conducted at the site to identify such resources.
 - A professional archaeological survey, including pedestrian survey and subsurface testing, was conducted to identify any cultural resources located within the project area. A review of archaeological site and survey data available in the WISAARD, analysis of historical maps and geographic information system data, and archaeological fieldwork conducted to support this project did not identify any cultural resources overlapping the project area.
- Describe the methods used to assess the potential impacts to cultural and historic resources on or near the project site. Examples include consultation with the Tribes and the DAHP, archaeological surveys, historic maps, geographic information system data, etc.
 - A professional archaeological review (including archaeological site and survey data available in the WISAARD), analysis of historical maps and geographic information system data, and archaeological fieldwork were conducted as part of this survey report.
- Discuss proposed measures to avoid, minimize, or compensate for loss, changes to, and disturbance to resources. Please include plans for the above and any permits that may be required.
 - The findings of the literature review and archaeological investigation did not identify any cultural resources within the project area. As such, no additional measures were recommended for this project.

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Appendix A – Shovel Test Unit Data

Table A-1. Data for STU 1

Photo	Depth	Soil Description	Artifacts/Features
	0 to 30 cm	Fine sand and silt, compacted, brown. Roots within top ~5 cm.	None.
	30-85 cm	Coarse and medium sand, <10% gravel, gray.	None.
	85 cm	Rock/caliche layer.	None.
	Reason terminated:		Refusal due to rock/caliche layer.

Table A-2. Data for STU 2

Photo	Depth	Soil Description	Artifacts/Features
	0 to 30 cm	Fine sand and silt, compacted, brown. Roots within top ~5 cm.	None.
	30 to 100 cm	Coarse and medium sand, <10% gravel, gray.	None.
	Reason terminated:		Reached depth.

Table A-3. Data for STU 3

Photo	Depth	Soil Description	Artifacts/Features
	0 to 30 cm	Fine sand and silt, compacted, brown. Roots within top ~5 cm.	None.
	30 to 90 cm	Coarse and medium sand, <10% gravel, gray.	None.
	Reason terminated:		Sand cave-in.

Table A-4. Data for STU 4

Photo	Depth	Soil Description	Artifacts/Features
	0 to 30 cm	Fine sand and silt, compacted, brown. Roots within top ~5 cm.	None.
	30 to 85 cm	Coarse and medium sand, <10% gravel, gray.	None.
	Reason terminated:		Sand cave-in.

Table A-5. Data for STU 5

Photo	Depth	Soil Description	Artifacts/Features
	0 to 30 cm	Fine sand and silt, compacted, brown. Roots within top ~5 cm.	None.
	30 to 80 cm	Coarse and medium sand, <10% gravel, gray.	None.
	Reason terminated:		Sand cave-in.

Table A-6. Data for STU 6

Photo	Depth	Soil Description	Artifacts/Features
	0 to 100 cm	Fine sand and silt, compacted, brown. Roots within top ~5 cm.	None.
	Reason terminated:		Reached depth.

Table A-7. Data for STU 7

Photo	Depth	Soil Description	Artifacts/Features
	0 to 95 cm	Fine sand and silt, compacted, brown. Roots within top ~5 cm.	None.
	Reason terminated:	Refusal due to large rock.	

Table A-8. Data for STU 8

Photo	Depth	Soil Description	Artifacts/Features
	0 to 95 cm	Fine sand and silt, compacted, brown. Roots within top ~5 cm.	None.
	Reason terminated:	Refusal due to large rock.	

Table A-9. Data for STU 9

Photo	Depth	Soil Description	Artifacts/Features
	0 to 100 cm	Fine sand and silt, compacted, brown. Roots within top ~5 cm.	None.
	Reason terminated:		Reached depth.

Table A-10. Data for STU 10

Photo	Depth	Soil Description	Artifacts/Features
	0 to 100 cm	Coarse and medium sand, <10% gravel, gray.. Roots within top ~5 cm.	None.
	Reason terminated:		Reached depth.

Table A-11. Data for STU 11

Photo	Depth	Soil Description	Artifacts/Features
	0 to 40 cm	Coarse and medium sand, <10% gravel, gray. Roots within top ~5 cm.	None.
	40 cm	Rock layer.	None.
	Reason terminated:		Refusal due to rock layer.

Table A-12. Data for STU 12

Photo	Depth	Soil Description	Artifacts/Features
	0 to 30 cm	Fine sand and silt, compacted, brown. Roots within top ~5 cm.	None.
	30 to 100 cm	Coarse and medium sand, <10% gravel, gray.	None.
	Reason terminated:		Reached depth.

Table A-13. Data for STU 13

Photo	Depth	Soil Description	Artifacts/Features
	0 to 40 cm	Coarse and medium sand, <10% gravel, gray. Roots within top ~5 cm.	None.
	40 cm	Rock/caliche layer.	None.
	Reason terminated:		Refusal due to rock/caliche layer.

Table A-14. Data for STU 14

Photo	Depth	Soil Description	Artifacts/Features
	0 to 30 cm	Fine sand and silt, compacted, brown. Roots within top ~5 cm.	None.
	30 to 80 cm	Coarse and medium sand, <10% gravel, gray.	None.
	Reason terminated:		Sand cave-in.

Table A-15. Data for STU 15

Photo	Depth	Soil Description	Artifacts/Features
	0 to 30 cm	Fine sand and silt, compacted, brown. Roots within top ~5 cm.	None.
	30 to 95 cm	Coarse and medium sand, <10% gravel, gray.	None.
	Reason terminated:		Sand cave-in.

Table A-16. Data for STU 16

Photo	Depth	Soil Description	Artifacts/Features
	0 to 100 cm	Coarse and medium sand, <10% gravel, gray. Roots within top ~5 cm.	None.
	Reason terminated:		Reached depth.

Table A-17. Data for STU 17

Photo	Depth	Soil Description	Artifacts/Features
	0 to 95 cm	Coarse and medium sand, <10% gravel, gray. Roots within top ~5 cm.	None.
	Reason terminated:	Sand cave-in.	

Table A-18. Data for STU 18

Photo	Depth	Soil Description	Artifacts/Features
	0 to 100 cm	Coarse and medium sand, <10% gravel, gray. Roots within top ~5 cm.	None.
	Reason terminated:	Reached depth.	

Table A-19. Data for STU 19

Photo	Depth	Soil Description	Artifacts/Features
	0 to 100 cm	Coarse and medium sand, <10% gravel, gray. Roots within top ~5 cm.	None.
	Reason terminated:		Reached depth.

Table A-20. Data for STU 20

Photo	Depth	Soil Description	Artifacts/Features
	0 to 65 cm	Coarse and medium sand, <10% gravel, gray. Roots within top ~5 cm.	None.
	65 cm	Rock/caliche layer.	None.
	Reason terminated:		Refusal due to rock/caliche layer.

Table A-21. Data for STU 21

Photo	Depth	Soil Description	Artifacts/Features
	0 to 30 cm	Fine sand and silt, compacted, brown. Roots within top ~5 cm.	None.
	30 to 85 cm	Coarse and medium sand, <10% gravel, gray.	None.
	Reason terminated:		Sand cave-in.

Table A-22. Data for STU 22

Photo	Depth	Soil Description	Artifacts/Features
	0 to 50 cm	Fine sand and silt, compacted, brown. Roots within top ~5 cm.	None.
	50 to 100 cm	Coarse and medium sand, <10% gravel, gray.	None.
	Reason terminated:		Reached depth.

Table A-23. Data for STU 23

Photo	Depth	Soil Description	Artifacts/Features
	0 to 30 cm	Fine sand and silt, compacted, brown. Roots within top ~5 cm.	None.
	50 to 75 cm	Coarse and medium sand with 40% gravel, gray.	None.
	75 cm	Rock/caliche layer.	None.
	Reason terminated:		Refusal due to rock/caliche layer.

Table A-24. Data for STU 24

Photo	Depth	Soil Description	Artifacts/Features
	0 to 30 cm	Fine sand and silt, compacted, brown. Roots within top ~5 cm.	None.
	30 to 100 cm	Coarse and medium sand, <10% gravel, gray.	None.
	Reason terminated:		Reached depth.

Table A-25. Data for STU 25

Photo	Depth	Soil Description	Artifacts/Features
	0 to 20 cm	Fine sand and silt, non-compacted, brown. Roots within top ~5 cm.	None.
	20 to 100 cm	Coarse and medium sand, <10% gravel, gray.	None.
	Reason terminated:		Reached depth.

Table A-26. Data for STU 26

Photo	Depth	Soil Description	Artifacts/Features
	0 to 20 cm	Fine sand and silt, compacted, brown. Roots within top ~5 cm.	None.
	20 to 85 cm	Coarse and medium sand, <10% gravel, gray.	None.
	Reason terminated:		Refusal due to large rock.

Table A-27. Data for STU 27

Photo	Depth	Soil Description	Artifacts/Features
	0 to 40 cm	Fill: 60% river rock, up to 15 cm, with fine, medium and coarse sand. Gray overall. Roots within top ~5 cm.	None.
	Reason terminated:		Refusal due to rocks.

Table A-28. Data for STU 28

Photo	Depth	Soil Description	Artifacts/Features
	0 to 20 cm	Fine sand and silt, non-compacted, brown. Roots within top ~5 cm.	None.
	20 to 100 cm	Coarse and medium sand, <10% gravel, gray.	None.
	Reason terminated:		Reached depth.

Table A-29. Data for STU 29

Photo	Depth	Soil Description	Artifacts/Features
	0 to 60 cm	Fine sand and silt, compacted, brown. Roots within top ~5 cm.	None.
	60 to 100 cm	Coarse and medium sand, <10% gravel, gray.	None.
	Reason terminated:		Reached depth.

Table A-30. Data for STU 30

Photo	Depth	Soil Description	Artifacts/Features
	0 to 25 cm	Fine sand and silt, compacted, brown. Roots within top ~5 cm.	None.
	Reason terminated:		Refusal due to multiple large rocks.

Table A-31. Data for STU 31

Photo	Depth	Soil Description	Artifacts/Features
	0 to 45 cm	Fine sand and silt, compacted, brown. Roots within top ~5 cm.	None.
	45 to 80 cm	Coarse and medium sand, 30% gravel – mixed river rock (10 cm maximum), gray.	None.
	Reason terminated:		Refusal due to rocks.

Table A-32. Data for STU 32

Photo	Depth	Soil Description	Artifacts/Features
	0 to 40 cm	Fine sand and silt, compacted, brown. Roots within top ~5 cm.	None.
	40 to 100 cm	Coarse and medium sand, <10% gravel, gray.	None.
	Reason terminated:		Reached depth.

Table A-33. Data for STU 33

Photo	Depth	Soil Description	Artifacts/Features
	0 to 55 cm	Fine sand and silt, compacted, brown. Roots within top ~5 cm.	None.
	55 to 60 cm	Coarse and medium sand, <10% gravel, gray.	None.
	Reason terminated:		Refusal due to large rock.

Table A-34. Data for STU 34

Photo	Depth	Soil Description	Artifacts/Features
	0 to 95 cm	Mix of silt, fine, medium and coarse sand with <10% gravel, noncompacted, overall tan color. Roots within top ~5 cm.	None.
	Reason terminated:		Refusal due to rocks.

Table A-35. Data for STU 35

Photo	Depth	Soil Description	Artifacts/Features
	0 to 100 cm	Coarse and medium sand, <10% gravel, gray. Roots within top ~5 cm.	None.
	Reason terminated:		Reached depth.

Table A-36. Data for STU 36

Photo	Depth	Soil Description	Artifacts/Features
	0 to 100 cm	Mix of silt, fine, medium and coarse sand with <10% gravel, noncompacted, overall tan color. Roots within top ~5 cm.	None.
	Reason terminated:		Reached depth.

Table A-37. Data for STU 37

Photo	Depth	Soil Description	Artifacts/Features
	0 to 100 cm	Coarse and medium sand, <10% gravel, gray. Roots within top ~5 cm.	None.
	Reason terminated:		Reached depth.

Table A-38. Data for STU 38

Photo	Depth	Soil Description	Artifacts/Features
	0 to 100 cm	Coarse and medium sand, <10% gravel, gray. Roots within top ~5 cm.	None.
	Reason terminated:		Reached depth.

Table A-39. Data for STU 39

Photo	Depth	Soil Description	Artifacts/Features
	0 to 30 cm	Fine sand and silt, compacted, brown. Roots within top ~5 cm.	None.
	30 to 100 cm	Coarse and medium sand, <10% gravel, gray.	None.
	Reason terminated:		Reached depth.

Table A-40. Data for STU 40

Photo	Depth	Soil Description	Artifacts/Features
	0 to 90 cm	Coarse and medium sand, <10% gravel, gray. Roots within top ~5 cm.	None.
	Reason terminated:		Sand cave-in.

Table A-41. Data for STU 41

Photo	Depth	Soil Description	Artifacts/Features
	0 to 100 cm	Coarse and medium sand, <10% gravel, gray. Roots within top ~5 cm.	None.
	Reason terminated:		Reached depth.

Table A-42. Data for STU 42

Photo	Depth	Soil Description	Artifacts/Features
	0 to 70 cm	Fine sand and silt, compacted, brown. Roots within top ~5 cm.	None.
	70 to 100 cm	Coarse and medium sand, <10% gravel, gray.	None.
	Reason terminated:		Reached depth.

Table A-43. Data for STU 43

Photo	Depth	Soil Description	Artifacts/Features
	0 to 30 cm	Fine sand and silt, compacted, brown. Roots within top ~5 cm.	None.
	30 to 100 cm	Coarse and medium sand, <10% gravel, gray.	None.
	Reason terminated:		Reached depth.

Table A-44. Data for STU 44

Photo	Depth	Soil Description	Artifacts/Features
	0 cm	Not excavated due to recent grading and hydroseeding.	None.
	Reason terminated:		Unable to excavate.

Table A-45. Data for STU 45

Photo	Depth	Soil Description	Artifacts/Features
	0 cm	Not excavated due to recent grading and hydroseeding.	None.
	Reason terminated:		Unable to excavate.

Table A-46. Data for STU 46

Photo	Depth	Soil Description	Artifacts/Features
	0 cm	Not excavated due to recent grading and hydroseeding.	None.
	Reason terminated:		Unable to excavate.

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Appendix B – Inadvertent Discovery Plan

Quail Ridge Housing Development Inadvertent Discovery Plan

June 24, 2021

Project Location

USGS Quadrangle: Richland, Washington 7.5'

Township: 10 N, Range: 28 E

Section: 19, 20, & 29

Project Description

The project includes the construction of a housing development on approximately 59.5 hectares (147 acres) of land located south of Washington State Route 240 between Twin Bridges Road and Village Parkway in Richland, Washington. Project activities including excavation and grading, as well as other general construction activities, that will take place throughout the project area. The anticipated maximum depth of excavation for this project is approximately 3 meters (10 feet).

The project area is approximately 59.5 hectares (147 acres) and is located in Benton County, Section 19, 20, and 29 of Township 10N, Range 28E (Figures 1 and 2). The property overlaps all or part of the following Benton County tax lots:

- | | |
|--------------------|--------------------|
| • #119081000001004 | • #129082020000012 |
| • #120083000009006 | • #129082020000013 |
| • #120083000009008 | • #129082020000038 |
| • #120083000009009 | • #129082020002000 |
| • #120083000009013 | • #120083000009012 |
| • #120084000001002 | • #120083000009014 |
| • #129082020003000 | • #120083000009015 |
| • #129082020000011 | |

Project Area

The Project area contains approximately 59.5 hectares (147 acres) located in Benton County, in Township 10 North, Range 28 East in Section 19, 20, and 29 of the Richland, WA 7.5' USGS Quadrangle.

Inadvertent Discovery Plan

This inadvertent discovery plan (IDP) was prepared to support project activities described above. This plan was prepared to provide field personnel a process for the inadvertent discovery of cultural resources and/or human remains identified during fieldwork for the project.

Recognizing Cultural Resources

A cultural resource discovery could be prehistoric or historic. Examples include the following:

- An accumulation of shell, burned rocks, or other food-related materials
- Bones or small pieces of bone
- An area of charcoal or very dark-stained soil with artifacts
- Stone tools or waste flakes (i.e. an arrowhead, or stone chips)
- Clusters of tin cans or bottles, logging or agricultural equipment that appears to be older than 50 years
- Buried railroad tracks, decking, or other industrial materials

When in doubt, assume the material is a cultural resource.

Onsite Responsibilities

STEP 1: Stop Work

If any employee, contractor, or subcontractor believes that he or she has uncovered a cultural resource at any point in the project, all work must stop immediately in the vicinity of the find. Notify the appropriate party(ies) as outlined in steps 2 through 4. The area surrounding the find must be secured using pin flags, stanchions and rope, or other appropriate delineation to provide for the security and protection of the discovery.

STEP 2: Notify the Archaeological Monitor

If there is an archaeological monitor for the project, notify that person. If there is a monitoring plan in place, the monitor will follow the procedure as described.

STEP 3: Notify the Project Manager

Notify the identified project manager of this project or other applicable contacts:

Project Manager

Jason Mattox, Principal Civil Engineer, PBS
400 Bradley Blvd, Suite 160, Richland, WA 99352
Phone: (509) 430-4252
Email: jason.mattox@pbsusa.com

Alternate Project Contact

TBD

Project manager responsibilities include the following:

- **Protect the Find:** The project manager is responsible for ensuring that the project takes appropriate steps to protect the discovery site while all necessary assessments and notifications are completed. As stated in steps 1 and 2, all work will stop immediately in the surrounding area, and the area will be secured to protect the integrity of the resource. Vehicles, equipment, and unauthorized personnel will not be permitted to enter the area of the discovery. See the section of this plan titled "Resuming Work" for further instruction on how and when work may resume.

- **Direct Project Activities Elsewhere Onsite:** The project manager may direct project activities to continue in areas away from cultural resources for working in other areas prior to contacting the concerned parties.
- **Contact the Project Archaeologist:** If the assigned project archaeologist has not yet been contacted, the project manager must do so.

STEP 5: Notify the Professional Archaeologist

Notify the identified professional archaeologist serving as the archaeologist for this project (if a monitor is not present)

Professional Archaeologist(s)

Stacie Sexton, Professional Archaeologist, GRAM Northwest, LLC
1201 Jadwin Ave., Richland, WA 99352
Phone: (509) 713-6806
Email: stacie.sexton@gramnorthwest.com

Molly Swords, Professional Archaeologist, GRAM Northwest, LLC
1201 Jadwin Ave., Richland, WA 99352
Phone: (703) 283-5175
Email: molly.swords@gramnorthwest.com

The professional archaeologist's responsibilities include the following:

- **Identify Find:** The professional archaeologist will examine the area to determine if there is an archaeological find.
 - If it is determined not to be a cultural resource/archaeological find or human remains, work may proceed with no further delay.
 - If it is determined to be a cultural resource/archaeological find or human remains, the professional archaeologist will continue with all notifications.

If the find may be human remains or funerary objects, the Project Archaeologist will ensure that a qualified physical anthropologist examines the find. **If the find is determined to be human remains, the procedure described in the section of this plan titled "DISCOVERY OF HUMAN REMAINS" will be followed.**
- **Notify Appropriate Parties:** If the find is determined to be a cultural resource, the professional archaeologist will notify the appropriate parties. Notifications may include the following:
 - **Agency Contact:** The professional archaeologist will contact the designated point of contact for the City of Richland.
 - **Washington Department of Archaeology (DAHP):** The professional archaeologist will contact DAHP.
 - **Tribes:** If the discovery may be of interest to Native American Tribes, the professional archaeologist, the Agency point of contact, and the DAHP will coordinate with the interested and/or affected Tribes.

- **Record the Find:** The project archaeologist will work with DAHP and the consulting parties as appropriate to determine how to record the find. Methods for recording will likely require completion of a Washington State Archaeological Site or Isolate Form.

Resuming Work

Work outside of the discovery location may continue while documentation and assessment of the cultural resources proceed. The professional archaeologist must determine the final boundaries of the discovery location.

Work may continue at the discovery location only after the process outlined in this plan is followed and the project manager, DAHP, and any affected Tribes (if applicable) determine that appropriate documentation has been completed.

Discovery of Human Remains

The inadvertent discovery of human skeletal remains on non-federal and non-Tribal land in the state of Washington is implemented under RCW 68.50.645, 27.44.055, and 68.60.055. The information below in italics for the inadvertent discovery of human remains was obtained from the Washington State Department of Archaeology and Historic Preservation web page (<http://www.dahp.wa.gov/programs/human-remains-program/idp-language>).

In the event that human remains are encountered during field-related project activities, the following steps will be implemented.

Step 1: Stop Work Immediately

If ground disturbing activities encounter human skeletal remains during the course of data collection or construction, then all activity will cease that may cause further disturbance to those remains. The area of the find will be secured and protected from further disturbance.

(<http://www.dahp.wa.gov/programs/human-remains-program/idp-language>)

In order to secure the discovery, a temporary fencing system such as posts and rope or similar protection measures will be placed around the discovery. Work in the immediate area of the discovery will be discontinued, however; work outside the discovery area may continue.

When an inadvertent discovery is encountered, staff will take measures to avoid further disturbance of the area. Any human skeletal remains, regardless of antiquity or ethnic origin, will at all times be treated with dignity and respect. Cultural materials shall not be moved from the location of the discovery. Photographs shall not be taken of bones unless photographs are needed to assist in the determination of the remains to be human or animal.

Step 2: Notification Process

The finding of human skeletal remains will be reported to the county medical examiner/coroner and local law enforcement in the most expeditious manner possible. The remains will not be touched, moved, or further disturbed. The county medical examiner/coroner will assume jurisdiction over the human skeletal remains and make a determination of whether those remains are forensic or nonforensic.

(<http://www.dahp.wa.gov/programs/human-remains-program/idp-language>)

In the event of the discovery of human remains, the following individuals will be contacted:

Benton County Coroner
William Leach, Coroner
7110 West Okanogan Pl. Building A, Kennewick WA 99336
Phone: (509) 736-2720
Email: william.leach@co.benton.wa.us

Benton County Sheriff
Address: 7122 West Okanogan Pl. Building B, Kennewick, WA 99336
Phone: (509) 735-6555

City of Richland Point of Contact
Mike Stevens, City Planner
625 Swift Boulevard, MS-35 Richland, WA 99352
Phone: (509) 942-7794
Email: mstevens@CI.RICHLAND.WA.US

Step 3: Jurisdictional Authority

If the county medical examiner/coroner determines the remains are non-forensic, then they will report that finding to the Department of Archaeology and Historic Preservation (DAHP) who will then take jurisdiction over the remains. The DAHP will notify any appropriate cemeteries and all affected tribes of the find. The State Physical Anthropologist will make a determination of whether the remains are Indian or Non-Indian and report that finding to any appropriate cemeteries and the affected tribes. The DAHP will then handle all consultation with the affected parties as to the future preservation, excavation, and disposition of the remains.

(<http://www.dahp.wa.gov/programs/human-remains-program/idplanguage>)

DAHP Contact
Guy Tasa, State Physical Anthropologist
Phone: (360) 586-3534
Email: Guy.Tasa@dahp.wa.gov

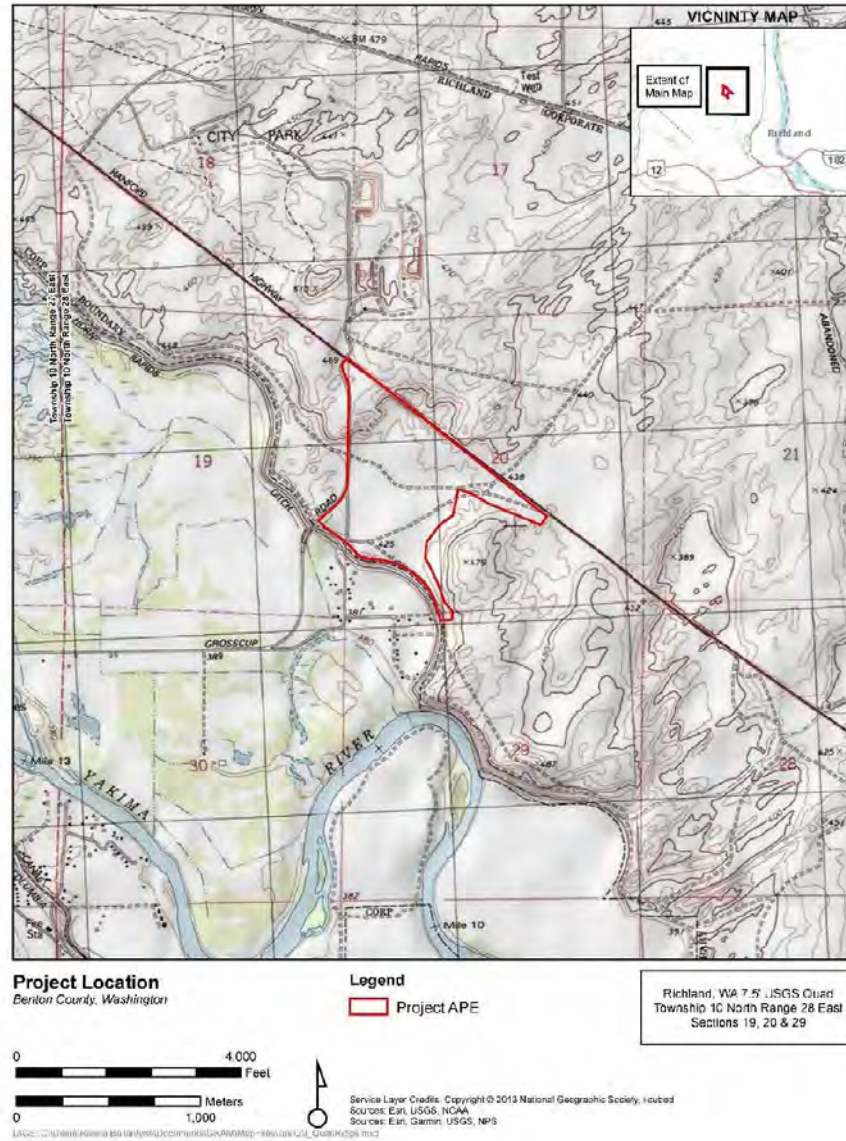


Figure 1. Project Area and USGS Topographic Map



Figure 2. Project Area and Aerial Imagery

MEMORANDUM

Exhibit 6

DATE: April 26, 2021

TO: Pahlisch Homes, Inc.
210 SW Wilson Avenue, Suite 100
Bend, Oregon 97702

FROM: Brian Bieger, Sr. Scientist/Project Manager

PROJECT: Quail Ridge II Residential Subdivision Project, PBS Project 66118.003

REGARDING: Critical Areas Assessment—Fish and Wildlife Habitat Conservation Areas

Introduction

PBS Engineering and Environmental Inc. (PBS) was contracted by Pahlisch Homes, Inc. (Client), to conduct a critical areas assessment for a planned residential subdivision within the city of Richland, Washington (City). The purpose of the critical areas assessment was to identify and delineate any jurisdictional fish and wildlife habitat conservation areas (FWHCAs) within or directly adjacent to the project area.

Through the course of the assessment, it was determined that the project site was mapped by Washington Department of Fish and Wildlife (WDFW) as having potential to support populations of Ferruginous hawks and burrowing owls. The site does not contain habitat typically utilized by Ferruginous hawks. The site does contain potential habitat for burrowing owls, but no evidence of owl utilization was observed in the field. Additionally, burrowing owl dens previously mapped on the adjacent project have been fully developed.

The results of the critical areas investigation and the jurisdictional requirements of the City are detailed below.

Baseline Background Information

A review of available existing information was completed prior to completing a site visit. This included a review of WDFW Online Priority Habitat and Species (PHS) maps, US Fish and Wildlife Service national wetland inventory (NWI) maps, Natural Resource Conservation Service (NRCS) soil maps, City of Richland Critical Area Maps, recent aerial photographs, and historic aerial photographs.

The project site is located within the Pleistocene Lake Basin level IV ecoregion within the Columbia Plateau ecoregion. This area is characterized by level to undulating lake plains that historically contained Pleistocene lakes following flooding from glacier lakes Missoula and Columbia. This area is one of the driest climates within the Columbia Plateau with annual precipitation averaging between 7 to 10 inches. The present-day landscape is characterized by sagebrush steppe grasslands in addition to irrigated agriculture lands and to a much smaller extent, developed urban lands. Most development in the area is focused around major urban centers.

A review of historical aerial photos show that the project site has not been subject to any notable development or disturbance during the last 40 years, although aerial photo coverage prior to 2000 is sporadic. Aerial photographs indicate the presence of a large amount of undeveloped roads and trails crisscrossing the property. These trails may have been utilized by motorized off-road vehicles or bicycles.

The NRCS soil maps indicate the presence of Quincy loamy sand, 2 to 15% slopes, and Quincy loamy sand, 0 to 30% slopes.¹ These well-draining soils are not listed as hydric soils in the Benton County soil survey. The NWI maps do not show any wetlands or surface waters mapped on or adjacent to the site. Based on soil and NWI maps, wetlands were not believed to occur on the property.

City of Richland Critical Area Maps do not indicate the presence of any critical areas on the site.

The WDFW priority habitat and species database returned two potential priority habitat and species occurring on the site. These include potential Ferruginous hawk (*Buteo regalis*) habitat and mapped burrowing owl (*Athene cunicularia*) breeding areas. The WDFW mapping and listing report for the site is attached to this report. The burrowing owl breeding area shown on PHS maps is likely the result of active burrowing owl burrows identified east of the project area. Both the individual owl burrows and breeding area were identified in 1999 by WDFW biologist Matt Smith.

Following the background investigation, a site visit was completed on April 20, 2021, by PBS Senior Scientist Brian Bieger to evaluate and document the conditions of the project site. Mr. Bieger has a Bachelor of Science in wildlife science and over 18 years of professional experience in natural resource assessments. Surveys of the property were conducted on foot and in vehicle when appropriate. Notes on dominant vegetation, notable topographic features, potential habitat features such as burrows, and evidence of wildlife usage or presence were investigated. The results of the field investigations are detailed below.

Existing Conditions

The approximately 120-acre project site is located immediately south of State Route 240 and is bound on the west by Twin Bridges Road and to the east by the Quail Ridge subdivision phases currently under construction (Figure 1). The topography of the project area is best described as flat to gently rolling with no dominant drainage direction (Figure 2). The surrounding land uses include high-density residential areas, undeveloped rangeland, irrigated agriculture, and semi-urban open space.

The most current aerial photograph available for the project site is presented in Figure 3. Since the time that this photograph was taken, construction of phases 3 through 6 of the adjacent Quail Ridge project have begun. At the time of the site visit the circulation roads and preliminary grading of lots had been completed. These features were overlaid on the aerial photograph in Figure 3.

Vegetation across the site is relatively homogenous across the entire subject project with some small variations observed in the field. Dominant shrub species includes big sagebrush (*Artemisia tridentata*), rabbitbrush (*Ericameria nauseosa*), and antelope bitterbrush (*Purshia tridentata*). The density of these native shrubs varies across the site from relatively dense to extremely sparse. The photo sheet attached to this report presents drone-based photographs of the site. The variations in shrub density can be observed in these photos.

Herbs and grasses identified include cheatgrass (*Bromus tectorum*), diffuse knapweed (*Centaurea diffusa*), thick spike wheatgrass (*Elymus lanceolatus*), common yarrow (*Achillea millefolium*), plumeless thistle (*Carduus acanthoides*), arrow leaf balsamroot (*Balsamorhiza sagittate*), blue mountain buckthorn (*Erigonium strictum*), tall tumble mustard (*Sisymbrium altissimum*), bulbous bluegrass (*Poa bulbosa*), longleaf phlox (*Phlox longifolia*), and

¹ NRCS. 2021. Natural Resources Conservation Service, US Department of Agriculture. Web Soil Survey. Available online at: <http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx>. Accessed April 19, 2021.

bunchgrass that appeared to be bluebunch wheatgrass (*Pseudoroegneria spicata*). The bunchgrass was only identified in the southwest portion of the site.

No observations of game trails or burrows were observed during walking transects on the property. One suspected coyote scat was identified but it appeared old and no tracks were visible.

WDFW Priority Wildlife Habitat and Species

The eastern portions of the site have been identified as potential habitat for Ferruginous hawks and burrowing owls. The habitat requirements and potential for the species to utilize the site are detailed below.

Ferruginous hawk (*Buteo regalis*)

One of the best overviews for the current population of Ferruginous hawks in Washington is found on the Washington Nature Mapping Program website:

This species is apparently declining throughout Washington. They have been reported as nesting as far north as Chelan, though recent records are limited to Kittitas, Yakima, Douglas, Grant, Benton, Klickitat, Lincoln, Adams, Franklin, Walla Walla, Whitman and Columbia Counties. Serious declines have occurred recently in Washington. For example, five pairs were seen in Yakima County in 1985, but these had been reduced to only one nesting pair by 1995. In fact, this species has also declined across North America in recent years, possibly a permanent trend due to increased human presence in its range, or possibly a temporary fluctuation in its relation to prey variability, or both. 72.8% of the nests surveyed for this Hawk were more than 1.25 miles from roads or areas with people, a testament to the need of disturbance-free areas for the conservation of this species. Temporal fluctuations in nest-site use and the decline of this species overall will affect the current distribution, which is probably smaller than that shown. Where it overlaps with the Swainson's Hawk, the Ferruginous Hawk generally nests on the ground or lower than the Swainson's, though Ferruginous Hawks are more likely to utilize utility towers where they are available. On the Hanford site, a population of seven to ten pairs nests on utility towers, foraging over steppe and irrigated agricultural areas. A 1990 study in Washington showed that 83% of the nests were located between 650 and 1,000 feet elevation, with a maximum elevation of 1,825 feet. This species is at the extreme edge of its range in Washington and may be susceptible to drought conditions, which can limit prey availability.²

Ferruginous hawks inhabit dry open country of the plains, grasslands, and shrub-steppe habitats of eastern Washington during the breeding season which runs from roughly March 1 through August 15. In these areas they typically construct nests on cliffs, rock outcrops, small trees, transmission line towers, and artificial platforms far from human disturbance. Ferruginous hawks nest farther away from human disturbance zones than other raptor species and often have more than a single nest within a range to allow for relocation if a particular nest is threatened during nesting season. This is apparently an adaptive strategy since Ferruginous hawks are very sensitive to disturbance during the nesting season and do not become acclimatized to repeated disturbance like many wildlife species.³ The hawks avoid cropland and it was found that populations decline consistently once cultivated land makes up 30% of a particular areas land use.⁴ The diet of Ferruginous hawks includes mostly small

² Nature Mapping Program. 2021. Ferruginous Hawk Predicted Distribution Map. Available online at: http://naturemappingfoundation.org/natmap/maps/wa/birds/WA_ferruginous_hawk.html. Accessed April 19, 2021.

³ White, C. M., and T. L. Thurow. 1985. Reproduction of ferruginous hawks exposed to controlled disturbance. *Condor* 87:14-22.

⁴ Schmutz, J. K. 1987. The effect of agriculture on ferruginous and Swainson's hawks. *Journal of Range Management* 40:438-330; Schmutz, J. K. 1989. Hawk occupancy of disturbed grasslands in relation to models of habitat selection. *Condor* 91:362-371.

and medium sized mammals with a preference for northern pocket gophers in Washington.⁵ The major limiting factors for viable Ferruginous hawks in Washington state is the availability of adequate prey populations and undisturbed habitat.⁶

The project site does not contain suitable habitat for Ferruginous hawks. While the birds could utilize the ground for nesting, the lack of cliffs or other perching habitats in addition to the proximity of high-intensity residential developments and marginal habitat conditions for prey species leads the author to believe that potential for Ferruginous hawks utilizing the site is extremely low, almost nonexistent.

Burrowing owl (*Athene cunicularia*)

The burrowing owl is a small owl species that occupies grasslands and shrub-steppe habitats in eastern Washington. It is listed as species of concern in Washington state and has a Natural Heritage status of vulnerable. Burrowing owls have become uncommon to rare outside of Benton, Franklin, Grant, and western Adams Counties.⁷ Burrowing owls utilize terrestrial burrows that are constructed and subsequently abandoned by other wildlife. A burrowing owl study in the Moses Lake area found that burrowing owls predominantly utilize abandoned badger burrows (21%) with marmot burrows, humanmade culverts, and humanmade irrigation trough making up the second greatest proportion of burrows (15% each).⁸ Burrowing owls are carnivores that primarily feed on moles, mice, songbirds, and insects. It was proposed that higher densities of burrowing owls in agricultural dominated landscapes could be attributed to higher amounts of prey species.⁸ Burrowing owls often nest in loose colonies within individual burrows with an opening of at least 3 to 4 inches wide and a length that can be upward of several meters long. Typically the burrows are less than 3 feet deep.⁹ Active or recently active nests can be readily identified by fresh scratchings, prey pellets, and fecal stains (whitewash).

Special attention was paid during the field transects in those areas with topographic relief that could provide burrow habitat for owls. No vacant or active burrows were identified during the field visit. It should be noted that the burrowing owl dens that were previously identified and mapped by the WDFW have been fully developed with single-family residential homes and access roads. The potential for burrowing owls to occur in those areas is now gone. The site does contain habitat for common burrowing owl prey species although indications of the presence of suitable prey species such as mice and mole tracks, scat, and burrows were not observed during the field visit.

While burrowing owl are more tolerant of human presence than many wildlife species, it does not appear that they are currently utilizing the project site. Given the overall decline in burrowing owl numbers in the state, the loss of nearby nesting opportunities, and the general quality of vegetation in the area for prey species, it is not likely that burrowing owls are utilizing the site.

⁵ Washington Department of Fish and Wildlife (WDFW). 1996. Washington state recovery plan for the Ferruginous Hawk. Olympia, Washington. 1996.

⁶ Schmutz, 1987.

⁷ WDFW. 2013. Threatened and Endangered Wildlife in Washington: 2012 Annual Report. Listing and Recovery Section, Wildlife Program, Washington Department of Fish and Wildlife, Olympia, Washington. 251 pp. Available Online at: https://wdfw.wa.gov/conservation/endangered/species/burrowing_owl.pdf Accessed July 20, 2019.

⁸ Conway. 2002. Population Ecology and Habitat Use of Burrowing Owls in Eastern Washington, Annual Report 2003. C. Conway, V. Garcia and L. Ellis. USGS Arizona Cooperative Fish and Wildlife Research Unit, Tucson, Arizona. Available online at: <https://wdfw.wa.gov/wildwatch/owlcam/bo-2003ap.pdf>. Accessed April 20, 2021.

⁹ Cornell. 2019. Burrowing Owl Life history. Cornell lab of Ornithology. Available online at: https://www.allaboutbirds.org/guide/Burrowing_Owl/lifehistory. Accessed July 20, 2019.

City of Richland Fish and Wildlife Habitat Conservation Areas

FWHCAs are regulated by the City under Chapter 22.170 of the City of Richland Development Code (CRDC). FWHCAs are defined in 22.10.185 of the CRDC as:

1. Areas where state or federally designated endangered, threatened, and sensitive species have a primary association.
2. State priority habitats and areas associated with state priority habitats.
3. Habitats and species of local importance.
4. Habitats and species that are important to the City of Richland.
5. National wildlife refuge, national park, or park or preserve designated under Washington Administrative Code 332-30-151.
6. The Yakima River Delta area, including Lake Wallula wildlife habitat areas currently managed by the US Army Corps of Engineers, the Chamna Natural Preserve, and Bateman Island.
7. The Hanford Islands in the Columbia River managed by the US Fish and Wildlife Service.
8. Amon Creek Natural Preserve.
9. Badger Mountain Natural Preserve.
10. Category I wetlands as defined in Richland Municipal Code 22.10.100.
11. State nature area preserves or natural resource conservation areas and state wildlife areas.
12. Documented habitat, other than accidental presence, of threatened or endangered species.
13. Documented habitat, other than accidental presence, of regional or national significance for migrating birds.
14. Naturally occurring ponds under 20 acres and their submerged aquatic beds that provide fish or wildlife habitat.
15. Waters of the state.
16. Lakes, ponds, streams, and rivers planted with game fish by a governmental or tribal entity.

Through the course of the assessment, it does not appear that the property contains priority habitat or species that would be regulated by the City as fish and wildlife conservation areas.

Regulatory Requirements

Based on the results of the background information search, on-site investigation, and best professional judgement, no WDFW priority habitats or WDFW priority wildlife occur within the study area.

Summary

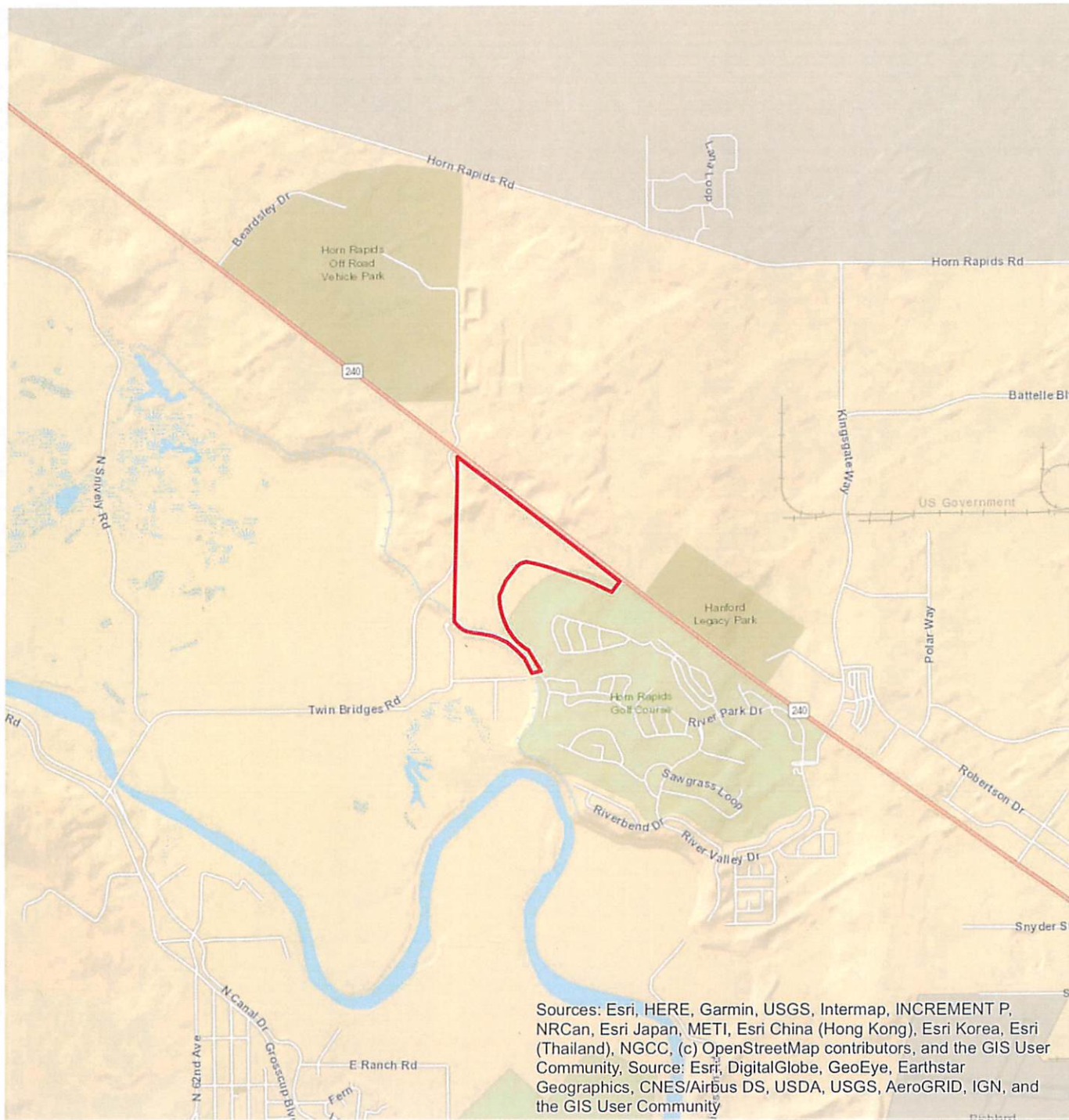
PBS was hired to complete a critical areas assessment for the proposed Quail Ridge subdivision in the city of Richland. The site was identified as having the potential for providing habitat for Ferruginous hawks and burrowing owls by the WDFW.

Through the course of this assessment, it was determined that the study area does not contain habitat for ferruginous hawks. While the habitats within the project area could be utilized by burrowing owls, no burrows or signs of owl activity were observed during transects of the property.

It is my best professional judgement that based on the details presented above, the project site should not be subject to the sections of the City of Richland development code that deal with FWHCAs.

If you have any questions or comments, please feel free to contact me at your convenience.

Attachments: Figures 1–3
 Photo Sheet
 WDFW Priority Habitat Report



SOURCE: ESRI Open Source Street Maps 2021.



SCALE: 1" = 3,000'



PREPARED FOR: Pahlisch Homes.

Legend

Study Area



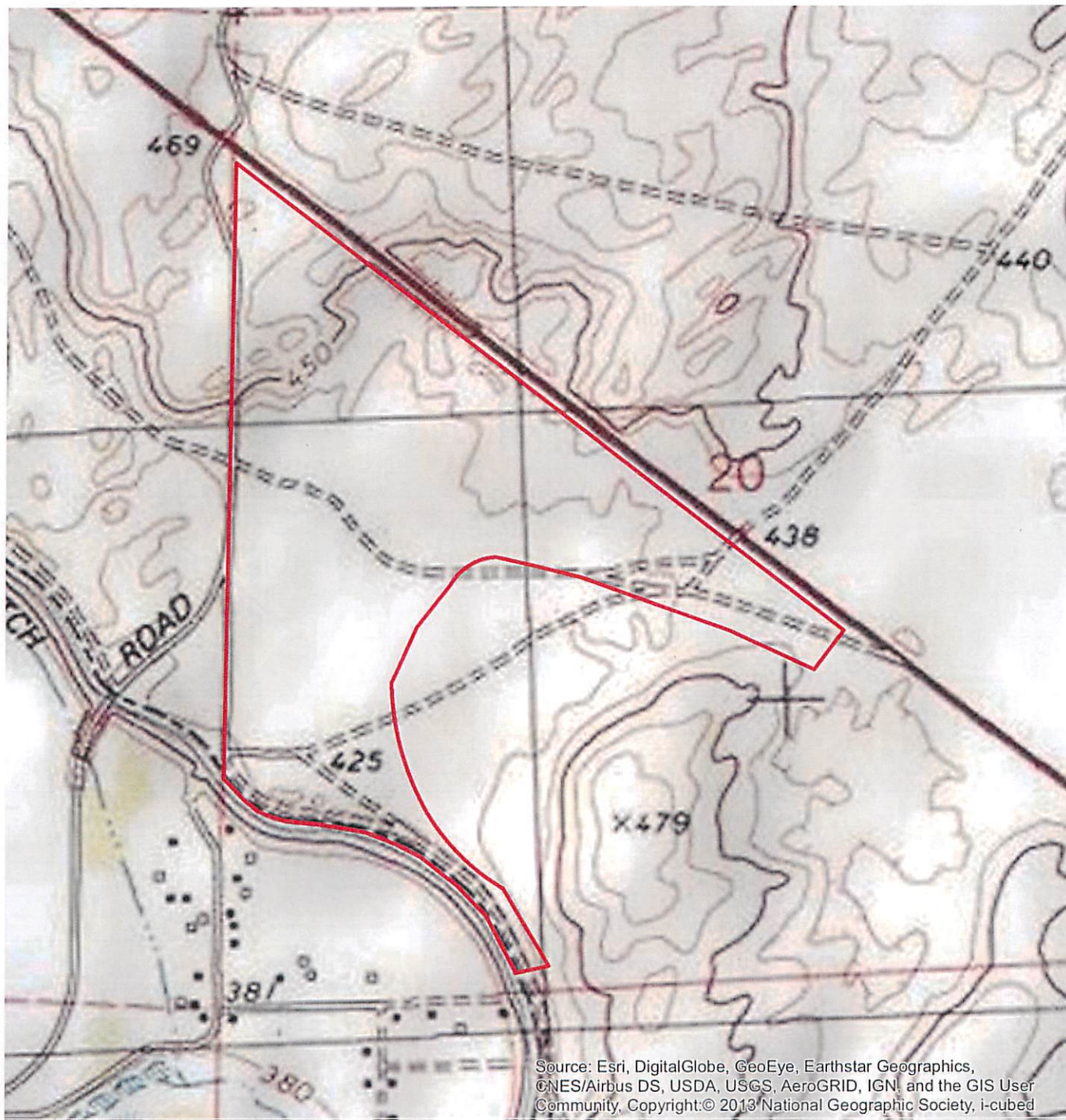
LOCATION MAP

Quail Ridge II Project
City of Richland, Washington

APRIL 2021
66118.006

FIGURE

1



SOURCE: USGS Topographic Map.



SCALE: 1" = 800'



PREPARED FOR: Pahlisch Homes.

Legend

 Study Area



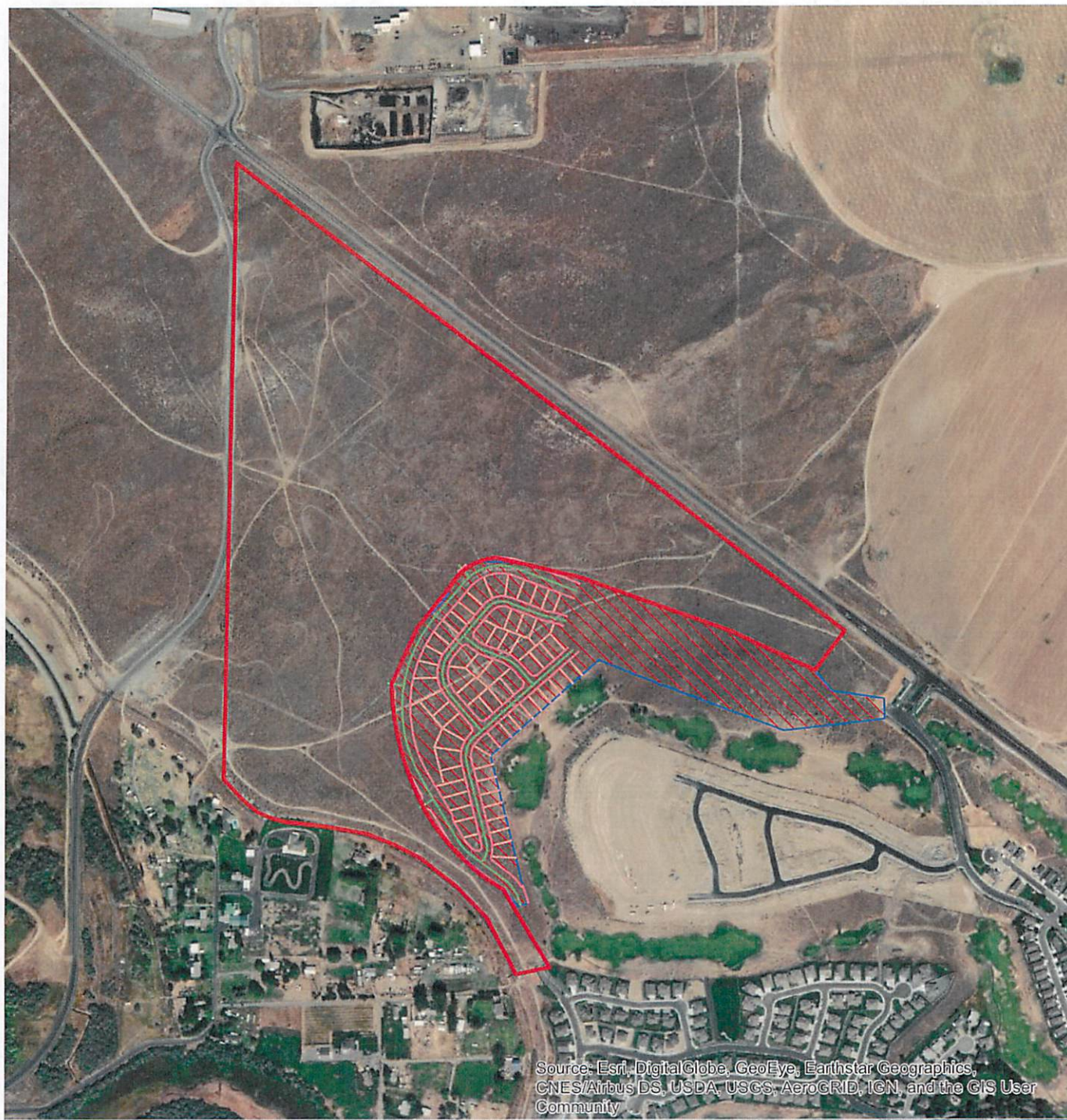
TOPOGRAPHIC MAP

Quail Ridge II Project
City of Richland, Washington

APRIL 2021
66118.003

FIGURE

2



SOURCE: .

Legend

-  Study Area
-  Quail Ridge Phases 3-6 Under Construction



SCALE: 1" = 800'



PREPARED FOR: Pahlisch Homes.



AERIAL PHOTOGRAPH

Quail Ridge II Project
City of Richland, Washington

APRIL 2021
66118.003

FIGURE

3



Photo 1. Eastern portion - facing west



Photo 2. Eastern portion - facing southwest



Photo 3. Eastern portion – facing north



Photo 4. Eastern portion - facing southeast



Photo 5. Central portion - facing northwest



Photo 6. Typical vegetation structure



Photo 7. Central portion - facing east



Photo 8. Central portion - facing southwest



Priority Habitats and Species on the Web



Report Date: 04/21/2021

PHS Species/Habitats Overview:

Occurrence Name	Federal Status	State Status	Generalized Location
Burrowing owl	N/A	Candidate	No
Ferruginous hawk	N/A	Threatened	Yes

PHS Species/Habitats Details:

Burrowing owl	
Scientific Name	<i>Athene cunicularia</i>
Priority Area	Breeding Area
Site Name	HORN RAPIDS GOLF COURSE
Accuracy	1/4 mile (Quarter Section)
Notes	SITE HAS APPROXIMATELY 4 NATURAL BURROWS. NEEDS ADDITIONAL SURVEY. BLACK-TAILED JACKRABBITS ALSO SEEN IN THE AREA.
Source Record	913558
Source Dataset	PHSREGION
Source Name	SOUTHERN, MARK U OF A
Source Entity	WA Dept. of Fish and Wildlife
Federal Status	N/A
State Status	Candidate
PHS Listing Status	PHS Listed Occurrence
Sensitive	N
SGCN	Y
Display Resolution	AS MAPPED
ManagementRecommendations	http://wdfw.wa.gov/publications/pub.php?id=00026
Geometry Type	Polygons

Ferruginous hawk	
Scientific Name	<i>Buteo regalis</i>
Notes	This polygon mask represents one or more records of the above species or habitat occurrence. Contact PHS Data Release (360-902-2543) for obtaining information about masked sensitive species and habitats.
Federal Status	N/A
State Status	Threatened
PHS Listing Status	PHS Listed Occurrence
Sensitive	Y
SGCN	Y
Display Resolution	TOWNSHIP
ManagementRecommendations	http://wdfw.wa.gov/publications/pub.php?id=00026

DISCLAIMER. This report includes information that the Washington Department of Fish and Wildlife (WDFW) maintains in a central computer database. It is not an attempt to provide you with an official agency response as to the impacts of your project on fish and wildlife. This information only documents the location of fish and wildlife resources to the best of our knowledge. It is not a complete inventory and it is important to note that fish and wildlife resources may occur in areas not currently known to WDFW biologists, or in areas for which comprehensive surveys have not been conducted. Site specific surveys are frequently necessary to rule out the presence of priority resources. Locations of fish and wildlife resources are subject to variation caused by disturbance, changes in season and weather, and other factors. WDFW does not recommend using reports more than six months old.

SEPA ENVIRONMENTAL CHECKLIST

Purpose of checklist:

Governmental agencies use this checklist to help determine whether the environmental impacts of your proposal are significant. This information is also helpful to determine if available avoidance, minimization or compensatory mitigation measures will address the probable significant impacts or if an environmental impact statement will be prepared to further analyze the proposal.

Instructions for applicants:

This environmental checklist asks you to describe some basic information about your proposal. Please answer each question accurately and carefully, to the best of your knowledge. You may need to consult with an agency specialist or private consultant for some questions. You may use "not applicable" or "does not apply" only when you can explain why it does not apply and not when the answer is unknown. You may also attach or incorporate by reference additional studies reports. Complete and accurate answers to these questions often avoid delays with the SEPA process as well as later in the decision-making process.

The checklist questions apply to all parts of your proposal, even if you plan to do them over a period of time or on different parcels of land. Attach any additional information that will help describe your proposal or its environmental effects. The agency to which you submit this checklist may ask you to explain your answers or provide additional information reasonably related to determining if there may be significant adverse impact.

Instructions for Lead Agencies:

Please adjust the format of this template as needed. Additional information may be necessary to evaluate the existing environment, all interrelated aspects of the proposal and an analysis of adverse impacts. The checklist is considered the first but not necessarily the only source of information needed to make an adequate threshold determination. Once a threshold determination is made, the lead agency is responsible for the completeness and accuracy of the checklist and other supporting documents.

Use of checklist for nonproject proposals:

For nonproject proposals (such as ordinances, regulations, plans and programs), complete the applicable parts of sections A and B plus the [SUPPLEMENTAL SHEET FOR NONPROJECT ACTIONS \(part D\)](#). Please completely answer all questions that apply and note that the words "project," "applicant," and "property or site" should be read as "proposal," "proponent," and "affected geographic area," respectively. The lead agency may exclude (for non-projects) questions in Part B - Environmental Elements –that do not contribute meaningfully to the analysis of the proposal.

A. Background [\[HELP\]](#)

1. Name of proposed project, if applicable:

Quail Ridge II

2. Name of applicant:

Pahlisch Homes

3. Address and phone number of applicant and contact person:

Pahlisch Homes, Chad Bettsworth, 210 SW Wilson Ave, Ste 100, Bend, OR 97702; 541.280.6242

4. Date checklist prepared:
April 30, 2021
5. Agency requesting checklist:
City of Richland
6. Proposed timing or schedule (including phasing, if applicable):
The project comprises 3 phases. Infrastructure construction will begin for each phase immediately following necessary approvals.
7. Do you have any plans for future additions, expansion, or further activity related to or connected with this proposal? If yes, explain.
Engineering plans will be permitted through the city for infrastructure. The project will apply for a grading permit also through the city. Upon completion of infrastructure and recording of the final plat, builders will apply for building permits for the dwellings.
8. List any environmental information you know about that has been prepared, or will be prepared, directly related to this proposal.
A geotechnical engineering report, trip accounting letter, and critical areas habitat study have been prepared, along with a topographic and boundary survey.
9. Do you know whether applications are pending for governmental approvals of other proposals directly affecting the property covered by your proposal? If yes, explain.
The applicant is completing a cultural resource study of the subject property.
10. List any government approvals or permits that will be needed for your proposal, if known.
Preliminary plat approval, final engineering drawing approval, grading and infrastructure permits, final plat approval, building permits.
11. Give brief, complete description of your proposal, including the proposed uses and the size of the project and site. There are several questions later in this checklist that ask you to describe certain aspects of your proposal. You do not need to repeat those answers on this page. (Lead agencies may modify this form to include additional specific information on project description.)
This is a three-phased subdivision of approximately 62.90 acres divided into 124 residential lots. 22.06 acres of this will be designated as a future development tract. The lots are for future construction of detached single-family dwellings. Lots range in size from 6,927 square feet to 14,399 square feet.
12. Location of the proposal. Give sufficient information for a person to understand the precise location of your proposed project, including a street address, if any, and section, township, and range, if known. If a proposal would occur over a range of area, provide the range or boundaries of the site(s). Provide a legal description, site plan, vicinity map, and topographic map, if reasonably available. While you should submit any plans required by the agency, you are not required to duplicate maps or detailed plans submitted with any permit applications related to this checklist. *The site is unaddressed. It is located in Section 20, Township 10 North, Range 28 East. The title report with the legal description and preliminary plat plan set are included as part of this submission.*

B. Environmental Elements [\[HELP\]](#)

1. Earth [\[help\]](#)

a. General description of the site:

(circle one): Flat, rolling, hilly, steep slopes, mountainous, other _____

b. What is the steepest slope on the site (approximate percent slope)?

The steepest slope is 5%, but only for a small portion of the site. The rest of the slopes are approximately 2%.

c. What general types of soils are found on the site (for example, clay, sand, gravel, peat, muck)? If you know the classification of agricultural soils, specify them and note any agricultural land of long-term commercial significance and whether the proposal results in removing any of these soils. *MarchMApril*

The geotechnical engineering report prepared by PBS on September 15, 2020 states the soils are sand to silty sand and gravel.

- d. Are there surface indications or history of unstable soils in the immediate vicinity? If so, describe. *There are no surface indications or history of unstable soils in the immediate vicinity.*
- e. Describe the purpose, type, total area, and approximate quantities and total affected area of any filling, excavation, and grading proposed. Indicate source of fill.
The site will be graded to create residential lots and to construct infrastructure that will serve those lots. All fill will be from material excavated on the site. Import of materials for grading is not anticipated.
- f. Could erosion occur as a result of clearing, construction, or use? If so, generally describe.
Potential erosion, both wind blown and runoff, are possible as a result of construction and will be managed with a temporary erosion control plan approved by the city. Landscaping on individual lots will provide permanent erosion control.
- g. About what percent of the site will be covered with impervious surfaces after project construction (for example, asphalt or buildings)?
Approximately 35% of the site will be covered with impervious surfaces after project completion and full build out of houses.
- h. Proposed measures to reduce or control erosion, or other impacts to the earth, if any:
During construction, erosion control measures will be implemented such as person-operated altering devices and silt fencing. After construction, the majority of the disturbed surfaces on the site will be landscaped consistent with single-family dwellings.

2. Air [\[help\]](#)

- a. What types of emissions to the air would result from the proposal during construction, operation, and maintenance when the project is completed? If any, generally describe and give approximate quantities if known.
During construction, there will be exhaust emissions from construction equipment as well as dust. After project completion, there will be typical air emissions resulting from a residential neighborhood setting.
- b. Are there any off-site sources of emissions or odor that may affect your proposal? If so, generally describe.
No off site sources of emissions will affect this proposal.
- c. Proposed measures to reduce or control emissions or other impacts to air, if any:
During construction, emissions will be limited to working hours and dust will be controlled by person-operated watering devices.

3. Water [\[help\]](#)

- a. Surface Water: [\[help\]](#)
- 1) Is there any surface water body on or in the immediate vicinity of the site (including year-round and seasonal streams, saltwater, lakes, ponds, wetlands)? If yes, describe type and provide names. If appropriate, state what stream or river it flows into.
There are no seasonal streams, saltwater, lakes, ponds, or wetlands on or in the immediate vicinity of the site. Horn Rapids Ditch is to the south of the site, but does not contain any water.
 - 2) Will the project require any work over, in, or adjacent to (within 200 feet) the described waters? If yes, please describe and attach available plans.
No.
 - 3) Estimate the amount of fill and dredge material that would be placed in or removed from surface water or wetlands and indicate the area of the site that would be affected. Indicate the source of fill material.
There will be no fill and dredge material placed in or removed from surface water or wetlands as part of this project.
 - 4) Will the proposal require surface water withdrawals or diversions? Give general description, purpose, and approximate quantities if known.
The proposal will not require surface water withdrawals or diversions.

5) Does the proposal lie within a 100-year floodplain? If so, note location on the site plan.

The proposal does not lie within a 100-year floodplain.

6) Does the proposal involve any discharges of waste materials to surface waters? If so, describe the type of waste and anticipated volume of discharge.

The proposal does not involve any discharges of waste materials to surface waters.

b. Ground Water: [\[help\]](#)

1) Will groundwater be withdrawn from a well for drinking water or other purposes? If so, give a general description of the well, proposed uses and approximate quantities withdrawn from the well. Will water be discharged to groundwater? Give general description, purpose, and approximate quantities if known.

No groundwater will be withdrawn from a well for drinking water or other purposes. No water will be discharged to groundwater. Drinking water will be provided by the City of Richland municipal system.

2) Describe waste material that will be discharged into the ground from septic tanks or other sources, if any (for example: Domestic sewage; industrial, containing the following chemicals. . . ; agricultural; etc.). Describe the general size of the system, the number of such systems, the number of houses to be served (if applicable), or the number of animals or humans the system(s) are expected to serve.

No waste material will be discharged into the ground from septic tanks or other sources. Sanitary sewer will be discharged to the city's sewer system.

c. Water runoff (including stormwater):

1) Describe the source of runoff (including storm water) and method of collection and disposal, if any (include quantities, if known). Where will this water flow? Will this water flow into other waters? If so, describe.

Storm water runoff will be collected within the roadway prism and disposed of via surface/subsurface methods consistent with the city's standards for storm water disposal. There will be no off-site discharges of design storm runoff from the project.

2) Could waste materials enter ground or surface waters? If so, generally describe.

It is not anticipated that waste materials will enter ground or surface waters since waste materials are not allowed to be discharged to city-owned and maintained storm systems.

3) Does the proposal alter or otherwise affect drainage patterns in the vicinity of the site? If so, describe.

The proposal will alter the existing ground surface through grading necessary for installation of required infrastructure. No adjacent properties are anticipated to be impacted.

d. Proposed measures to reduce or control surface, ground, and runoff water, and drainage pattern impacts, if any:

The storm water disposal methods will be in compliance with city standards as well as the Washington State Department of Ecology Eastern Washington Stormwater Manual.

4. **Plants** [\[help\]](#)

a. Check the types of vegetation found on the site:

- ☐ deciduous tree: alder, maple, aspen, other
- ☐ evergreen tree: fir, cedar, pine, other
- ☐ shrubs
- ☒ grass
- ☐ pasture
- ☐ crop or grain
- ☐ Orchards, vineyards or other permanent crops.
- ☐ wet soil plants: cattail, buttercup, bullrush, skunk cabbage, other
- ☐ water plants: water lily, eelgrass, milfoil, other
- ☒ other types of vegetation *sagebrush*

b. What kind and amount of vegetation will be removed or altered?

All existing sagebrush and grass vegetation on the site will be removed.

c. List threatened and endangered species known to be on or near the site.

See attached Critical Areas report for site prepared by PBS dated April 26th, 2021 "Critical Areas Assessment - Fish and Wildlife Habitat Conservation Areas."

d. Proposed landscaping, use of native plants, or other measures to preserve or enhance vegetation on the site, if any:

The lots will be landscaped with vegetation typical of single-family dwellings.

e. List all noxious weeds and invasive species known to be on or near the site.

See attached Critical Areas report for site prepared by PBS dated April 26th, 2021 "Critical Areas Assessment - Fish and Wildlife Habitat Conservation Areas."

5. Animals [\[help\]](#)

a. List any birds and other animals which have been observed on or near the site or are known to be on or near the site. *ground squirrel, hawk*

Examples include:

birds: hawk, heron, eagle, songbirds, other:

mammals: deer, bear, elk, beaver, other:

fish: bass, salmon, trout, herring, shellfish, other _____

b. List any threatened and endangered species known to be on or near the site.

See attached Critical Areas report for site prepared by PBS dated April 26th, 2021 "Critical Areas Assessment - Fish and Wildlife Habitat Conservation Areas."

c. Is the site part of a migration route? If so, explain.

Richland is within the Pacific Flyway.

d. Proposed measures to preserve or enhance wildlife, if any:

No measures are being proposed to preserve or enhance wildlife.

e. List any invasive animal species known to be on or near the site.

The applicant has no knowledge of any invasive animal species on or near the site.

6. Energy and Natural Resources [\[help\]](#)

- a. What kinds of energy (electric, natural gas, oil, wood stove, solar) will be used to meet the completed project's energy needs? Describe whether it will be used for heating, manufacturing, etc.

The subdivision, once completed, will require electricity and gas to serve the dwellings.

- b. Would your project affect the potential use of solar energy by adjacent properties? If so, generally describe.

This project will not impact the potential use of solar energy by adjacent properties.

- c. What kinds of energy conservation features are included in the plans of this proposal? List other proposed measures to reduce or control energy impacts, if any:

Future dwellings will be constructed in accordance with all applicable building and energy codes as adopted by the city.

7. Environmental Health [\[help\]](#)

- a. Are there any environmental health hazards, including exposure to toxic chemicals, risk of fire and explosion, spill, or hazardous waste, that could occur as a result of this proposal? If so, describe.

- 1) Describe any known or possible contamination at the site from present or past uses.

The applicant has no knowledge of known or possible contamination at the site from present or past uses.

- 2) Describe existing hazardous chemicals/conditions that might affect project development and design. This includes underground hazardous liquid and gas transmission pipelines located within the project area and in the vicinity.

There are no existing hazardous chemicals/conditions that might affect project development and design to the applicant's knowledge.

- 3) Describe any toxic or hazardous chemicals that might be stored, used, or produced during the project's development or construction, or at any time during the operating life of the project.

There will be no toxic or hazardous chemicals stored, used, or produced during the project's development or construction.

- 4) Describe special emergency services that might be required.

No special emergency services will be required.

- 5) Proposed measures to reduce or control environmental health hazards, if any:

There are no proposed measures to reduce or control environmental health hazards.

b. Noise

- 1) What types of noise exist in the area which may affect your project (for example: traffic, equipment, operation, other)?

There are no known sources of noise in the area that will directly affect this project. The project is near residential uses and will experience noises typical of residential dwellings.

- 2) What types and levels of noise would be created by or associated with the project on a short-term or a long-term basis (for example: traffic, construction, operation, other)? Indicate what hours noise would come from the site.

On a short-term basis, there will be noise associated with construction. Hours of construction will be limited to those allowed by the city. The proposed project will increase the traffic in the area consistent with single-family dwellings on a long-term basis.

- 3) Proposed measures to reduce or control noise impacts, if any:

Construction hours will be limited to those allowed by the city's noise ordinance.

8. Land and Shoreline Use [\[help\]](#)

- a. What is the current use of the site and adjacent properties? Will the proposal affect current land uses on nearby or adjacent properties? If so, describe.

The site is currently vacant, undeveloped property. Adjacent properties are either residential or vacant, undeveloped sites. This proposal will not affect nearby land uses.

- b. Has the project site been used as working farmlands or working forest lands? If so, describe. How much agricultural or forest land of long-term commercial significance will be converted to other uses as a result of the proposal, if any? If resource lands have not been designated, how many acres in farmland or forest land tax status will be converted to nonfarm or nonforest use?

The project site has not been used as working farmlands or working forest lands.

- 1) Will the proposal affect or be affected by surrounding working farm or forest land normal business operations, such as oversize equipment access, the application of pesticides, tilling, and harvesting? If so, how:

The proposal does not anticipate any adverse impacts to or from working farm or forest land business operations.

- c. Describe any structures on the site.

The site has no structures.

- d. Will any structures be demolished? If so, what?

No structures will be demolished.

- e. What is the current zoning classification of the site?

The site is currently zoned R-3 and R-2S.

- f. What is the current comprehensive plan designation of the site?

The current comprehensive plan designations of the site are MDR (Medium Density Residential) and HDR (High Density Residential).

- g. If applicable, what is the current shoreline master program designation of the site?

The site does not contain shoreline and is not part of a current shoreline master program.

- h. Has any part of the site been classified as a critical area by the city or county? If so, specify.

City and county GIS maps available on their websites show none of the site has been classified as a critical area.

- i. Approximately how many people would reside or work in the completed project?

The completed project will contain 124 dwellings. Assuming each dwelling has an occupant size of two persons per dwelling, there will be a total of 312 individuals residing in the completed project.

- j. Approximately how many people would the completed project displace?

No people will be displaced since the site is currently vacant and undeveloped.

- k. Proposed measures to avoid or reduce displacement impacts, if any:

No measures are proposed to avoid or reduce displacement impacts since there won't be any displacement impacts.

- L. Proposed measures to ensure the proposal is compatible with existing and projected land uses and plans, if any:

The site is surrounded by either residential dwellings or vacant undeveloped land. The proposal is for residential dwellings, so the project is compatible with the surrounding residential dwelling land use. Construction will be in accordance with the city's zoning and building requirements. The project is consistent with the Horn Rapids Master Plan.

- m. Proposed measures to reduce or control impacts to agricultural and forest lands of long-term commercial significance, if any:

There are no proposed measures to reduce or control impacts to agricultural and forest lands.

9. Housing [\[help\]](#)

- a. Approximately how many units would be provided, if any? Indicate whether high, middle, or low-income housing.

124 detached single-family dwellings will be provided.

- b. Approximately how many units, if any, would be eliminated? Indicate whether high, middle, or low-income housing.

No housing units will be eliminated.

- c. Proposed measures to reduce or control housing impacts, if any:

Housing impacts will be controlled by the city's zoning code for the R-3 and R-2S zoning designations.

10. Aesthetics [\[help\]](#)

- a. What is the tallest height of any proposed structure(s), not including antennas; what is the principal exterior building material(s) proposed?

The tallest height of any dwelling is limited by the zoning code. The R-2S maximum height is 30 feet. The R-3 maximum height is also 30 feet when within 50 feet of any property zoned for single-family use. Beyond the 50-foot area, the height may increase by one foot for each additional foot of setback. Principal exterior building materials could vary but will likely be either composite siding or stucco.

- b. What views in the immediate vicinity would be altered or obstructed?

No views in the immediate vicinity will be altered or obstructed by this project.

- b. Proposed measures to reduce or control aesthetic impacts, if any:

Aesthetics will be controlled by the city's zoning code requirements for the R-3 and R-2S zones.

11. Light and Glare [\[help\]](#)

- a. What type of light or glare will the proposal produce? What time of day would it mainly occur?

The proposal will produce light from the required city street lights as well as exterior lighting fixtures placed on the residential dwellings. This light will be created during evening and very early morning hours.

- b. Could light or glare from the finished project be a safety hazard or interfere with views?

The applicant does not anticipate light or glare from the finished project being a safety hazard or interfering with views.

- c. What existing off-site sources of light or glare may affect your proposal?

There are no off-site sources of light or glare that will affect the proposal.

- d. Proposed measures to reduce or control light and glare impacts, if any:

All city street lights and exterior light fixtures on the dwellings will be directed downward.

12. Recreation [\[help\]](#)

- a. What designated and informal recreational opportunities are in the immediate vicinity?

The Horn Rapids Golf Course, Hanford Legacy Park, and Horn Rapids Off Road Vehicle Park are all in the vicinity of the project.

- b. Would the proposed project displace any existing recreational uses? If so, describe.

No existing recreational uses will be displaced by this project.

- c. Proposed measures to reduce or control impacts on recreation, including recreation opportunities to be provided by the project or applicant, if any:

Proposed measures to reduce or control impacts on recreation include the sidewalk system that will be installed as part of the infrastructure, an open space tract, and an amenity lot.

13. Historic and cultural preservation [\[help\]](#)

- a. Are there any buildings, structures, or sites, located on or near the site that are over 45 years old listed in or eligible for listing in national, state, or local preservation registers? If so, specifically describe.

The applicant is unaware of any buildings, structures, or sites, located on or near the site that are over 45 years old listed in or eligible for listing in any preservation registers.

- b. Are there any landmarks, features, or other evidence of Indian or historic use or occupation? This may include human burials or old cemeteries. Are there any material evidence, artifacts, or areas of cultural importance on or near the site? Please list any professional studies conducted at the site to identify such resources.

The applicant is unaware of any landmarks, features, or other evidence of Indian or historic use or occupation. The applicant is currently conducting a cultural resource study on the property

- c. Describe the methods used to assess the potential impacts to cultural and historic resources on or near the project site. Examples include consultation with tribes and the department of archeology and historic preservation, archaeological surveys, historic maps, GIS data, etc.

The applicant is having a cultural resource study of the site conducted. The applicant does not know of any cultural or historical resources on the site.

- d. Proposed measures to avoid, minimize, or compensate for loss, changes to, and disturbance to resources. Please include plans for the above and any permits that may be required.

There are no proposed measures to avoid, minimize, or compensate for loss, change, to, and disturbance to resources since there aren't any identified resources at this time.

14. Transportation [\[help\]](#)

- a. Identify public streets and highways serving the site or affected geographic area and describe proposed access to the existing street system. Show on site plans, if any.

The attached preliminary plat plan set shows the proposed access to the site as being from the existing Village Parkway. New local streets will be constructed to connect to Village Parkway. The site is also in the vicinity of SR 240 to the north and Twin Bridges Road to the east.

- b. Is the site or affected geographic area currently served by public transit? If so, generally describe. If not, what is the approximate distance to the nearest transit stop?

Portions of Richland are served by Ben Franklin Transit. The nearest transit stop is over 5 miles away.

- c. How many additional parking spaces would the completed project or non-project proposal have? How many would the project or proposal eliminate?

The project will provide on-street parking as well as off-street parking in the form of driveways and garages for each individual dwelling. No parking spaces will be eliminated by the project.

- d. Will the proposal require any new or improvements to existing roads, streets, pedestrian, bicycle or state transportation facilities, not including driveways? If so, generally describe (indicate whether public or private).
Yes, the project will require the development of the internal roadway system to serve the future dwellings, as well as their connection to Village Parkway.
- e. Will the project or proposal use (or occur in the immediate vicinity of) water, rail, or air transportation? If so, generally describe.
No, the project will not use (or occur in the immediate vicinity of) water, rail, or air transportation.
- f. How many vehicular trips per day would be generated by the completed project or proposal? If known, indicate when peak volumes would occur and what percentage of the volume would be trucks (such as commercial and nonpassenger vehicles). What data or transportation models were used to make these estimates?
Approximately 1,258 vehicular trips per day will be generated by the completed project. Peak volumes would occur in the morning and evening hours. ITE Trip Generation Manual was used for estimation of traffic generated by single-family residential development. See attached Trip Accounting Letter by PBS, dated April 20, 2021.
- g. Will the proposal interfere with, affect or be affected by the movement of agricultural and forest products on roads or streets in the area? If so, generally describe.
No, the proposal will not interfere with, affect, or be affected by the movement of agricultural and forest products on roads or streets in the area.
- h. Proposed measures to reduce or control transportation impacts, if any:
The project will look to construct a SEVA access road from Road B to Twin Bridges Road for secondary access.

15. Public Services [\[help\]](#)

- a. Would the project result in an increased need for public services (for example: fire protection, police protection, public transit, health care, schools, other)? If so, generally describe.
The project will result in the need for fire protection, police protection, schools, and other public services associated with housing development.
- b. Proposed measures to reduce or control direct impacts on public services, if any.
The project will be subject to impact fees implemented by the city and the school district. Lots created by the project will be subject to local taxes and levies from the local jurisdictions.

16. Utilities [\[help\]](#)

- a. Circle utilities currently available at the site:
 electricity, natural gas, water, refuse service, telephone, sanitary sewer, septic system,
 other _____
Electricity, natural gas, water, refuse service, telephone, and sanitary sewer are currently available at the site.
- c. Describe the utilities that are proposed for the project, the utility providing the service, and the general construction activities on the site or in the immediate vicinity which might be needed.
Richland Energy Services, through the city of Richland, will provide electricity to the project. Irrigation, domestic water, wastewater, stormwater, and solid waste services will all be provided to the project through the city of Richland. The natural gas provider in the area is Cascade Natural Gas, and telephone is provided by CenturyLink and Charter Communications. New sanitary sewer, water, and irrigation mains, as well as dry utilities will need to be extended into the project to service the new lots.

C. Signature [\[HELP\]](#)

The above answers are true and complete to the best of my knowledge. I understand that the lead agency is relying on them to make its decision.

Signature: _____

Name of signee Jason Mattox, PE

Position and Agency/Organization Principal Engineer / PBS Engineering and Environmental

Date Submitted: 4/30/2021

D. Supplemental sheet for nonproject actions [\[HELP\]](#)

(IT IS NOT NECESSARY to use this sheet for project actions)

Because these questions are very general, it may be helpful to read them in conjunction with the list of the elements of the environment.

When answering these questions, be aware of the extent the proposal, or the types of activities likely to result from the proposal, would affect the item at a greater intensity or at a faster rate than if the proposal were not implemented. Respond briefly and in general terms.

1. How would the proposal be likely to increase discharge to water; emissions to air; production, storage, or release of toxic or hazardous substances; or production of noise?

Proposed measures to avoid or reduce such increases are:

2. How would the proposal be likely to affect plants, animals, fish, or marine life?

Proposed measures to protect or conserve plants, animals, fish, or marine life are:

3. How would the proposal be likely to deplete energy or natural resources?

Proposed measures to protect or conserve energy and natural resources are:

4. How would the proposal be likely to use or affect environmentally sensitive areas or areas designated (or eligible or under study) for governmental protection; such as parks,

wilderness, wild and scenic rivers, threatened or endangered species habitat, historic or cultural sites, wetlands, floodplains, or prime farmlands?

Proposed measures to protect such resources or to avoid or reduce impacts are:

5. How would the proposal be likely to affect land and shoreline use, including whether it would allow or encourage land or shoreline uses incompatible with existing plans?

Proposed measures to avoid or reduce shoreline and land use impacts are:

6. How would the proposal be likely to increase demands on transportation or public services and utilities?

Proposed measures to reduce or respond to such demand(s) are:

7. Identify, if possible, whether the proposal may conflict with local, state, or federal laws or requirements for the protection of the environment.

Quail Ridge Housing Development Inadvertent Discovery Plan

June 24, 2021

Project Location

USGS Quadrangle: Richland, Washington 7.5'

Township: 10 N, Range: 28 E

Section: 19, 20, & 29

Project Description

The project includes the construction of a housing development on approximately 59.5 hectares (147 acres) of land located south of Washington State Route 240 between Twin Bridges Road and Village Parkway in Richland, Washington. Project activities including excavation and grading, as well as other general construction activities, that will take place throughout the project area. The anticipated maximum depth of excavation for this project is approximately 3 meters (10 feet).

The project area is approximately 59.5 hectares (147 acres) and is located in Benton County, Section 19, 20, and 29 of Township 10N, Range 28E (Figures 1 and 2). The property overlaps all or part of the following Benton County tax lots:

- #119081000001004
- #129082020000012
- #120083000009006
- #129082020000013
- #120083000009008
- #129082020000038
- #120083000009009
- #129082020002000
- #120083000009013
- #120083000009012
- #120084000001002
- #120083000009014
- #129082020003000
- #120083000009015
- #129082020000011

Project Area

The Project area contains approximately 59.5 hectares (147 acres) located in Benton County, in Township 10 North, Range 28 East in Section 19, 20, and 29 of the Richland, WA 7.5' USGS Quadrangle.

Inadvertent Discovery Plan

This inadvertent discovery plan (IDP) was prepared to support project activities described above. This plan was prepared to provide field personnel a process for the inadvertent discovery of cultural resources and/or human remains identified during fieldwork for the project.

Recognizing Cultural Resources

A cultural resource discovery could be prehistoric or historic. Examples include the following:

- An accumulation of shell, burned rocks, or other food-related materials
- Bones or small pieces of bone
- An area of charcoal or very dark-stained soil with artifacts
- Stone tools or waste flakes (i.e. an arrowhead. or stone chips)
- Clusters of tin cans or bottles, logging or agricultural equipment that appears to be older than 50 years
- Buried railroad tracks, decking, or other industrial materials

When in doubt, assume the material is a cultural resource.

Onsite Responsibilities

STEP 1: Stop Work

If any employee, contractor, or subcontractor believes that he or she has uncovered a cultural resource at any point in the project, all work must stop immediately in the vicinity of the find. Notify the appropriate party(ies) as outlined in steps 2 through 4. The area surrounding the find must be secured using pin flags, stanchions and rope, or other appropriate delineation to provide for the security and protection of the discovery.

STEP 2: Notify the Archaeological Monitor

If there is an archaeological monitor for the project, notify that person. If there is a monitoring plan in place, the monitor will follow the procedure as described.

STEP 3: Notify the Project Manager

Notify the identified project manager of this project or other applicable contacts:

Project Manager

Jason Mattox, Principal Civil Engineer, PBS
400 Bradley Blvd, Suite 160, Richland, WA 99352
Phone: (509) 430-4252
Email: jason.mattox@pbsusa.com

Alternate Project Contact

TBD

Project manager responsibilities include the following:

- **Protect the Find:** The project manager is responsible for ensuring that the project takes appropriate steps to protect the discovery site while all necessary assessments and notifications are completed. As stated in steps 1 and 2, all work will stop immediately in the surrounding area, and the area will be secured to protect the integrity of the resource. Vehicles, equipment, and unauthorized personnel will not be permitted to enter the area of the discovery. See the section of this plan titled "Resuming Work" for further instruction on how and when work may resume.

- **Direct Project Activities Elsewhere Onsite:** The project manager may direct project activities to continue in areas away from cultural resources for working in other areas prior to contacting the concerned parties.
- **Contact the Project Archaeologist:** If the assigned project archaeologist has not yet been contacted, the project manager must do so.

STEP 5: Notify the Professional Archaeologist

Notify the identified professional archaeologist serving as the archaeologist for this project (if a monitor is not present)

Professional Archaeologist(s)

Stacie Sexton, Professional Archaeologist, GRAM Northwest, LLC
1201 Jadwin Ave., Richland, WA 99352
Phone: (509) 713-6806
Email: stacie.sexton@gramnorthwest.com

Molly Swords, Professional Archaeologist, GRAM Northwest, LLC
1201 Jadwin Ave., Richland, WA 99352
Phone: (703) 283-5175
Email: molly.swords@gramnorthwest.com

The professional archaeologist's responsibilities include the following:

- **Identify Find:** The professional archaeologist will examine the area to determine if there is an archaeological find.
 - If it is determined not to be a cultural resource/archaeological find or human remains, work may proceed with no further delay.
 - If it is determined to be a cultural resource/archaeological find or human remains, the professional archaeologist will continue with all notifications.

If the find may be human remains or funerary objects, the Project Archaeologist will ensure that a qualified physical anthropologist examines the find. **If the find is determined to be human remains, the procedure described in the section of this plan titled "DISCOVERY OF HUMAN REMAINS" will be followed.**

- **Notify Appropriate Parties:** If the find is determined to be a cultural resource, the professional archaeologist will notify the appropriate parties. Notifications may include the following:
 - **Agency Contact:** The professional archaeologist will contact the designated point of contact for the City of Richland.
 - **Washington Department of Archaeology (DAHP):** The professional archaeologist will contact DAHP.
 - **Tribes:** If the discovery may be of interest to Native American Tribes, the professional archaeologist, the Agency point of contact, and the DAHP will coordinate with the interested and/or affected Tribes.

- **Record the Find:** The project archaeologist will work with DAHP and the consulting parties as appropriate to determine how to record the find. Methods for recording will likely require completion of a Washington State Archaeological Site or Isolate Form.

Resuming Work

Work outside of the discovery location may continue while documentation and assessment of the cultural resources proceed. The professional archaeologist must determine the final boundaries of the discovery location.

Work may continue at the discovery location only after the process outlined in this plan is followed and the project manager, DAHP, and any affected Tribes (if applicable) determine that appropriate documentation has been completed.

Discovery of Human Remains

The inadvertent discovery of human skeletal remains on non-federal and non-Tribal land in the state of Washington is implemented under RCW 68.50.645, 27.44.055, and 68.60.055. The information below in italics for the inadvertent discovery of human remains was obtained from the Washington State Department of Archaeology and Historic Preservation web page (<http://www.dahp.wa.gov/programs/human-remains-program/idp-language>).

In the event that human remains are encountered during field-related project activities, the following steps will be implemented.

Step 1: Stop Work Immediately

If ground disturbing activities encounter human skeletal remains during the course of data collection or construction, then all activity will cease that may cause further disturbance to those remains. The area of the find will be secured and protected from further disturbance.

(<http://www.dahp.wa.gov/programs/human-remains-program/idp-language>)

In order to secure the discovery, a temporary fencing system such as posts and rope or similar protection measures will be placed around the discovery. Work in the immediate area of the discovery will be discontinued, however; work outside the discovery area may continue.

When an inadvertent discovery is encountered, staff will take measures to avoid further disturbance of the area. Any human skeletal remains, regardless of antiquity or ethnic origin, will at all times be treated with dignity and respect. Cultural materials shall not be moved from the location of the discovery. Photographs shall not be taken of bones unless photographs are needed to assist in the determination of the remains to be human or animal.

Step 2: Notification Process

The finding of human skeletal remains will be reported to the county medical examiner/coroner and local law enforcement in the most expeditious manner possible. The remains will not be touched, moved, or further disturbed. The county medical examiner/coroner will assume jurisdiction over the human skeletal remains and make a determination of whether those remains are forensic or nonforensic.

(<http://www.dahp.wa.gov/programs/human-remains-program/idp-language>)

In the event of the discovery of human remains, the following individuals will be contacted:

Benton County Coroner

William Leach, Coroner

7110 West Okanogan Pl. Building A, Kennewick WA 99336

Phone: (509) 736-2720

Email: william.leach@co.benton.wa.us

Benton County Sheriff

Address: 7122 West Okanogan Pl. Building B, Kennewick, WA 99336

Phone: (509) 735-6555

City of Richland Point of Contact

Mike Stevens, City Planner

625 Swift Boulevard, MS-35 Richland, WA 99352

Phone: (509) 942-7794

Email: mstevens@CI.RICHLAND.WA.US

Step 3: Jurisdictional Authority

If the county medical examiner/coroner determines the remains are non-forensic, then they will report that finding to the Department of Archaeology and Historic Preservation (DAHP) who will then take jurisdiction over the remains. The DAHP will notify any appropriate cemeteries and all affected tribes of the find. The State Physical Anthropologist will make a determination of whether the remains are Indian or Non-Indian and report that finding to any appropriate cemeteries and the affected tribes. The DAHP will then handle all consultation with the affected parties as to the future preservation, excavation, and disposition of the remains.

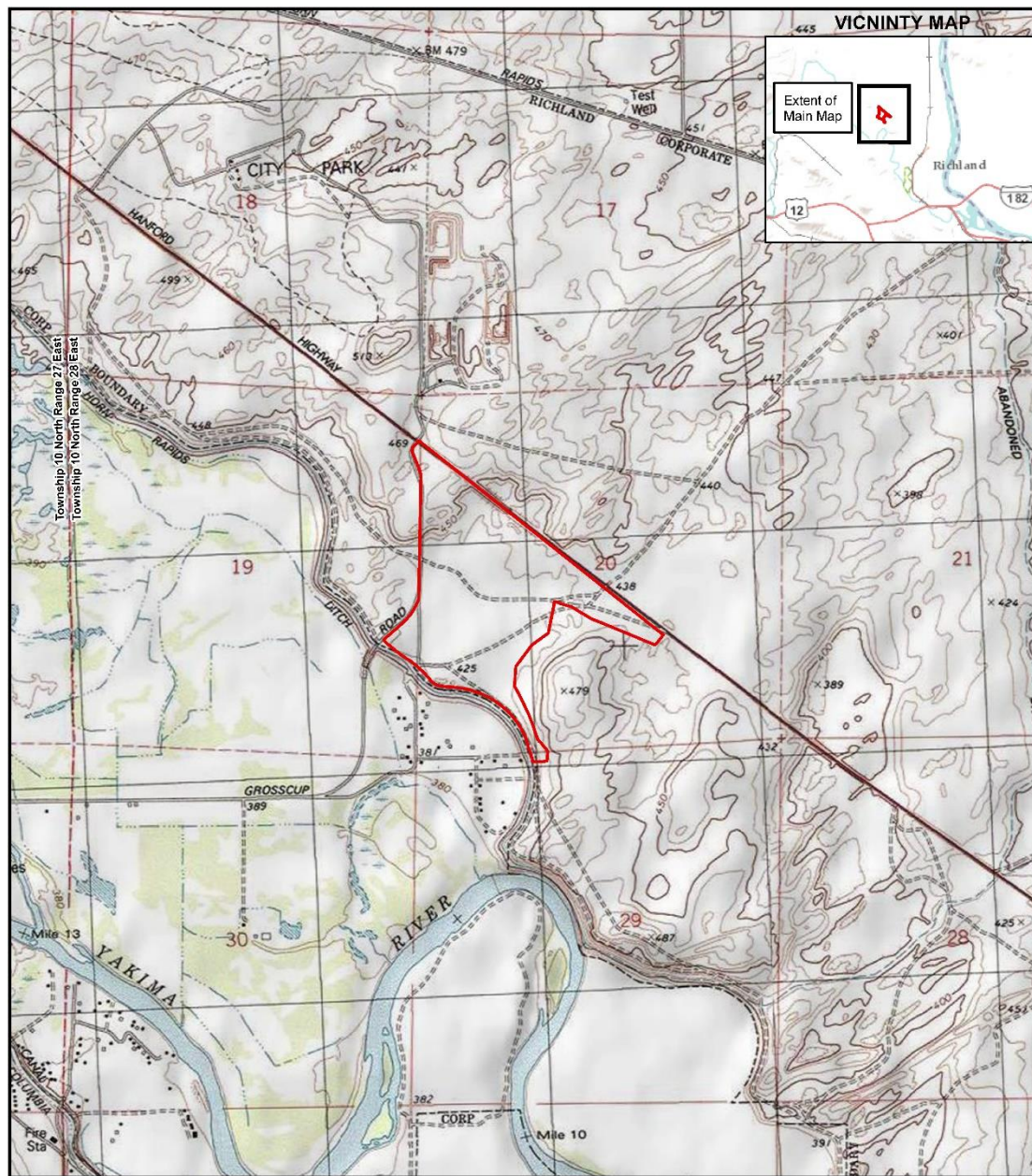
(<http://www.dahp.wa.gov/programs/human-remains-program/idplanguage>)

DAHP Contact

Guy Tasa, State Physical Anthropologist

Phone: (360) 586-3534

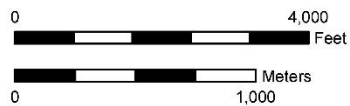
Email: Guy.Tasa@dahp.wa.gov



Project Location
Benton County, Washington

Legend
Project APE

Richland, WA 7.5' USGS Quad
Township 10 North Range 28 East
Sections 19, 20 & 29



Service Layer Credits: Copyright © 2013 National Geographic Society, i-cubed
Sources: Esri, USGS, NOAA
Sources: Esri, Garmin, USGS, NPS

DIGS: C:\Users\Raena Ballantyne\Documents\GRAMM\MapFiles\Task29_QuailRidge.mxd

Figure 1. Project Area and USGS Topographic Map



Figure 2. Project Area and Aerial Imagery

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PRELIMINARY UTILITY PLAN FOR:



Know what's below.
Call before you dig.

DESIGNED:

DCC

CHECKED:

JLM

APRIL 2021

66118.003

SHEET ID

SHEET 1 OF 1



QUAIL RIDGE II - PHASE 1-3
A SUBDIVISION LOCATED IN THE CITY OF RICHLAND, WA.

PBS Engineering and
Environmental Inc.
106
Richland, WA 99352
509.942.1600
pbsusa.com



CITY OF RICHLAND

NOTICE OF APPLICATION, PUBLIC HEARING AND OPTIONAL DNS (S2021-105 & EA2021-125)

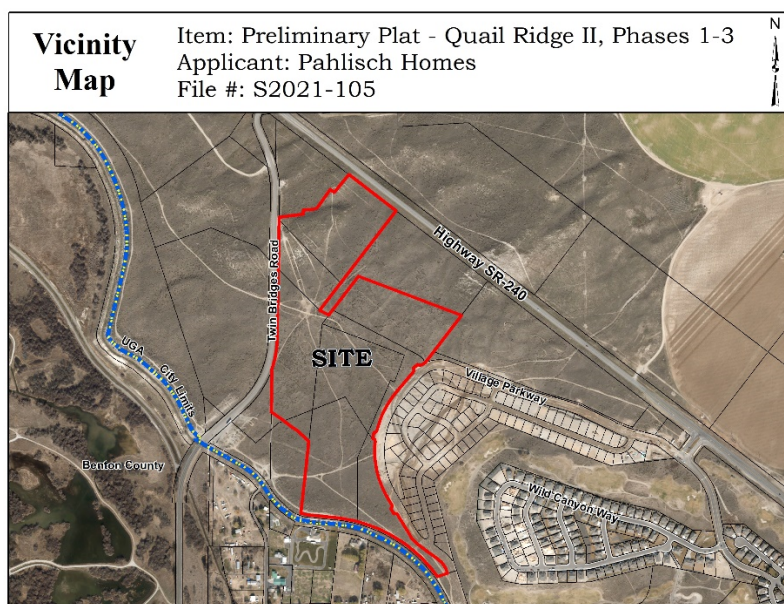
Notice is hereby given that Pahlisch Homes has applied for preliminary plat approval to subdivide a 62.9 acre site into 124 lots and ten (10) tracts, named the Preliminary Plat of Quail Ridge II, Phases 1-3. The project site is located along the south side of Highway SR-240; south of the intersection of SR-240 and Twin Bridges Road (APN's 1-20083030004000, 1-20083000009008, 1-20083000009015, 1-20083000009013). The plat proposes an average lot size of 8,663 square feet.

The Richland Hearing Examiner will conduct a public hearing and review of the application at 6:00 p.m., Monday, August 9, 2021. All interested parties are invited to participate in the virtual public hearing by visiting the City of Richland website (www.ci.richland.wa.us).

Environmental Review: The proposal is subject to environmental review. The City of Richland is lead agency for the proposal under the State Environmental Policy Act (SEPA) and has reviewed the proposed project for probable adverse environmental impacts and expects to issue a determination of non-significance (DNS) for this project. The optional DNS process in WAC 197-11-355 is being used. This may be your only opportunity to comment on the environmental impacts of the proposed development. The environmental checklist and related file information are available to the public and can be viewed at www.ci.richland.wa.us.

Any person desiring to express their views or to be notified of any decisions pertaining to this application should notify Shane O'Neill, Senior Planner, 625 Swift Boulevard, MS-35, Richland, WA 99352. Comments may also be faxed to (509) 942-7764 or emailed to soneill@ci.richland.wa.us. The deadline to submit written comments is 5:00 p.m., Monday, August 2, 2021. However, written comments must be received no later than 5:00 p.m., Friday, July 30, 2021 to be incorporated into the staff report. Comments received after that time will be entered into the record during the hearing.

The application will be reviewed in accordance with the regulations in RMC Title 19 Development Regulations Administration, Title 24 Plats and Subdivisions, the Badger Mountain South Land Use & Development Regulations, and the Badger Mountain South Master Agreement. Appeal procedures of decisions related to the above referenced application are set forth in RMC Chapter 19.70. Contact the Richland Planning Division at the above referenced address with questions related to the available appeal process.



AFFIDAVIT OF POSTING

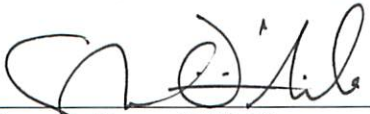
STATE OF WASHINGTON)
) ss.
COUNTY OF BENTON)

COMES NOW, **Shane O'Neill**, who, being first duly sworn upon oath deposes and says:

1. I am an employee in the Planning Division of the Development Services Department for the City of Richland.

2. On the 14th day of July, 2021, I posted the attached NOTICE OF PUBLIC HEARING, File Number S2021-105 (Preliminary Plat of Quail Ridge II, Phases 1-3) in the following location:

The west side of Village Parkway, approximately 730 feet west of Ketch Road


Signed: Shane O'Neill

SIGNED AND SWORN to before me this 14th day of July, 2021, by Shane O'Neill.




Signature of Notary

Briana C. Ghbein
Printed Name

Notary Public in and for the State of Washington,

Residing in Benton County

My appointment expires: 4-25-23

AFFIDAVIT OF MAILING

STATE OF WASHINGTON)
) ss.
COUNTY OF BENTON)

COMES NOW, Briana Ghbein, who, being first duly sworn upon oath deposes and says:

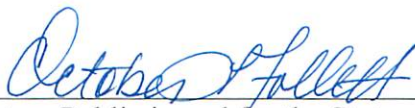
1. I am an employee in the Planning & Development Department for the City of Richland.

2. On the 16th day of July 2021, I mailed a copy of the attached NOTICE OF APPLICATION, PUBLIC HEARING, AND OPTIONAL DNS (S2021-105 & EA2021-125) to the attached list of individuals via regular USPS on the date indicated above. The Richland Hearing Examiner will conduct a virtual public hearing at 6:00 PM on Monday, August 9, 2021.


Signed: Briana Ghbein

SIGNED AND SWORN to before me this 16th day of July 2021 by Briana Ghbein.




Notary Public in and for the State of Washington,

October L. Follett
Print Name
Residing at Richland, WA
My appointment expires: 11-1-21



CITY OF RICHLAND NOTICE OF APPLICATION, PUBLIC HEARING AND OPTIONAL DNS (S2021-105 & EA2021-125)

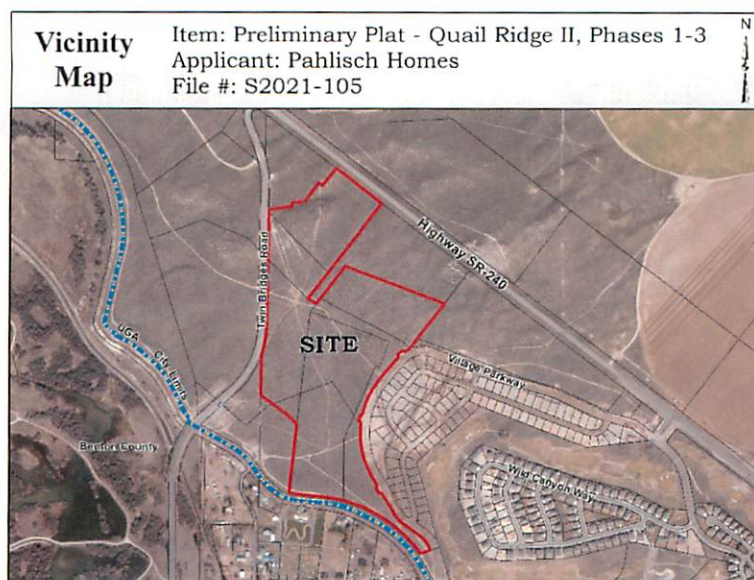
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OWNER	SITUS	STATE	CITY	ZIP
PAHLISCH HOMES AT HORN RAPIDS LIMITED PARTNERSHIP	210 SW WILSON AVE STE 100	OR	BEND	97702
HJBT PROPERTIES LLC	1611 SUNSET ST	WA	RICHLAND	99354
STEERS JR TRUSTEES LESTER LEROY & PHYLLIS CATHERINE	3166 REDHAWK DRIVE	WA	RICHLAND	99354
GRAYSON & SUSAN BAKER	3172 REDHAWK DRIVE	WA	RICHLAND	99354
MARKIS & NIKI HUGHEY	3178 REDHAWK DR	WA	RICHLAND	99354
DAVID & MARGARET BARNES	3324 VILLAGE PARKWAY	WA	RICHLAND	99354
KHRIS & CHRISTINE OLSEN	3169 REDHAWK DRIVE	WA	RICHLAND	99354
HORN RAPIDS HOMEOWNERS ASSOCIATION	2600 CLUBHOUSE LN	WA	RICHLAND	99352-2189
CAREY & JASLYN CAMPBELL	3055 BOBWHITE WAY	WA	RICHLAND	99354
JOSE & MINERYA NUNEZ	3061 BOBWHITE WAY	WA	RICHLAND	99354
DYLAN & CHLOE CASSEL	3079 BOBWHITE WAY	WA	RICHLAND	99354
RAEDER RENE RIOS & CONCEPCION NAVA MARIA DEL CANIZO	3085 BOBWHITE WAY	WA	RICHLAND	99354
KYLE ROBERT & MACKENZIE WAGAR	3091 BOBWHITE WAY	WA	RICHLAND	99354
THOMAS EDWARD & MICHELLE LEE HOLDER	3097 BOBWHITE WAY	WA	RICHLAND	99354
MARK & JANELLE DOMAROTSKY	3103 BOBWHITE WAY	WA	RICHLAND	99354
FRANCISCO ISLAS	PO BOX 357	WA	RICHLAND	99352
LORI & DALE OLSON	3140 QUAIL RIDGE LP	WA	RICHLAND	99354
KIRA BENNETT	1312 PAIGE ST	WA	RICHLAND	99352
GENE PAUL & SHERRY CLASEN	3114 BOBWHITE WAY	WA	RICHLAND	99354
LANCE & ZERBY LIESE BENEDICT	3108 BOBWHITE WAY	WA	RICHLAND	99354
RICHARD & HEIDI CUNNINGHAM	3096 BOBWHITE WAY	WA	RICHLAND	99354
TIM & KATHLEEN BENNETT TRUSTEES	8108 JOPLIN RD	ID	NAMPA	83687
SARANAH SELMI & RUBAYET MORTUZA MD	3084 BOBWHITE WAY	WA	RICHLAND	99354
SINGARES EDUARD SMITH & IZASKUM MELANIA IGLESIAS	3078 BOBWHITE WAY	WA	RICHLAND	99354
STEPHEN & SHARON LEINEN	3072 BOBWHITE WAY	WA	RICHLAND	99354
THOMAS & EMILY MALDONADO	3066 BOBWHITE WAY	WA	RICHLAND	99354
DUSHYANT & VAZQUEZ BARPAGA	3060 BOBWHITE WAY	WA	RICHLAND	99354
WILLIAM MANSON & STACY KAY MOUAT	3054 BOBWHITE WAY	WA	RICHLAND	99354
GLENN & MARY JOHNSON	82905 N WEIDLE RD	WA	WEST RICHLAND	99353-6174
RICHARD & DEANN NELSON	72104 E 811 PR NE	WA	WEST RICHLAND	99353
JOHN ALLEN HERRIN	72604 E 811 PR NE	WA	WEST RICHLAND	99353
NICHOLAS & JULIE GRUBICH	73607 E 811 PR NE	WA	WEST RICHLAND	99353
JEREMIE & JENNIFER MONSON	72106 E 811 PR NE	WA	WEST RICHLAND	99353-6155
CARL & DENISE MORSE	72110 E 811 PR NE	WA	WEST RICHLAND	99353
JIM & SUSAN NELSON	82123 N WEIDLE RD	WA	WEST RICHLAND	99353
BENEFICIAL REUSE SOLUTIONS LLC	PO BOX 20514	AK	JUNEAU	99802
NORTH AMERICAN POTATO COMPANY INC	70 RIVERSHORE DR	WA	PASCO	99301
ALMA LOU ENDICOTT	82804 N WEIDLE RD	WA	W RICHLAND	99353-0000
MICHAEL & KATIE MAIER	82203 N WEIDLE RD	WA	WEST RICHLAND	99353

**CITY OF RICHLAND
NOTICE OF APPLICATION,
PUBLIC HEARING, AND OP-
TIONAL DNS**

Pahlisch Homes has applied for preliminary plat approval to subdivide a 62.9 acre site into 124 lots and ten (10) tracts, named the Preliminary Plat of Quail Ridge II, Phases 1-3. The project site is located along the south side of Highway SR-240; south of the intersection of SR-240 and Twin Bridges Road (APN's 1-20083030004000, 1 - 2 0 0 8 3 0 0 0 0 0 9 0 0 8 , 1 - 2 0 0 8 3 0 0 0 0 0 9 0 1 5 , 1-20083000009013). The plat proposes an average lot size of 8,663 square feet.

The Richland Hearing Examiner will conduct a virtual public hearing and review of the application on **Monday, August 9, 2021 at 6:00 p.m.** All interested parties are invited to participate in the virtual public hearing by visiting the City of Richland's website at www.ci.richland.wa.us.

Environmental Review: The proposal is subject to environmental review. The City of Richland is lead agency for the proposal under the State Environmental Policy Act (SEPA) and has reviewed the proposed project for probable adverse environmental impacts and expects to issue a determination of non-significance (DNS) for this project. The optional DNS process in WAC 197-11-355 is being used. This may be your only opportunity to comment on the environmental impacts of the proposed development. The environmental checklist and related file information are available to the public and can be viewed at www.ci.richland.wa.us.

Any person desiring to express their views or to be notified of any decisions pertaining to this application should notify Shane O'Neill, Senior Planner, 625 Swift Boulevard, MS-35, Richland, WA 99352. Comments may also be faxed to (509) 942-7764 or emailed to soneill@ci.richland.wa.us. Written comments should be received no later than 5:00 p.m. on Friday, July 30, 2021 to be incorporated into the staff report. Comments received after that time will be entered into the record during the hearing.

Published: Sunday, July 25, 2021

W000000000

Publication Dates

Looking North



Looking West



Looking South



Looking East





July 19, 2021

City of Richland Development Services
625 Swift Blvd.
Richland, WA 99352

Attn: Shane O'Neill, Senior Planner

RE: S2021-105 & EA2021-125 – Quail Ridge II Ph 1-3
SR 240 milepost 25.4 Rt. – Twin Bridges Rd vicinity

We have reviewed the proposed subdivision and have the following comments.

- The subject property is adjacent to State Route 240 (SR 240), a partial control limited access facility with a posted speed limit of 55 miles per hour. WSDOT has acquired all access rights to the highway from the abutting property. Access to SR 240 is restricted to existing public road intersection (Twin Bridges Rd & Village Parkway Blvd). Private direct access to the highway is prohibited; no new approaches will be allowed.
- We are not opposed to the proposed subdivision; however, we are concerned with the cumulative impact of development along the SR 240 corridor. WSDOT has plans to widen the highway to four lanes in this area. We believe this project will not only benefit the city, but also future residents and developers of the subject property. As with other projects along the SR 240 corridor, it is our position that the proponent should contribute towards this highway project on a pro-rata basis.
- Stormwater and surface runoff generated by this project must be retained and treated on site. Any discharge onto SR 240 right-of-way will require an approved WSDOT utility permit.
- The proponent and future residents should be aware this is an area with existing traffic noise. They should also expect traffic noise to continue to grow into the future. Further, as an essential public facility, SR 240 may need to be expanded to accommodate future traffic growth. It is the developer's responsibility to dampen or deflect any traffic noise for this project.
- Any proposed lighting should be directed down towards the site and away from SR 240.

Thank you for the opportunity to review and comment on this proposal. If you have any questions regarding this letter, please contact Jacob Prilucik at (509) 225-0637.

Sincerely,

Paul Gonseth, P.E.
Region Planning Engineer

PG: jjp
cc: SR 240, File #2021_004

ONeill, Shane

From: Davis, Deanna <d.davis@bces.wa.gov>
Sent: Monday, July 19, 2021 11:31 AM
To: O'Neill, Shane
Subject: RE: Quail Ridge II, Phases 1-3

Follow Up Flag: Follow up
Flag Status: Flagged

Shane,

This area is designated as Section 3B of the Emergency Planning zone, and as such may be subject to evacuation in the event there is a radiological emergency at the Columbia Generation Station, additional information can be found at www.bces.wa.gov or by calling 509-628-2600.

Our BCES website is down right – I can send a specific link to the page that has the specific info on evacuations when our website is back up or you can just reference our Home page address as listed above and our phone to call for additional information.

Thanks,



Deanna Davis

BCEM Manager

Physical Address: 651 Truman Ave, Richland WA 99352

Mailing Address: 625 Swfit Blvd-MS 36, Richland WA 99352
(509) 628-8092 Cell (509) 380-4522

From: O'Neill, Shane <soneill@CI.RICHLAND.WA.US>
Sent: Monday, July 19, 2021 08:56
To: Davis, Deanna <d.davis@bces.wa.gov>
Subject: RE: Quail Ridge II, Phases 1-3

Thanks Deanna. I plan to have the highlighted language below applied to all subsequent final plat(s) as a note. I wonder if you can expand the language to indicate where residents can find details about the applicable evacuation plan.

With regard to another point of access, Tract B will be the next segment of development. That platting action will achieve the connection to Twin Bridges Road.



Shane O'Neill

Senior Planner

625 Swift Blvd., MS-35 | Richland, WA 99352
(509) 942-7587

ONeill, Shane

From: Jennings, Tyler
Sent: Thursday, July 15, 2021 7:46 AM
To: O'Neill, Shane
Subject: RE: Quail Ridge II, Phases 1-3

Please add the following comment to the face of the plat.

Development of lots within this plat shall be performed in accordance with the Geotechnical Engineering Report for Quail Ridge prepared by PBS Engineering (Proj. No. 66118.002, dated 9/15/2020).



Ty Jennings, CBO · CFM · MCP
Plans Examiner
625 Swift Blvd., MS-35 | Richland, WA 99352
(509) 942-7793

From: O'Neill, Shane <soneill@CI.RICHLAND.WA.US>
Sent: Wednesday, July 14, 2021 3:54 PM
To: Anthony Muai <anthony.muai@ci.kennewick.wa.us>; Anthony Von Moos <anthony.vonmoos@co.benton.wa.us>; Ashley Morton <AshleyMorton@ctuir.org>; Badger Mountain Irrigation District <bmidmanager@badgermountainirrigation.com>; Benton County - Segregations <Segregations@co.benton.wa.us>; Benton PUD, Broadband <osp@noanet.net>; Benton PUD, Electrical <engservice@bentonpud.org>; Bill Barlow <bbarlow@bft.org>; Blaine Broberg, KID <bbroberg@kid.org>; Boring, Michael <MBoring@CI.RICHLAND.WA.US>; Boshart, Thomas <tboshart@CI.RICHLAND.WA.US>; Buechler, Ken <KBuechler@CI.RICHLAND.WA.US>; Carrie Thompson <carrie.thompson@bnsf.com>; Casey Barney, Yakama Nation <Casey_Barney@Yakama.com>; Catherine Dickson <catherinedickson@ctuir.org>; Clark Posey <clark.posey@co.benton.wa.us>; Corrine Camuso, Yakama Nation <Corrine_Camuso@Yakama.com>; Hamilton, Craig <C.Hamilton@bces.wa.gov>; DAHP SEPA Reviews <sepa@dahp.wa.gov>; DAlessandro, Carlo <cdalessandro@ci.richland.wa.us>; Darrick Dietrich <darrick@basindisposal.com>; Davis, Deanna <d.davis@bces.wa.gov>; Deborah Rodgers <dxrodders@bpa.gov>; Deskins, John <jdeskins@CI.RICHLAND.WA.US>; Eric Mendenhall <emendenhall@westrichland.org>; Florinda Coleman <florinda.coleman@co.benton.wa.us>; FormerOrchards@ecy.wa.gov; Ghbein, Briana <bghbein@ci.richland.wa.us>; Greg McCormick <gregory.mccormick@ci.kennewick.wa.us>; Greg Wendt <greg.wendt@co.benton.wa.us>; Gwen Clear <gcle461@ecy.wa.gov>; Hill, Kelly <khill@CI.RICHLAND.WA.US>; USPS Ina N. Beutler <ina.n.beutler@usps.gov>; Jason McShane <jmcshane@kid.org>; Jennings, Tyler <tjennings@CI.RICHLAND.WA.US>; Jerrod Macpherson <Jerrod.Macpherson@co.benton.wa.us>; Jessica Lally, Yakama Nation <Jessica_Lally@Yakama.com>; Joseph Cichy, Ziply <joseph.cichy@ziply.com>; Joseph Cottrell <jecottrell@bpa.gov>; Junior Campos <junior.campos@charter.com>; Kelly Cooper <kelly.cooper@doh.wa.gov>; Kevin Knodel <kevin.knodel@rsd.edu>; Kevin Sliger <KSliger@bft.org>; KID Development <development@kid.org>; KID Webmaster <webmaster@kid.org>; Lopez, Brandin <blopez@CI.RICHLAND.WA.US>; M. Deklyne <mjdeklyne@bpa.gov>; Map BCES <map@bces.wa.gov>; Mattheus, Pamela <pmattheus@CI.RICHLAND.WA.US>; Noah Oliver, Yakama Nation <Noah_Oliver@Yakama.com>; Pasco99301 <99301PascoWA-Postmaster@usps.gov>; Paul Gonseth <gonsetp@wsdot.wa.gov>; Reathaford, Jason <JReathaford@CI.RICHLAND.WA.US>; Review Team <reviewteam@commerce.wa.gov>; Richard Krasner <richard.krasner@rsd.edu>; USPS Richland Postmaster <99352RichlandWA-Postmaster@usps.gov>; Rick Dawson <rickd@bfhd.wa.gov>; Rob Rodger <rob.rodger@bentoncleanair.org>; Robin Priddy <robin.priddy@bentoncleanair.org>; Sarah Gates <s.gates@bces.wa.gov>; Schiessl, Joe <JSchiessl@CI.RICHLAND.WA.US>; SEPA Center <sepacenter@dnr.wa.gov>; SEPA Register <separegister@ecy.wa.gov>; SEPA Unit <sepaunit@ecy.wa.gov>; Seth DeFoe <SDefoe@kid.org>; South Central Region Planning



Department of Energy

Bonneville Power Administration
2211 North Commercial Avenue
Pasco, WA 99301

TRANSMISSION SERVICES

July 26, 2021

In reply refer to: Quail Ridge II, Phases 1-3
Located within a Portion of Section 20, Township 10 North, Range 28 East,
W.M., Benton County, Washington

Shane O'Neill
Senior Planner
City of Richland
625 Swift Boulevard, MS-35
Richland, WA 99352

Dear Shane:

Bonneville Power Administration (BPA) has had the opportunity to review Quail Ridge II, Phases 1-3. The application is to subdivide 62.9-acres into 124 lots and ten (10) tracts. The subject site is generally located along the south side of Highway SR-240; south of the intersection SR-240 and Twin Bridges Road located in Richland, WA.

In researching our records, we have found that this proposal will not directly impact BPA facilities approximately 1.5 miles north of the subject property. BPA does not have any objections to the approval of this request at this time.

Thank you for the opportunity to review this application. If you have any questions regarding this request or need additional information, please feel free to contact me. I can be reached at (509) 544-4747 or by email at jecottrell@bpa.gov.

Sincerely,

A handwritten signature in blue ink that reads "Joseph E. Cottrell II".

Joseph E. Cottrell II
BPA Field Realty Specialist



**City of Richland
Development Services**

625 Swift Blvd. MS-35
Richland, WA 99352
☎ (509) 942-7794
📠 (509) 942-7764

DATE: July 23, 2021

TO: Shane O'Neill, Senior Planner

REVIEW BY: Briana Ghbein, Permit Technician

PROJECT NAME: S2021-105 – Preliminary Plat of Quail Ridge II, Phases 1-3

1. Street names will be reviewed when construction drawings are submitted to the Public Works Department. When construction drawings are submitted, please include two (2) street name options for each of the new street segments and the City will review to determine acceptable street names.
2. Addressing brackets [] are needed on all lots and tracts.

ONeill, Shane

From: Corrine Camuso <Corrine_Camuso@Yakama.com>
Sent: Thursday, July 15, 2021 1:39 PM
To: O'Neill, Shane
Cc: Casey Barney; Jessica Lally; Noah Oliver
Subject: Re: Quail Ridge II, Phases 1-3

Good afternoon Shane,

Thank you for contacting us regarding the proposed undertaking. The project is within the traditional homelands of the Yakama. There is a high probability of encountering cultural resources. We recommend a cultural resources investigation inclusive of subsurface testing. Please send a copy of the cultural resources report to our office for review.

Regards,

Corrine Camuso
Yakama Nation
Cultural Resources Program Archaeologist
Office 509-865-5121 ext. 4776

From: O'Neill, Shane <soneill@CI.RICHLAND.WA.US>
Sent: Wednesday, July 14, 2021 3:53 PM
To: Anthony Muai; Anthony Von Moos; Ashley Morton; Badger Mountain Irrigation District; Benton County - Segregations; Benton PUD, Broadband; Benton PUD, Electrical; Bill Barlow; Blaine Broberg, KID; Boring, Michael; Boshart, Thomas; Buechler, Ken; Carrie Thompson; Casey Barney; Catherine Dickson; Clark Posey; Corrine Camuso; Hamilton, Craig; DAHP SEPA Reviews; DAlessandro, Carlo; Darrick Dietrich; Davis, Deanna; Deborah Rodgers; Deskins, John; Eric Mendenhall; Florinda Coleman; FormerOrchards@ecy.wa.gov; Ghbein, Briana; Greg McCormick; Greg Wendt; Gwen Clear; Hill, Kelly; USPS Ina N. Beutler; Jason McShane; Jennings, Tyler; Jerrod Macpherson; Jessica Lally; Joseph Cichy, Ziply; Joseph Cottrell; Junior Campos; Kelly Cooper; Kevin Knodel; Kevin Sliger; KID Development; KID Webmaster; Lopez, Brandin; M. Deklyne; Map BCES; Mattheus, Pamela; Noah Oliver; Pasco99301; Paul Gonseth; Reathaford, Jason; Review Team; Richard Krasner; USPS Richland Postmaster; Rick Dawson; Rob Rodger; Robin Priddy; Sarah Gates; Schiessl, Joe; SEPA Center; SEPA Register; SEPA Unit; Seth DeFoe; South Central Region Planning; T.S. "Max" Platts; WA Dept of Fish & Wildlife; WA Dept of Fish & Wildlife; West, Julie; Westphal, Nichole; William Simpson
Subject: Quail Ridge II, Phases 1-3

Hello,

For your review and commenting, I am sending some of the application materials for the preliminary plat of Quail Ridge II, Phases 1-3. The plat proposes to divide a 62.9-acre site into 124 lots for single-family residential development, and ten (10) tracts. Please provide any comments you have by Monday, July 26. To view all of the application materials, including the critical areas report, visit this link:

<https://www.ci.richland.wa.us/departments/development-services/planning/land-use>

ONeill, Shane

From: Corrine Camuso <Corrine_Camuso@Yakama.com>
Sent: Tuesday, July 27, 2021 10:08 AM
To: O'Neill, Shane
Cc: Casey Barney
Subject: Re: Quail Ridge II, Phases 1-3

Thank you Shane for providing the cultural resources report. We have reviewed it and have no comment.

Regards,

Corrine Camuso
Yakama Nation
Cultural Resources Program Archaeologist
Office 509-865-5121 ext. 4776

From: O'Neill, Shane <soneill@CI.RICHLAND.WA.US>
Sent: Monday, July 19, 2021 10:52 AM
To: Corrine Camuso
Subject: FW: Quail Ridge II, Phases 1-3

Corrine,
The applicant provided the attached cultural resources report.



Shane O'Neill
Senior Planner
625 Swift Blvd., MS-35 | Richland, WA 99352
(509) 942-7587

From: Jason L. Mattox <Jason.Mattox@pbsusa.com>
Sent: Monday, July 19, 2021 10:27 AM
To: O'Neill, Shane <soneill@CI.RICHLAND.WA.US>; Chad Bettsworth, PE <chadb@pahlisch.com>
Subject: RE: Quail Ridge II, Phases 1-3

Looks like based on the docs I have DAHP has already accepted our findings. See attached. Thanks

Jason Mattox, PE
Principal Civil Engineer/Survey Lead/Operations Manager

PBS
400 Bradley Blvd., Suite 106, Richland, WA 99352
office: 509.942.1600 | cell: 509.430.4252

Comments on Preliminary Plat of Quail Ridge II, Phases 1-3 (S2021-105 & EA2021-125) – Failure of City to Analyze Environmental Impacts

Laurie Ness
Patrick Paulson

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1. Introduction

We request that the plat application be withdrawn and resubmitted once it is complete. The project's Habitat Report does not meet the requirements of the Richland Municipal Code. Given the incomplete application it is impossible for regulatory agencies the public to make meaningful comments on the project. Below we show the Habitat Report submitted by the applicant fails to meet the requirements of the RMC.

2. Deficiencies in applicant's Fish and Wildlife Habitat Conservation Areas Report

RMC 22.10.200 requires that a habitat conservation report

- “shall be forwarded ~~to the Washington Department of Fish and Wildlife [WDFW]~~ and ... local Native American Indian tribes to provide them with an opportunity to comment on the adequacy and accuracy of the report;”¹
- “shall be prepared by a qualified professional using the *best available science* (our emphasis);”²
- includes “Identification of any priority species and habitats (PHS) ... on or adjacent to the project area”;³ and
- includes a “A discussion of any federal, state or local special management recommendations, including Department of Fish and Wildlife habitat management recommendations, that have been developed for species or habitats located on or adjacent to the project area”.⁴

¹ RMC 22.10.200.D.

² RMC 22.10.200.A

³ RMC 22.10.200.C.2

⁴ RMC 22.10.200.C.3

We show below that the proposal's *Habitat Report*⁵ fails to meet these requirements. By failing to require the developer to meet Richland's requirements for best available science and adherence to WDFW's management recommendations, the planning department makes it impossible for agencies and the public to assess the possible impacts of the process. It also makes it impossible for the City, as the SEPA lead agency for the project, to credibly state that it "has a reasonable basis for determining significant adverse environmental impacts are unlikely" as required when using the Optional DNS Process.⁶

The planning department should be especially careful when evaluating habitat assessments submitted by the applicant, given that previous reports submitted by the applicant were found to be "confusing or in conflict with other evidence in the record regarding the presence of Critical Areas on the project site" by the City's Hearings Examiner.⁷ The examiner also found that the habitat report submitted by the applicant for the Ladera project appears "to be biased and written in a manner that tends to downplay potential challenges facing the proposed Ladera plat, *especially with respect to how Critical Areas are to be addressed on the site*" (our emphasis).⁸

2.1 Failure to provide habitat report to ~~WDFW and Tribes~~

No indication is given in the packet that the requirement to supply the Habitat Report to tribes and WDFW has been fulfilled. ~~We contacted the local WDFW Biologist who had not received the Habitat Report.~~

2.2 Failure to ensure identification of PHS on or adjacent to project area

The Habitat report states "it does not appear that the property contains priority habitat or species that would be regulated by the City as fish and wildlife conservation areas" but cites no science

⁵ PBS Engineering and Environmental, 2021. *Quail Ridge II Residential Subdivision Project, PBS Project 66118.003 – Critical Areas Assessment—Fish and Wildlife Habitat Conservation Areas* [Habitat Report]. Within referral packet at pp. 24-26.
(<https://www.ci.richland.wa.us/home/showpublisheddocument/12405/637618750352630000>)

⁶ WAC 197-11-355. 2003. Optional DNS process. <https://apps.leg.wa.gov/wac/default.aspx?cite=197-11-355>. This WAC is

⁷ Hearing Examiner for the City Of Richland, "Findings, Conclusions and Decision on Application for Preliminary Plat Of Ladera". June, 2021. p. 12.
<https://www.ci.richland.wa.us/home/showpublisheddocument/12326/637599550928030000>

⁸ Ibid., p. 15.

to justify this conclusion. The term “best available science” is defined in the RMC as the “current scientific information used in the process to designate, protect, or restore critical areas that is derived from a valid scientific process as defined by WAC [365-195-900](#) through [365-195-925](#).”

RMC 22.10.185A.2 designates “State Priority Habitats and areas associated with state priority species” as Fish and Wildlife Habitat Conservation Areas.

2.2.1 Townsend’s Ground Squirrels

The applicant’s SEPA checklist clearly states that ‘ground squirrels’ were observed on the sight. The only ground squirrels that occur in this region are Townsend’s Ground Squirrels, a PHS species⁹. But this species is not addressed by the habitat report.

2.2.2 Shrub steppe

Shrub steppe is Priority Habitat or Species (PHS) recognized by the Washington Department of Fish and Wildlife (WDFW),¹⁰ and is defined as “A nonforested vegetation type consisting of one or more layers of perennial bunchgrasses and a conspicuous but discontinuous layer of shrubs”.

Nothing in the Habitat Report indicates that the proposal site was evaluated for the presence of shrub-steppe, despite the finding that the entire site was characterized as “Dominant shrub species includes **big sagebrush** (*Artemisia tridentata*), **rabbitbrush** (*Ericameria nauseosa*), and **antelope bitterbrush** (*Purshia tridentata*). The density of these native shrubs varies across the site from **relatively dense** to extremely sparse”.

2.3 Failure to discuss and summarize appropriate management recommendations

The report contains no discussion of “[WDFW] habitat management recommendations that have been developed for species or habitats located on or adjacent to the project area”; such recommendations include WDFW’s management recommendations for shrubsteppe.¹¹ Such a

⁹ WDFW, 2020. *Priority Habitats and Species List* [PHS List], pp. 269-270.
<https://wdfw.wa.gov/sites/default/files/publications/00165/wdfw00165.pdf>

¹⁰ Ibid.

¹¹ Azerrad, J. M., K. A. Divens, M. F. Livingston, M. S. Teske, H. L. Ferguson, and J. L. Davis. 2011 (Revised 2020). *Management recommendations for Washington’s priority habitats: managing shrubsteppe in developing landscapes*. Washington Department of Fish and Wildlife [WDFW]

discussion would indicate the need to apply WDFW’s protocol for “identifying, mapping, and assessing quality of shrubsteppe on an individual parcel.”.

We note that the developer is aware of these resources, given that the same author cited WDFW’s management recommendations in their recent habitat report for the Ladera project.¹²

3. Deficiencies in SEPA Checklist

3.1 Item A.7: “Do you have any plans for future additions, expansion, or further activity related to or connected with this proposal? If yes, explain.”

Guidance from the Washington Department of Ecology (WDOE)¹³:

Define the total proposal by identifying

- Known expansions.
- Related proposals.
- Connected project elements or objectives.

Applicant’s response:

Engineering plans will be permitted through the city for infrastructure. The project will apply for a grading permit also through the city. Upon completion of infrastructure and recording of the final plat, builders will apply for building permits for the dwellings.

The applicant’s response does not address the question, leaving the checklist incomplete.

3.2 Item A.9: “Do you know whether applications are pending for governmental approvals of other proposals directly affecting the property covered by your proposal? If yes, explain.”

Guidance from WDOE¹⁴:

During reviews, agencies also consider existing, additional and future environmental impacts posed by other projects or proposals. List permits, applications, funding decisions, or other

Shrubsteppe]. p. 22: “Appendix 9 summarizes this protocol. We recommend you use this protocol in the early stage of developing an HMP [Habitat Management Plan].”

¹² PBS Engineering and Environmental, 2021. *Ladera Residential Subdivision Project, Critical Areas Assessment – Fish and Wildlife Habitat Conservation Areas* [Habitat Report]. <https://www.ci.richland.wa.us/home/showpublisheddocument?id=11852>.

¹³ WDOE, *SEPA checklist guidance, Section A: Background* [SEPA Guidance,Background]. <https://ecology.wa.gov/Regulations-Permits/SEPA/Environmental-review/SEPA-guidance/SEPA-checklist-guidance/SEPA-Checklist-Section-A-Background>

¹⁴ Ibid.

pending decisions / approvals for other proposals that could affect a proposal. The lead agency should have this information.

Applicant's Response:

The applicant is completing a cultural resource study of the subject property.

The applicant does not address the question. The cultural resource study is not in the application packet and so no determination can be made on impacts to cultural resources, so the project is not ready for public or agency comment. Further, the study mentioned is for *this* proposal, which means the applicant made no effort to determine if approvals are pending for *other* proposals, which is what is being asked by this question.

3.3 Item A.10: "List any government approvals or permits that will be needed for your proposal, if known."

Guidance from WDOE¹⁵:

List all needed government permits, funding, leases, approvals, certificates, and letters of availability for public services or utilities. These permits could be needed from the lead agency or another local government, or state or federal agency. List the agency and type of needed permit, action or decision. Has any part of the site been classified as a critical area by the city or county? If so, specify.

Applicant's Response:

Preliminary plat approval, final engineering drawing approval, grading and infrastructure permits, final plat approval, building permits.

No mention of stormwater permits required by Ecology.

3.4 Item B.4.c : "List threatened and endangered species known to be on or near the site."

Guidance from WDOE¹⁶:

The Washington Department of Natural Resources has information about rare, threatened, and endangered plant species in our state.

Applicant's Response:

See attached Critical Areas report for site prepared by PBS dated April 26th, 2021 "Critical Areas Assessment - Fish and Wildlife Habitat Conservation Areas."

¹⁵ Ibid.

¹⁶ WDOE, *SEPA checklist guidance, Section B: Plants* [SEPA Guidance, Plants].
<https://ecology.wa.gov/Regulations-Permits/SEPA/Environmental-review/SEPA-guidance/SEPA-checklist-guidance/SEPA-Checklist-Section-A-Background>

WAC 197-11-960 contains guidance for State Environmental Policy Act (SEPA) checklists. The purpose of the SEPA checklist is "to provide information to help you and the agency identify impacts from your proposal (and to reduce or avoid impacts from the proposal, if it can be done) and to help the agency decide whether an EIS [Environmental Impact Statement] is required."

In order to allow agencies to "use this checklist to determine whether the environmental impacts of your proposal are significant," the SEPA checklist should be complete and self-contained. The checklist should not refer to external documents, which require the agency and the public to track down the referenced document.

Why not just list any plants here?

3.5 Item B.4.e: "List all noxious weeds and invasive species known to be on or near the site".

Guidance from WDOE¹⁷:

Describe if plant species present on site or used in the project are listed as noxious or invasive.

Applicant's Response:

See attached Critical Areas report for site prepared by PBS dated April 26th, 2021 "Critical Areas Assessment - Fish and Wildlife Habitat Conservation Areas."

See above. Don't answer the question by giving us a task to do.

3.6 Item B.5.a: "List any birds and other animals which have been observed on or near the site or are known to be on or near the site".

Guidance from WDOE¹⁸:

Information about animal species is available from the Washington Department of Fish and Wildlife (WDFW). Describe if any animal species on site are listed as prohibited, regulated, or invasive.

Additional Resources

Washington Species and Habitats (Washington Department of Fish and Wildlife)

¹⁷ Ibid.

¹⁸ WDOE, *SEPA checklist guidance, Section B: Animals* [SEPA Guidance, Animals].
<https://ecology.wa.gov/Regulations-Permits/SEPA/Environmental-review/SEPA-guidance/SEPA-checklist-guidance/SEPA-Checklist-Section-B-Environmental-elements/Environmental-elements-5-Animals>

Priority Habitats and Species (Washington Department of Fish and Wildlife).

Applicant’s Response:

ground squirrel, hawk

Incomplete list of bird species indicates failure to complete any kind of survey. Note that the only ground squirrels that occur in this area are Townsend’s Ground Squirrel, a WDFW PHS species. This is not addressed in the projects Habitat Report.

3.7 Item B.5.c: “Is the site part of a migration route? If so, explain”.

Guidance from WDOE¹⁹:

Consider birds, fish, and other wildlife when identifying affected migration routes. Your proposal could have an adverse impacts if the affected area includes rare or unique habitat, wildlife corridors, fish-bearing rivers and streams, lakes, ponds, or other areas where migrating birds are likely to stop.

Applicant’s Response:

Richland is within the Pacific Flyway

The project site is a wildlife corridor between water sources for terrestrial animals.

4. References

Azerrad, J. M., K. A. Divens, M. F. Livingston, M. S. Teske, H. L. Ferguson, and J. L. Davis. 2011 (Revised 2020). *Management recommendations for Washington’s priority habitats: managing shrubsteppe in developing landscapes*. Washington Department of Fish and Wildlife [WDFW Shrubsteppe] 4

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EIS ADDENDUM

Horn Rapids Master Planned Community

Prepared For

Columbia Triangle Venture

by

Butler & Associates

April 28, 1993

FACT SHEET

ACTION SPONSOR AND LEAD AGENCY

City of Richland
Community Development Department
505 Swift Blvd.
Box 190
Richland, WA 99352

LEAD AGENCY CONTACT PERSON

Jeff Rolph, Senior Planner
Telephone: (509) 943-7587

APPLICANT AND CONTACT PERSON

Columbia Triangle Ventures
14410 Bel-Red Road
Bellevue, WA 98007

Mike Miller, President
Pacific Properties

644-2310

PROPOSED ACTION

The proposed Horn Rapids Master Planned Community is a major new mixed-use community on approximately 835 acres within the 6,000 acre Horn Rapids Triangle Community Planning area of north Richland. Proposed for construction over a 20-year period, the Master Planned Community will contain approximately 3,050 residential units intended to serve a wide variety of lifestyles and incomes. It will also contain centers for local services and employment in the form of approximately 83,000 square feet of commercial space and 105,000 square feet of office space. The community's recreational amenities will be abundant and include an 18-hole golf course (a separate project), two large joint use public park and school sites, two recreational clubs for homeowners in the community, and numerous small neighborhood parks, greenbelts, trails, and viewpoints.

EIS ADDENDUM AUTHORS AND PRINCIPAL CONTRIBUTORS

Butler & Associates
1235 20th Avenue East
Seattle, WA 98112

Principal Author

Shannon & Wilson, Inc.
1354 Grandridge Blvd.
Kennewick, WA 99336

Geotechnical Studies

J.U.B. Engineers, Inc.
2810 Clearwater Avenue
Suite 201
Kennewick, WA 99336

Transportation Studies

REQUIRED PERMITS AND APPROVALS

The Horn Rapids Master Planned Community will require the following permits and approvals:

City of Richland

- Master Plan Approval
- Zone reclassification
 - AG to R-1M (Single Family Residential - Medium Density)
 - AG to R-2 (High Density Residential)
 - AG to R-3 (Multiple-Family Residential)
 - AG to C-LB (Limited Business District)
 - AG to C-1 (Neighborhood Retail)
 - AG to PR (Public Reserve District)
- Subdivision approval
- Drainage plan approval
- Building permits

Department of Transportation

- Approval of controlled highway access (SR-240)

Other Applicable Regulations

City of Richland

- Comprehensive Plan
- Horn Rapids Community Plan
- City of Richland Municipal Code
 - Chapter 21.28 - Outdoor Light Fixtures
 - Ordinance 40-92 (Dust Ordinance)
 - Title 22 - Environment
 - Title 23 - Zoning
 - Title 24 - Plats and Subdivision
 - Title 26 - Shoreline Management

Air Pollution Control Authority

- General Regulation 80-7
- Washington Administrative Code, Chapter 173-400

LOCATION OF BACKGROUND DATA

City of Richland
Community Development Department
505 Swift Blvd.
Box 190
Richland, WA 99352

Butler & Associates
1235 20th Avenue East
Seattle, WA 98112

DATE OF ISSUANCE:

April 28, 1993

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SUMMARY

DESCRIPTION OF PROPOSED ACTION

Location

The Horn Rapids Master Planned Community is located within the City of Richland's Horn Rapids Community Planning Area (FIGURE 1). The project site includes approximately 835 acres bordered on the north by State Route 240, on the south by the Yakima River and adjoining floodplain, on the west by Grosscup Road, and on the east by the Lamb Weston industrial plant and spray field.

Project Description

The proposed Horn Rapids Master Planned Community is a major new mixed-use community on approximately 835 acres within the 6,000 acre Horn Rapids Triangle Community Planning area of north Richland. It represents the first major step in implementing the vision of a new community expressed in the Horn Rapids Community Plan.

The Horn Rapids Master Planned Community is shown in FIGURE 2. Proposed for construction over a 20-year period, the Master Planned Community contains approximately 3,050 residential units intended to serve a wide variety of lifestyles and incomes. It will also contain centers for local services and employment in the form of approximately 83,000 square feet of commercial space and 105,000 square feet of office space. The community's recreational amenities will be abundant and include an 18-hole golf course (a separate project), two large joint use public park and school sites, two recreational clubs for homeowners in the community, and numerous small neighborhood parks, greenbelts, trails, and viewpoints.

SEPA STRATEGY

Overview

This EIS Addendum is part of an overall strategy for SEPA compliance for the Horn Rapids Master Planned Community. The strategy, agreed to by Columbia Triangle Ventures and the City of Richland, consists of four basic elements which are summarized below:

Phased Review

The purpose of phased review is to focus on issues that are ready for decision and exclude from consideration issues already decided. (WAC 197-11-060(5)(b)) Phased review is appropriate where the sequence of proposals is from programmatic, such as the Horn Rapids Triangle Development Program, to proposals which are narrower in scope, such as the Horn Rapids Master Planned Community. (WAC 197-11-060(5)(c))

Expanded Checklist

The purpose of the expanded SEPA Environmental Checklist is to present more detailed information and analyses on the probable impacts of the project. The expanded checklist will assist City of Richland staff in defining the scope of the Addendum to the Horn Rapids Triangle Development Program FEIS. Even though an expanded Environmental Checklist is being prepared, a new Threshold Determination is not required for the Horn Rapids Master Planned Community (see below).

EIS Addendum

The purpose of the Addendum is to add analysis and information, but not change or add to the probable significant adverse impacts identified in the existing Horn Rapids Triangle Development Program FEIS. (WAC 197-11-600(4)(c)) A new Threshold Determination or SEIS is not required if probable significant adverse environmental impacts are covered by the impacts and alternatives in the existing EIS. (WAC 197-11-600(3)(b)(ii)) When combined with adoption, the Addendum must be circulated to agencies and interested persons and organizations. (WAC 197-11-630(3)(a),(c))

FEIS Adoption

The purpose of adoption is to use the existing Horn Rapids Triangle Development Program FEIS in order to help the City comply with SEPA. (WAC 197-11-600(4)(a)), and to avoid duplication of preparing a new EIS on the proposal. The City cannot take action on the proposed Horn Rapids Master Planned Community until seven (7) days after statement of adoption is issued. (WAC 197-11-630(3)(a))

IMPACTS AND MITIGATION MEASURES

EARTH

Impacts

The most significant potential adverse impacts to the earth resulting from development of the Horn Rapids Master Planned Community include water and wind erosion, runoff from new impervious surfaces, and grading and fill activities.

There are two primary erosion-related concerns with regard to construction of the proposed development. The first is the potential for progressive erosion and slope stability, particularly along the bluff adjacent to the Yakima River. A second concern is wind erosion and dust resulting from any unprotected or unvegetated areas.

The addition of new impervious surfaces increases the potential for stormwater runoff from developed areas. Precise estimates of the amount of impervious surfaces at project buildout have not been developed. However, approximately 68 percent of the project site will be affected by new impervious surfaces. The extent will depend on building lot coverage and landscaping.

Over the 20-year life of the project, grading and filling of approximately 500,000 cubic yards will be occur. Grading and fill activities increase the potential for water-related erosion.

Mitigation

Water Erosion Buildings will be set back from the crest of the slope adjacent to the Yakima River a distance equal to 1.5 times the height of slope, or approximately 135 feet.

Impervious Surfaces/Grading and Fill The stormwater collection system proposed for the project is designed so that all surface water runoff will be conveyed and stored for recharge to soils and groundwater. No stormwater runoff will be discharged to the Yakima River or other surface water bodies. The system will be designed so that areas of recharge will be as close as possible to the point of collection.

Wind Erosion Geosynthetic slope protection is proposed on the face of the river escarpment. The selected system must be capable of allowing re-vegetation of the slope. An alternative may be a complete vegetative resurfacing program. In addition, the City of Richland's Ordinance 40-92 and APCA regulations require the control of dust in disturbed areas.

AIR

Impacts

Two general types of emissions could result from development of the Horn Rapids Master Planned Community. During site grading, and other related construction, dust could contribute to concentrations of suspended particulate matter in the project vicinity. Emissions from motor vehicles will increase, over the short related to project construction and over the long term the addition of approximately 32,513 daily vehicle trips at project buildout.

Mitigation

Fugitive Dust The project will comply with the City of Richland's Ordinance 40-92 (Dust Ordinance). The ordinance requires any person, firm or corporation which disturbs, excavates, grade, plows, or removes the top soil of any land area to take "affirmative measures to suppress and minimize the blowing and scattering of dust. . . ." In addition, the Benton-Franklin-Walla Walla Counties Air Pollution Control Authority's (APCA) General Regulation 80-7, contains specific provisions requiring control of visible emissions, particulate matter, fugitive emissions, and fugitive dust.

Vehicle Emissions Emissions from construction equipment and trucks can be reduced by using new and/or well-maintained equipment, and avoiding prolonged periods of vehicle idling. Secondary air quality impacts could be minimized by controlling the trucking of material to and from construction areas during peak travel times. In addition all construction equipment and trucks and automobiles operating in the State of Washington must meet federal emission standards, as well as the regulations contained in the Washington Clean Air Act (RCW 70.94) and Chapter 173 WAC for vehicle emissions.

WATER

Impacts

Groundwater Quantity The primary concern regarding groundwater quantity is the possibility of "mounding" of the groundwater and subsequent flooding of property and structures in the Weidle neighborhood. Groundwater mounding is a process whereby an existing groundwater system is overloaded by excess water from some outside source, usually a surface source.

Groundwater Quality One of the primary concerns of residents in the Weidle neighborhood is the potential impacts to groundwater from pesticides or herbicides applied in the planned community.

Storm Water Upon completion of the project, storm water runoff will be generated by impervious surfaces within the project including buildings, streets, and parking areas. The primary cause of major runoff events in this region is significant accumulation of snow during the winter months followed by sudden and warm

"Chinook" wind conditions. The "Chinook" winds cause a rapid melting of the snow pack, and accompanying peak flows of runoff. These conditions are exacerbated when the ground is frozen, preventing infiltration of runoff.

Mitigation

Groundwater Quantity In the case of the Horn Rapids Master Planned Community, the major potential source of excess groundwater is irrigation of the golf course and landscaping in residential and commercial uses. Balancing irrigation application rates with the requirements of vegetation can easily reduce the potential for groundwater mounding. An agronomist or soil scientist familiar with the design of balanced irrigation programs will be retained to design an irrigation program for the project which will allow irrigation of the golf course and other landscaping in the community while minimizing the amount of irrigation water used.

Groundwater Quality Three wells, including a new on-site well and two existing wells in the Weidle neighborhood, were sampled and tested for total petroleum hydrocarbons, pesticides, and herbicides. The results of the chemical tests indicate no detectable concentration of contaminants. These wells will continue to be monitored throughout project development. Minimizing future impacts of contaminants to groundwater will be addressed through implementation of a balanced irrigation program.

Storm Water The stormwater collection system proposed for the project is designed so that all surface water runoff will be conveyed and stored for recharge to soils and groundwater. No stormwater runoff will be discharged to the Yakima River or other surface water bodies. The system will be designed so that areas of recharge will be as close as possible to the point of collection.

PLANTS AND ANIMALS

Impacts

Vegetation within the developed areas of the Horn Rapids Master Planned Community will be destroyed during land clearing activities. Over the twenty-year buildout period for the project, approximately 570 acres of vegetation will be cleared for building sites, roads, parking and other facilities. Direct impacts of these activities on plants and animals include elimination of habitat and displacement or loss of resident wildlife populations.

Mitigation

Based on recommendations made by the Washington Department of Wildlife for the associated Horn Rapids Golf Course project, a number of measures are proposed to mitigate impacts to wildlife on the planned community site. They include building setbacks, phasing of development, protecting portions of the shrub-steppe habitat, revegetation of disturbed areas, incorporating wildlife habitat into planned open space.

ENVIRONMENTAL HAZARDS

Impacts

Two general types of environmental hazards could affect the Horn Rapids Master Planned Community. They include 1) potential radioactive emissions from nuclear facilities at the Hanford Federal Reservation and 2) spills and other release of waste materials during project construction.

Mitigation

Hanford Site An emergency response plan has been prepared by the U.S. Department of Energy (USDOE), Washington Public Power Supply System (WPPSS), and the Emergency Management offices of Benton, Franklin and Grant Counties.

Spills and Other Releases For emergencies arising from project construction activities, the risk of fire, explosion and release of hazardous substances can be minimized through the use of standard construction practices and traffic control measures. Project contractors will be required to undertake a number of measures to reduce environmental hazards.

NOISE

Impacts

Project Construction During project construction, there would be a temporary increase in sound levels near the site due to the use of construction vehicles and other heavy equipment.

Long Term Impacts Traffic impact studies conducted by J-U-B Engineers, Inc. predict the Horn Rapids Master Planned Community will generate 32,513 daily vehicle trips at project buildout. This increase in vehicle trips will result in a long term increase in vehicle noise in the Horn Rapids Triangle.

Mitigation

Project Construction The project contractors will use the following measures designed to minimize noise impacts during construction. These measures are intended to comply with the standards contained in RCW 70.107 (Noise Control Act of 1974) and WAC 173-60 (Maximum Environmental Noise Levels).

Long Term Impacts Vehicles in the State of Washington must comply with WAC 173-62 (Motor Vehicle Noise Performance Standards).

LAND AND SHORELINE USE

Impacts

Development of the proposed Horn Rapids Master Planned Community will result in the conversion of approximately 835 acres of undeveloped land to residential, commercial, and institutional uses over a twenty-year period. The community will contain approximately 3,050 residential units with an estimated resident population of 7,500 people.

Mitigation

The proposed Horn Rapids Master Planned Community is designed to be consistent with all applicable adopted land use plans and policies of the City of Richland. Those plans and policies include the terms of the "Horn Rapids Development and Option Agreement" between CTV and the City of Richland, the Comprehensive Plan, Horn Rapids Community Plan, Zoning Code, and Shoreline Master Program.

POPULATION AND HOUSING

Impacts

Development of the proposed Horn Rapids Master Planned Community will result in the conversion of approximately 835 acres of undeveloped land to residential and other uses over a twenty-year period. The community will contain approximately 3,050 residential units with an estimated resident population of 7,500 people. Based on the extent of planned uses, an estimated 581 people will be employed within the Master Planned Community at buildout.

Mitigation

The Horn Rapids Master Planned Community strives to achieve the goals of the Horn Rapids Community Plan by providing approximately 3,050 housing units of varying types, densities, and prices. Based on current plans and market analyses, the project contains a mix of housing types and prices to offer the public a full range of housing alternatives. In addition, Columbia Triangle Ventures (CTV) is working with the Affordable Housing Council to assure that the Master Planned Community helps meet local and regional goals for affordable housing.

AESTHETICS

Impacts

Existing views over the site from State Route 240, and from within the site, will be altered to the extent that the landscape will gradually change over the twenty-year buildout period from undeveloped shrub-steppe habitat to clusters of one and two-story residences surrounding fairways of the proposed golf course.

Mitigation

The proposed Horn Rapids Master Planned Community will contain over 267 acres of active and passive recreation and open space areas. This constitutes approximately 32 percent of the total project site. Parks and open space will include the golf course, two large community parks, and numerous neighborhood parks throughout the community. It will also include a network of greenbelts to provide visual buffers separating residential areas from one another. This network of parks, greenbelts, and other open space will help to offset the visual impact of the Master Planned Community on the currently undeveloped shrub-steppe habitat.

LIGHT AND GLARE

Impacts

The Horn Rapids Master Planned Community site will gradually become a source of reflected glare from windows in the mornings and evenings. Lights on houses, schools, commercial buildings, and offices will be visible at night from the surrounding areas. Automobile headlights on this portion of State Route 240 will increase at night.

Mitigation

The Horn Rapids Master Planned Community will comply with all applicable regulations governing lighting, particularly Chapter 21.28 of the Richland Municipal Code (Outdoor Light Fixtures). Because of this compliance, light or glare from the project is not expected to result in any safety hazard.

RECREATION

Impacts

Population growth resulting from development of the Horn Rapids Master Planned Community will increase the demand for new park and recreational facilities. Use of existing nearby county or city park facilities would also increase, including the need for maintenance of those facilities.

Mitigation

Recreational opportunities and open space are abundant in the Horn Rapids Master Planned Community. Over 267 acres, or approximately 32 percent of the total project, is currently proposed for active and passive recreational uses. These include a golf course, community and neighborhood parks, trails, and greenbelts.

HISTORIC AND CULTURAL PRESERVATION

Impacts

Construction activities on the project site could result in the alteration or destruction of historic resources or sites not yet identified.

Mitigation

If cultural resources are encountered during project construction, work will be halted in the immediate vicinity and the Washington State Office of Archaeology and Historic Preservation notified.

TRANSPORTATION

Impacts

Parking The Horn Rapids Master Planned Community will require approximately 7,131 off-street parking spaces. These include 1,540 spaces for commercial and office development, 3,720 spaces for single family residences, and 1,785 spaces for multifamily residences.

Vehicle Trips The project will generate an estimated 32,513 average daily vehicle trips at buildout.

Mitigation

A transportation impact study was conducted for the Horn Rapids Master Planned Community by J-U-B Engineers, Inc. and is contained in APPENDIX 3. The impact study identified a number of required improvements to SR 240 assuming full buildout of the project.

FIRE PROTECTION

Impacts

Based on current service ratios, the Fire Department estimates that the 3,050 residential units and approximate population of 7,500 at the Horn Rapids Master Planned Community will require the addition of one new fire station somewhere in the Horn Rapids area.

Mitigation

The Comprehensive Plan and Horn Rapids Community Plan direct the majority of future growth in Richland to areas capable of providing appropriate levels of service. In addition, tax revenues generated by future development in the Horn Rapids Triangle will be available to finance additional fire protection staff and equipment.

POLICE PROTECTION

Impacts

Based on current service ratios, the Police Department estimates that the Horn Rapids Master Planned Community, at buildout, will require an additional ten (10) officers. A new police district would have to be created when the project is approximately one-third developed. The new district would require five (5) new officers at that time. New facilities would include an office space which, according to the department, could be co-located with a new fire station in the area.

Mitigation

The Comprehensive Plan and Horn Rapids Community Plan direct the majority of future growth in Richland to areas capable of providing appropriate levels of service. In addition, tax revenues generated by future development in the Horn Rapids Triangle will be available to finance additional police protection staff and equipment.

SCHOOLS

Impacts

Based on 1990 Census data, there are .4567 K-12 students per household within the school district. Applying this factor to the 3,050 residential units proposed for the Horn Rapids Master Planned Community yields a projected public school enrollment of 1,393 students.

Mitigation

The master plan for the proposed Horn Rapids Master Planned Community designates two sites for public schools. The first site, located on the east side of the community, is 19 acres in size and will contain an elementary school and neighborhood park. The

second site, located on the west side of the community, is 30 acres in size and will contain an elementary school along with a neighborhood park.

ELECTRICITY

Impacts

Based on the electrical demand standards contained in the Horn Rapids Master Utility Plan and the proposed uses in the Horn Rapids Master Planned Community, the completed project will result in an estimated electrical demand of 44,013 kilowatts.

Mitigation

The Horn Rapids Triangle Master Utility Plan estimated the electrical load demand for buildout of all land uses proposed by the Horn Rapids Community Plan. The Master Utility Plan estimated an ultimate electrical demand of 515,338 kilowatts for the Horn Rapids Community Plan area at buildout. Electrical substations are located at the Horn Rapids Business Park and north of the City's sanitary landfill. Additional power and substation capacity can be obtained from an existing 115 kilovolt transmission line which serves the area.

WATER

Impacts

The largest portion of the demand for domestic water in the Horn Rapids Master Planned Community will result from the planned 3,050 residential units. Residential development in the project at buildout will result in an average daily demand of .76 million gallons per day (MGD). Commercial and office development will result in an additional demand of .04 MGD. Based on the projected enrollment of the schools planned for the project, estimated average daily demand for all schools is .02 MGD. Therefore, the total average daily demand for domestic water for the project at buildout is an estimated .82 MGD.

Mitigation

The Horn Rapids Triangle Master Utility Plan estimated the demand for water at buildout of all land uses proposed by the Horn Rapids Community Plan. The Master Utility Plan estimated an ultimate demand of 56.6 MGD for the Horn Rapids Community Plan area at buildout. The City's current supply capacity includes 49.2 MGD pumped, and 24.4 MGD from storage. A 30-inch main is available at the Horn Rapids Business Park. Capacity is 3.7 MGD at 50 PSI. Fire flow capacity is 4,000 gallons per minute (gpm).

WASTEWATER

Impacts

Based on residential flow criteria and a projected population of 7,500, the residential portion of the project will generate an estimated wastewater flow of 720, 000 GPD at full buildout. Commercial and office development will generate an additional

103,600. Schools will generate estimated wastewater flows of 37,755 GPD. Therefore, the total estimated wastewater flow resulting from the project at full buildout is 861,355 GPD.

Mitigation

Current plans by the City of Richland call for a new sewer trunk line extension (Horn Rapids Connection) to the project site. Preliminary engineering design calls for a 36-inch line to extend from McMurray Street in the Richland Core Area to the Horn Rapids Business Park and then west along SR 240. An additional 54-inch line, the Lower North Interceptor, is needed to connect the Horn Rapids area via the Horn Rapids Connection with the City's treatment plant. On-site wastewater improvements will be constructed concurrent with development phases.

STORM DRAINAGE

Impacts

Upon completion of the project, storm water runoff will be generated by impervious surfaces within the project including buildings, streets, and parking areas. The primary cause of major runoff events in this region is significant accumulation of snow during the winter months followed by sudden and warm "Chinook" wind conditions. The "Chinook" winds cause a rapid melting of the snow pack, and accompanying peak flows of runoff. These conditions are exacerbated when the ground is frozen, preventing infiltration of runoff.

Mitigation

The stormwater collection system proposed for the project is designed so that all surface water runoff will be conveyed and stored for recharge to soils and groundwater. No stormwater runoff will be discharged to the Yakima River or other surface water bodies. The system will be designed so that areas of recharge will be as close as possible to the point of collection.

SOLID WASTE

Impacts

Based on current per capita waste disposal rates in the City of Richland, residents of the Horn Rapids Master Planned Community could generate approximately 5,250 additional tons of waste per year at full project buildout, or an additional 21 percent of the current municipal waste stream. Commercial and office development would augment the waste stream.

Mitigation

The existing 114-acre parcel at the City's landfill has approximately 35 to 40 years of use remaining. The 135-acre parcel to the north has an estimated 50 additional years of capacity. Based on this expected capacity, the landfill can easily accommodate the waste disposal needs of the Horn Rapids Master Planned Community at buildout.

PROPOSED ACTION

PROJECT DESCRIPTION

Project Location

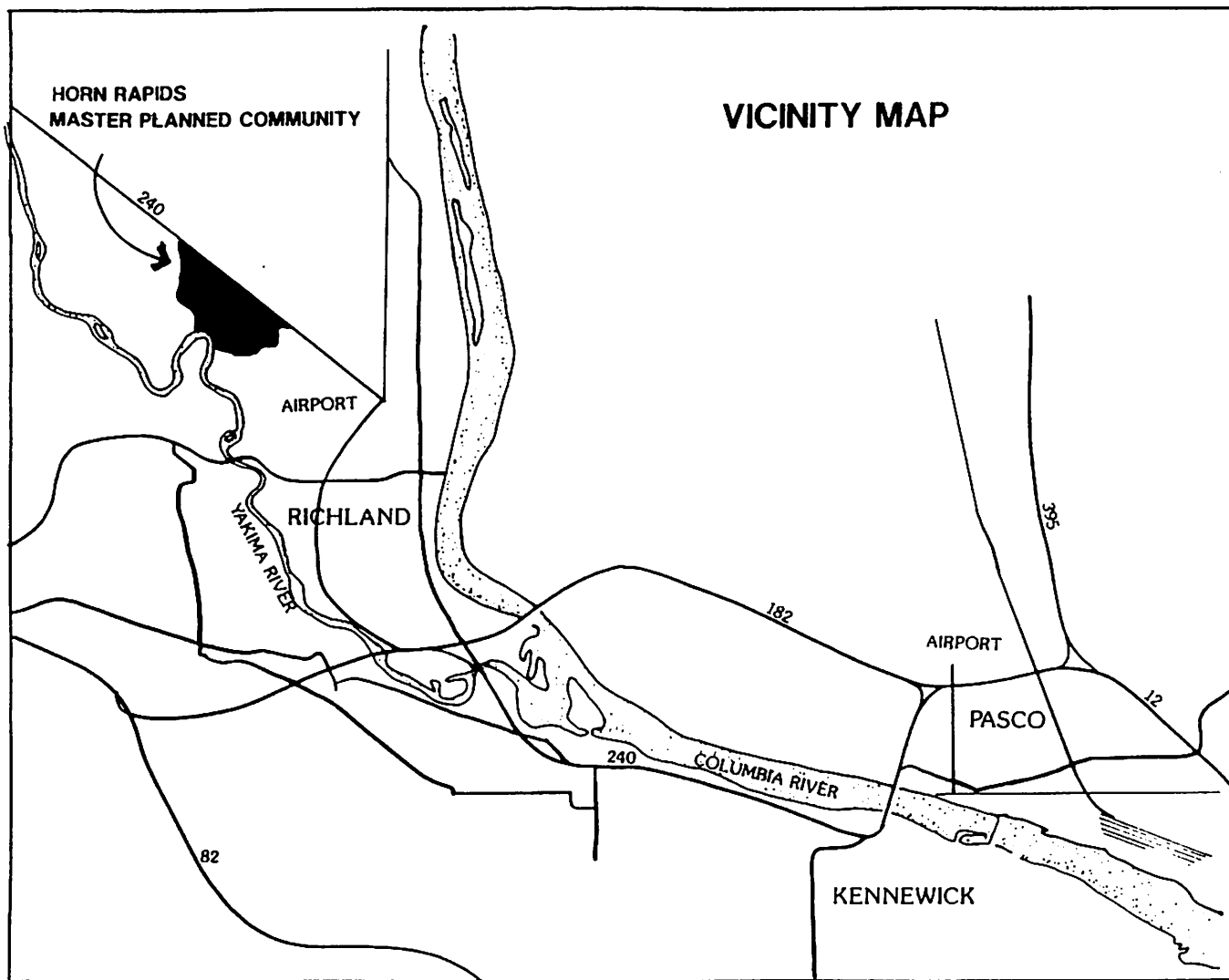
The Horn Rapids Master Planned Community is located within the City of Richland's Horn Rapids Community Planning Area (FIGURE 1). The Planning Area is bordered on the east by the Richland Core Area (SR-240/Bypass and Stevens Drive highways); on the north by Horn Rapids Road and the federal Hanford Reservation; on the west by the federal Arid Lands Ecology Reserve and the intersection of SR-240 and Snively Road; and on the south by the Yakima River and its associated floodplain, and the Horn Rapids Ditch.

The Horn Rapids Master Planned Community project site includes approximately 835 acres bordered on the north by State Route 240, on the south by the Yakima River and adjoining floodplain, on the west by Grosscup Road, and on the east by the Lamb Weston industrial plant and spray field. The site includes the approximate southwest half of Section 20, the northeast half of Section 29, and a triangular wedge in the western half of Section 28. All of these sections are located in Township 10 North, Range 28 East, Willamette Meridian.

Project Description

The proposed Horn Rapids Master Planned Community is a major new mixed-use community on approximately 835 acres within the 6,000 acre Horn Rapids Triangle Community Planning area of north Richland. It represents the first major step in implementing the vision of a new community expressed in the Horn Rapids Community Plan.

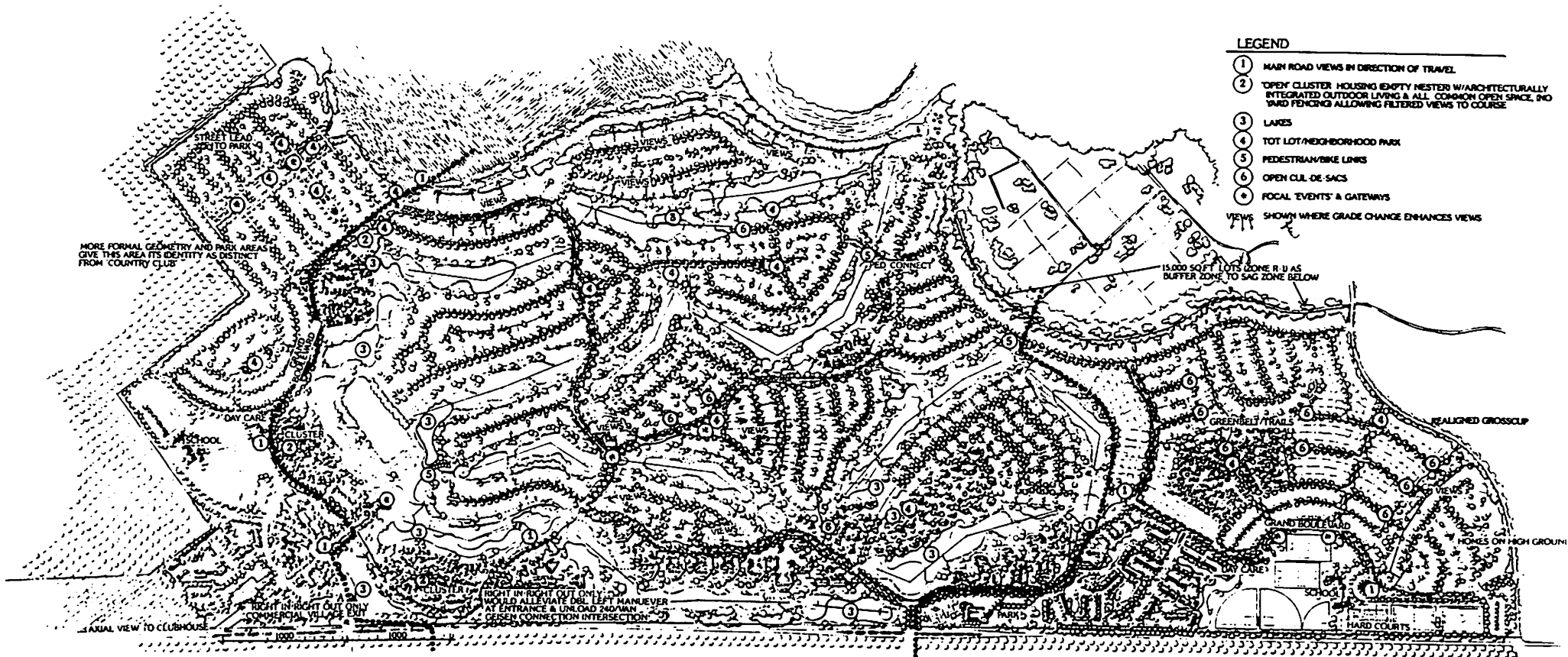
The Horn Rapids Master Planned Community is shown in FIGURE 2. Proposed for construction over a 20-year period, the Master Planned Community contains approximately 3,050 residential units intended to serve a wide variety of lifestyles and incomes. It will also contain centers for local services and employment in the form of approximately 83,000 square feet of commercial space and 105,000 square feet of office space. The community's recreational amenities will be abundant and include an 18-hole golf course (a separate project), two large joint use public park and school sites, two recreational clubs for homeowners in the community, and numerous small neighborhood parks, greenbelts, trails, and viewpoints. The following table summarizes the approximate acreage in the Master Plan devoted to each major land use category.



HORN RAPIDS MASTER PLANNED COMMUNITY
COLUMBIA TRIANGLE VENTURE

Figure 1





HORN RAPIDS MASTER PLANNED COMMUNITY COLUMBIA TRIANGLE VENTURE

WORKING LAND PLAN
W/DESIGN COMMENTS

DAHLIN GROUP
ARCHITECTS - PLANNERS
1000 1000

Figure 2

Residential	190 acres
High Density Residential	260 acres
Golf Course	170 acres
Parks and Greenbelts	50 acres
Park/School	47 acres
Village Center Retail/Commercial	14 acres

Consistent with the policies of the Horn Rapids Community Plan, development of the Master Planned Community will begin at the southeast end of the site adjacent to SR 240 and nearest to downtown Richland. Later phases will progress outward to the south and west in an orderly fashion in order to ensure timely provision of public facilities and services. High intensity uses have been concentrated around the Village Center retail and commercial area and along SR 240. Densities gradually decline away from these areas, with the least intense uses located at the edges of the community.

The focus of the Master Planned Community will be an 18-hole golf course open to the public. (For the purpose of permitting and SEPA review, the golf course is a separate project.) The golf course will be complemented by approximately 97 acres of parks, greenbelts, playgrounds, recreational clubs, and trails.

The community will offer a variety of single family and multifamily residences. Single family homes will range from large view homes overlooking the Yakima River valley to homes of varying sizes fronting on the golf course, to more affordable homes on traditional neighborhood streets. Other units will be clustered in small village settings, or as townhouses in groupings of various sizes. Multifamily residences will consist of both apartments and smaller complexes of condominium homes.

Neighborhood services will be concentrated in the Village Center located near the main entrance on SR 240. Services available at the Village Center will include a grocery store, convenience retail, food service, event space and, possibly, a "courtyard" hotel to serve the nearby industrial uses.

Public facilities contemplated for the community include two elementary schools and day care facilities with adjacent athletic fields. One site is located near the Village Center, and the second site is located near Grosscup Road.

Project Phasing

Development of the Horn Rapids Master Planned Community is scheduled to occur over a period of approximately 20 years, beginning in the summer of 1993. Ultimate buildout of the community will depend on market conditions and housing cost factors.

The Phasing Plan in FIGURE 3 depicts the planned phasing of the community based on Community Plan policies and projected market demand and cost factors. The precise size and configuration of each phase will be modified in response to conditions at the time development of a particular phase is initiated.

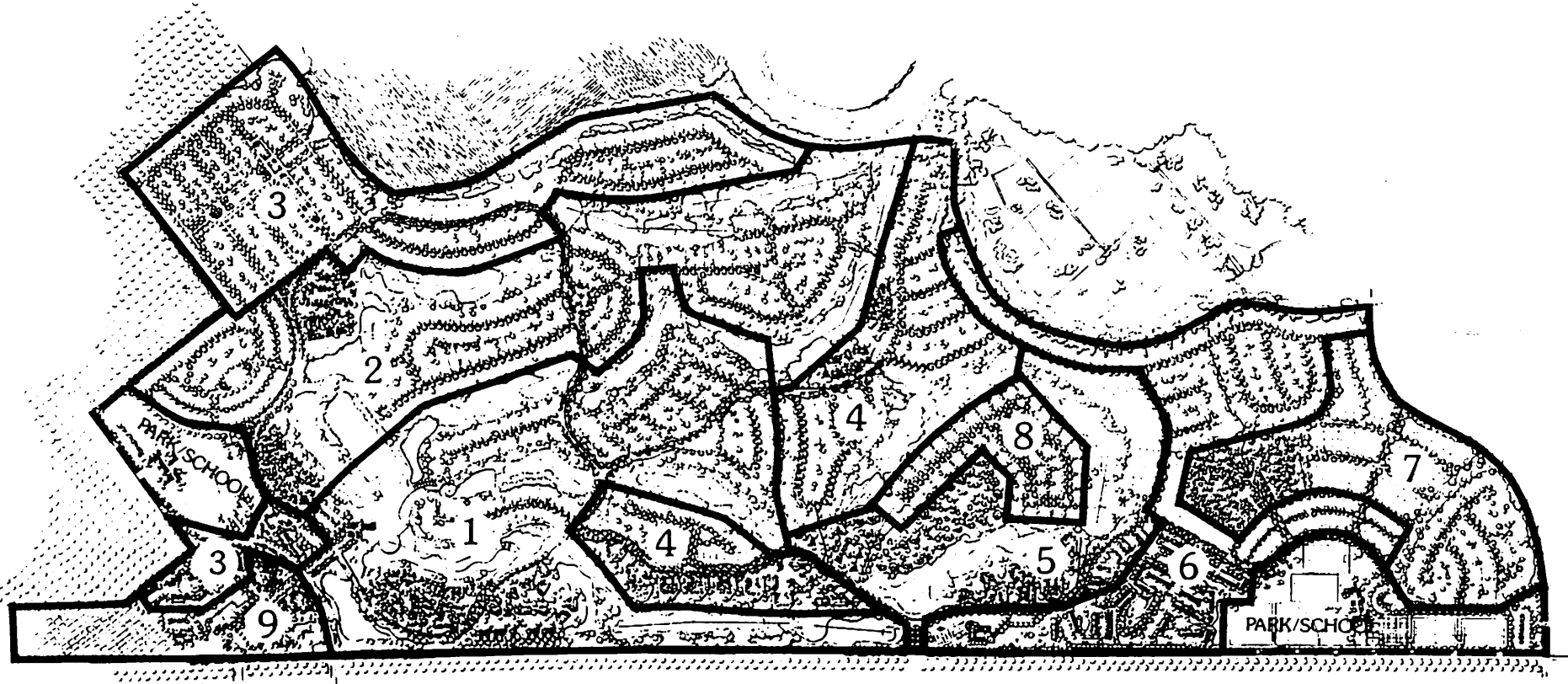
Phase one of the Master Planned Community, located in the central "golf course community", will begin construction in the summer of 1993 and will contain the following approximate of housing types:

Townhouses	50 Units
Single Family Homes Clustered in Villages	50 Units
High Density Single Family Homes	125 Units
Medium Density Single Family Homes	25 Units

The following table summarizes the information contained in FIGURE 3 and includes the estimated timing of remaining project phases.

Phase	Estimated Timing	Projected Uses
1	1993-1995	Residential, Golf Course
2	1995-1998	Residential, Recreation
3	1998-2002	Residential, Recreation
4	2003-2004	Residential, Recreation
5	2004-2006	Residential, Recreation
6	2007-2011	Residential, Recreation
7	2011-2012	Residential, Recreation
8	2013	Residential, Recreation
9	Based on market	Commercial and Retail

All times are approximate and depend on future market demand and cost factors. The projected uses are based on those contained in the conceptual Master Plan. Actual uses in any phase may vary based on market demand and cost factors. Phase 9 consists of the Village Center commercial and retail area. This phase will be constructed in response to market demand, making it difficult to estimate the timing of development.



HORN RAPIDS
COLUMBIA TRIANGLE VENTURE

ILLUSTRATIVE PLAN
PHASING PLAN

DATE: 1984

— 1 — 2

Figure 3

RELATION TO HORN RAPIDS DEVELOPMENT PROGRAM

Horn Rapids Triangle Development Program

The Horn Rapids Master Planned Community is part of an overall development program for the area known as the Horn Rapids Triangle. The development program was presented and discussed in the Horn Rapids Triangle Development Program - Final Environmental Impact Statement (December, 1981). The Horn Rapids Master Planned Community is part of the first phase of development under that program.

The Horn Rapids Triangle Development Program consists of four phases:

Community Plan The first phase consists of the Horn Rapids Community, adopted in 1981. The Community Plan contains policies which reflect desired community growth patterns in the area and are intended to define the direction and character of future development during later program phases. The Community Plan contains policies addressing natural environment, land use, transportation, parks, recreation and schools, utilities, services, and implementation.

Utility Services Master Plan The second phase consists of supplemental policies to the Community Plan for detailed engineering of the following capital facilities and utilities: water, wastewater, stormwater, solid waste, electrical, natural gas, and communications. For each element, the plan identifies the scope of service, proposed level of service and capacity, implementation measures.

Development Package (Phase 1) The third phase consists of providing basic services to designated industrial, commercial, and residential areas within the program area. The industrial area is proposed to consist of rail and utility systems within a 370-acre site. The commercial/residential area will consist of extension of basic water and wastewater services to 300 to 500 acres.

In the Horn Rapids Triangle Development Program - Final Environmental Impact Statement, this phase is identified as "Phase 1" of actual development of the Horn Rapids Community. The Horn Rapids Golf Course (see below) and the Horn Rapids Master Planned Community are part of that Phase 1 development.

*Horn Rapids Golf
Course Project*

Implementation Phase four of the Horn Rapids program includes a number of activities related the development of specific projects within the project area. Those activities include preparation of additional development package phases, amendments to the subdivision and zoning codes, subdivision of land, sale of parcels, and project construction.

The Horn Rapids Golf Course Project is also part of the Phase 1 development package for Horn Rapids community. The project is the next step in implementing the Horn Rapids Community Plan and Horn Rapids Triangle Development Program. It is intended to stimulate planned residential and commercial development through development of a planned golf course community. Construction of the golf course is scheduled to begin in the spring of 1993.

CTV is proposing to develop the new municipal golf course on 190 acres of the approximate 835 acre Horn Rapids Community Phase 1 area. Development of the golf course will consist of:

Infrastructure Extension Activities will include extension of domestic and irrigation water, sewer and electrical lines; and construction of access roads.

Golf Course Facilities Golf course facilities will consist of an 18-hole regulation course with related tees, fairways, course obstacles, practice driving range, clubhouse, maintenance buildings, accessory parking, golf cart storage, cart paths, and other accessory equipment, landscaping and facilities.

Construction Activities Activities will include site clearing; rough grading; course shaping and drainage improvements (culverts); green and tee construction; installation of irrigation system (including pump station); cart paths; driving range improvements; fine grading, landscaping and related improvements; grassing and revegetation of rough areas and fairways; and construction of shelters, restrooms, drinking fountains, clubhouse, golf cart storage and maintenance buildings, and parking areas.

**AFFECTED ENVIRONMENT,
SIGNIFICANT IMPACTS AND
MITIGATION MEASURES**

NATURAL ENVIRONMENT

EARTH

AFFECTED ENVIRONMENT

The Horn Rapids Triangle lies in the Pasco Basin, which includes the Tri-Cities region and extends as far north as Othello. The area is part of the Badger Mountain-Red Mountain Trend and contains two geologic elements: the Grosscup Flats and Horn Rapids Lineament. Along the Yakima River from the Horn Rapids area to its confluence with the Columbia River, is a series of northwesterly aligned basalt knolls known as the Horn Rapids Lineament. These knolls probably result from weak folds occurring in the basaltic bedrock rather than erosion processes. The Horn Rapids Master Planned Community project site lies in the Grosscup Flat, an alluvial and glacial floodplain.

General Description

The Horn Rapids area is underlain by the Columbia river basalt lava flows at depth ranging from 150 to 200 feet. They are overlain by about 40 feet of compact silty clay, then by compact silty sands and gravels of the Ringold Formation. Above the Ringold Formation sediments are the deposits of the glacial Lake Missoula floods including the Pasco Gravels near the Columbia River, and the Touchet beds silts and fine sands toward the Yakima River. The gravels and sandy silts form the local soils.

The project site is relatively flat and comprised of wind formed ridges, shallow washes, and ditches. Several sand-filled depressions are scattered throughout the site, a result of the effects of wind and water erosion. The Yakima River and floodplain, together with the adjoining shoreline bluffs or escarpments are dominant physical features that border the project site.

Elevations on the project site range from a high point of 513 feet, to low points of less than 360 feet. Topography on the site varies considerably. Slopes range from less than one percent in many of the upland portions of the site to 67 percent on the escarpment adjacent to the Yakima River.

Soils

General subterranean conditions in the Grosscup Flat consist of the following:

0 - 10 Feet	Sandy, gravelly soils of various types
10 - 30 Feet	Pasco Gravels

30 - 150 Feet	Ringold formation, silts and clays, gravel and sand
150 - 10,000 Feet	Basaltic lava (no bedrock is exposed in this feature)

The project site falls within the Hezel-Quincy-Burbank soil association. These soils are gently sloping soils that have a loamy sand surface layer and are very deep to shallow over gravel, lacustrine material, or basaltic bedrock. The soils were formed from wind-blown sand, loamy sand, alluvium, or a combination of these materials. They occur at elevations ranging from 300 to 900 feet.

Quincy soils cover approximately 80 percent of the Horn Rapids Triangle area. These soils are deep loamy sands ranging in slope from 2 to 15 percent. One characteristic of this association is the long, narrow duned ridges extending considerable distances. This soil type is excessively drained, permeability is very rapid, and water holding capacity is low. Runoff on this soil is considered slow but the hazard of wind erosion is severe.

Burbank soils cover approximately 16 to 18 percent of the area. These soils consist of excessively drained, coarse-textured loamy sands and gravels. Slopes in this association range from 0 to 15 percent and average 4 percent. Permeability is very rapid, water holding capacity is low, and runoff is very slow. The hazard of water erosion is slight, but the hazard of wind erosion is severe.

In very small pockets (2 to 4 percent of the area), are found the Finley soil associations. These soils are fine sandy loams with very gravelled sub-layers. Slopes range from 0 to 15 percent. However, steep slopes are 20 percent or greater. Finley soils are very well drained. Permeability is moderately rapid, water holding capacity is low, and runoff is very slow to slow. Water erosion hazard is slight and wind erosion hazard is moderate. Finley soils have some susceptibility to frost action, but are highly stable when compacted.

Geologic Hazards

Two potential geologic hazards have been identified on the project site: erosion hazard/slope failure along the Yakima River, and seismic hazard.

Erosion Hazard A survey of the project site was conducted in March, 1993 by Shannon & Wilson, Inc. A major focus of the survey was the escarpment adjacent to the Yakima River.

Erosion on the escarpment above the abandoned irrigation canal has been caused primarily by off-road vehicle travel, which has denuded the western two-thirds of the escarpment face. The canal is effectively acting as a bench on the escarpment slope, collecting material eroded from above.

Erosion at the base of the slope, below the abandoned irrigation canal, is typified by several areas of mass wasting of material into the river. In at least one section, the erosion at the base of the river bank has progressed 10 feet northeasterly since 1983. This conclusion was based on a comparison of 1983 Soil Conservation Service aerial photographs to existing conditions. Observations further indicated that a nearly vertical erosive cut of 8 feet in height had been cut into the river bank, and had subsequently been re-covered with soil eroded from above (see APPENDIX 1).

The combination of natural and man-made erosion has combined to create a situation where sections of the escarpment face are eroding downhill to be carried away by the river. Simultaneously, the Yakima River is impacting the escarpment face by eroding into the toe of the escarpment face. The river channel at the base of the escarpment slope is on the outside of bend where the velocity of the river is the greatest, and where erosive impact of the river is expected to be most severe.

Seismic Hazard Records of seismic events in the Hanford-Richland area date to 1850 and indicate that the area is seismically active. In 1872, a large earthquake occurred in north-central Washington, approximately 81 miles north of the project site, with an estimated Richter magnitude of 7.0. In the central part of the Columbia Plateau, the largest historical earthquakes near the site were two earthquakes that occurred north of the site in 1918 and 1973, both with magnitudes of 4.4. The largest earthquake in the Columbia Plateau was the Milton-Freewater, Oregon, earthquake which occurred in 1936 and had a magnitude of 5.75. During the period from 1969 to 1989, there were numerous earthquakes in the area with Richter magnitudes between 3.0 and 5.0.

The Horn Rapids project site is located in Seismic Risk Zone 2B as defined in the Uniform Building Code. Earthquakes in this zone can be expected to cause moderate damage.

SIGNIFICANT IMPACTS

The most significant potential adverse impacts to the earth resulting from development of the Horn Rapids Master Planned Community include water and wind erosion, runoff from new impervious surfaces, and grading and fill activities. These impacts are discussed in the following sections.

Erosion

There are two primary erosion-related concerns with regard to construction of the proposed development. The first is the potential for progressive erosion and slope stability, particularly along the bluff adjacent to the Yakima River. A second concern is wind erosion and dust resulting from any unprotected or unvegetated areas.

In combination, these erosive forces will continue to cause the escarpment along the river to erode. Uphill of the abandoned canal,

erosion will tend to be localized to denuded areas, primarily represent a nuisance from dust. However, localized slope failures above the canal could also be caused by surface water runoff or excessive irrigation.

Erosion below the canal can be expected to progressively undermine the escarpment slope, eventually causing slope failure and possibly resulting in loss of acreage on top of the hill. Such slope failures could also cause the loss of structures placed within the potential failure area. The rate of erosion and possible loss of the slope cannot be predicted. However, slope failure from erosion of the river bank does not appear to be an immediate problem. Slope failure may be a gradual flattening of the slope or a dramatic event due to an outside occurrence such as flooding of the river or severe slope erosion due to heavy precipitation.

Impervious Surfaces

Precise estimates of the amount of impervious surfaces at project buildout have not been developed. However, a minimum of 32 percent of the project site, or over 267 acres, will remain in parks, golf course, and other active and passive recreation and open space. The amount of impervious surfaces on the remaining 68 percent of the project site will depend on the extent of building lot coverage and landscaping. The addition of new impervious surfaces increases the potential for stormwater runoff from developed areas.

Grading and Fill

Over the 20-year life of the project, grading and filling of approximately 500,000 cubic yards will be occur. Fill material is expected to be obtained from on-site sources. Filling and grading will be designed to minimize alteration of the natural topography of the project site.

Grading and fill activities increase the potential for water-related erosion. A filling and grading plan will be prepared and submitted to the City of Richland prior to construction of each project phase.

MITIGATION MEASURES

Measures to offset the potential impacts of the Horn Rapids Master Planned Community to the earth are proposed in three areas: water erosion, impervious surfaces/grading and fill, and wind erosion. Proposed mitigation measures are discussed in the following sections.

Water Erosion

Several measures are proposed to address the potential for continuing river bank erosion following completion of the project.

Building Setback Shannon & Wilson, Inc. is recommending a building setback from the crest of the slope at least equal to 1.5 times the height of the slope above river elevation. For example, along the middle of the escarpment where it is about 90 feet above the river, the recommended minimum setback from the crest of the slope be 135 feet. More refined recommendations for setbacks will

*Impervious Surfaces
Grading and Fill*

be made based on more detailed field exploration and laboratory testing (see APPENDIX 1).

The stormwater collection system proposed by Hugh Goldsmith & Associates for the project is designed so that all surface water runoff will be conveyed and stored for recharge to soils and groundwater. No stormwater runoff will be discharged to the Yakima River or other surface water bodies. The system will be designed so that areas of recharge will be as close as possible to the point of collection.

Stormwater runoff from impervious surfaces will be conveyed via a biofiltration system consisting of grass-lined swales and retention areas. The swales will be constructed adjacent to the internal street network in the community. Stormwater will be conveyed by the grass-lined swales to the retention areas located in the community and neighborhood parks throughout the development. Additional retention areas will be provided in the Horn Rapids Golf Course, now under development. In areas where there is a potential that the volume of runoff may exceed the storage volume of the retention area under frozen ground conditions, recharge chambers will be installed four (4) feet below ground level to allow recharge to continue.

Wind Erosion

There are several proposed or existing measures which can offset the potential impacts of wind erosion:

Slope Protection Geosynthetic slope protection is proposed on the face of the river escarpment. These systems vary in configuration, from plastic cellular matrices fill with gravel and sand to systems which blanket the slope. The selected system must be capable of allowing re-vegetation of the slope. An alternative may be a complete vegetative resurfacing program. However, because of the relatively steep slope, such a system should be designed by an agronomist or soil scientist.

Richland Dust Ordinance In November, 1992 the City of Richland adopted Ordinance 40-92 (Dust Ordinance). The ordinance requires any person, firm or corporation which disturbs, excavates, grade, plows, or removes the top soil of any land area to take "affirmative measures to suppress and minimize the blowing and scattering of dust. . . ." Measures include, but are not limited to, adequate periodic sprinkling of the disturbed soil with water or other fluid, application of a chemical or physical soil binder, physical cover, adequate fencing, and effective corrugation of the surface. The ordinance provides for civil penalties or abatement for noncompliance.

APCA Regulations The Benton-Franklin-Walla Walla Counties Air Pollution Control Authority (APCA) adopted General Regulation 80-7. Part B, Section 400-040 of the regulation contains specific

provisions requiring control of visible emissions, particulate matter, fugitive emissions, and fugitive dust.

State Regulations More recent regulations governing emissions, which are implemented by the APCA, are contained in WAC 173-400. WAC 173-400-040 contains regulations for the control of visible emissions, fallout of particulate matter, fugitive emissions, and fugitive dust.

AIR

AFFECTED ENVIRONMENT

The climate at the Horn Rapids Master Planned Community site and the surrounding region is characteristic of a semiarid steppe. Humidity is low, and winters are mild.

Average annual precipitation in the project area is 6.25 inches. More than 40 percent of the annual precipitation occurs from December through February. Snowfall accounts for about 38 percent of the total precipitation during the winter.

Prevailing winds are from the west-northwest, with a secondary maximum frequency from the southwest. Strong winds at the project site are associated with the southwesterly winds and afternoon "drainage" winds and thunderstorms during the summer. The "drainage" winds are generally from the northwest.

The project site is located within the South Central Washington Intrastate Air Quality Control Region (AQCR). As of 1990, none of the counties surrounding the project site was designated as a nonattainment area under the National Ambient Air Quality Standards (40 CFR 81.348), or applicable Washington state ambient air quality standards. Federal and state air quality regulations are implemented in this region by the Benton-Franklin-Walla Walla Counties Air Pollution Control Authority (APCA).

Existing Sources of Emissions and Odor

The Lamb-Weston industrial plant and spray field is located to the east of the project site. Odors from the plant have been the source of complaints filed with the APCA in the past. Experience in the Richland Core Area further to the east indicate that the odors may be obnoxious to some, but not toxic. The impact of the plant on the project area is not anticipated to be significant, as the prevailing wind pattern is predominantly to the northeast. The City of Richland's sanitary landfill is located north of the project site, adjacent to SR-240 at the Grosscup Road intersection.

SIGNIFICANT IMPACTS

Two general types of emissions could result from development of the Horn Rapids Master Planned Community: 1) fugitive dust 2) vehicle emissions.

Fugitive Dust

During site grading, and other related construction, dust could contribute to concentrations of suspended particulate matter in the project vicinity. CTV will comply with the City of Richland's Ordinance 40-92 (Dust Ordinance), Benton-Franklin-Walla Walla Counties Air Pollution Control Authority (APCA) General Regulation 80-7, and WAC 173-400 for the control of fugitive dust emissions (see section c. below).

Vehicle Emissions

Construction Site clearing, grading, construction, and paving will require the use of a number of different types of vehicles including backhoes, loaders, bulldozers, dump trucks, paving equipment, and water trucks. The number and types of vehicles to be used in the project are not known at this time. Engines in the trucks and other equipment emit air pollutants which could temporarily degrade local air quality during the demolition and paving process. Operation of these vehicles could also temporarily affect traffic flow in and around the project site, resulting in reduced travel speeds and corresponding increased vehicle emissions.

Long Term Vehicle Emissions According to the Transportation Impact Study conducted for the project by J-U-B Engineers, Inc., the Horn Rapids Master Planned Community will generate approximately 32,513 daily vehicle trips at project buildout. This long term increase in vehicle trips will also result in a gradual increase in vehicle emissions in the vicinity of the planned community.

MITIGATION MEASURES

Measures to offset the potential impacts of the Horn Rapids Master Planned Community to the air are proposed in three areas: fugitive dust, and vehicle emissions. Proposed mitigation measures are discussed in the following sections.

Fugitive Dust

In November, 1992 the City of Richland adopted Ordinance 40-92 (Dust Ordinance). The ordinance requires any person, firm or corporation which disturbs, excavates, grade, plows, or removes the top soil of any land area to take "affirmative measures to suppress and minimize the blowing and scattering of dust. . . ." Measures include, but are not limited to, adequate periodic sprinkling of the disturbed soil with water or other fluid, application of a chemical or physical soil binder, physical cover, adequate fencing, and effective corrugation of the surface. The ordinance provides for civil penalties or abatement for noncompliance.

The Benton-Franklin-Walla Walla Counties Air Pollution Control Authority (APCA) adopted General Regulation 80-7. Part B, Section 400-040 of the regulation contains specific provisions requiring control of visible emissions, particulate matter, fugitive emissions, and fugitive dust.

More recent regulations governing emissions, which are implemented by the APCA, are contained in WAC 173-400. WAC

173-400-040 contains regulations for the control of visible emissions, fallout of particulate matter, fugitive emissions, and fugitive dust.

Grading and clearing for the project will be minimized in order to protect existing topographic features. Construction will be scheduled to avoid the high wind season. Interim or temporary irrigation, and/or water trucks will be used to reduce wind erosion to a minimum. Installation of grasses and landscaping will be phased to coincide with installation of permanent irrigation systems.

Vehicle Emissions

Construction Emissions from construction equipment and trucks can be reduced by using new and/or well-maintained equipment, and avoiding prolonged periods of vehicle idling. Secondary air quality impacts could be minimized by controlling the trucking of material to and from construction areas during peak travel times. In addition all construction equipment and trucks must meet state and federal vehicle emission standards.

Long Term Vehicle Emissions Automobiles imported into the State of Washington must meet federal emission standards, as well as the regulations contained in the Washington Clean Air Act (RCW 70.94) and Chapter 173 WAC for vehicle emissions.

Odors

The impact of the Lamb-Weston plant on the project area is not anticipated to be significant, as the prevailing wind pattern is predominantly to the northeast. In addition, effective management of the plant's clarifier and spray fields along with a dilution unit for the fryer roof has reduced the number of complaints significantly.

WATER

AFFECTED ENVIRONMENT

The Horn Rapids Master Planned Community is located within the Yakima River basin. The project site is approximately seven miles upstream of the confluence of the Yakima River and Columbia River.

Surface Water

The project site is adjacent to the Yakima River and its associated floodplain. Throughout much of the year, surface water movement is not evident on the site. Shallow washes and ditches exist on the site which may convey surface water during periods of heavy precipitation.

An abandoned concrete-lined canal is located on the southern edge of the site adjacent to the Yakima River. The canal was formerly operated by the Richland Irrigation District and the Atomic Energy Commission for service to lands which are now part of the City of Richland. The canal formerly conveyed water diverted from the left bank of the Yakima River at the Horn Rapids Dam. However, the

canal has not been used for an estimated 20 years, and portions upstream of the site have been destroyed.

Groundwater

In response to concerns expressed by residents of the Weidle neighborhood (adjacent to the project site), CTV retained Shannon & Wilson, Inc. to conduct hydrogeologic studies of the site. The focus of the studies was the potential for irrigation on the site to cause adverse impacts to groundwater, primarily in the form of groundwater "mounding", or impacts from pesticides or herbicides applied at the site.

Groundwater Quantity A groundwater monitoring well was installed on the project site on March 15 and March 16, 1993 (see APPENDIX 2). Nine (9) existing wells, three (3) in the Weidle neighborhood and six (6) in other areas adjacent to the site, were selected for review of well log data from the Department of Ecology.

Based on observations made during installation of the on-site monitoring well, and on well log data obtained from Ecology, the primary near-surface aquifer is the unconfined layer composed primarily of the Pasco gravel soils. In the area of West Richland and north Richland, the unconfined gravel layer is encountered across the entire Yakima River Valley, and extends south and east into the Columbia River.

To define groundwater flow within and adjacent to the project, groundwater elevations were measured in three wells: the new monitoring well on the project site, a private residential well in the Weidle neighborhood west of the site, and a well on the Lamb-Weston property east of the site. Based on measurements of these wells and groundwater and surface water elevation information from Ecology, the City of Richland, and a recent U.S. Department of Energy study, the groundwater gradient across the site appears to trend in an east-southeasterly direction.

Groundwater Quality Three wells, including the new on-site well and two existing wells in the Weidle neighborhood, were sampled and tested for total petroleum hydrocarbons, pesticides, and herbicides. These tests were intended to detect the potential contaminants which may be associated with irrigation practices in the Horn Rapids Master Planned Community. The results of the chemical tests indicate no detectable concentration of contaminants.

SIGNIFICANT IMPACTS

The most significant potential adverse impacts to water resulting from development of the Horn Rapids Master Planned Community include groundwater quantity, groundwater quality, and storm water. These impacts are discussed in the following sections.

Groundwater Quantity

The primary concern regarding groundwater quantity is the possibility of "mounding" of the groundwater and subsequent flooding of property and structures in the Weidle neighborhood.

Groundwater mounding is a process whereby an existing groundwater system is overloaded by excess water from some outside source, usually a surface source. The excess water migrates down to the existing groundwater surface and, if environmental conditions don't allow the excess water to flow away quickly enough (due to low soil transmissivity), groundwater elevations rise at the point of water influx. Groundwater elevations adjacent to the point of influx also rise, with the rise of groundwater elevation tapering down to the original water surface profile away from the point of influx.

Groundwater Quality

One of the primary concerns of residents in the Weidle neighborhood is the potential impacts to groundwater from pesticides or herbicides applied in the planned community. To address this concern three wells, including the new on-site well and two existing wells in the Weidle neighborhood, were sampled and tested for total petroleum hydrocarbons, pesticides, and herbicides. These tests were intended to detect the potential contaminants which may be associated with irrigation practices in the Horn Rapids Master Planned Community. The results of the chemical tests indicate no detectable concentration of contaminants. Specific measures to minimize the risk of pollutants migrating into groundwater as the project are below.

Storm Water

Upon completion of the project, storm water runoff will be generated by impervious surfaces within the project including buildings, streets, and parking areas. The primary cause of major runoff events in this region is significant accumulation of snow during the winter months followed by sudden and warm "Chinook" wind conditions. The "Chinook" winds cause a rapid melting of the snow pack, and accompanying peak flows of runoff. These conditions are exacerbated when the ground is frozen, preventing infiltration of runoff.

MITIGATION MEASURES

Measures to offset the potential impacts of the Horn Rapids Master Planned Community to water are proposed in three areas: groundwater quantity, groundwater quality, and storm water. Proposed mitigation measures are discussed in the following sections.

Groundwater Quantity

In the case of the Horn Rapids Master Planned Community, the major potential source of excess groundwater is irrigation of the golf course and landscaping in residential and commercial uses. Mounding can occur only if a) the amount of irrigation exceeds the evaporation rate from soil or the evapotranspiration rate from vegetation, b) the amount of water which exceeds the evaporation or evapotranspiration rate is sufficient to migrate downward to the groundwater table, and c) the transmissivity of the aquifer is low enough to cause the excess water to "back up" in the groundwater system, causing mounding.

Balancing irrigation application rates with the requirements of vegetation can easily reduce the potential for groundwater mounding. Based on the results of its groundwater investigations, Shannon & Wilson, Inc. have recommended that an agronomist or soil scientist familiar with the design of balanced irrigation programs be retained to design an irrigation program for the project which will allow irrigation of the golf course and other landscaping in the community while minimizing the amount of irrigation water used.

Groundwater Quality

To address the concern regarding potential impacts from pesticides or herbicides applied at the site three wells, including the new on-site well and two existing wells in the Weidle neighborhood, were sampled and tested for total petroleum hydrocarbons, pesticides, and herbicides. These tests were intended to detect the potential contaminants which may be associated with irrigation practices in the Horn Rapids Master Planned Community. The results of the chemical tests indicate no detectable concentration of contaminants.

Minimizing future impacts of contaminants to groundwater will be addressed through implementation of a balanced irrigation program. CTV will retain an agronomist or soil scientist familiar with the design of balanced irrigation programs to design an irrigation program for the project which will allow irrigation of the golf course and other landscaping in the community while minimizing the amount of contaminants which move into the groundwater.

Storm Water

The stormwater collection system proposed for the project is designed so that all surface water runoff will be conveyed and stored for recharge to soils and groundwater. No stormwater runoff will be discharged to the Yakima River or other surface water bodies. The system will be designed so that areas of recharge will be as close as possible to the point of collection.

Stormwater runoff from impervious surfaces will be conveyed via a biofiltration system consisting of grass-lined swales and retention areas. The swales will be constructed adjacent to the internal street network in the community. Stormwater will be conveyed by the grass-lined swales to the retention areas located in the community and neighborhood parks throughout the development. Additional retention areas will be provided in the Horn Rapids Golf Course, now under development. In areas where there is a potential that the volume of runoff may exceed the storage volume of the retention area under frozen ground conditions, recharge chambers will be installed four (4) feet below ground level to allow recharge to continue.

More details on the design of the stormwater collection system will be contained in the Master Stormwater and Water Quality Plan, to be submitted along with the Phase 1 application package.

PLANTS AND ANIMALS

AFFECTED ENVIRONMENT

This section describes the plant and animal resources of the project site with emphasis on species that might be affected by development of the Horn Rapids Master Planned Community. Plants and animals are addressed jointly because of the close association of natural vegetation and habitat.

Plants

The Horn Rapids Triangle area is characterized as shrub-steppe. The low productivity and number of plant species in the area reflect the region's low annual precipitation, the low water-holding capacity of the the sandy soil, and the occasionally very cold winters.

In the early 1800's, the dominant vegetation in the area was big sagebrush, with an understory of perennial bunchgrasses. Today, cheatgrass, an introduced species, is the dominant plant in areas that were cultivated 40 years ago, as well as on previously grazed areas at lower elevations.

More than 240 species of plants in ten major plant communities have been identified in the Horn Rapids area. The plant communities include 1) sagebrush/bluebunch wheatgrass, 2) sagebrush/cheatgrass-Sandberg's bluegrass, 3) sagebrush-bitterbrush/cheatgrass, 4) greasewood/cheatgrass-saltgrass, 5) winterfat/Sandberg's bluegrass, 6) thyme buckwheat/Sandberg's bluegrass, 7) cheatgrass-tumble mustard, 8) willow, 9) spiny hopsage, and 10) sand dunes. (U.S. Department of Energy, Office of New Production Reactors, Draft EIS for the Siting, Construction, and Operation of New Production Reactor Capacity, Document DOE/EIS-0144D, April, 1991)

Endangered and Threatened Species TABLE 1 lists federal and state threatened, endangered or candidate species of plants known to occur, or which could occur, in the Horn Rapids Triangle area.

Studies conducted by the Department of Energy (DOE) on the Hanford Federal Reservation indicate it is unlikely that the plant species listed above occur on the Horn Rapids project site. Columbia yellow cress occurs in the riparian areas along the Hanford Reach of the Columbia River. The nearest known population of Columbia milk-vetch is in the northwestern portion of Hanford near Vermita. Hoover's desert parsley was not found in the DOE Hanford studies.

Animals

The Horn Rapids area provides habitat for numerous animal species including 15 species of reptile and amphibians, 125 species of birds, and 30 species of mammals. The Yakima River supports a variety of fish and other aquatic organisms.

TABLE 1

Threatened and Endangered Plant Species

Common Name	Scientific Name	Federal Status	State Status
Columbia yellow cress	Rorippa columbiae	Candidate	Endangered
Columbia milk-vetch	Astagalus columbianus	Candidate	Threatened
Hoover's desert parsley	Lomatium tuberosum	Candidate	Threatened

(Source: U.S. Department of Energy, Office of New Production Reactors, Draft EIS for the Siting, Construction, and Operation of New Production Reactor Capacity, Document DOE/EIS-0144D, April, 1991)

Amphibians and Reptiles The side-blotched lizard is the most abundant reptile and can be found throughout the area. The most common snakes are the gopher snake, western yellow-bellied racer, and Pacific rattlesnake. Rarely occurring in the area are striped whipsnakes and desert night snakes. Toads and frogs occur along the Yakima River.

Birds The horned lark and western meadowlark are the most abundant nesting birds in the shrub-steppe. The area support populations of chukar and gray partridge, primarily in the Rattlesnake Hills to the west. Wastewater ponds on the Hanford reservation are important habitats for songbirds, shorebirds, ducks, and geese. The most important resident waterfowl species is the Canada goose, whose nesting habitat is confined to the islands of the free-flowing reach of the Columbia River. Forster's tern, ring-billed gulls, and California gulls also nest on these islands. The Columbia and Yakima Rivers also serve as major resting areas for migrant waterfowl. Several species of hawks and owls use the Hanford-Horn Rapids area for foraging and nesting.

Mammals Approximately 30 species of mammals have been identified in the Hanford-Horn Rapids area, most of which are rodents. These include the Great Basin pocket mouse, deer mouse, Townsend's ground squirrel, northern pocket gopher, western harvest mouse, house mouse, Norway rat, northern grasshopper mouse, and least chipmunk. Nuttall's cottontail rabbits and black-tailed jackrabbits are widely distributed throughout the area. Muskrats and porcupines have been along the shorelines of streams, ponds, and ditches, and beavers are residents of the sloughs along the Columbia and Yakima Rivers. Raccoons, skunks, bobcats, mink, and badgers are also present in the area. The coyote is the principal mammalian predator in the area. Large mammals include elk (primarily in the Rattlesnake Hills) and mule deer (primarily in the Rattlesnake Hills and along the Columbia and Yakima Rivers). Seven species of bat are also present.

Aquatic Species The Columbia and Yakima Rivers support a large and diverse community of plankton, benthic invertebrates, and fish. Previous Hanford-related studies identify 44 species of fish in the Hanford Reach of the Columbia River. Species include chinook salmon, sockeye salmon, coho salmon, and steelhead trout which use both rivers as migration routes to and from upstream spawning areas. Other fish of importance to sport fishermen are the whitefish, white sturgeon, smallmouth bass, crappie, catfish, walleye, and perch. Nongame fish present in the rivers include carp, shiners, suckers, and squawfish.

Endangered and Threatened Species TABLE 2 lists federal and state threatened, endangered or candidate species of animals known to occur, or which could occur, in the Horn Rapids Triangle area.

TABLE 2
Threatened and Endangered Animal Species

Common Name	Scientific Name	Federal Status	State Status
Common loon	Gavia immer	Not listed	Candidate
White pelican	Pelecanus erythrorhychos	Not listed	Endangered
Peregrine falcon	Falco peregrinus	Endangered	Endangered
Bald eagle	Haliaeetus leucocephalus	Threatened	Threatened
Swainson's hawk	Buteo swainsoni	Candidate	Not listed
Western sage grouse	Centrocercus urophasianus phaios	Candidate	Not listed
Ferruginous hawk	Buteo regalis	Candidate	Threatened
Sandhill crane	Grus canadensis	Not listed	Endangered
Long-billed curlew	Numenius americanus	Candidate	Not listed
Giant Columbia River limpet	Fisherola (= Lanx) nuttali	Candidate	Not listed
Giant Columbia River spire snail	Fluminicola (= Lithoglyphus) columbiana		

(Source: U.S. Department of Energy, Office of New Production Reactors, Draft EIS for the Siting, Construction, and Operation of New Production Reactor Capacity, Document DOE/EIS-0144D, April, 1991)

Two species of birds listed as threatened or endangered by both the Federal government and State of Washington occur in the Hanford-Horn Rapids area. The peregrine falcon is an occasional migrant through the area but does not nest there. The bald eagle is a regular winter resident and forages on dead salmon and waterfowl along the Columbia and Yakima Rivers. However, it does not nest in the area.

Bird species which appear on the State list that are not on the Federal list include the white pelican (endangered), sandhill crane (endangered), and ferruginous hawk (threatened). Both species could occur in the project area. The white pelican forages for fish in the shallow areas of Columbia and Yakima Rivers. The sandhill crane migrates through the area and could be found along the river. The ferruginous hawk nests on electrical transmission towers on the Hanford site and forages throughout the area.

Several bird species are candidates for either the state or Federal list. The common loon, a candidate for the state list, occurs on both rivers during migration and in the winter. The long-billed curlew, candidate for the Federal list, nests throughout the Hanford-Horn Rapids area. The Swainson's hawk, candidate for the Federal list, forages throughout the area and nests at the old Hanford Townsite.

The giant Columbia River limpet and giant Columbia River spire snail are found in the Columbia and Yakima Rivers. The limpet is relatively abundant, while the snail is less common. Both are candidates for the Federal list, but do not appear on the state list. Although Federal candidate species do not receive legal protection under the Endangered Species Act, the U.S. Fish & Wildlife Service recommends that impacts to these species be considered in project planning.

SIGNIFICANT IMPACTS

Vegetation within the developed areas of the Horn Rapids Master Planned Community will be destroyed during land clearing activities. Over the twenty-year buildout period for the project, approximately 570 acres of vegetation will be cleared for building sites, roads, parking and other facilities.

Direct impacts of these activities on plants and animals include elimination of habitat and displacement or loss of resident wildlife populations. The magnitude of the impacts depends on the location and density of development. As habitat is eliminated, wildlife must relocate to new areas. Since most habitats are assumed to be at their capacity to support wildlife, displaced animals may perish or displace other animals.

MITIGATION MEASURES

Based on recommendations made by the Washington Department of Wildlife for the associated Horn Rapids Golf Course project, the following measures will be incorporated into project design and construction in order to mitigate impacts to wildlife on the planned community site:

Building Setbacks Set back lots and buildings from the edge of the bluff adjacent to the Yakima River and its associated floodplain in order to retain an area of shrub-steppe habitat, and reduce impacts to the floodplain.

Phased Development Phase the development, and related vegetative clearing, to retain natural vegetation and defer impacts as long as possible.

Project Design Plan, develop, and construct sites, buildings, and other improvements to minimize the destruction of natural vegetation. Remnants of the shrub-steppe habitat should be retained in planned open space between clusters of residential development.

Revegetation To the extent possible, revegetate disturbed areas with native species and landscape with trees and shrubs that are useful to wildlife.

Habitat Incorporate wildlife habitat into utility corridors, stormwater facilities, trails, and other areas in the planned community.

BUILT ENVIRONMENT

ENVIRONMENTAL HAZARDS

AFFECTED ENVIRONMENT

The Horn Rapids Triangle borders the Hanford Site on the south. Three types of facilities are operated at the site:

Nuclear Reactor Plants The Washington Public Power Supply System (WPPSS) operates Plant 2, a commercial reactor that has produced electricity since May, 1984. The Fast Flux Test Facility is U.S. Department of Energy research reactor that is currently on "standby". Other reactors, such as the N-Reactor, operated previously but have been shut down and the nuclear fuel removed.

Fuel Storage Spent nuclear fuel is stored in the 100-K area on the Hanford Site pending completion of disposal plans and facilities.

Waste Storage and Treatment Radioactive waste and chemicals used in the processing of waste are stored at several locations at Hanford including the 200 and 300 areas. Most of the waste is stored in large tanks which are located underground near the center of the Hanford Site. Work is underway to build treatment facilities to transform the waste into stable forms for long term storage. Low level waste will be mixed with cement in the grout facility and stored in vaults. High level waste will be processed into glass logs at the Hanford Waste Vitrification Plant when it becomes operational near the turn of the century.

SIGNIFICANT IMPACTS

Two general types of environmental hazards could affect the Horn Rapids Master Planned Community. They include 1) potential radioactive emissions from nuclear facilities at the Hanford Federal Reservation and 2) spills and other release of waste materials during project construction.

Hanford Reservation

Under federal guidelines, there are four types of emergencies which could occur at nuclear power facilities, including those on the Hanford Reservation, and which are basis for emergency response. TABLE 3 describes each type of emergency.

Spills and Other Releases

The potential for minor spills or releases of other hazardous or toxic substances could be present during project construction. The most probable time for an occurrence is during the operation of construction equipment and vehicles and transport of petroleum and paving products. Leakage of petroleum products, including fuels, oil, grease, hydraulic fluids, and lubricants from construction equipment. These substances could drain either directly into the Yakima River or indirectly via stormwater flows. The extent of

TABLE 3

Emergency Action Levels
Nuclear Power Facilities

Class	Description	Example Conditions
Unusual Event	Unusual events are in process or have occurred which indicate a potential degradation of the level of safety of the plant. No releases of radioactive material requiring offsite response or monitoring are expected unless further degradation of safety systems occurs.	Fuel damage; abnormal coolant temperature and/or pressure; failure of a safety or relief valve; loss of offsite power; fire within the plant lasting more than 10 minutes; loss of containment integrity requiring technical shutdown; security threat; natural phenomenon such as earthquake.
Alert	Events are in process or have occurred which involve an actual or potential substantial degradation of the level of safety of the plant. Any releases are expected to be limited to small fractions of EPA exposure levels.	Failure of steam generator tubes; steam line break; primary coolant leak; loss of offsite and onsite power; release of radioactivity to containment or fuel building; fire affecting safety systems; severe natural phenomenon such as earthquake.
Site Area Emergency	Events are in process or have occurred which involve actual or likely major failures of plant functions needed for protection of the public. Releases may exceed EPA guidelines near site boundary.	Known loss of coolant; degraded core; steam line breaks; loss of offsite and onsite power for more than 15 minutes; major damage to spent fuel; fire compromising safety systems; imminent loss of physical control of the plant; severe natural phenomenon such as earthquake.
General Emergency	Events are in process or have occurred which involve actual or imminent substantial core degradation or melting with potential loss of containment integrity. Releases are expected to exceed EPA exposure levels offsite for more than the immediate site area.	Exposure levels high enough to consider evacuation within 2 miles of the site boundary; loss of 2 of 3 fission product barriers; loss of physical control of the facility; conditions that make release of large amounts of radioactivity possible in a short time period, such a core melt.

Source: U.S. Nuclear Regulatory Commission/Federal Emergency Management Agency, Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants, (NUREG-0654, FEMA-REP-1), November, 1980.

impacts resulting from accidental discharge of petroleum products during construction depends upon the amount and duration of the spill. Project construction practices are intended to minimize the risk of accidental spills or discharges to the Yakima River. Specific mitigation measures are outlined in section 2 below.

MITIGATION MEASURES

Mitigation measures address potential radioactive emissions from nuclear facilities at the Hanford Federal Reservation and 2) spills and other release of waste materials during project construction. Those measures are discussed in the following sections.

Hanford Site

An emergency response plan has been prepared by the U.S. Department of Energy (USDOE), Washington Public Power Supply System (WPPSS), and the Emergency Management offices of Benton, Franklin and Grant Counties. Basic features of the plan which affect future residents of the Horn Rapids Master Planned Community include the following:

Sirens If there is a problem at WPPSS Plant 2, persons within a 10-mile radius of the plant (this includes the Horn Rapids Master Planned Community site) will hear sirens sound continuously for three minutes or longer. These sirens are a signal to evacuate the area and tune to the Emergency Broadcast Radio Station KONA (610 AM or 105.3 FM) for more information. Other radio and TV stations may also broadcast emergency information.

Alert Radios Residents within the emergency planning zone in Benton County (including the project site) are provided with emergency alert radios. These radios would be turned on automatically by a signal transmitted just before an emergency broadcast system message.

Announcements When possible, emergency workers from the Sheriff's, police and fire department would verify notification by driving through the area broadcasting announcements on loudspeakers.

Possible Actions Depending on the class of emergency (described above), residents might be told that no actions are necessary, asked to prepare to shelter or evacuate, or asked to shelter or evacuate immediately.

Evacuation Residents will be provided with instructions on what to do if asked to evacuate and maps indicating evacuation routes and the location of the nearest Assistance Center. For the purposes of evacuation, the project site is located in Section 3. The primary evacuation route for residents in this section is west on Grosscup Road and south on Harrington Road to SR 224, and then on to Benton City. An alternative route is south on Stevens Drive or George Washington Way through Richland.

The designated Assistance Center for Section 3 is the Kiona Benton Middle School located at 913 Horne Drive in Benton. Assistance Centers provide lodging, food, first aid care, social services and, if necessary, decontamination.

CTV will consult with the Benton County Emergency Management Agency to review the existing plans for evacuation, and identify needed revisions and/or improvements which can best protect the future residents of the Horn Rapids Master Planned Community.

Spills and Other Releases

For emergencies arising from project construction activity, special emergency services which could be required in response to an explosion or release of hazardous or toxic substances include fire department personnel with hazardous materials training and appropriate equipment.

For emergencies arising from project construction activities, the risk of fire, explosion and release of hazardous substances can be minimized through the use of standard construction practices and traffic control measures. Project contractors will be required to undertake a number of measures to reduce environmental hazards. Those measures include the following:

Close Connections All connections to the surface drainage system from the site will be closed in the event of a spill or discharge.

Erosion Control Erosion control facilities will be installed prior to performing any earthwork on the site, and maintained in working order throughout the project.

NOISE

AFFECTED ENVIRONMENT

Existing sources of noise in the vicinity of the Horn Rapids Master Planned Community include State Route 240 and aircraft at the Richland Airport, which is approximately one mile southeast of the project site. In the past, the airport was the source of numerous noise complaints filed with the Port of Benton County, the Air Pollution Control Authority, and the City of Richland. Changes in site design at the airport along with the elimination of certain types of aircraft which serve the site have significantly reduced the complaints.

SIGNIFICANT IMPACTS

Project Construction During project construction, there would be a temporary increase in sound levels near the site due to the use of construction vehicles and other heavy equipment. Construction will require the cutting and drilling of wood, concrete and metal; welding equipment; and the use of compressors. The project will require the use of a number of different types of vehicles including backhoes, loaders, bulldozers, dump trucks, paving equipment, and water trucks. The number of vehicles to be used in the project is not

known at this time. Noise generated by these activities is highly variable. Equipment may not operate or may idle for long periods of time, depending on construction phasing. At some point, however, all the equipment may be operating simultaneously and would generate sound levels at the high end of acceptable levels, or which temporarily exceed current regulations.

Long Term Impacts Traffic impact studies conducted by J-U-B Engineers, Inc. predict the Horn Rapids Master Planned Community will generate 32,513 daily vehicle trips at project buildout. This increase in vehicle trips will result in a long term increase in vehicle noise in the Horn Rapids Triangle.

MITIGATION MEASURES

Project Construction The project contractors will use the following measures designed to minimize noise impacts during construction. These measures are intended to comply with the standards contained in RCW 70.107 (Noise Control Act of 1974) and WAC 173-60 (Maximum Environmental Noise Levels):

Limited Hours Work will generally be limited to the hours of 7:00 AM to 6:00 PM. If work is necessary after 10:00 PM, it will comply with the noise limitations in WAC 173-60-40 (b) and (c).

Operating Rules Objectionable noise will be minimized by observing the following rules:

1. Equip air compressors with silencing packages.
2. Equip jackhammers with silencers on the air outlet.
3. When possible, equipment that can be electrically driven instead of gas or diesel will be utilized.

Objectionable Noise The standards define objectionable noise received on neighboring properties as any noise exceeding the limits specified in WAC 173-60-040.

Noise Limits The standards define noise limits (in dBA) for residential, commercial, and industrial uses on receiving properties.

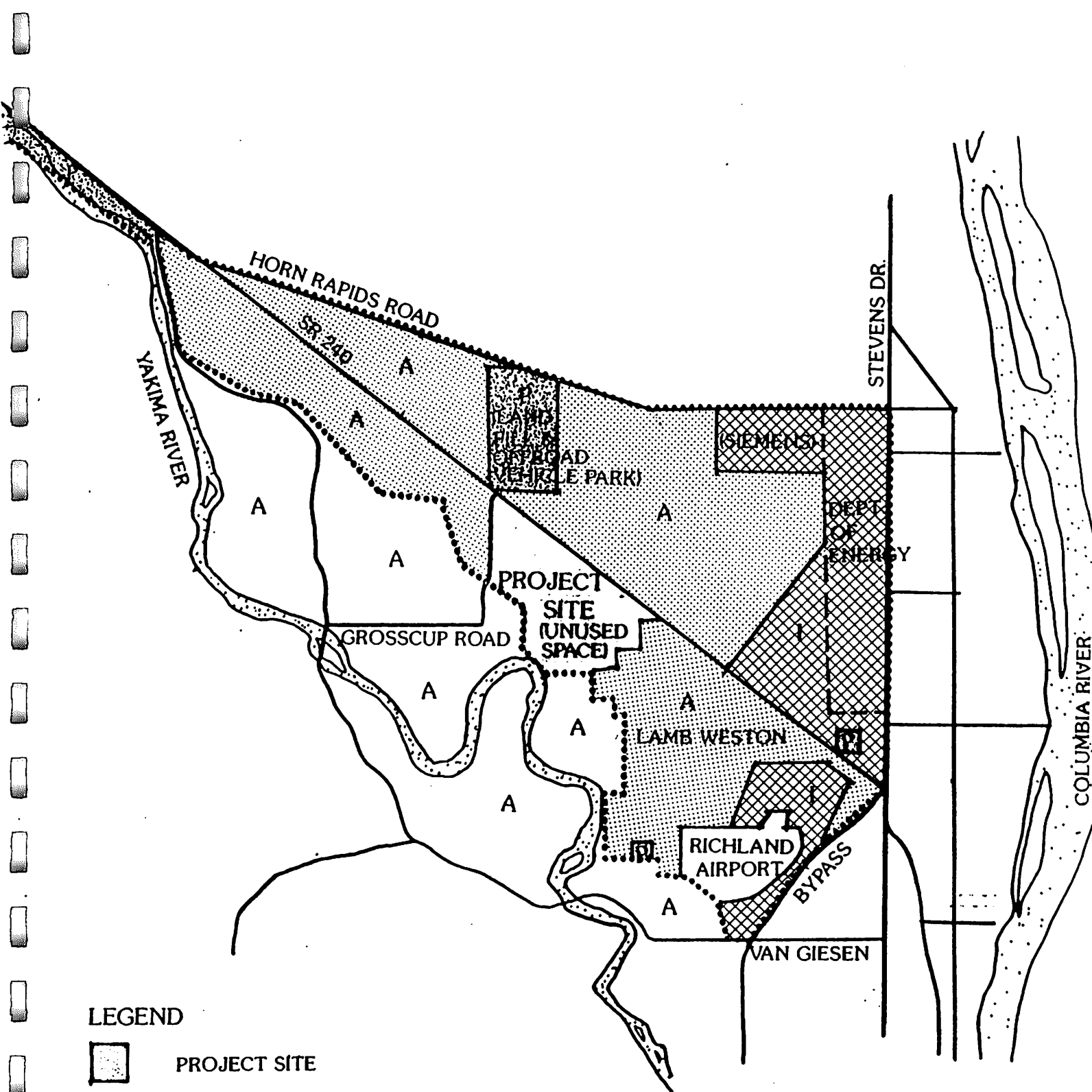
Long Term Impacts

Vehicles in the State of Washington must comply with WAC 173-62 (Motor Vehicle Noise Performance Standards). No other mitigation measures are proposed.

LAND AND SHORELINE USE

AFFECTED ENVIRONMENT

Existing land use on the Horn Rapids Master Planned Community site is shown in FIGURE 4. The site is currently undeveloped open space. Use of the site is limited to informal recreational activities.



LEGEND



PROJECT SITE



AGRICULTURE



INDUSTRIAL



PUBLIC



PLANNING AREA BOUNDARY



EXISTING LAND USES IN THE
HORN RAPIDS VICINITY

Figure 4

The Horn Rapids Business Park is located directly to the north of the project site and is partially built out with industrial uses. The City of Richland's sanitary landfill and Horn Rapids Off-Road Vehicle (ORV) Park are located directly across SR-240 to the northwest. Large portions of the remaining area north of SR-240 are leased to a local farmer for agricultural use. Available evidence suggests that the project site may have been used for agriculture prior to 1942.

Adjacent to the project site on the south is the Yakima River and its associated floodplain. The floodplain is partially developed with small-tract rural residential development. The Lamb-Weston potato processing plant is adjacent to the project site on the southeast. Also to the southeast is the Waniwasha Indian Cemetery.

Exxon Nuclear's fabrication facility is located in the northeast portion of the Horn Rapids Triangle adjacent to Horn Rapids Road. and Richland Airport are located in southeast and the area. The Department of Energy's warehousing and distribution facilities and bus lot are at the extreme eastern edge of the area, adjacent to Stevens Drive.

Comprehensive Plan

The City of Richland's Comprehensive Plan was updated in 1988. The Comprehensive Plan designates the Horn Rapids Triangle as an area expected to accommodate "... a full range of urban uses and activities including the expansion of industrial development around the Richland Airport and north of SR 240 and easterly of the sanitary landfill. Public facilities and commercial land uses are proposed to be activity centers or focal points for residential uses located around them . . ."

The Comprehensive Plan map is shown in FIGURE 5. The map designates the Master Planned Community site for residential development of 8 dwelling units per acre, with associated public facilities, parks, schools, and community and neighborhood commercial uses.

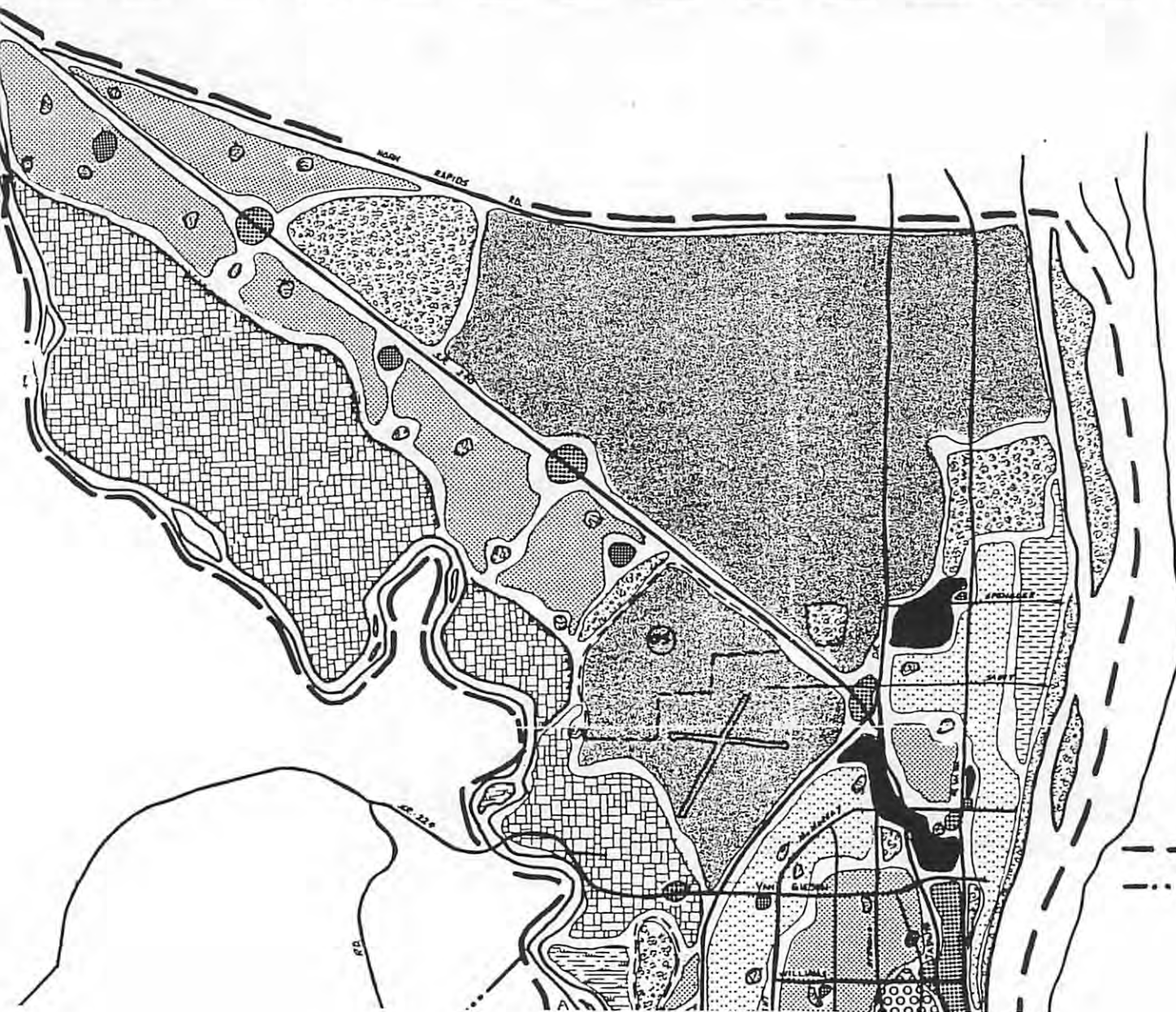
Horn Rapids Community Plan

The Horn Rapids Community Plan was adopted in 1981. The community plan contains specific goals and policies for long term development in the Horn Rapids Triangle and is intended to augment the Comprehensive Plan.

Specific elements of the plan focus on natural systems and environment, land use, transportation, parks and recreation and schools, utilities, community services, and implementation. The Land Use Plan map (FIGURE 6) designates the Horn Rapids Master Planned Community site for residential development with associated community and neighborhood commercial centers, and public facilities.

Zoning

The Horn Rapids Master Planned Community site is currently designated Agricultural Use District (AG) in the City of Richland's



COMPREHENSIVE LAND USE PLAN

LEGEND

- INDUSTRIAL
- COMMUNITY COMMERCIAL
- NEIGHBORHOOD COMMERCIAL
- OFFICE/APARTMENTS
- RESIDENTIAL - 15 dwellings/acre
- " - 8 dwellings/acre
- " - 5 dwellings/acre
- " - 3 dwellings/acre
- " - 1 dwelling/acre
- AGRICULTURE
- AGRICULTURE - non-residential
- PUBLIC
- OPEN SPACE

--- PLANNING AREA BOUNDARY

--- URBAN GROWTH BOUNDARY

Figure 5

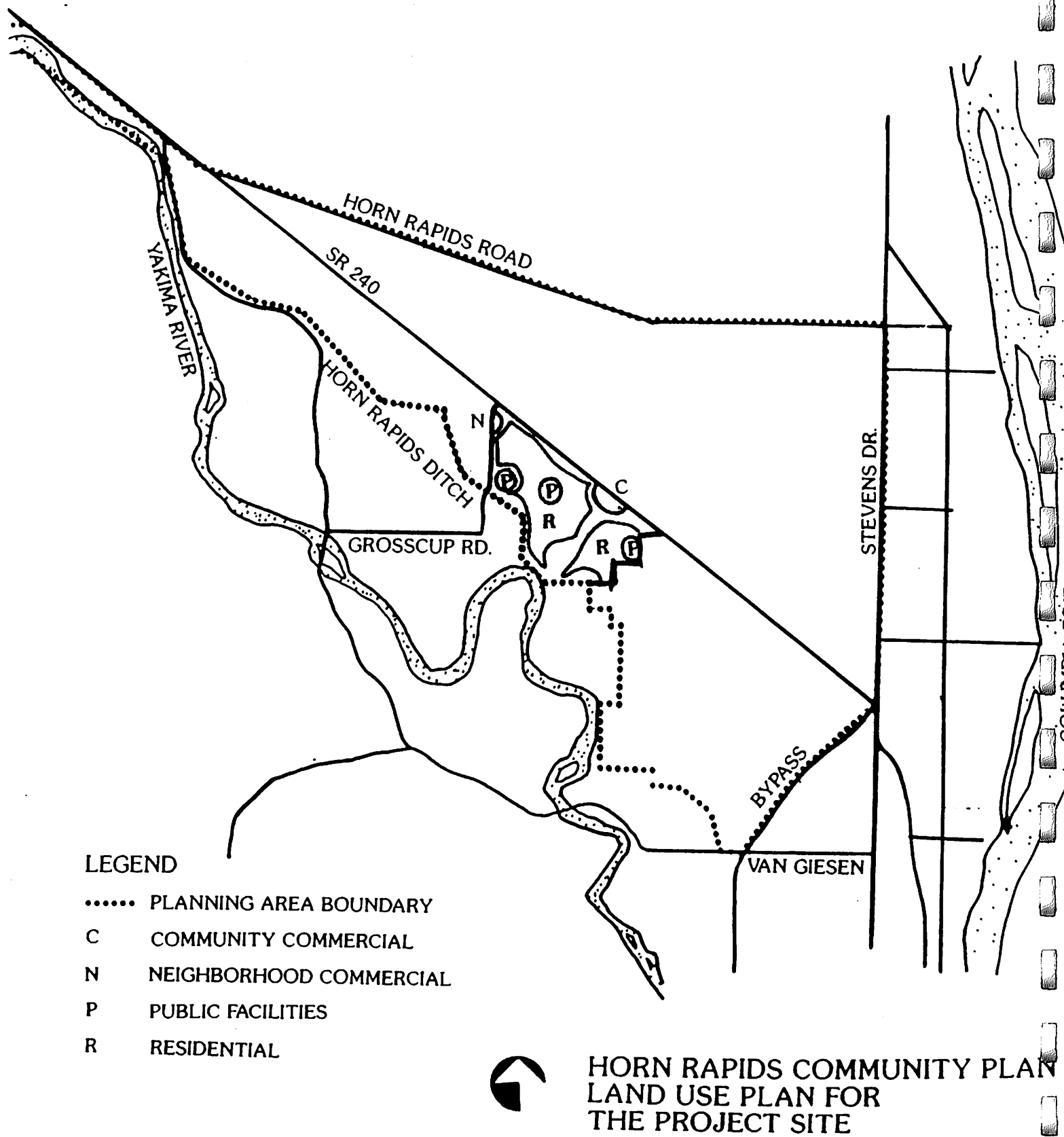


Figure 6

*Shoreline Master
Program*

zoning code (RMC 23.14). The purpose of the district is to permit essentially open lands use such as grazing lands or pasture, agriculture, and development of part-time small tract farming and other compatible uses such as cemeteries, parks, and recreational or similar uses. Permitted uses include agriculture, single family dwellings, golf courses, cemeteries, parks, playgrounds, wildlife refuges, structures related to public utilities, carnival tents, and manufactured homes of a temporary nature.

The City of Richland's Shoreline Master Program designates this portion of the shoreline as Conservancy. This designation applies to the 1,700 lineal feet of escarpment directly adjacent to the Yakima River. According to the Shoreline Master Program and RMC 26.09, the Conservancy environment ". . . seeks to satisfy some of the needs of the community relative to the present and future location of recreation areas serving existing and proposed population concentrations and to provide a continuous flow of recreational uses and benefits without substantial adverse modification of the shoreline character. Recognized uses in the Conservancy Environment are those which are generally non-consumptive of the physical and geological resources of the land water areas.

Development policies for the Conservancy Environment include the following:

1. *Give consideration to the maintenance of natural, cultural, aesthetic, historic, archaeological and recreational resources over other development activities.*
2. *Allow only those uses which can utilize the physical and biological resources of the area on a sustained yield basis while minimally reducing opportunities for other future uses of the resources of the area.*
3. *Encourage activities and uses of a non-permanent nature which do not substantially degrade the existing character of a Conservancy Environment.*
4. *Restrict new developments to those which are compatible with the natural and biological limitations of the land and water and which will not substantially alter the character of the Conservancy Environment.*
5. *Encourage streamway rehabilitation projects which will restore or enhance the natural streamway character.*
6. *Encourage publicly owned use area and/or commercially oriented recreational uses to provide appropriate public access to the shoreline without impinging upon the rights of the private property owner.*

7. *Prohibit commercial or industrial uses which do not enhance the purposes of the Conservancy Environment.*
8. *Require that new developments be designed to preclude the need for structural flood control protection.*

The specific use regulations for the Conservancy Environment (RMC 26.21) prohibit residential and commercial development. Passive recreation activities are permitted, while active recreation uses are permitted only with a Special Use Permit. Shoreline protection is also permitted only with a Special Use Permit.

Sensitive Areas

No portions of the Horn Rapids Master Planned Community site are currently designated as environmentally sensitive. The City of Richland is currently in the process of developing its Interim Regulations for Critical Areas and Resource Lands pursuant to the Growth Management Act. Critical Area maps and regulations have not been adopted.

SIGNIFICANT IMPACTS

Development of the proposed Horn Rapids Master Planned Community will result in the conversion of approximately 835 acres of undeveloped land to residential, commercial, and institutional uses over a twenty-year period. The community will contain approximately 3,050 residential units with an estimated resident population of 7,500 people.

Residential	190 acres
High Density Residential	260 acres
Golf Course	170 acres
Parks and Greenbelts	50 acres
Park/School	47 acres
Village Center Retail/Commercial	14 acres

Implementation of the Master Plan for the project will require reclassification of approximately 561 acres of land currently zoned for agricultural uses, to residential, commercial, and public use zones in the following categories:

AG to R-1M (Single Family Residential - Medium Density)
 AG to R-2 (High Density Residential)
 AG to R-3 (Multiple-Family Residential)
 AG to C-LB (Limited Business District)
 AG to C-1 (Neighborhood Retail)
 AG to PR (Public Reserve District)

The first phase of the development will begin construction in the summer of 1993. The first phase will contain 250 residences in the following housing types:

Townhouses	50 Units
Single Family Homes Clustered in Villages	50 Units
High Density Single Family Homes	125 Units
Medium Density Single Family Homes	25 Units

The following table summarizes the estimated timing and projected uses in remaining project phases.

Phase	Estimated Timing	Projected Uses
1	1993-1995	Residential, Golf Course
2	1995-1998	Residential, Recreation
3	1998-2002	Residential, Recreation
4	2003-2004	Residential, Recreation
5	2004-2006	Residential, Recreation
6	2007-2011	Residential, Recreation
7	2011-2012	Residential, Recreation
8	2013	Residential, Recreation
9	Based on market	Commercial and Retail

MITIGATION MEASURES

The proposed Horn Rapids Master Planned Community is designed to be consistent with all applicable adopted land use plans and policies of the City of Richland. Those plans and policies are discussed below.

Shoreline Management

In response to the policies and regulations contained in the City of Richland's Shoreline Master Program, no residential or commercial uses, including residential lots, associated with the Horn Rapids Master Planned Community will be located within designated Conservancy Environment. Uses within the 200-foot Conservancy Environment will be limited to passive recreation in the form of trails and river access or view point parks. The extent of continued equestrian use of the shoreline trail (an active recreation use) has not been determined.

Land Use Plans and Policies

The proposed Horn Rapids Master Planned Community is consistent with policies and designations in both the 1981 Horn Rapids Community Plan and the 1988 City of Richland Comprehensive Plan. It is also intended to comply with the terms and conditions of the "Horn Rapids Development and Option Agreement" between CTV and the City of Richland. The agreement sets forth the process and requirements under which CTV will prepare and implement the master plan for this City-owned property in the Horn Rapids Triangle.

POPULATION AND HOUSING

AFFECTED ENVIRONMENT

TABLE 4 contains the populations for Benton and Franklin Counties for the years 1980, 1985, and 1990, projections for the years 1995 and 2000.. The population of the two counties increased dramatically in 1990 and again in 1991, after rebounding from declines in 1988 and early 1989. Bi-county population is estimated to have increased by approximately 3,000 between April 1, 1990 and April 1, 1991, with an additional increase of 3,000 through April of 1992.

The Tri-Cities area of Richland, Kennewick, and Pasco accounts for more than 60 percent of the total population within the region. Approximately 26 percent of people in Benton County, and approximately 41 percent of people in Franklin County reside in unincorporated areas.

By 2000, the Bi-county area population is projected to increase from its 1990 level of 150,030 to 166,575, an increase of 11 percent. Factors contributing to this anticipated growth are related directly to projected increases in employment in non-agricultural jobs in the region, primarily at the Hanford Reservation. The Washington state Employment Security Department projects a minimum of 6,400 new non-agricultural jobs over the next few years. Projections by local employers such as Westinghouse, GTE and Battelle are for even higher rates of growth.

Housing

In 1988, approximately 4,600 housing units were vacant in the Tri-Cities region. Average single family home prices had declined from a peak of \$73,100 in 1981 to \$58,800. Since the second quarter of 1988, the local real estate market has experienced a significant turnaround. Through June, 1990 the average price of a single family home increased at about 1 percent per month to \$65,000. There was a 50 percent increase in the number of single family units sold per month and a significant decline in the number of new units available for sale. Rental housing also became increasingly scarce.

By April, 1991 the average sales price for single family homes had increased to \$75,200. In the same year, 461 new units were constructed. By contrast, development of new multifamily units had virtually ceased.

Based on projected population growth, there will be a demand for approximately 1,000 new housing units each year over the next decade. Of those, approximately 700 will single family units, and the remainder will be multifamily units. There will also be a demand for affordable housing, priced from \$80,000 to \$120,000.

TABLE 4

Existing and Projected Population

Region	1980	1985	1989	1990	1995	2000
Benton County						
Richland	33,578	30,508	29,970	32,320		
Kennewick	34,397	36,990	36,880	42,160		
Other	41,469	37,702	37,250	38,080		
Total County	109,444	105,200	104,100	112,560	114,972	123,358
Franklin County						
Pasco	18,425	18,700	17,560	20,340		
Other	16,602	17,000	16,640	17,130		
Total County	35,027	35,700	34,200	37,470	40,503	43,317
TOTAL	114,459	140,900	138,300	150,030	155,475	166,675

Source: Columbia Triangle Venture, "Horn Rapids Market Summary", January 25, 1992.

SIGNIFICANT IMPACTS

Development of the proposed Horn Rapids Master Planned Community will result in the conversion of approximately 835 acres of undeveloped land to residential and other uses over a twenty-year period. The community will contain approximately 3,050 residential units with an estimated resident population of 7,500 people.

Employment

TABLE 5 contains estimated employment for the planned commercial, office and school facilities in the project. Based on the extent of these planned uses, an estimated 581 people will be employed within the Master Planned Community at buildout.

MITIGATION MEASURES

The Horn Rapids Community Plan calls for the City of Richland to provide for and encourage a maximum choice of living environments and a variety of residential densities to meet the housing needs of people of all economic levels. The Horn Rapids Master Planned Community strives to achieve those goals by providing approximately 3,050 housing units of varying types, densities, and prices. Based on current plans and market analyses, the project contains a mix of housing types and prices to offer the public a full range of housing alternatives. Those housing types are summarized in TABLE 6.

The actual number and mix of housing units built over the projected 20-year buildout period for the community will vary from the numbers in TABLE 6 based on actual housing demand and other market factors in the Richland area. However, it will continue to be a goal of the Master Planned Community to offer a variety of housing types throughout the community and to create neighborhoods of varying sizes and identities.

To meet the housing needs of people of varying income levels, a wide range of prices will be offered. In addition, Columbia Triangle Ventures (CTV) is working with the Affordable Housing Council to assure that the Master Planned Community helps meet local and regional goals for affordable housing. TABLE 7 summarizes the price ranges for by housing type. The prices are based on 1993 housing prices and will change based on market demand and cost factors.

The first phase of the Master Planned Community will begin construction in the summer of 1993. A total of 200 housing units will be constructed and contain the following approximate mix of housing types:

Townhouses	50 Units
Single Family Homes Clustered in Villages	50 Units
High Density Single Family Homes	125 Units
Medium Density Single Family Homes	25 Units

TABLE 5
Estimated Employment

Land Use	Acres	Square Feet	Jobs/ 1000 Sq. Ft.	Jobs/Acre	Estimated Employees
Commercial		83,000	2/1000		166
Office		105,000	3/1000		315
Schools	30			3.3	100
				TOTAL	581

TABLE 6
Summary of Housing Types

Housing Type	Number of Dwelling Units
Apartments	490
Condominiums	250
Townhouses, Duplex & Triplex	450
Single Family Cluster in Villages	510
Small Lot Single Family Cottages	650
High Density Single Family Homes	250
Medium Density Single Family Homes	450
TOTAL	3,050

TABLE 7

Estimated Housing Price Ranges

Housing Type	Estimated Price Range
Apartments	\$450 - \$1,000/mo
Condominiums	\$69,000 - \$85,000
Townhouses, Duplex & Triplex	\$75,000 - \$100,000
Single Family Cluster in Villages	\$85,000 - \$105,000
Small Lot Single Family Cottages	\$99,000 - \$120,000
High Density Single Family Homes	\$110,000 - \$140,000
Medium Density Single Family Homes	\$130,000 - \$250,000

AESTHETICS

AFFECTED ENVIRONMENT

The project site is rolling shrub steppe comprised of wind formed ridges, shallow washes, and ditches. Several sand-filled depressions are scattered throughout the site, a result of the effects of wind and water erosion. The Yakima River and floodplain, together with the adjoining shoreline bluffs or escarpments are dominant physical features that border the project site. There are no buildings or other structures on the site.

SIGNIFICANT IMPACTS

The maximum height of buildings in the Horn Rapids Master Planned Community will most likely not exceed two stories. Final building heights and configurations will be determined prior to submittal of bid documents for Phase 1 development.

Existing views over the site from State Route 240, and from within the site, will be altered to the extent that the landscape will gradually change over the twenty-year buildout period from undeveloped shrub-steppe habitat to clusters of one and two-story residences surrounding fairways of the proposed golf course.

MITIGATION MEASURES

The proposed Horn Rapids Master Planned Community will contain over 267 acres of active and passive recreation and open space areas. This constitutes approximately 32 percent of the total project site. Parks and open space will include the golf course, two large community parks, and numerous neighborhood parks throughout the community. It will also include a network of greenbelts to provide visual buffers separating residential areas from one another. This network of parks, greenbelts, and other open space will help to offset the visual impact of the Master Planned Community on the currently undeveloped shrub-steppe habitat which now dominates the site.

LIGHT AND GLARE

AFFECTED ENVIRONMENT

There are currently no existing sources of light or glare on the project site. There are no off-site sources of light or glare which are expected to affect the Horn Rapids Master Planned Community.

SIGNIFICANT IMPACTS

The Horn Rapids Master Planned Community site will gradually become a source of reflected glare from windows in the mornings and evenings. However, the glare will be at a distance and location that will pose a hazard.

Lights on houses, schools, commercial buildings, and offices will be visible at night from the surrounding areas. This represents a

significant change from the existing undeveloped conditions on the site.

Automobile headlights on this portion of State Route 240 will increase at night. The most significant increase will be during peak travel times in the early morning (1,584 AM Peak Hour Departures) and early evening (2,124 PM Peak Hour Arrivals), particularly during the winter months.

MITIGATION MEASURES

The Horn Rapids Master Planned Community will comply with all applicable regulations governing lighting, particularly Chapter 21.28 of the Richland Municipal Code (Outdoor Light Fixtures). Because of this compliance, light or glare from the project is not expected to result in any safety hazard.

RECREATION

AFFECTED ENVIRONMENT

There are few developed parks or recreation areas in the vicinity of the Horn Rapids Master Planned Community site. The Horn Rapids Off-Road Vehicle (ORV) Park is located directly across SR-240 from the site to the northwest.

The project site and surrounding area are used for a variety of other recreational activities. The shoreline bluff overlooking the Yakima River and floodplain is used as an equestrian trail. The trail generally runs along the bluff adjacent to the Horn Rapids Ditch. Other informal recreational activities on or near the site include off-road vehicle use, rifle and pistol shooting, and fishing.

The undeveloped Horn Rapids County Park is located at the northwestern tip of the Horn Rapids Triangle, between SR-240 and the Yakima River. The Horn Rapids Community Plan proposes that this site eventually be annexed to the City and developed as a Community Park in order to provide an attractive entrance to the City.

Throughout the Richland area, the City of Richland provides outdoor recreational opportunities through the development and management of community and neighborhood parks. Various types of playfield and playground activities are available. In addition, the City operates its outdoor municipal pool, located in the Richland Core Area, during the summer months. The Richland School District also provides indoor and outdoor recreation facilities for its students. These facilities are also utilized by the citizens of Richland. Other popular recreational activities in the region include hang gliding, sailing, water skiing, flying, parachuting, bicycling, boating, and sightseeing.

The Horn Rapids Community Plan proposes several park sites and numerous trails for the master planned community site. It generally

identifies three community park sites, two of which are associated with schools. In addition, it proposes two neighborhood park sites. Numerous trails are proposed on the site, including the bluff overlooking the Yakima River and adjacent to the Horn Rapids Ditch.

SIGNIFICANT IMPACTS

Population growth resulting from development of the Horn Rapids Master Planned Community will increase the demand for new park and recreational facilities. Use of existing nearby county or city park facilities would also increase, including the need for maintenance of those facilities.

Because there are no developed recreation facilities or uses on the project site, any displacement which occurs will affect only those recreation uses which have occurred informally on the site. Those include equestrian use, off-road vehicle use, rifle and pistol shooting, and fishing.

MITIGATION MEASURES

Recreational opportunities and open space are abundant in the Horn Rapids Master Planned Community. Over 267 acres, or approximately 32 percent of the total project, is currently proposed for active and passive recreational uses. (The actual acreages and percentages will vary as the community is built out over the next 20 years.)

The most apparent recreational feature will be the 18-hole golf course and clubhouse, now under construction. The golf course and clubhouse are a separate project, addressed in the Horn Rapids Golf Course Project Final Environmental Impact Statement (City of Richland, May, 1991).

Parks

Two large joint-use public park and school sites will provide opportunities for a variety of active recreation in the community. The first site is approximately 17 acres in size and is prominently located to the south of the main entrance, near the future Kingston Road extension. It is proposed to be a combined neighborhood playground and elementary school. As shown in FIGURE 2, the site could accommodate a soccer field, three youth baseball or softball fields, an adult baseball or softball field, four outdoor tennis courts, the elementary school playground, and off-street parking.

A much larger joint-use community playfield and elementary school site is located adjacent to SR 240 near Grosscup Road. The site is approximately 30 acres in size and provides convenient access for neighbors and people living outside the Horn Rapids area. As shown in FIGURE 2, this large playfield and school site could accommodate four soccer fields, two adult baseball or softball fields, a youth baseball or softball field, eight outdoor tennis courts, the elementary school playground, and two off-street parking areas. The City of Richland will determine the actual number, type, and

location of recreational facilities on the site prior to park development.

Numerous smaller neighborhood parks have been placed throughout the community to serve a variety of both active and passive recreation needs. Ranging in size from 1/4 acre to over 2 acres, these parks will provide essential outdoor space for adults and children. Some of the smaller parks may be developed as "tot lots", while others will provide passive views and vistas. The larger parks may provide space for informal activities, neighborhood functions, or family gatherings. Potential locations include street ends with views, promontories above the Yakima River, and sites located conveniently to individual neighborhoods.

Trails and Greenbelts

A network of greenbelts will add an important passive element to the community's recreation and open space system. A network of greenbelts provide visual buffers separating residential areas from one another. Pathways within the greenbelts provide the linkages among neighborhoods and between neighborhoods and community activity centers such as parks and schools.

The greenbelt pathways also form an integral part of the overall trail system in the community. The system can accommodate joggers, pedestrians, or bicyclists along numerous routes throughout the community. Some trails will meander through passive recreation areas such as greenbelts. Others will follow more active connectors such as interior roadways. At SR 240, Grosscup Road, and the Kingston Road extension the trail system will eventually tie in to the regional trail system called for in the Horn Rapids Triangle Community Plan.

HISTORIC AND CULTURAL PRESERVATION

AFFECTED ENVIRONMENT

No landmarks or evidence of historic, archaeological, scientific, or cultural importance are known to exist on the project site. The Richland area, particularly riverine and associated upland areas, is generally considered to be rich in sites of potential archaeological importance. Artifacts and fossils have been previously uncovered, generally during excavation associated with new development. In addition, extensive archaeological surveys have been conducted on the Hanford Reservation.

The Yakima and Columbia Rivers in the vicinity of the Horn Rapids Triangle have been used by the Indians of the region for salmon fishing, both prior and subsequent to the coming of white explorers and settlers to the area. Today, descendants of these native Indians still build wooden platforms at Horn Rapids Dam and spear salmon in much the same manner as their ancestors.

The Waniwasha Indian Cemetery overlooks the Yakima River about three quarters of a mile north of the SR 224/West Richland Bridge

(south of the project site). The cemetery was acquired for preservation by the Confederate Tribes and Bands of the Yakima Indian Nation.

There are no places or objects on or next to the Horn Rapids Master Planned Community site which are known to be on, or eligible for, a local, state, or national register of historic places.

SIGNIFICANT IMPACTS

Construction activities on the project site could result in the destruction of historic resources or sites not yet identified.

MITIGATION MEASURES

Because there are no known places or objects on, or known to be eligible for, a local, state, or national register of historic places, nor landmarks or evidence of historic, archaeological, scientific, or cultural importance known to be on or next to the project site, no mitigation measures are required. However, if cultural resources are encountered during project construction, work will be halted in the immediate vicinity and the Washington State Office of Archaeology and Historic Preservation notified.

TRANSPORTATION

AFFECTED

Existing highways and streets which serve the Horn Rapids Master Planned Community are shown in FIGURE 1. SR 240 is a minor arterial highway route between Richland and Vantage with Partial Access Control. The intersection of SR 240 with SR 240 Bypass Highway is currently signalized and is primarily impacted during the morning and evening shift changes at the U.S. Department of Energy Hanford Reservation, to the north of the intersection.

Grosscup road is a local access road from SR 240 to West Richland. It also provides access to the Richland municipal landfill and the Horn Rapids ORV Park, both north of the SR 240/Grosscup Road intersection.

As currently proposed, all access to and from the project site will be directly onto SR 240 or Grosscup Road. The City of Richland's Comprehensive Growth Plan currently shows a future extension of Kingston Road north from Van Giesen Street (SR 224), through the project site, intersecting with SR 240 and continuing north to Horn Rapids Road. The Kingston Road extension is not funded and currently has no schedule for construction. If Kingston Road is extended to provide alternate access to the site, it could significantly change the traffic distribution patterns generated by the project.

The Horn Rapids Master Planned Community site is currently not served by public transit. The nearest transit stop is between 1.5 and 2 miles to the east

SIGNIFICANT IMPACTS

Development of the Horn Rapids Master Planned Community will have impacts on traffic and transportation in two primary areas: parking and vehicle trips. Impacts in these two areas are discussed in the following sections.

Parking

TABLE 8 contains estimates for off-street parking requirements based on the Horn Rapids Master Planned Community as currently proposed. The estimates are based on the standards contained in RMC Title 23, Chapter 23.74, Section 100 - Parking Standards and Requirements. Parking estimates are subject to change based on market conditions and the ultimate configuration of project uses at the end of the projected 10-year buildout.

Vehicle Trips

Design years 1994, 1999, and 2008 were selected as the analysis periods which represent traffic impacts in the first year, fifth year, and fifteenth year (full buildout). TABLE 9 summarizes the trip generation volumes for each of these three years, and the total estimated trips for the project.

The Horn Rapids Master Planned Community is expected to generate significant increases in traffic volume on adjacent roadways at full project development. Total ADT generated from the project is estimated to be 32,513 trips. This does not include an additional 645 ADT generated by the golf course (a separate project). Annual rates of traffic growth are estimated to be 1.5% on SR 240 adjacent to the project, and 3.0% on the SR 240 Bypass Highway.

MITIGATION MEASURES

A transportation impact study was conducted for the Horn Rapids Master Planned Community by J-U-B Engineers, Inc. and is contained in APPENDIX 3. The impact study identified the following required improvements assuming full buildout of the project:

SR 240/SR 240 Bypass Intersection

The primary impact to this intersection will be AM peak hour eastbound left turns and PM peak northbound left turns. By 1999, it is anticipated that additional left turn lane storage will be required on eastbound SR 240. Double left turn lane movements may be required on the eastbound SR 240 and the northbound Bypass Highway by the years 2001 and 2005, respectively.

Project Entrance No. 1/SR 240 Intersection

Project Entrance 1 will serve as the main entrance to the commercial uses at the east end of the project site. This entrance is not planned until late in the project's development. At full development a signal, along with center left turn lane, right turn deceleration lane, and acceleration lane are recommended on SR 240.

TABLE 8
Estimated Off-Street Parking Requirements

Proposed Use	Standard (RMC 23.74.100)	Proposed Size/Area	Required Spaces
Single Family	2 Spaces/Dwelling Unit	1,860 Units	3,720
Multifamily	1.5 Spaces/Dwelling Unit	1,190 Units	1,785
Elementary Schools	2 Spaces/Classroom	2 at 20 Rooms	80
Day Care	2 Spaces/Staff	2 w/ 20 Staff Each	40
Parks	1 Space/2000 Square Feet	31 Acres	675
Winery	1 Space/400 Square Feet	19,000 Square Feet	48
Hotel	1 Space/Room	80 Rooms	80
Restaurant	1 Space/100 Square Feet	9,000 Square Feet	90
Retail	1 Space/300 Square Feet	34,000 Square Feet	113
Office	1 Space/250 Square Feet	105,000 Square Feet	420
Bank	1 Space/250 SF less 3/drive-thru	9,000 SF w/2 drive-thru	30
Church	1 Space/4 Seats	200 Seats	50
TOTAL			7,131

(Source: Richland Municipal Code, Title 23, Chapter 23.74, Section 23.74.090 - 100)

TABLE 9
Estimated Trip Generation Volumes

Proposed Use	Number of Units	Area (GFA/Acres)	Average Daily Trips
Project Year 1994			
Single Family	200		1,954
Project Year 1999			
Single Family	800		7,006
Multifamily	200		1,256
Project Year 2008			
Single Family	1,182		10,037
Multifamily	640		3,624
Elementary Schools		38,000	449
Day Care		12,000	951
Parks		31 Acres	174
Winery		19,000	61
Hotel	80		645
Restaurant		9,000	1,848
Retail		34,000	1,325
Office		105,000	1,456
Bank		9,000	1,662
Church		7,000	65
		TOTAL	32,513

(Source: J-U-B Engineers, Inc., Draft Report, Horn Rapids Development, Transportation Impact Study, March, 1993)

Project Entrance No. 2/SR 240 Intersection

Project Entrance 2 will be constructed in 1993 and will serve as the main project entrance. This entrance will be designed and located in accordance with the City of Richland's conceptual plans for the extension of Kingston Road.

In 1994, a center left turn lane, right turn deceleration pocket, and acceleration lane will be required. In 1999, a full right turn deceleration lane will be required, and the center left turn storage will require extension. A signal will probably be required sometime between 1999 and 2008.

Project Entrance No. 3/SR 240 Intersection

Project Entrance 3 will be the second entrance constructed and will be required after approximately 600 units of housing are constructed. A center left turn lane, right turn deceleration lane, and acceleration lane will be required on SR 240. Based on anticipated LOS, a signal will probably be required sometime between 1999 and 2008.

Project Entrance No. 4/SR 240 Intersection

Project Entrance 4 will be a secondary entrance to serve the west end of the development and a proposed elementary school. A center left turn lane, right turn deceleration lane, and acceleration lane will be required on SR 240. This intersection will be monitored closely at full development for the need for signalization.

Grosscup Road/SR 240 Intersection

The transportation impact study projected that, by 2008, northbound Grosscup Road will be at LOS B and southbound Grosscup Road will be at LOS D. Therefore, no improvements are recommended at this intersection.

SR 240 Bypass Highway to Project Entrance No. 3

At full development, the Horn Rapids Master Planned Community will generate over 24,000 Average Daily Trips (ADT) on SR 240. The traffic analysis assumed that the character of the highway would change from rural to suburban after approximately 1,200 housing units, corresponding to approximately 16,000 ADT. After 16,000 ADT, the portion of SR 240 from the SR 240 Bypass Highway to Project Entrance 3 will probably require widening to four lanes with left turn lanes at intersections in order to maintain LOS D.

Internal Project Roads

Internal roads in the Horn Rapids Master Planned Community will function well as two (2) lane facilities with left turn lanes at major intersections in the residential areas. Four (4) lanes with left turn lanes are recommended in commercial areas. Separate left and right turn lanes will be required at all project entrance intersections with SR 240. Sufficient future right-of-way should be reserved at each entrance to accommodate the potential extension of roads across SR 240.

FIRE PROTECTION

AFFECTED ENVIRONMENT

Fire protection will be provided to the Horn Rapids Master Planned Community by the Richland Fire Department. The department currently has 52.5 total personnel, of which 45 are line personnel and 7.5 are support and administrative staff. The department is currently negotiating with WPPSS to provide fire protection services to Plant No. 2 on the Hanford Reservation. If negotiations are successful, the department would add 6 new firefighters and one (1) reserve 1,500 gpm pumper. In addition, the department expects to add one new administrative staff in July, 1993.

The current rating by the Washington Survey and Rating Bureau for the Richland Fire Department is Class 3. The department will be evaluated and rated again in May, 1993 at which time it anticipates the rating of Class 3 to be maintained.

The Fire Department currently operates three stations:

Station 71 Station 71 is located at 1000 George Washington Way. Equipment at the station include 1 first line ambulance, 1 reserve ambulance, 1 first line 1,500 gpm pumper, 1 reserve 1,500 gpm pumper, 1 100-foot aerial with 1,500 pumping capacity, and 1 command vehicle. Station 71 also houses all of the department's administrative staff and facilities.

Station 72 Station 72 is located in south Richland at 150 Gage Blvd. Equipment at the station includes 1 first line ambulance, 1 first line 1,500 gpm pumper, 1 brush truck, and 1 hazardous materials response vehicle which serves the tri-county area.

Station 73 Station 73 is located at 1900 Jadwin Avenue, and is the closest fire station to the Horn Rapids Master Planned Community site at approximately 2.5 miles. Equipment at the station includes 1 first line 1,500 gpm pumper, 1 first line ambulance, and 1 pumper tanker. Currently, there are at least 3 staff at the station 24 hours a day. That will increase to 5 staff if service is extended to WPPSS Plant No. 2.

The Fire Department's current average response time to calls is 5 minutes. Over the past 10 years, the ratio of firefighters to 1000 population has remained consistent at approximately 1.5/1000. The ratio of firefighters to 1000 residential dwelling units is 3.5/1000.

SIGNIFICANT IMPACTS

Based on current service ratios, the Fire Department estimates that the 3,050 residential units and approximate population of 7,500 at the Horn Rapids Master Planned Community will require the addition of one new station somewhere in the Horn Rapids area. The new station will require 9 to 12 staff, including 3 officers, and the following equipment: 1 first line 1,500 gpm pumper, 1 first line ambulance, and 1 brush truck. The department was not able to estimate the point during the project development process at which the new station would need to be constructed.

MITIGATION MEASURES

The Comprehensive Plan and Horn Rapids Community Plan direct the majority of future growth in Richland to areas capable of providing appropriate levels of service. In addition, tax revenues generated by future development in the Horn Rapids Triangle will be available to finance additional fire protection staff and equipment.

POLICE PROTECTION

AFFECTED ENVIRONMENT

Police protection will be provided to the Horn Rapids Master Planned Community by the Richland Police Department. The department currently has 50.5 total personnel, of which 44 are officers.

The department's main office is at 505 Swift Blvd. in Richland, approximately 2 miles from the project site. An additional precinct station is located in south Richland near Middle Springs.

The Police Department has no current plans for expansion of facilities or staff. A request for 2 additional officers in the 1993 budget was not approved. The department plans to request 2 additional officers in the 1994 budget.

The current ratio of officers to 1000 population is 1.31/1000, compared to the statewide average of 1.6/1000. The department considers the current ratio to be a minimum, but acceptable given the City's relatively low crime rate.

SIGNIFICANT IMPACTS

Based on current service ratios, the Police Department estimates that the Horn Rapids Master Planned Community, at buildout, will require an additional ten (10) officers. A new police district would have to be created when the project is approximately one-third developed. The new district would require five (5) new officers at that time. New facilities would include an office space which,

according to the department, could be co-located with a new fire station in the area.

MITIGATION MEASURES

The Comprehensive Plan and Horn Rapids Community Plan direct the majority of future growth in Richland to areas capable of providing appropriate levels of service. In addition, tax revenues generated by future development in the Horn Rapids Triangle will be available to finance additional police protection staff and equipment.

SCHOOLS

AFFECTED ENVIRONMENT

The project site is located within, and will be served by, Richland School District 400. There are currently no school facilities within the Horn Rapids Triangle area.

SIGNIFICANT IMPACTS

Based on 1990 Census data, there are .4567 K-12 students per household within the school district. Applying this factor to the 3,050 residential units proposed for the Horn Rapids Master Planned Community yields a projected public school enrollment of 1,393 students. Using school district data for elementary, middle, and high school, projected enrollments for the planned community are contained in TABLE 10.

MITIGATION MEASURES

The master plan for the proposed Horn Rapids Master Planned Community designates two sites for public schools. The first site, located on the east side of the community, is 19 acres in size and will contain an elementary school and neighborhood park. The second site, located on the west side of the community, is 30 acres in size and will contain an elementary school along with a neighborhood park.

ELECTRICITY

AFFECTED ENVIRONMENT

Electrical power for the Horn Rapids Master Planned Community will be provided by the City of Richland, which operates its own municipal system and purchases electrical power from the Bonneville Power Administration. Substations are located at the Horn Rapids Business Park to the east of the site, where 8 megavolt amperes and a 2-substation connector are available. A second substation is located north of the City's sanitary landfill and adjacent to Horn Rapids Road. Additional power and substation capacity can be obtained from an existing 115 kilovolt transmission line which serves the area. Distribution facilities include overhead and underground lines operated at 12,470 and 7,200 volts.

TABLE 10
Projected School Enrollment

Type of School	% of Total Enrollment	Estimated Project Enrollment
Elementary School	50	697
Middle School	23	320
High School	27	376
TOTAL	100	1,393

Source: Richland School District

SIGNIFICANT IMPACTS

The Horn Rapids Master Planned Community will require electrical power to be provided by the City of Richland. Power will be extended from the Horn Rapids Business Park to the east of the site, where 8 megavolt amperes and a 2-substation connector are available. Another existing substation is located north of the sanitary landfill and adjacent to Horn Rapids Road. Additional power and substation capacity can be obtained from an existing 115 kilovolt transmission line which serves the area.

The 1981 Horn Rapids Triangle Master Utility Plan estimated the electrical load demand for buildout of all land uses proposed by the Horn Rapids Community Plan. The Master Utility Plan estimated an ultimate electrical demand of 515,338 kilowatts for the Horn Rapids Community Plan area at buildout.

The Master Utility Plan also contained standards for electrical demand ("load densities") by land use. Those standards allow an estimate of electrical demand for the Horn Rapids Master Planned Community. The estimates of electrical demand are contained in TABLE 11.

Based on the electrical demand standards contained in the Master Utility Plan and the proposed uses in the Horn Rapids Master Planned Community, the completed project will result in an estimated electrical demand of 44,013 kilowatts.

MITIGATION MEASURES

The Horn Rapids Triangle Master Utility Plan estimated the electrical load demand for buildout of all land uses proposed by the Horn Rapids Community Plan. The Master Utility Plan estimated an ultimate electrical demand of 515,338 kilowatts for the Horn Rapids Community Plan area at buildout. Electrical substations are located at the Horn Rapids Business Park and north of the City's sanitary landfill. Additional power and substation capacity can be obtained from an existing 115 kilovolt transmission line which serves the area.

WATER

AFFECTED ENVIRONMENT

Domestic water supply is provided by the City of Richland. The City's current supply capacity includes 49,200,000 gallons per day (49.2 MGD) pumped, and 24,430,000 (24.4 MGD) from storage. A 30-inch main is available at the Horn Rapids Business Park. Capacity is 3.7 MGD at 50 PSI. Fire flow capacity is 4,000 gallons per minute (gpm).

Irrigation

Water used for irrigation by residences and other uses within the planned community will be provided separately from water used for domestic purposes. The source of irrigation water will be a portion of the City of Richland's existing approved surface water right for

TABLE 11
Estimated Electrical Demand

Customer Class	Demand Standard	Units/Area in Project	Electrical Demand (KW)
Single Family	15 KW/Unit	1,860 Units	27,900
Multifamily	7.5 KW/Unit	1,190 Units	8,925
Elementary Schools	25 KW/Acre	30 Acres	750
Commercial/Office	87 KW/Acre	74 Acres	6,438
TOTAL			44,013

(Source: City of Richland Horn Rapids Triangle Master Utility Plan, July, 1981)

withdrawal of water from the Columbia River. The surface water right (No. S4-29941) was approved in September, 1989 by the Department of Ecology. The quantity of withdrawal in the approved water right is 20,196 gallons per minute (GPM). The portion of that withdrawal proposed for irrigation in the planned community is 5,000 GPM. A portion of that allocation will also be used for irrigation of the Horn Rapids Golf Course.

SIGNIFICANT IMPACTS

TABLE 12 contains estimated demand for domestic water in the completed Horn Rapids Master Planned Community. Estimates are based on water usage criteria for three basic classes of land use in the proposed project: residential (250 GPD/Unit), commercial/office (500 GPD/Acre), and schools (20 GPD/Student).

The largest portion of the demand for domestic water in the Horn Rapids Master Planned Community will result from the planned 3,050 residential units. Assuming average use of 250 gpd for each residential unit, residential development in the project at buildout will result in an average daily demand of .76 MGD. Commercial and office development will result in an additional demand of .04 MGD. Based on the projected enrollment of the schools planned for the project, estimated average daily demand for all schools is .02 MGD. Therefore, the total average daily demand for domestic water for the project at buildout is an estimated .82 MGD.

Providing the project with domestic water will require extension of the existing 30-inch water line that currently serves the Horn Rapids Business Park. The line was designed and constructed to extended westward along SR 240 to serve future development. On-site water improvements will be constructed concurrent with development phases.

MITIGATION MEASURES

The Horn Rapids Triangle Master Utility Plan estimated the demand for water at buildout of all land uses proposed by the Horn Rapids Community Plan. The Master Utility Plan estimated an ultimate demand of 56.6 MGD for the Horn Rapids Community Plan area at buildout. The City's current supply capacity includes 49.2 MGD pumped, and 24.4 MGD from storage. A 30-inch main is available at the Horn Rapids Business Park. Capacity is 3.7 MGD at 50 PSI. Fire flow capacity is 4,000 gallons per minute (gpm).

WASTEWATER

AFFECTED ENVIRONMENT

Wastewater collection and treatment are provided by the City of Richland. The City recently constructed a new secondary treatment plant. The treatment plant currently has an average demand of 8.9 million gallons per day (MGD), and peak demand of 12.3 MGD. The plant is designed to serve a population of 68,500 (compared to

TABLE 12
Estimated Water Demand

Use	Size	GPD/Unit	GPD/Acre	GPD/ Student	Average Daily Demand (MGD)
Residential	3,050 Units	250			.76
Schools	1,017 Students			20	.02
Commercial/Office	74 Acres		500		.04
TOTAL					.82

(Sources: City of Richland Horn Rapids Triangle Master Utility Plan, July, 1981; City of Dupont, Comprehensive Land Use Plan FEIS, Appendix f, Water Supply Plan, Entranco Engineers, January, 1985)

the 1990 population of 32,320) and is considered adequate to serve Richland through the year 2000. A 12-inch main currently extends to the Horn Rapids Business Park.

SIGNIFICANT IMPACTS

TABLE 13 contains estimated wastewater flows for the completed Horn Rapids Master Planned Community. Estimates are based on wastewater loading criteria for three basic classes of land use in the proposed project: residential (60 GPD/Resident), commercial/office (800 GPD/Acre), and schools (15 GPD/Student). An infiltration-inflow rate of 600 GPD/Acre was added for residential and commercial uses, and 750 GPD/Acre was added for schools. These infiltration-inflow rates are averages for new sewer construction.

Based on the residential flow criteria and a projected population of 7,500, the residential portion of the project will generate an estimated wastewater flow of 720,000 GPD at full buildout. Commercial and office development will generate an additional 103,600. Schools will generate estimated wastewater flows of 37,755 GPD. Therefore, the total estimated wastewater flow resulting from the project at full buildout is 861,355 GPD.

MITIGATION MEASURES

Current plans by the City of Richland call for a new sewer trunk line extension (Horn Rapids Connection) to the project site. Preliminary engineering design calls for a 36-inch line to extend from McMurray Street in the Richland Core Area to the Horn Rapids Business Park and then west along SR 240. An additional 54-inch line, the Lower North Interceptor, is needed to connect the Horn Rapids area via the Horn Rapids Connection with the City's treatment plant. On-site wastewater improvements will be constructed concurrent with development phases.

STORM DRAINAGE

AFFECTED ENVIRONMENT

There are currently no storm drainage facilities on the Horn Rapids Master Planned Community site. The stormwater collection system proposed for the project is designed so that all surface water runoff will be conveyed and stored for recharge to soils and groundwater. No stormwater runoff will be discharged to the Yakima River or other surface water bodies.

SIGNIFICANT IMPACTS

Upon completion of the project, storm water runoff will be generated by impervious surfaces within the project including buildings, streets, and parking areas. The primary cause of major runoff events in this region is significant accumulation of snow during the winter months followed by sudden and warm "Chinook" wind conditions. The "Chinook" winds cause a rapid melting of the snow pack, and accompanying peak flows of runoff. These

TABLE 13
Estimated Wastewater Flows

Use	Acres	Pop	Flow GPD/Res	Flow GPD/Acre	Flow GPD/Stud	Infil/Inflow GPD/Acre	Average Daily Flow (GPD)
Residential	450	7,500	60			600	720,000
Schools	30	1,017			15	750	37,755
Commer/ Office	74			800		600	103,600
TOTAL							861,355

(Sources: City of Richland Horn Rapids Triangle Master Utility Plan, July, 1981; City of Dupont, Comprehensive Land Use Plan FEIS, Appendix F, Wastewater Disposal Plan, Entranco Engineers, January, 1985)

conditions are exacerbated when the ground is frozen, preventing infiltration of runoff.

MITIGATION MEASURES

The stormwater collection system proposed for the project is designed so that all surface water runoff will be conveyed and stored for recharge to soils and groundwater. No stormwater runoff will be discharged to the Yakima River or other surface water bodies. The system will be designed so that areas of recharge will be as close as possible to the point of collection.

Stormwater runoff from impervious surfaces will be conveyed via a biofiltration system consisting of grass-lined swales and retention areas. The swales will be constructed adjacent to the internal street network in the community. Stormwater will be conveyed by the grass-lined swales to the retention areas located in the community and neighborhood parks throughout the development. Additional retention areas will be provided in the Horn Rapids Golf Course, now under development. In areas where there is a potential that the volume of runoff may exceed the storage volume of the retention area under frozen ground conditions, recharge chambers will be installed four (4) feet below ground level to allow recharge to continue.

SOLID WASTE

AFFECTED ENVIRONMENT

Collection and disposal of solid waste is provided by the City of Richland. The City's sanitary landfill is located to the north of the project site adjacent to SR 240 at the Grosscup Road intersection. The landfill was constructed in 1974 and consists of two parcels. The first parcel is 114 acres in size and permitted for use. To the north, a second parcel of 135 acres is future expansion and is not currently permitted.

Within the 114-acre site, 57 acres is active landfill. The remaining 57 acres is used for sludge disposal and disposal of petroleum-contaminated soils. None of the existing landfill is lined. However, a portion of the site is equipped with vadose zone monitoring devices to monitor for potential migration of leachate to groundwater.

Assuming an annual growth rate of 2 percent in the municipal waste stream, the 114-acre parcel has approximately 35 to 40 years of use remaining. The 135-acre parcel has an estimated 50 additional years of capacity. However, the City has indicated that the current growth rate is less than 2 percent due to recycling and other related programs.

SIGNIFICANT IMPACTS

The City of Richland estimates that approximately 25,000 tons of municipal waste is currently disposed in the landfill each year. Based on the City's current population, this means each person in Richland disposes of approximately .7 tons of waste each year. Based on this estimate, residents of the Horn Rapids Master Planned Community could generate approximately 5,250 additional tons of waste per year at full project buildout, or an additional 21 percent of the municipal waste stream. Commercial and office development would augment the waste stream.

The City of Richland is in the process of converting its solid waste collection system to an "automated" process using specialized trucks and containers. This will increase the daily rate of household collection from the current 700 homes/day/truck to 1,500 homes/day/truck. For the Horn Rapids Master Planned Community, this means approximately two additional routes will be required at project buildout. An additional cost to the City will be the approximate 3,050 new solid waste containers for residences in the community.

MITIGATION MEASURES

Assuming an annual growth rate of 2 percent in the municipal waste stream, the 114-acre parcel at the landfill has approximately 35 to 40 years of use remaining. The 135-acre parcel to the north has an estimated 50 additional years of capacity. However, the City has indicated that the current growth rate is less than 2 percent due to recycling and other related programs. Based on this expected capacity, the landfill can easily accommodate the waste disposal needs of the Horn Rapids Master Planned Community at buildout.

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APPENDIX 1

Final Report Task 1: Geotechnical Studies

Horn Rapids Triangle Development
Richland, Washington

Shannon & Wilson, Inc.

April, 1993

***Revised Final Report
Task I Geotechnical Studies
Horn Rapids Triangle Development
Richland, Washington***

APRIL 1993

***Columbia Triangle Ventures
14410 Bel-Red Road, Suite 200
Bellevue, Washington 98007***



SHANNON & WILSON, INC.
GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS

1354 Grandridge Boulevard
Kennewick, Washington 99336 • 1037
509 • 735 • 1280

April 22, 1993

Columbia Triangle Ventures
14410 Bel-Red Road, Suite 200
Bellevue, Washington 98007

Attn: Mr. Mike Miller

**RE: CLARIFICATION OF GEOTECHNICAL RECOMMENDATIONS FOR HORN
RAPIDS TRIANGLE DEVELOPMENT, RICHLAND, WASHINGTON**

In response to our telephone conversation of April 15, 1993, we have reviewed the information contained in our Revised Final Report of the Task 1 Geotechnical Studies for the Horn Rapids Triangle Development dated April 1, 1993. This clarification specifically addresses the slope protection and the building set-back requirement recommendations contained in that report.

The rip-rap or wire gabion slope protection discussed in the "Escarpment Erosion" section of the report was recommended to minimize further erosion of the toe of the escarpment along the Yakima River. At this location, the river bends sharply to the east and then southeast, and has resulted in erosion of the escarpment toe. It is expected that without installation of erosion protection, erosion will continue along the base of the escarpment.

The building set back recommendations presented in the report are based upon the assumption that no erosion protection has been installed. Because of the continued escarpment erosion and the potential for slope failure, the set back recommendations were, of necessity, estimated conservatively.

Over time, as the river erodes the toe of the slope, it can be expected that some loss of the slope will occur both through simple erosion and through slope failure, reducing the set back distance. We are not, however, able to predict the rate at which this loss may occur. The slope failure may be a gradual flattening of the slope or a dramatic event due to an outside occurrence such as flooding of the river or severe slope erosion due to heavy precipitation.

H-1033-01

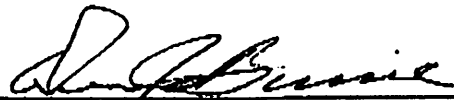
Columbia Triangle Ventures
Attn: Mr. Mike Miller
April 22, 1993
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SHANNON & WILSON, INC.

We hope that this clarification meets your present needs. If you have any further questions, please contact us at your convenience.

Sincerely,

SHANNON & WILSON, INC.



Dee J. Barrie, P.E.
Branch Manager

BJW:DJB:RHG/ejh

H-1033-01

April 1, 1993

Columbia Triangle Ventures
14410 Bel-Red Road
Bellevue, Washington 98007

Attn: Mr. Mike Miller

**RE: REVISED FINAL REPORT OF TASK I GEOTECHNICAL STUDIES FOR THE
HORN RAPIDS TRIANGLE DEVELOPMENT, RICHLAND, WASHINGTON**

We have completed the TASK I geotechnical studies as outline in our proposal of March 2, 1993. This letter summarizes our observations and presents our preliminary design recommendations and recommendations for further exploration.

The original report was presented on March 15, 1993. Subsequent to that time, Columbia Triangle Ventures requested clarification of the section regarding building set-back from the crest of the escarpment along the Yakima River. This report incorporates the modifications discussed with Columbia Triangle Ventures personnel during a meeting on March 24, 1993.

BACKGROUND

Columbia Triangle Ventures has been selected by the City of Richland to develop a residential and mixed use development in the Horn Rapids area west of Richland, Washington. The property includes about 658 acres on a tract bordered on the north by Washington State Route 240, on the west by Grosscup Road, on the east by an abandoned canal, and on the south by the same canal and the Yakima River. This tract includes the approximate southwest half of Section 20, the northeast half of Section 29, and a triangular wedge in the western half of Section 28. All of these sections are located in Township 10 North, Range 28 East, Willamette Meridian (see Figure 1). The proposed development will include a golf course, residential building areas, and some commercial areas. Initial construction will be centered around the golf course.

H-1033-01

SCOPE OF SERVICES

To support the design development and the proposed amendments to the existing Environmental Impact Statements (EIS's) concerning the site, Shannon & Wilson was retained to provide geotechnical engineering services, hydrogeological engineering services, and environmental engineering services. This report concerns the geotechnical engineering services.

The proposed Task I geotechnical engineering services were subdivided into three subtasks. The scope for each subtask is listed below. For the purposes of this report, subtasks 2 and 3 have been combined.

1. Review the 1981 and 1991 Horn Rapids Triangle EIS's and provide a summary of the information regarding site geology and soil conditions for use in the technical appendices of a proposed EIS amendment.
2. Perform geologic reconnaissance of the site to identify areas requiring further study for definition of site-specific geologic or geotechnical characteristics required to provide specific construction recommendations.
3. Perform visual evaluation of the river bluffs to provide preliminary recommendations for building set-backs and slope protection.
4. Provide a letter report summarizing our observations and findings. Site-specific construction recommendations would not be provided in the Task I report.

TASK I GEOTECHNICAL STUDIES

Review of 1981/1991 Horn Rapids Triangle EIS's

The 1981 EIS¹ summarizes the geology and soils of the Horn Rapids Triangle area. The geologic characterization was based upon an unnamed 1978 study of the area performed by the Rockwell

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Attn: Mr. Mike Miller
April 1, 1993
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Hanford Company. That report indicated that the Horn Rapids Triangle is located within a geologic subarea known as the Pasco Basin.

The soils were characterized in accordance with the 1971 Benton County Area Soil Survey². The 1971 survey was, however, limited to the area south of the Yakima River, which was the old boundary for the Atomic Energy Commission property (the Hanford Reservation), and the area of the proposed 1993 development was not included in the 1971 study. Nonetheless, the authors of the 1981 EIS extrapolated the descriptions of the 1971 study to the soils of the 1993 study area. The soils were characterized in accordance with U.S. Department of Agriculture soil classification system, and are represented by three local soil series including the Burbank, Hezel, and Quincy series. These soils were characterized as consisting of loam, loamy sands, and loamy sands with gravel layers. The soils reportedly slope gently, from 0 to 20%, with locally steeper areas.

In geologic terms, the soils at the site were subdivided into three subgroups. These subgroups included fine sand and silt soils (known locally as "Touchet Beds", in reference to the soil type section), dune soils consisting of re-worked Touchet soils, and the sand and gravel soils belonging to the Pasco Gravels. The Touchet soils generally consist of fine-grained fluvial silt and sand. The dune materials consist of Touchet materials that have been eroded by wind and redeposited as dunes. The Pasco gravels consist of material ranging in size from sand to cobbles.

The primary geotechnical issues delineated by the 1981 EIS included the location of the site in Seismic Risk Zone 2B³, and brief mention of potential development difficulties along the escarpment adjacent to the Yakima River.

The 1991 EIS⁴ primarily referenced the previous 1981 EIS¹ insofar as technical material relating to geotechnical or geological matters. However, the 1991 EIS did indicate that the steepest slope on the site was a grade of about 25%, and that the only indications of unstable soils was that the site soils were subject to wind erosion.

H-1033-01

March, 1993 Geologic Site Reconnaissance

The reconnaissance task was started near the west end of the abandoned canal, adjacent to Grosscup Road, at the intersection of the canal and Sections 19 and 20 in T10N, R28E⁵ (see Figure 1). The mapping was conducted mostly uphill of the canal, adjacent to an existing trail. The canal is located downhill of the main HRT property, and may or may not be included within the boundary on this section of the site. The section of slope at the beginning of the project is located on a cut-off meander of the Yakima River. The former river channel eroded the slope presently located downhill of the canal. The slope between the trail and the canal was at a grade of about 3.5:1 (h:v), or a grade of about 29%. Where exposed, the slope material appeared to consist of fluvial silty sand and poorly graded sand overlaid by wind-blown sand and silt material.

Travelling east and south along the trail, to the boundary of sections 20 and 29, the elevation of the trail increases steadily, and the downhill slope (between the trail and the canal) becomes steeper to about 2:1, or a grade of about 50%. This 2:1 slope continues to about the intersection of the slope and canal with the existing Yakima River channel. The slope and canal intersect with the Yakima River channel near the center of the northwest quarter of Section 29.

The slope which follows the river forms the main escarpment referenced in previous reports. Along the escarpment, the slopes uphill and downhill of the canal become steep, approaching 1.5:1 (67%), and several areas of slope erosion along the river bank were observed. Erosion above the canal appears to have occurred primarily along the western two-thirds of the escarpment, where off-road vehicle travel has denuded the escarpment face. The canal is effectively acting as a bench on the escarpment slope, and has collected the material eroded from uphill of the canal (see Figure 2).

Erosion below the canal is typified by several areas of mass wasting of the slope material into the river. In at least one section, the erosion observed on the escarpment along the Yakima River appears to have progressed about 10 feet northeasterly since 1983. This conclusion is based upon

a comparison of conditions observed in a 1983 Soil Conservation Service aerial photo to those conditions presently observed at the site. A nearly vertical erosive cut about 8 feet high which had been cut into the river bank and subsequently re-covered with soil eroded from above can be observed in the subject area. The combination of river and traffic-induced erosion has combined to create a condition in which sections of the escarpment face are eroding downhill to be carried away by the river. In combination, the Yakima River is impacting the escarpment face by eroding into the toe of the escarpment face. The river channel at the base of the escarpment slope is on the outside of a bend where the velocity of the river is the greatest, and where the erosive impact of the river is expected to be most severe (see Figure 3).

The geologic section of the escarpment was partially exposed along the river. Where exposed, the section was mapped from river level uphill to the trail adjacent to the crest of the escarpment. Assuming a nominal river elevation of 370 feet Above Mean Sea Level near the center of the northwest quarter of Section 29, the exposed section appeared as follows:

- 370' - 380': Dense, grey, Poorly Graded GRAVEL with Sand terrace; moist, slightly cemented, with nearly horizontal layers of material ranging in size from silt to cobbles. This material appeared to represent the Pasco Gravels.
- 380' - 460': Loose to medium dense, tan-grey SILT/Silty SAND; dry, slightly cemented to non-cemented, with minor layers of gravel, layered nearly horizontally. This material is typical of the Touchet silt and sand soils.

From the east end of the escarpment along the river, near the middle of Section 29, the property boundary continues eastward along the abandoned canal. This section of the property follows another cut-off meander of the Yakima River. Along this section of the property, the downhill slope (above and below the canal) varies from a grade of about 1.5:1(67%) to 2.5:1(40%). It was observed that the river bank on the tract of land below the canal has been protected with heavy rip rap consisting of concrete rubble (see Figure 4).

Away from the river, distinct lowlands were observed in the southeast quarter of Section 20 and the wedge of the project contained within Section 28. These lowlands appear to be areas eroded by wind (deflated), with some dunes overlaid onto the deflated area at the extreme northeast corner of the property. Some of the slopes bordering the lowlands are relatively steep. In section 20, the steepest slopes are about 6:1, or 17%. In section 28, along the east-facing slopes (the steepest), the grade varies from about 4:1 to 3:1, or 25% to 33%.

The soils forming the dunes appeared to consist of weathered Touchet material.

Overall, the Horn Rapids Triangle area can be characterized as a fluvial plain consisting of silt and sand soils overlaying gravel and sand soils at depth. The fluvial plain has subsequently been eroded by wind (as evidenced by the deflated area) and by water (as evidenced by the existing and former channels along the Yakima River).

Analysis and Recommendations

The primary concerns for construction in the proposed development will be progressive erosion and slope stability, especially along the Yakima River bluff. As a secondary factor, wind erosion and dust production of any unprotected or unvegetated surfaces will also be a factor.

Escarpment Erosion

Unless minimized, the combination of erosion mechanisms will continue to cause the escarpment to progressively erode. Erosion uphill of the canal will tend to be localized to the denuded areas, and will primarily represent a nuisance from dust. However, localized slope failures above the canal could also be precipitated by excessive irrigation.

Erosion below the canal can be expected to progressively undermine the escarpment slope, eventually causing slope failure and possibly resulting in loss of acreage on top of the hill. Such slope failures could also cause the loss of structures placed within the potential failure area. Although slope failure from erosion of the river bank does not appear to be an immediate

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Attn: Mr. Mike Miller
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problem, there is the potential that one significant flooding season could cause damaging erosion. It should be noted that the erosion observed during our March 1993 observations appeared to be relatively recent and was likely caused by normal river flow.

To minimize and slow the effects of the wind and river erosion, we recommend that a two-phase erosion control program be undertaken.

The first phase of erosion control would include placement of erosion protection along the bank of the river, extending into the river to an elevation at least 3 feet below mean low water elevation and extending at least 2 feet above the anticipated 100 year flood elevation. The bank protection may consist of rip rap or rock gabions (rock-filled wire baskets).

The second phase of erosion protection would include protection of the escarpment face from off-road vehicle travel and wind erosion. Because the site is relatively steep and subject to wind erosion, we recommend that a geosynthetic slope protection system be placed. Geosynthetic slope protection systems vary in configuration from plastic cellular matrices filled with gravel and sand to systems which blanket the slope. The selected system must be capable of allowing re-vegetation of the slope. As an alternative, a completely vegetative resurfacing program may be applicable. However, due to the relatively steep slope and semi-arid local conditions, such an erosion protection system should be designed by an agronomist or soil scientist specializing in that area.

The erosion protection plan will require input from government agencies. Any construction along a river, such as the rip rap erosion protection proposed above, may require input and permitting from the Washington Department of Ecology, Benton County, The U.S. Army Corps of Engineers, and a number of other state agencies. We recommend that we be retained to research the necessary permits and permit documentation required to accommodate design and construction in accordance with state and federal regulations.

H-1033-01

Building Set-Back from Escarpment Along Yakima River

Our observations of the upper soil column near the crest of the escarpment suggests that the critical slope and foundation soil type will include the silt or silty sand Touchet soils. The silty soil is expected to have low to moderate shear strength when near it's natural dry moisture condition. However, if the moisture content of the silt or silty sand soil is increased (possibly because of excess irrigation), the shear strength of the soil would be expected to be reduced, thus possibly precipitating slope failure. Without field or laboratory tested soil characteristics, the recommended building set-back from the crest of the escarpment must, therefore, be conservative. For the purposes of this preliminary geotechnical investigation, we recommend that the building set-back from the crest of the slope be at least equal to 1.5 times the height of the slope above river elevation. For example, along the middle of the escarpment where the crest of the escarpment is about 90 feet above river elevation, we recommend that the minimum set-back from the crest of the slope be 135 feet. This set-back would yield an effective slope of 3:1 between the toe of the existing slope and a proposed residential structure.

In order to provide more refined (and possibly less restrictive) set-back recommendations, we recommend that the escarpment be further explored by a minimum of two exploratory borings to define the characteristics of the soils forming the escarpment. More refined recommendations of set-back can only be made with soil characteristics based upon field exploration and laboratory testing of the slope soils. For planning purposes, the closest recommended set-back between the slope crest and any residential structure would be not less than 50 feet.

Because of the potentially adverse impact of excessive runoff or groundwater acting upon the slope, we further recommend that a program be undertaken to limit the amount of irrigation water used adjacent to or within 100 feet of the slope. For the purposes of conservation of resources, this program should also be considered for use on the entire development. The irrigation program should limit irrigation to only the amount necessary to sustain vegetation. The irrigation plan should be formulated by an agronomist or soil scientist specializing in this area.

LIMITATIONS

The analyses, conclusions, and recommendations contained in this preliminary report are based upon site conditions as determined by limited surficial exploration, and further assume that the geologic section observed along the Yakima River is representative of the subsurface conditions under all sections of the escarpment, i.e. the subsurface conditions are not significantly different from those disclosed by the field explorations.

This report is not intended as a final report for design and construction of slopes or slope protection systems. Therefore, we reiterate our recommendations that additional exploration take place to refine the building set-back requirements, and that the environmental impact of a slope protection system be researched.

If there is substantial lapse of time between the submission of this report and the start of work at the site, or if conditions have changed due to natural causes or construction at the site, it is recommended that this report be reviewed to determine the applicability of the conclusions and recommendations concerning the changed conditions or time lapse.

This report was prepared for the exclusive use of the Owner and Architect and/or Engineer in the design of the structure. It should be made available to prospective contractors and/or the Contractor for information on factual data only, and not as a warranty of subsurface conditions included in this report, such as those inferred by discussions of subsurface conditions included in this report.

The scope of services for this preliminary report did not include any environmental assessment or evaluation regarding the presence or absence of wetlands or hazardous or toxic materials in the soil, surface water, groundwater, or air, on or below the site or for the evaluation of disposal of contaminated soils or groundwater should any be encountered.

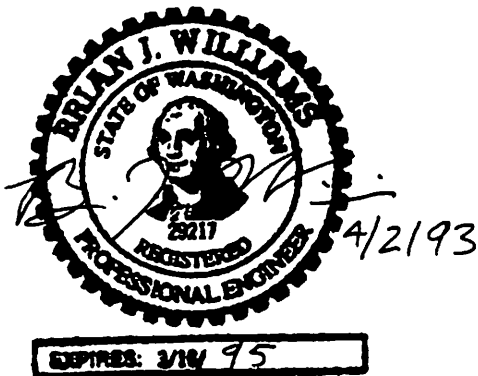
Columbia Triangle Ventures
Attn: Mr. Mike Miller
April 1, 1993
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SHANNON & WILSON, INC.

We have prepared the attachment "Important Information About Your Geotechnical Engineering Report" to help our clients more clearly understand the limitations of this report. Please consider it as an integral part of this report.

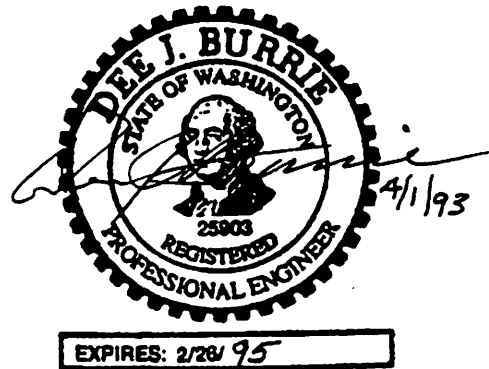
Sincerely,

SHANNON & WILSON, INC.



Brian J. Williams, P.E., P.G.
Senior Engineer

BJW:DJB:WPG/ejh



Dee J. Burrie, P.E.
Branch Manager

Enclosures: References
 Figure 1 Vincity Map
 Figure 2-4 Site Photos
 Important Information About Your Geotechnical Engineering Report

H-1033-01

REFERENCES

1. Horn Rapids Triangle Final Environmental Impact Statement, City of Richland, Washington, 1981.
2. United States Department of Agriculture, Soil Conservation Service Soil Survey, Benton County Area, Washington, July, 1971.
3. International; Conference of Building Officials Uniform Building Code, 1991.
4. Horn Rapids Golf Course Project Final Environmental Impact Statement, City of Richland, Washington, 1991.
5. United States Geological Survey 7.5 minute Topographic Series, Richland, Washington, AMS 2176 IN SE, 1978./

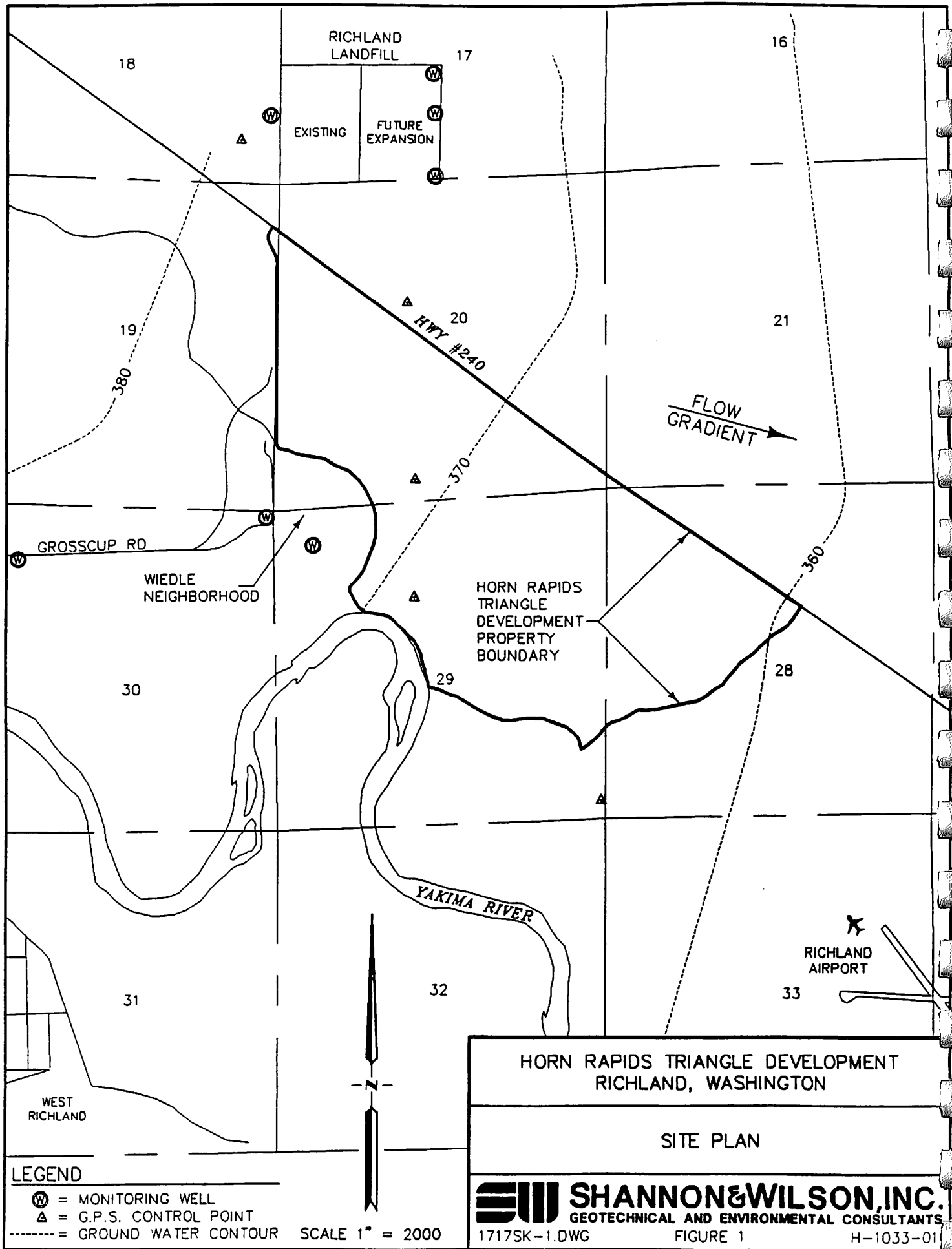




Figure 2. View to east from west of escarpment. Off-road vehicle tracks have denuded areas uphill of the the can, precipitating erosion. Note that abandoned canal is filled with eroded soil from uphill.

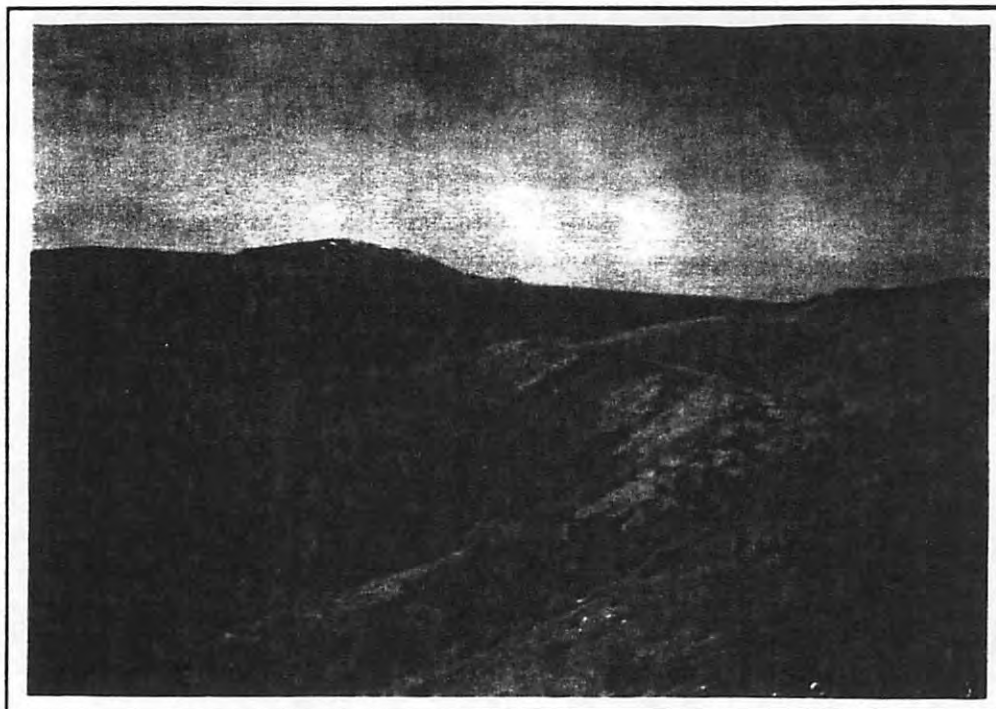


Figure 3. View to west from east end of escarpment. Areas of erosion below the canal exhibit no vegetation. Arrow pointed right indicates primary erosion zone at toe of slope. Curved arrow indicates direction of current.

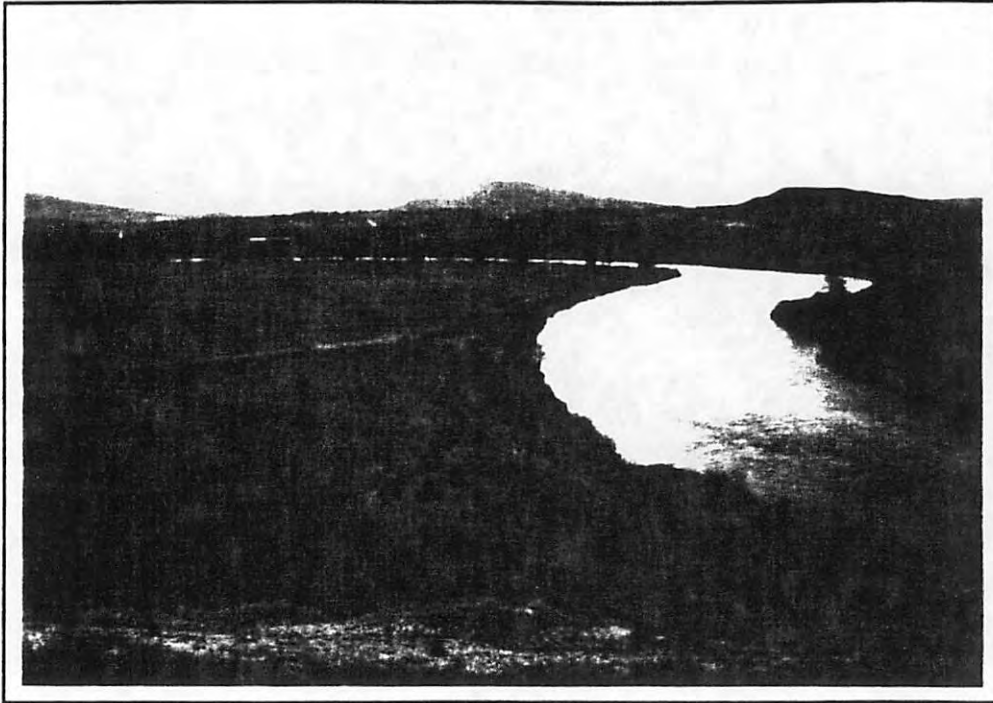


Figure 4. Tract of land downstream from 1993 HRT project area. Concrete rubble rip rap can be observed along the river bank. The top of the abandoned canal is at the bottom of the photo.



Dated: April 2, 1993

To: Columbia Triangle Ventures

Attn: Mike Miller

Important Information About Your Geotechnical Engineering/ Subsurface Waste Management (Remediation) Report

GEOTECHNICAL SERVICES ARE PERFORMED FOR SPECIFIC PURPOSES AND PERSONS.

Consulting geotechnical engineers prepare reports to meet the specific needs of specific individuals. A report prepared for a civil engineer may not be adequate for a construction contractor or even another civil engineer. Unless indicated otherwise, your consultant prepared your report expressly for you and expressly for purposes you indicated. No one other than you should apply this report for its intended purpose without first conferring with the consultant. No party should apply this report for any purpose other than that originally contemplated without first conferring with the geotechnical engineer/geoscientist.

AN ENGINEERING REPORT IS BASED ON PROJECT-SPECIFIC FACTORS.

A geotechnical engineering/subsurface waste management (remediation) report is based on a subsurface exploration plan designed to consider a unique set of project-specific factors. Depending on the project, these may include: the general nature of the structure and property involved; its size and configuration; its historical use and practice; the location of the structure on the site and its orientation; other improvements such as access roads, parking lots, and underground utilities; and the additional risk created by scope-of-service limitations imposed by the client. To help avoid costly problems, have the consulting engineer(s)/scientist(s) evaluate how any factors which change subsequent to the date of the report, may affect the recommendations. Unless your consulting geotechnical/civil engineer and/or scientist indicates otherwise, your report should not be used: 1) when the nature of the proposed project is changed (for example, if an office building will be erected instead of a parking garage, or if a refrigerated warehouse will be built instead of an unrefrigerated one, or chemicals are discovered on or near the site); 2) when the size, elevation, or configuration of the proposed project is altered; 3) when the location or orientation of the proposed project is modified; 4) when there is a change of ownership; or 5) for application to an adjacent site. Geotechnical/civil engineers and/or scientists cannot accept responsibility for problems which may occur if they are not consulted after factors which were considered in the development of the report have changed.

SUBSURFACE CONDITIONS CAN CHANGE.

Subsurface conditions may be affected as a result of natural changes or human influence. Because a geotechnical/waste management engineering report is based on conditions which existed at the time of subsurface exploration, construction decisions should not be based on an engineering report whose adequacy may have been affected by time. Ask the geotechnical/waste management consultant to advise if additional tests are desirable before construction starts. For example, groundwater conditions commonly vary seasonally.

Construction operations at or adjacent to the site and natural events such as floods, earthquakes, or groundwater fluctuations may also affect subsurface conditions and, thus, the continuing adequacy of a geotechnical/waste management report. The geotechnical/civil engineer and/or scientist should be kept apprised of any such events, and should be consulted to determine if additional tests are necessary.

MOST GEOTECHNICAL RECOMMENDATIONS ARE PROFESSIONAL JUDGMENTS.

Site exploration and testing identifies actual surface and subsurface conditions only at those points where samples are taken. The data were extrapolated by your consultant who then applied judgment to render an opinion about overall subsurface conditions. The actual interface between materials may be far more gradual or abrupt than your report indicates. Actual conditions in areas not sampled may differ from those predicted in your report. While nothing can be done to prevent such situations, you and your consultant can work together to help minimize their impact. Retaining your consultant to observe subsurface construction operations can be particularly beneficial in this respect.

A REPORT'S CONCLUSIONS ARE PRELIMINARY.

The conclusions contained in your geotechnical engineer's report are preliminary because they must be based on the assumption that conditions revealed through selective exploratory sampling are indicative of actual conditions throughout a site. Because actual

subsurface conditions can be discerned only during earthwork, you should retain your geotechnical engineer to observe actual conditions and to finalize conclusions. Only the geotechnical engineer who prepared the report is fully familiar with the background information needed to determine whether or not the report's recommendations based on those conclusions are valid and whether or not the contractor is abiding by applicable recommendations. The geotechnical engineer who developed your report cannot assume responsibility or liability for the adequacy of the report's recommendations if another party is retained to observe construction.

THE GEOTECHNICAL ENGINEERING/SUBSURFACE WASTE MANAGEMENT (REMEDIATION) REPORT IS SUBJECT TO MISINTERPRETATION.

Costly problems can occur when other design professionals develop their plans based on misinterpretation of a geotechnical engineering/subsurface management (remediation) report. To help avoid these problems, the geotechnical/civil engineer and/or scientist should be retained to work with other project design professionals to explain relevant geotechnical, geological, hydrogeological and waste management findings and to review the adequacy of their plans and specifications relative to these issues.

BORING LOGS AND/OR MONITORING WELL DATA SHOULD NOT BE SEPARATED FROM THE ENGINEERING/WASTE MANAGEMENT REPORT.

Final boring logs developed by the geotechnical/civil engineer and/or scientist are based upon interpretation of field logs (assembled by site personnel), field test results, and laboratory and/or office evaluation of field samples and data. Only final boring logs and data are customarily included in geotechnical engineering/waste management reports. These final logs should not, under any circumstances, be redrawn for inclusion in architectural or other design drawings, because drafters may commit errors or omissions in the transfer process.

To minimize the likelihood of boring log or monitoring well misinterpretation, contractors should be given ready access to the complete geotechnical engineering/waste management report prepared or authorized for their use. If access is provided only to the report prepared for you, you should advise contractors of the report's limitations, assuming that a contractor was not one of the specific persons for whom the report was prepared and that developing construction cost estimates was not one of the specific purposes for which it was prepared. While a contractor may gain important knowledge from a report prepared for another party, the contractor should discuss the report with your consultant and perform the additional or alternative work believed necessary to obtain the data specifically appropriate for construction cost estimating purposes. Some clients hold the mistaken impression that simply disclaiming responsibility for the accuracy of subsurface information always insulates them from attendant liability. Providing the best available information to contractors helps prevent costly construction problems and the adversarial attitudes which aggravate them to a disproportionate scale.

READ RESPONSIBILITY CLAUSES CLOSELY.

Because geotechnical engineering/subsurface waste management (remediation) is based extensively on judgment and opinion, it is far less exact than other design disciplines. This situation has resulted in wholly unwarranted claims being lodged against geotechnical/waste management consultants. To help prevent this problem, geotechnical/civil engineers and/or scientists have developed a number of clauses for use in their contracts, reports and other documents. These responsibility clauses are not exculpatory clauses designed to transfer the engineer's or scientist's liabilities to other parties; rather, they are definitive clauses which identify where the engineer's or scientist's responsibilities begin and end. Their use helps all parties involved recognize their individual responsibilities and take appropriate action. Some of these definitive clauses are likely to appear in your report, and you are encouraged to read them closely. Your engineer/scientist will be pleased to give full and frank answers to your questions.

The preceding paragraphs are based on information provided by the
ASFE/Association of Engineering Firms Practicing in the Geosciences, Silver Spring, Maryland



APPENDIX 2

Final Report Task 2: Hydrogeologic Studies

Horn Rapids Triangle Development
Richland, Washington

Shannon & Wilson, Inc.

April, 1993

***Final Report
Task II
Hydrogeologic Studies
Horn Rapids Triangle Development
Richland, Washington***

APRIL 1993

***Columbia Triangle Ventures
14410 Bel-Red Road
Bellevue, Washington 98007***



SHANNON & WILSON, INC.

GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS

1354 Grandridge Boulevard
Kennewick, Washington 99336 • 1037
509 • 735 • 1280

April 7, 1993

Columbia Triangle Ventures
14410 Bel-Red Road, Suite 200
Bellevue, Washington 98007

Attn: Mr. Mike Miller

**RE: REPORT OF TASK II HYDROGEOLOGIC STUDIES FOR THE HORN RAPIDS
TRIANGLE DEVELOPMENT**

We have completed the TASK II hydrogeologic studies as outlined in our proposal of March 2, 1993. This letter summarizes our observations and findings.

BACKGROUND

Columbia Triangle Ventures has been selected by the City of Richland to develop a residential and mixed use development in the Horn Rapids area west of Richland, Washington (see Figure A-1). The property includes about 658 acres on a tract bordered on the north by Washington State Route 240, on the west by Grosscup Road, on the east by an abandoned canal, and on the south by the same canal and the Yakima River. This tract includes the approximate southwest half of Section 20, the northeast half of Section 29, and a triangular wedge in the western half of Section 28. All of these sections are located in Township 10 North, Range 28 East, Willamette Meridian. The proposed development will include a golf course, residential building areas, and some commercial areas. Initial construction will be centered around the golf course.

Appendix A of this report contains the site and vicinity map, Figure A-1, and the exploratory boring and well log, Figure A-2. Appendix B of this report contains the results of tests performed on water samples to determine the presence of pesticides, herbicides, or petroleum hydrocarbons on the site or upstream of the site. Appendix C contains our standard enclosure, "Important Information About Your Geotechnical Report".

H-1033-02

SCOPE OF SERVICES

To support the design development and the proposed amendments to the existing Environmental Impact Statements (EIS's)^{1,2} concerning the site, Shannon & Wilson was retained to provide geotechnical engineering services, hydrogeological engineering services, and environmental engineering services. This report concerns the hydrogeologic engineering services.

The proposed Task II hydrogeologic engineering services were subdivided into six subtasks. The scope of work for each subtask is listed below.

1. Install at least one groundwater monitoring well to determine the elevation of the groundwater table under the development.
2. Provide sampling and laboratory analysis services to determine water quality parameters initially encountered both on and off the site.
3. Monitor existing wells in the Weidle neighborhood to determine the initial elevation of groundwater in off-site wells adjacent to the site. Monitoring will include an initial event of water level measurement and water sampling for chemical evaluation, and two additional water level measuring events.
4. Provide a horizontal and elevation survey to accurately locate the existing residential wells, the existing City of Richland Wells, one monitoring well at the adjacent Lamb-Weston site, and the location and elevation of the new monitoring well. This step provides a baseline for water elevation conditions at and adjacent to the site.
5. Review existing well logs and historical information for areas adjacent to the site, with specific emphasis on water level elevations and locations of the wells to formulate a local groundwater model.

6. Provide a letter report summarizing our observations and findings. The report would include a log of the new monitoring well, results of the laboratory analyses, a map of the surveyed well elevations and locations, an interpretation of the existing groundwater conditions as related to gradient, and general recommendations for control of irrigation at the proposed golf course.

For the purposes of this report, subtasks 2 and 3, and subtasks 4 and 5 were combined.

TASK II HYDROGEOLOGIC STUDIES

Installation of Groundwater Monitoring Well MW-1

One groundwater monitoring well, designated MW-1, was installed on March 15 and March 16, 1993. The location of the well is shown on Figure A-1, and the log of the well and completion is shown on Figure A-2.

Columbia Triangle personnel indicated that residents of the Weidle neighborhood (adjacent to the site) have concerns that irrigation on the proposed site may cause adverse impacts to groundwater, possibly in the form of groundwater mounding or impacts from pesticides or herbicides potentially used at the site. The well was, therefore, installed to establish a baseline for groundwater elevation and groundwater quality on the site prior to construction.

Because of the potential impacts of groundwater elevation changes, the monitoring well was installed to accommodate potentially large fluctuations in groundwater, with approximately 10 feet of slotted well screen above and below the first encountered groundwater surface. Based on well log information obtained from the Washington Department of Ecology³, it was anticipated that the upper groundwater unit would consist of an unconfined sand or gravel layer corresponding approximately to the elevation of the nearby Yakima River.

The well was drilled using 6-inch diameter ODEX air-rotary equipment. Samples of the cuttings were obtained for each of the major soil types observed. Groundwater was first observed at a depth of approximately 65 feet beneath the ground surface, and the well boring was then extended to about 79 feet beneath the ground surface. The well was then installed with approximately 10 feet of screen installed both above and below the groundwater table. The screen section of the well was then backfilled with No. 8-12 Colorado Silica Sand to an elevation of 3.5 feet above the top of the well screen. The well was sealed to within 1.5 feet of the surface using bentonite chips hydrated with water from the potable supply system of the City of Richland. The well was completed above the surface with a hinged locking monument and three steel guard posts.

Upon completion of well construction, the well was developed by pumping with a down-hole bladder-type pump. Approximately 70 gallons (or approximately 40 well volumes) of water was removed from the well during development. At the end of the development period, the water being discharged had visually cleared, and no sediment was observed.

The geology encountered within the well boring included primarily sand from the surface to a depth of about 65 feet, where a unit containing both sand and gravel was encountered (see Figure 2). The sand and gravel unit extended to the bottom of the boring.

Sampling of Well MW-1 and Adjacent Wells

Three wells, including MW-1 and two residential wells MW-2 and MW-3^{4,5}, were sampled and the samples submitted to an analytical laboratory for testing of total petroleum hydrocarbons, pesticides, and herbicides. The location of the wells is shown on Figure A-1. The analytical suite was selected to detect the potential contaminants which may be associated with a agriculturally-intense development such as a golf course.

The results of the chemical tests are enclosed in Appendix B. The results indicate no detectable concentration of contaminants.

Groundwater Regime

The geology of the Horn Rapids Triangle area can be characterized as a fluvial plain consisting of silt and sand soils overlaying gravel and sand soils at depth. The existing highlands, which include the proposed development, consist primarily of water-deposited silt and sand soils known locally as Touchet soils^{1,2}. Lower in the geologic section, near the groundwater table, primarily gravel soils are encountered. The near-surface component of these gravel soils is known locally as the Pasco Gravels, and may contain materials ranging in size from sand to cobbles^{1,2,3,7}. The gravel materials are exposed in outcrop along the steep escarpment adjacent to the Yakima River, in that part of the development in Section 29⁸.

Based on the observations made during installation of the project well MW-1 (see Figure A-2), and on well log data obtained from the Washington Department of Ecology³, the primary near-surface aquifer is the unconfined layer composed primarily of the Pasco gravel soils referenced above. In the area of West Richland and north Richland, the unconfined gravel layer is encountered across the entire Yakima River valley^{3,7}, and extends south and east into the Columbia River⁷.

To define the groundwater flow within and directly adjacent to the project, groundwater elevations were measured in the new monitoring well MW-1, one private residential well (designated MW-2)⁴ in the Weidle neighborhood west of the site, and one well on the Lamb-Weston property east of the site. The locations of the wells are shown on Figure A-1.

Based on the elevation survey results, the groundwater gradient across the site appears to trend in an east-southeasterly direction. Approximate groundwater elevation contours and the direction of the flow gradient are shown on Figure A-1. Figure A-1 also includes groundwater and surface water elevation information from the Department of Ecology², the City of Richland, Washington⁶, and one report referencing groundwater in the North Richland area⁷.

Discussion and Recommendations for Water Table Control

Based on discussions with Columbia Triangle Ventures personnel and adjacent landowners, the primary concern regarding groundwater is the possibility of mounding of the groundwater and subsequent flooding of property and structures in the upstream Weidle neighborhood.

Groundwater mounding is a process whereby an existing groundwater system is "overloaded" by excess water from some outside source, usually some surface source. The excess water migrates down to the existing groundwater surface, and if the natural conditions don't allow the excess water to flow away quickly enough (low soil transmissivity), groundwater elevations rise at the point of water influx. The water elevations adjacent to the point of influx also rise, with the rise in groundwater elevation tapering down to the original water surface profile away from the point of influx.

Groundwater is already relatively high in the Weidle neighborhood. On March 23, 1993, the groundwater was measured at 8.1 feet below the ground surface in well MW-2⁴. The influx of water from any source may be sufficient to cause a rise of the groundwater elevation sufficient to cause flooding of basements in the area of the measured well⁴.

In the case of the Horn Rapids Triangle development, the major potential source for excess water is irrigation of the golf course. Mounding of the groundwater can occur only if three conditions are met, specifically:

1. If the amount of irrigation exceeds the evaporation rate from soil or the evapotranspiration rate from vegetation,
2. If the amount of water which exceeds the evaporation or evapotranspiration rate is sufficient to migrate downward to the groundwater table,
3. If the transmissivity of the aquifer is low enough to cause the excess water to "back up" in the groundwater system.

All three factors must occur, or mounding cannot take place.

Columbia Triangle Ventures
Attn: Mr. Mike Miller
April 7, 1993
Page 7

SHANNON & WILSON, INC.

Although the mechanisms which could result in mounding are very complex, balancing irrigation application rates with the vegetation requirements can easily reduce the potential for groundwater mounding difficulties. We recommend that an agronomist or soil scientist familiar with the design of balanced irrigation programs be retained to design an irrigation program which will allow greening of the golf course facilities while minimizing the amount of irrigation water used.

LIMITATIONS

The analyses, conclusions, and recommendations contained in this report are based upon site conditions as they presently exist, and further assume that the exploratory well boring is generally representative of the subsurface conditions under all portions of the proposed development, i.e. the subsurface conditions are not significantly different from those disclosed by the field explorations.

If there is substantial lapse of time between the submission of this report and the start of work at the site, or if conditions have changed due to natural causes or construction at the site, it is recommended that this report be reviewed to determine the applicability of the conclusions and recommendations concerning the changed conditions or time lapse.

This report was prepared for the exclusive use of Columbia Triangle Ventures in the design of the Horn Rapids Triangle development. It should be made available to prospective contractors and/or the Contractor for information on factual data only, and not as a warranty of subsurface conditions included in this report, such as those interpreted from the boring logs and discussions of subsurface conditions included in this report.

H-1033-02

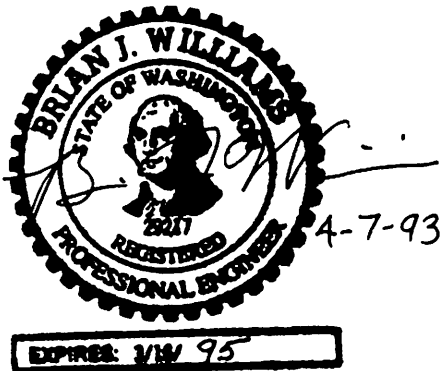
Columbia Triangle Ventures
Attn: Mr. Mike Miller
April 7, 1993
Page 8

SHANNON & WILSON, INC.

We have prepared the attachment "Important Information About Your Geotechnical Engineering Report" to help our clients more clearly understand the limitations of this report. Please consider it as an integral part of this report.

Sincerely,

SHANNON & WILSON, INC.



Brian J. Williams, P.E., P.G.
Senior Engineer

BJW:DJB:FWP/ejh

Enclosures:

REFERENCES

APPENDIX A - FIGURES

APPENDIX B - TEST RESULTS

APPENDIX C - IMPORTANT INFORMATION ABOUT YOUR
GEOTECHNICAL ENGINEERING REPORT



Dee J. Burrie, P.E.
Branch Manager

H-1033-02

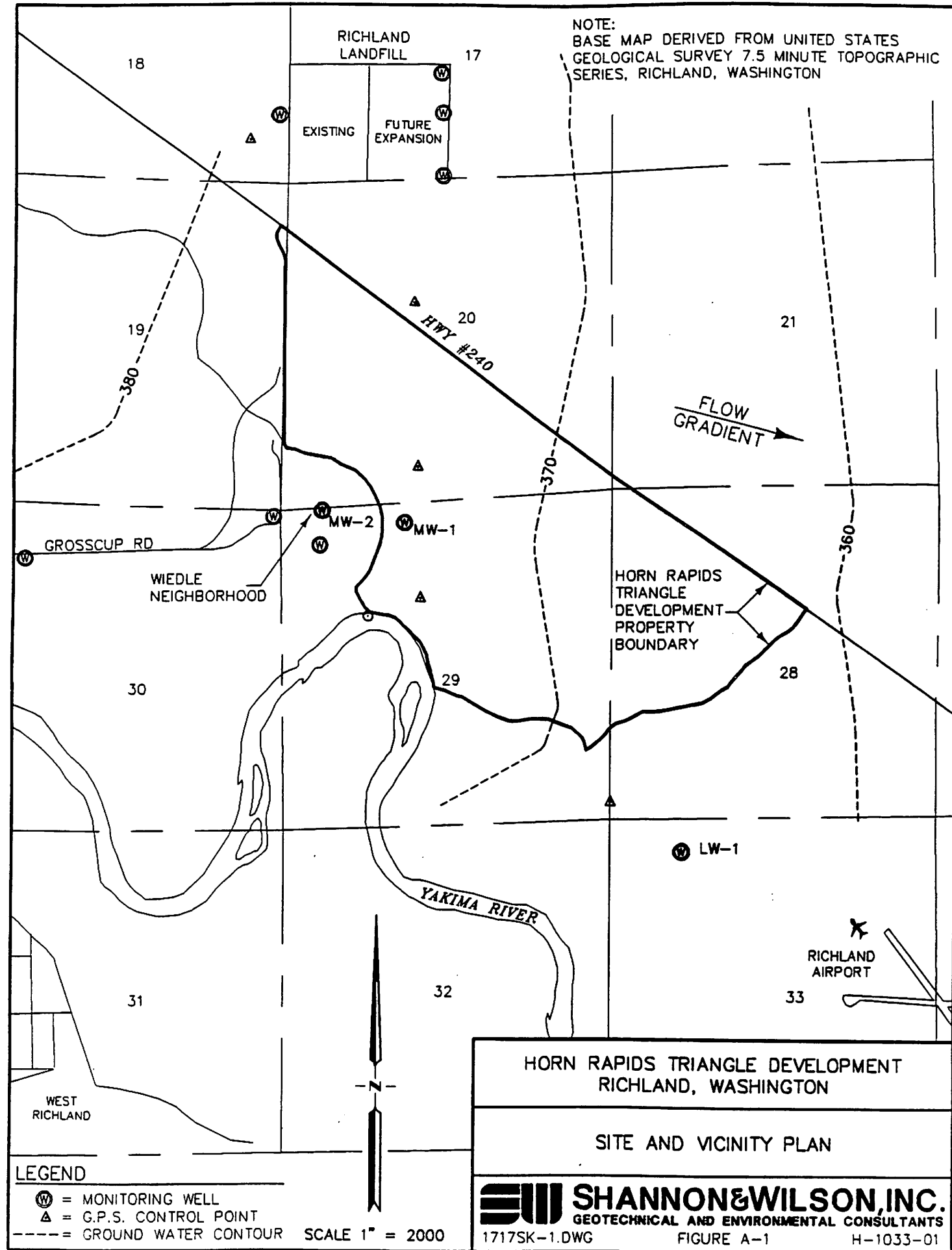
REFERENCES

1. Horn Rapids Triangle Final Environmental Impact Statement, City of Richland, Washington, 1981.
2. Horn Rapids Golf Course Project Final Environmental Impact Statement, City of Richland, Washington, 1991.
3. Washington State Department of Ecology, Well logs for sections 13, 23, 24, 25, and 26 in Township 10 North/Range 27 East, and sections 19, 20, 27, 28, 29, and 30 in Township 10 North/Range 28 East, Willamette Meridian.
4. Private well belonging to Mr. Garry McLain, Weidle Road, West Richland, Washington.
5. Private well belonging to Mr. Michael McComb, Weidle Road, West Richland, Washington.
6. Richland Landfill well data obtained from the City of Richland, Washington, March, 1993.
7. "Phase 1 Remedial Investigation Report, 1100-EM-1 Operable Unit, Hanford Federal Reservation", U. S. Department of Energy, 1990.
8. United States Geological Survey 7.5 minute Topographic Series, Richland, Washington, AMS 2176 IN SE, 1978.

APPENDIX A

FIGURES

NOTE:
BASE MAP DERIVED FROM UNITED STATES
GEOLOGICAL SURVEY 7.5 MINUTE TOPOGRAPHIC
SERIES, RICHLAND, WASHINGTON



LEGEND

- ⊙ = MONITORING WELL
- △ = G.P.S. CONTROL POINT
- = GROUND WATER CONTOUR

SCALE 1" = 2000

HORN RAPIDS TRIANGLE DEVELOPMENT
RICHLAND, WASHINGTON

SITE AND VICINITY PLAN

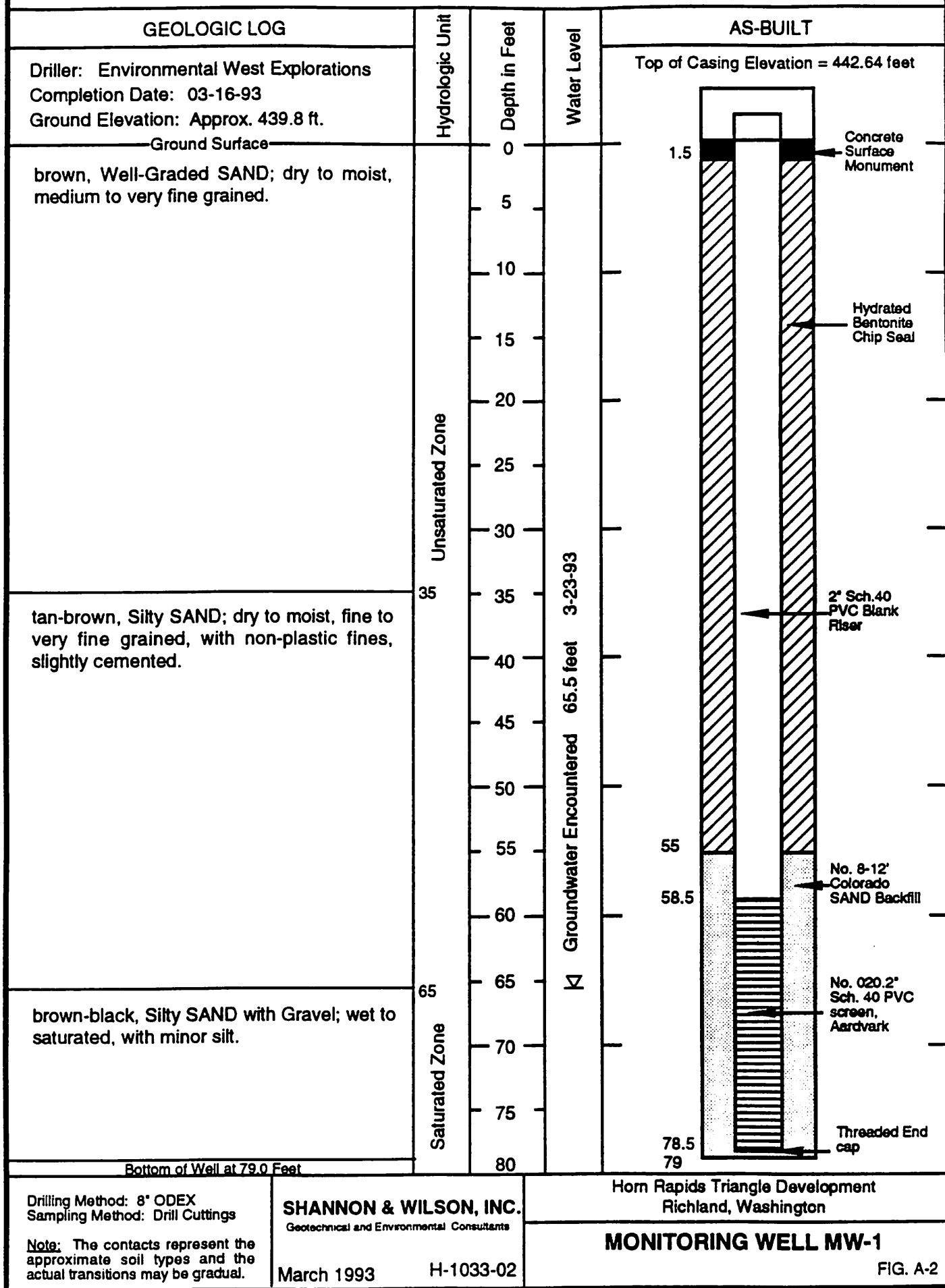
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GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS

1717SK-1.DWG

FIGURE A-1

H-1033-01

LOG & AS-BUILT DIAGRAM



Drilling Method: 8" ODEX
Sampling Method: Drill Cuttings

Note: The contacts represent the approximate soil types and the actual transitions may be gradual.

SHANNON & WILSON, INC.
Geotechnical and Environmental Consultants

March 1993

H-1033-02

Horn Rapids Triangle Development
Richland, Washington

MONITORING WELL MW-1

FIG. A-2

APPENDIX B
TEST RESULTS

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Andrew John Friedman
James E. Bruya, Ph.D.
(206) 285-8282

3008-B 16th Avenue West
Seattle, WA 98119
FAX: (206) 283-5044

March 31, 1993

Brian Williams, Project Leader
Shannon & Wilson, Inc.
1354 Grandridge Boulevard
Kennewick, WA 99336

Dear Mr. Williams:

Enclosed are the results from the testing of material submitted on March 25, 1993 from Project H-1033-02, Horn Rapids.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,



Stephen D. Zappone
Chemist

SDZ/dp

Enclosures

FAX: (509) 735-6474

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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Chemist

SDZ/dp

Enclosures

FAX: (509) 735-6474

Date of Report: March 31, 1993
Date Received: March 25, 1993
Project: H-1033-02, Horn Rapids

**RESULTS FROM THE ANALYSIS OF WATER SAMPLES
FOR CHLORINATED PESTICIDES**

BY GC/ECD
Results Reported as $\mu\text{g/L}$ (ppb)

<u>Sample ID</u>	<u>MW-1-01</u>	<u>MW-2-01</u>	<u>MW-3-01</u>
Analyte:			
2,4,5,6-Tetrachlora <i>m</i> -xylene (surrogate)	91%	97%	97%
BHC - Alpha	<1	<1	<1
BHC - Beta	<1	<1	<1
BHC - Gamma	<1	<1	<1
BHC - Delta	<1	<1	<1
Heptachlor	<1	<1	<1
Aldrin	<1	<1	<1
Heptachlor epoxide	<1	<1	<1
Endosulfan I	<1	<1	<1
DDE/Dieldrin	<2	<2	<2
Endrin	<1	<1	<1
Endosulfan II	<1	<1	<1
DDD	<1	<1	<1
Endrin aldehyde	<1	<1	<1
DDT/Endosulfan sulfate	<2	<2	<2
Endrin ketone	<1	<1	<1
Methoxychlor	<1	<1	<1
Dibutyl chlorendate (surrogate)	93%	88%	92%

Date of Report: March 31, 1993

Date Received: March 25, 1993

Project: H-1033-02, Horn Rapids

**RESULTS FROM THE ANALYSIS OF WATER SAMPLES
FOR CHLORINATED PESTICIDES****BY GC/ECD**Results Reported as $\mu\text{g/L}$ (ppb)

Quality Assurance

<u>Sample #</u>	<u>Tap Water</u> <u>Blank</u>
Analyte:	
2,4,5,6-Tetrachlora <i>m</i> -xylene (surrogate)	79%
BHC - Alpha	<1
BHC - Beta	<1
BHC - Gamma	<1
BHC - Delta	<1
Heptachlor	<1
Aldrin	<1
Heptachlor epoxide	<1
Endosulfan I	<1
DDE/Dieldrin	<2
Endrin	<1
Endosulfan II	<1
DDD	<1
Endrin aldehyde	<1
DDT/Endosulfan sulfate	<2
Endrin ketone	<1
Methoxychlor	<1
Dibutyl chlorendate (surrogate)	61%

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: March 31, 1993

Date Received: March 25, 1993

Project: H-1033-02, Horn Rapids

**RESULTS FROM THE ANALYSIS OF WATER SAMPLES
FOR CHLORINATED PESTICIDES**

BY GC/ECD

Results Reported as % Recovery

Quality Assurance

<u>Sample #</u>	<u>Tap Water Matrix Spike % Recovery</u>	<u>Tap Water Matrix Spike Duplicate % Recovery</u>	<u>Spike Level</u>
Analyte:			
2,4,5,6-Tetrachlora <i>m</i> -xylene (surrogate)	120%	120%	
BHC - Alpha	101%	89%	1
BHC - Beta	83%	82%	1
BHC - Gamma	110%	111%	1
BHC - Delta	105%	100%	1
Heptachlor	112%	112%	1
Aldrin	105%	120%	1
Heptachlor epoxide	101%	116%	1
Endosulfan I	107%	112%	1
DDE/Dieldrin	100%	95%	1
Endrin	109%	112%	1
Endosulfan II	96%	105%	1
DDD	100%	100%	1
Endrin aldehyde	100%	110%	1

Date of Report: March 31, 1993
Date Received: March 25, 1993
Project: H-1033-02, Horn Rapids

**RESULTS FROM THE ANALYSIS OF WATER SAMPLES
FOR CHLORINATED PESTICIDES
BY GC/ECD
Results Reported as % Recovery
Quality Assurance**

<u>Sample #</u>	<u>Tap Water Matrix Spike % Recovery</u>	<u>Tap Water Matrix Spike Duplicate % Recovery</u>	<u>Spike Level</u>
Analyte:			
DDT/Endosulfan sulfate	110%	104%	1
Endrin ketone	105%	111%	1
Methoxychlor	10%	10%	1
Dibutyl chlorendate (surrogate)	130%	130%	

Date of Report: March 31, 1993
Date Received: March 25, 1993
Project: H-1033-02, Horn Rapids

**RESULTS FROM THE ANALYSIS OF WATER SAMPLES
FOR TOTAL PETROLEUM HYDROCARBONS
BY IR (METHOD 418.1)
(MODIFIED TO REPORT RESULTS AS DIESEL)
Results Reported as mg/L (ppm)**

<u>Sample #</u>	<u>Total Petroleum Hydrocarbons</u>
MW-1-03	0.2
MW-2-03	<0.2
MW-3-03	<0.2
Field Blank	<0.2
<u>Quality Assurance</u>	
Tap Water Blank	<0.2
Tap Water (Matrix Spike) % Recovery	110%
Tap Water (Matrix Spike Duplicate) % Recovery	110%
Spike Level	5

Date of Report: March 31, 1993
Date Received: March 25, 1993
Project: H-1033-02, Horn Rapids

**RESULTS FROM THE ANALYSIS OF WATER SAMPLES
FOR CHLORINATED HERBICIDES**

BY GC/ECD

Results Reported as $\mu\text{g/L}$ (ppb)

<u>Sample ID</u>	<u>MW-1-02</u>	<u>MW-2-02</u>	<u>MW-3-02</u>
<u>Analyte:</u>			
Dalapon	<0.2	<0.2	<0.2
Dicamba	<2	<2	<2
Dichlorprop	<2	<2	<2
2,4-D	<2	<2	<2
2,4,-DB	<20	<20	<20
2,4,5-T	<0.2	<0.2	<0.2
Dinoseb	<2	<2	<2

Date of Report: March 31, 1993

Date Received: March 25, 1993

Project: H-1033-02, Horn Rapids

**RESULTS FROM THE ANALYSIS OF WATER SAMPLES
FOR CHLORINATED HERBICIDES****BY GC/ECD**Results Reported as $\mu\text{g/L}$ (ppb)

Quality Assurance

<u>Sample #</u>	<u>Tap Water</u> <u>Blank</u>
<u>Analyte:</u>	
Dalapon	<0.2
Dicamba	<2
Dichlorprop	<2
2,4-D	<2
2,4,-DB	<20
2,4,5-T	<0.2
Dinoseb	<2

Date of Report: March 31, 1993

Date Received: March 25, 1993

Project: H-1033-02, Horn Rapids

**RESULTS FROM THE ANALYSIS OF WATER SAMPLES
FOR CHLORINATED HERBICIDES
BY GC/ECD
Results Reported as % Recovery
Quality Assurance**

<u>Sample #</u>	<u>Tap Water Matrix Spike % Recovery</u>	<u>Tap Water Matrix Spike Duplicate % Recovery</u>	<u>Spike Level</u>
<u>Analyte:</u>			
Dalapon	13%	<10%	100
Dicamba	<10%	<10%	100
Dichlorprop	<10%	22%	100
2,4-D	59%	17%	100
2,4,-DB	<10%	<10%	100
2,4,5-T	<10%	<10%	100
Dinoseb	97%	83%	100

Date of Report: March 31, 1993

Date Received: March 25, 1993

Project: H-1033-02, Horn Rapids

**RESULTS FROM THE ANALYSIS OF WATER SAMPLES
FOR CHLORINATED HERBICIDES****BY GC/ECD****Results Reported as % Recovery
Quality Assurance**

<u>Sample #</u>	<u>Spike Blank</u>	<u>Spike Level</u>
<u>Analyte:</u>		
Dalapon	100%	100
Dicamba	100%	100
Dichlorprop	100%	100
2,4-D	100%	100
2,4,-DB	100%	100
2,4,5-T	100%	100
Dinoseb	100%	100



Shannon & Wilson, Inc.

400 N. 34th Street, Suite 100
Seattle, WA 98103
(206) 632-8020

11500 Olive Blvd., Suite 276
St. Louis, MO 63141
(314) 872-8170

2055 Hill Road
Fairbanks, AK 99707
(907) 479-0600

5430 Fairbanks Street, Suite 3
Anchorage, AK 99518
(907) 561-2120

Chain of Custody Record

1354 Grandridge Blvd.
Kennewick, WA 99336
(509) 735-1280
FAX: (509) 735-6474

Page 1 of 1
Laboratory F&B
Attn: _____

Analysis Parameters/Sample Container Description
(include preservative if used)

Sample Identity	Lab No.	Time	Date Sampled	Comp.	Grab	A2: Pesticides 8080	A4: Herbicides 8150	TPH A18-1	Total Number of Containers	Remarks/Matrix
MW-1-01	38638		3-23			X			1	Water
MW-1-02	38639		3-23				X		1	"
MW-1-03	38640		3-23					X	1	"
MW-2-01	38641		3-23			X			1	"
MW-2-02	38642		3-23				X		1	"
MW-2-03	38643		3-23					X	1	"
MW-3-01	38644		3-23			X			1	"
MW-3-02	38645		3-23				X		1	"
MW-3-03	38646		3-23					X	1	"
Field Blank	38647		3-23					X	1	"

38640
38641
38642
38643
38644
38645
38646
38647
Consumed
in lab
3/24/93

Project Information		Sample Receipt		Relinquished By: 1.		Relinquished By: 2.		Relinquished By: 3.	
Project Number: <u>H-1033-02</u>	Total Number of Containers: _____	COC Seals/Intact? Y/N/NA: _____	Received Good Cond./Cold: _____	Signature: <u>[Signature]</u>	Time: <u>15:15</u>	Signature: _____	Time: _____	Signature: _____	Time: _____
Project Name: <u>Hun Rapids</u>	Delivery Method: _____	Received Good Cond./Cold: _____	(attach shipping bill, if any)	Printed Name: <u>Brian J. Williams</u>	Date: <u>3-24-93</u>	Printed Name: _____	Date: _____	Printed Name: _____	Date: _____
Contact: <u>Brian Williams</u>	Sampler: <u>Brian Williams</u>			Company: <u>Shannon & Wilson, Inc.</u>		Company: _____		Company: _____	
Ongoing Project? Yes ☒ No ☐				Received By: 1.		Received By: 2.		Received By: 3.	
Instructions				Signature: <u>[Signature]</u>	Time: <u>10:30 AM</u>	Signature: _____	Time: _____	Signature: _____	Time: _____
Requested Turn Around Time: <u>ASAP</u>				Printed Name: <u>CHICKS</u>	Date: <u>3-25-93</u>	Printed Name: _____	Date: _____	Printed Name: _____	Date: _____
Special Instructions				Company: <u>United Parcel Service</u>		Company: _____		Company: _____	

Distribution: White - w/shipment - returned to Shannon & Wilson w/ Laboratory report
Yellow - w/shipment - for consignee files
Pink - Shannon & Wilson - Job File

APPENDIX C

IMPORTANT INFORMATION ABOUT
YOUR GEOTECHNICAL ENGINEERING REPORT

Dated: April 7, 1993To: Columbia Triangle VenturesAttn: Mike Miller

Important Information About Your Geotechnical Engineering/ Subsurface Waste Management (Remediation) Report

GEOTECHNICAL SERVICES ARE PERFORMED FOR SPECIFIC PURPOSES AND PERSONS.

Consulting geotechnical engineers prepare reports to meet the specific needs of specific individuals. A report prepared for a civil engineer may not be adequate for a construction contractor or even another civil engineer. Unless indicated otherwise, your consultant prepared your report expressly for you and expressly for purposes you indicated. No one other than you should apply this report for its intended purpose without first conferring with the consultant. No party should apply this report for any purpose other than that originally contemplated without first conferring with the geotechnical engineer/geoscientist.

AN ENGINEERING REPORT IS BASED ON PROJECT-SPECIFIC FACTORS.

A geotechnical engineering/subsurface waste management (remediation) report is based on a subsurface exploration plan designed to consider a unique set of project-specific factors. Depending on the project, these may include: the general nature of the structure and property involved; its size and configuration; its historical use and practice; the location of the structure on the site and its orientation; other improvements such as access roads, parking lots, and underground utilities; and the additional risk created by scope-of-service limitations imposed by the client. To help avoid costly problems, have the consulting engineer(s)/scientist(s) evaluate how any factors which change subsequent to the date of the report, may affect the recommendations. Unless your consulting geotechnical/civil engineer and/or scientist indicates otherwise, your report should not be used: 1) when the nature of the proposed project is changed (for example, if an office building will be erected instead of a parking garage, or if a refrigerated warehouse will be built instead of an unrefrigerated one, or chemicals are discovered on or near the site); 2) when the size, elevation, or configuration of the proposed project is altered; 3) when the location or orientation of the proposed project is modified; 4) when there is a change of ownership; or 5) for application to an adjacent site. Geotechnical/civil engineers and/or scientists cannot accept responsibility for problems which may occur if they are not consulted after factors which were considered in the development of the report have changed.

SUBSURFACE CONDITIONS CAN CHANGE.

Subsurface conditions may be affected as a result of natural changes or human influence. Because a geotechnical/waste management engineering report is based on conditions which existed at the time of subsurface exploration, construction decisions should not be based on an engineering report whose adequacy may have been affected by time. Ask the geotechnical/waste management consultant to advise if additional tests are desirable before construction starts. For example, groundwater conditions commonly vary seasonally.

Construction operations at or adjacent to the site and natural events such as floods, earthquakes, or groundwater fluctuations may also affect subsurface conditions and, thus, the continuing adequacy of a geotechnical/waste management report. The geotechnical/civil engineer and/or scientist should be kept apprised of any such events, and should be consulted to determine if additional tests are necessary.

MOST GEOTECHNICAL RECOMMENDATIONS ARE PROFESSIONAL JUDGMENTS.

Site exploration and testing identifies actual surface and subsurface conditions only at those points where samples are taken. The data were extrapolated by your consultant who then applied judgment to render an opinion about overall subsurface conditions. The actual interface between materials may be far more gradual or abrupt than your report indicates. Actual conditions in areas not sampled may differ from those predicted in your report. While nothing can be done to prevent such situations, you and your consultant can work together to help minimize their impact. Retaining your consultant to observe subsurface construction operations can be particularly beneficial in this respect.

A REPORT'S CONCLUSIONS ARE PRELIMINARY.

The conclusions contained in your geotechnical engineer's report are preliminary because they must be based on the assumption that conditions revealed through selective exploratory sampling are indicative of actual conditions throughout a site. Because actual

subsurface conditions can be discerned only during earthwork, you should retain your geotechnical engineer to observe actual conditions and to finalize conclusions. Only the geotechnical engineer who prepared the report is fully familiar with the background information needed to determine whether or not the report's recommendations based on those conclusions are valid and whether or not the contractor is abiding by applicable recommendations. The geotechnical engineer who developed your report cannot assume responsibility or liability for the adequacy of the report's recommendations if another party is retained to observe construction.

THE GEOTECHNICAL ENGINEERING/SUBSURFACE WASTE MANAGEMENT (REMEDIATION) REPORT IS SUBJECT TO MISINTERPRETATION.

Costly problems can occur when other design professionals develop their plans based on misinterpretation of a geotechnical engineering/subsurface management (remediation) report. To help avoid these problems, the geotechnical/civil engineer and/or scientist should be retained to work with other project design professionals to explain relevant geotechnical, geological, hydrogeological and waste management findings and to review the adequacy of their plans and specifications relative to these issues.

BORING LOGS AND/OR MONITORING WELL DATA SHOULD NOT BE SEPARATED FROM THE ENGINEERING/WASTE MANAGEMENT REPORT.

Final boring logs developed by the geotechnical/civil engineer and/or scientist are based upon interpretation of field logs (assembled by site personnel), field test results, and laboratory and/or office evaluation of field samples and data. Only final boring logs and data are customarily included in geotechnical engineering/waste management reports. These final logs should not, under any circumstances, be redrawn for inclusion in architectural or other design drawings, because drafters may commit errors or omissions in the transfer process.

To minimize the likelihood of boring log or monitoring well misinterpretation, contractors should be given ready access to the complete geotechnical engineering/waste management report prepared or authorized for their use. If access is provided only to the report prepared for you, you should advise contractors of the report's limitations, assuming that a contractor was not one of the specific persons for whom the report was prepared and that developing construction cost estimates was not one of the specific purposes for which it was prepared. While a contractor may gain important knowledge from a report prepared for another party, the contractor should discuss the report with your consultant and perform the additional or alternative work believed necessary to obtain the data specifically appropriate for construction cost estimating purposes. Some clients hold the mistaken impression that simply disclaiming responsibility for the accuracy of subsurface information always insulates them from attendant liability. Providing the best available information to contractors helps prevent costly construction problems and the adversarial attitudes which aggravate them to a disproportionate scale.

READ RESPONSIBILITY CLAUSES CLOSELY.

Because geotechnical engineering/subsurface waste management (remediation) is based extensively on judgment and opinion, it is far less exact than other design disciplines. This situation has resulted in wholly unwarranted claims being lodged against geotechnical/waste management consultants. To help prevent this problem, geotechnical/civil engineers and/or scientists have developed a number of clauses for use in their contracts, reports and other documents. These responsibility clauses are not exculpatory clauses designed to transfer the engineer's or scientist's liabilities to other parties; rather, they are definitive clauses which identify where the engineer's or scientist's responsibilities begin and end. Their use helps all parties involved recognize their individual responsibilities and take appropriate action. Some of these definitive clauses are likely to appear in your report, and you are encouraged to read them closely. Your engineer/scientist will be pleased to give full and frank answers to your questions.

The preceding paragraphs are based on information provided by the
ASFE/Association of Engineering Firms Practicing in the Geosciences, Silver Spring, Maryland

APPENDIX 3

Draft Report
Horn Rapids Development
Transportation Impact Study
Richland, Washington

J-U-B Engineers, Inc.

March, 1993

DRAFT REPORT

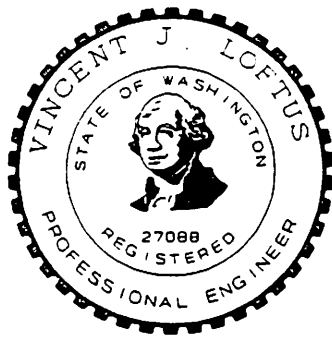
HORN RAPIDS DEVELOPMENT

TRANSPORTATION IMPACT STUDY RICHLAND, WASHINGTON

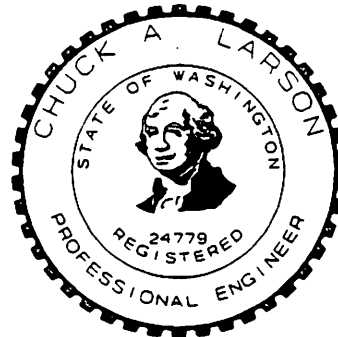
MARCH 1993

Prepared For:

***Columbia Triangle Ventures
Bellevue, Washington***



EXPIRES



EXPIRES

Prepared By:

J-U-B ENGINEERS, Inc.
2810 W. Clearwater Avenue, Suite 201
Kennewick, Washington 99336
(509) 783-2144

TABLE OF CONTENTS

HORN RAPIDS DEVELOPMENT

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II. RESEARCH METHODOLOGY	4
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V. PROJECT TRAFFIC IMPACTS	22-25
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APPENDIX

LEVEL OF SERVICE

Level of Service for Signalized Intersections

CAPACITY ANALYSIS

Computer Printouts

I. STUDY OBJECTIVES

The objective of this study is to determine the overall impact of the proposed **Horn Rapids Development** on adjacent roadways in Richland, Washington. The intersections analyzed include; 1) SR 240 and the Bypass Highway; 2) Four (4) proposed Project Entrance Roads onto SR 240; 3) SR 240 and Grosscup Road. The transportation study objectives will anticipate both correlation of community growth to forecast traffic loading, as well as entrance visibility, circulations, distribution, and traffic control needs. Figure 1 depicts the site location in relation to the area road system.

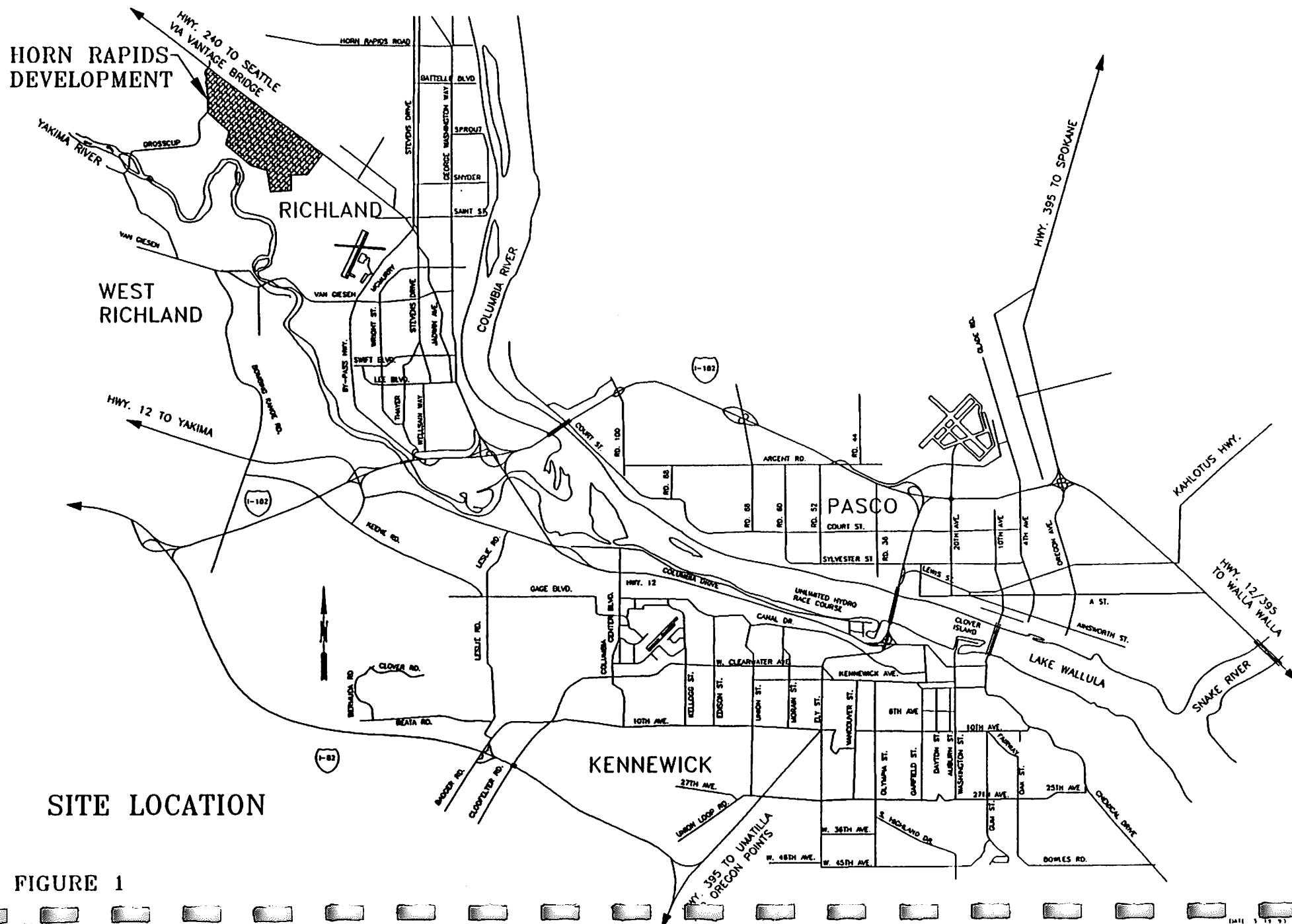
Columbia Triangle Ventures of Bellevue, Washington, proposes to construct a multi-use planned development in the Horn Rapids Area northwest of Richland. The proposed residential development would include over 2000 single family detached, townhouse, duplex, and apartment dwelling units, an 18 hole golf course, sports fields, numerous parks and recreation centers, 105,000 square feet Gross Floor Area (GFA) of office space, an 80 suite hotel, a winery, two (2) elementary schools, two (2) day care facilities, a church, 34,000 GFA retail, 2 restaurants, and a drive in bank. The proposed development is to be built on vacant property located directly south of SR 240, west of the Lamb-Weston Processing Plant, and east of Grosscup Road. The development would be visible from and directly adjacent to SR 240.

Construction of the golf course and 200 single family houses is scheduled to begin in 1993 with completion in 1994. An additional 800 units of single family housing and 200 apartments are scheduled to be complete by 1999. The full development is projected for completion by 2008.

Traffic volumes and improvement recommendations are analyzed assuming the construction phasing schedule above. The results of this study will serve to identify impacts created by the development on adjacent roadways, with recommendations for improvements.

It is important to note that the analysis is based on the assumption that all access to and from the development will be directly onto SR 240 or Grosscup Road. The City of Richland's Comprehensive Growth Plan currently shows a future extension of Kingston

Road from Van Giesen to the main Project Entrance #2 and on north to Horn Rapids Road. The Kingston Road extension is not funded and currently has no schedule for construction. If Kingston Road is extended to provide alternate access to the site, it could significantly change the traffic distribution patterns generated by the Horn Rapids Development. In this event, traffic impacts of the future project entrances and associated improvements should be re-evaluated.



II. RESEARCH METHODOLOGY

In developing the conclusions of this study, research methodology involved collecting and analyzing traffic data in seven major areas. Each of these seven areas and sources of data are described as follows:

- (1) **SITE VISITS** - Site visits to the proposed development were conducted to review anticipated traffic access locations and observe traffic movement at all major roadways surrounding the site.
- (2) **INSTITUTE OF TRANSPORTATION ENGINEERS (ITE)** - The ITE Trip Generation Manual (1991-5th Edition) provided the basis for determination of traffic levels attracted to the proposed development site. ITE trip generating rates are nationally recognized and have been successfully applied to other development projects.
- (3) **FIELD TRAFFIC COUNTS** - To verify available traffic data, peak hour traffic turning movement counts were conducted at the intersection of SR 240 and the Bypass Highway on March 9, 1993. Daily traffic counts were also taken on SR 240 west of the Horn Rapids Business Park from March 5 through March 9, 1993.
- (4) **HIGHWAY CAPACITY MANUAL (HCM)** - The Highway Capacity Manual, Special Report 209, 1985 Edition and supporting computer software, were used to calculate forecast operating level of service of both turning and through lanes at all project intersections.
- (5) **MANUAL OF TRAFFIC SIGNAL DESIGN** - The Manual of Traffic Signal Design (1982) published by the Institute of Transportation engineers was the basis for evaluating signalization.
- (6) **MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MUTCD)** - The Manual of Uniform Traffic Control Devices (1988) was the basis for evaluating auxiliary lane requirements.
- (7) **WSDOT DESIGN MANUAL** - The Washington State Department of Transportation Design Manual, Revision No. 93-01 was the basis of highway improvements on SR 240.

III. EXISTING AND PLANNED TRAFFIC CONDITIONS

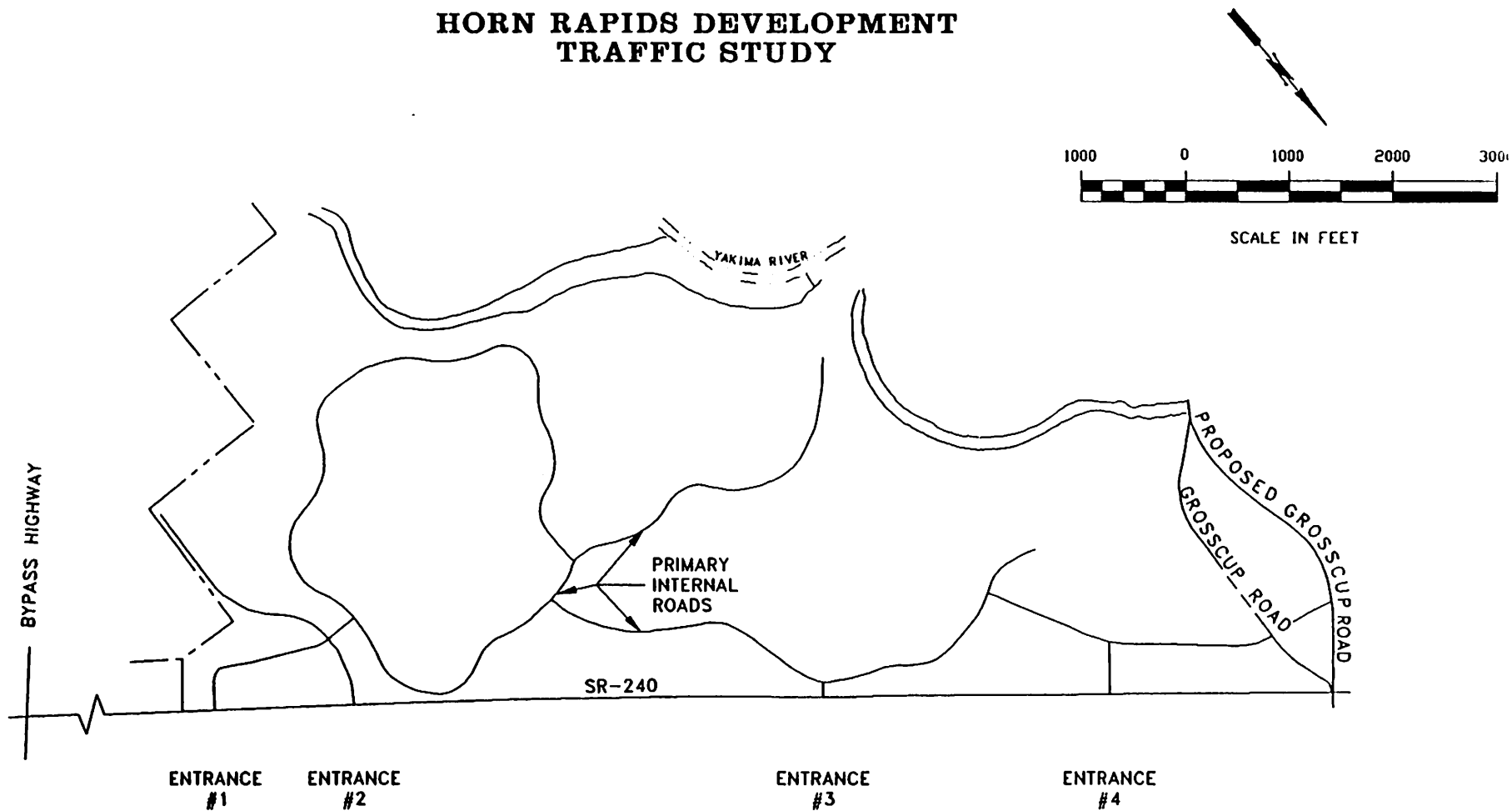
The overall concept layout in Figure 2 is the basis for traffic assumptions and corresponding traffic generation judgements. Primary internal roads and proposed access points onto SR 240 are shown. The future commercial development would be located in the northeast corner of the site and would be accessed mainly by entrances #1 and #2. SR 240 is a minor arterial highway route between Richland and Vantage with Partial Access Control. The SR 240 intersection with the Bypass Highway is currently signalized and is primarily impacted during the morning and evening shift changes at the U.S Department of Energy Hanford Reservation to the north of the intersection. Turning movements at the intersection were recorded in March during the P.M. peak and are shown in Figure 3.

Grosscup Road is a local access road from SR 240 to West Richland. It also provides access to the Richland Landfill and the Off Road Vehicle Park. SR 240 is currently undeveloped from Grosscup Road east through the project limits. Traffic counts for SR 240 were taken in March and the P.M. Peak Hour Volumes are also shown on Figure 3. The P.M. peak hour volumes in the project vicinity occurred between 4:00 P.M. and 5:00 P.M. It is expected that Project Entrance #3 will be required after approximately 600 housing units are constructed. By 1999, 1200 housing units are expected to be built and should be adequately served by entrances #2 and #3. Entrance #4 will be required sometime after 1200 units as development begins to occur in the eastern part of the site.

Computer traffic analyses were conducted on each of the proposed project entrances and the intersection of Grosscup Road and SR 240. To evaluate the operating level of service (LOS) at the various phases, a brief explanation of intersection capacity LOS is included in the appendix. Generally, an LOS of A or B is excellent for traffic flow during peak conditions. An LOS of C or D is usually considered acceptable in peak conditions.

The capacity analysis was conducted assuming unsignalized intersections with SR 240.

HORN RAPIDS DEVELOPMENT TRAFFIC STUDY



MIXED USE RESIDENTIAL DEVELOPMENT
CONCEPT LAYOUT

(JUB)

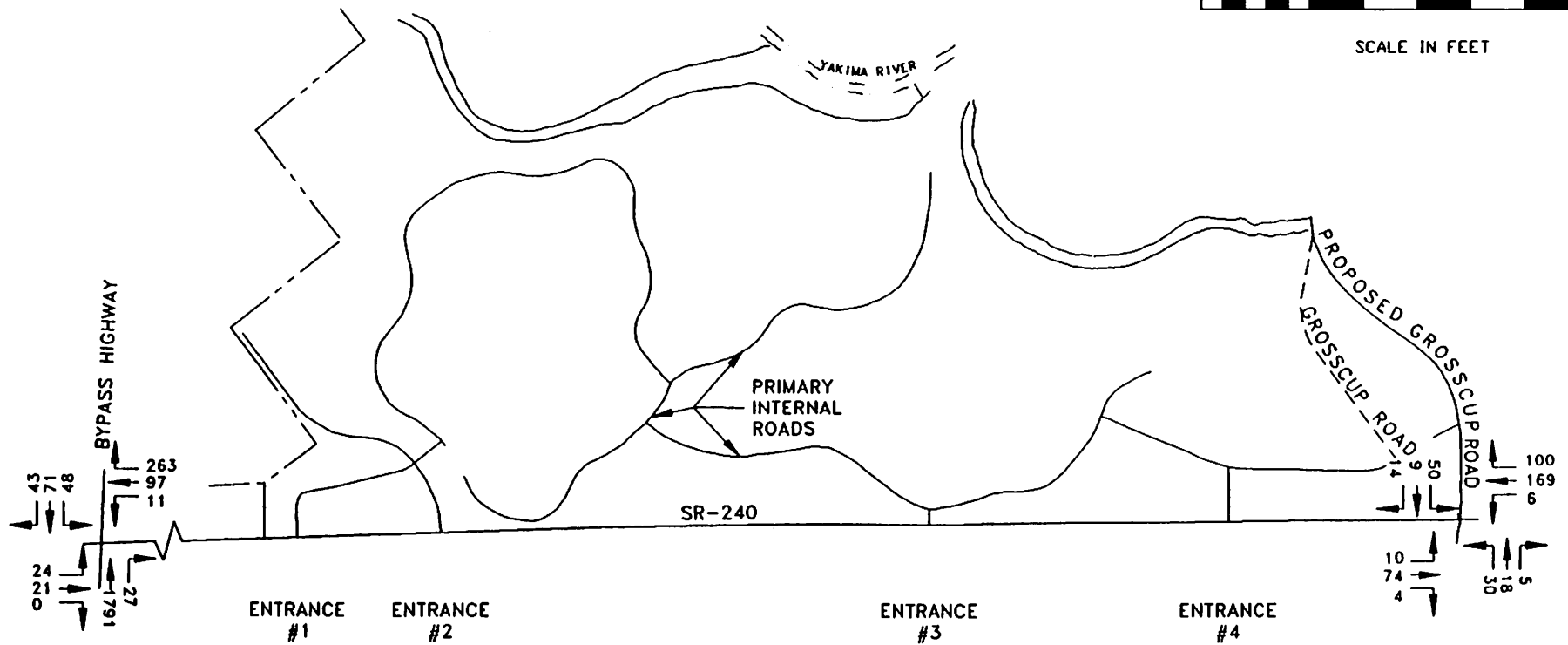
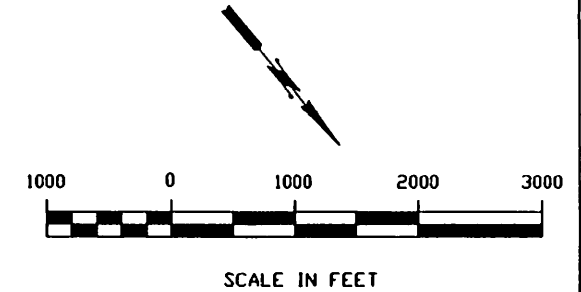
Engineers Surveyors Planners

FIGURE 2

LEGEND

xx- PEAK HOUR
DIRECTIONAL VOLUME

HORN RAPIDS DEVELOPMENT TRAFFIC STUDY



PRE-DEVELOPMENT - 1993
P.M. PEAK HOUR
TRAFFIC VOLUMES

(JUB)

Engineers Surveyors Planners

IV. PROJECT TRAFFIC VOLUMES

An important element in evaluating the traffic impacts from a proposed development is establishing accurate trip generation data and reasonable traffic distribution assumptions. The traffic impacts created by the proposed development will relate to increased volume on all adjacent roadways. The approach to establishing traffic impacts are as follows: 1) Estimate the number of trips generated by the development; 2) Estimate the distribution of trips to the actual roadways; 3) Incorporate the added trips to existing traffic volumes and; 4) Compare the impacts of increased traffic volumes, against the existing traffic volumes. Each of these steps are discussed in detail below.

TRIP GENERATION

The Institute of Transportation Engineers (ITE), Trip Generation Manual, Copyrighted 1991, is the basis for estimating projected trip generation rates and volumes for this study.

The proposed Multi-Use development is a residential golf course community containing offices and a shopping/service area. The trips generated by the site are calculated by individual uses with the following descriptions:

The **Single Family** trip generation rates are based on ITE Land Use 210 - Single Family Detached Housing with the following equations:

$$\begin{array}{llll} \text{Average Weekday,} & \text{Ln (T)} & = & 0.921 \text{ Ln (X)} + 2.698 \\ \text{P.M. Peak Hour,} & \text{Ln (T)} & = & 0.902 \text{ Ln (X)} + 0.528 \\ \text{A.M. Peak Hour,} & \text{Ln (T)} & = & 0.867 \text{ Ln (X)} + 0.398 \end{array}$$

$$\begin{array}{lll} \text{Where:} & \text{T} & = \text{Number of Trips (Typical)} \\ & \text{X} & = \text{Number of Dwelling Units} \end{array}$$

The **Apartment** trip generation rates are based on ITE Land Use 220 - Apartment with the following equations:

$$\begin{array}{llll} \text{Average Weekday,} & \text{Ln (T)} & = & 1.024 \text{ Ln (X)} + 1.710 \\ \text{P.M. Peak Hour,} & \text{Ln (T)} & = & 0.928 \text{ Ln (X)} - 0.118 \\ \text{A.M. Peak Hour,} & \text{T} & = & 0.491 \text{ (X)} + 3.391 \end{array}$$

The **Townhouse and Duplex** trip generation rates are based on ITE Land Use 230 - Residential Condominium/Townhouse with the following equations:

$$\begin{aligned}\text{Average Weekday, } L_n (T) &= 0.850 L_n (X) + 2.565 \\ \text{P.M. Peak Hour, } L_n (T) &= 0.818 L_n (X) + 0.368 \\ \text{A.M. Peak Hour, } L_n (T) &= 0.787 L_n (X) + 0.314\end{aligned}$$

The **Winery** trip generation rates are based on ITE Land Use 140-Manufacturing with the following equations:

$$\begin{aligned}\text{Average Weekday, } T &= 3.883 (X) - 13.112 \\ \text{P.M. Peak Hour, } T &= 0.748 (X) + 0.100 \\ \text{A.M. Peak Hour, } T &= 0.850 (X) - 21.617\end{aligned}$$

Where: $X = 1,000$ Square Feet Gross Floor Area

The **Hotel** trip generation rates are based on ITE Land Use 310 - Hotel with the following equations:

$$\begin{aligned}\text{Average Weekday, } T &= 8.80 (X) - 59.208 \\ \text{P.M. Peak Hour, } L_n (T) &= 0.957 L_n (X) - 0.070 \\ \text{A.M. Peak Hour, } T &= 0.785 (X) - 30.549\end{aligned}$$

Where: $X =$ Number of Occupied Rooms

The **Golf Course** trip generation rates are based on ITE Land Use 430 - Golf Course with the following equations:

$$\begin{aligned}\text{Average Weekday, } L_n (T) &= 1.237 L_n (X) + 2.894 \\ \text{P.M. Peak Hour, } T &= 3.50 (X) - 2.60 \\ \text{A.M. Peak Hour, } L_n (T) &= 2.284 L_n (X) - 2.704\end{aligned}$$

Where: $X =$ Number of Holes

The **Elementary School** trip generation rates are based on ITE Land Use 520 - Elementary School with the following equations:

$$\begin{aligned}\text{Average Weekday, } L_n (T) &= 0.718 L_n (X) + 3.496 \\ \text{P.M. Peak Hour, } L_n (T) &= 0.641 L_n (X) + 2.338 \\ \text{A.M. Peak Hour, } L_n (T) &= 0.622 L_n (X) + 2.558\end{aligned}$$

Where: $X = 1,000$ Square Feet Gross Floor Area

The **Day Care** trip generations are based on Land Use 565 - Day Care Center with the following equations:

$$\begin{array}{llll} \text{Average Weekday,} & T & = & 79.26 \quad (X) \\ \text{P.M. Peak Hour,} & \text{Ln } (T) & = & 0.758 \text{ Ln } (X) + 3.025 \\ \text{A.M. Peak Hour,} & \text{Ln } (T) & = & 0.501 \text{ Ln } (X) + 3.301 \end{array}$$

Where: $X = 1,000$ Square Feet Gross Floor Area

The **Park and Sports Field** trip generations are based on ITE Land Use 411 - City park with the following equations:

$$\begin{array}{llll} \text{Average Weekday,} & \text{Ln } (T) & = & -401 \text{ Ln } (X) + 3.780 \\ \text{P.M. Peak Hour,} & \text{N/A (Peaks at times other than that of adjacent traffic)} & & \\ \text{A.M. Peak Hour,} & \text{N/A (Peaks at times other than that of adjacent traffic)} & & \end{array}$$

Where: $X = \text{Acres}$

The **Church** trip generation rates are based on ITE Land Use 560 - Church with the following equations:

$$\begin{array}{llll} \text{Average Weekday,} & T & = & 9.32 \quad (X) \\ \text{P.M. Peak Hour,} & \text{Ln } (T) & = & 0.699 \text{ Ln } (X) + 0.299 \\ \text{A.M. Peak Hour,} & T & = & 1.37 \quad (X) \end{array}$$

Where: $X = 1,000$ Square Feet Gross Floor Area

The **Office** trip generation rates are based on ITE Land Use 710 - General Office Building with the following equations:

$$\begin{array}{llll} \text{Average Weekday,} & \text{Ln } (T) & = & 0.756 \text{ Ln } (X) + 3.765 \\ \text{P.M. Peak Hour,} & \text{Ln } (T) & = & 0.737 \text{ Ln } (X) + 1.831 \\ \text{A.M. Peak Hour,} & \text{Ln } (T) & = & 0.777 \text{ Ln } (X) + 1.674 \end{array}$$

Where: $X = 1,000$ Square Feet Gross Floor Area

The **Retail** trip generation rates are based on ITE Land Use 810 - Retail - General Merchandise with the following equations:

$$\begin{array}{llll} \text{Average Weekday, Ln (T)} & = & 1.12 \text{ Ln (X)} + 3.24 \\ \text{P.M. Peak Hour, T} & = & 4.804 \text{ (X)} \\ \text{A.M. Peak Hour,} & \text{N/A (Peaks at times other than that of adjacent traffic)} \end{array}$$

Where: X = 1,000 Square Feet Gross Floor Area

The **Restaurant** trip generation rates are based on ITE Land Use 832 - High Turnover (Sit-Down) Restaurant with the following equations:

$$\begin{array}{llll} \text{Average Weekday, T} & = & 205.36 \text{ (X)} \\ \text{P.M. Peak Hour, T} & = & 16.26 \text{ (X)} \\ \text{A.M. Peak Hour, T} & = & 15.70 \text{ (X)} \end{array}$$

Where: X = 1,000 Square Feet of Gross Floor Area

The **Bank** trip generation rates are based on ITE Land Use 912 - Drive In Bank with the following equations:

$$\begin{array}{llll} \text{Average Weekday, Ln (T)} & = & 0.562 \text{ Ln (X)} + 6.81 \\ \text{P.M. Peak Hour, T} & = & 43.63 \text{ (X)} \\ \text{A.M. Peak Hour,} & \text{N/A (Peaks at times other than that of adjacent traffic)} \end{array}$$

Where: X = 1,000 Square Feet of Gross Floor Area

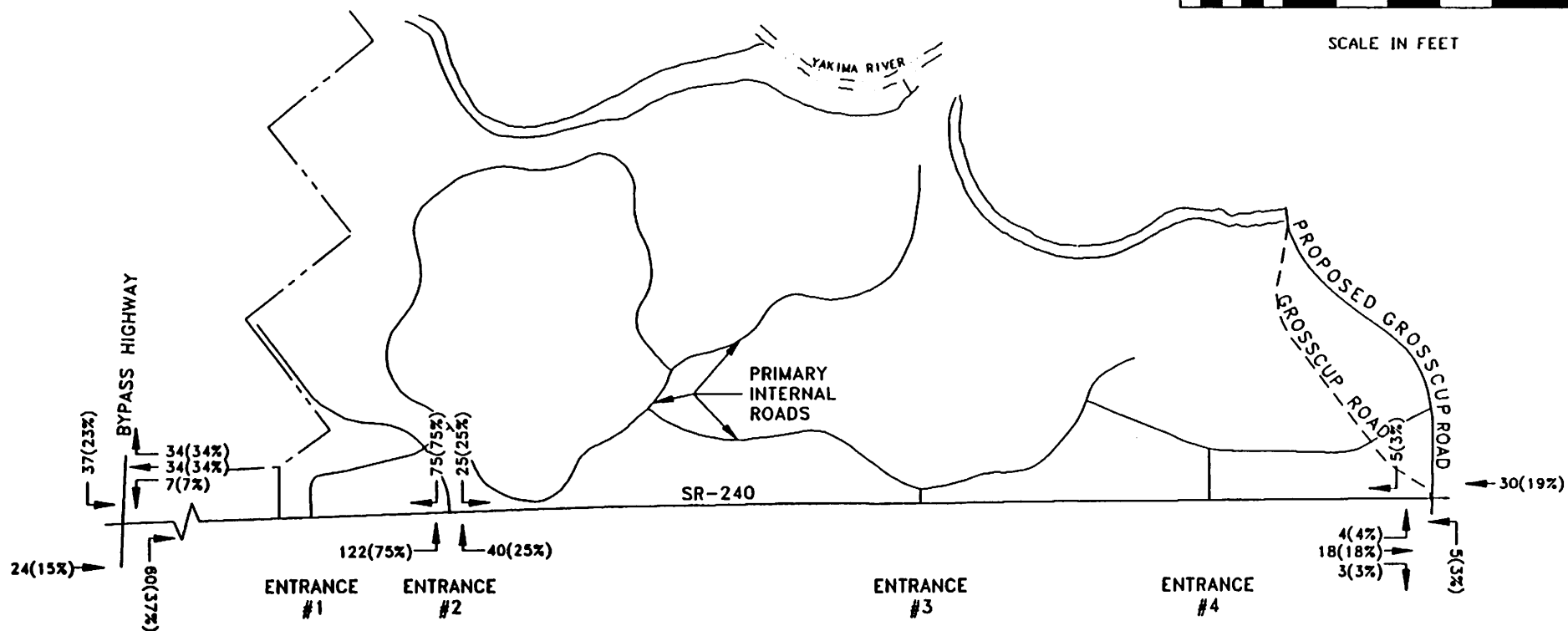
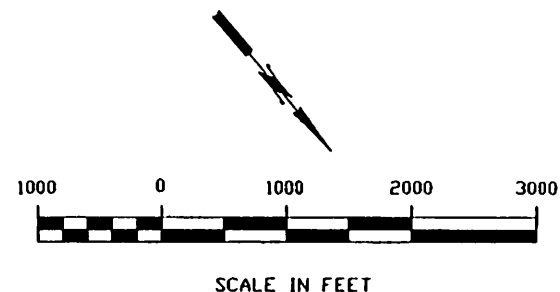
TABLE 1
TRIP GENERATION VOLUMES

GENERATOR	UNITS	AREA (GFA)	AVERAGE DAILY TRIPS	A.M. PEAK HOUR DEPARTURES	P.M. PEAK HOURS	
					ARRIVALS	DEPARTURES
<u>DESIGN YEAR 1994 - SINGLE FAMILY</u>	200	---	1,954	109 (74%)	131 (65%)	71 (35%)
GOLF COURSE	18 HOLES	---	645	84 (83%)	31 (52%)	29 (48%)
<u>DESIGN YEAR 1999 - SINGLE FAMILY</u>	800	---	7,006	362 (74%)	457 (65%)	246 (35%)
APARTMENTS	200	---	1,256	508 (74%)	83 (68%)	39 (32%)
<u>DESIGN YEAR 2008 - SINGLE FAMILY</u>	1,182	---	10,037	99 (83%)	651 (65%)	351 (35%)
APARTMENTS	237	---	1,494	128 (83%)	97 (68%)	45 (32%)
TOWNHOUSE	403	---	2,130	0 (7%)	129 (66%)	66 (34%)
WINERY	---	19,000	61	13 (40%)	7 (53%)	28 (46%)
HOTEL	80 SUITES	---	645	8 (17%)	33 (54%)	28 (46%)
ELEMENTARY SCHOOL	---	38,000	449	50 (40%)	58 (56%)	47 (44%)
DAY CARE	---	12,000	951	43 (46%)	62 (46%)	73 (54%)
PARKS	31 ACRES	---	174	N/A	N/A	N/A
OFFICE	---	105,000	1,456	22 (11%)	33 (17%)	160 (83%)
CHURCH	---	7,000	65	5 (50%)	3 (54%)	2 (46%)
RETAIL	---	34,000	1,325	82 (50%)	82 (50%)	81 (50%)
RESTAURANT	---	9,000	1,848	71 (50%)	79 (54%)	67 (46%)
BANK	---	9,000	1,662	N/A	188 (48%)	204 (52%)
TOTAL			33,158	1584	2,124	1,537

LEGEND

- xx- PEAK HOUR DIRECTIONAL VOLUME
- (xx%) PERCENTAGE TRIP DISTRIBUTION

HORN RAPIDS DEVELOPMENT TRAFFIC STUDY



DESIGN YEAR - 1994
P.M. PEAK HOUR 4:00 - 5:00
PROJECT ARRIVALS AND DEPARTURES

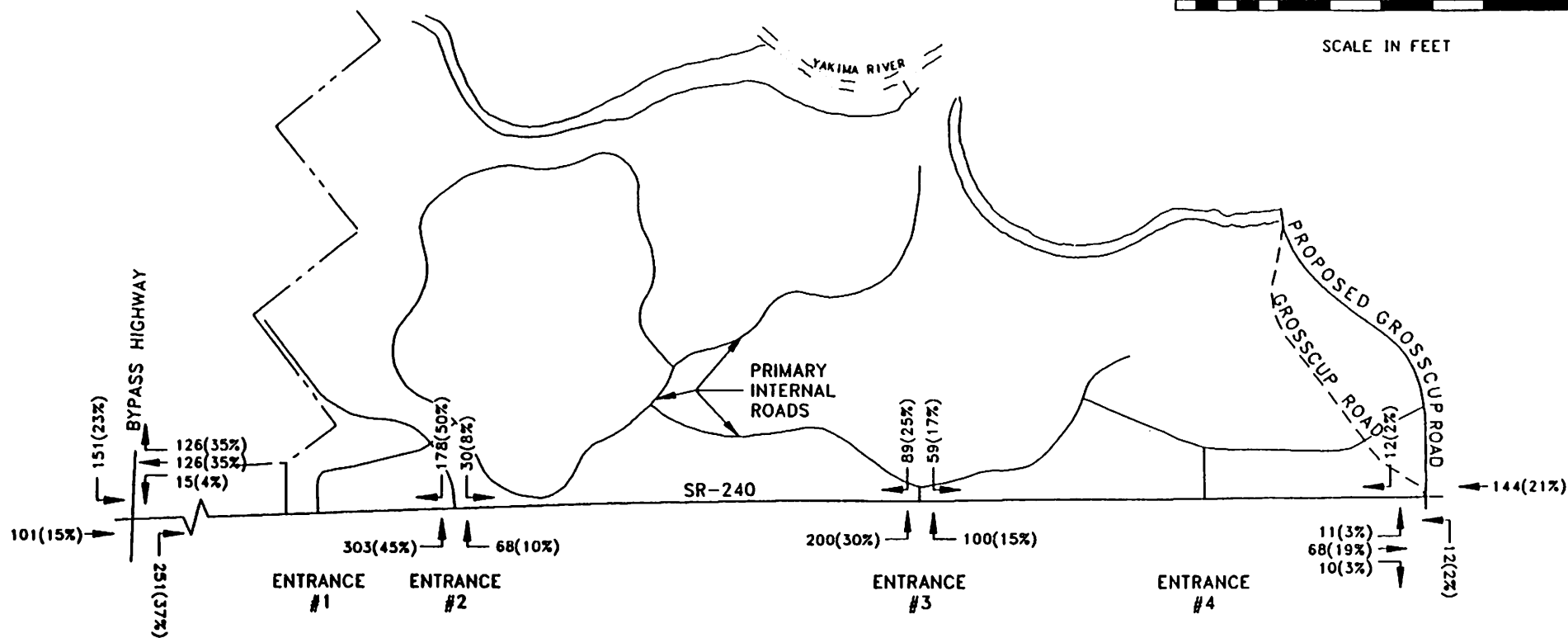
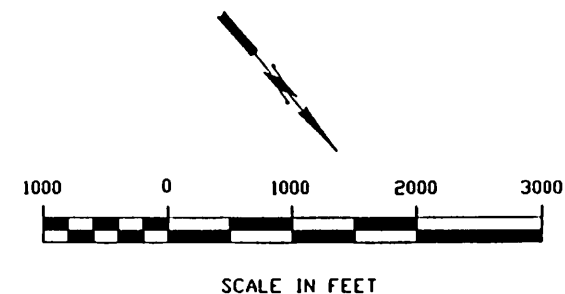


Engineers Surveyors Planners

LEGEND

xx- PEAK HOUR
DIRECTIONAL VOLUME
(xx%) - PERCENTAGE TRIP DISTRIBUTION

HORN RAPIDS DEVELOPMENT TRAFFIC STUDY



DESIGN YEAR - 1999
P.M. PEAK HOUR 4:00 - 5:00
PROJECT ARRIVALS AND DEPARTURES

JUB

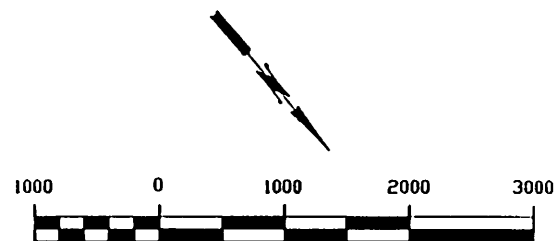
Engineers Surveyors Planners

FIGURE 5

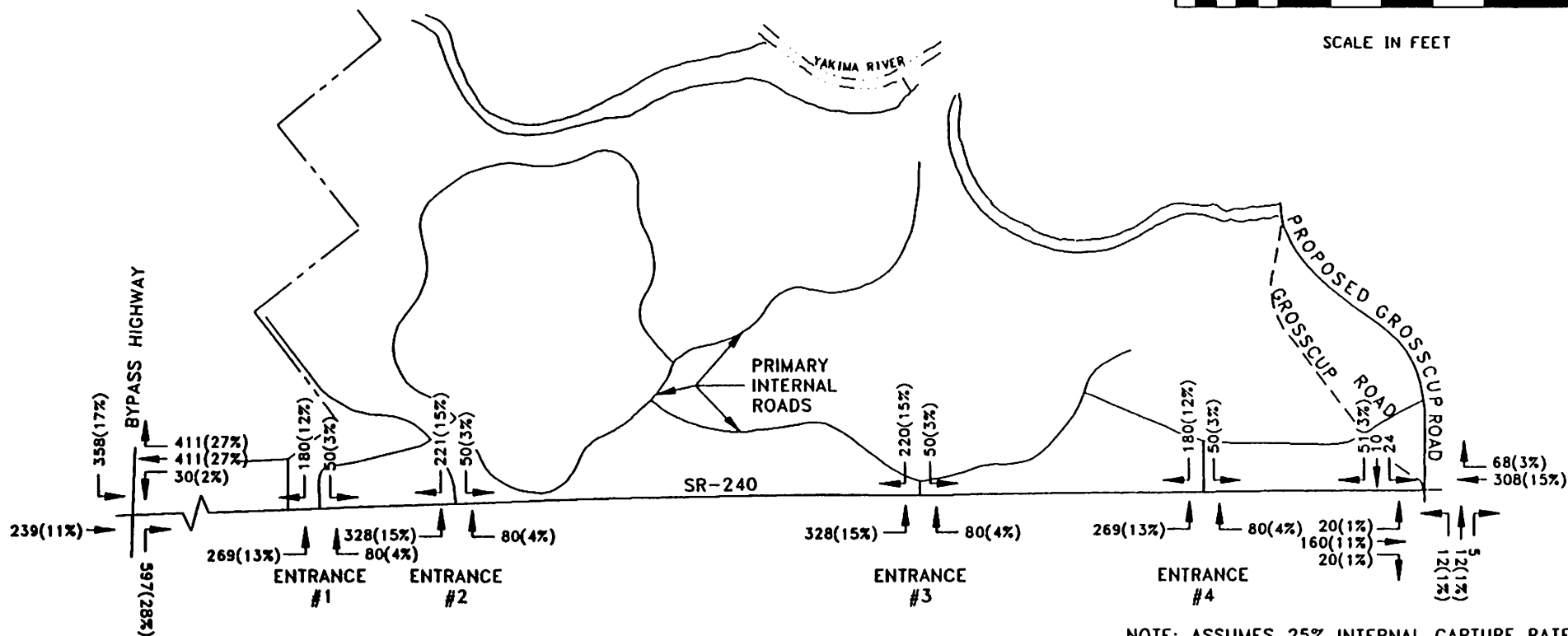
LEGEND

xx → PEAK HOUR
DIRECTIONAL VOLUME
(xx%) → PERCENTAGE TRIP DISTRIBUTION

HORN RAPIDS DEVELOPMENT TRAFFIC STUDY



SCALE IN FEET



NOTE: ASSUMES 25% INTERNAL CAPTURE RATE

DESIGN YEAR - 2008
P.M. PEAK HOUR 4:00 - 5:00
PROJECT ARRIVALS AND DEPARTURES

JUB

Engineers Surveyors Planners

RE

PROJECTED TRAFFIC VOLUMES

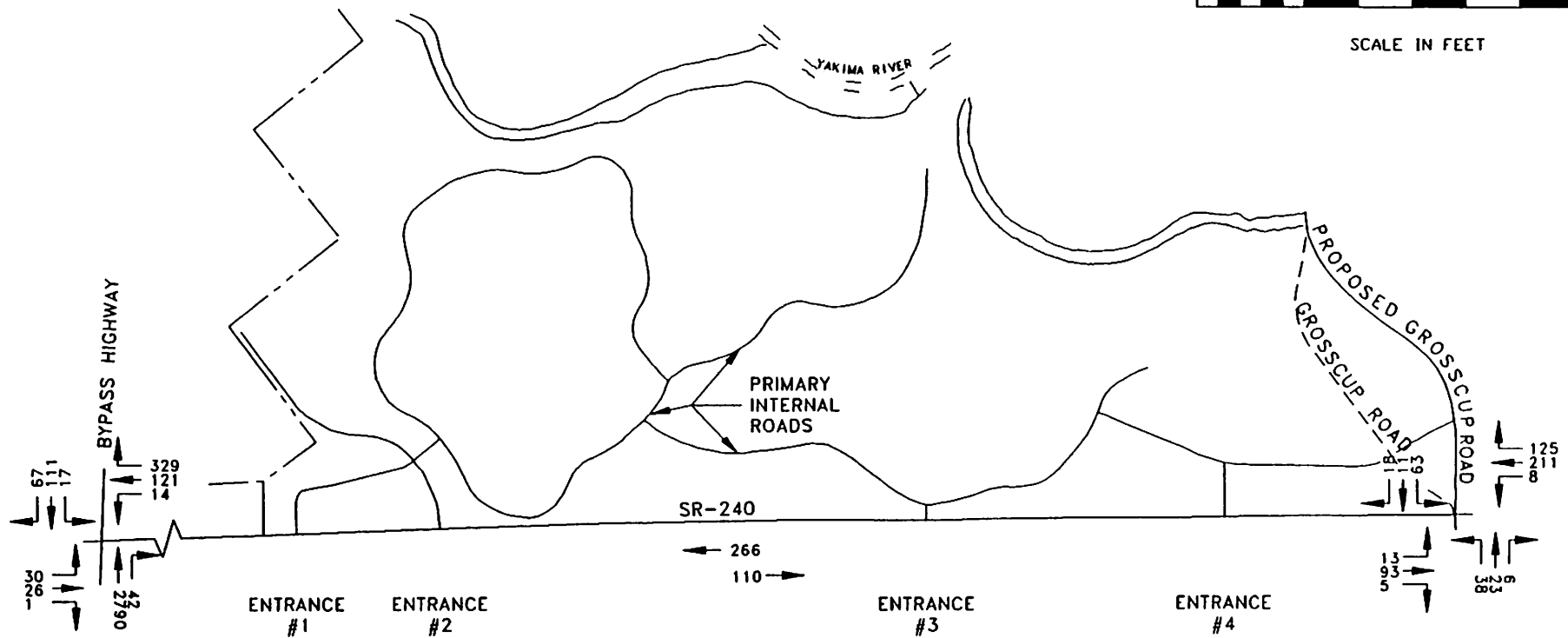
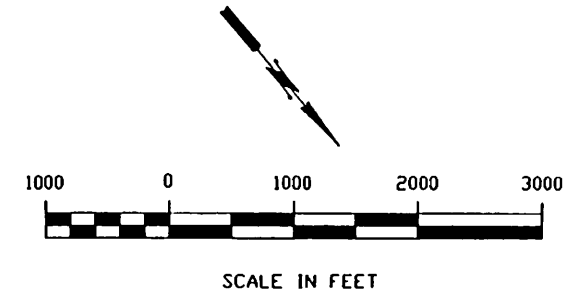
Design year 1994, 1999, and 2008 have been selected as the analysis periods which represents traffic impacts in the first year, fifth year, and fifteenth year, when full development occurs. The estimated project traffic volumes are combined with the existing area traffic volumes (the existing volumes were presented in Figure 3) to determine the total traffic impact of the project. The annual growth rates on SR 240 has been estimated at 1.5% and 3% for the Bypass Highway. Figure 7 depicts the projected year 2008 P.M. peak hour volumes for pre-development background traffic based on these annual growth rates. Project generated traffic volumes are added to pre-development traffic volumes to compare the impacts.

Figures 8, 9, and 10 depict the year 1994, 1999, and 2008 respectively, arrival and departure P.M. peak hour volumes for the area roadways, with both project and existing traffic combined. Figure 8 shows 200 units of housing and the golf course only, Figure 9 shows an additional 1000 units of housing and Figure 10 shows full development. These figures are the basis for detailed intersection capacity analysis and evaluation of project impacts.

LEGEND

xx- PEAK HOUR
DIRECTIONAL VOLUME

HORN RAPIDS DEVELOPMENT TRAFFIC STUDY



PRE-DEVELOPMENT - 2008
P.M. PEAK HOUR 4:00 - 5:00
TRAFFIC VOLUMES

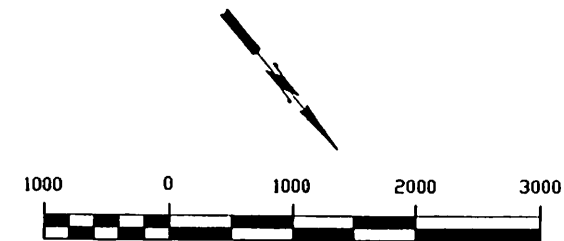
JUB

Engineers Surveyors Planners

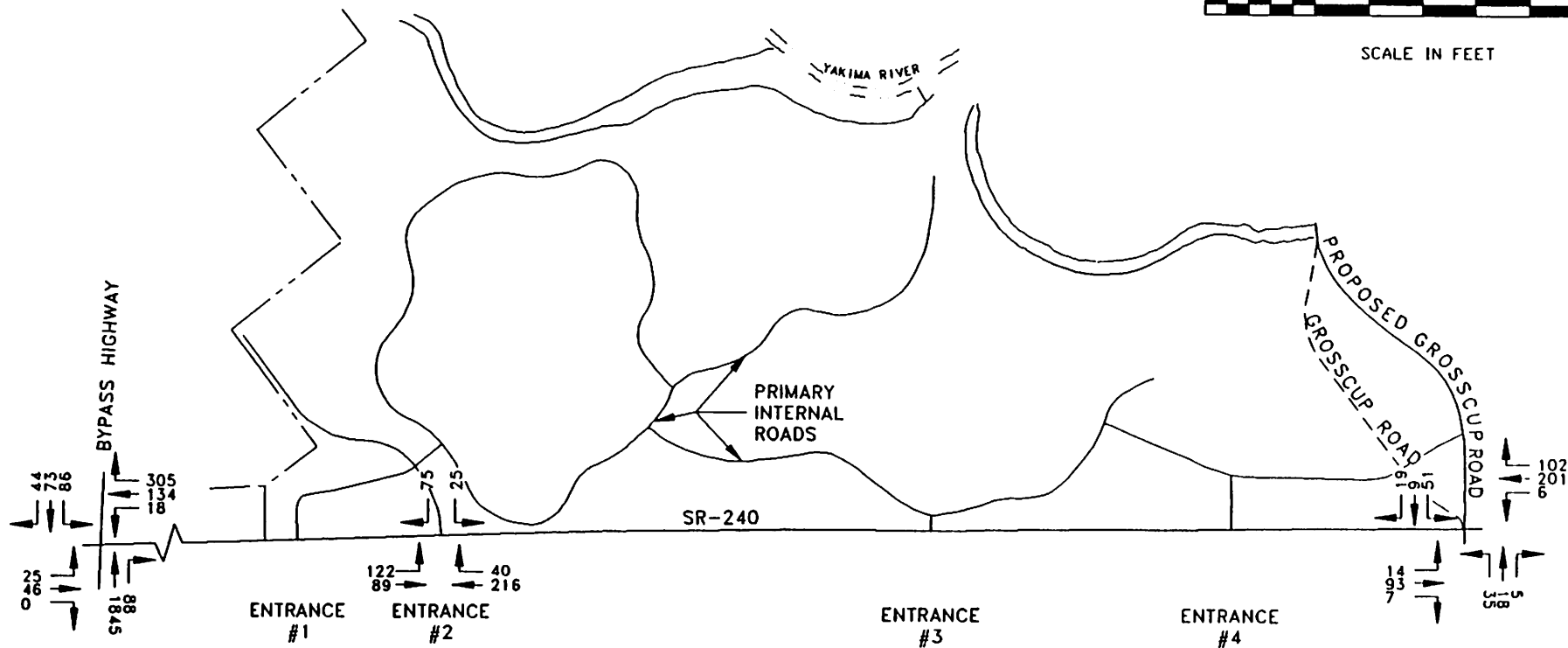
LEGEND

xx → PEAK HOUR
DIRECTIONAL VOLUME

HORN RAPIDS DEVELOPMENT TRAFFIC STUDY



SCALE IN FEET



DESIGN YEAR - 1994
P.M. PEAK HOUR 4:00 - 5:00
TRAFFIC VOLUMES



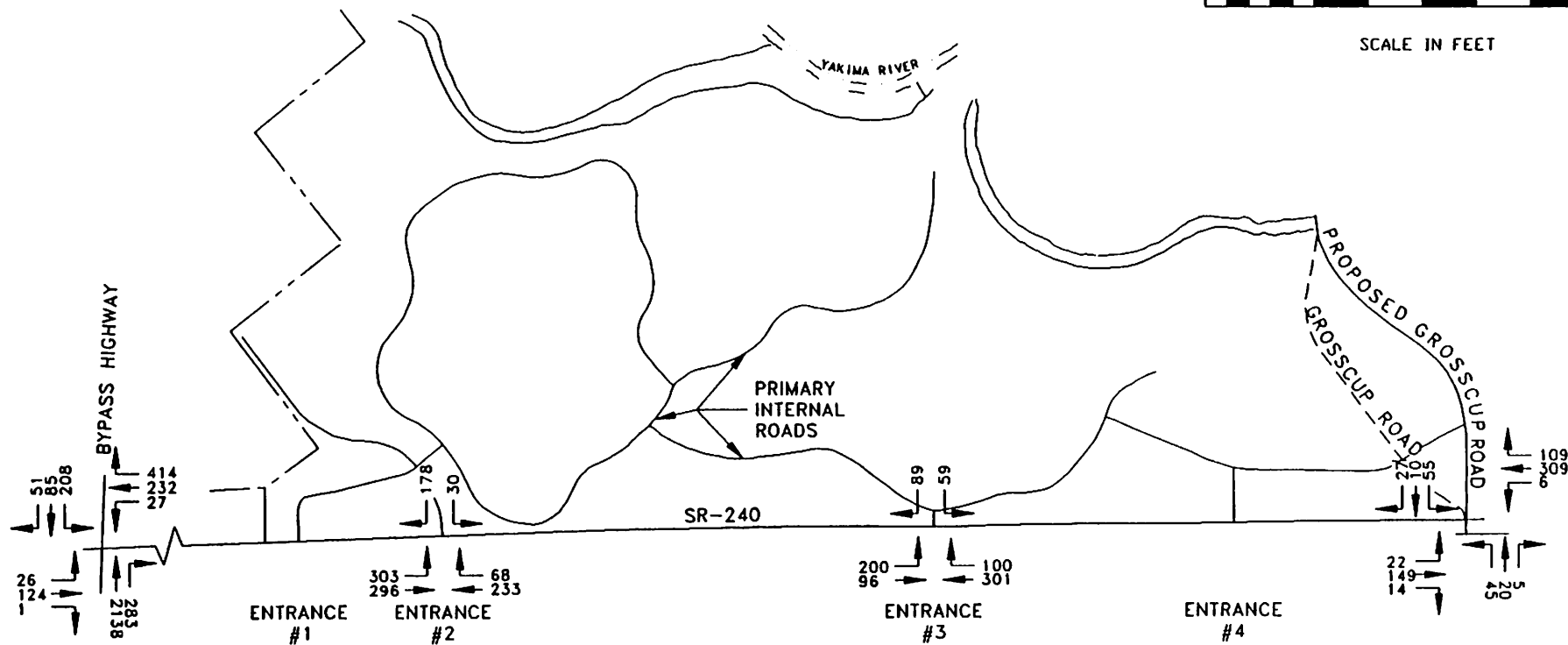
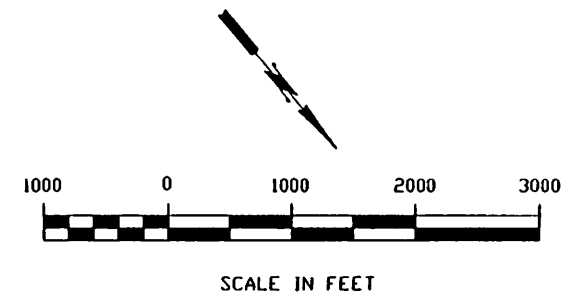
Engineers Surveyors Planners

FIGURE 8

LEGEND

xx → PEAK HOUR
DIRECTIONAL VOLUME

HORN RAPIDS DEVELOPMENT TRAFFIC STUDY



DESIGN YEAR - 1999
P.M. PEAK HOUR 4:00 - 5:00
TRAFFIC VOLUMES

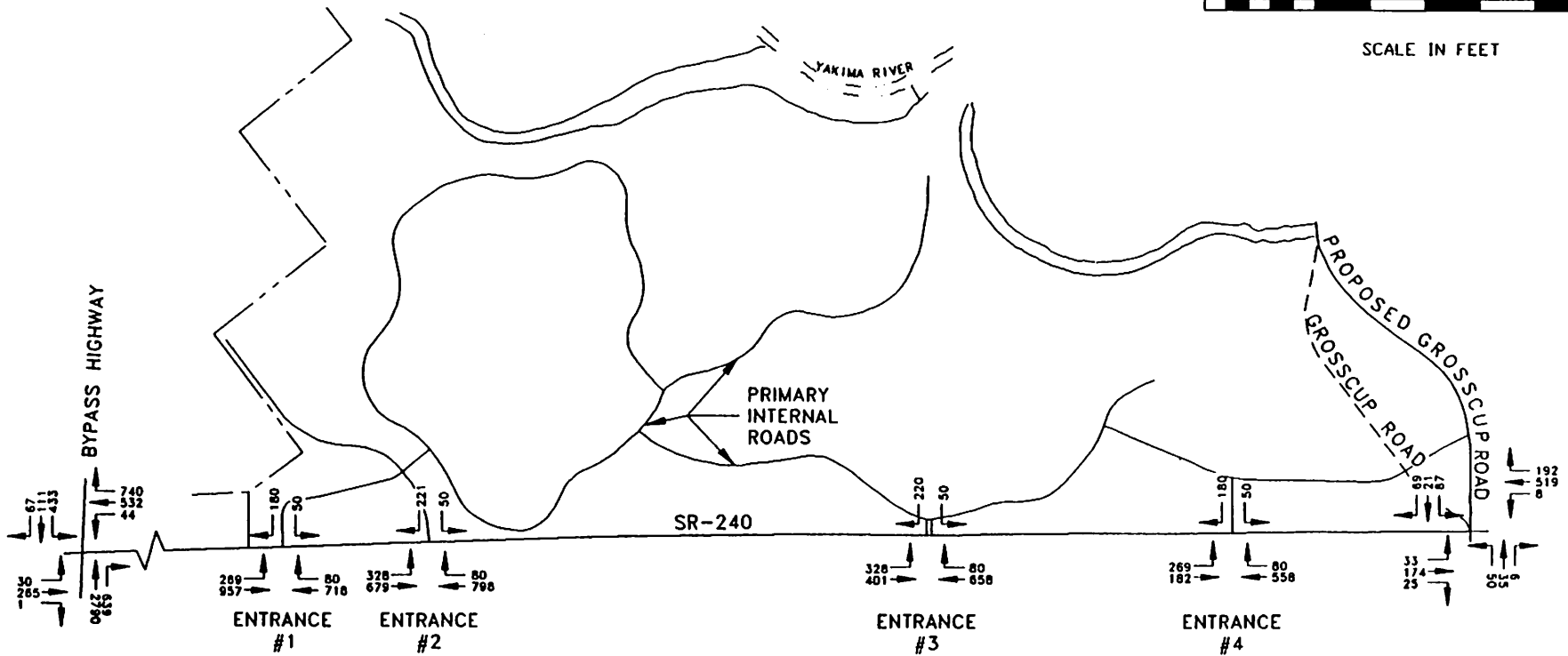
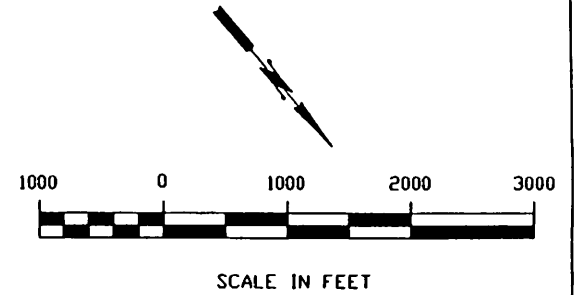
(JUB)

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LEGEND

xx → PEAK HOUR
DIRECTIONAL VOLUME

HORN RAPIDS DEVELOPMENT TRAFFIC STUDY



DESIGN YEAR - 2008
P.M. PEAK HOUR 4:00 - 5:00
TRAFFIC VOLUMES



Engineers Surveyors Planners

V. PROJECT TRAFFIC IMPACTS

Computerized intersection capacity analysis was conducted on the four (4) proposed project entrances and the intersection of Grosscup Road and SR 240. For analysis purposes, they were treated as unsignalized. Overall intersection operation levels of adjacent roadways before and after the project are outlined in Table 2 for Years 1994, 1999, and 2008 for both Pre- and Post-Development. The capacity computer analysis calculations are provided in the appendix.

TABLE 2
INTERSECTION LEVEL OF SERVICE
P.M. PEAK HOUR

INTERSECTION	LANE DIRECTION	POST-DEVELOPMENT YEAR 1994	POST-DEVELOPMENT YEAR 1999	POST-DEVELOPMENT YEAR 2008
SR 240 and Project Entrance #1				
Westbound Northbound	LT	---	---	E
	LT	---	---	F
	RT	---	---	A
SR 240 and Project Entrance #2				
Westbound Northbound	LT	A	B	F
	LT	C	E	F
	RT	A	A	A
SR 240 and Project Entrance #3				
Westbound Northbound	LT	---	B	E
	LT	---	D	F
	RT	---	A	A
SR 240 and Project Entrance #4				
Westbound Northbound	LT	---	---	D
	LT	---	---	F
	RT	---	---	A
SR 240 and Grosscup Road				
Eastbound Westbound Northbound	LT	A	A	A
	LT	A	A	B
	LT	B	C	E
	TH	A	B	D
	RT	A	A	A
Northbound	LT	B	C	E
	TH	A	C	D
	RT	A	A	A

Signal warrant analysis was also conducted on each proposed project entrance roadway and Grosscup Road. It was determined that signals may be warranted at project entrances #2 and #3 sometime before full development. Project Entrance #1 may also warrant a signal. There are 11 criteria established in the "Manual of Uniform Traffic Control Devices" for determining if a signal is warranted. Under most circumstances, more than one of the warrants should be satisfied before a signal is installed. The satisfaction of a warrant, however, does not always completely justify signalization. The appropriate signal warrant analyses which were evaluated are summarized in Table 3.

**TABLE 3
SIGNAL WARRANT ANALYSIS**

WARRANT	WARRANT ACHIEVED?				
	YEAR 2008				
	ENTRANCE #1	ENTRANCE #2	ENTRANCE #3	ENTRANCE #4	GROSSCUP ROAD
# 1 - Minimum Vehicular Volume	No	No	No	No	No
# 2 - Interruption of Continuous Traffic	Yes	Yes	Yes	No	No
# 8 - Combination of Warrants	No	Yes	Yes	No	No
# 9 - Four Hour Volume	Yes	Yes	Yes	Yes	No
#11 - Peak Hour Volumes	No	Yes	Yes	No	No

The following observations were identified at each intersection within the project vicinity:

SR 240 AND BYPASS HIGHWAY INTERSECTION

The primary project impact to this intersection will be A.M. peak hour eastbound left turns and P.M. peak northbound left turns. It is anticipated that double left turn lane movements may be required on the eastbound SR 240 and the northbound Bypass Highway by the years 2001 and 2005 respectively. By 1999 it is anticipated that additional left turn lane storage will be required on eastbound SR 240.

PROJECT ENTRANCE #1

Project Entrance #1 will serve as the main entrance to the commercial activities at the project. This entrance is not planned until late in its development. If unsignalized at

full development, northbound lefts will be at LOS F and westbound lefts will be at LOS E. Based on poor levels of operation and meeting two (2) warrants in Table 3, a signal will likely be required here at full development. A center left turn lane, right turn deceleration lane, and acceleration lane are recommended on SR 240.

PROJECT ENTRANCE #2

Project Entrance #2 will be constructed in 1993 and will serve as the main project entrance. This entrance will be located in accordance with the City of Richland's conceptual extension of Kingston Road. In 1994, northbound left will be at LOS C. A center left turn lane, a right turn deceleration pocket, and acceleration lane are required initially.

In 1999, northbound lefts will function at LOS E and westbound lefts will function at LOS B. On SR 240 a full right turn deceleration lane will be required and the center left turn storage will need to be extended. If still unsignalized by 2008, both northbound and westbound lefts would experience LOS F. A signal will likely be required sometime between 1999 and 2008.

PROJECT ENTRANCE #3

Project Entrance #3 will be the second entrance constructed and will be required after approximately 600 units of housing. A center left turn lane, right turn deceleration lane and acceleration lane will be required on SR 240. By 1999 northbound lefts will be at LOS D and westbound lefts will be at LOS B. In 2008, if still unsignalized, northbound lefts will experience LOS F and westbound lefts will be at LOS E. A signal will likely be required sometime between 1999 and 2008.

PROJECT ENTRANCE #4

Project Entrance #4 will be a secondary entrance to serve the east end of the development and a proposed elementary school. A center left turn lane, right turn deceleration lane, and acceleration lane will be required on SR 240. Northbound lefts will function at LOS F and westbound lefts will experience LOS D. This intersection should be watched closely for the need for a signal after full development.

GROSSCUP ROAD AND SR 240 INTERSECTION

It is assumed that any project generated traffic accessing on Grosscup Road will use the Grosscup Road\SR 240 intersection. In 1994, northbound and southbound lefts will function at LOS B. In 1999, Grosscup Road north and south will function at LOS C. By 2008, northbound Grosscup Road will be at LOS B and southbound will be at LOS D. No improvements are required at this intersection.

SR 240 BYPASS HIGHWAY TO PROJECT ENTRANCE

Using equations from the ITE Trip Generation Manual, we have estimated the Average Daily Trips (ADT) generated by the project to be 33,158. The Manual suggests that 15% to 45% of trips generated by a multi-use development like Horn Rapids could be internally generated. This internal capture reduces the impact to the adjacent roadways. Assuming a 25% internal capture rate, the full project development will distribute over 24,000 ADT onto SR 240. Our analysis assumed the character of SR 240 changing from rural to suburban after approximately 1200 housing units. Under the suburban classification, a three lane facility can serve up to 16,000 ADT at LOS D. After achieving 16,000 ADT, the stretch of SR 240 from the Bypass Highway to Project Entrance #3 will probably need to be widened to four lanes with left turn lanes at intersections to maintain an LOS D. This need is based on the assumption that background traffic on SR 240 will grow at 1.5% annually.

INTERNAL PROJECT ROADS

The internal project roads will function well as two (2) lane facilities with left turn lanes at major intersections in the residential areas. Four (4) lanes with left turn lanes are recommended in commercial areas. Separate left and right turn lanes are required at all proposed project entrance intersections with SR 240. Sufficient future right-of-way should be provided at each entrance to accomodate the potential extension of roadways across SR 240 heading northeast.

VI. CONCLUSIONS AND RECOMMENDATIONS

The proposed Multi-Use Horn Rapids Development is expected to generate significant traffic volume increases on adjacent roadways by the time it is fully developed. Total average daily traffic generated from the proposed full development would be approximately 33,158. Assuming 15% to 45% internal capture rate ADT contributing to SR 240 would range from 28,185 to 18,237. Weekday 4:00 P.M. to 5:00 P.M. traffic is expected to generate the peak periods of flow which corresponds to the existing peak volume periods in this vicinity.

Based on detailed traffic counts, analysis and assumptions of traffic distribution, the following conclusions and recommendations are summarized for the project. Annual traffic growth rates on SR 240 adjacent to the project and on the Bypass Highway are assumed to be 1.5% and 3.0% respectively.

- 1) Traffic distribution patterns and intersection capacity analysis were conducted assuming SR 240 and Grosscup Road provide the only access to and from the development. If Kingston Road is extended from Van Giesen to Horn Rapids Road, north of the project, it could significantly affect distribution patterns and intersection capacities. Re-evaluation of project entrance impact should be required.
- 2) The annual traffic growth rate was assumed at 1.5% on SR 240 adjacent to the site. The area adjacent to the site is currently undeveloped but is positioned well for future industrial and commercial development. The Horn Rapids Development could serve as an attraction for this additional development.
- 3) Right turn deceleration lane, center left turn lane, and acceleration lane are warranted on SR 240 at each project entrance. The length of lanes and configuration should be as recommended in the **WSDOT Design Manual**. Separate left and right turn lanes are required on the entrance roads. Future right-of-way should be provided at each entrance to accomodate possible continuation to the northeast across SR 240.
- 4) Project Entrance #2 will be constructed in 1993 and will serve as the main project entrance. Project Entrance #3 will be required in 3-5 years after approximately 600 units of housing are complete. After 1999, Project Entrance #4 will be required to better distribute traffic onto SR 240. Project Entrance #1 will function as the main commercial entrance and should be constructed with the initial commercial developments, planned for later phases of the project.

5) SR 240 will probably need to be a four (4) lane facility with left turn lanes at intersections from the Bypass Highway through Project Entrance #3, depending on the actual internal capture rate of the Horn Rapids project and the future development of other properties adjacent to SR 240.

6) Project Entrance intersections were analyzed as unsignalized through design year 2008 and Levels of Service were summarized in Table 2. Signal Warrant analysis indicated signals will probably be warranted at Project Entrances #1, #2, and #3 by full development. Computer Capacity analysis indicate these intersections would operate at LOS C in the year 2008 if signalized. These intersections should be closely monitored on an annual basis to determine the actual warrant period for signal installation.

7) Internal project roads should be four (4) lanes with separate left turn lanes in commercial areas. Separate left turn lanes should be provided at all internal project intersections.

8) Additional northbound and eastbound left turn capacity will be required at the SR 240/Bypass Highway intersection by the year 2001. The SR 240 Metropolitan Transportation Study is now in progress. It will project traffic impacts and recommend improvements to the SR 240 Road system in Richland. The SR 240/Bypass Highway intersection is being analyzed as a part of that study. At 3% annual traffic growth, it is likely a seven lane facility with dual left turn lanes will be recommended by design year 2008.

9) It is difficult to reliably project traffic impacts beyond ten (10) years. Close monitoring of actual traffic and biannual movement traffic counts are required to determine the actual schedule for improvements recommended in this study.

10) SR 240 is currently classified as a Minor Arterial with partial access control. The Washington State Department of Transportation (WSDOT) Highway Design Manual recommends a minimum spacing of ½ mile between intersections. Variances from this spacing recommendation are sometimes allowed with justification. Project Entrances #2 and #3 will initially meet this spacing requirement. When Entrance #4 is constructed it will be slightly under ½ mile from Entrance #3 and from Grosscup Road. Project Entrance #1 will only be slightly more than ¼ mile from Entrance #2. Based on discussions with WSDOT officials, it is recommended that the developer submit the plan in full to WSDOT and the City of Richland and pursue implementation of access permits now for all four (4) of the proposed project entrances.



LEVEL OF SERVICE

LEVEL OF SERVICE FOR SIGNALIZED INTERSECTIONS*

Level of Service for signalized intersections is defined in terms of delay. Delay is a measure of driver discomfort, frustration, fuel consumption, and lost travel time. Specifically, level of service criteria are stated in terms of the average stopped delay per vehicle for a 15 minute analysis period.

Delay may be measured in the field, or may be estimated using procedures presented later in this chapter. Delay is a complex measure, and is dependent on a number of variables, including the quality of progression, the cycle length, the green ration, and v/c ratio for the lane group or approach in question.

Level of Service A describes operation with very low delay, i.e., less than 5.0 seconds per vehicle. This occurs when progression is extremely favorable, and most vehicles arrive during the green phase. Most vehicles do not stop at all. Short cycle lengths may also contribute to low delay.

Level of Service B describes operations with delay in the range of 5.1 to 15.0 seconds per vehicle. This generally occurs with good progression and/or short cycle lengths. More vehicles stop than for L.O.S. A, causing higher levels of average delay.

Level of Service C describes operations with delay in the range of 15.1 to 25.0 seconds per vehicle. These higher delays may result from fair progression and/or larger cycle lengths. Individual cycle failures may begin to appear in this level. The number of vehicles stopping is significant at this level, although many still pass through the intersection without stopping.

Level of Service D describes operations with delay in the range of 25.1 to 40.0 seconds per vehicles. At level D, the influence of congestion becomes more noticeable. Longer delays may result from some combination of unfavorable progression, long cycle lengths, or high v/c ratios. Many vehicles stop, and the proportion of vehicles not stopping declines. Individual cycle failures are noticeable.

Level of Service E describes operations with delay in the range 40.1 to 60.0 seconds per vehicles. This is considered to be the limit of acceptable delay. These high delays values generally indicate poor progression, long cycle lengths, and high v/c ratios. Individual cycle failures are frequent occurrences.

Level of Service F describes operations with delay in excess of 60.0 seconds per vehicle. This is considered to be unacceptable to most drivers. This condition often occurs with over saturation, i.e., when arrival flow rates exceed the capacity of the intersection. It may also occur at high v/c ratios below 1.00 with many individual cycle failures. Poor progression and long cycle lengths may also be major contributing causes to such delay levels.

* Taken from City of Moses Lake Traffic Study, 1982.

CAPACITY ANALYSIS COMPUTER PRINTOUTS

TRIP DISTRIBUTION

The estimated distribution of project generated trips by the proposed development assumes traffic will arrive and depart from the site in the general direction from which they came. Most of the traffic is expected to come from the Richland direction.

Figures 4, 5, and 6 illustrate the estimated project traffic assignments for general paths of development generated trips under peak conditions. The trips generated by the project were assigned to the area roadway network based upon distribution assumptions and the trip generation volume of Table 1. Figure 4 identifies P.M. peak hour project arrival and departure trips for 200 units of housing and the golf course all expected to use Entrance #2, the main project entrance. Figure 5 identifies P.M. peak hour arrivals and departures for an additional 1000 units of housing with another access to SR 240 at Entrance #3. Figure 6 shows P.M. peak arrivals and departures of the full development.

Figure 6 assumes a 25% capture rate of trips generated within the project. The ITE, Trip Generation Manual suggests that in Multi-Use Developments such as Horn Rapids, some of the trips made to on-site facilities would be generated from residents within the development. The Manual suggests this internal capture rate ranges from 15% to 45% of trips generated. We have assumed 25% of the P.M. peak trips generated would be internal and would not use the intersections on SR 240.

1985 HCM: UNSIGNALIZED INTERSECTIONS

Page-1

IDENTIFYING INFORMATION

AVERAGE RUNNING SPEED, MAJOR STREET.. 55

PEAK HOUR FACTOR..... 1

AREA POPULATION..... 150000

NAME OF THE EAST/WEST STREET..... S.R. 240

NAME OF THE NORTH/SOUTH STREET..... PROJECT ENTRANCE #1

NAME OF THE ANALYST..... VJL

DATE OF THE ANALYSIS (mm/dd/yy)..... 03/27/93

TIME PERIOD ANALYZED..... P.M. PEAK HOUR

OTHER INFORMATION.... PROJECT ENTRANCE #1, DESIGN YEAR 2008

INTERSECTION TYPE AND CONTROL

INTERSECTION TYPE: T-INTERSECTION

MAJOR STREET DIRECTION: EAST/WEST

CONTROL TYPE NORTHBOUND: STOP SIGN

TRAFFIC VOLUMES

	EB	WB	NB	SB
LEFT	0	269	50	--
THRU	718	957	0	--
RIGHT	80	0	180	--

NUMBER OF LANES

	EB	WB	NB	SB
LANES	2	2	2	--

ADJUSTMENT FACTORS

Page-2

	PERCENT GRADE	RIGHT TURN ANGLE	CURB RADIUS (ft) FOR RIGHT TURNS	ACCELERATION LANE FOR RIGHT TURNS
EASTBOUND	0.00	90	20	N
WESTBOUND	0.00	90	20	N
NORTHBOUND	0.00	90	35	Y
SOUTHBOUND	-----	---	---	-

VEHICLE COMPOSITION

	% SU TRUCKS AND RV'S	% COMBINATION VEHICLES	% MOTORCYCLES
EASTBOUND	0	0	0
WESTBOUND	0	0	0
NORTHBOUND	0	0	0
SOUTHBOUND	---	---	---

CRITICAL GAPS

	TABULAR VALUES (Table 10-2)	ADJUSTED VALUE	SIGHT DIST. ADJUSTMENT	FINAL CRITICAL GAP
MINOR RIGHTS				
NB	6.50	5.50	0.00	5.50
MAJOR LEFTS				
WB	6.00	6.00	0.00	6.00
MINOR LEFTS				
NB	8.50	8.50	0.00	8.50

IDENTIFYING INFORMATION

NAME OF THE EAST/WEST STREET..... S.R. 240
NAME OF THE NORTH/SOUTH STREET.... PROJECT ENTRANCE #1
DATE AND TIME OF THE ANALYSIS..... 03/27/93 ; P.M. PEAK HOUR
OTHER INFORMATION.... PROJECT ENTRANCE #1, DESIGN YEAR 2008

CAPACITY AND LEVEL-OF-SERVICE

Page-3

MOVEMENT	FLOW- RATE v (pcph)	POTEN- TIAL CAPACITY c (pcph) p	ACTUAL MOVEMENT CAPACITY c (pcph) M	SHARED CAPACITY c (pcph) SH	RESERVE CAPACITY c = c - v R SH	LOS

MINOR STREET						
NB LEFT	55	35	8	8	-47	F
RIGHT	198	701	701	701	503	A
MAJOR STREET						
WB LEFT	296	366	366	366	70	E

IDENTIFYING INFORMATION

NAME OF THE EAST/WEST STREET..... S.R. 240

NAME OF THE NORTH/SOUTH STREET.... PROJECT ENTRANCE #1

DATE AND TIME OF THE ANALYSIS..... 03/27/93 ; P.M. PEAK HOUR

OTHER INFORMATION.... PROJECT ENTRANCE #1, DESIGN YEAR 2008

IDENTIFYING INFORMATION

AVERAGE RUNNING SPEED, MAJOR STREET.. 55

PEAK HOUR FACTOR..... 1

AREA POPULATION..... 150000

NAME OF THE EAST/WEST STREET..... S.R. 240

NAME OF THE NORTH/SOUTH STREET..... PROJECT ENTRANCE #2

NAME OF THE ANALYST..... VJL

DATE OF THE ANALYSIS (mm/dd/yy)..... 0-27-1993

TIME PERIOD ANALYZED..... P.M. PEAK HOUR

OTHER INFORMATION.... PROJECT ENTRANCE #2, DESIGN YEAR 1994

INTERSECTION TYPE AND CONTROL

INTERSECTION TYPE: T-INTERSECTION

MAJOR STREET DIRECTION: EAST/WEST

CONTROL TYPE NORTHBOUND: STOP SIGN

TRAFFIC VOLUMES

	EB	WB	NB	SB
	----	----	----	----
LEFT	0	122	25	--
THRU	216	89	0	--
RIGHT	40	0	75	--

NUMBER OF LANES

	EB	WB	NB	SB
	----	----	----	----
LANES	2	2	2	--

ADJUSTMENT FACTORS

Page-2

	PERCENT GRADE	RIGHT TURN ANGLE	CURB RADIUS (ft) FOR RIGHT TURNS	ACCELERATION LANE FOR RIGHT TURNS
EASTBOUND	0.00	90	20	N
WESTBOUND	0.00	90	20	N
NORTHBOUND	0.00	90	35	Y
SOUTHBOUND	-----	---	---	-

VEHICLE COMPOSITION

	% SU TRUCKS AND RV'S	% COMBINATION VEHICLES	% MOTORCYCLES
EASTBOUND	0	0	0
WESTBOUND	0	0	0
NORTHBOUND	0	0	0
SOUTHBOUND	---	---	---

CRITICAL GAPS

	TABULAR VALUES (Table 10-2)	ADJUSTED VALUE	SIGHT DIST. ADJUSTMENT	FINAL CRITICAL GAP
MINOR RIGHTS				
NB	6.50	5.50	0.00	5.50
MAJOR LEFTS				
WB	6.00	6.00	0.00	6.00
MINOR LEFTS				
NB	8.50	8.50	0.00	8.50

IDENTIFYING INFORMATION

NAME OF THE EAST/WEST STREET..... S.R. 240
 NAME OF THE NORTH/SOUTH STREET.... PROJECT ENTRANCE #2
 DATE AND TIME OF THE ANALYSIS..... 0-27-1993 ; P.M. PEAK HOUR
 OTHER INFORMATION.... PROJECT ENTRANCE #2, DESIGN YEAR 1994

CAPACITY AND LEVEL-OF-SERVICE

Page-3

MOVEMENT	FLOW-RATE v(pcph)	POTENTIAL CAPACITY c (pcph) p	ACTUAL MOVEMENT CAPACITY c (pcph) M	SHARED CAPACITY c (pcph) SH	RESERVE CAPACITY c = c - v R SH	LOS
----------	----------------------	--	---	--------------------------------------	--	-----

MINOR STREET

NB LEFT	28	349	306	306	278	C
RIGHT	83	966	966	966	883	A

MAJOR STREET

WB LEFT	134	747	747	747	613	A
---------	-----	-----	-----	-----	-----	---

IDENTIFYING INFORMATION

NAME OF THE EAST/WEST STREET..... S.R. 240

NAME OF THE NORTH/SOUTH STREET.... PROJECT ENTRANCE #2

DATE AND TIME OF THE ANALYSIS..... 0-27-1993 ; P.M. PEAK HOUR

OTHER INFORMATION.... PROJECT ENTRANCE #2, DESIGN YEAR 1994

1985 HCM: UNSIGNALIZED INTERSECTIONS

Page-1

IDENTIFYING INFORMATION

AVERAGE RUNNING SPEED, MAJOR STREET.. 55

PEAK HOUR FACTOR..... 1

AREA POPULATION..... 150000

NAME OF THE EAST/WEST STREET..... S.R. 240

NAME OF THE NORTH/SOUTH STREET..... PROJECT ENTRANCE #2

NAME OF THE ANALYST..... VJL

DATE OF THE ANALYSIS (mm/dd/yy)..... 3-27-1993

TIME PERIOD ANALYZED..... P.M. PEAK HOUR

OTHER INFORMATION.... PROJECT ENTRANCE #2, DESIGN YEAR 1999

INTERSECTION TYPE AND CONTROL

INTERSECTION TYPE: T-INTERSECTION

MAJOR STREET DIRECTION: EAST/WEST

CONTROL TYPE NORTHBOUND: STOP SIGN

TRAFFIC VOLUMES

	EB	WB	NB	SB
LEFT	0	303	30	--
THRU	233	296	0	--
RIGHT	68	0	178	--

NUMBER OF LANES

	EB	WB	NB	SB
LANES	2	2	2	--

ADJUSTMENT FACTORS

Page-2

	PERCENT GRADE	RIGHT TURN ANGLE	CURB RADIUS (ft) FOR RIGHT TURNS	ACCELERATION LANE FOR RIGHT TURNS
EASTBOUND	0.00	90	20	N
WESTBOUND	0.00	90	20	N
NORTHBOUND	0.00	90	35	Y
SOUTHBOUND	-----	---	---	-

VEHICLE COMPOSITION

	% SU TRUCKS AND RV'S	% COMBINATION VEHICLES	% MOTORCYCLES
EASTBOUND	0	0	0
WESTBOUND	0	0	0
NORTHBOUND	0	0	0
SOUTHBOUND	---	---	---

CRITICAL GAPS

	TABULAR VALUES (Table 10-2)	ADJUSTED VALUE	SIGHT DIST. ADJUSTMENT	FINAL CRITICAL GAP
MINOR RIGHTS				
NB	6.50	5.50	0.00	5.50
MAJOR LEFTS				
WB	6.00	6.00	0.00	6.00
MINOR LEFTS				
NB	8.50	8.50	0.00	8.50

IDENTIFYING INFORMATION

NAME OF THE EAST/WEST STREET..... S.R. 240
NAME OF THE NORTH/SOUTH STREET.... PROJECT ENTRANCE #2
DATE AND TIME OF THE ANALYSIS..... 3-27-1993 ; P.M. PEAK HOUR
OTHER INFORMATION.... PROJECT ENTRANCE #2, DESIGN YEAR 1999

CAPACITY AND LEVEL-OF-SERVICE

Page-3

MOVEMENT	FLOW- RATE v(pcph)	POTEN- TIAL CAPACITY c (pcph) p	ACTUAL MOVEMENT CAPACITY c (pcph) M	SHARED CAPACITY c (pcph) SH	RESERVE CAPACITY c = c - v R SH	LOS
	-----	-----	-----	-----	-----	-----
MINOR STREET						
NB LEFT	33	159	97	97	64	E
RIGHT	196	942	942	942	746	A
MAJOR STREET						
WB LEFT	333	709	709	709	376	B

IDENTIFYING INFORMATION

NAME OF THE EAST/WEST STREET..... S.R. 240

NAME OF THE NORTH/SOUTH STREET.... PROJECT ENTRANCE #2

DATE AND TIME OF THE ANALYSIS..... 3-27-1993 ; P.M. PEAK HOUR

OTHER INFORMATION.... PROJECT ENTRANCE #2, DESIGN YEAR 1999

IDENTIFYING INFORMATION

AVERAGE RUNNING SPEED, MAJOR STREET.. 55

PEAK HOUR FACTOR..... 1

AREA POPULATION..... 150000

NAME OF THE EAST/WEST STREET..... S.R. 240

NAME OF THE NORTH/SOUTH STREET..... PROJECT ENTRANCE #2

NAME OF THE ANALYST..... VJL

DATE OF THE ANALYSIS (mm/dd/yy)..... 3-27-1993

TIME PERIOD ANALYZED..... P.M. PEAK HOUR

OTHER INFORMATION.... PROJECT ENTRANCE #2, DESIGN YEAR 2008

INTERSECTION TYPE AND CONTROL

INTERSECTION TYPE: T-INTERSECTION

MAJOR STREET DIRECTION: EAST/WEST

CONTROL TYPE NORTHBOUND: STOP SIGN

TRAFFIC VOLUMES

	EB	WB	NB	SB
	----	----	----	----
LEFT	0	328	50	--
THRU	798	679	0	--
RIGHT	80	0	221	--

NUMBER OF LANES

	EB	WB	NB	SB
	----	----	----	----
LANES	2	2	2	--

ADJUSTMENT FACTORS

Page-2

	PERCENT GRADE	RIGHT TURN ANGLE	CURB RADIUS (ft) FOR RIGHT TURNS	ACCELERATION LANE FOR RIGHT TURNS
EASTBOUND	0.00	90	20	N
WESTBOUND	0.00	90	20	N
NORTHBOUND	0.00	90	35	Y
SOUTHBOUND	-----	---	---	-

VEHICLE COMPOSITION

	% SU TRUCKS AND RV'S	% COMBINATION VEHICLES	% MOTORCYCLES
EASTBOUND	0	0	0
WESTBOUND	0	0	0
NORTHBOUND	0	0	0
SOUTHBOUND	---	---	---

CRITICAL GAPS

	TABULAR VALUES (Table 10-2)	ADJUSTED VALUE	SIGHT DIST. ADJUSTMENT	FINAL CRITICAL GAP
MINOR RIGHTS				
NB	6.50	5.50	0.00	5.50
MAJOR LEFTS				
WB	6.00	6.00	0.00	6.00
MINOR LEFTS				
NB	8.50	8.50	0.00	8.50

IDENTIFYING INFORMATION

NAME OF THE EAST/WEST STREET..... S.R. 240
NAME OF THE NORTH/SOUTH STREET.... PROJECT ENTRANCE #2
DATE AND TIME OF THE ANALYSIS..... 3-27-1993 ; P.M. PEAK HOUR
OTHER INFORMATION.... PROJECT ENTRANCE #2, DESIGN YEAR 2008

CAPACITY AND LEVEL-OF-SERVICE

Page-3

MOVEMENT	FLOW- RATE v (pcph)	POTEN- TIAL CAPACITY c (pcph) p	ACTUAL MOVEMENT CAPACITY c (pcph) M	SHARED CAPACITY c (pcph) SH	RESERVE CAPACITY c = c - v R SH	LOS
----------	---------------------------	---	---	--------------------------------------	--	-----

MINOR STREET

NB LEFT	55	35	0	0	-55	F
RIGHT	243	672	672	672	429	A

MAJOR STREET

WB LEFT	361	328	328	328	-33	F
---------	-----	-----	-----	-----	-----	---

IDENTIFYING INFORMATION

NAME OF THE EAST/WEST STREET..... S.R. 240
NAME OF THE NORTH/SOUTH STREET.... PROJECT ENTRANCE #2
DATE AND TIME OF THE ANALYSIS..... 3-27-1993 ;. P.M. PEAK HOUR
OTHER INFORMATION.... PROJECT ENTRANCE #2, DESIGN YEAR 2008

1985 HCM: UNSIGNALIZED INTERSECTIONS

Page-1

IDENTIFYING INFORMATION

AVERAGE RUNNING SPEED, MAJOR STREET.. 55

PEAK HOUR FACTOR..... 1

AREA POPULATION..... 150000

NAME OF THE EAST/WEST STREET..... S.R. 240

NAME OF THE NORTH/SOUTH STREET..... PROJECT ENTRANCE #3

NAME OF THE ANALYST..... VJL

DATE OF THE ANALYSIS (mm/dd/yy)..... 03/27/93

TIME PERIOD ANALYZED..... P.M. PEAK HOUR

OTHER INFORMATION.... PROJECT ENTRANCE #3, DESIGN YEAR 2008

INTERSECTION TYPE AND CONTROL

INTERSECTION TYPE: T-INTERSECTION

MAJOR STREET DIRECTION: EAST/WEST

CONTROL TYPE NORTHBOUND: STOP SIGN

TRAFFIC VOLUMES

	EB	WB	NB	SB
LEFT	0	328	50	--
THRU	658	401	0	--
RIGHT	80	0	220	--

NUMBER OF LANES

	EB	WB	NB	SB
LANES	2	2	2	--

ADJUSTMENT FACTORS

Page-2

	PERCENT GRADE	RIGHT TURN ANGLE	CURB RADIUS (ft) FOR RIGHT TURNS	ACCELERATION LANE FOR RIGHT TURNS
EASTBOUND	0.00	90	20	N
WESTBOUND	0.00	90	20	N
NORTHBOUND	0.00	90	35	Y
SOUTHBOUND	-----	---	---	-

VEHICLE COMPOSITION

	% SU TRUCKS AND RV'S	% COMBINATION VEHICLES	% MOTORCYCLES
EASTBOUND	0	0	0
WESTBOUND	0	0	0
NORTHBOUND	0	0	0
SOUTHBOUND	---	---	---

CRITICAL GAPS

	TABULAR VALUES (Table 10-2)	ADJUSTED VALUE	SIGHT DIST. ADJUSTMENT	FINAL CRITICAL GAP
MINOR RIGHTS				
NB	6.50	5.50	0.00	5.50
MAJOR LEFTS				
WB	6.00	6.00	0.00	6.00
MINOR LEFTS				
NB	8.50	8.50	0.00	8.50

IDENTIFYING INFORMATION

NAME OF THE EAST/WEST STREET..... S.R. 240
NAME OF THE NORTH/SOUTH STREET.... PROJECT ENTRANCE #3
DATE AND TIME OF THE ANALYSIS..... 03/27/93 ; P.M. PEAK HOUR
OTHER INFORMATION.... PROJECT ENTRANCE #3, DESIGN YEAR 2008

CAPACITY AND LEVEL-OF-SERVICE

Page-3

MOVEMENT	FLOW- RATE v (pcph)	POTEN- TIAL CAPACITY c (pcph) p	ACTUAL MOVEMENT CAPACITY c (pcph) M	SHARED CAPACITY c (pcph) SH	RESERVE CAPACITY c = c - v R SH	LOS

MINOR STREET						
NB LEFT	55	44	6	6	-49	F
RIGHT	242	728	728	728	486	A
MAJOR STREET						
WB LEFT	361	401	401	401	40	E

IDENTIFYING INFORMATION

NAME OF THE EAST/WEST STREET..... S.R. 240

NAME OF THE NORTH/SOUTH STREET.... PROJECT ENTRANCE #3

DATE AND TIME OF THE ANALYSIS..... 03/27/93 ; P.M. PEAK HOUR

OTHER INFORMATION.... PROJECT ENTRANCE #3, DESIGN YEAR 2008

IDENTIFYING INFORMATION

AVERAGE RUNNING SPEED, MAJOR STREET.. 55

PEAK HOUR FACTOR..... 1

AREA POPULATION..... 150000

NAME OF THE EAST/WEST STREET..... S.R. 240

NAME OF THE NORTH/SOUTH STREET..... PROJECT ENTRANCE #4

NAME OF THE ANALYST..... VJL

DATE OF THE ANALYSIS (mm/dd/yy)..... 03/27/93

TIME PERIOD ANALYZED..... P.M. PEAK HOUR

OTHER INFORMATION.... PROJECT ENTRANCE #4, DESIGN YEAR 2008

INTERSECTION TYPE AND CONTROL

INTERSECTION TYPE: T-INTERSECTION

MAJOR STREET DIRECTION: EAST/WEST

CONTROL TYPE NORTHBOUND: STOP SIGN

TRAFFIC VOLUMES

	EB	WB	NB	SB
LEFT	0	269	50	--
THRU	558	182	0	--
RIGHT	80	0	180	--

NUMBER OF LANES

	EB	WB	NB	SB
LANES	2	2	2	--

ADJUSTMENT FACTORS

Page-2

	PERCENT GRADE	RIGHT TURN ANGLE	CURB RADIUS (ft) FOR RIGHT TURNS	ACCELERATION LANE FOR RIGHT TURNS
EASTBOUND	0.00	90	20	N
WESTBOUND	0.00	90	20	N
NORTHBOUND	0.00	90	35	Y
SOUTHBOUND	-----	---	---	-

VEHICLE COMPOSITION

	% SU TRUCKS AND RV'S	% COMBINATION VEHICLES	% MOTORCYCLES
EASTBOUND	0	0	0
WESTBOUND	0	0	0
NORTHBOUND	0	0	0
SOUTHBOUND	---	---	---

CRITICAL GAPS

	TABULAR VALUES (Table 10-2)	ADJUSTED VALUE	SIGHT DIST. ADJUSTMENT	FINAL CRITICAL GAP
MINOR RIGHTS				
NB	6.50	5.50	0.00	5.50
MAJOR LEFTS				
WB	6.00	6.00	0.00	6.00
MINOR LEFTS				
NB	8.50	8.50	0.00	8.50

IDENTIFYING INFORMATION

NAME OF THE EAST/WEST STREET..... S.R. 240
NAME OF THE NORTH/SOUTH STREET.... PROJECT ENTRANCE #4
DATE AND TIME OF THE ANALYSIS..... 03/27/93 ; P.M. PEAK HOUR
OTHER INFORMATION.... PROJECT ENTRANCE #4, DESIGN YEAR 2008

CAPACITY AND LEVEL-OF-SERVICE

Page-3

MOVEMENT	FLOW- RATE v (pcph)	POTEN- TIAL CAPACITY c (pcph) p	ACTUAL MOVEMENT CAPACITY c (pcph) M	SHARED CAPACITY c (pcph) SH	RESERVE CAPACITY c = c - v R SH	LOS
----------	---------------------------	---	---	--------------------------------------	--	-----

MINOR STREET

NB LEFT	55	105	46	46	-9	F
RIGHT	198	773	773	773	575	A

MAJOR STREET

WB LEFT	296	458	458	458	162	D
---------	-----	-----	-----	-----	-----	---

IDENTIFYING INFORMATION

NAME OF THE EAST/WEST STREET..... S.R. 240
NAME OF THE NORTH/SOUTH STREET.... PROJECT ENTRANCE #4
DATE AND TIME OF THE ANALYSIS..... 03/27/93 ; P.M. PEAK HOUR
OTHER INFORMATION.... PROJECT ENTRANCE #4, DESIGN YEAR 2008

1985 HCM: UNSIGNALIZED INTERSECTIONS

Page-1

IDENTIFYING INFORMATION

AVERAGE RUNNING SPEED, MAJOR STREET.. 55

PEAK HOUR FACTOR..... 1

AREA POPULATION..... 150000

NAME OF THE EAST/WEST STREET..... S.R. 240

NAME OF THE NORTH/SOUTH STREET..... GROSSCUP ROAD

NAME OF THE ANALYST..... VJL

DATE OF THE ANALYSIS (mm/dd/yy)..... 03/27/93

TIME PERIOD ANALYZED..... P.M. PEAK HOUR

OTHER INFORMATION.... GROSSCUP INTERSECTION, DESIGN YEAR 1994

INTERSECTION TYPE AND CONTROL

INTERSECTION TYPE: 4-LEG

MAJOR STREET DIRECTION: EAST/WEST

CONTROL TYPE NORTHBOUND: STOP SIGN

CONTROL TYPE SOUTHBOUND: STOP SIGN

TRAFFIC VOLUMES

	EB	WB	NB	SB
	----	----	----	----
LEFT	6	14	51	35
THRU	201	93	9	18
RIGHT	102	7	19	5

NUMBER OF LANES AND LANE USAGE

	EB	WB	NB	SB
	----	----	----	----
LANES	1	1	1	1

LANE USAGE

LTR

LTR



ADJUSTMENT FACTORS

Page-2

	PERCENT GRADE	RIGHT TURN ANGLE	CURB RADIUS (ft) FOR RIGHT TURNS	ACCELERATION LANE FOR RIGHT TURNS
EASTBOUND	0.00	90	20	N
WESTBOUND	0.00	90	20	N
NORTHBOUND	0.00	90	35	N
SOUTHBOUND	0.00	90	35	N

VEHICLE COMPOSITION

	% SU TRUCKS AND RV'S	% COMBINATION VEHICLES	% MOTORCYCLES
EASTBOUND	0	0	0
WESTBOUND	0	0	0
NORTHBOUND	0	0	0
SOUTHBOUND	0	0	0

CRITICAL GAPS

	TABULAR VALUES (Table 10-2)	ADJUSTED VALUE	SIGHT DIST. ADJUSTMENT	FINAL CRITICAL GAP
MINOR RIGHTS				
NB	6.50	6.50	0.00	6.50
SB	6.50	6.50	0.00	6.50
MAJOR LEFTS				
EB	5.50	5.50	0.00	5.50
WB	5.50	5.50	0.00	5.50
MINOR THROUGH				
NB	7.50	7.50	0.00	7.50
SB	7.50	7.50	0.00	7.50
MINOR LEFTS				
NB	8.00	8.00	0.00	8.00
SB	8.00	8.00	0.00	8.00

IDENTIFYING INFORMATION

NAME OF THE EAST/WEST STREET..... S.R. 240
NAME OF THE NORTH/SOUTH STREET.... GROSSCUP ROAD
DATE AND TIME OF THE ANALYSIS..... 03/27/93 ; P.M. PEAK HOUR
OTHER INFORMATION.... GROSSCUP INTERSECTION, DESIGN YEAR 1994

CAPACITY AND LEVEL-OF-SERVICE

Page-3

MOVEMENT	FLOW- RATE v(pcph)	POTEN- TIAL CAPACITY c (pcph) p	ACTUAL MOVEMENT CAPACITY c (pcph) M		SHARED CAPACITY c (pcph) SH		RESERVE CAPACITY c = c - v R SH		LOS

MINOR STREET									
NB LEFT	56	419	400	>	400	>	343	>	B
THROUGH	10	476	469	>	451	>	365	>	B A
RIGHT	21	676	676	>	676	>	655	>	A
MINOR STREET									
SB LEFT	39	387	369	>	369	>	330	>	B
THROUGH	20	443	436	>	408	>	344	>	B A
RIGHT	6	824	824	>	824	>	818	>	A
MAJOR STREET									
EB LEFT	7	995	995		995		988		A
WB LEFT	15	787	787		787		772		A

IDENTIFYING INFORMATION

NAME OF THE EAST/WEST STREET..... S.R. 240
NAME OF THE NORTH/SOUTH STREET.... GROSSCUP ROAD
DATE AND TIME OF THE ANALYSIS..... 03/27/93 ; P.M. PEAK HOUR
OTHER INFORMATION.... GROSSCUP INTERSECTION, DESIGN YEAR 1994

1985 HCM: UNSIGNALIZED INTERSECTIONS

Page-1

IDENTIFYING INFORMATION

AVERAGE RUNNING SPEED, MAJOR STREET.. 55

PEAK HOUR FACTOR..... 1

AREA POPULATION..... 150000

NAME OF THE EAST/WEST STREET..... S.R. 240

NAME OF THE NORTH/SOUTH STREET..... GROSSCUP ROAD

NAME OF THE ANALYST..... VJL

DATE OF THE ANALYSIS (mm/dd/yy)..... 03/27/93

TIME PERIOD ANALYZED..... P.M. PEAK HOUR

OTHER INFORMATION.... GROSSCUP INTERSECTION DESIGN YEAR 1999

INTERSECTION TYPE AND CONTROL

INTERSECTION TYPE: 4-LEG

MAJOR STREET DIRECTION: EAST/WEST

CONTROL TYPE NORTHBOUND: STOP SIGN

CONTROL TYPE SOUTHBOUND: STOP SIGN

TRAFFIC VOLUMES

	EB	WB	NB	SB
	----	----	----	----
LEFT	6	22	55	45
THRU	309	149	10	20
RIGHT	109	14	27	5

NUMBER OF LANES AND LANE USAGE

	EB	WB	NB	SB
	----	----	----	----
LANES	1	1	1	1

ADJUSTMENT FACTORS

Page-2

	PERCENT GRADE	RIGHT TURN ANGLE	CURB RADIUS (ft) FOR RIGHT TURNS	ACCELERATION LANE FOR RIGHT TURNS
EASTBOUND	0.00	90	20	N
WESTBOUND	0.00	90	20	N
NORTHBOUND	0.00	90	35	N
SOUTHBOUND	0.00	90	35	N

VEHICLE COMPOSITION

	% SU TRUCKS AND RV'S	% COMBINATION VEHICLES	% MOTORCYCLES
EASTBOUND	0	0	0
WESTBOUND	0	0	0
NORTHBOUND	0	0	0
SOUTHBOUND	0	0	0

CRITICAL GAPS

	TABULAR VALUES (Table 10-2)	ADJUSTED VALUE	SIGHT DIST. ADJUSTMENT	FINAL CRITICAL GAP
MINOR RIGHTS				
NB	6.50	6.50	0.00	6.50
SB	6.50	6.50	0.00	6.50
MAJOR LEFTS				
EB	5.50	5.50	0.00	5.50
WB	5.50	5.50	0.00	5.50
MINOR THROUGHS				
NB	7.50	7.50	0.00	7.50
SB	7.50	7.50	0.00	7.50
MINOR LEFTS				
NB	8.00	8.00	0.00	8.00
SB	8.00	8.00	0.00	8.00

IDENTIFYING INFORMATION

NAME OF THE EAST/WEST STREET..... S.R. 240
NAME OF THE NORTH/SOUTH STREET.... GROSSCUP ROAD
DATE AND TIME OF THE ANALYSIS..... 03/27/93 ; P.M. PEAK HOUR
OTHER INFORMATION.... GROSSCUP INTERSECTION DESIGN YEAR 1999

CAPACITY AND LEVEL-OF-SERVICE

Page-3

MOVEMENT	FLOW- RATE v (pcph)	POTEN- TIAL CAPACITY c (pcph) p	ACTUAL MOVEMENT CAPACITY c (pcph) M		SHARED CAPACITY c (pcph) SH		RESERVE CAPACITY c = c - v R SH		LOS

MINOR STREET									
NB LEFT	61	307	286	>	286	>	226	>	C
THROUGH	11	358	349	>	345	>	244	>	C B
RIGHT	30	587	587	>	587	>	558	>	A
MINOR STREET									
SB LEFT	50	277	257	>	257	>	208	>	C
THROUGH	22	329	321	>	287	>	210	>	C C
RIGHT	6	764	764	>	764	>	759	>	A
MAJOR STREET									
EB LEFT	7	929	929		929		922		A
WB LEFT	24	687	687		687		663		A

IDENTIFYING INFORMATION

NAME OF THE EAST/WEST STREET..... S.R. 240
 NAME OF THE NORTH/SOUTH STREET.... GROSSCUP ROAD
 DATE AND TIME OF THE ANALYSIS..... 03/27/93 ; P.M. PEAK HOUR
 OTHER INFORMATION.... GROSSCUP INTERSECTION DESIGN YEAR 1999

1985 HCM: UNSIGNALIZED INTERSECTIONS

Page-1

IDENTIFYING INFORMATION

AVERAGE RUNNING SPEED, MAJOR STREET.. 55

PEAK HOUR FACTOR..... 1

AREA POPULATION..... 150000

NAME OF THE EAST/WEST STREET..... S.R. 240

NAME OF THE NORTH/SOUTH STREET..... GROSSCUP ROAD

NAME OF THE ANALYST..... VJL

DATE OF THE ANALYSIS (mm/dd/yy)..... 03/27/93

TIME PERIOD ANALYZED..... P.M. PEAK HOUR

OTHER INFORMATION.... GROSSCUP INTERSECTION DESIGN YEAR 2008

INTERSECTION TYPE AND CONTROL

INTERSECTION TYPE: 4-LEG

MAJOR STREET DIRECTION: EAST/WEST

CONTROL TYPE NORTHBOUND: STOP SIGN

CONTROL TYPE SOUTHBOUND: STOP SIGN

TRAFFIC VOLUMES

	EB	WB	NB	SB
	----	----	----	----
LEFT	8	33	87	50
THRU	519	174	21	35
RIGHT	192	25	69	6

NUMBER OF LANES AND LANE USAGE

	EB	WB	NB	SB
	----	----	----	----
LANES	2	2	2	2

ADJUSTMENT FACTORS

Page-2

	PERCENT GRADE	RIGHT TURN ANGLE	CURB RADIUS (ft) FOR RIGHT TURNS	ACCELERATION LANE FOR RIGHT TURNS
EASTBOUND	0.00	90	20	N
WESTBOUND	0.00	90	20	N
NORTHBOUND	0.00	90	35	Y
SOUTHBOUND	0.00	90	35	Y

VEHICLE COMPOSITION

	% SU TRUCKS AND RV'S	% COMBINATION VEHICLES	% MOTORCYCLES
EASTBOUND	0	0	0
WESTBOUND	0	0	0
NORTHBOUND	0	0	0
SOUTHBOUND	0	0	0

CRITICAL GAPS

	TABULAR VALUES (Table 10-2)	ADJUSTED VALUE	SIGHT DIST. ADJUSTMENT	FINAL CRITICAL GAP
MINOR RIGHTS				
NB	6.50	5.50	0.00	5.50
SB	6.50	5.50	0.00	5.50
MAJOR LEFTS				
EB	6.00	6.00	0.00	6.00
WB	6.00	6.00	0.00	6.00
MINOR THROUGH				
NB	8.00	8.00	0.00	8.00
SB	8.00	8.00	0.00	8.00
MINOR LEFTS				
NB	8.50	8.50	0.00	8.50
SB	8.50	8.50	0.00	8.50

IDENTIFYING INFORMATION

NAME OF THE EAST/WEST STREET..... S.R. 240
NAME OF THE NORTH/SOUTH STREET.... GROSSCUP ROAD
DATE AND TIME OF THE ANALYSIS..... 03/27/93 ; P.M. PEAK HOUR
OTHER INFORMATION.... GROSSCUP INTERSECTION DESIGN YEAR 2008

CAPACITY AND LEVEL-OF-SERVICE

Page-3

MOVEMENT	FLOW- RATE v(pcph)	POTEN- TIAL CAPACITY c (pcph) p	ACTUAL MOVEMENT CAPACITY c (pcph) M	SHARED CAPACITY c (pcph) SH	RESERVE CAPACITY c = c - v R SH	LOS

MINOR STREET						
NB LEFT	96	149	115	115	19	E
THROUGH	23	186	175	> 175	> 152	D
RIGHT	76	740	740	> 422 740	> 323 664	>B A
MINOR STREET						
SB LEFT	55	109	89	89	34	E
THROUGH	39	157	147	> 147	> 109	D
RIGHT	7	995	995	> 168 995	> 123 988	>D A
MAJOR STREET						
EB LEFT	9	796	796	796	787	A
WB LEFT	36	416	416	416	380	B

IDENTIFYING INFORMATION

NAME OF THE EAST/WEST STREET..... S.R. 240

NAME OF THE NORTH/SOUTH STREET.... GROSSCUP ROAD

DATE AND TIME OF THE ANALYSIS..... 03/27/93 ; P.M. PEAK HOUR

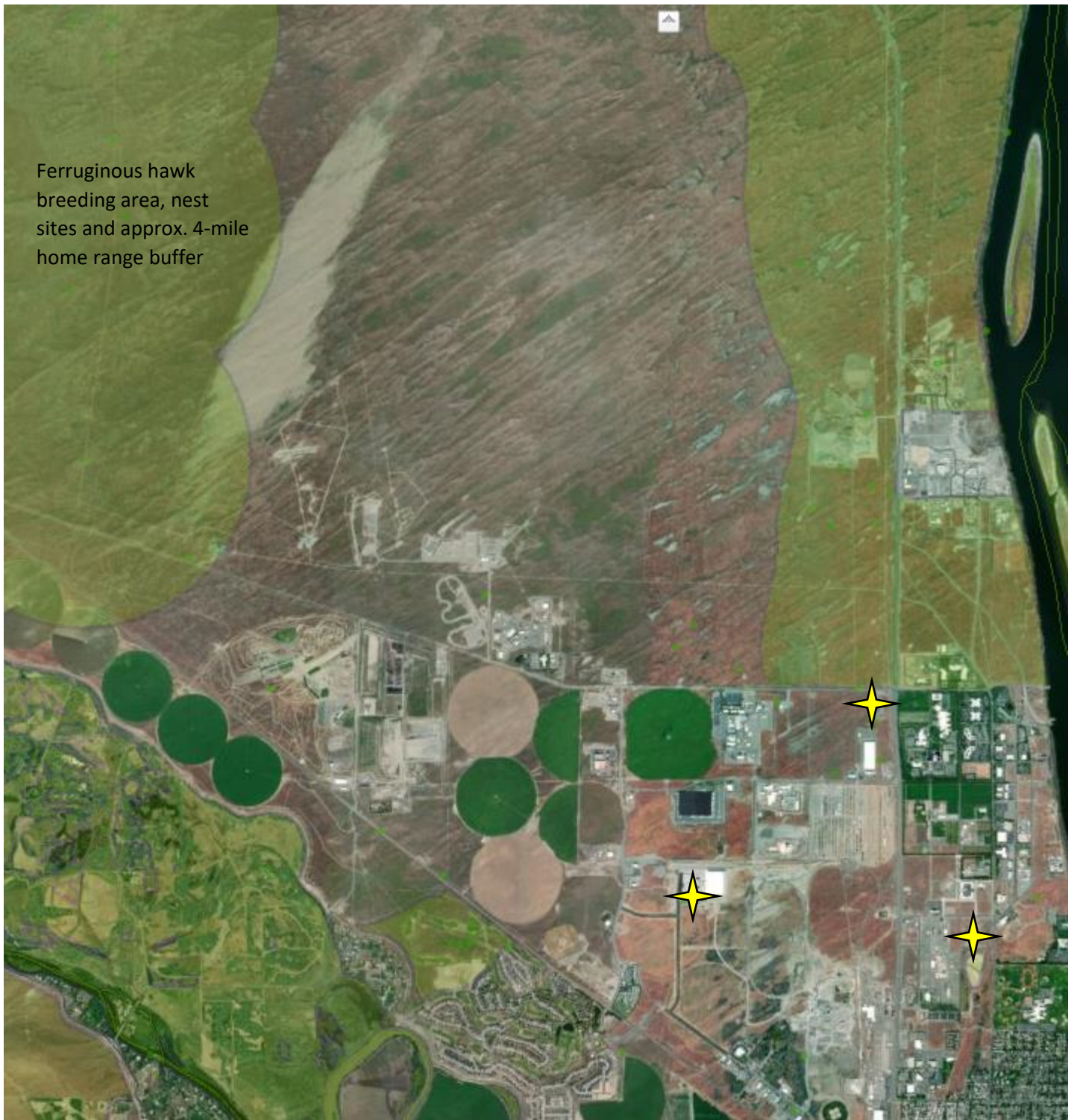
OTHER INFORMATION.... GROSSCUP INTERSECTION DESIGN YEAR 2008

Exhibit 14

Maps showing WDFW PHS species, habitats, and breeding areas relative to pending land use actions in the City of Richland. Ferruginous hawks will certainly fly outside the buffer to forage, but they are strongly linked with ground squirrels as a primary prey, but may also prey on small rodents. The PHS data base does not indicate any ground squirrel colonies associated with or adjacent to the pending land use actions, so impacts to Ferruginous hawk foraging are unlikely. Additionally, the closest pending land use actions to a buffer is approximately 3 miles, and in between there is a variety of other development, including transportation.



= Pending land use actions: Port of Benton, 3D Development, JUB Engineers. All three pending actions within the Richland city Limits.



Ferruginous hawk
breeding area, nest
sites and approx. 4-mile
home range buffer



= Pending land use actions: Port of Benton, 3D Development, JUB Engineers. All three pending actions within the Richland city Limits.