

# NATURAL RESOURCE ASSESSMENT REPORT

GOSSAMER HILLS MASTER PLAN DEVELOPMENT

Prepared for:

Ryland Group, Inc. and Springville Road Joint Venture Portland, Oregon

Prepared by:

PBS Engineering and Environmental Vancouver, Washington



PBS Project Number 70070.006

March 2002

Area 85 West Exhibit 9

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#### **EXECUTIVE SUMMARY**

This updated Natural Resource Assessment Report has been prepared for Ryland Homes and Springville Road Joint Venture, Inc. for an area within the proposed Gossamer Hills Master Plan Development. The site is located in the Bethany area of northern Washington County near Beaverton, Oregon.

The purpose of this report is to respond to the Washington County Hearings Officer's July 3, 2001 Notice of Decision (Case File # 00-601-M) and current Clean Water Services (CWS) requirements for obtaining a sensitive area certification. This Natural Resource Assessment (NRA) focuses on the northern portion of the Gossamer Hills Master Plan, which is approximately 73 acres in size, and the dedicated south access right-of-way (ROW). Parcels not intended for development at this time are not included within this report. The sensitive area certification issued by CWS and approval of the Compensatory Wetland Mitigation Plan by CWS and the Oregon Division of State Lands (DSL) will allow development to proceed within the proposed development area.

The assessment includes an initial review and analysis of existing data and a detailed site investigation of water quality sensitive areas and buffers on and within 200 feet of the proposed development area. The proposed development area and 200-foot wide corridor surrounding the development comprise the study area. The study area, approximately 111 acres in size, contains development areas 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, and 12 and is located within the overall 108.7-acre Gossamer Hills Master Plan. The remaining development areas, 11, 13, and 14, are outside the study area.

The following water quality sensitive areas are present within the study area:

- Springville Creek, a perennial tributary to Rock Creek;
- western unnamed Tributary to Springville Creek;
- Wetland C tributary;
- delineated wetland areas: A, B, C, D, E, F, and G; and
- · non-delineated wetland areas.

The water quality sensitive areas were delineated with two levels of accuracy:

- Surveyed Features: These are features that include stream corridors and wetlands, which
  were identified and surveyed in the field. Each of these areas is within the proposed
  development area or the easement for the south access road. PBS delineated the wetland
  features in May 2000. Consulting Engineering Services, Lake Oswego, Oregon, surveyed
  the stream locations and wetland boundaries in the summer of 2000.
- 2. <u>Estimated Features:</u> These are features that include an intermittent tributary associated with Wetland C, the floodplain and wetland areas south of the two stream channels, and the area east of the fence line that surround the northern development area.

Vegetated corridor widths were established for each sensitive area based on area of drainage and steepness of adjacent slopes. Vegetation sample plots were established to characterize the existing plant community types and conditions. Washington County water quality standards and requirements must be met within these vegetated corridors. These requirements include:

- 1. Any encroachment into vegetated corridors by proposed development requires replacement mitigation.
- Vegetation conditions must be enhanced and/or maintained in a "good" condition for all vegetated corridors (buffers) within the proposed development area.

The proposed site development plan will impact the vegetated corridors of several sensitive areas and require fill of wetlands. Wetland fill areas are regulated by the DSL and the U.S. Army Corps of Engineers (USACE). Vegetated corridors associated with wetland fills are mitigated in qualities and widths recommended by CWS. The dedicated south access ROW will impact approximately 5,130 square feet of buffer. The western access road sensitive area impacts will be evaluated during development of Area 14. Road impacts to buffer areas will require compensation at a 1:1 ratio. Buffer areas impacted through wetland fill, except road corridor impacts, do not require a 1:1 replacement ratio. Rather buffers impacted through wetland fill will require the appropriate buffer width be applied to the created wetland areas. The remaining buffer area not affected by site development will be enhanced. Enhancement includes removal of invasive shrub species and revegetation of native woodland and riparian species. Site development will require the fill of approximately 81,420 square feet of degraded wetland outside the ROW and 9,370 square feet within the ROW. Impacts to wetlands will be mitigated through enhancement of approximately 113,810 square feet of degraded wetland and creation of approximately 81,790 square feet of scrubshrub and forested wetland.

Section 3.02.1 of the Design and Construction Standards Manual (USA 2000), requires a Tier 1 or Tier 2 alternative analysis unless the project meets at least one of the standards presented in Sections 3.02.3 or 3.02.4. The proposed plan includes filling wetlands and associated vegetated corridors and a stream crossing for a dedicated access road. Section 3.02.3 standards are met because the fillings of wetlands require permit and mitigation approval from the DSL and USACE (Section 3.02.3.a.2; Section 3.02.3.a.3; and Section 3.02.3.b). There are no other intrusions into the vegetated corridors except as permitted through Section 3.02.4.b.1.a (road crossing). Because the plan meets at least one standard presented in section 3.02.3 and 3.02.4, no alternative analysis is required for this project.

#### 1.0 INTRODUCTION

PBS Engineering and Environmental (PBS) was contracted by Ryland Homes and Springville Road Joint Venture, Inc. (Applicant) to update a Natural Resource Assessment report (EnviroScience 1998). The purpose of this update is to respond to the Washington County Hearings Officer's Notice of Decision and meet current Clean Water Services (CWS) requirements for obtaining a sensitive area certification. This updated Natural Resource Assessment (NRA) focuses on those portions of the Master Plan designated as Areas 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, and 12, referred to as the development area. These areas are within the approximate 73-acre "north area" of the Gossamer Hills Master Plan. Parcels 11, 13, and 14 are not currently proposed for development and, therefore, are not included within this report.

The Natural Resource Assessment is a specific evaluation of water quality sensitive areas as defined by the *Design and Construction Standards Resolution and Order No: 00-7* under CWS jurisdiction for Washington County. In combination with other state, federal, and local laws and ordinances, the design and construction standards are intended to protect the beneficial uses of waters within the Tualatin River Basin.

#### 1.1 Historical Overview

On July 3, 2001, the Washington County Hearings Officer approved the Gossamer Hills Master Plan Development (Case File # 00-601-M). The site is designated as an Area of Special Concern No. 2 in the Bethany Community Plan and has an acknowledged comprehensive plan and zoning designation of R-9. The approved Master Plan contains 14 development areas, including 8 areas designated for single or multi-family dwellings; an 8-acre site designated for an elementary school, and 5 parks or open space areas. Approval for the natural resource area assessment, mitigation plan, and work within a drainage hazard area will be subject to additional County review. The Master Plan provides for a minimum density of 545 dwelling units and a maximum density of 904 dwelling units.

The Gossamer Hills Master Plan Development application included wetland delineation consistent with Metro's Title III and Community Development Code 422. The Hearings Officer approved the delineation of the resource areas and the mitigation plan for the proposed impacts. The decision included the following:

"The natural resource evaluation and mitigation reports submitted as part of this application support permitting the impacts to the SNRA (significant natural resource areas) that will result from most of the development activities anticipated by the Master Plan."

"The updated resource evaluation reports describe the wetland areas that need to be filled and other impacts to the SNRA that will result from the construction of the creek (Springville Creek) crossing for the minor collector road and the development proposed for Areas 4, 5, and 6."

"PBS Environmental has prepared a mitigation plan (Figure 2, dated 4/13/01), which as the reports describe will more than compensate for the impacts that will result from the construction of the minor collector road and development of Areas 4, 5, and 6."

In addition, as a condition of approval, the Hearings Officer required that the Applicant receive a sensitive area certification from CWS (formerly Unified Sewerage Agency)) affirming the natural resource delineation and mitigation for the development impacts. This updated Natural Resource Assessment report is intended to satisfy that condition of approval.

## 1.2 Regulatory Authority

The standards, requirements and methods for the sensitive area site assessment are outlined in the CWS document titled *Design and Construction Standards for Sanitary Sewer and Surface Water Management* (USA 2000). The site assessment study area includes the proposed development area and adjacent areas within 200 feet.

CWS has intergovernmental jurisdictional authority for sewer and storm water management in the urban areas of Washington County. A decision notice with "Conditions of Approval" was issued on the Master Plan Review for Gossamer Hills on July 3, 2001 by a Washington County Department of Land Use and Transportation, Land Development Services Hearings Officer (Appendix A). Conditions of approval require the completion of a sensitive area site assessment in accordance to standards presented in the Design and Construction Standards for Sanitary Sewer and Surface Water Management (USA 2000) and a sensitive area certification to obtain a service provider letter from CWS.

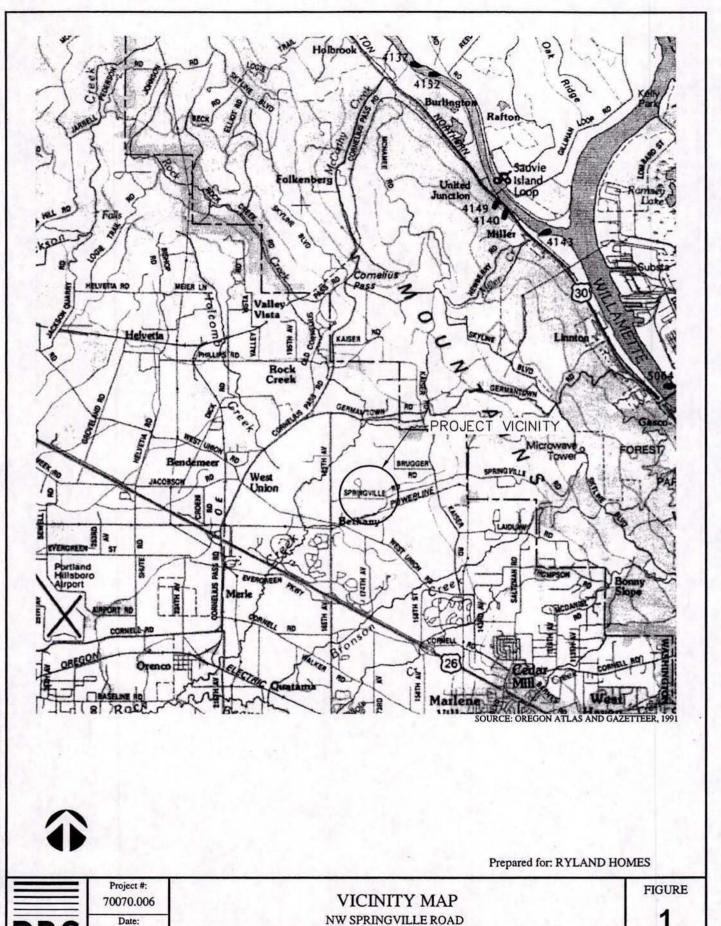
Section 3.02.1b of the DCSM, specifies that in order to secure a service provider letter from the Agency, the applicant shall perform a site assessment in accordance with Section 3.02.2. A Tier 1 or Tier 2 Alternative Analysis pursuant to Section 3.02.5 shall be conducted if the proposed site plan can not meet the standards outlined in Sections 3.02.3 and 3.02.4.

Section 3.02.3.a allows development and enhancement activities within vegetated corridors if required permits (e.g., a wetland fill permit) are issued by the DSL and/or USACE. Section 3.02.3.b also requires mitigation for impacts to areas regulated by the DSL and USACE.

Sensitive area impacts, such as wetland fill, are regulated by the DSL and USACE and require mitigation. Because encroachments into areas regulated and permitted by the state or federal agency are allowed, the encroachments are not intended to be included in the standards for compliance with Section 3.02.3, 3.02.4, and 3.02.5.

#### 1.3 Project Location

The proposed development area is located on the north side of NW Springville Road approximately 1,650 feet west of NW Kaiser Road, north of Beaverton, Oregon (Figure 1). The six parcels included within the study area are tax lot nos. 1N117C000500 and 1N1180000600, 601, 690, 700 and 800 on



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assessor map #1N1 18W, Washington County, Oregon (Figure 2). The study area is located in Township 1N, Range 1W, Sections 17 and 18.

### 1.4 Project Description

The proposed action for the site is the creation of a residential development that includes single-family and multiple-family homes together with a school/park site. The area is located north of NW Springville Road and is made up of 11 parcels totaling approximately 72 acres (Figure 3). A road easement from NW Springville Road will allow a minor collector road to be built for access to the proposed development.

Development of the 72-acre site includes wetland fill and removal, which will require a Joint Permit Application to be submitted to USACE for approval under Section 404 of the Clean Water Act. PBS completed a wetland delineation on the 72-acre proposed development area in May 2000 and performed a delineation at the confluence of the two streams in January 2002 (PBS 2002). A Joint Permit Application has not been completed at this time. DSL reviewed the May 2000 delineation for concurrence in November 2000. The January 2002 delineation has been submitted to DSL for concurrence. The May 2000 delineation report and November 2000 concurrence letter are found in Appendix B.

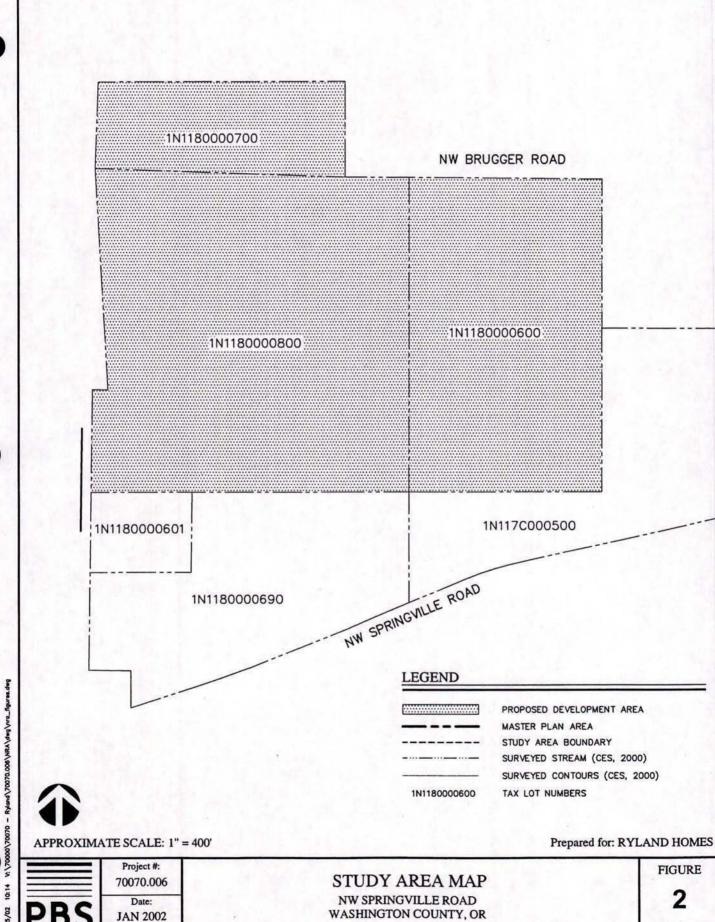
Other proposed activities include wetland enhancement and creation as compensation for proposed wetland impacts. PBS prepared a Wetland Mitigation Report in July 2000, adding supplemental revisions in April 2001 and February 2002, to reflect site plan revisions. A site visit and mitigation plan review was conducted by Heidi Berg, Site Assessment Coordinator for CWS, on November 27, 2001. During a subsequent telephone conversation with Ms. Berg, she stated that the mitigation plan would comply with CWS requirements, but a more detailed plan will be required for submittal to DSL (Berg 2002).

Compensation for impacts to wetlands and sensitive area buffers are addressed in the Wetland Mitigation Report and Supplement to Wetland Mitigation Plan (Appendix C). A more detailed mitigation plan that includes grading and planting details will be required for DSL and USACE approval.

## 1.5 Site Description

## 1.5.1 Study Area

For the purposes of the Natural Resource Assessment, the study area is defined as the proposed development area and all adjacent property within 200 feet. In this case, the proposed development area is a three parcel, 72.6-acre, area within the Gossamer Hills Master Plan Development area. The study area for this assessment is approximately 111 acres (Figure 2).



#### 1.5.2 Site Characteristics

The majority of the study area is characterized by gently rolling farmlands consisting of cultivated fields and pasture. Two active farms are located within the study area. The northern portion of the proposed development area is separated from the adjacent parcels to the south and east by a fence line. NW Brugger Road abuts a portion of the northwestern boundary. The study area, which extends 200 feet in all directions from the proposed development area, consists of pasture and cultivated fields to the north, west, and south. To the east lies a large forested area.

Site hydrology is strongly influenced by Springville Creek, one of its unnamed tributaries, a small drainage, and several hillside seeps. Springville Creek, a tributary of Rock Creek, is a perennial stream that flows southwest across the southeast corner of the study area. This creek is joined to the south of the study area by the unnamed tributary, an intermittent stream flowing southeast across the southwest corner of the study area. From this confluence Springville Creek flows south, crossing under NW Springville Road and continuing southwest for several miles before joining Rock Creek. Several seeps and the small drainage are located throughout the hillslope.

Plant communities within the study area consist primarily of agricultural fields and pastureland. Several small orchards are also located within the study area. The off-site forest to the east is a mixed coniferous-deciduous wetland dominated by mature Oregon ash (*Fraxinus latifolia*) and associated with Springville Creek. This area is separated from the pasture by a 50-foot wide power line easement that parallels the eastern boundary of the proposed development area. Riparian forested and scrub-shrub plant communities in various seral states form a narrow corridor along Springville Creek. The unnamed tributary, which crosses through active pasture, supports only a narrow band of riparian vegetation. Grazing has negatively impacted the abundance and quality of vegetation throughout the entire area.

#### 2.0 METHODS

The methods employed for this NRA are outlined in the Design and Construction Standards for Sanitary Sewer and Surface Water Management (USA 2000). The conditions, standards, and procedures used in the site assessment are outlined in Section 3.02 Water Quality Standards and Appendix C: Natural Resource Assessments of the design and construction manual.

#### 2.1 Site Assessment

The initial phase of the assessment involved the acquisition and review of existing data pertaining to the site. Data were obtained from the following resources:

- Federal Emergency Management Area (FEMA) Flood Insurance Rate Map
- Metro Title 3 Water Quality and Flood Management Area Map
- Metro Data Resource Center Land Use Planning Data (Metro 2001).
- U.S. Geological Survey Map of the Linnton, Oregon, Quadrangle (USGS 1990)



## - National Wetland Inventory Map, Linnton, Oregon, Quadrangle (USFWS 1989)

Currently, the Rock Creek Watershed Plan Map and the CWS Perennial Streams Map are both out of date for this area of Washington County. New data are being compiled for these mid-gradient tributaries to Rock Creek, in the Watershed 2000 project data (Kendra Smith, personal communication, December 2001). These unpublished data are not available to the public.

Other existing data included topographic and hydrologic survey data from CES (CES 2000). CES was contracted by the applicant to complete a survey for the entire Gossamer Hills Master Plan Development Area. Subsequently, CES provided the survey for the wetland boundaries that were delineated by PBS in May 2000. These surveyed features were used to define the boundaries of the water quality sensitive areas located within the proposed development area. The location and extent of wetlands outside the proposed development area were estimated using aerial photographs, topographic maps, and on-site visual observation. These are referred to as "non-delineated wetlands" in this report. A scaled topographic and hydrology base map was created showing the master plan area boundary, proposed development area boundary, study area boundary, topographic contours, stream channels, and development area delineated wetlands, and 100-year flood plain (Figure 4).

Vegetated corridor widths were determined following methods outlined in Section 3.02.2.c (USA 2000) using the criteria of drainage area and percent slope (Table 1). The corridor widths for each sensitive area was determined and mapped to the base map using AutoCad. The corridor areas that overlapped were joined to form a continuous buffer area around the water quality features. The base maps and aerial photography were used to ground truth the locations and extent of the water quality sensitive areas and the associated vegetated corridors during the field investigation.

TABLE 1: VEGETATED CORRIDOR WIDTH CRITERIA

SENSITIVE AREA DEFINITION	SLOPE ADJACENT TO SENSITIVE AREA	WIDTH OF VEGETATED CORRIDOR PER SITE (FT.)
Streams with intermittent flow draining:  • 10 to <50 acres  • 50 to 100 acres  Existing or created wetlands < 0.5 acres	<25%	15 25 25
Existing or created wetlands 0.5 acres or greater Rivers, streams, and springs with year round flow Streams with intermittent flow draining > 100 acres Natural lakes and ponds	< 25%	50
Streams with intermittent flow draining:  10 to <50 acres  50 to 100 acres	>25 %	30 50
Existing or created wetlands Rivers, streams, and springs with year round flow Streams with intermittent flow draining > 100 acres Natural lakes and ponds	>25%	Variable (from 50 - 200 ft.) 25ft. increments from starting point to break in > 25% slope. plus 35 ft. past

Source: Design and Construction Standards for Sanitary Sewer and Surface Water Management, (Unified Sewerage Agency, February 2000)

#### 2.2 Natural Resource Assessment

Natural resource assessment field investigations were performed on December 22, 2001 and January 9, 2002. The location and extent of the surveyed sensitive areas and vegetated corridors, depicted on the base map, were verified in the field. Adjustments and corrections were made to the base map, but no additional survey points were taken. Vegetated corridors were traversed to determine the various plant community types found within each corridor and to characterize corridor conditions based the composition of the vegetation.

Plant community types identified within each sensitive area vegetated corridor were based on dominant vegetation and key indicator species. Sample plot locations were chosen within each plant community for the purpose of gathering cover and composition plot data for all species with cover greater than 5%. Each plant community was sampled within each vegetative corridor, using appropriate plots size for woody and herbaceous species. Variable plot shapes were used for streamside riparian communities to ensure that the plot was within the boundaries of the community type. Only plant communities within the study area were sampled.

Sample plots were established and plot data recorded for each plant community type found within each vegetated corridor. Vegetated corridor condition was determined from the cover values using the ratings of good, marginal, and degraded. The rating was based on the percentage of tree canopy cover, and/or percent of native species cover, and/or the total cover of non-native invasive and noxious weeds present within the plot (Table 2).

TABLE 2: VEGETATED CORRIDOR STANDARDS

Corridor 7	Cover							
Condition	All Native Species	Tree Canopy	Invasive, Non-native, or Noxious Species					
Good	Combination of native tree, shrub, and herbaceous species covering greater than 80% of the area, and	Greater than 50% tree canopy (aerial measure), or	Less than 10% cover by invasive, non- native species, or noxious weeds <sup>1</sup>					
Marginal	Combination of native tree, shrub, and herbaceous species covering 50 - 80% of the area, and	25-50% tree canopy (aerial measure), or	10- 20% cover by invasive, non-native species, or noxious weeds <sup>1</sup>					
Degraded	Combination of native tree, shrub, and herbaceous species covering less than 50% of the area.	Less that 25% tree canopy (aerial measure), or	Greater than 20% covered by invasive, non- native species, or noxious weeds <sup>1</sup>					

Invasive, non-native species are defined by Rubus discolor, Phalaris arundinacea, Dipsacus fullonum, Hedra helix, Solanum sp., Clematis ligusticifolia, and Clematis vitabla. Noxious species are those found in most current version of Oregon Department of Agriculture Noxious Weed List and Portland Plant List.

Source: Design and Construction Standards for Sanitary Sewer and Surface Water Management, (Unified Sewerage Agency, February 2000)

#### 3.0 RESULTS AND DISCUSSION

This section is separated into a presentation of results and discussion pertaining to the water quality sensitive areas and the vegetated corridors located within the study area. Topography, hydrology, and vegetation are used as criteria to characterize these resources. Specific data was collected for each designated sensitive area and the vegetated corridor located with the study area. These results are presented in Section 3.3.

The study area includes the proposed development area, the access road easement located to the south, and the adjacent property within 200 feet of the proposed development area (Figure 3). Water quality features were identified and surveyed within the proposed development area and north of the two stream channels. Additional stream and wetland features outside the development area were estimated using existing topography, a previous natural resource assessment report (EnviroScience 1998), and on-site reconnaissance.

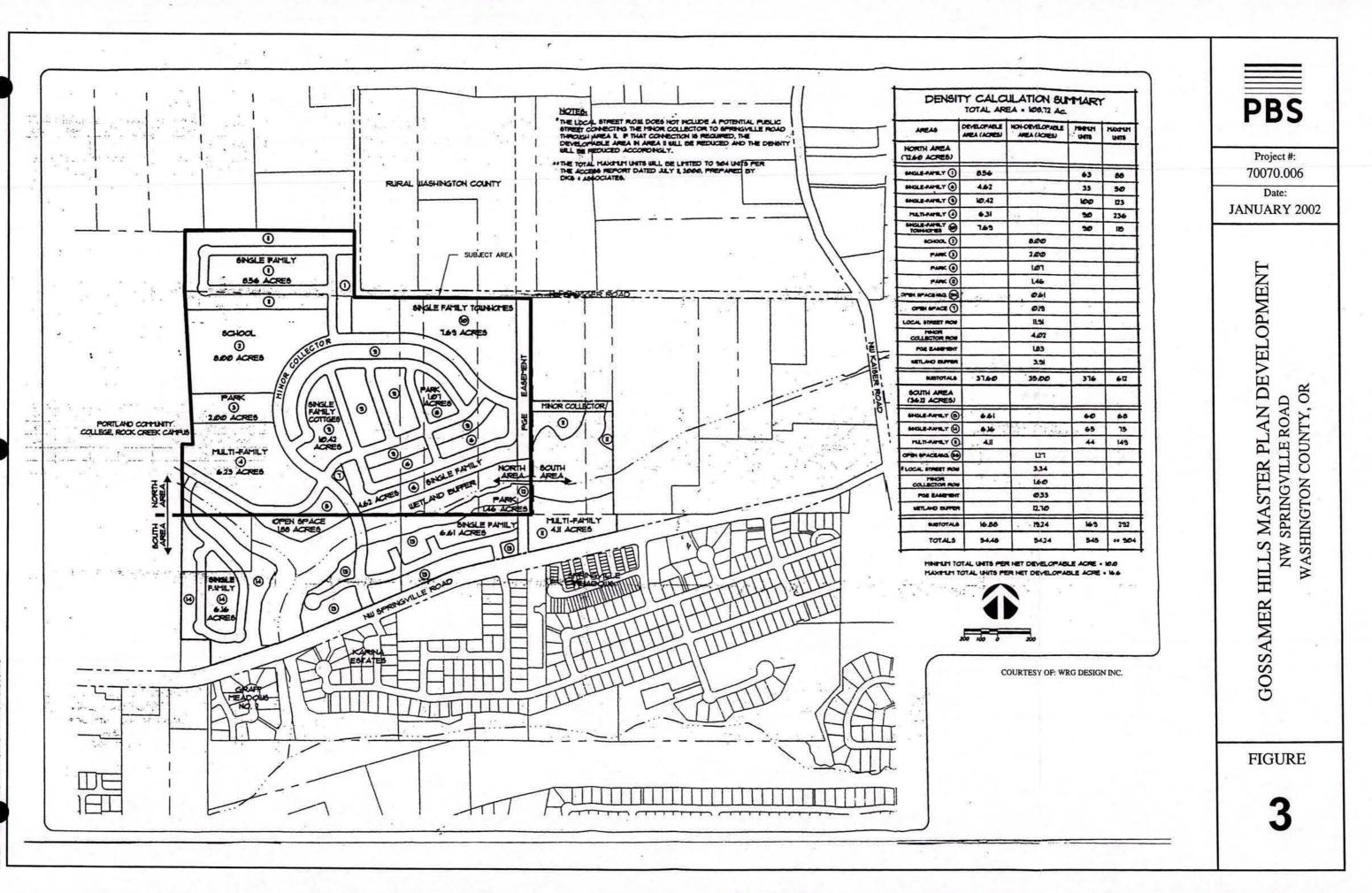
The Gossamer Hills Master Plan Development includes several parcels located to the south and east that are not proposed for development at this time. Although they are not included in this detailed assessment, they are discussed because of their connectivity to the proposed development area. Specifically, some wetland areas extend across the proposed development area boundary to the adjacent areas. Additionally, planned activities such as wetland fill, road construction, and mitigation within the proposed development area will affect hydrologic and vegetative conditions in the adjacent Master Plan Area parcels.

Another consideration is the Oregon ash dominated wetland that abuts the eastern portion of the proposed development. The western extent of this wetland will determine the amount of buffer that will extend onto the proposed development area. For this report, the width of buffer extending on the development property has been estimated and is contained within the power line easement. Buffer enhancement within the power line easement is not proposed as part of the mitigation plan.

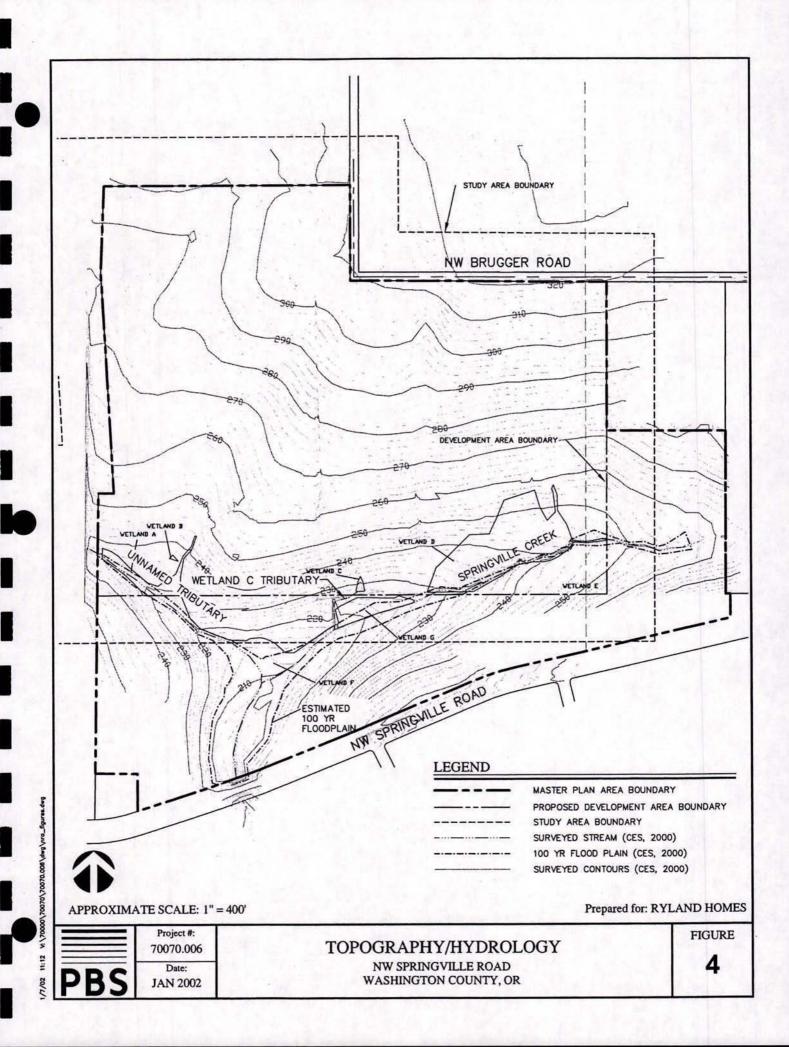
## 3.1 Topography and Hydrology

Surface elevations across the study area range from approximately 220 feet in the southwest corner to approximately 320 feet in the northeastern corner (Figure 4). The topography slopes gently from the north at NW Brugger Road toward the Springville Creek in the south. The terrain also slopes from the northwest corner toward the southwest in association with the unnamed tributary to Springville Creek.

The site hydrology is dominated by Springville Creek, a mid-gradient headwater tributary of Rock Creek. Several hillside seeps, found north of Springville Creek, contribute surface flow to the stream. A small triangular-shaped seep (Wetland C), located along the southern fence line, is the source for an intermittent stream that flows through a narrow channel and into Springville Creek. An unnamed tributary of Springville Creek enters the proposed development area from the west, crossing the southwest corner of the proposed developed area and joins Springville Creek.



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Floodplain wetland areas are associated with the confluence and with low-lying areas adjacent to both streams.

Within the proposed development area, grazing has impacted the stream banks. Dense streamside woody vegetation is absent. Channel depth within Springville Creek ranges from to less than 3 feet in broad, meandering sections to 8 feet in deeply incised areas. Channel widths vary from to less than 3 feet where channels are deeply incised to 15 feet in heavily grazed pasture areas. The unnamed tributary is poorly defined and has been trampled by livestock. No woody vegetation occurs along the streambanks within the proposed development area. A dense, narrow zone of native rose is found above the top of the bank outside the western fence line. The unnamed tributary appears to have been altered by human activity, appearing more like an excavated ditch that a natural watercourse.

Springville Creek enters the study area from forested woodland in the east, crossing through the southeast corner of the proposed development area for 600 feet. In this location, the remnant riparian vegetation consists of scattered mature ash and oak trees. The channel is incised. Pasture grasses have dominated the understory. Fencing along the southern and eastern boundaries of the proposed development area clearly marks the spatial extent of grazing.

Another 600-foot segment of Springville Creek flows from the southern border of the proposed development area to the southern border of the study area. In this area, the creek is joined by a narrow tributary channel that drains from Wetland C, located approximately 100 feet to the north. This tributary is densely vegetated and appears to have been altered by human disturbance. Both the wetland and the tributary are proposed to be filled.

A 100-year floodplain for the two main drainages was surveyed by CES based on visual estimates. The Metro Title 3 Flood Management Map for this area shows no FEMA 100-year floodplain associated with these streams. Field investigation has shown the observed extent of wetland areas associated with these streams exceeds the 100-year floodplain line in several areas. Rather than using the 100-year floodplain to delineate the wetland extent, wetland boundaries were mapped onsite using field indicators.

Figure 4 shows the topographic and hydrologic survey data collected by CES in 2000. The streamline is considered to be center of the channel of the main stem of Springville Creek and the western tributary. The small tributary associated with a wetland seep (Wetland C) was not surveyed.

## 3.2 Vegetation

Vegetation within the study area is heavily influenced by agriculture. Cultivated fields and pastures comprise the majority of the site. A few small orchards are also found within the study area. Along the corridor of Springville Creek is a narrow band of remnant forested riparian vegetation in various seral stages. Mature Oregon ash and Oregon white oak are found along the incised channel in the eastern half of the stream corridor within the proposed development area (Plate 1 and 2, Appendix D). Grazing impacts are evident. Non-native grasses dominate the understory and stream banks are

highly degraded. Table 3 shows a complete list of all plant species observed within the study area and the plant community types in which they were observed. Details about the species composition and cover values for the vegetated corridors are presented in Section 3.3.1.

Short sections of the Springville Creek lack tree canopy cover. Streambanks are trampled and dominated by pasture vegetation (Plate 3, Appendix D). Native species include western manna grass, soft rush, and American brooklime. The streambanks and adjacent pasture wetlands are dominated by non-native species including creeping bentgrass, Kentucky bluegrass, meadow foxtail, and fowl bluegrass.

The proposed development area is fenced along its eastern and southern edges. Vegetation differences across the fence line are dramatic. The mixed woodland to the east is comprised of a forested wetland/upland complex. Forested wetlands associated with the stream channels and low-lying areas are dominated by Oregon ash, slough sedge, and spreading rush (Plate 8, Appendix D). Drier portions contain Douglas fir, grand fir, red alder, and Oregon white oak in the canopy. Other trees include several escaped cultivars of cherry and apple and an occasional paper birch. The well-developed understory consists of a diverse assemblage of shrub and herbaceous species. Common species include beaked hazelnut, Nootka rose, Pacific ninebark, snowberry, sword fern, piggyback plant, Henderson's sedge, and other native woodland herbs.

South of the fence line, vegetation along Springville Creek transitions from a dense narrow strip of scrub-shrub dominated by Nootka rose and Himalayan blackberry, to wide, open swaths of reed canarygrass (Plate 4, Appendix D). An intact multi-layered riparian forest and forested wetland are found near the confluence of Springville Creek with the unnamed tributary. The riparian forest in less disturbed areas along Springville Creek contains Oregon ash, red alder, Pacific willow, red-osier dogwood, Douglas' spiraea, field horsetail, and piggyback plant.

# 3.3 Water Quality Sensitive Areas and Vegetated Corridors

Several discrete water quality sensitive areas were identified within the study site. These include the following (Figure 5):

- Springville Creek, a perennial tributary to Rock Creek;
- the unnamed tributary;
- Wetland C tributary;
- delineated wetland areas: A, B, C, D, and E; and
- Non-delineated wetland areas.

The water quality sensitive areas were delineated with two levels of accuracy. Surveyed features included Springville Creek, the unnamed tributary, the wetlands within the proposed development area, and a portion of easement for the south access road. PBS delineated the wetland features in May 2000. The complete delineation report is found in Appendix B. The stream locations were determined by CES in the summer of 2000. Stream lengths for Springville Creek, the unnamed tributary, and the Wetland C tributary are shown in Table 4.

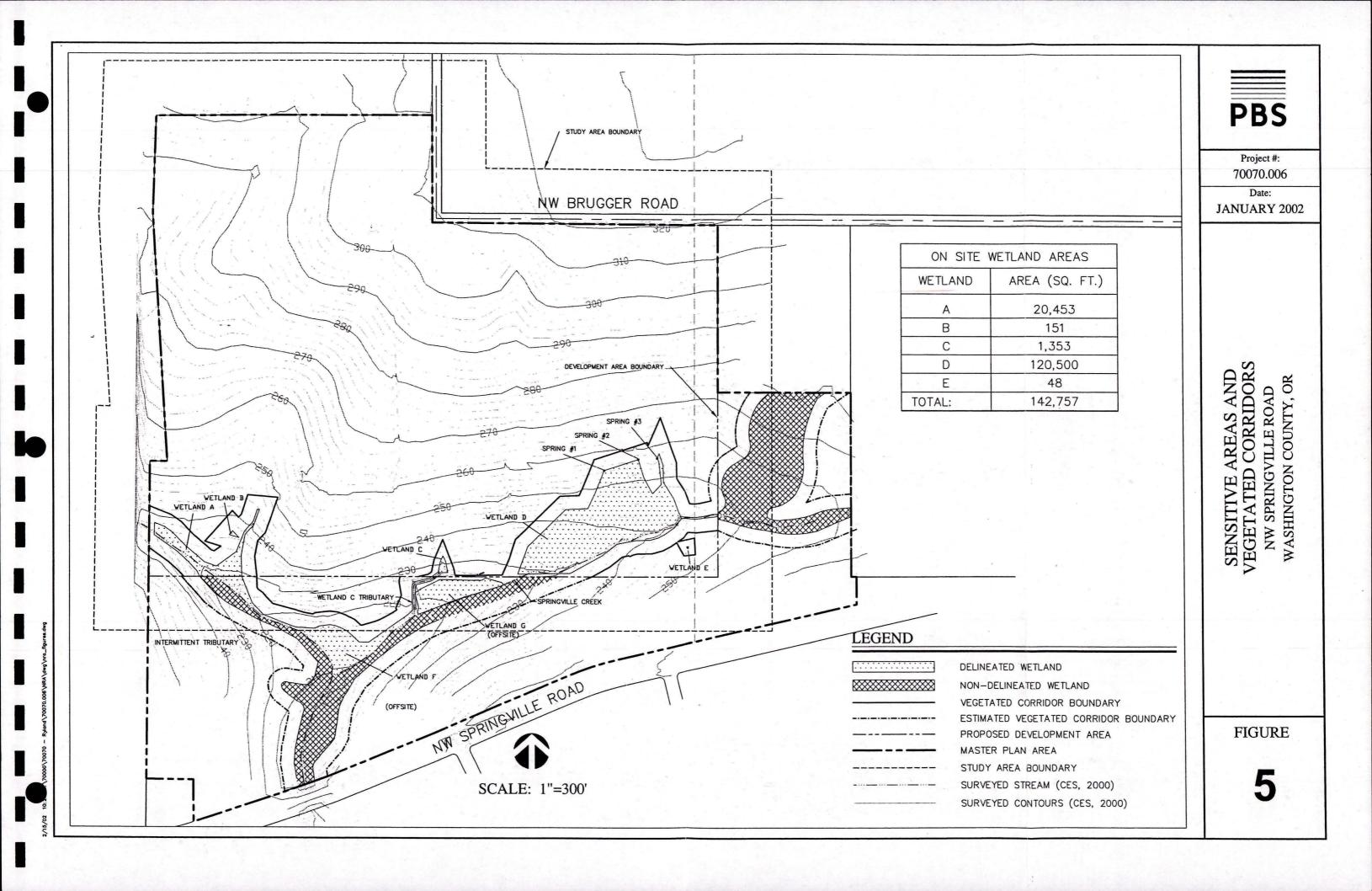


TABLE 3: DISTRIBUTION OF PLANT SPECIES BY PLANT COMMUNITY TYPE

SCIENTIFIC NAME	COMMON NAME	NATIVE	FORESTED RIPARIAN	RIPARIAN SHRUB- SCRUB	EMERGENT WETLAND	PASTURE	MIXED WOODLAND
Abies grandis	grand fir	Y	SWANGE A RECORDED CT ASKEN	Alternative and participate	Section Control of the Control of th	BRESIGNAS (12)	X
Acer circinatum	vine maple	Y					Х
Acer macrophyllum	big leaf maple	Y	The Late			- CONTRACTOR CONTRACTOR	Х
Agrostis stolonifera	creeping bentgrass	N	х		Х	X	
Alopecurus pratensis	meadow foxtail	N	Charles To		Х	Х	
Amelanchier alnifolia	serviceberry	Y	Y				X
Avena sativa	common oak	N				Х	
Berberis aquifolium	tall Oregon-grape	Y					х
Betula papyrifera	paper birch	Y					Х
Callitriche sp	water starwort		X		Х		
Calocedrus decurrens	incense cedar	Y		Mary 1			х
Carex hendersonii	Henderson's sedge	Y	Х				
Carex obnupta	slough sedge	Y	Х				
Cornus stolonifera	red-osier dogwood	Y	Х	X			NEW YEAR
Corylus cornuta	beaked hazelnut	Y	х	X			Х
Crataegus monogyna	English hawthorn	N		X			
Dactylis glomerata	orchard grass	N	х		Х	Х	
Daucus carota	Queen Anne's lace	N				Х	1111 2.84
Echinochloa crusgalli	barnyard grass	N	Х			Х	
Equisetum hyemale	scouring rush	Y	Х	X	Х	Х	111111111111111111111111111111111111111
Equisetum arvense	field horsetail	Y	Х		Х	Х	
Festuca arundinacea	tall fescue	N	R. PHELL		Х		
Fraxinus latifolia	Oregon ash	Y	Х	X			Х
Gaultheria shallon	salal	Y	2 - 10				Х
Glyceria occidentalis	western manna grass	Y	X		Х		
Holcus lanatus	velvet grass	N			Х	Х	
Holodiscus discolor	oceanspray	Y	Х		TEN DAY		Х
Ilex aquifolium	English holly	N	х				Х
Juncus bufonius	toad rush	Y	X		X		
Juncus effusus	common rush	Y	х		Х		
Juncus patens	spreading rush	Y	х		X		
Lemna sp.	duckweed		х		Х		
Lolium perenne	perennial ryegrass	N				Х	
Malus sp.	apple		Y Warner				х
Oemleria cerasiformis	Indian plum	Y	Х				Х
Phalaris arundinacea	reed canarygrass	N	х	X	Х		
Physocarpus capitatus	Pacific ninebark	Y	х				Х
Pinus ponderosa	ponderosa pine	Y	MICE TO S				Х
Plantago lanceolata	English plantain	Y	х		X		Х
Poa palustris	fowl bluegrass	N	Х		Х	Х	
Poa pratensis	Kentucky bluegrass	N	Х		х	Х	-1.5
Polygonum hydropiper	marshpepper smartweed	N	х		х		47.4
Polystichum munitum	sword fern	Y	Х	X		85	Х
Populus balsamifera	black cottonwood	Y	Х				1112
Prunus sp.	cherry		Х				Х

TABLE 3: DISTRIBUTION OF PLANT SPECIES BY PLANT COMMUNITY TYPE

SCIENTIFIC NAME	COMMON NAME	NATIVE	FORESTED RIPARIAN	RIPARIAN SHRUB- SCRUB	EMERGENT WETLAND	PASTURE	MIXED WOODLAND
Prunus emarginata	bitter cherry	Y					X
Pseudotsuga menziesii	Douglas-fir	Y	х	Maria Land			х
Pteridium aquilinum	bracken fern	Y	Х	Х			Х
Quercus garryana	Oregon white oak	Y	Х				х
Rhamnus purshiana	cascara buckthorn	Y	X				Х
Rorippa curvisiliqua	curved-pod yellowcress	Y			х		HALL
Rorippa nasturtium- aquaticum	watercress	N	х		х		
Rosa eglanteria	sweetbriar rose	N	х	X			X
Rosa nutkana	Nootka rose	Y	х	Х			X
Rosa pisocarpa	clustered wild rose	Y	х	Х	BITT		Х
Rubus discolor	Himalayan blackberry	N	х	х			х
Rubus laciniatus	evergreen blackberry	N	x	х			х
Rubus ursinus	Pacific blackberry	Y	х	X			Х
Salix lasiandra	Pacific willow	Y	х	Х			
Salix scouleriana	Scouler's willow	Y	Х				Х
Solanum dulcamara	bittersweet nightshade	N	х				
Sonchus asper	prickly sow-thistle	Y				Х	
Spiraea douglasii	douglas's spirea	Y	х	Х			Х
Symphoricarpos albus	snowberry	Y	Х	Х			Х
Thuja plicata	western redcedar	Y				7.5	Х
Tolmiea menziesii	piggy-back plant	Y	х				Х
Trifolium repens	white clover	N				Х	
Vaccinium parvifolium	red huckleberry	Y	100000				Х
Vancouveria hexandra	inside-out flower	Y					х
Veronica americana	American brooklime	Y	THE PARTY OF		X	7.0	2000

Estimated features included the Wetland C tributary, located within the dedicated south access right-of-way, and the floodplain wetlands south and east of the fence line surrounding the proposed development area. A complete wetland delineation conducted in accordance with the criteria outlined in the *Corps of Engineers Wetland Delineation Manual* (USACE 1987) will be needed to determine the exact boundary and areal extent of the wetlands in this area.

TABLE 4: STREAM LENGTHS FOR ALL DRAINAGEWAYS WITHIN THE GOSSAMER HILLS MASTER PLAN AREA

STREAM NAME	AVERAGE CHANNEL WIDTH (FT.)	STREAM LENGTH (FT.) WITHIN MASTER PLAN AREA	STREAM LENGTH (FT.) WITHIN PROPOSED DEVELOPMENT AREA
Springville Creek	8	2,459	1,535
Western Intermittent Tributary	12	934	710
Wetland C Tributary	6	234	65

Distribution and size of the wetland areas observed within the Gossamer Hills Master Plan Area are shown in Table 5.

TABLE 5: WETLAND ACREAGE WITHIN THE GOSSAMER HILLS MASTER PLAN STUDY AREA

LOCATION RELATIVE TO STUDY AREA	WETLAND	SIZE (SQ. FT.)	DETERMINATION METHOD
Within Proposed Development Area	A, B, C, D, E	142,505	Delineated
Within Dedicated South Access Road ROW	G	21,177	Delineated
South sides of stream channels		110,247	Estimated
North of confluence of streams to fence line	F	37,369	Delineated
Eastern Forested Wetland		126,558	Estimated

### 3.3.1 Vegetated Corridors

Vegetated corridors were mapped from both surveyed and estimated sensitive area boundaries following vegetated corridor width guidelines found in Section 3.02.2 of Design and Construction Standards for Sanitary Sewer and Surface Water Management (USA 2000) (Table 1). Stream channels were delineated using CES survey data (CES 2000) for the entire Gossamer Hills Master Plan Area. Wetland boundaries within the proposed development area were delineated and surveyed. The Wetland C tributary and other wetland areas outside of the proposed development area were estimated.

Corridor widths were calculated based on a slope grade of under 25%. Where wetland corridor widths and stream corridor widths did overlapped. The corridor boundaries were extended out to encompass these water quality sensitive areas. Where adjacent water quality features do not

influence stream or wetland areas, corridor widths were mapped at the least permissible width. Most of the stream and wetland features within the study were connected or adjacent to one another, but buffer widths varied due to the type of sensitive area feature. Table 6 shows the corridor widths for each water quality sensitive area within the study area.

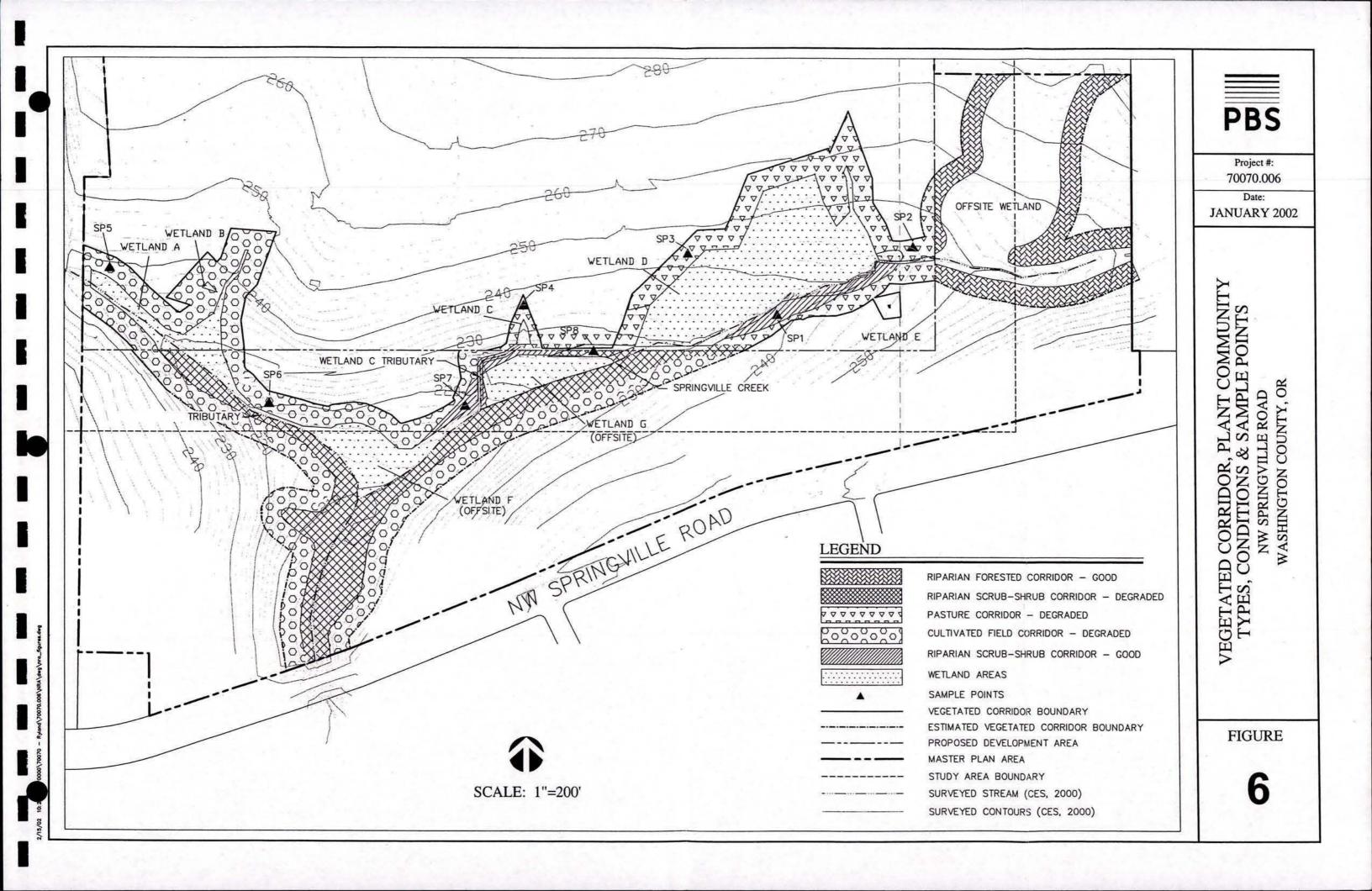
TABLE 6: WATER QUALITY SENSITIVE AREAS AND VEGETATED CORRIDOR WIDTHS

SENSITIVE AREA	ТУРЕ	SIZE	CORRIDOR WIDTH (FT.)
Springville Creek	perennial stream	-	50
Unnamed Tributary	intermittent stream		15
Wetland C Tributary	intermittent stream		15
Wetland A	existing wetland - continuous	> 0.5 acre	50
Wetland B	existing wetland	< 0.5 acre	25
Wetland C	existing wetland	< 0.5 acre	25
Wetland D	existing wetland	> 0.5 acre	50
Wetland E	existing wetland	< 0.5 acre	25
ROW Wetland	existing wetland - continuous	> 0.5 acre	50
Eastern forested wetland	existing wetland	> 0.5 acre	50

### 3.3.2 Plant Community Types and Conditions

All plant communities sampled were rated as degraded (Tables 7,8, and 9). Non-native graminoid species were dominant in the cultivated fields and pastures, which comprised the majority of the wetland and stream corridor areas. Where woody vegetation was present, understory vegetation was disturbed by grazing activities and non-native graminoids, and/or invasive shrub species dominated. Plates 1-8 in Appendix D show the range of plant community types and conditions found within the study area.

The vegetated corridors for all sensitive areas within the Master Plan Area were traversed and plant community type and condition were evaluated (Figure 6). The forested wetland east of the proposed development area appears to be in good condition. This area has both forested wetland and mixed woodland plant communities. A portion of the forested wetland associated with the confluence appears to be in good condition as well. The forested wetlands in these areas are not delineated and the buffers associated with them are estimated. Plant communities in the vegetated corridors associated with the floodplain wetlands located south of the study area were all in degraded condition.



## TABLE 7: PLANT COMMUNITY TYPES IN VEGETATED CORRIDOR OF SPRINGVILLE CREEK

FO	DRESTE	D RIPARIAN		RIPARIAN SCRUB-SHRUB		PASTURE	
Sample Plot 1	Cover	Sample Plots 7	Cover	Sample Plot 8	Cover	Sample Plot 2	Cover
Fraxinus latifolia	15	Quercus garryana	35	Fraxinus latifolia	5	Festuca arundinacea	90
Quercus garryana	15	Fraxinus latifolia	15	Alnus rubra	5	Agrostis stolonifera	10
		Pseudotsuga menziesii	T			Juncus effusus	Т
Rubus discolor <sup>1</sup>	T <sup>2</sup>	Alnus rubra	5				
Festuca arundinacea	65	Rubus ursinus	25	Rubus discolor	35		
Dactylis glomerata	5	Rosa nutkana	30	Rosa nutkana	45		
other grass sp.	30	Rubus discolor	35	Cornus stolonifera	5		
		Corylus cornuta	5				
		Polystichum munitum	20	Phalaris arundinacea	25		
		Tolmiea menziesii	5	Equisetum arvense	5		
% Cover by Natives	30	% Cover by Natives	135	% Cover by Natives	65	% Cover by Natives	T
% Tree Canopy	30	% Tree Canopy	55	% Tree Canopy	10	% Tree Canopy	0
% Invasive/Noxious	T	% Invasive/Noxious	35	% Invasive/Noxious	60	% Invasive/Noxious	0
Condition - Degraded		Condition - Degraded		Condition - Degraded		Condition -Degraded	

<sup>&</sup>lt;sup>1</sup>Invasive Species: Rubus discolor, Phalaris arundinacea, Dipsacus fullonum, Hedra helix, Solanum sp., Clematis ligusticifolia and C. vitabla. Source CWS, 2000; Noxious Species Source: Oregon Department of Agriculture Noxious Weed List and Portland Plant List <sup>2</sup>T= Trace

TABLE 8: PLANT COMMUNITY TYPES IN VEGETATED CORRIDOR OF UNNAMED TRIBUTARY

PASTURE		CULIVATED FIEL	D
Sample Plot 5	Cover	Sample Plot 6	Cover
Festuca arundinacea	90	Festuca arundinacea	100
Agrostis stolonifera	10	Rosa nutkana (sprouts)	3
% Cover by Natives	0	% Cover by Natives	1
% Tree Canopy	0	% Tree Canopy	0
% Invasive/Noxious <sup>1</sup>	0	% Invasive/Noxious <sup>1</sup>	0
Condition - Degraded		Condition - Degrade	d

Invasive Sp.: Rubus discolor, Phalaris arundinacea, Dipsacus fullonum, Hedra helix, Solanum sp., Clematis ligusticifolia and C. vitabla. Source: CWS, 2000. Noxious Sp. Source: Oregon Department of Agriculture Noxious Weed List and Portland Plant List.

TABLE 9: PLANT COMMUNITY TYPES IN VEGETATED CORRIDOR OF WETLANDS

PASTURE		PASTURE	
Sample Plot 3	Cover	Sample Plot 4	Cover
Festuca arundinacea	90	Festuca arundinacea a	90
Agrostis stolonifera	10	Agrostis stolonifera	10
% Cover by Natives	0	% Cover by Natives	0
% Tree Canopy	0	% Tree Canopy	0
% Invasive/Noxious <sup>1</sup>	0	% Invasive/Noxious <sup>1</sup>	0
Condition – Degraded		Condition – Degrade	d

Invasive Sp.: Rubus discolor, Phalaris arundinacea, Dipsacus fullonum, Hedra helix, Solanum sp., Clematis ligusticifolia and C. vitabla. Source: CWS, 2000. Noxious Sp. Source: Oregon Department of Agriculture Noxious Weed List and Portland Plant List.

# 4.0 POTENTIAL IMPACTS, MITIGATION, AND ALTERNATIVE ANALYSIS

These data are provided as a basis for determining impacts to water quality sensitive areas by the proposed development on the property. This information will aid in further design modifications, site planning, and the permitting process.

# 4.1 Potential Impacts

No major direct discharge or construction is proposed into or across Springville Creek, a perennial stream in the Rock Creek Watershed. Therefore, no Tualatin Basin Rapid Stream Assessment

Technique was required for this site (Berg 2001). The allowed exception is for the access road from NW Springville road to the proposed development area. This proposed road crosses Springville Creek, a nearby tributary, and the associated vegetated corridors for these sensitive areas. Encroachment into the corridors for road crossing requires corridor replacement at a 1:1 ratio. Replacement locations must be incorporated into existing vegetated corridors within the site.

The current site plan for proposed development will impact the vegetated corridors of several sensitive areas. Wetland fill and mitigation, that includes compensation for wetland buffers, is proposed for the majority of these areas. Three buffer areas require 1:1 replacement mitigation for buffer encroachment have been identified and are found within the ROW. The three buffer areas comprise approximately 5,130 square feet. Table 10 shows which buffer encroachment areas need replacement at 1:1 ratio.

Figure 7 shows the site plan, areas of buffer encroachment, proposed wetland fill buffers, and enhancement areas.

TABLE 10: SENSITIVE AREAS BUFFER ENCROACHMENT

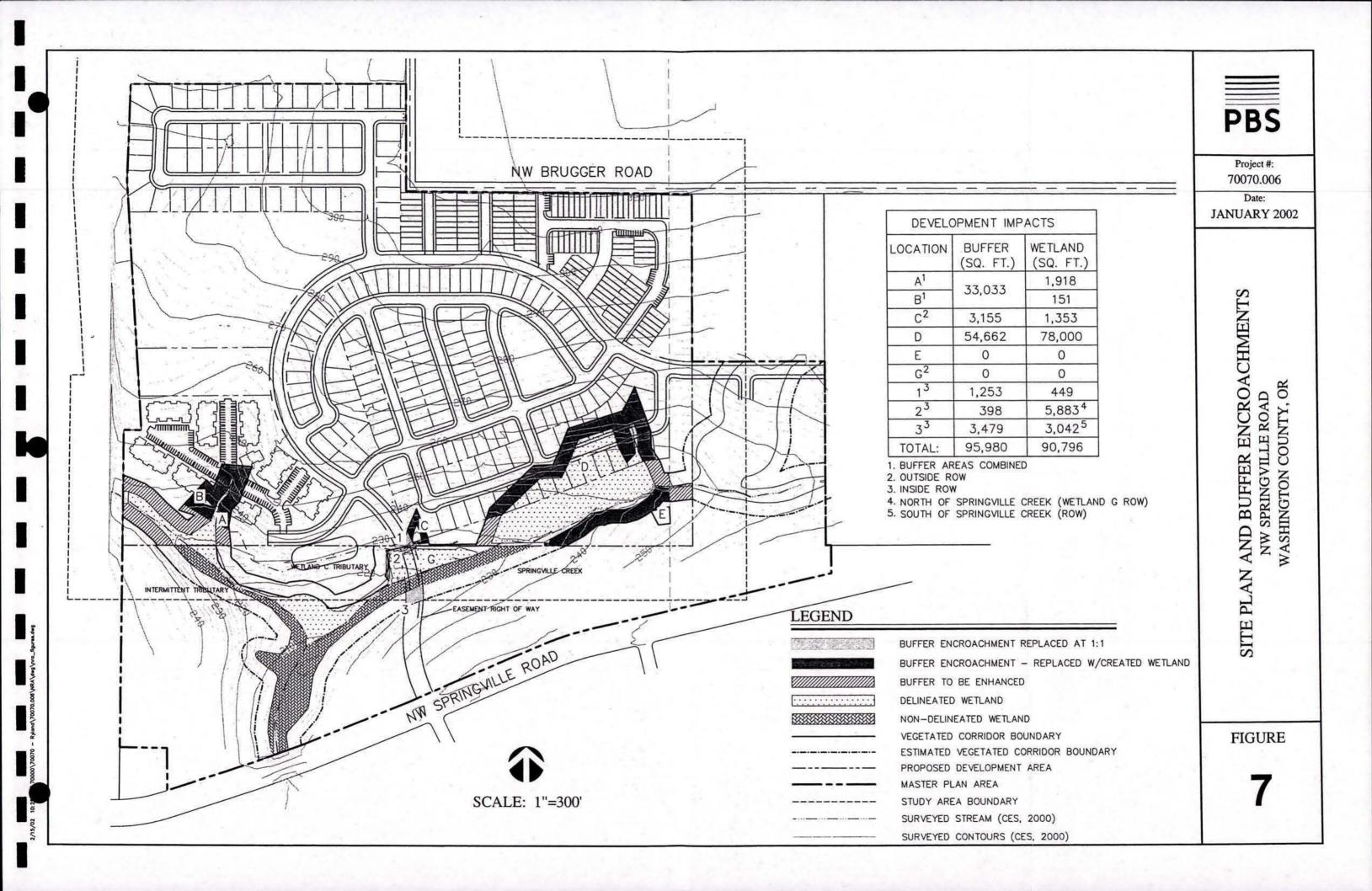
BUFFER ENCROACHMENT LOCATION	AREA OF BUFFER ENCROACHMENT (SQ. FT.)	REPLACEMENT REQUIRED
Wetland A & B buffer	33,033	No
Wetland C buffer outside ROW	3,155	No <sup>1</sup>
Wetland D buffer	54,662	No
Springville Creek, Wetland G and C buffer inside ROW	5,130	Yes

A 1:1 replacement of buffer areas is not required because mitigated wetlands will be assigned CWS standard buffers.

#### 4.2 Alternative Analysis

Section 3.02.1 of the CWS Design and Construction Standards requires a Tier 1 or Tier 2 alternative analysis unless the project meets the standards presented Sections 3.02.3 and 3.02.4. Not all of the standards are applicable to the proposed plan and there is no requirement that the plan meet all the standards presented in these sections. Therefore, if the development plan and mitigation requirements meet at least one standard in each section, the plan would be considered "compliant" and an Alternative Analysis would not be required.

The proposed plan includes filling several wetland areas and their vegetated corridors and creating a stream crossing for a dedicated access road. The filling of the wetlands and vegetated corridors will require compliance with the Oregon Department of State Lands (DSL) mitigation guidelines and permit approval from the DSL and USACE. In the case of vegetated corridors associated with road crossings, the impacted corridors will require compensation at a 1:1 ratio.



Section 3.02.3 standards are met because the fillings of wetlands require permit and mitigation approval from the DSL and USACE (Section 3.02.3.a.2, Section 3.02.3.a.3, and Section 3.02.3.b). There are no other intrusions into the vegetated corridors except as permitted through Section 3.02.4.b.1.a (road crossing). Because the proposed project complies with at least one standard in each section (Section 3.02.3 and 3.02.4), an Alternative Analysis is not required for this project.

### 4.3 Vegetated Corridor Mitigation

The requirements and conditions of the water quality sensitive areas, as outlined in Section 3.02.4 (USA 2000), include provision for protection and enhancement of the vegetated corridor associated with these areas. For vegetated corridors 50 feet wide and greater, the 50 feet nearest the sensitive area must be equal to or better than "good" condition. For vegetated corridors less than 50 feet wide, the entire corridor must be equal to or better than "good" condition. When development occurs, degraded vegetated corridors must be restored to "good or better" condition.

The vegetated corridors within the proposed development area are all in degraded condition (Figure 6). Degraded corridors not affected by site development will need to be enhanced. Corridors impacted by ROW development will require mitigation at a 1:1 ratio. Corridors impacted during the fill of wetlands will be compensated by assigning the CWS recommended corridor width to the wetland mitigation areas. Enhancement of the degraded corridors to "good or better condition" will require removal of invasive non-native species and revegetation with native plant species. The mitigation plan will include a map depicting the location of vegetated corridors that will need to be replaced at 1:1, the areas that will need to be enhanced, and the created wetland areas. The mitigation plan will also include an outline of the planting plan, guidelines for invasive species removal, and maintenance schedule to assure compliance with the mitigation objectives.

#### 5.0 REFERENCES

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- USGS (U.S. Geological Survey). 1990. 7.5 Minute Topographic Quadrangle for Linnton, Oregon. United States Geological Survey, Denver, Colorado.

Raymond Haak, M.S.

Senior Technical Manager Natural Resources Division Date

James H. Carsner, B.S.

Senior Scientist

Date



# APPENDIX A

Conditions of Approval Gossamer Hills Master Plan Review



Washington County Department of Land Use and Transportation Land Development Services 155 N First Ave, Suite 350 Hillsboro, OR 97124

# NOTICE OF DECISION OF HEARINGS OFFICER

PROCEDURE TYPE: III

CPO: Z COMMUNITY PLAN:

Bethany

LAND USE DISTRICTS:

R-9 (Residential 9 Units Per Acre District)

PROPERTY DESCRIPTION:

ASSESSOR MAP#: 1N1 17C and 1N1 18

TAX LOT#: 500 & 600 & 601, 690, 700 and

800 respectively

SITE SIZE: Approximately 108.7 Acres

ADDRESS: Several site addresses

- JIAB'S COPY

CASEFILE: 00-601-M

RECEIVED

JUL 0 9 2001

ADDITO

CORRIGAN & BACHRACH, LLP

APPLICANT: CORRIGAN & BACHRACH, I Ryland Group, Inc. (Don Guthre)

10070 Southwest Murdock Street

Tigard, Oregon 97224

APPLICANT'S REPRESENTATIVE:

WRG Design, Inc. (Randy Dyer P.E.)

10450 Southwest Nimbus Avenue

Beaverton, Oregon 97223

CONTACT PERSON:

Jeff Bachrach

OWNER:

Multiple Property Owners (See Casefile)

Road approximately 1,850 feet west of NW

Kalser Road

PROPOSED DEVELOPMENT ACTION: Master Plan Review for a Residential Development "Gossamer Hills" including single-family and multi-family residential development together with a school/park site centered around a future minor collector street.

A summary of the decision of the Hearings Officer and supplemental findings are attached.

This decision may be appealed to the Land Use Board of Appeals (LUBA) by filing a notice of Intent to Appeal with LUBA within 21 days of the date of this decision. Contact your attorney if you have any questions in this regard.

For further information contact the Land Use Board of Appeals at 503-373-1265.

The complete case, including Notice of Decision, Application, Staff Report,

Findings and Conclusions, and Conditions of Approval, if any, are available for <u>review</u> at no cost at the Department of Land Use and Transportation. <u>Copies</u> of this material will be provided at reasonable cost.

#### DATE OF DECISION: July 3, 2001

Notice to Mortgagee, Lien Holder, Vendor or Seller: ORS Chapter 215 requires that if you receive this notice it must promptly be forwarded to the purchaser. Notice of Decision of Hearings Officer July 3, 2001 Page 2

CASEFILE NUMBER: 00-601-M/S/DHA/W

#### SUMMARY OF DECISION:

On July 3, 2001, the Washington County Hearings Officer issued a written decision (Attachment "C") on the request for a Master Plan Review for a Residential Development "Gossamer Hills" including single-family and multi-family residential development together with a school/park site centered around a future minor collector street on property located on the north side of NW Springville Road, approximately 1,650 feet west of NW Kaiser Road, in CPO #7 and described as tax lots #500 and 600 on assessor map #1N1 17C and tax lots #601, 690, 700 and 800 on assessor map #1N1 18, W.M., Washington County, Oregon. His decision is as follows:

#### ORDER:

The Application is Approved, subject to the Conditions set forth in Attachment "B".

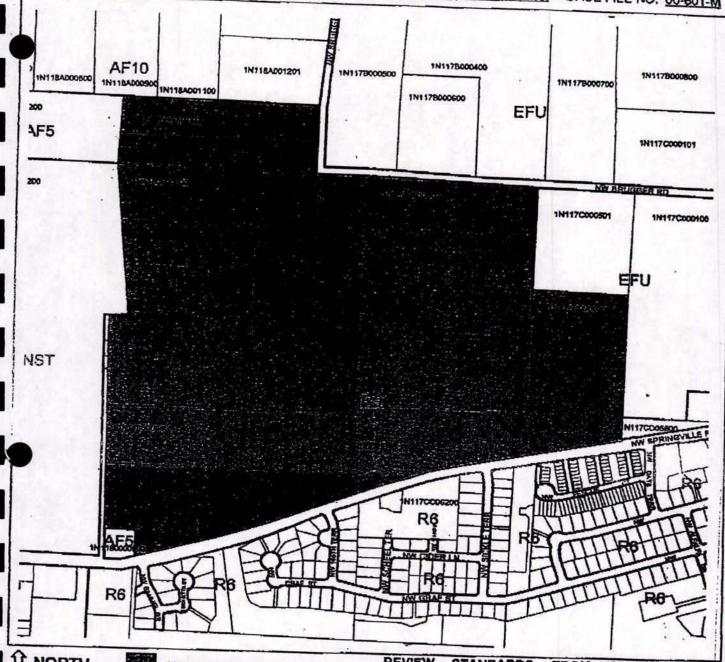
#### Attachments:

A. Vicinity Map

B. Conditions of Approval

C. Hearings Officer's Findings, Conclusion and Order

TAX MAP/LOT NO. 1N1 17 C0 00500, 00600; 1N1 18 00 00601, 00690, 00700, 00800 CASE FILE NO. 00-601-M



I NORTH

AREA OF CONSIDERATION

SCALE: 1" TO 500"

SITE & SURROUNDING LAND USE DISTRICTS:

R9 (Residential 7-9 units/acre)

R6 (Residential 5-8 units/acre)

R15 (Residential 12-15 units/acre)

R24 (Residential 19-24 units/acre)

INST (Institutional)

Urban Growth Boundary

AF5 (Agriculture & Forest 5 Acre Minimum)

AF10 (Agriculture & Forest 10 Acre Minimum)

EFU (Exclusive Farm Use)

#### STANDARDS FROM CURRENT APPLICABLE ORDINANCE OR PLAN

- WASHINGTON COUNTY COMPREHENSIVE PLAN
- APPLICABLE COMMUNITY PLAN (See Front of Notice)
  TRANSPORTATION PLAN
- WASHINGTON COUNTY COMMUNITY DEVELOPMENT CODE: ARTICLE I, INTRODUCTION & GENERAL PROVISIONS

ARTICLE II, PROCEDURES
ARTICLE III, LAND USE DISTRICTS ARTICLE IV, DEVELOPMENT STANDARDS

ARTICLE V. PUBLIC FACILITIES AND SERVICES

ARTICLE VI, LAND DIV. & LOT LINE ADJUSTMENTS

ARTICLE VII, PUBLIC TRANSPORTATION FACILITIES

R & O 86-95 TRAFFIC SAFETY IMPROVEMENTS

ORD, NO. 524 UNIFORM ROAD IMPROVEMENT STANDARDS

ORD. NO. 379 TRAFFIC IMPACT FEE G.

R & O 91-75 SURFACE WATER QUALITY/QUANTITY

Attachment B

## CONDITIONS OF APPROVAL

I. PRIOR TO FINAL APPROVAL OF THE GOSSAMER HILLS MASTER PLAN THE APPLICANT SHALL:

Submit the following to the Unified Sewerage Agency and obtain a service provider letter:

A site assessment and sensitive area certification preserving a corridor which separates the sensitive area from the impact of development. The corridor must be set aside in a separate tract and not part of any buildable lot.

# II. THE APPLICANT FOR A DEVELOPMENT APPLICATION FOR THE FIRST PHASE OF THE GOSSAMER HILLS MASTER PLAN APPLICATION SHALL:

- A. Provide evidence that final approval has been obtained for the Master Plan as outlined above.
- B. Include a development application form signed by the property owner(s) of record for all tax lots within the Gossamer Hills Master Plan area fronting NW Springville Road including the property owner where the minor collector roadway is proposed in the Master Plan.
- C. Propose construction of the minor collector road and associated utilities at least to the east edge of Area 2, including any required drainage hazard area alteration or wetland buffer review. (207-5)
- Propose dedication of right-of-way along the entire Master Plan's frontage of NW Springville Road. (207-5)
- E. Propose construction of the concrete sidewalk and roadside drainage (ditch) improvements along the entire master plan's frontage of NW Springville Road in accordance with the WCRIDS. (207-5)
- F. Provide a plan for the minor collector's intersection with NW Springville road which is consistent (in terms of design) with the version included in the Master Plan and meets the criteria listed in the Springville Subarea Design Element No. 5.k. This plan is subject to approval through the Engineering Division. (207-5)

Casefile 00-601-M Conditions of Approval Page 2

G. Provide a chart, like the Density Summary on page 4 of the Master Plan, and supporting analysis showing that the residential development on the site will comply with the minimum and maximum density range in the R-9 zone. The analysis shall be consistent with the methodology in the June 1, 2001 memorandum from Mr. Goodell or amendments thereto approved by the planning director consistent with applicable density standards, and shall reflect more detailed delineation of wetland buffers (if any) and other changes in net developable area as defined by the CDC.

### III. THE APPLICANT FOR THE FIRST DEVELOPMENT APPLICATION (PHASE) NORTH OF THE CREEK SHALL:

Propose the extension of the minor collector and utilities to the school site (Area 2), including, if necessary, a type II drainage hazard area alteration. (

### IV. FUTURE DEVELOPMENT APPLICATIONS (AS APPLICABLE) WITHIN THE GOSSAMER HILLS MASTER PLAN AREA SHALL:

- A. Include a plan for Master Plan Areas 9 and 10 (together or individually) for reporting sales information ensuring that at least 20% of the housing units built in Areas 1, 4, 6, 8, 9 and 10 (north of the resource area) shall be for-sale units affordable to households at or below area median incomes using current HUD affordability data as detailed in the findings of this Report. (See Springville Subarea Design Element No. 5.c.) Note: Shifting of responsibility for this affordability requirement from Area to Area shall be allowed only when the affected property owner's signature is on the development application form.
- B. Include a plan (to be reviewed and approved by the County) for Master Plan Areas 11, 13 and 14 (together or individually) for reporting sales information ensuring compliance with Springville Subarea Design Element No. 5.c. Note: Shifting of responsibility for this affordability requirement from Area to Area shall be allowed only when the affected property owner's signature is on the development application form.
- C. The application for each phase of the Master Plan containing residential uses shall include evidence that the development proposed in that phase will be within the relevant minimum and maximum density range, considering the table and the analysis approved pursuant to condition of approval 2.g and amendments thereto warranted as a result of modifications of land uses or areas in the Master Plan (e.g., to reflect more detailed delineation of wetland buffers, other changes that affect net developable acreage, or elimination of the school site).

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- Development proposals shall emphasize shorter block lengths (except for the collector street) and greater street and pedestrian connectivity (accessways) than are proposed in the Master Plan. Future development applications shall be scrutinized for compliance with the findings in the Staff Report with regard to Section 408 (Neighborhood Circulation) and corresponding discussion in the hearings officer's final order. This shall ensure that each Area within the Gossamer Hills Master Plan provides the highest degree of vehicular and pedestrian connectivity. See findings in the Staff Report and above regarding Section 408-5 for the issues relevant to this condition of approval. Also see condition of approval VIII.D.
- E. The need for and timeliness of road connections and access to Brugger Road shall be evaluated at the time future development applications are submitted.

## V. PRIOR TO FINAL APPROVAL FOR A DEVELOPMENT APPLICATION FOR THE FIRST PHASE OF THE GOSSAMER HILLS MASTER PLAN:

- A. The subject area(s) of Gossamer Hills Master Plan shall be required to annex to the Tualatin Hills Park and Recreation District.
- B. The applicant shall submit evidence demonstrating compliance with the delayed annexation agreement requirement with the City of Beaverton and that all necessary service district annexations have taken place.

### VI. PRIOR TO COMMENCING DEVELOPMENT FOR ANY PORTION OF THE GOSSAMER HILLS MASTER PLAN:

The applicant for development shall provide evidence that an opportunity has been provided to the Beaverton School District for acquiring up to 10 acres of land (within the Master Plan Area) for a school site.

### VII. TRAFFIC SAFETY IMPROVEMENT CONDITIONS TO BE IMPLEMENTED AT THE DEVELOPMENT REVIEW STAGE:

A. Provide adequate illumination at the site accesses on NW Springville Road. Adequate illumination shall consist of at least one 200 watt high pressure sodium cobra head luminaire mounted at a minimum height of 20 feet on existing utility poles if available. The fixture shall have a medium semi-cutoff type III distribution. The pole shall be within the area defined by the radius returns of the intersection. The fixture shall be oriented at 90 degrees to centerline of the collector or arterial. For intersections of collectors with arterials, or arterials with arterials, the luminaire fixture shall be installed at 90 degrees to the higher classified roadway. If the intersecting roadways are of the same functional classification, the fixture may be oriented at 90 degrees to either roadway. If no existing utility poles are available within the

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intersection area defined by the radius returns, the developer shall meet the requirements of the Department of Land Use and Transportation 1991 Roadway Illumination Standards, latest revision. The Traffic Engineer may require illumination in addition to the above-stated minimums. Direct technical questions concerning this condition or the 1991 Roadway Illumination Standards to Tom Wolch, Traffic Engineer at (503) 845-7960.

- B. At development review for each phase, provide left and right-turn refuge analysis for the intersection of Springville Road and Gossamer Hills Way, the main access, and for Springville Road at the east site access. The turn refuge analyses for each phase should project turn refuge warrant status upon the build-out of the subject phase and, if the County determines that a turn warrant refuge is met, the refuge should be constructed prior to the number of units that trigger it. Signal conduits should be installed by the applicant at the time the intersection/left turn lane is constructed at the main
- C. Allow no access points on Gossamer Hills Way, the main site access, north of its intersection with Springville Road for a distance to be determined at Type II development review of the phase which will construct the proposed access.
- D. At development review for each phase, provide signal warrant analysis for the intersection of Springville Road, 165<sup>th</sup> Avenue, and Gossamer Hills Way. The signal warrant analysis submitted for each phase should project signal warrant status upon the build-out of the subject phase, and if the County determines the warrants are met and that signalization is recommended, the signal and required lane configuration should be constructed prior to the number of units that triggers it. If the signal is determined by the County to not yet be recommended until the build-out of the last phase, then prior to occupancy of the last phase an assurance should be provided for future
- E. Remove vegetation or use other methods as required to provide adequate intersection sight distance along NW Springville Road for the site accesses. After completion of any required vegetation removal or other methods of enhancing sight distance, final sight distance certification from a registered professional engineer demonstrating that adequate intersection sight distance exists in both directions in accordance with the Community Development Code shall be required.

#### VIII. ADDITIONAL CONDITIONS:

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- A. Proportional improvements to the NW 185<sup>th</sup> Avenue/ NW Springville Road intersection (as required by Springville Subarea Design Element No. 5.i.) shall be determined through future development applications.
- B. Future development applications and/or building permits for detached dwelling units, and single family attached dwelling units with individual vehicular access to a street, that are located within one thousand three hundred and twenty (1,320) feet of NW Springville Road shall be required to comply with the building façade requirements in accordance with Section 304-8.
- C. Future Type II drainage hazard area alterations shall be required for the vehicular and pedestrian stream crossings and the wetlands enhancement in accordance with Section 421 and 422.
- D. Future development applications within the Gossamer Hills Master Plan Area shall be substantially consistent with the approved Master Plan. Revisions to the Master Plan shall be reviewed for compliance with the Bethany Community Plan, the Community Development Code and findings included or incorporated by reference in this final order;
  - Applications for areas 11 and/or 13 may propose or be approved subject to conditions that the applicant provide for extension of a public road and/or one or more accessways through Area 11, if consistent with and/or required to comply with CDC 408-5 or other applicable standards.
  - Adverse impacts of development in the Master Plan or existing sight distance constraints shall be mitigated in a timely manner, such as by providing alternative access or the requisite sight distance improvements.
  - Applications to amend the Master Plan must be authorized in writing by the owner(s) of the property that is directly affected by and subject to the proposed amendment.
- E. Development may not commence for the Gossamer Hills Master Plan at this time. Development applications, consistent with the Master Plan and the findings and conditions presented in this document, may be submitted as a result of this decision. Any decision approving future development

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> applications shall be conditioned to prohibit development on any portion of the Gossamer Hills Master Plan site until Metro includes the site in the Urban Growth Boundary, and that decision is not subject to further appeal.

- F. This development shall be constructed in accordance with the conditions of this decision, the approved final plans, and the standards of the Community Development Code (Section 207-5).
- G. All conditions of approval shall be binding upon all heirs, successors, and assigns (Section 207-5).
- Transferability of this Development Permit shall be in accordance with H. Section 201-8.
- 1. This approval shall automatically expire two years from the date of this approval or two years from the date of final resolution of any appeal(s) of this final order, unless a development application for the initial phase of the Master Plan is approved and remains valid, an application for an extension is filed, or this approval is revoked or invalidated (CDC Section 201-4).

### BEFORE THE LAND USE HEARINGS OFFICER OF WASHINGTON COUNTY, OREGON

Regarding an application by the Ryland Group, Inc. ) FINAL ORDER for approval of the Gossamer Hills Master Plan for ) Casefile No. 00-601- M land north of Springville Road at NW 165th Place ) (Gossamer Hills in unincorporated Washington County, Oregon ) Master Plan)

#### A. SUMMARY

- 1. The applicant, the Ryland Group, Inc., requests conceptual Master Plan approval for a mostly residential development on a 109-acre site east of the PCC Rock Creek campus and north of Springville Road at NW 165th Place (the "site"). The proposed Master Plan contains 14 areas including eight areas for single- or multi-family dwellings, a school site and five park or open space areas. The applicant proposes a minimum density of 545 dwelling units (10 units/net developable acre). Approval of the Master Plan does not authorize the applicant to undertake any development. Development (e.g., subdivisions, development review, conditional use review for a school, drainage hazard area alterations, etc.) will be subject to additional County review and approval.
- a. Primary access for the site is a proposed minor collector street that extends north and east from NW Springville Road. A second public street will intersect Springville Road opposite NW Sickle Terrace. A driveway will intersect Springville Road near the southeast edge of the site. Four streets will intersect NW Brugger Road, but the intersections are to be gated to allow only emergency vehicle, bicycle and pedestrian access to Brugger Road until it is improved. Emergency vehicle, bicycle and pedestrian access to Springville Road is proposed near the southwest corner of the site (opposite NW Samuel Drive). The applicant proposed to extend street stubs to the east and west edges of the site to provide access for adjoining land.
- b. The site is bisected east to west by a wetland and stream corridor, part of which extends south beyond Springville Road. The applicant proposes that two of the on-site roadways and one driveway will cross the wetland/stream corridor if applicable permits and reviews are approved.
- 2. The site is outside the Urban Growth Boundary (the "UGB"). Metro included the site in the UGB by ordinance adopted December 26, 1999. However, on appeal, the Land Use Board of Appeals ("LUBA") remanded the decision to Metro. After the hearing and before the record closed, the Court of Appeals affirmed LUBA's decision. The site is contingently zoned R-9 (Residential, 9-units per acre). Washington County Ordinance 546. Additional basic facts about the site and surroundings and applicable approval standards are in the Staff Report and Recommendation dated May 11, 2001 and attached Transportation Report (the "Staff Report"), incorporated herein by reference.

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- 3. A County hearings officer conducted a duly noticed public hearing to receive testimony and evidence about the request. County staff recommended the hearings officer approve the application subject to the conditions in the Staff Report. The applicant's representatives testified in support of the application. Several parties testified orally at the hearing and/or in writing before the public record closed with comments and concerns about the application. Contested issues in the case include the following:
- a. The relevance and significance of recent rulings by LUBA and the Court of Appeals remanding to Metro its decision amending the UGB to include the site;
  - b. What is the minimum residential density for the site;
- c. Whether the proposed master plan does or can comply with applicable approval standards, particularly the timing and location of circulation to the west, the number of access points to the site, sight distance at those access points, temporary obstruction of some roads to non-emergency vehicle traffic, and signalization of the main entry to the site from NW Springville Road;
- d. Whether public roads on the site should be built to County or City of Beaverton standards; and,
  - e. Whether grading of the site as proposed is feasible.
- 4. Based on the findings and conclusions adopted or incorporated herein, the hearings officer hereby approves the master plan subject to the conditions of approval at the conclusion of this final order.

#### B. HEARING AND RECORD

- Hearing Officer Larry Epstein (the "hearings officer") received testimony and evidence and addressed record issues at a duly noticed public hearing about this application on May 11, 2001.
- a. At the hearing, the hearings officer received and physically inspected the file maintained by the Department of Land Use and Transportation ("DLUT") regarding this application, including comments received after the Staff Report was issued. The record includes all materials in the file prior to the hearing, testimony and evidence entered into the record at the hearing, the list of witnesses at the hearing, the tape of hearing proceedings and the evidence and testimony received by the County after the hearing while the public record was held open. The record is filed at DLUT.

- b. The hearings officer announced at the beginning of the hearing the rights of persons with an interest in the matter, including the right to request that the hearings officer continue the hearing or hold open the public record, the duty of those persons to testify and to raise all issues to preserve appeal rights, the manner in which the hearing will be conducted, and the applicable approval standards. The hearings officer disclaimed any ex parte contacts, bias or conflicts of interest. The following is a summary by the hearings officer of selected relevant testimony at the hearing.
- County planner Chris Goodell summarized the Staff Report, revised conditions of approval and the applicable approval criteria and showed an aerial photograph of the site.
- a. He noted that the site is in the Springville subarea of the Bethany Community Plan. The Community Plan requires Master Plan approval for the entire site before the County can approve any development on the site. The County must review and approve any future development on the site.
- b. He noted that the applicant submitted revised plans prior to the hearing. He requested the hearings officer hold the record open for one week for staff to review and respond to the revised plans.
- c. He testified that the County and Metro calculate density differently. The County includes street rights of way is its definition of "net developable acre;" Metro does not.
- 3. Don Guthrie, attorney Jeff Bachrach and engineer Randy Dyer appeared on behalf of the applicant, Ryland Group, Inc..
- a. Mr. Guthrie summarized the proposed Master Plan and the history of the project.
- i. Because the applicant worked with the County, City of Beaverton and the CPO in developing the Master Plan, the applicant made a number of significant changes to the Master Plan, including relocating the proposed access points and the areas of proposed multi-family development to reduce traffic volumes near the proposed school site. The CPO voted unanimously in support of the Master Plan.
- ii. He noted that the Master Plan includes an 8-acre school site and roughly 20 acres of open space. The applicant proposed to extend the existing regional trail/bike path through the site. The applicant will landscape the development to blend with and buffer the existing neighborhood and the park. The applicant can delete a proposed pedestrian connection to the park to address neighborhood concerns if that is what the County wants.

- b. Mr. Bachrach summarized changes to the proposed Master
   Plan and additional evidence submitted by the applicant.
- i. The applicant's revised plans (dated May 10, 2001) provide a third public access (i.e., a private driveway) intersecting Springville Road near the southeast corner of the site. See plan sheets 3 and 5. He testified that this access point was included in the transportation analysis.
- ii. He noted that plan sheet 4 includes a revised density chart. The revised density calculations provide a minimum density of 711 dwelling units for the entire site. The applicant may further revise the minimum density as a result of planned discussions with County staff. The applicant did not alter the proposed maximum density.
- iii. He introduced a memorandum from PBS Environmental in response to the concerns expressed by the City of Beaverton about the natural resource areas on the site. Applicant's Exhibit 1. PBS reviewed the resource areas on the site in coordination with USA. USA approval of the resource areas is required as a condition of Master Plan approval.
- iv. He introduced a feasibility concept plan demonstrating how the District could develop a school on the proposed school site within the Master Plan area. Applicant's Exhibit 2. He testified the applicant is negotiating with the School District about the school site. The conditions of approval require a final agreement between the School District and the applicant prior to development approval on the site.<sup>2</sup>
- v. He noted the May 11, 2001 letter from the City of Beaverton. He testified that the applicant is willing to design and construct streets on the site consistent with City standards, as requested therein, because the City expects to annex the site in the future. He requested the hearings officer modify the conditions of approval to that effect.
- c. Mr. Dyer summarized the applicant's grading feasibility plan. He testified that the plan is intended to respond to condition of approval 1.A. He noted that, although the plan shows considerable grading, the proposed grading contours are very close to the existing contours over 75-percent of the site. The proposed street profiles largely follow existing grades on the site. The applicant designed the proposed lots to be as flat as possible from front to back, which may require considerable grading/fill in some cases. However individual developers may choose to reduce grading requirements through the

<sup>&</sup>lt;sup>1</sup> Although the transportation report by DKS does consider four accesses to the site, it does not consider an access point east of Sickle Terrace.

See recommended condition of approval VI, which requires the applicant to give the school district "an opportunity" to acquire up to 10 acres for a school site.

use of daylight basements, "pony walls" and other construction techniques. The grading plan merely shows that it is feasible to create flat building sites on the conceptually proposed lots.

- 4. Attorney Mike Robinson appeared on behalf of West Hills Development Company. He requested the hearings officer hold the record open to allow him to review the new evidence submitted by the applicant.
- 5. Susan Nolte testified she owns the land at the southwest corner of the site. Although she does not want to be in the UGB, if this site is included, her property will be an island of rural land. Therefore, if the site is included in the UGB, her property should be as well.
- a. She testified that her driveway, which she shares with the owners of the abutting property to the north, the Bradley's, intersects Springville Road near the southwest corner of the site. This intersection is unsafe due to inadequate sight distance and the volume of traffic on Springville Road. Development on the site will exacerbate the existing hazard by increasing traffic on Springville Road. She noted that the applicant proposed to provide a stub road to PCC property through proposed Area 14. To provide alternative access to her property, so she does not have to access Springville Road where sight distance is constrained, she proposed that the applicant stub the street so it can serve her property, too. She argues the street should be required to be stubbed to her property in the first phase of the Master Plan.
- b. She argued that the applicant should be required to develop the site so that it "fits with the community." The applicant should be required to facilitate bicycle and pedestrian access in all directions.
- c. She questioned whether the applicant coordinated with Portland Community College about the location of the proposed street stub.
- d. She argued the applicant should be required to provide a traffic signal at the intersection of Springville Road and the proposed minor collector street to provide safe pedestrian and bicycle access to the school site for children living south of Springville Road who will attend the proposed school.
- e. She argued that the applicant should be required to provide more than the minimum buffer to protect the wetlands. The applicant should provide a 250-foot wetland buffer consistent with Metro's proposed standards.
- Greg Malinowski expressed concern that the applicant will not bear the entire cost of the project. He questioned whether development on the site will meet Metro's minimum density goals.

- 7. David Miller expressed concern that development will generate additional traffic on Brugger Road north of the site. Brugger Road is narrow with a "difficult" intersection at Kaiser Road. He argued the applicant should be required to pay some of the cost of improving Brugger Road. He argued the applicant should be required to signalize the main Springville Road access.
- 8. County planner Phil Healy testified that conditions of approval require that the applicant construct a public street stub to Brugger Road to provide for future access. However the stub street will be gated to allow for emergency access only until Brugger Road is redeveloped to County standards.
- a. He testified that development on the site is unlikely to generate sufficient traffic volume to warrant a signal at the primary access to Springville Road even at full build-out of the site. Traffic from the site will be dispersed to the three proposed accesses to Springville Road. Recommended condition of approval VII.D requires the applicant to conduct a signal warrant analysis for each phase of the development. If circumstances change and a signal is warranted, the applicant can be required to install it or pay a share of its cost.
- b. He testified the County will work with the School District to determine what improvements may be needed to protect pedestrian safety when a school is proposed to be developed on the site.
- c. He testified that the County will evaluate sight distance when development is proposed on the site. He opined that lack of sight distance does not pose a hazard at an emergency access point, because an emergency vehicle can use its lights and siren.
- 9. John Breiling, chair of CPO 7, testified that the applicant significantly revised the Master Plan in response to concerns expressed by the neighborhood. He requested the hearings officer hold open the record to allow the public to respond to new evidence submitted by the applicant at and after the hearing. He argued that the applicant's revised densities are adequate to comply with Metro's density goals. He argued that a traffic signal is warranted on Springville Road at the primary access to allow safe access to the site and school. He argued that the applicant should be required to provide traffic calming measures around the school site.
- 10. The hearings officer held the record open for two weeks for all parties to submit new evidence. The hearings officer held the record open for a third week to allow all parties to respond to the new evidence. The hearings officer held the record open for a fourth week for the applicant to submit a final argument. The record in this case closed at 5:00 PM, Monday, June 8, 2001.

#### C. DISCUSSION

- 1. The hearings officer generally concurs in the analysis and conclusions offered by County staff; to wit, the proposed Master Plan does or can comply with the applicable standards and criteria, all of which are identified on Attachment C of the Staff Report. Adoption of recommended conditions of approval, with certain changes, will ensure development applications can be submitted and approved consistent with those criteria and standards and the Master Plan and will prevent, reduce or mitigate potential adverse impacts of the development consistent with the requirements of the CDC. The hearings officer adopts the findings and conclusions in the Staff Report except as otherwise expressly provided herein.
- 2. The hearings officer notes that the applicant, the County, the City of Beaverton, several neighbors and area residents raised issues and concerns about some aspects of the Master Plan, but, assuming the site is in the Urban Growth Boundary and complied with applicable standards for urban land, there was general support for the development depicted conceptually in the Master Plan. Disputes mostly involve details that cannot be readily resolved based on substantial evidence in the record, because the application does not propose specific development at this time. Conditions of approval largely respond to these outstanding issues, many of which will have to be resolved in future development application reviews. Some disputed issues are identified and discussed below and are resolved to the extent relevant or are addressed by feasible conditions warranted to comply with the standards for a Master Plan,
- 3. For instance, there is a dispute about whether one of the proposed roads in the Master Plan should extend to the Nolte property, and, if so, whether it should be required to be developed in the first phase of the project. Sections 408 and 501 are relevant to these issues.<sup>3</sup> See pp. 16-22 of the Staff Report.

The following review standards shall: 1) be used to provide a generally direct and uncircuitous pattern of streets and accessways to ensure safe and convenient access for motor vehicles, pedestrians, bicyclists, and transit users; and 2) to ensure that proposed development will be designed in a manner which will not preclude properties within the circulation analysis area from meeting the requirements of Section 408-5. These standards are applicable to all lends that are not designated on a Community Plan's Local Street Connectivity Map.

- 408-5.1 For single-family or duplex residential development, on-site streets shall be provided which meet the following:
- A. Block lengths for local streets and collectors shall not exceed six hundred (600) feet between through streets, measured along the nearside right-ofway line of the through street, except when the provisions of Sections 408-5.1 D., 408-5.5, 408-5.6 or 408-7 are met.

<sup>3.</sup> CDC 408-5 provides as follows in relevant part:

- b. Ms. Nolte argued the applicant should be required to provide direct vehicular access to her property from a road in Area 14 in the first phase of the project. She did not cite any basis for such a requirement under the CDC, and the hearings officer is unable to find one on his own.4
- Ms. Nolte did not offer much legal or evidentiary support for her argument that public access to the southwest corner of the site should be provided early in the project to remedy existing sight distance constraints at
  - B. The total length of a perimeter of a block for local and collector streets shall not exceed eighteen hundred (1,800) feet between through streets, measured along the nearside right-of-way line; except when the provisions of Sections 408-5.1 D., 408-5.5, 408-5.6 or 408-7 are met.
  - C. Cul-de-sacs and permanent dead-end streets shall be prohibited except where construction of a through street is found to be impracticable due to the provisions of Section 408-5.1 D., or application of Sections 408-5.5, 408-5.6 or 408-7. When cul-de-sacs or closed end streets are allowed under these provisions, they shall be limited to two hundred (200) feet and no more than twenty five (25) dwelling units unless impracticable.
  - D. The Review Authority may approve a modification to the review standards of Section 408-5.1 A., B., or C. above based on findings that the modification is the minimum necessary to address the constraint and the application of the standard is impracticable due to the following:...
    - (2) Drainage hazard areas, wetlands, flood plains, or a Significant Natural Resource area;
    - (3) Existing development patterns on abutting property which preclude the logical connection of streets or accessways;
    - (4) Abutting undeveloped or underdeveloped property is not designated R-5, R-8, R-9, R-15, FD-10 or an urban reserve area;...
  - E. Streets shall connect to all existing or approved stub streets which abut the development site.
  - 4 But see, CDC 605-3.3.H, which provides "[s]treets, existing and future, shall:"
    - (1) Be consistent with the standards of Section 408 (Neighborhood Circulation):
    - (2) Provide for general public convenience and safety in the areas to be served:
    - (3) Not allow the intersection of more than two streets at any one point;
    - (4) Be designed to encourage safe and efficient traffic flow;
    - (5) Be designed to discourage through traffic on minor streets; and
    - (6) A local or minor collector street may be established which exceeds the maximum County standard for cul-de-sac length when the street is planned to be ultimately connected to another public street and meets Fire Marshal approval for adequate terminus;

her driveway. The sight distance constraint is an existing condition. The applicant did not create it, and the CDC does not require the applicant to fix it per se.

ii. Increasing trip volume from the site to Springville Road and vice-versa will exacerbate the existing sight distance constraint at the Nolte driveway by reducing gaps between vehicles. At some point, if not otherwise addressed, development in the Master Plan is required to mitigate that impact. The CDC does not define precisely when such mitigation is required. Additional substantial evidence that bear on this issue could be introduced in the context of future development applications.

iii. There are general and specific CDC standards (e.g., for neighborhood connectivity and block size) and Community Plan provisions that are relevant to her request. The loop road shown in Area 14 does not comply with those standards, as noted in the Staff Report. The applicant may apply for a modification to the standards to allow the longer-than-permitted loop road, but mitigation is likely to be warranted for such a modification.

iv. The hearings officer cannot conclude that Area 14 must be developed first to address Ms. Nolte's existing sight distance problem. CDC 408 does not require the applicant to provide access to remedy an existing sight distance deficiency to which it does not substantially contribute. There is not sufficient substantial evidence in the record to find that the impact of the development warrants such a remedy immediately (i.e., in the first phase of the development), or that the remedy must involve development of Area 14. However measures to address the impact of the development will be warranted at some point (i.e., when warranted by substantial evidence of such impact).

v. Approval of the Master Plan does not preclude the applicant from proposing or the County from requiring changes in the access to the southwest corner of the site. The Master Plan shows a public easement extending to Springville Road from the public road in Area 14. Although not proposed to be used for non-emergency vehicles as part of the Master Plan, in

Assuming 70% of traffic from the site travels west, as in the applicant's traffic study, the peak hour trip volume west of the site will be about three times the existing volume. At some point, if not otherwise addressed, a condition of approval may be warranted under CDC 207-5.1, which provides:

The Review Authority may impose conditions on any Type II or III development approval. Such conditions shall be designed to protect the public from potential adverse impacts of the proposed use or development or to fulfill an identified need for public services within the impact area of the proposed development. Conditions shall not restrict densities to less than that authorized by the development standards of this Code.

a subsequent application for development of Area 14 or any other area of the Master Plan, the applicant could propose to grant an easement from Ms. Nolte's property over the easement to the interior loop road in Area 14. If the applicant does not do so, a condition of approval could be imposed to achieve the same result if reasonably related to the impact of the development as discussed above.

- 4. The applicant urged the hearings officer to find that "the underlying intent [of the Master Plan is] to try and avoid [a public road connection between Area 14 and Springville Road] in the future if possible." (Applicant's Response to May 25 Staff memorandum). The hearings officer expressly declines to make such a finding.
- a. A public road connection between Area 14 and Springville Road does not cross a significant natural resource nor violate any applicable standards on its face. It is feasible.
- b. Having such a connection would enhance vehicle connectivity (albeit not a lot), and might address block size or other standards in the CDC. The Staff Report notes that streets in Area 14 violate the 600-foot standard in CDC 408-5.1.A. The hearings officer agrees. The stream/wetland corridor constrains access to Area 14. Opportunities for access to Springville Road west of the site might be limited by land use, ownership patterns, topography, appearing the propose of the site might be accessed to the southwest are limited, greater vehicular connecting with Springville Road at the southwest coiner of the site his per the necessary to comply with applicable standards or permitted variations thereto, and it is not inconsistent with the Master Plan approval to propose or require it.
- c. The hearings officer infers from the applicant's statements that it is the applicant's intent that access to Area 14 be restricted to the interior roadway. The hearings officer appreciates that Area 14 enjoys more privacy without through traffic. Because, as proposed, emergency and non-vehicular traffic will have access to Area 14 from Springville Road, residents of that area and points north and west will have good pedestrian and bicycle access. From the applicant's standpoint, that access and proposed road improvements fulfill the relevant provisions of the Community Plan and CDC 408; direct all-vehicle access to Springville Road from Area 14 is not necessary to achieve an adequate level of service or connectivity. Although the County does not reach the same conclusion, the hearings officer declines to resolve that dispute, because it is not necessary to find that the road will or will not be accessible to all vehicles to conclude that the Master Plan does or can comply with applicable standards.

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- 5. There is a dispute about whether the applicant should be required to install a traffic signal at the intersection of the collector road and NW Springville Road. This dispute will be addressed with each phase of the Master Plan based on condition of approval VII.B. The applicable approval criteria do not require the signalization issue to be resolved before approval of the Master Plan.
- a. Based on the County's traffic report and the applicant's traffic study, signal warrants are unlikely to be met at the intersection with full build-out of the site, particularly if the access to the southwest comer of the site is open to all vehicles. If warrants are not met, the County generally does not install a signal, because a signal may pose as many problems as it solves. Therefore the signal may be a moot issue.
- b. The hearings officer is persuaded that issues relating to the safety of school children will be addressed by the County and the school district pursuant to existing practices to coordinate public road access to school sites. If a signal is warranted, and it otherwise complies with the Uniform Manual on Traffic Control Devices, it can be required, as can traffic-calming measures in the vicinity of the school site.
- c. The hearings officer acknowledges the argument by the CPO that children are entitled to safe walking conditions to and from schools. Hard to disagree with that. But the hearings officer is not persuaded that state or federal laws or constitutions accord children the status of a protected class or otherwise require the County to do more for them than provided in the CDC.
- 6. There is something of a dispute about the minimum density that must be achieved on the site, assuming it is included in the UGB. The minimum density has declined over time as the applicant refined plans for the site and information about the site that affect the "net developable acres" of the site under the CDC. The minimum number of dwelling units necessary to comply with minimum density standards will vary depending on the outcome of negotiations with the Beaverton School District about the school sites, the precise delineation of parks, open spaces and wetland buffer areas, and other factors that affect net developable acres. However the numbers are not likely to change dramatically.
- a. The hearings officer is persuaded that the site can be developed to achieve or exceed the minimum density standards for the R-9 zone, based on the acreages and densities shown on the Master Plan. Based on the best evidence in the record, it appears the minimum number of dwelling units is 545. But that number could change as noted above.
- b. There does not appear to be a dispute about the methodology to be used to calculate net developable area and minimum or maximum

Casefile No. 00-601-M (Gossamer Hills Master Plan) Hearings Officer Final Order Page 11 density. There are relatively minor factual disputes about how much land is developable for purposes of the CDC. However the hearings officer finds those disputes will be resolved with more detailed information that will be provided in development applications in the future before development occurs.<sup>6</sup>

- c. The hearings officer further finds that the applicant should revise the table on sheet 4 of the Master Plan as needed to reflect methodological refinements, new information and any changes to the Master Plan before the County approves the first phase of the Master Plan. Applications for each subsequent phase should be required to show residential development in that phase is consistent with the approved density range, subject to any amendments warranted by more detailed information or changes in the Master Plan.
- 7. There is a dispute about whether public streets should be improved to County or City standards.
- a. The parties did not identify any authority in the CDC for requiring streets to be built to City standards. Such authority may be inherent in the office of the County Engineer or may be granted by an intergovernmental agreement that is not in the record or may exist for other reasons. However the hearings officer finds he cannot impose a condition of approval of the Master Plan requiring the applicant to improve streets to City standards, based on substantial evidence in the record and the applicable law in this case.
- b. For what it is worth, the hearings officer agrees with the City that improvement to City standards may be in the long-term interests of the public, because the City will be responsible for maintaining public streets after the site is annexed, and it may be more familiar or efficient maintaining streets improved to City standards. On the other hand, the City is and will be responsible for many streets that were not improved to its standards initially, and there is no evidence that County street standards are any more or less safe or maintenance-friendly than City street standards.
- c. This issue can be raised in subsequent development reviews. If the parties can identify relevant authority for the hearings officer to impose such a condition, or if the County and City agree to resolve the matter in a certain way, the hearings officer will reconsider it. Approval of the Master Plan in no way prevents the County from requiring the applicants for future

There was no dispute about the maximum density. The CPO suggested not including the maximum density in the density table, but, while the CPO may not want the site to be developed to its maximum density, the CDC does not authorize the hearings officer to reduce the maximum density. It is what it is depending on the net developable acres of the site. The maximum density should be stated on the density table in the interests of assuring full and fair information for use by all parties in the process.

development applications to improve public streets to City standards as a condition of approval of those applications.

- 8. The City of Beaverton argues that a public street should be provided through Area 11. The applicant proposes a private street that will be accessible to the public, i.e., it will not be gated. County staff did not address this issue directly.
- a. It appears to the hearings officer that a public street through Area 11 would be needed to comply with block size standards if Area 11 was used for single family development. However, because it is to be used for multi-family development, the block length and perimeter standards in CDC 408-5.1.A and B do not apply to Area 11. See pp. 16-17 of the Staff Report.
- b. CDC 408-5.3 requires any streets in Area 11 to connect to existing or approved stub streets that abut the site. Although staff conclude this standard does not apply because there are no stub streets that abut the development site, the hearings officer disagrees. The proposed street parallel to Springville Road in Area 13 could be construed to be a stub street subject to CDC 408-5.3. It could be argued that the applicant is required to extend that street into and through the multi-family area to the minor collector street at the north side of Area 11. Doing so would improve connectivity for vehicles and would respond to the concern voiced by the City of Beaverton without creating another public street intersection on Springville Road. The hearings officer infers from the Master Plan that the applicant does not want traffic from the single and multi-family areas to mix; therefore no direct connection is provided. However the applicant's preference is not an approval standard, and nothing in the Community Plan or CDC discourages such a connection. It is not necessary to determine whether or where a public street should extend through Area 11 to approve the Master Plan; the issue can be resolved in the context of future development applications for the areas in question. The hearings officer encourages the applicant and County staff to reconsider this issue as part of the review of future applications. Accessways may be provided (or required) pursuant to CDC 408-5.4 for pedestrian and bicycle traffic between the singleand multi-family areas, but that does not address vehicular connectivity.
- 9. The City also raised concerns about utility placement and the adequacy of proposed stormwater detention facilities. These issues are not relevant to Master Plan approval. The applicant's preliminary stormwater calculations show that it is feasible to provide stormwater detention and treatment consistent with applicable standards of the service provider.
- 10. A number of changes to conditions of approval were requested or recommended. Some of those have been addressed above. Others are addressed below.

Casefile No. 00-601-M (Gossamer Hills Master Plan) Hearings Officer Final Order Page 13

- a. Recommended condition of approval I.A, which requires a preliminary grading plan is moot, because the applicant has provided such a plan. That condition can be deleted. See p. 2 of the May 25, 2001 memo from Chris Goodell.
- b. A condition of approval is warranted requiring phase 1 of the Master Plan to include extension of the minor collector street to the school site and the associated drainage hazard area alteration, consistent with the request of the school district and the applicant's acquiescence. See condition of approval II.C.
- c. Recommended condition of approval VIII.E provides the County will process applications for development in the Master Plan but will not issue permits for approved development until the site is in the UGB. This condition should be amended substantially as recommended in the May 11, 2001 memo from Chris Goodell. The location of the site inside or outside the UGB is not directly relevant to the Master Plan application. However it is relevant to (and could preclude) issuance of development permits. The amended condition would reflect this relationship. The hearings officer hereby adopts as his own the Supplemental Findings Regarding UGB Status and Goal 14 as revised June 8, 2001 by Mr. Bachrach to support the condition of approval and to explain the reasons why the UGB status of the property is addressed as such.
- i. The CPO suggested a condition of approval allow the applicant two or three years to resolve the UGB issue so the work by the applicant and other interested parties will not be wasted if the UGB issue is not resolved more quickly. The hearings officer notes that condition VIII.I includes a time limit for the decision, consistent with the CDC 201-4. That section does not authorize the hearings officer to extend the effective date of the decision beyond the time provided therein.
- ii. Condition of approval VIII.I should be amended to reflect that the effective date of this final order, and therefore the start of the two-year expiration period for this final order, would follow the effective date of any decision in an appeal of this final order.
- d. Condition of approval IV.E should be amended to make it clear that non-emergency vehicular access to Brugger Road should be evaluated in the context of specific development applications, because the language of the condition as recommended in the Staff Report did not do so clearly. As noted in the testimony from several witnesses, Brugger Road is not Improved to an urban standard, is subject to road design and intersection geometry constraints, and principally serves land outside the UGB. General vehicular access to that roadway is not appropriate under existing conditions, but may be appropriate in the future if it is (or will be) substantially improved and can meet the needs of traffic that would use it.

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- e. Recommended condition of approval V.A should be amended to allow for incremental annexation of the site to the Tualatin Hills Park and Recreation District as development is proposed, because that is consistent with General Design Element 5 of the Bethany Community Plan and Springville Subarea Design Element 5.e.
- f. A condition of approval is warranted clarifying that an application to amend a portion of the Master Plan is required to be authorized in writing by the owner(s) of only that portion of the Master Plan that would be subject to such a change. See condition VIII.D.3.

#### D. CONCLUSION

Based on the above findings, the hearings officer concludes the Gossamer Hills Master Plan should be approved in concept subject to the conditions recommended by County staff as amended consistent with the above discussion, because it does or can comply with applicable approval standards from the Washington County Community Development Code subject to recommended conditions as amended herein.

#### E. DECISION

The hearings officer hereby approves Casefile 00-601-M (Gossamer Hills Master Plan), subject to the following conditions of approval:

### I. PRIOR TO FINAL APPROVAL OF THE GOSSAMER HILLS MASTER PLAN THE APPLICANT SHALL:

Submit the following to the Unified Sewerage Agency and obtain a service provider letter:

A site assessment and sensitive area certification preserving a corridor which separates the sensitive area from the impact of development. The corridor must be set aside in a separate tract and not part of any buildable lot.

# II. THE APPLICANT FOR A DEVELOPMENT APPLICATION FOR THE FIRST PHASE OF THE GOSSAMER HILLS MASTER PLAN APPLICATION SHALL:

- A Provide evidence that final approval has been obtained for the Master Plan as outlined above.
- B. Include a development application form signed by the property owner(s) of record for all tax lots within the Gossamer Hills Master Plan area fronting NW Springville Road including the property owner where the minor collector roadway is proposed in the Master Plan.
- C. Propose construction of the minor collector road and associated utilities at least to the east edge of Area 2, including any required drainage hazard area alteration or wetland buffer review. (207-5)
- Propose dedication of right-of-way along the entire Master Plan's frontage of NW Springville Road. (207-5)
- E. Propose construction of the concrete sidewalk and roadside drainage (ditch) improvements along the entire master plan's frontage of NW Springville Road in accordance with the WCRIDS. (207-5)
- F. Provide a plan for the minor collector's intersection with NW Springville Road which is consistent (in terms of design) with the version included in the Master Plan and meets the criteria listed in the Springville Subarea Design Element No. 5.k. This plan is subject to approval through the Engineering Division. (207-5)
- G. Provide a chart, like the Density Summary on page 4 of the Master Plan, and supporting analysis showing that the residential development on the site will comply with the minimum and maximum density range in the R-9 zone. The analysis shall be consistent with the methodology in the June 1, 2001 memorandum from Mr. Goodell or amendments thereto approved by the planning director consistent with applicable density standards, and shall reflect more detailed delineation of wetland buffers (if any) and other changes in net developable area as defined by the CDC.

### THE APPLICANT FOR THE FIRST DEVELOPMENT APPLICATION (PHASE) NORTH OF THE CREEK SHALL:

Propose the extension of the minor collector and utilities to the school site (Area 2), including, if necessary, a type II drainage hazard area alteration.

### IV. FUTURE DEVELOPMENT APPLICATIONS (AS APPLICABLE) WITHIN THE GOSSAMER HILLS MASTER PLAN AREA SHALL:

- A Include a plan for Master Plan Areas 9 and 10 (together or individually) for reporting sales information ensuring that at least 20% of the housing units built in Areas 1, 4, 6, 8, 9 and 10 (north of the resource area) shall be for-sale units affordable to households at or below area median incomes using current HUD affordability data as detailed in the findings of this Report. (See Springville Subarea Design Element No. 5.c.) Note: Shifting of responsibility for this affordability requirement from Area to Area shall be allowed only when the affected property owner's signature is on the development application form.
- B. Include a plan (to be reviewed and approved by the County) for Master Plan Areas 11, 13 and 14 (together or individually) for reporting sales information ensuring compliance with Springville Subarea Design Element No. 5.c. Note: Shifting of responsibility for this affordability requirement from Area to Area shall be allowed only when the affected property owner's signature is on the development application form.
- C. The application for each phase of the Master Plan containing residential uses shall include evidence that the development proposed in that phase will be within the relevant minimum and maximum density range, considering the table and the analysis approved pursuant to condition of approval 2.g and amendments thereto warranted as a result of modifications of land uses or areas in the Master Plan (e.g., to reflect more detailed delineation of wetland buffers, other changes that affect net developable acreage, or elimination of the school site).
- D. Development proposals shall emphasize shorter block lengths (except for the collector street) and greater street and pedestrian connectivity (accessways) than are proposed in the Master Plan. Future development

applications shall be scrutinized for compliance with the findings in the Staff Report with regard to Section 408 (Neighborhood Circulation) and corresponding discussion in the hearings officer's final order. This shall ensure that each Area within the Gossamer Hills Master Plan provides the highest degree of vehicular and pedestrian connectivity. See findings in the Staff Report and above regarding Section 408-5 for the issues relevant to this condition of approval. Also see condition of approval VIII.D.

- E. The need for and timeliness of road connections and access to Brugger Road shall be evaluated at the time future development applications are submitted.
- V. PRIOR TO FINAL APPROVAL FOR A DEVELOPMENT
  APPLICATION FOR THE FIRST PHASE OF THE GOSSAMER HILLS
  MASTER PLAN:
  - A The subject area(s) of Gossamer Hills Master Plan shall be required to annex to the Tualatin Hills Park and Recreation District.
  - B. The applicant shall submit evidence demonstrating compliance with the delayed annexation agreement requirement with the City of Beaverton and that all necessary service district annexations have taken place.
- VI. PRIOR TO COMMENCING DEVELOPMENT FOR ANY PORTION OF THE GOSSAMER HILLS MASTER PLAN:

The applicant for development shall provide evidence that an opportunity has been provided to the Beaverton School District for acquiring up to 10 acres of land (within the Master Plan Area) for a school site.

- VII. TRAFFIC SAFETY IMPROVEMENT CONDITIONS TO BE IMPLEMENTED AT THE DEVELOPMENT REVIEW STAGE:
  - A Provide adequate illumination at the site accesses on NW Springville Road. Adequate illumination shall consist of at least one 200 watt high pressure sodium cobra head luminaire mounted at a minimum height of 20 feet on existing utility poles if available. The fixture shall have a medium semi-cutoff type III distribution. The pole shall be within the area defined by the radius returns of the intersection. The fixture shall be oriented at 90 degrees to

Casefile No. 00-601-M (Gossamer Hills Master Plan) Hearings Officer Final Order Page 18 centerline of the collector or arterial. For intersections of collectors with arterials, or arterials with arterials, the luminaire fixture shall be installed at 90 degrees to the higher classified roadway. If the intersecting roadways are of the same functional classification, the fixture may be oriented at 90 degrees to either roadway. If no existing utility poles are available within the intersection area defined by the radius returns, the developer shall meet the requirements of the Department of Land Use and Transportation 1991 Roadway Illumination Standards, latest revision. The Traffic Engineer may require illumination in addition to the above-stated minimums. Direct technical questions concerning this condition or the 1991 Roadway Illumination Standards to Tom Wolch, Traffic Engineer at (503) 846-7960.

- B. At development review for each phase, provide left and right-turn refuge analysis for the intersection of Springville Road and Gossamer Hills Way, the main access, and for Springville Road at the east site access. The turn refuge analyses for each phase should project turn refuge warrant status upon the build-out of the subject phase and if the County determines that a turn warrant refuge is met, the refuge should be constructed prior to the number of units that trigger it. Signal conduits should be installed by the applicant at the time the intersection/left turn lane is constructed at the main access.
- C. Allow no access points on Gossamer Hills Way, the main site access, north of its intersection with Springville Road for a distance to be determined at Type II development review of the phase which will construct the proposed access.
- D. At development review for each phase, provide signal warrant analysis for the intersection of Springville Road, 165<sup>th</sup> Avenue, and Gossamer Hills Way. The signal warrant analysis submitted for each phase should project signal warrant status upon the build-out of the subject phase, and if the County determines the warrants are met and that signalization is recommended, the signal and required lane configuration should be constructed prior to the number of units that triggers it. If the signal is determined by the County to not yet be recommended until the build-out of the last phase, then prior to occupancy of the last phase an assurance should be provided for future construction.

E. Remove vegetation or use other methods as required to provide adequate intersection sight distance along NW Springville Road for the site accesses. After completion of any required vegetation removal or other methods of enhancing sight distance, final sight distance certification from a registered professional engineer demonstrating that adequate intersection sight distance exists in both directions in accordance with the Community Development Code shall be required.

#### VIII. ADDITIONAL CONDITIONS:

- A Proportional improvements to the NW 185<sup>th</sup> Avenue/ NW Springville Road intersection (as required by Springville Subarea Design Element No. 5.i.) shall be determined through future development applications.
- B. Future development applications and/or building permits for detached dwelling units, and single family attached dwelling units with individual vehicular access to a street, that are located within one thousand three hundred and twenty (1,320) feet of NW Springville Road shall be required to comply with the building façade requirements in accordance with Section 304-8.
- C. Future Type II drainage hazard area alterations shall be required for the vehicular and pedestrian stream crossings and the wetlands enhancement in accordance with Section 421 and 422.
- D. Future development applications within the Gossamer Hills Master Plan Area shall be substantially consistent with the approved Master Plan. Revisions to the Master Plan shall be reviewed for compliance with the Bethany Community Plan, the Community Development Code and findings included or incorporated by reference in this final order; provided,
  - Applications for areas 11 and/or 13 may propose or be approved subject to conditions that the applicant provide for extension of a public road and/or one or more accessways through Area 11, if consistent with and/or required to comply with CDC 408-5 or other applicable standards.

STAFF:

A utility plan, as required by this Section, shall be required at the Development Review Stage.

Section 417 Irrigation

STAFE:

Irrigation plans, as required by Section 417-2, shall be submitted at the Development Review stage.

Section 421 Flood Plain and Drainage Hazard Area
Development

STAFF:

A delineation of the on-site drainage hazard areas was included in the original master plan application materials as required by Section 421-1.2.B. The current Master Plan materials show that the drainage hazard areas will be altered for three vehicular stream crossings, pedestrian stream crossings and for a wetlands enhancement. These uses are permitted through a Type II procedure in accordance with Sections 421-5.10, 421-5.15 and 421-5.16. Therefore, when these uses are proposed to be developed, Type II land use applications shall be required to be submitted.

#### Section 422 Significant Natural Resources

422-2 Lands Subject to this Section

Those areas identified in the applicable Community plan or the Rural/Natural Resource Plan Element as Significant Natural Resources.

Significant Natural Resources have been classified in the Community Plans or the Rural/Natural Resource Plan Element by the following categories:

- 422-2.1 Water Areas and Wetlands 100 year flood plain, drainage hazard areas and ponds, except those aiready developed.
- 422-2.2 Water Areas and Wetlands and Fish and Wildlife Habitat Water areas and wetlands that are also fish and wildlife habitat.

STAFF:

The Significant Natural and Cultural Resources Map Element of the Bethany Community Plan has designated a portion of the subject site as Water Areas and Wetlands and Water Areas and Wetlands & Fish and Wildlife Habitat.

422-3 Criteria for Development

422-3.1 The required master plan and site analysis for a site which includes an identified natural resource shall:

> A. Identify the location of the natural resource(s), except in areas where a Goal 5 analysis has been completed and a program decision adopted pursuant to OAR 660, Division 23 (effective September 1, 1996);

STAFF:

The applicant has identified the location of the natural resources within the Gossamer Hills Master Plan. That information can be found in the an Addendum to the 1998 Natural Resource Protection Plan prepared for the Plan Amendment (Ordinance 546) and a mitigation plan prepared by PBS Environmental which has further refined the boundaries of the onsite significant natural area pursuant to Springville Subarea Design Element No. 5.d.

- B. Describe the treatment or proposed alteration, if any. Any alteration proposed pursuant to Section 422-3.1 B. shall be consistent with the program decision for the subject natural resource; and
- STAFF:

Impacts caused by the proposed minor collector street and development in Areas 4, 5 and 6 are identified in the impact analysis and mitigation plan prepared by PBS Environmental. Mitigation measures are proposed in accordance with Section 422-3.6 and 106-129 of the Community Development Code.

- C. Apply the design elements of the applicable Community Plan;
- STAFF:

The Bethany General Design Elements and Springville Subarea Design Elements have been addressed in this Staff Report.

- 422-3.2 Open Space Inside the UGB:
  - A. Shall be identified as provided in Section 405-1, Master Planning Site -Analysis;
  - B. When located in a park deficient area as identified on the significant natural resource map, the applicant shall notify the appropriate park provider of the proposed development.

STAFE:

The applicant has identified required open space in accordance with Section 405. Tualatin Hills Park and Recreation Division has been notified and has commented on the proposed development.

- 422-3.3 Development Within a Riparian Corridor, Water Areas and Wetlands, and Water Areas and Wetlands and Fish and Wildlife Habitat:
  - A. No new or expanded alteration of the vegetation or terrain of the Riparian Comdor (as defined in Section 106) or a significant water area or wetland (as identified in the applicable Community Plan or the Rural/Natural Resource Plan Element) shall be allowed except for the following:
    - (1) Crossings for streets, roads or other public transportation facilities.

- (2) Construction or reconstruction of streets, roads or other public transportation facilities.
- (3) Installation or construction of the following utilities; sewer and water lines, electric, communication and signal lines; and gas distribution and transmission lines.
- (4) Wildlife viewing areas and recreation or nature trails.
- (7) Where it can be demonstrated, with concurrence of the Clackamas District biologist or other applicable district biologist of the Oregon Department of Fish and Wildlife, that a riparian conflict, Water Areas and Wellands, or Water Areas and Wellands and Fish and Wildlife Habitat has been degraded, an enhancement of these areas which conforms to the definition and criteria listed in Section 422-3.4 may be permitted through a Type II procedure.

STAFF:

The Gossamer Hills Master Plan includes the above listed used within riparian areas. Therefore, when these uses are proposed to be developed, Type II land use applications as required by Section 421 and 422 shall be submitted.

422-3.6 For any proposed use in a Significant Natural Resource Area, there shall be a finding that the proposed use will not seriously interfere with the preservation of fish and wildlife areas and habitat identified in the Washington County Comprehensive Plan, or how the interference can be mitigated.

STAFF:

The impact analysis and mitigation report prepared by PBS Environmental demonstrates that impacts associated with the proposed master plan, including the minor collector street and development in Areas 4, 5 and 6 will not seriously interfere with the preservation of fish and wildlife habitat. The applicant asserts that impacts caused by development (i.e. stream crossings) within the identified resource area adjacent to Areas 4, 11 and 13 however, will require a more detailed Significant Natural Resource analysis.

106-129

Mitigation Reducing the impacts of a proposed development and/or offsetting the loss of habitat values resulting from development. In fish, wildlife, and big game range areas, mitigation may include, but is not necessarily limited to, requiring: 1) clustering of structures near each other and roads, controlling location of structures on a parcel to avoid habitat conflicts, minimizing extent of road construction to that required for the proposed use; and, 2) replacing unavoidable loss of values by reestablishing resources for those lost, such as: forage for food production, escape or thermal shelter. In other areas of significant wildlife value, such as wetlands, riparian vegetation and special bird nesting sites, maintenance and enhancement of remaining habitat, setbacks and restoration of damage and avoiding damage would be appropriate.

Proposed Mitigation methods include avoidance of the majority of the resource and selective grading within the drainage hazard area to create

wetlands. These areas are to be planted with emergent wetland plant species and other native vegetation.

#### Section 426 Erosion Control

STAFF:

Section 426 requires erosion control measures in the Tualatin River and Oswego Lake sub-basins during construction to control and limit soil erosion. The applicant has submitted a preliminary erosion control plan for the development.

On July 1, 1990, Unified Sewerage Agency (USA) assumed responsibility for erosion control within their district boundaries. The applicant will be required to submit a an erosion control plan to USA for their approval prior to any on-site or off-site work (including work within the right-of-way) or construction that is approved through future development application.

#### Section 429 Bicycle Parking

STAFF:

Developments requiring bicycle parking in accordance with Section 429-2 (Applicability) shall be required to address the standards listed in this Section as part of a future development application.

#### 4. Article V, Public Facilities and Services:

Section 501 Public Facility and Service Requirements

STAFE:

Required public services and facilities can be provided to the site to serve the proposed use. All of the agencies listed in Section II of this staff report with the exception of Tualatin Hills Park and Recreation District and the Beaverton School District, have stated they can adequately serve the development subject to complying with their standards.

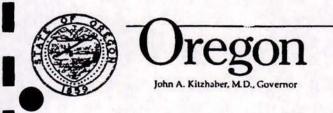
The lack of availability of park service (THPRD) is not grounds for denial of the application as it is considered by the Code to be a desirable (not a critical or essential) service.

Staff finds that based upon ORS 185.110(10), which intimates school capacity shall not be the sole basis for the approval or denial of any residential development application, unless the application involves changes to the local government comprehensive plan or land use regulations. This application does not involve amending any plan designation. Therefore, the application cannot be denied because of inadequate school capacity alone.



### APPENDIX B

Wetland Delineation Report



Division of State Lands

775 Summer Street NE, Suite No. 100 Salem, OR 97301-1279 (503) 378-3805 FAX (503) 378-4844 TTY (503) 378-4615

State Land Board

John A. Kitzhaber Governor

Bill Bradbury Secretary of State

> Jim Hill State Treasurer

> > . ...

November 21, 2000

Don Guthrie Ryland Homes 10070 SW Murdock Tigard, OR 97224

Re: Wetland Delineation for NW Springville Rd. and 185th Ave., Beaverton;

T1N R1W S17&18; DSL WD# 00-0298

Dear Mr. Guthrie:

I have reviewed the wetland delineation report for the above site done by PBS Environmental and discussed the site with Bill Parks, the Oregon Division of State Lands Permit Coordinator for the site. I basically concur with the delineation and conclusions in the report as shown in figure 5 of the report; however; point 3B is wetland and the wetland boundary needs to be changed to include the point. The mapped wetlands are subject to permit requirements of the state Removal-Fill Law. A state permit is required for fill or excavation of 50 cubic yards or more of material in the wetland areas.

This concurrence is for purposes of the state Removal-Fill Law only. Federal or local permit requirements may apply as well. The Army Corps of Engineers will make a determination for purposes of Section 404 of the Clean Water Act at the time that a permit application is submitted. We recommend that you attach a copy of this concurrence letter to both copies of any subsequent joint permit application to speed permit application review.

Please be advised that state law establishes a preference for avoidance of wetland impacts. In evaluating a permit application, we must first consider whether there is an analysis of alternatives that avoid or minimize wetland or waterway impacts. Because measures to avoid and minimize wetland impacts may include reconfiguring parcel layout and size or development design, we recommend that you work with Bill Parks on appropriate site design before completing the city or county land use approval process. He can be reached at (503) 378-3805 ext. 234.

This concurrence is based upon the information provided in the report. Should additional information be provided or site conditions change, the Division would consider the new information and revise our jurisdictional determination if needed.

Thank you for your report. Please phone Janet Morian at extension 236 if you or your consultant have any questions.

Sincerely.

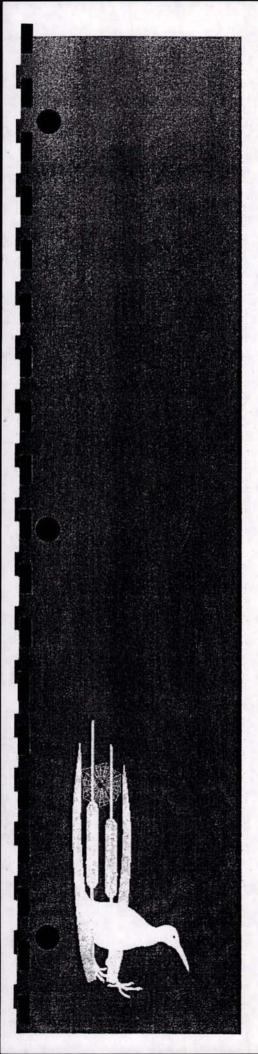
Emily Roth, PWS Wedland Program

> cc: Reggy O'Nell, PBS Environmental Berbara Fryer, City of Beaverton Planning Dept. Richard Gebhart, Corps of Engineers Bill Parks, DSL

# REQUEST FOR WETLAND DELINEATION /DETERMINATION REVIEW

Oregon Division of State Lands
Attn: Wetlands Program Manager
775 Summer Street NE
Salem, Oregon 97310-1337
(503) 378-3805

(Please Ty	pe or Print With Ink)
Applicant Name and Address: Ryland Homes 10070 SW Murdock Tibard OR, 97224	business phone # (503) 639 -4399 home phone # FAX #
☐ Co-Applicant: ☐ Consultant/Contractor: ☐ Authorized Agent: ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐	business phone # home phone # FAX #
Pro	ect Location
	201
Proposed Use Urbon development	Tax Map# Tax Lot#
Project Street Address (or other descriptive location)  NW Springuille Ro  City or Town Brower ton County Machin	Township Range Section   North   North   17:18   Waterway River Mile:
Peopy O' Veill PBS Environm 1310 Main ( Venceuver WA USACE Wetland Delineator Certification Date:  Date of Delineatible Rots Wetland No  O5/12/00 Present? Yes M	Total Site Acreage: Date of Field Work:
Othe	r Information
is any of the Property Agricultural Land? USOA Program Participant? Is the applicant the landowner of lessee?	Yes No C
Has a NRCS Form 026 Been Completed?  Is the Ag Land in EFU Zoning?  Is Site on Local Wetland Inventory?  Has a Previous Delinestion/Application Been Made For P	
NWI Quad Name: Linaton	If yes, Corps of Engineers #
	Division of State Lands #
	ince use only
Status: Project Mgr. Date Delineation Received: / Date Delineation Approved: /	Corps # DSL #



# WETLAND DELINEATION REPORT NW Springville Road

Beaverton, Oregon

# Prepared for

Ryland Homes Tigard, Oregon

# Prepared by

PBS Environmental Portland, Oregon



# WETLAND DELINEATION REPORT

NW Springville Road Beaverton, Oregon

> Prepared for Ryland Homes Tigard, Oregon

Prepared by
PBS Environmental
1310 Main Street
Vancouver, Washington 98660
(360) 690 - 4331

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Figure 5	Wetland Boundary		5

#### WETLAND DELINEATION REPORT

NW Springville Road Beaverton, Oregon

#### 1.0 INTRODUCTION

PBS Environmental was contracted by Don Guthrie of Ryland Homes to perform a wetland delineation on the identified property. The property is located east of the intersection of NW Springville Road and 185<sup>th</sup> Avenue in Beaverton, Oregon. The location of the property is displayed in the Vicinity Map (Figure 1). The legal land description is Township 1N, Range 1W, Sections 17 and 18.

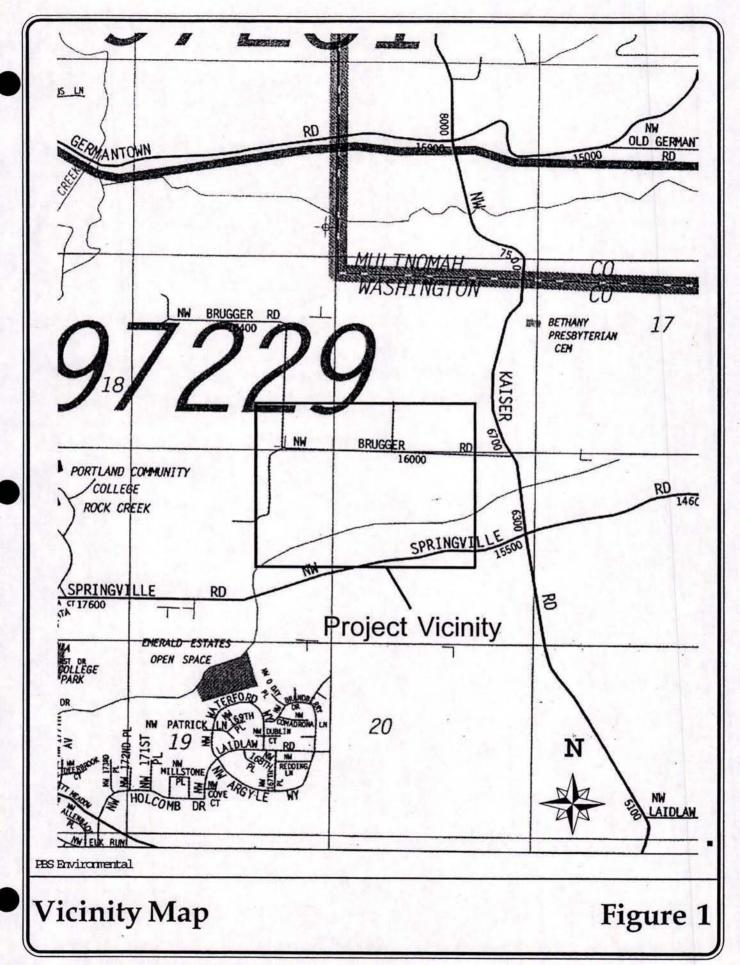
The property consists of gently rolling field and pasture bisected by perennial and intermittent drainages. Riparian scrub-shrub and forested plant communities form a narrow corridor adjacent to an unnamed perennial stream that flows across the southern portion of the site. A large upland/wetland forest complex that comprises the eastern end of the property was not included in this investigation.

#### 2.0 METHODS

The initial phase of the delineation involved the acquisition and review of existing data pertaining to the site. This information included the Soil Survey of Washington County, Oregon (Green, 1982). Other materials that were acquired in the initial analysis included the U.S. Geological Survey Map of the Linnton, Oregon quadrangle (U.S. Geological Survey, 1990), the National Wetlands Inventory (NWI) map for the Linnton, Oregon quadrangle (U.S. Fish and Wildlife Service, 1995).

A site investigation was performed on May 5 and May 8, 2000 to delineate the wetland boundary. The investigation utilized the methodology outlined in the *Corps of Engineers 1987 Wetland Delineation Manual* (U.S. Army Corps of Engineers, 1987). Data was recorded on sample plots along each of 16 transects. Sample plots were established until paired plots (one wetland and one non-wetland) were obtained to accurately determine the location of the wetland boundary.

The data that was collected included an analysis of vegetation, soils, and hydrology (see Appendix A for data sheets). Vegetation was categorized into three strata, which included herbaceous ground cover, shrubs/saplings, and trees. Current taxonomic guides to local flora were consulted to verify the identity of all plant species (Cooke, 1997; Guard, 1995; Hitchcock, 1971; Hitchcock and Cronquist, 1973; Pojar and MacKinnon, 1994). The 50/20 rule was utilized to determine the dominant species of vegetation within each plot. In the assessment of hydrophytic vegetation, the U.S. Fish and Wildlife Service National List of Plant Species That Occur in Wetlands: Northwest Region 9 (Reed, 1988; Reed,



1993) was consulted to determine the wetland indicator status of all vascular plant species within each sample plot.

Test pits were dug to a depth of at least 18 inches to assess soil and hydrological characteristics. The *Munsell Soil Color Charts* (GretaMacbeth, 1998) were used to determine the colors of the soil matrices and mottles. The presence of primary and secondary hydrological indicators was recorded.

#### 3.0 RESULTS AND DISCUSSION

This section is separated into a presentation of results and discussion pertaining to the National Wetlands Inventory, topography, hydrology, soils, vegetation, and wetland boundary. Typical views of the wetland and adjacent non-wetland areas on the property are presented in Plates 1 through 10. Data sheets for each sample plot are presented in the Appendix.

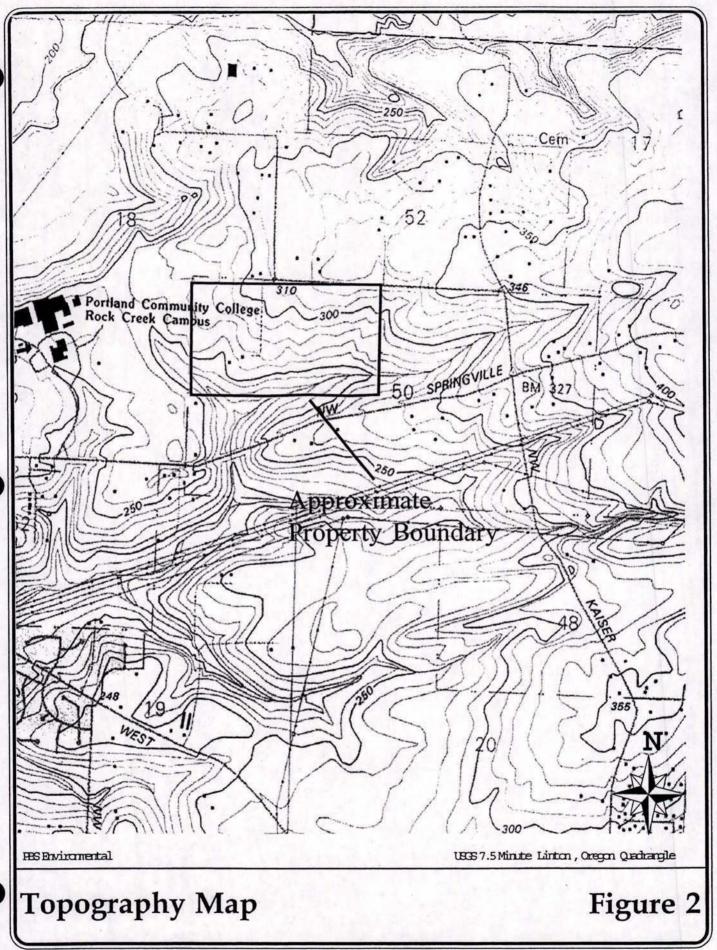
#### 3.1 National Wetlands Inventory

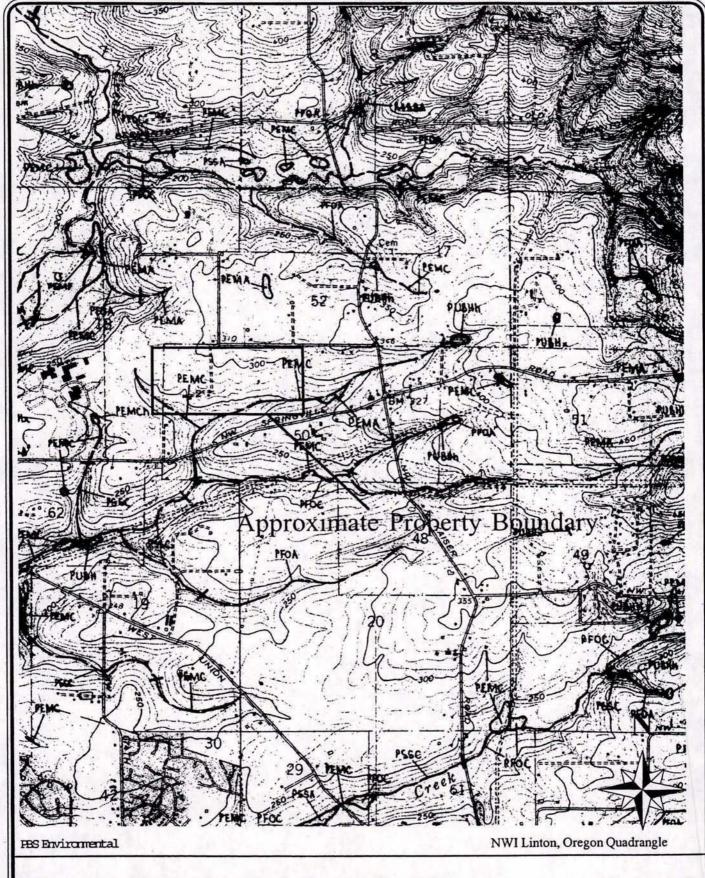
National wetland inventory maps are prepared by stereoscopic analysis of high altitude aerial photographs. Wetlands are identified based on vegetation, visible hydrology, and geography. Field evaluations are conducted of random sites on each map. Such a field check was not conducted for the site in the current study. A detailed field examination and analysis of the site may result in a revision of the wetland boundaries identified on the NWI map.

The National Wetlands Inventory map for the Linnton, Oregon quadrangle (Figure 3) identifies one wetland feature within the property boundaries. The stream channels are identified as palustrine emergent wetlands that are seasonally flooded (PEMC). Our field investigation verified the presence of such wetlands, as well as several other small palustrine emergent (PEM) wetland areas associated with seeps and springs on the hillside north of the main channel.

#### 3.2 Topography

Surface elevations across the site range from approximately 320 feet in the northeastern portion of the site to approximately 220 feet along the western half of the southern boundary. The topography slopes gently from the north along Brugger Road toward the channel at the southern boundary. The terrain also slopes from the northwest corner of the site to approximately the center of the western half of the southern boundary in association with an intermittent drainage channel (Figure 2).





National Wetlands Inventory Map

Figure 3

#### 3.3 Hydrology

Site hydrology is dominated by an unnamed headwater tributary of Rock Creek. This perennial stream flows toward the southwest from the southeastern portion of the site. An intermittent channel flows across the southwestern corner of the site to midway along the southern boundary. This channel continues in a southeasterly direction beyond the property boundary for approximately 200 feet where it joins the perennial channel described above. In addition to these channels, several springs and seep areas were also observed. Most of these were located on the hillside north of the perennial channel. These seeps and springs represent a major source of surface water hydrology as expressed in channeling and sheet flow across the hillside.

During the field visits, wetland hydrology indicators observed were saturated soils in the upper 12 inches and distinct drainage patterns in the wetland areas. Oxidized rhizospheres were also observed in sample plots throughout the site.

#### 3.4 Soils

Soils within the study area have been historically impacted by agricultural activities. Soil survey information (Figure 4) identifies the presence of six soil types within the property boundaries:

Cascade silt loam, 0 to 7% slopes (7b) is a somewhat poorly drained soil that formed in silty loess and old mixed alluvium on uplands. Permeability of this soil is slow. Cascade silt loam is not listed as a hydric soil but may contain inclusions of hydric soils in swales.

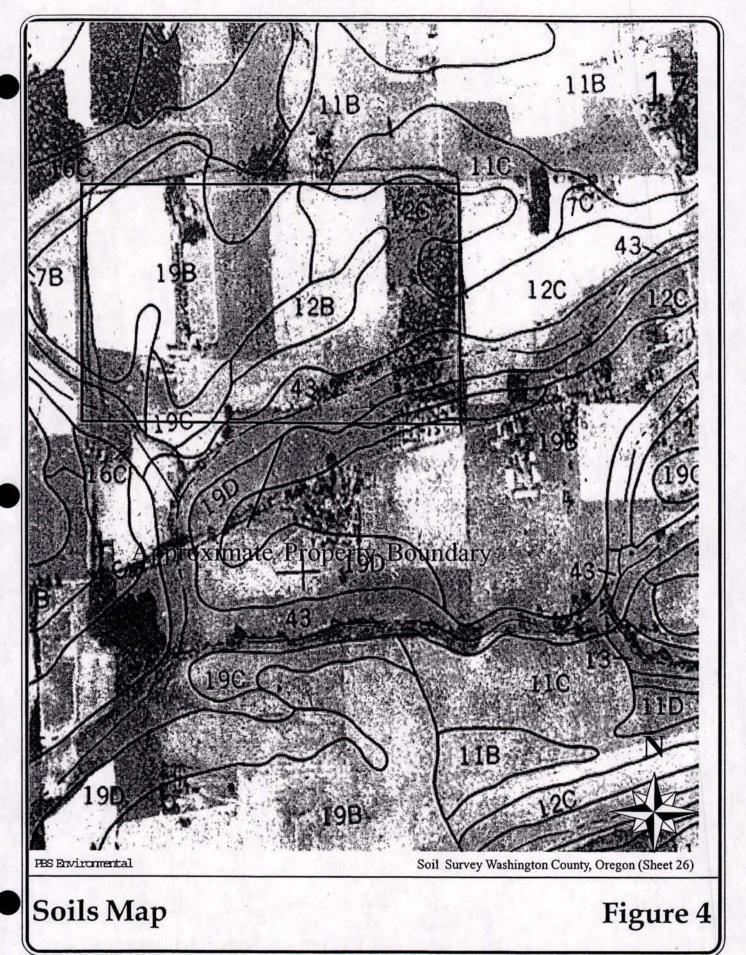
Cornelius and Kinton silt loams, 0 to 7% slopes (11b) and 7 to 12% slopes (11c) are moderately well drained soils that formed in loesslike material over fine-silty, old alluvium of mixed origin on uplands. Permeability of this soil is slow. Cornelius and Kinton silt loams are not listed as a hydric soil, but may contain inclusions of hydric soils in swales.

Cornelius Variant silt loam, 3 to 7% slopes (12b) and 7 to 12% slopes (12c) are somewhat poorly drained soils that formed in lacustrine silts on broad valley terraces. Permeability of this soil is moderately slow. Cornelius Variant silt loam is not listed as a hydric soil, and generally does not contain inclusions of hydric soils.

Delena silt loam, 3 to 12% slopes (16c) is a very poorly drained soil that formed in mixed alluvium and eolian material on uplands. Permeability of this soil is very slow. Delena silt loam is listed as a hydric soil.

Helvetia silt loam, 2 to 7% slopes (19b), 7 to 12% slopes (19c), 12 to 20% slopes (19d) are moderately well drained soils that formed in old alluvium of

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mixed origin on old terraces. Permeability of this soil is moderately slow. Helvetia silt loam is not listed as a hydric soil, but may contain wet spots in depressional areas.

Wapato silty clay loam (43) is a poorly drained soil that formed in recent alluvium on floodplains. Permeability of this soil is moderately slow. Wapato silty clay loam is listed as a hydric soil, and may also contain inclusions of other hydric soils.

Evidence of wetland soils included low and/or very low chroma matrix with redoximorphic features in the upper 12 inches.

#### 3.5 Vegetation

Vegetation on the project site is dominated by pasture grasses and forbs. A forested riparian corridor is present along the perennial stream that flows through the southern portion of the site. A complete list of all dominant plant species and their wetland status is presented in Table 1.

The herbaceous pasture vegetation is dominated by a nearly uniform mix of 80% Kentucky bluegrass (*Poa pratensis*; FAC), 20% meadow foxtail (*Alopecurus pratensis*; FACW), with scattered patches of creeping bentgrass (*Agrostis stolonifera*; FAC), fowl bluegrass (*Poa palustris*; FAC), and reed canarygrass (*Phalaris arundinacea*; FACW).

Little difference in plant community composition was noted in the seep or spring-fed areas as compared to the surrounding areas. A greater proportion of fowl bluegrass was found in these areas, along with scattered occurrences of common rush (*Juncus effusus*; FACW) and veronica americana (*Veronica americana*; OBL).

The riparian forested area along the eastern portion of the creek is comprised of mature Oregon ash (Fraxinus latifolia; FACW) and Oregon white oak (Quercus garryana; UPL). Most of the understory shrub vegetation has been cleared in this area, resulting in an almost entirely herbaceous understory plant community similar to that described above. Vegetation present within the banks of the stream channel includes Himalayan blackberry (Rubus discolor; FACU), nootka rose (Rosa nutkana; FAC), and soft rush (Juncus effusus; FACW). The oak/ash plant community transitions to an herbaceous plant community dominated by soft rush, then to shrub-scrub plant community further downstream.

The intermittent stream in the northwest portion of the site has no distinct riparian vegetation community. Vegetation consists of the same planted pasture grass assemblage described above, with patches of reed canarygrass in the lowest areas.

TABLE 1
Plant Species List with Wetland Indicator Status

Common Name	Scientific Name	Wetland Indicator Status*			
IERBS:		CANADA LA CONTRA			
creeping bentgrass	Agrostis stolonifera	FAC			
fowl bluegrass	Poa palustris	FAC			
Kentucky bluegrass	Poa pratensis	FAC			
meadow foxtail	Alopecurus pratensis	FACW			
reed canarygrass	Phalaris arundinacea	FACW			
soft rush	Juncus effusus	FACW			
velvet grass	Holcus lanatus	FAC			
white clover	Trifolium repens	FAC			
SHRUBS:					
Himalayan blackberry	Rubus discolor	FACU			
nootka rose	Rosa nutkana	FAC			
TREES:					
beaked hazlenut	Corylus cornuta	FACU			
bitter cherry	Prunus emarginata	FACU			
English hawthorn	Crataegus monogyna	FACU+			
Oregon ash	Fraxinus latifolia	FACW			
Oregon white oak	Quercus garryana	UPL			

#### \*EXPLANATION OF WETLAND INDICATOR STATUS:

Wetland Status Code	Designation	Wetlands Probability (% occurrence of plant in a wetland)
OBL	Obligate wetland speciess	>99
FACW	Facultative wet wetland species	67 to 99
FAC	Facultative wetland species	34 to 66
FACU	Facultative upland species	1 to 33
UPL	Obligate upland speciess	<1
NI	No indicator status	

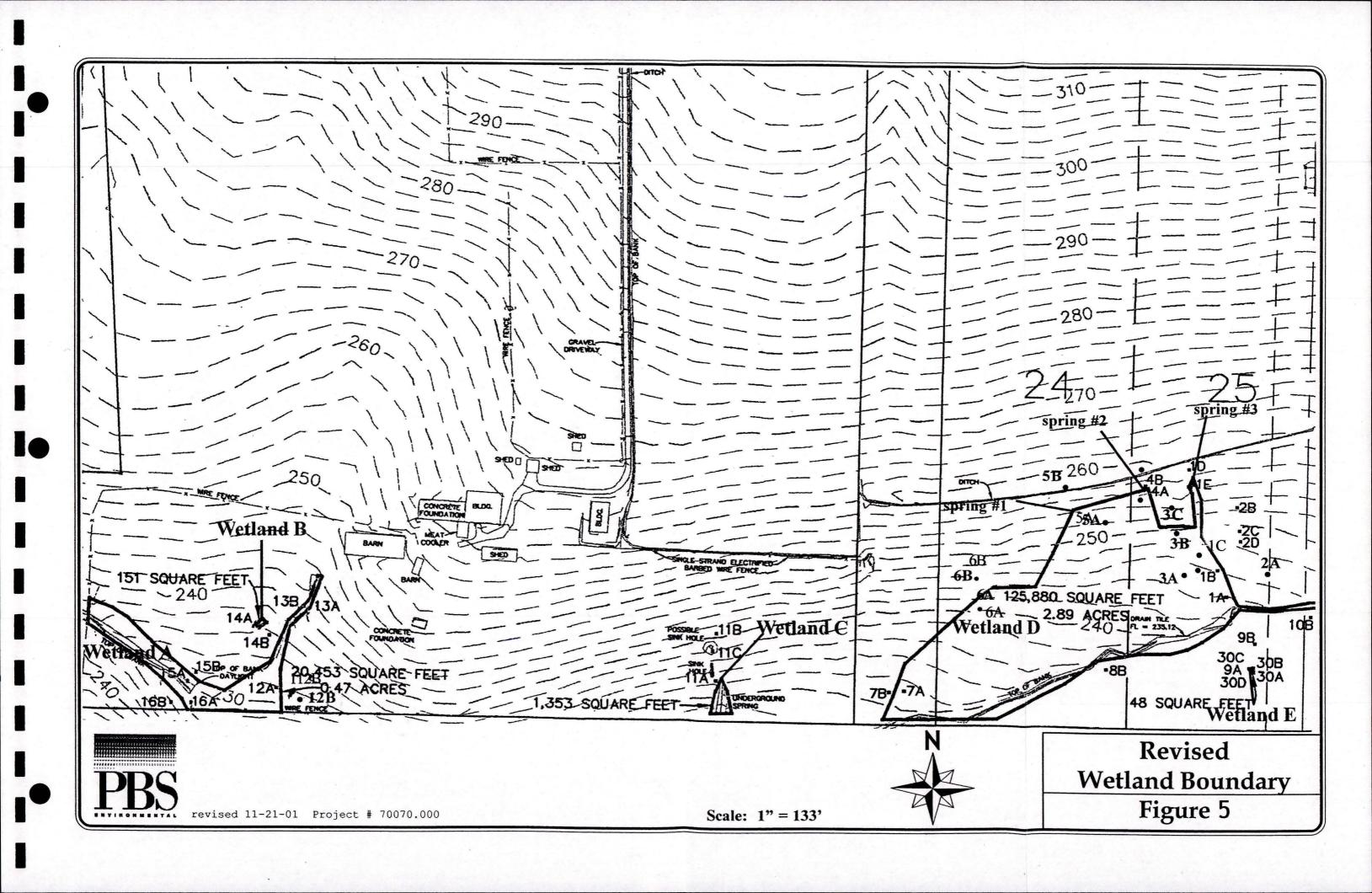
#### 3.6 Summary

The wetland boundary was established utilizing the data gathered in paired sample plots. Numerous soil pits were excavated between these data points to verify changes in the three wetland parameters. This data was coupled with a visual overview of site topography, indicators of wetland hydrology, and shifts in plant community dominance. Two wetland classes were observed on the property:

- palustrine forested (PFO) wetlands in the riparian corridor adjacent to the creek, and
- palustrine emergent (PEM) wetlands associated with the spring/seep areas and the intermittent drainage.

Total wetland area is estimated to be 3.4 acres in 5 distinct areas. Locations of the wetland areas with surveyed boundaries and sample points identified are shown in Figure 5.

This wetland delineation is subject to concurrence by the appropriate jurisdictional agencies. Upon agency approval, the delineation is valid for a period of five years from the date of approval. The agencies may, at any time, require further evaluation of these wetlands based upon any newly available evidence of wetland conditions.



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- U.S. Geological Survey. 1990. "7.5 Minute Topographic Quadrangle for Linnton, Oregon." United States Geological Survey.

# APPENDIX A

Field Datasheets

Client/O Powerting Is the are EGETAT Species	ea a potential pi	lomes I/I. Chane exist on the sical situation?		100000000000000000000000000000000000000	Indicator status FAC	State:	Washing T1N R1V Pasture		- COPSIGNATION CO.	Indicator
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							41		54	
Comr	Percer ments:	nt of dominant	species	that a	are OBL, F	ACW, or FAC (excluding FAC-)	2/2 = 10	0%		
Depth	Matrix Color	Mottle Color	Mottle A	Abund	ance, Size,	Soil Texture, Concretions, etc.	2.49	<b>利用某些指定</b>	Thinks.	機能與此所能
-12"	10YR 3/1	none				layey silt loam		July 1		
12-18"	10YR 4/1	10YR 3/4	commo	n, sma	all, distinct;	clayey silt loam				
Comr	ments:		chroma	matrix	k with redox	ximorphic features				
Depth of	surface water:									
	ee water in pit:									
Depth to	saturated soil:		•							
	Water mar Drift lines Sediment of Drainage p	in upper 12 in. rks	ds			Secondary Indicators:  X Oxidized rhizospheres in uppe Water-stained leaves  X Local soil survey data FAC neutral test Other	r 12 in.			
Comi	ments:		20		•					
	D DETERMINA									
Hydrophy	tic Vegetation?						2.14			
147.11	Hudric Coile?	Vac			1- 46-		/ VOO			
vvetia	Hydric Soils? and Hydrology?				is tr	nis sample plot within a wetland	res			

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	/Owner: Ryland					State:				
	stigator: P. O'Ne						Washing			
Down	al circumstances		ite?	Yes		Township, Range, Section:		N S17		
		oical situation?		No		Plant Community:	Pasture			
Is the	area a potential p	problem area?		No		Sample Plot:	1b			
EGET/	ATION									
	<b>经验证的</b>	<b>基本文字</b>	%		Indicator	是这个是一个一种。 第二个是一个一种是一种的一种的一个	15 CE 15 LIVE	%		Indicator
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lopecu	rus pratensis	Н	20	X	FACW					
							THE S			
			n easter to the		CD: 5	ACW, or FAC (excluding FAC-):	0/0 1-	001		
SOILS	nments:									
Depth		Mottle Color				Soil Texture, Concretions, etc.	總上的模型	<b>了</b> 社会建筑	鐵物鐵	報整接關鍵
-8"	10YR 3/2					d rhizospheres; clayey silt loam				
-18"	10YR 4/1	10YR 4/4	many, la	arge,	distinct; cla	yey silt loam			1	
				-				•		
					7.51.41					
	c Soil Indicators: nments:	low/very low	chroma	matri	x with redox	kimorphic features				
HYDRO	LOGY		-							Latin 6
	of surface water:	N/A		-						
	free water in pit:									
15,000	to saturated soil:									
	Primary Indic	ators:				Secondary Indicators:				
	Inundated					X Oxidized rhizospheres in upper	12 in.			
		in upper 12 in.				Water-stained leaves				
	Water ma					Local soil survey data				
100	Drift lines					FAC neutral test				
	Sediment	patterns in wetland	ts			Other				
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Cor	nments:		1		-				1	
WETLA	ND DETERMINA	TION				AND THE PARTY OF T		9.00mm		
	nytic Vegetation?			The state of				-		-
	Hydric Soils?		41		Is thi	is sample plot within a wetland?	Yes			
We	tland Hydrology?									
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Client	area a potential	Homes ill/I. Chane s exist on the social situation?		Yes No No		State: County: Township, Range, Section: Plant Community:	Date: 5/5/00 State: OR County: Washington T1N R1W S17 Plant Community: Pasture Sample Plot: 1c				
Species	想到1000000000000000000000000000000000000	Stratum	% Cover	Dom	Indicator status	Species 10	Stratum	% Cover	Dom. S	ndicator	
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epth -8" -18"	10YR 3/2 10YR 4/2	Mottle Color 10YR 3/4 10YR 4/3	many, r	nediu	m, distinct;	, Soil Texture; Concretions, etc. oxidized rhizospheres; clayey s iyey silt loam					
	c Soil Indicators	: low chroma	matrix w	ith red	doximorphi	c features					
epth to	of surface water free water in pit to saturated soil Primary India	: >18" : 12" cators:				Secondary Indicators: X Oxidized rhizospheres in uppe	r 12 in				
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Co	mments:										

Client/O vesti Po-normal	ea a potential p	Homes ill/I. Chane s exist on the social situation?		Yes No No	Indicator status	State County Township, Range, Section Plant Community Sample Plot	: Washington : T1N R1W S17 : Pasture				
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iopecurus	s pratensis	Н	10		FACW						
Comn SOILS Depth	nents:					ACW, or FAC (excluding FAC-)  Soil Texture, Concretions, etc.					
-12"	10YR 3/2	10YR 4/4	many, r	nediur	n, distinct;	oxidized rhizospheres; clayey s					
12-18"	10YR 3/2	10YR 4/3	many, l	arge,	distinct; cla	yey silt loam					
							+	-			
Comn			matrix w	ith red	oximorphic	efeatures					
	surface water: ee water in pit:		-								
	saturated soil:		= "								
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Comn	nents:										
WETLAND	DETERMINA	TION									
	ic Vegetation?	Yes									
Wetla	Hydric Soils? nd Hydrology?		11		Is th	iis sample plot within a wetland	? <u>No</u>				
Comn	nents:										

Is the a	Owner: Ryland stigator: P. O'Ne al circumstance Is it an atylarea a potential	eill/I. Chane s exist on the s pical situation? problem area?	% Cover	AND TANK OF STREET	Indicator status	State:	Washing T1N R1\ Pasture	oton V S17	VINESCOUNT CONTRACTOR	Indicator
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	rus pratensis	Н	50	X	FACW					
Poa palu	istris	Н	10		FAC					
-18"	10YR 4/2	10YR 4/3	many, i	arge,	distinct; cia	yey silt loam				
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Hydric Comi HYDROL Depth of Depth to	ogy f surface water ree water in pit o saturated soil  Primary India Inundates Saturated Water ma Drift lines Sediment Drainage ments:	: N/A : >18" : >18" cators: d in upper 12 in. arks it deposits patterns in wettar		th rec		Secondary Indicators: Oxidized rhizospheres in up Water-stained leaves Local soil survey data FAC neutral test	oper 12 in.			
Hydric Comi HYDROL Depth of Depth to	ogy f surface water ree water in pit o saturated soil  Primary India Inundated Saturated Water ma Drift lines Sediment Drainage ments:	: N/A : >18" : >18" cators: d in upper 12 in. arks d deposits patterns in wetlar		th rec		Secondary Indicators: Oxidized rhizospheres in up Water-stained leaves Local soil survey data FAC neutral test	oper 12 in.			
Hydric Comi HYDROL Depth of Depth to	ogy f surface water ree water in pit o saturated soil  Primary India Inundated Saturated Water ma Drift lines Sediment Drainage ments:	: N/A : >18" : >18" cators: d in upper 12 in. arks d deposits patterns in wetlar		th rec		Secondary Indicators: Oxidized rhizospheres in up Water-stained leaves Local soil survey data FAC neutral test	oper 12 in.			
Hydric Coming Part of the Comming Comm	ogy f surface water ree water in pit o saturated soil  Primary India Inundater Saturated Water ma Drift lines Sediment Drainage ments:  D DETERMINA Hydric Soils?	: N/A : >18" : >18" cators: d in upper 12 in. arks d deposits patterns in wetter		th rec	doximorphic	Secondary Indicators: Oxidized rhizospheres in up Water-stained leaves Local soil survey data FAC neutral test				
Hydric Coming Part of the Comming Comm	ogy f surface water ree water in pit o saturated soil  Primary India Inundated Saturated Water ma Drift lines Sediment Drainage ments:	: N/A : >18" : >18" cators: d in upper 12 in. arks d deposits patterns in wetter		th red	doximorphic	Secondary Indicators: Oxidized rhizospheres in up Water-stained leaves Local soil survey data FAC neutral test Other				

	ct/Site: NW Spr				-	Date: State:	5/5/00			14.0
	tigator: P. O'Ne				-0		Washing	nton		
	al circumstances		ite?	Yes	-3	Township, Range, Section:			TIT S	177
OHOHHE		oical situation?		No		Plant Community:		W 017		
Is the a	rea a potential			No		Sample Plot:			7	
10 110 0	roa a poterniar j	problem area.		110	•	Cumple 1 lot.				1
EGETA	TION	EVISOR I	1	-	\$16 E 58		Section 1			
	Signal Marris and the	<b>《经验是基本及企图</b> 》	%	- The second	Indicator		WUNDER CO.	%	製造業	Indicator
Species		Stratum	Cover	Dom.	status	Species	Stratum	Cover	Dom.	
oa prate	ensis	Н	80	X	FAC					
lopecur	us pratensis	Н	20	X	FACW					
W.								- NZ 5-7		
OILS	Matrix Color	Mottle Color	Mottle	Abuno	ance Size	Soil Teyture Concretions at	<b>对于2000年</b>	Ferry AMERICAN	Dynamic Shows	
Depth						, Soil Texture, Concretions, etc.	和建筑的温	是一个	網接受透過	觀徵到
-12"	10YR 3/2	10YR 4/4			int; clayey				-	
2-18"	10YR 3/2	10YR 4/6	many,	arge,	distinct; cla	ayey silt loam	124	-		
Com	Soil Indicators	: low chroma	matrix w	ith rec	doximorphi	c features				
HYDROL		NIA	0.01							
	of surface water		-0							
	free water in pit o saturated soil		-8							
Depui	o saturated soil		-11	4						
	Primary India	cators:				Secondary Indicators:	÷			
	Inundated					Oxidized rhizospheres in upper	12 in.			
		in upper 12 in.				Water-stained leaves				
	Water ma					Local soil survey data  FAC neutral test	14.			
		deposits				Other				
		patterns in wetland	ds							
Com	nments:									2.
	ID DETERMINA					and the same of the same				
Hydroph	ytic Vegetation?				2 00		oners.			
	Hydric Soils?				ls th	nis sample plot within a wetland?	No		- 318	
Wet	land Hydrology	No	76							
Com	nments:			×			1	A.		

10" 10YR 3/2 10YR 4/4 few, small, faint; clayey silt loam 10-18" 10YR 3/2 10YR 4/6 many, large, distinct; clayey silt loam  Hydric Soil Indicators: Comments:	Is the a  EGETA  Species  Oa prate	rea a potential p	Homes II/I. Chane exist on the s ical situation?	% ***	CONTRACTOR AND ADDRESS OF	Indicator status FAC FACW	State	Washing T1N R1\ Pasture	gton	Dom	Indicator
### 10	OILS	ments:				*					
D-18" 10YR 3/2 10YR 4/6 many, large, distinct; clayey silt loam  Hydric Soil Indicators: low chroma matrix with redoximorphic features  Comments:	And the second second second							对西京学	<b>海</b> 草河 新	2.7%公司	的原理
Hydric Soil Indicators: low chroma matrix with redoximorphic features  Comments:  HYDROLOGY  Depth of surface water: N/A epth to free water in pit: >18"  Depth to saturated soil: >18"  Primary Indicators: Secondary Indicators: Oxidized rhizospheres in upper 12 in. Water-stained leaves  Local soil survey data Drift lines FAC neutral test Sediment deposits Other  Comments:  WETLAND DETERMINATION lydrophytic Vegetation? Yes Hydric Soils? Yes  Is this sample plot within a wetland? No	The state of the s										
Comments:  HYDROLOGY  Depth of surface water: N/A	-U-18	101K 3/2	101K 4/6	many, la	arge, (	usunct; cla	yey siit ioam		-		
Comments:  HYDROLOGY  Depth of surface water: N/A ppth to free water in pit: >18"  Depth to saturated soil: >18"  Primary Indicators: Secondary Indicators:				+							
HYDROLOGY  Depth of surface water: N/A			low chroma	I matrix wi	ith red	oximorphic	features				
Depth of surface water: N/A epth to free water in pit: >18"  Depth to saturated soil: >18"  Primary Indicators: Secondary Indicators: Oxidized rhizospheres in upper 12 in. Saturated in upper 12 in. Water-stained leaves Water marks Local soil survey data Drift lines FAC neutral test Sediment deposits Other  Drainage patterns in wetlands  Comments:  WETLAND DETERMINATION  Indicators: Secondary Indicators: Oxidized rhizospheres in upper 12 in. Water-stained leaves FAC neutral test Other  Other  Indicators: Oxidized rhizospheres in upper 12 in. Water-stained leaves FAC neutral test Other  Indicators: Secondary Indicators: Oxidized rhizospheres in upper 12 in. Water-stained leaves The control of the control	Com	ments:									220
pepth to free water in pit:   >18"	HYDROL	OGY									
Primary Indicators:  Inundated  Saturated in upper 12 in.  Water marks  Drift lines  Sediment deposits  Drainage patterns in wetlands  Comments:  WETLAND DETERMINATION  Ilydrophytic Vegetation?  Hydric Soils?  Yes  Secondary Indicators:  Oxidized rhizospheres in upper 12 in.  Water-stained leaves  Local soil survey data  FAC neutral test  Other  Other  Is this sample plot within a wetland? No						1.11.2			A STATE OF		Pier I
Primary Indicators:											
Inundated Saturated in upper 12 in. Water-stained leaves Local soil survey data Drift lines Sediment deposits Drainage patterns in wetlands  Comments:  WETLAND DETERMINATION lydrophytic Vegetation? Yes Hydric Soils? Yes Is this sample plot within a wetland? No	Depth to	o saturated soil:	>18"	- 17/							
WETLAND DETERMINATION lydrophytic Vegetation? Yes Hydric Soils? Yes Is this sample plot within a wetland? No		Inundated Saturated Water mar Drift lines Sediment	in upper 12 in. rks deposits	ds			Oxidized rhizospheres in upper Water-stained leaves Local soil survey data FAC neutral test	r 12 in.			
Hydrophytic Vegetation? Yes  Hydric Soils? Yes  Is this sample plot within a wetland? No	Com	ments:									
lydrophytic Vegetation? Yes  Hydric Soils? Yes  Is this sample plot within a wetland? No	WETLAN	D DETERMINA	TION				A STATE OF THE STA		1	100	
Hydric Soils? Yes Is this sample plot within a wetland? No						ALL VEN			1 11/2		1000
Wetland Hydrology? No		Hydric Soils?	Yes	1 7 30		Is th	is sample plot within a wetland?	No			
	Wetl	and Hydrology?	No				A STATE OF THE STA		THE	X	
Comments:	Com	ments:					State of the state			ti	

Proje	ct/Site: NW Spr	ingville Road				Date:	5/5/00					
Client/	Owner: Ryland	Homes				State:	OR			7,13		
ves	tigator: P. O'Ne	ill/I. Chane					Washing	ton				
Do rma	al circumstances	exist on the s	ite?	Yes		Township, Range, Section:	ection: T1N R1W S17					
	Is it an atyp	ical situation?		No	WALK.	Plant Community:	Pasture					
Is the a	rea a potential p	problem area?		No		Sample Plot:	2d					
EGETA	TION											
Species		Stratum	% Cover	Dom.	Indicator status	Species	Stratum	% Cover	Dom.	Indicator status		
oa prate	ensis	Н	80	X	FAC		STREET, ST. TAY S CANA	MA STANDAR MANAGES	Water Spiriter	MANUFACTURE THE CO.		
lopecur	us pratensis	Н	20	Х	FACW							
0.50												
									100			
					- 9-1		19					
OILS	ments:											
Depth	Matrix Color	Mottle Color	Mottle A	bund	ance, Size	Soil Texture, Concretions, etc.	<b>企</b> 相似的系统	<b>清。引西泊</b>	<b>清解器</b>	<b>全种理</b> 类的		
-18"	10YR 3/2	5YR 3/4	few, sm	all, fai	int; oxidize	d rhizospheres; clayey silt loam						
0-18"	10YR 4/1	10YR 4/6	many, la	arge, o	distinct; cla	yey silt loam						
						2 120	-		-			
	: Soil Indicators: ments:	low chroma	matrix w	th red	oximorphic	features						
HYDROL	OGY									Street Section		
	f surface water:	N/A	V OF					-		A COLUMN TO THE PARTY OF THE PA		
1.7	free water in pit:		•									
	o saturated soil:											
District Control	Primary Indic	ators:				Secondary Indicators:						
MALE.	Inundated					X Oxidized rhizospheres in upper	12 in.					
		in upper 12 in.				Water-stained leaves						
	Water ma	rks				Local soil survey data						
David Control	Drift lines					FAC neutral test						
	Sediment	deposits patterns in wetland	10			Other						
	Drainage	patterns in wedarit	15									
Com	ments:											
VETLAN	D DETERMINA	TION								38		
Hydrophy	ytic Vegetation?											
	Hydric Soils?		Carl		ls th	is sample plot within a wetland?	No					
Wetl	and Hydrology?	No										
Com	ments:		, Ma						16			
	HAVE SEEDE								140			

■ Proje	ect/Site: NW Spri	naville Road				Date	5/5/00	7-		
	Owner: Ryland H			-	75	State:			-	-
	stigator: P. O'Neil		U.S. T.	-			Washing	aton		
	al circumstances		ito?	Yes	-	Township, Range, Section:				+
0 1101111		ical situation?		No	-	Plant Community:				
Is the	area a potential p			No	2	Sample Plot:		-		-
_	area a poterniai p	iobieiii alea?		140		Sample Flot.	Sa			
EGETA	ATION	alle label	2 11		to Sprange	245 0 Say 5 1 10 5 F	NEW Y	CONT.	- 4	
<b>基本基础</b>		是特殊的	%		Indicator	A SECURITION AND A SECURITION AND ASSESSMENT		%		Indicator
Species		Stratum	Cover	Dom.	status	Species	Stratum	Cover	Dom.	status
oa prat		Н	80	X	FAC					
lopecui	rus pratensis	Н	20	X	FACW					
								-		
								Mari		
				5,00		THE RESERVE THE PARTY OF THE PARTY				
			1000	I I						
								Care		
Con	nments:	nt of dominan	species	that a	are OBL, F/	ACW, or FAC (excluding FAC-):	2/2 = 10	0%		
SOILS				-						Marie V
Depth	Matrix Color	Mottle Colors	Mottle A	Abund	ance, Size,	Soil Texture, Concretions, etc.	12 1 2 W	<b>《中华》</b>		文的特殊
-8"	10YR 3/2	10YR 4/4	ALC: UNKNOWN			d rhizospheres; clayey silt loam			and the same of th	
0-18"	10YR 4/2	10YR 4/3				yey silt loam				
										1/1
			100							
				-			4		-	
	c Soil Indicators: nments:	low chroma	matrix wi	ith red	loximorphic	features				
				1				الناماني		
HYDROI		NIA								
	of surface water: free water in pit:									
	to saturated soil:		-							
Depui	io saturateu son.	0	•2							
	Primary Indica	ators:				Secondary Indicators:				
	Inundated	2007				X Oxidized rhizospheres in upper	12 in.			
	X Saturated i				Water-stained leaves					
10-9-1	Water man	ks				Local soil survey data				
15.50	Drift lines Sediment of	donosito				FAC neutral test				
		patterns in wetland	ds		-	Other				
Con	nments: This app	ears to be a	spring.							-
WETLAN	ND DETERMINA	TION					Land Maria		10 7 6	
	ytic Vegetation?				ne en			CHICA I		
., op/	Hydric Soils?				le th	is sample plot within a wetland?	Yes			130
Wet	tland Hydrology?				10 41		100			
	nments:						•			
		1 8								

Is the and Species	rea a potential	Homes bill/I. Chane s exist on the social situation? problem area?	% Cover	Yes No No	THE RESERVE TO A STREET THE PARTY AND ASSESSMENT OF THE PARTY ASSE	State	: Washing : T1N R1V : Pasture	gton	Dom.	Indicator
Poa prate Nopecuru	nsis Is pratensis	H	80 20	X	FACW					
					1.7.1.			7		
	10YR 3/2 10YR 4/2 Soil Indicators:	10YR 4/4 10YR 4/3	many, la	arge,	distinct; cla	ed rhizospheres; clayey silt loam ayey silt loam c features				
Com	ments:									
HYDROL										
	surface water ree water in pit									
	saturated soil:									
	Water ma Drift lines Sediment	l I in upper 12 in. arks	ds			Secondary Indicators:  X Oxidized rhizospheres in upper Water-stained leaves Local soil survey data FAC neutral test Other	r 12 in.			
Com	ments: This ap	pears to be a s	spring.							
WETLAN	D DETERMINA	TION							-	
Hydrophy	tic Vegetation?							100		
Wetla	Hydric Soils? and Hydrology?				Is th	nis sample plot within a wetland	? Yes			Min.
Com	ments:									

Client/e pes Do Marma	rea a potential	Homes eill/I. Chane s exist on the s pical situation?		Yes No No		State:	: Washington : T1N R1W S17 : Pasture					
Species		Stratum	% Cover	Dom.	Indicator status	Species	Stratum	% Cover	Dom.	Indicator status		
pa prate	ensis us pratensis	H H	80 20	X	FAC FACW		Onatum		Dom			
SOILS Depth 12" 12" 12-18"	Matrix Color 10YR 3/2 10YR 3/2	Mottle Color 10YR 4/4 10YR 4/3	few, sm	all, fai	int; oxidize	Soil Texture, Concretions, etc. d rhizospheres; clayey silt loam yey silt loam	W					
Com			matrix wi	th red	loximorphic	c features						
epth to	of surface water free water in pit o saturated soil	t: >18" l: >18"										
	Water management with the second control of	d d in upper 12 in. arks	nds			Secondary Indicators:  X Oxidized rhizospheres in upper Water-stained leaves Local soil survey data FAC neutral test Other	12 in.					
Com	ments:				1							
lydroph	ytic Vegetation Hydric Soils and Hydrology	? Yes ? Yes			Is th	nis sample plot within a wetland?	No No					
Com	nments:								48			

Client/ pyes rma	area a potential	Homes eill/I. Chane s exist on the pical situation	?	Yes No No		State:	Washing T1N R1 Pasture	gton		
EGETA	TION	是 [1] (1) (1) (1) (1) (1) (1) (1) (1) (1) (1)	% - 2	E STATE	Indicator		<b>建</b> 国北京公司	1%		Indicator
Species	Section China Change Section 2015	Stratum	Cover	Annual States	status	Species	Stratum	Cover		status
oa prate lopecur	ensis us pratensis	H	20	X	FACW					
Com	Perce	ent of dominar	t species	that a	are OBL, F	ACW, or FAC (excluding FAC-):	2/2 = 10	0%		
SOILS					- 12-2-				11 (5.5)	
Depth	Matrix Color	Mottle Color	Mottle A	bund	ance, Size	Soil Texture, Concretions, etc.	化水流 安徽	TO SKILL THAT	LEAST OF THE PARTY	的和政治的
-10"	10YR 3/2	10YR 4/4	many, s	mall.	distinct: ox	idized rhizospheres; clayey silt l	oam	<b>不过时以上的</b>	NAME OF STREET	ON OUT OF SHIP
0-18"	10YR 4/2	10YR 4/3				yey silt loam	-			
	NOTE OF THE							_		
Hydric	: Soil Indicators ments:	: low chroma	matrix wi	th red	oximorphic	features				
HYDROL	OGV	MARKET IN			dia.					
	of surface water	: N/A		-						
	free water in pit									
Depth t	o saturated soil	: 10"				**				
	Water ma Drift lines Sediment	d I in upper 12 in. arks	nds			Secondary Indicators:  X Oxidized rhizospheres in upper Water-stained leaves Local soil survey data FAC neutral test Other	12 in.			
Com	ments:									
WETLAN	D DETERMINA	ATION					No. of the last			
	ytic Vegetation?	Yes			77 7 7					ATT F
Wetl	Hydric Soils? and Hydrology?		- 174		Is th	is sample plot within a wetland?	Yes	-	145	
	ments:						¥2			

Client/C	ea a potential p	Homes III/I. Chane exist on the s ical situation?		Yes No No		State:	Washing T1N R1V Pasture			
機能的可能	(2) 计对数时间		%		Indicator			%		Indicator
Species  Poa pratei	COLUMN TO SELECT MANAGEMENT AND AND	Stratum H	Cover 80	P-17-MALIGUE	status	Species	Stratum	Cover	Dom.	status
	s pratensis	Н	20	X	FACW					
Comr	Percenter:	nt of dominant	species	that a	are OBL, F	ACW, or FAC (excluding FAC-):	2/2 = 10	0%		
OILS										
Depth						Soil Texture, Concretions, etc.		和的國際	<b>建筑建筑</b>	結論的理
-12"	10YR 3/2	10YR 4/4				oxidized rhizospheres; clayey si	It loam			
2-18"	10YR 3/2	10YR 4/3	many, la	arge, o	distinct; cla	yey silt loam				
	Soil Indicators: ments:	low chroma	matrix w	ith red	loximorphic	features				
HYDROL	acy									
	surface water:	N/A		-						August 1
	ee water in pit:									
	saturated soil:									
	Water mai Drift lines Sediment Drainage	in upper 12 in. rks	ds			Secondary Indicators: Oxidized rhizospheres in upper Water-stained leaves Local soil survey data FAC neutral test Other	12 in.			
Com	ments:									
	D DETERMINA									
Hydrophy	tic Vegetation?									
Wetla	Hydric Soils? and Hydrology?				Is th	is sample plot within a wetland?	No		34	
Com	ments:									

Projec	ct/Site: NW Spri	ingville Road				Date:	5/5/00			
	Owner: Ryland I					State:	OR			
est	igator: P. O'Nei	ill/I. Chane				County:	Washing	ton		
orma	I circumstances	exist on the	site?	Yes		Township, Range, Section:	T1N R1\	N S17		
	Is it an atyp	ical situation?	?	No		Plant Community:	Pasture	1,400		ET DE
Is the ar	rea a potential p	problem area?	?	No		Sample Plot:	5a			
EGETAT	TION									
pecies		Stratum	%		Indicator status	Species	Stratum	% Cover	Dom	Indicator status
oa prate	nsis	H	80	DOMEST STATISTICS	FAC	Species was a series of the se	Suatum	Cove	DOM.	Status
	is pratensis	Н	10		FACW					1007
	tolonifera	Н	10	131						
-15								-		
				L						
OILS	ments:					The second second				
epth			Mottle	Abund	ance Size	Soil Texture, Concretions, etc.	<b>以</b> 使是15元的	化多种基础	CHAP &	TANK THE
-9"	10YR 3/2	10YR 4/4	few, sn	nall, fai	nt; oxidize	d rhizospheres; clayey silt loam			L. Mari	
-18"	10YR 4/2	10YR 4/3	many, I	arge, d	distinct; cla	yey silt loam				
									-	
		RATE OF								
	Soil Indicators: ments:	low chroma	matrix w	ith red	oximorphic	c features				
VDDOL	OCY							a line		i i
YDROL	f surface water:	NI/A		100.00						
	ree water in pit:		-							
	saturated soil:		-							
Doparto	odiarated com.		-							
	Primary Indic					Secondary Indicators:				
	Inundated					X Oxidized rhizospheres in upper	12 in.			
	X Saturated	The state of the s				Water-stained leaves				
	Water ma	rks				Local soil survey data  FAC neutral test				
	Sediment	denosits				Other				
		patterns in wetlar	nds							
Com	ments:									
VETLAN	D DETERMINA	TION			1-14-1					V-1
lydrophy	tic Vegetation?	Yes					The same			
lydropily						Tel 12 12 15 15 15 15 15 15 15 15 15 15 15 15 15				
iyuropiiy	Hydric Soils?	Yes			Is th	is sample plot within a wetland?	Yes			
					Is th	is sample plot within a wetland?	Yes		-	

Client/O yesting Is the are	ea a potential p	Homes II/I. Chane exist on the s ical situation?		Yes No No		Date: State: County: Township, Range, Section: Plant Community: Sample Plot:				
EGETAT	ION	Professional Control	%	n sid	Indicator		超年公司	%	ale se la constante de la cons	Indicator .
Species .		Stratum	Cover /		status	Species.	Stratum	Cover	Dom.	status
Poa prater lopecurus	s pratensis	H	20	X	FACW					
Comn		nt of dominant	species	that a	are OBL, F	ACW, or FAC (excluding FAC-):	2/2 = 10	0%		
SOILS	II V CONTROLLED	Valleraans	I V PRINCE	A laws of	Cina		CONTRACTOR OF SAME		NAME OF TAXABLE PARTY.	
Depth 3-18"	10YR 3/2	5YR 3/4				Soil Texture Concretions, etc. d rhizospheres; clayey silt loam	de la companya de la	<b>在以海野</b> 炎	<b>建建整</b>	<b>西斯斯里斯</b>
10-18"	10YR 4/1	10YR 4/6				yey silt loam				
	Soil Indicators:	low chroma	matrix w	ith rec	doximorphic	e features				
	surface water:	N/A				THE RESERVE OF THE PERSON OF T			-	-
	ee water in pit:		-12							
Depth to	saturated soil:	>18"								
	Water mar Drift lines Sediment	in upper 12 in. ks	ds			Secondary Indicators:  X Oxidized rhizospheres in upper Water-stained leaves Local soil survey data FAC neutral test Other	12 in.			
Comn	nents:						100			
WETLAND	DETERMINA	TION			S. A. Say	A CONTRACTOR OF THE PARTY OF TH	AL IVINE		No.	124
THE RESERVE THE PERSON NAMED IN	ic Vegetation?	Yes	N. T.		WITTEN					
	Hydric Soils?	Yes			Is th	is sample plot within a wetland?	No .			
Wetla	nd Hydrology?					no campio piet maini a ricadia.				

Client/C vest o normal	rea a potential p	Homes ill/I. Chane exist on the sical situation?		Yes No No		State:	: Washington : T1N R1W S17 : Pasture : 6a				
AND FRANCES	5高级 扩发的 经	No. of the last of	%	独立	Indicator	ARKS (EVEL DATE)		%		Indicator	
Species	Andrew service and an incident an incident and an incident and an incident and an incident and	Stratum	Cover		status FAC	Species	Stratum	Cover	Dom.	status	
oa prate Jopecuru	nsis is pratensis	H	80 20	x	FACW						
SOILS Depth	Matrix Color	Mottle Color	Mottle /			Soil Texture, Concretions, etc.	<b>沙斯沙</b> 斯泰				
5-10"	10YR 3/2	10YR 3/4				zed rhizospheres; clayey silt loa	m				
10-18"	10YR 5/1	10YR 4/4	many, l	arge,	distinct; cla	yey silt loam					
	Soil Indicators: ments:	low/very lov	v chroma	matrix	k with redo	ximorphic features					
HYDROL											
Depth to f	f surface water ree water in pit o saturated soil	>18"									
	Primary Indic	cators: I I in upper 12 in. arks	nds .			Secondary Indicators:  X Oxidized rhizospheres in upper Water-stained leaves Local soil survey data FAC neutral test Other	r 12 in.				
Com	ments:					hard the all					
Hydrophy	ptic Vegetation? Hydric Soils? and Hydrology?	Yes Yes			ls th	nis sample plot within a wetland	? Yes				
Com	ments:										

Don's	-1/C:1 NIM C	sin maille Dood				Doto	5/5/00				
	ct/Site: NW Spr Owner: Ryland			-	-	State:	5/5/00				
	tigator: P. O'Ne			-			Washing	iton	-		
	al circumstances		cito?	Yes		Township, Range, Section:					
o noma		oical situation?		No	-	Plant Community:		V 317			
le the e				No	-	Sample Plot			-		
is the a	rea a potential	problem area		140		Sample Flot.	. 00	-			
EGETA	TION	Critical Cast	Me to the	4111				107	CONTROL OF COM		
pecies		Stratum	% Cover	Dom.	Indicator status	Species	Stratum	% Cover	Dom.	Indicator status	
oa prate	ensis	Н	80	Х	FAC						
lopecun	us pratensis	Н	20	X	FACW			10			
					4 9 6			A. Carrie			
	Harry Control										
			1 200						400		
	/				100						
Depth	CALLES CONTRACTOR MANAGEMENT OF THE PARTY OF		THE RESIDENCE AND PARTY OF THE		Control of the Contro	Soil Texture, Concretions, etc.	2000年新建	群器器度		開始終於	
-6"	10YR 3/2	none	clayey								
6-11"	10YR 3/2	10YR 4/3				zed rhizospheres; clayey silt loa	m	-			
1-18"	10YR 4/2	10YR 4/6	many,	mediu	m, distinct;	clayey silt loam			-		
		-	-								
	Soil Indicators	: low chroma	matrix v	vith red	doximorphi	c features					
HYDROL											
	of surface water										
	free water in pit		_								
Depth t	to saturated soil	l: <u>&gt;18"</u>	_								
	Primary India	cators:				Secondary Indicators:					
	Inundate					X Oxidized rhizospheres in upper	er 12 in.				
		d in upper 12 in.				Water-stained leaves					
Marie Control	Water ma					Local soil survey data					
	Drift lines	s It deposits				FAC neutral test Other					
		patterns in wetla	nds			oulei					
Con	nments:	11.11		11							
MITTER AN	ID DETERMIN	ATION		W			Library			1000	
	ND DETERMINA		A AFFE								
riyaroph	nytic Vegetation		_	3	1- 4	his sample plot within a water of	2 No				
10/04	Hydric Soils				IS t	his sample plot within a wetland	i INO		-		
l	tland Hydrology	r INO	_								
Con	nments:									1	
	The state of the s	THE PARTY NAMED IN					3 100		H H	Carl Contract	

Client/es on norma Is the a EGETA Species oa prate	area a potential	Homes  eill/I. Chane s exist on the pical situation?	?	Yes No No Dom.	Indicator status FAC FACW	State:	Washing T1N R1 Pasture	gton W S17	Dom	Indicator
SOILS	nments:				THINK D	ACW, or FAC (excluding FAC-):				
-12" T2-18"	10YR 3/2 10YR 4/2	10YR 4/4 10YR 4/4	many, r	nediu	m, distinct;	Soil Texture Concretions, etc. oxidized rhizospheres; clayey si ayey silt loam				
HYDROL Depth to Depth to Depth t	of surface water free water in pit to saturated soil  Primary India Inundate Saturated Water many Drift lines Sedimen Drainage	: N/A : >18" : 14" cators: d d in upper 12 in.		ith rec	doximorphic	Secondary Indicators:  X Oxidized rhizospheres in upper Water-stained leaves Local soil survey data FAC neutral test Other	r 12 in.			
WETLAN Hydroph Wet	nments:  ND DETERMINARY  Sylic Vegetation' Hydric Soils'  land Hydrology'  nments:	? Yes ? Yes			ls th	nis sample plot within a wetland?	No No			

	ect/Site: NW Spri			_			5/8/00			
	Owner: Ryland I stigator: P. O'Nei					State				
And the second second	al circumstances		cito?	Yes		Township, Range, Section:	Washing			
OTIOITIA		ical situation?		No		Plant Community:		V 317		
Is the a	area a potential p			No		Sample Plot		-		
-			N. T. C.	110		Campio Fiot				
EGETA	TION	STATE OF			DELL'EST	AND THE PERSON WHEN	N. D. I	STATE OF		
Species		Stratum	% Cover	Dom.	Indicator status	Species	Stratum	% Cover	Dom.	Indicator status
oa prate		Н	100		FAC		1.111			
ubus di		S	100	X	FACU		The state of			
Fraxinus		I	50	X	FAC					
uercus	garryana	L T	50	X	UPL					
			1							
Con	Perce	nt of dominan	it species	that a	are OBL, FA	ACW, or FAC (excluding FAC-)	2/4 = 50	%		0.45
SOILS				1				2-3-2		
Pepth	Matrix Color	Mottle Color	Mottle A	Abund	ance, Size,	Soil Texture, Concretions, etc.	18.173克克	語為的語言	が発情	們逐步流
-12"	10YR 3/2	none	clayey s							LET P
12-18"	10YR 3/1	none	clayey s	silt loa	m					
									-	2 (3)
Hydrid	c Soil Indicators:							4		
HYDROL										
	of surface water:									
	free water in pit:		_							
Depth t	to saturated soil:	>18"	-							
	Water man Drift lines Sediment	in upper 12 in. rks	nds			Secondary Indicators:  Oxidized rhizospheres in uppe Water-stained leaves Local soil survey data FAC neutral test Other	r 12 in.			
Con	nments:									
WETLAN	ND DETERMINA	TION								
Hydroph	ytic Vegetation?									
	Hydric Soils?			,	Is th	is sample plot within a wetland?	No No	di li		
Wet	land Hydrology?	No				ALC: NO PARTY				
Con	nments: Sample	plot is at top	of bank;	there	is no 8a, o	r wetland plot as it would be in	the chann	el.		

	ect/Site: NW Sp					Date				
	Owner: Ryland stigator: P. O'Ne					State		aton .		
	al circumstance		ito?	Yes		Township, Range, Section	Washing			
OHOIIII		oical situation?		No		Plant Community		W 517		
Is the	area a potential			No		Sample Plot			-	
15 1110 0	area a potentiar	problem area:	-	110		Sample Flot	. <u>3a</u>	63	-	
EGETA	TION	KARAL PER	15 15 16	SA ANY	Main Male	(中心: FUEVER) (内EE) (中部) (中)	MANUAL PROPERTY.	Was a		
<b>明</b> 明 2 2 2	<b>新疆,西部</b>		%	温膜	Indicator	<b>以上,以下,</b>	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	%	The same	Indicator
pecies	<b>建</b> 配件。在 <b>国</b> 报报	Stratum	Cover	7-1-1-1-1	status	Species	Stratum	Cover	Dom.	status
oa prate		Н	70	X	FAC				12	711
	rus pratensis	Н	5		FACW					
luncus e		Н	20	X	FACW					
lolcus la	anatus	Н	20	X	FAC		-			
				-						
THE PERSON										
								William Co.		
OILS Depth						Soil Texture, Concretions, etc.			以法律的	
-8"	10YR 4/1	5YR 3/4	many,	mediur	n, distinct;	oxidized rhizospheres; clayey s	ilt loam			
-18"	10YR 3/1	7.5YR 4/4	many,	mediur	n, distinct;	clayey silt loam		715.0		
					· Call					
							Logi			
	nments:	: low/very low	chroma	matrix	with redox	rimorphic features				
		. NVA	_							
	of surface water									
	free water in pit to saturated soil		-							
Depuir	o saturated son		-3							
	Primary India	cators:				Secondary Indicators:				
	Inundated					X Oxidized rhizospheres in uppe	r 12 in.			
		in upper 12 in.				Water-stained leaves				
15.7	Water ma					Local soil survey data				
A COL	Sediment					FAC neutral test Other				
		patterns in wetlan	ds			Outlet				
Con	nments:									
NETLAN	ND DETERMINA	TION							1	Letter 1
	ytic Vegetation?	THE RESERVE TO THE RE						-	77	
Jaroph	Hydric Soils?				le th	is sample plot within a wetland?	Voc			F .
Wet	land Hydrology				15 (1)	is sample plot within a wetland	168			
1	.and Hydrology		-7.							
Con	nments:	1914	- 8	N/G	11614		11 2			
						A STATE OF THE STA				31.11

对特殊的企业的提供的证明,是 <b>是</b> 有效的。 [1] 特别,在1000年,1200年		
Township, Range, Section: T1N R1M Plant Community: Pasture Sample Plot: 9b  EGETATION  Species Stratum Cover Dom, Status Species Stratum Percent of dominant species that are OBL, FACW, or FAC (excluding FAC-): 2/2 = 100 Comments:  SOILS  Depthr Matrix Color Mottle Color Mottle Abundance, Size; Soil Texture, Concretions, etc.  8" 10YR 3/2 10YR 4/4 many, medium, distinct; oxidized rhizospheres; clayey silt loam clayey silt loam  Hydric Soil Indicators: Low chroma matrix with redoximorphic features  Comments:  HYDROLOGY  Depth of surface water: N/A epith to free water in pit: 518"  Primary Indicators: 10x		
Is it an atypical situation? Is the area a potential problem area?    Society   Stratum   Society   Species   Stratum   Society   Species   Stratum   Society   Stratum   Society   Species   Stratum   Species   Stratum   Species   Stratum   Species   Stratum   Species   Species   Stratum   Species   Stratum   Species   Stratum   Species   Species   Stratum   Species   Stratum   Species   Species   Stratum   Specie	V S17	
Is the area a potential problem area?  No Sample Plot: 9b  EGETATION  Species Stratum Cover Dom Status Species Stratum Oa pratensis H 80 X FAC Iopecurus pratensis H 20 X FACW  Percent of dominant species that are OBL, FACW, or FAC (excluding FAC-): 2/2 = 100  Comments:  SOILS Depth Matrix Color Mottle Color Mottle Abundance, Size) Soil Fexture, Concretions, etc. 8° 10YR 3/2 10YR 4/4 many, medium, distinct; oxidized rhizospheres; clayey silt loam  Hydric Soil Indicators: Comments:  Hydric Soil Indicators: Comments:  Hydric Soil Indicators: Comments:  But Chroma matrix with redoximorphic features Comments:  Secondary Indicators: Inundated Soil: >18"  Primary Indicators: Inundated  Secondary Indicators: Oxidized rhizospheres in upper 12 in.		
Percent of dominant species that are OBL, FACW, or FAC (excluding FAC-): 2/2 = 100  Comments:  Percent of dominant species that are OBL, FACW, or FAC (excluding FAC-): 2/2 = 100  Comments:  SOILS  Pepthr   Matrix Color   Mottle Color   Mottle Abundance, Size, Soil Fexture, Concretions, etc.  8"   10YR 3/2   10YR 4/4   many, medium, distinct; oxidized rhizospheres; clayey silt loam  10YR 3/2   none   clayey silt loam  Hydric Soil Indicators:  Comments:  HYDROLOGY  Depth of surface water:   N/A   pepth to saturated soil:   >18"   Depth to saturated soil:   >18"    Primary Indicators:   Secondary Indicators:   Oxidized rhizospheres in upper 12 in.		
Species Stratum Cover Dom status Species Stratum  Oa pratensis H 80 X FAC  Iopecurus pratensis H 20 X FACW  Percent of dominant species that are OBL, FACW, or FAC (excluding FAC-): 2/2 = 100  Comments:  SOILS  Depth Matrix Color Mottle Color Mottle Abundance: Size: Soil Texture, Concretions, etc.  -8" 10YR 3/2 10YR 4/4 many, medium, distinct; oxidized rhizospheres; clayey silt loam  Hydric Soil Indicators: low chroma matrix with redoximorphic features  Comments:  HYDROLOGY  Depth of surface water: N/A  lepth to free water in pit: >18"  Depth to saturated soil: >18"  Primary Indicators: Secondary Indicators: Oxidized rhizospheres in upper 12 in.		12 - 15 - 10 - 10 - 10 - 10 - 10 - 10 - 10
Percent of dominant species that are OBL, FACW, or FAC (excluding FAC-): 2/2 = 100  Comments:  Percent of dominant species that are OBL, FACW, or FAC (excluding FAC-): 2/2 = 100  Comments:  Pepth   Matrix Color   Mottle Color   Mottle Abundance, Size   Soil Texture, Concretions, etc.    8"   10YR 3/2   10YR 4/4   many, medium, distinct; oxidized rhizospheres; clayey silt loam  Hydric Soil Indicators:   low chroma matrix with redoximorphic features  Comments:  HYDROLOGY  Depth of surface water:   N/A   epth to free water in pit:   >18"   Depth to saturated soil:   >18"   Depth to saturated soil:   >18"   Primary Indicators:   Oxidized rhizospheres in upper 12 in.	200	
Percent of dominant species that are OBL, FACW, or FAC (excluding FAC-): 2/2 = 100 Comments:    Percent of dominant species that are OBL, FACW, or FAC (excluding FAC-): 2/2 = 100 Comments:   Matrix Color   Mottle Color   Mottle Abundance, Size; Soil Texture, Concretions, etc.   -8"   10YR 3/2   10YR 4/4   many, medium, distinct; oxidized rhizospheres; clayey silt loam   Hydric Soil Indicators:   Iow chroma matrix with redoximorphic features   Comments:   Iow chroma matrix with redoximorphic features   Comments:   Iow chroma matrix with redoximorphic features   Iow chroma matrix with redoximorphic fe	% Cover Do	Indicator om, status
Percent of dominant species that are OBL, FACW, or FAC (excluding FAC-): 2/2 = 100 Comments:    Soil S		
Comments:    Comments:		
Comments:    Comments:		
Comments:    Comments:		
Comments:    Comments		
Comments:    Comments		
Comments:    Comments	Q.L.	
Comments:    Comments		
Hydric Soil Indicators: low chroma matrix with redoximorphic features  Comments:    YDROLOGY		
Hydric Soil Indicators: low chroma matrix with redoximorphic features  Comments:  HYDROLOGY  Depth of surface water: N/A epth to free water in pit: >18"  Depth to saturated soil: >18"  Primary Indicators: Secondary Indicators: Oxidized rhizospheres in upper 12 in.		A PERMIT
Comments:  HYDROLOGY Depth of surface water: N/A epth to free water in pit: >18" Depth to saturated soil: >18"  Primary Indicators: Secondary Indicators: Oxidized rhizospheres in upper 12 in.		
Comments:  HYDROLOGY Depth of surface water: N/A epth to free water in pit: >18" Depth to saturated soil: >18"  Primary Indicators: Secondary Indicators: Oxidized rhizospheres in upper 12 in.		
Comments:  HYDROLOGY  Depth of surface water: N/A epth to free water in pit: >18"  Depth to saturated soil: >18"  Primary Indicators: Secondary Indicators: Oxidized rhizospheres in upper 12 in.		
Depth of surface water: N/A epth to free water in pit: >18"  Depth to saturated soil: >18"  Primary Indicators: Secondary Indicators: Oxidized rhizospheres in upper 12 in.		
epth to free water in pit: >18"  Depth to saturated soil: >18"  Primary Indicators: Secondary Indicators: Oxidized rhizospheres in upper 12 in.		
Depth to saturated soil: >18"  Primary Indicators: Inundated  Secondary Indicators: Oxidized rhizospheres in upper 12 in.		
Primary Indicators: Secondary Indicators: Oxidized rhizospheres in upper 12 in.		
InundatedOxidized rhizospheres in upper 12 in.		
Saturated in upper 12 in. Vvater-stained leaves		
Water marks Local soil survey data		
Drift lines FAC neutral test		
Sediment deposits Other		
Drainage patterns in wetlands		
Comments:		
WETLAND DETERMINATION		Mark att
Hydrophytic Vegetation? Yes	4	
Hydric Soils? Yes Is this sample plot within a wetland? No		
Wetland Hydrology? No		
Comments:		92 K

	ct/Site: NW Sp Owner: Ryland					Date:	5/8/00 OR			
	tigator: P. O'Ne						Washing	aton		
	al circumstance		site?	Yes		Township, Range, Section:				
		pical situation?		No		Plant Community:				
Is the a	rea a potential	problem area?		No		Sample Plot:	10b			
EGETA	TION		(三)				<b>THE S</b>	STEE S		
Species		Stratum	% Cover	Dom.	Indicator status	Species	Stratum	% Cover		Indicator status
oa prate		Н	60	X	FAC	CONTRACTOR OF THE PARTY OF THE				
	us pratensis	Н	20	X	FACW				+	
Juncus e	ffusus	Н	10		FACW					
Holcus la	inatus	Н	20	X	FAC					
Rubus di		S	70	X	FACU		7U4 7		-	
	is monogyna	S	20	X	FACU+				7 (-1)	
Corylus o	marginata	T	60	X	FACU					
1411400						ACW, or FAC (excluding FAC-):	0.7 :-	٥,		
SOILS Depth	Matrix Color	Mottle Color	Mottle /	Abune	lance, Size	Soil Texture, Concretions, etc.		<b>西南西</b> 北约第		
-10"	10YR 3/2	none	clayey:							
10-18"	10YR 4/2	none	clayey	silt loa	ım					
	Soil Indicators	:							THE STATE OF	
HYDROL	OGY						100	AL IN		
	of surface water	: N/A	720 7			THE RESERVE OF STREET			7	
epth to	free water in pit	: >18"	7.5							
Depth t	o saturated soil	: >18"								
	Primary India	catore:				Secondary Indicators:				
	Inundate				4 4	Oxidized rhizospheres in upper	r 12 in.			
	Saturated	d in upper 12 in.				Water-stained leaves				
	Water ma					Local soil survey data				
relie d	Drift lines					FAC neutral test				
		t deposits patterns in wetlan	de			Other				
Corr		patterns in wedan	us							
Con	nments:									
	ND DETERMINA									
Hydroph	ytic Vegetation				2000	S 12 20 20 17 18 20 17	Sec. Sec.			145
184-4	Hydric Soils'		-		Is th	nis sample plot within a wetland?	No			
vvet	land Hydrology	NO	- v		T. BAH					
Com	nments:	Marie Land					4			

Client/O yesti	t/Site: NW Spi wner: Ryland gator: P. O'Ne circumstances Is it an atype ea a potential	Homes ill/I. Chane s exist on the s pical situation?		Yes No No		State:	Washing T1N R1V Pasture	gton		
EGETAT	ION		%	的 图数例	Indicator			%		ndicator
Species		Stratum	Cover		status	Species	Stratum	Cover	Dom. s	tatus
oa pratei		H	80	X	FAC FACW					
Trifolium r	s pratensis	H	10	^	FAC			-		
	epens		10		FAC					
Comm	Perce	ent of dominant	species	that a	are OBL, F	ACW, or FAC (excluding FAC-)	2/2 = 10	0%	VII.	
Depth	Matrix Color 10YR 3/2 10YR 5/2	Mottle Color none 10YR 4/6	clayey	silt loa	m	Soil Texture, Concretions, etc.				
Coming HYDROL Depth of	Soil Indicators ments:  OGY f surface water ree water in pit	:_N/A	matrix w	ith rec	doximorphic	efeatures				
	Water ma Drift lines Sedimen Drainage	cators: d d in upper 12 in. arks	ds			Secondary Indicators:  Oxidized rhizospheres in uppe Water-stained leaves Local soil survey data FAC neutral test Other	r 12 in.			
Com	ments:									
	D DETERMINA									
Hydrophy	tic Vegetation									
Wetla	Hydric Soils' and Hydrology'				Is th	is sample plot within a wetland?	Yes		34.	
Com	ments:									

Township, Range, Section:   T1N R1W S18   Pasture   Township, Range, Section:   T1N R1W S18   Pasture   T1b   Pasture   T1b	Client/	ct/Site: NW Spri Owner: Ryland F stigator: P. O'Nei	Homes				State:				
Secies Size Strain Cover Dom Status Species Stratum Cover Dom Status Da pratensis H 80 X FAC Trifolium repens H 20 X FAC H 1	D norma	al circumstances Is it an atypi	exist on the si ical situation?	te?	No		Township, Range, Section: Plant Community:	T1N R1\ Pasture			
pa pratensis	1,000	TION				PRINTED PRODUCED AND ASSESSMENT OF THE PROPERTY OF THE PROPERT		N. S. W.	THE UNITED SECURITIONS OF		SECURITY OF PERSONS AND PROPERTY.
### Trifolium repens   ### B	Mary Mary Property Committee (1975)	ensis	The second of the second of the second of	AND STATE OF THE PARTY OF	Children describe	ENGINEERING AND ADDRESS OF THE PARTY OF THE	Species	Stratum	Cover	Dom.	status
Percent of dominant species that are OBL, FACW, or FAC (excluding FAC-): 2/2 = 100%  Comments:  SOILS  Peptit: Matrix Colors Mottle Colors Mottle Abundance, Size, Soil Texture, Concretions, etc. 18											
SOILS  Pepth Matrix Color Mottle Color Mottle Abundance, Size, Soil Texture, Concretions, etc.  18 10YR 4/3 10YR 4/6 many, medium, distinct; clayey silt loam  Hydric Soil Indicators:  Comments:  HYDROLOGY  Depth of surface water: N/A epth to free water in pit: >18"  Depth to saturated soil: >18"  Primary Indicators: Secondary Indicators: Oxidized hizospheres in upper 12 in.  Saturated in upper 12 in. Water-stained leaves  Water marks Local soil survey data  Drainage patterns in wetlands  Comments:  WEILAND DETERMINATION  lydrophytic Vegetation? Yes Hydric Soils? No Is this sample plot within a wetland? No  Wetland Hydrology? No								SOL.			
SOILS  Pepth Matrix Color Mottle Color Mottle Abundance, Size, Soil Texture, Concretions, etc.  18 10YR 4/3 10YR 4/6 many, medium, distinct; clayey silt loam  Hydric Soil Indicators:  Comments:  HYDROLOGY  Depth of surface water: N/A epth to free water in pit: >18"  Depth to saturated soil: >18"  Primary Indicators: Secondary Indicators: Oxidized histospheres in upper 12 in.  Saturated in upper 12 in. Water-stained leaves  Water marks Local soil survey data  Drainage patterns in wetlands  Comments:  WETLAND DETERMINATION  Iydrophytic Vegetation? Yes Hydric Soils? No Is this sample plot within a wetland? No  Wetland Hydrology? No											
SOILS  Pepth Matrix Color Mottle Color Mottle Abundance Size Soil Texture Concretions etc.  18 10YR 4/3 10YR 4/6 many, medium, distinct; clayey silt loam  Hydric Soil Indicators:  Comments:  HYDROLOGY  Depth of surface water: N/A epth to free water in pit: >18"  Depth to saturated soil: >18"  Primary Indicators: Secondary Indicators: Oxidized mixospheres in upper 12 in.  Saturated in upper 12 in. Water-stained leaves  Water marks Local soil survey data  Drift lines FAC neutral test  Drainage patterns in wetlands  Comments:  WETLAND DETERMINATION lydrophytic Vegetation? Yes Hydric Soils? No Is this sample plot within a wetland? No  Wetland Hydrology? No											
SOILS  Pepth Matrix Color Mottle Color Mottle Abundance, Size, Soil Texture, Concretions, etc.  18 10YR 4/3 10YR 4/6 many, medium, distinct; clayey silt loam  Hydric Soil Indicators:  Comments:  HYDROLOGY  Depth of surface water: N/A epth to free water in pit: >18"  Depth to saturated soil: >18"  Primary Indicators: Secondary Indicators: Oxidized histospheres in upper 12 in.  Saturated in upper 12 in. Water-stained leaves  Water marks Local soil survey data  Drainage patterns in wetlands  Comments:  WETLAND DETERMINATION  Iydrophytic Vegetation? Yes Hydric Soils? No Is this sample plot within a wetland? No  Wetland Hydrology? No									-		
Comments:   Secondary Indicators:   Secondary Indicators:   Indicators:   Oxidized rhizospheres in upper 12 in.   Saturated leaves   Local soil survey data   Drift lines   Drainage patterns in wetlands   Other	Depth	Matrix Color 10YR 4/3									
Depth of surface water: N/A epth to free water in pit: >18"  Depth to saturated soil: >18"  Primary Indicators: Oxidized rhizospheres in upper 12 in.  Saturated in upper 12 in.  Water-stained leaves  Local soil survey data  Drift lines FAC neutral test  Drainage patterns in wetlands  Comments:  WETLAND DETERMINATION Hydrophytic Vegetation? Yes Hydric Soils? No Is this sample plot within a wetland? No  Wetland Hydrology? No	Com	nments:									
Primary Indicators:  Inundated Saturated in upper 12 in. Water marks Drift lines Sediment deposits Drainage patterns in wetlands  Comments:  WETLAND DETERMINATION Hydrophytic Vegetation? Hydrophytic Vegetation? Hydrology?  No  Secondary Indicators: Oxidized rhizospheres in upper 12 in. Water-stained leaves Local soil survey data FAC neutral test Other  Other  Is this sample plot within a wetland? No											
Primary Indicators:	2333										
WETLAND DETERMINATION  lydrophytic Vegetation? Yes  Hydric Soils? No  Wetland Hydrology? No  Is this sample plot within a wetland? No		Primary Indica Inundated Saturated Water mar Drift lines Sediment of	ators: in upper 12 in. ks deposits	s			Oxidized rhizospheres in upper Water-stained leaves Local soil survey data FAC neutral test	12 in.			
Hydrophytic Vegetation? Yes Hydric Soils? No Wetland Hydrology? No  Is this sample plot within a wetland? No	Com	nments:									
Hydric Soils? No Is this sample plot within a wetland? No Wetland Hydrology? No	WETLAN	D DETERMINA	TION					O NAME OF			
Wetland Hydrology? No	lydroph					Wite Mean	N IN CHECK WAVEN IN			7	
Comments:	Wetl					Is th	is sample plot within a wetland?	No			
	Com	nments:		5							

ves	Owner: Ryland Fatigator: P. O'Neil					State:	OR Washing	iton		
	al circumstances Is it an atypi area a potential p	cal situation?		Yes No No		Township, Range, Section: Plant Community: Sample Plot:	T1N R1\ Pasture			
EGETA	TION		as die		THE FALL		- SEE			
Species		Stratum	% Cover	Dom	Indicator status	Species	Stratum	% Cover		Indicator
oa prate	INCOME. PRED-ANNUA REAL MODERNING MAD ANNUA DE CAMPAGNA	Н	80	COCOLIC DIPOSIO	FAC	SPOOLS THE PROPERTY OF THE PRO	Cudionis	13年2月日本日本	Done	
	rus pratensis	Н	20	Х	FACW					
Trifolium	repens	Н	10		FAC					
OILS Depth	Matrix Color 10YR 4/2	Mottle Color 10YR 4/6				Soil Texture, Concretions, etc., dized rhizospheres; clayey silt lo			ue) o 17 e	
•								92.01		
	Soil Indicators:	low chroma	matrix wi	th red	oximorphic	features				
HYDROL	OGV	Chanta.	(RVP2)	201						
	of surface water:	N/A							-	
	free water in pit:									
Depth t	o saturated soil:	>18"	1 4							
	Primary Indica	itors:				Secondary Indicators:				
	Inundated					X Oxidized rhizospheres in upper	12 in.			
	Saturated i	n upper 12 in.				Water-stained leaves				
	Drift lines	KS				Local soil survey data  FAC neutral test				
	Sediment of					Other				
	Drainage p	atterns in wetlan	ds							
Con	nments:									
WETLAN	ND DETERMINAT	TION								6,00
	ytic Vegetation?	Yes	777				75 17			
0.5	Hydric Soils?	Yes			Is th	is sample plot within a wetland?	No			
Wet	land Hydrology?	No	11 12 1					4 11		
	77.50		_							

Proje	ct/Site: NW Spr	ingville Road				Date:	5/8/00			
	Owner: Ryland I					State:				3777
es	tigator: P. O'Nei	ill/I. Chane			21	County:	Washing	ton	100	
p norma	al circumstances	exist on the s	site?	Yes		Township, Range, Section:				
lad.	Is it an atyp	ical situation?		No	•M	Plant Community:				
Is the a	rea a potential p	oroblem area?		No		Sample Plot:				
EGETA	TION									
F 6 3 5 2	电视频 地名美国		%	<b>建</b>	Indicator			%		Indicator
ecies pa prate		Stratum H	Cover 80	A SPECIAL PROPERTY.	FAC	Species	Stratum	Cover	Dom.	status
	us pratensis	Н	10	1	FACW					-27
	arundinacea	Н	20	X	FACW					
-					100					
210	Perce	nt of dominan	t species	s that a	re OBL. F	ACW, or FAC (excluding FAC-):	2/2 = 10	0%		
Com	nments:	in or dominar	Соробю	J triat c	aro obe, r	now, or the (excluding the-).	2/2 - 10	0 70		
OILS										
eptha	Matrix Color	Mottle Color	Mottle	Abund	ance Size	Soil Texture, Concretions, etc.	B. 1. 6. 17 11 11 11 11 11 11 11 11 11 11 11 11	\$10.000 STANS	() 经验的	<b>和</b> 用于4000000000000000000000000000000000000
18"	10YR 3/1	10YR 4/6				clayey silt loam	的知识学问其所有的	<b>在19</b> 名目的用题的		No. of the Association
10	1011(3/1	101114/0	illally,	neului	n, district,	clayey siit loaili				
					-					-
					4	THE RESERVE OF THE PARTY OF THE				
	Soil Indicators:	very low chr	oma ma	trix wit	h redoximo	orphic features				
VDDOL	OCV			The Park	in tell				11	
YDROL	of surface water:	NI/A	_	77					-	
	free water in pit:		-11							
	o saturated soil:									
- op			-0							
	Primary Indic					Secondary Indicators:				
	Inundated					Oxidized rhizospheres in upper	12 in.			
	X Saturated Water ma					Water-stained leaves				
	Drift lines	INS				Local soil survey data  FAC neutral test				
	Sediment	deposits				Other				
		patterns in wetlan	ids							
Com	nments:									
ETLAN	ND DETERMINA	TION			A CONTRACTOR			diam'r.	TO LE	
	ytic Vegetation?									77 5 12 1
	Hydric Soils?		-10		Is th	nis sample plot within a wetland?	Yes	) à		
Wet	land Hydrology?								7	
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1			16							
Com	nments:								-	
-									100	

Client/	ct/Site: NW Sp Owner: Ryland tigator: P. O'Ne al circumstance	Homes eill/I. Chane	ite?	Yes		State	Washing	gton		
		pical situation?		No No	-0 -0 -0	Plant Community Sample Plot	Pasture			
EGETA	Section Value		%	100	Indicator			%		Indicator
Species		Stratum	Cover	Dom.	Charles and the Control of the Contr	Species	Stratum	Cover	Dom.	status
oa prate lopecur	ensis us pratensis	H	80 20	X	FAC FACW					
SOILS Depth -12" 12-18"	Matrix Color 10YR 3/2 10YR 3/2	Mottle Colors 10YR 3/4 10YR 4/4	few, sm	all, fa	int; clayey s	Soil Texture Concretions, etc. silt loam clayey silt loam			<b>45</b> %	
	: Soil Indicators	: low chroma	matrix wi	ith red	loximorphic	features				
epth to	OGY of surface water free water in pit o saturated soil	: >18"								
	Water management with the water water with the water management with the water water water water water with the water wate	d d in upper 12 in. arks	ds			Secondary Indicators:  Oxidized rhizospheres in uppe Water-stained leaves Local soil survey data FAC neutral test Other	r 12 in.			
Com	nments:					A Property of the Control of the Con				
THE RESERVE OF THE PERSON NAMED IN	ID DETERMINA	Productional Contra					Audulus (			
	Hydric Soils' and Hydrology'	? Yes			Is thi	s sample plot within a wetland?	No No			
Com	ments:							1 12	11	1760

Client	area a potential	Homes eill/I. Chane s exist on the s pical situation?		Yes No No	Indicator	State:	Washing T1N R1V Pasture	gton		Undicator
Species		Stratum	Cover	A STATE OF THE REAL PROPERTY.	status	Species	Stratum	Cover	Dom.	status
oa prat	tensis	Н	100	X	FAC					
							11700			
Depth	Matrix Color 10YR 4/2 10YR 4/1	Mottle Color 10YR 3/4 10YR 4/4	many, s	small,	distinct; cla	Soil Texture, Concretions, etc. lyey silt loam clayey silt loam				
HYDRO Depth epth to	comments:  LOGY of surface water of free water in pir to saturated soi  Primary Indi X Inundate	r: 0.5" t: surface l: surface cators:	chroma	matrix	x with redo	Secondary Indicators:  Oxidized rhizospheres in uppe Water-stained leaves	r 12 in.			
WETLA	Water m Drift lines	arks s s tt deposits e patterns in wetlan	ds			Local soil survey data FAC neutral test Other				
We	Hydric Soils stland Hydrology	? Yes			Is th	is sample plot within a wetland?	? Yes			

o norma	rea a potential	eill/I. Chane s exist on the s pical situation?		Yes No No		Date: State: County: Township, Range, Section: Plant Community: Sample Plot:	OR Washing T1N R1V Pasture	gton		
EGETA pecies	TION	Stratum	% Cover	Dom	Indicator status	Species	Stratum	% Cover	Dom	Indicator
oa prate	ensis	H	80	X	FAC	openes and a second	oualding		Doma	
Com	Percenters:	ent of dominan	species	that a	are OBL, F/	ACW, or FAC (excluding FAC-)	1/1 = 10	0%		
Depth	Matrix Color	Mottle Color	Mottle /		CONTRACTOR OF THE PARTY OF THE	Soil Texture, Concretions, etc.	自然基础证	研測的	自的无限	<b>MANAGE</b>
2-18"	10YR 4/2	none	clayey			7				
	Soil Indicators	3: <u>1                                   </u>			7 (40					
Com  IYDROL  Depth of the first control of the firs	OGY of surface water free water in pit o saturated soi	r: N/A t: >18" l: >18"	7/2							
Com  IYDROL  Depth of the first control of the firs	OGY of surface water free water in pir o saturated soi  Primary Indi Inundate Saturate Water m Drift lines Sedimen	r: N/A t: >18" l: >18" cators: ed d in upper 12 in. earks				Secondary Indicators:  Oxidized rhizospheres in uppe Water-stained leaves Local soil survey data FAC neutral test Other	r 12 in.			
Com  PyDROL  Depth to bepth to bepth to	OGY of surface water free water in pir o saturated soi  Primary Indi Inundate Saturate Water m Drift lines Sedimen	r: N/A t: >18" l: >18" cators: ed d in upper 12 in. earks s at deposits				Secondary Indicators:  Oxidized rhizospheres in uppe Water-stained leaves Local soil survey data FAC neutral test	r 12 in.			

Client Yes To Horm	area a potential	Homes ill/I. Chane s exist on the s pical situation?		Yes No No		State:	Washing T1N R1\ Pasture	gton		
EGETA	ATION		%	1000元	Indicator			%	7 46	Indicator
Species	THE RESERVE THE PERSON NAMED IN COLUMN TWO IS NOT THE PERSON NAMED IN COLUMN TWO IS NAMED I	Stratum	Cover	Chicago Sept.	status	Species	Stratum	Cover	Dom.	status
oa prat Jopecui	rus pratensis	H	20	X	FAC FACW					
	Perce	ent of dominant	species	that a	are OBL, F	ACW, or FAC (excluding FAC-):	2/2 = 10	0%		
SOILS	THE I VENTER TO THE		1 T PRI PRI	a recovered						
Depth.	10YR 4/2	10YR 3/4				Soil Texture: Concretions, etc.		<b>新新生命</b> 從		
8-18"	10YR 4/1	10YR 4/4				clayey silt loam				
10									757	
	c Soil Indicators: nments:	low/very low	chroma	matrix	with redox	ximorphic features				
HYDRO										
	of surface water:					AND THE PERSON NAMED IN				
	free water in pit: to saturated soil:									
	Primary Indic	ators:				Secondary Indicators:  Oxidized rhizospheres in upper Water-stained leaves	12 in.			
	Drift lines X Sediment		ds			Local soil survey data FAC neutral test Other				
Con	nments:									190
WETLAN	ND DETERMINA	TION	-			All the state of t	6 5			Called Sale
	ytic Vegetation?			27	R Ring		W-20		-	
Wet	Hydric Soils? land Hydrology?		67		Is th	is sample plot within a wetland?	Yes			
	nments:					the state of the s		4.		

Project/Site: NW Springville Road Client/Owner: Ryland Homes vestigator: P. O'Neill/I. Chane poormal circumstances exist on the site? Is it an atypical situation? Is the area a potential problem area?  EGETATION Species Stratum Cover Poa pratensis H 80 Iopecurus pratensis H 20				Yes No No Dom.	Indicator status FAC FACW	State	Washing T1N R1 Pasture	gton	Döm.	Indicator
SOILS Depth	nments:	Mottle Color	Mottle /	Abund	ance, Size	FACW, or FAC (excluding FAC-)				
-10" -0-18"	10YR 3/2 10YR 4/2	none	clayey s	silt loa	m		, pa			,
70-10	101K 4/2	none	clayey s	siit ioa	m				-	
HYDROL Depth of epth to Depth t	of surface water free water in pit o saturated soil  Primary India Inundate Saturated Water ma Drift lines Sediment	: N/A : >18" : >18" : >18" d d in upper 12 in.	ds			Secondary Indicators:  Oxidized rhizospheres in upper Water-stained leaves Local soil survey data FAC neutral test Other	r 12 in.			
WETLAN	D DETERMINA	ATION						100		
Wetl	ytic Vegetation? Hydric Soils? land Hydrology? nments:	? No			Is th	nis sample plot within a wetland?	No			
		V- 1								

	Client/Owner: Ryland Homes					State: OR							
Investigator: P. O'Neill/I. Chane o normal circumstances exist on the site? Yes					County: Washington								
						Township, Range, Section	n: T1N R1	W S18					
		pical situation?		No	. 19	Plant Communi							
Is the a	area a potential	problem area?		No		Sample Pl	ot: 15a						
VEGETA	TION		104										
Species		Stratum	% Cover	Dom.	Indicator status	Species	Stratum	% Cover	Dom. st	dicat atus			
Poa prate	ensis	Н	80	X	FAC			A STATE STATE STATE OF THE STAT		NETW HOLTON			
Alopecur	us pratensis	Н	20	X	FACW								
Phalaris	arundinacea	Н	15		FACW								
	No. 1316												
OILS	Matrix Color	Mottle Color	Mottle A	Voune	ance Size	Soil Texture, Concretions, et	CS NOW BEAUTIFUL TO	NEW STATE	C1-10-28050				
)-4"	10YR 3/2	7.5YR 4/4				clayey silt loam	THE PERSON NAMED OF	A PROPERTY OF THE PARTY OF THE		STATE STATE			
1-18"	10YR 3/1	7.5YR 4/6				clayey silt loam				-			
			,,,,,		in, dictilion,	oldy of the loan,			-	_			
				-	YES THE			-	-				
Hydric	Soil Indicators	: low/very low	chroma	matrix	x with redo	ximorphic features							
	: Soil Indicators	: _low/very low	chroma	matrix	x with redo	ximorphic features							
Com	nments:	: _low/very low	chroma	matrix	x with redo	ximorphic features							
Com  IYDROL  Depth of	OGY of surface water	: N/A	chroma	matrix	x with redo	ximorphic features							
Com  HYDROL  Depth of	OGY of surface water free water in pit	:: N/A :: 11"	chroma	matrix	x with redo	ximorphic features							
HYDROL Depth of	OGY of surface water	:: N/A :: 11"	chroma	matri	x with redo	ximorphic features							
HYDROL Depth of	OGY of surface water free water in pit o saturated soil	: N/A : 11" : 6"	chroma	matri	x with redo								
HYDROL Depth of	OGY of surface water free water in pit o saturated soil Primary Indi	:: N/A :: 11" :: 6"	r chroma	matri	x with redo	Secondary Indicators:	per 12 in						
HYDROL Depth of	OGY of surface water free water in pit o saturated soil  Primary Indi-	:: N/A :: 11" :: 6" cators:	r chroma	matri	x with redo		per 12 in.						
HYDROL Depth of	OGY of surface water free water in pit o saturated soil  Primary Indi-	:: N/A :: 11" :: 6" cators: d	v chroma	matrix	x with redo	Secondary Indicators:Oxidized rhizospheres in up	per 12 in.						
Com  HYDROL  Depth of	OGY of surface water in pit o saturated soil  Primary India Inundate X Saturated Water m Drift lines	r: N/A t: 11" t: 6" cators: d d in upper 12 in. arks	v chroma	matri	x with redo	Secondary Indicators: Oxidized rhizospheres in up Water-stained leaves Local soil survey data FAC neutral test	per 12 in.						
HYDROL Depth of	OGY of surface water in pit o saturated soil  Primary India Inundate X Saturate Water m Drift lines X Sedimen	r: N/A t: 11" t: 6" cators: d d in upper 12 in. arks s t deposits		matri	x with redo	Secondary Indicators: Oxidized rhizospheres in up Water-stained leaves Local soil survey data	per 12 in.						
HYDROL Depth of	OGY of surface water in pit o saturated soil  Primary India Inundate X Saturate Water m Drift lines X Sedimen	r: N/A t: 11" t: 6" cators: d d in upper 12 in. arks		matri	x with redo	Secondary Indicators: Oxidized rhizospheres in up Water-stained leaves Local soil survey data FAC neutral test	per 12 in.						
Open to Depth to	OGY of surface water in pit o saturated soil  Primary India Inundate X Saturate Water m Drift lines X Sedimen	r: N/A t: 11" t: 6" cators: d d in upper 12 in. arks s t deposits		matri	x with redo	Secondary Indicators: Oxidized rhizospheres in up Water-stained leaves Local soil survey data FAC neutral test	per 12 in.						
Com  PyDROL  Depth to  Depth to  Depth to	OGY of surface water free water in pit o saturated soil  Primary India Inundate  X Saturate Water m Drift lines X Sedimen X Drainage	cators: d d in upper 12 in. arks s t deposits patterns in wetlan		matrix	x with redo	Secondary Indicators: Oxidized rhizospheres in up Water-stained leaves Local soil survey data FAC neutral test	per 12 in.						
Com  HYDROL  Depth to  Depth to  Depth to	OGY of surface water in pit o saturated soil  Primary India Inundate  X Saturated Water m Drift lines X Sedimen X Drainage	cators: d d in upper 12 in. arks t deposits patterns in wetlan		matrix	x with redo	Secondary Indicators: Oxidized rhizospheres in up Water-stained leaves Local soil survey data FAC neutral test	per 12 in.						
Com Depth to	OGY of surface water in pit o saturated soil  Primary India Inundate  X Saturated Water m Drift lines X Sedimen X Drainage  Drainage  Drift Vegetation' Hydric Soils'	Cators: d in upper 12 in. arks t deposits patterns in wetlan  ATION Yes Yes		matrix		Secondary Indicators: Oxidized rhizospheres in up Water-stained leaves Local soil survey data FAC neutral test							
Com Depth to	OGY of surface water in pit o saturated soil  Primary India Inundate  X Saturated Water m Drift lines X Sedimen X Drainage	Cators: d in upper 12 in. arks t deposits patterns in wetlan  ATION Yes Yes		matrix		Secondary Indicators: Oxidized rhizospheres in up Water-stained leaves Local soil survey data FAC neutral test Other							

	t/Site: NW Sni	ringville Road				Date	- 5/8/00	ř		
Project/Site: NW Springville Road Client/Owner: Ryland Homes					Date:					
Investigator: P. O'Neill/I. Chane o normal circumstances exist on the site? Yes										
						Township, Range, Section	: Washing			
Is it an atypical situation?					Plant Community			-		
Is the area a potential problem area? No				Sample Plot						
VEGETAT	TION	经域的过程的影响	1%	<b>10% 年前</b> 班	Indicator		5 4 - 15 Arts 1445	1%	100	Indicator
Species		Stratum	Cover	Dom.	status	Species	Stratum	Cover		
Poa pratei		H	80	X	FAC					
Alopecuru	s pratensis	Н	20	X	FACW					
Phalaris a	rundinacea	Н	5		FACW					
		-	-	-						-
-										
Depth D-6"	Matrix Color 10YR 3/2	Mottle Color	Mottle /			Soil Texture Concretions, etc.	STATE OF	(A) CALLED		<b>新田野市</b>
6-14"	10YR 3/2	10YR 3/4			faint; claye					
14-18"	10YR 4/2	10YR 4/6	many, i	mediu	m, distinct;	clayey silt loam			-	
	-		-						-	
	Soil Indicators	: low chroma	matrix w	ith rec	dovimorphic	features				
Com					JOXIMOTORIC	Total				
HYDROL	OGY	• N/A			Joximorphic	Total of the second of the sec				
HYDROL Depth of	OGY f surface water				oximoi priic					
HYDROL Depth of Depth to fr	OGY	: >18"			oxinioi pine					4
HYDROL Depth of Depth to fr	OGY f surface water ree water in pit o saturated soil	: >18" : >18"			oximoi pine					4
HYDROL Depth of Depth to fr	oGY f surface water ree water in pit o saturated soil Primary India	: >18" : >18" cators:			oximor princ	Secondary Indicators:	w 42 in			
HYDROL Depth of Depth to fr	ogy f surface water ree water in pit saturated soil Primary Indic	: >18" : >18" cators:			oximor princ	Secondary Indicators: Oxidized rhizospheres in upper	er 12 in.			
HYDROL Depth of Depth to fr	ogy f surface water ree water in pit o saturated soil Primary India Inundated Saturated	: >18" : >18" cators: d			oximor princ	Secondary Indicators: Oxidized rhizospheres in upper Water-stained leaves	er 12 in.			
HYDROL Depth of Depth to fr	ogy f surface water ree water in pit saturated soil Primary Indic	: >18" : >18" cators: d d in upper 12 in.			a common principal de la common principal de	Secondary Indicators: Oxidized rhizospheres in upper Water-stained leaves Local soil survey data	er 12 in.			
HYDROL Depth of Depth to fr	ogy f surface water ree water in pit o saturated soil  Primary India Inundated Saturated Water ma	: >18" : >18" cators: d d in upper 12 in.			a common principal de la common principal de	Secondary Indicators: Oxidized rhizospheres in upper Water-stained leaves	er 12 in.			
HYDROL Depth of Depth to fr	ogy f surface water ree water in pit o saturated soil  Primary India Inundated Saturated Water ma Drift lines Sediment	: >18" : >18" cators: d in upper 12 in. arks	nds		a common principal de la common principal de	Secondary Indicators:  Oxidized rhizospheres in upper Water-stained leaves Local soil survey data FAC neutral test	er 12 in.			
Depth of Depth to fr Depth to	ogy f surface water ree water in pit o saturated soil  Primary India Inundated Saturated Water ma Drift lines Sediment	: >18" : >18" cators: d in upper 12 in. arks t deposits	nds		oximor princ	Secondary Indicators:  Oxidized rhizospheres in upper Water-stained leaves Local soil survey data FAC neutral test	er 12 in.			
Depth of Depth to for Depth to Depth to	ogy f surface water ree water in pit o saturated soil  Primary India Inundates Saturate Water ma Drift lines Sediment Drainage ments:	: >18" : >18" cators: d in upper 12 in. arks d deposits patterns in wetla	nds		JOXINIO PINC	Secondary Indicators:  Oxidized rhizospheres in upper Water-stained leaves Local soil survey data FAC neutral test	er 12 in.			
Depth of Depth to Depth to Comi	ogy f surface water ree water in pit o saturated soil  Primary India Inundated Saturated Water ma Drift lines Sediment Drainage	: >18" : >18" cators: d in upper 12 in. arks it deposits patterns in wetla	nds		JOXINIO PINC	Secondary Indicators:  Oxidized rhizospheres in upper Water-stained leaves Local soil survey data FAC neutral test	er 12 in.			
Depth of Depth to Depth to Communication	ogy f surface water ree water in pit o saturated soil  Primary India Inundates Saturated Water ma Drift lines Sediment Drainage ments:  D DETERMINA Hydric Soils	: >18" : >18" cators: d in upper 12 in. arks it deposits patterns in wetla	nds			Secondary Indicators:  Oxidized rhizospheres in upper Water-stained leaves Local soil survey data FAC neutral test				
Depth of Depth to Depth to Communication	ogy f surface water ree water in pit o saturated soil  Primary India Inundates Saturate Water ma Drift lines Sediment Drainage ments:  D DETERMINA	: >18" : >18" cators: d in upper 12 in. arks it deposits patterns in wetla	nds			Secondary Indicators:  Oxidized rhizospheres in upport Water-stained leaves Local soil survey data FAC neutral test Other				

Proje	ct/Site: NW Spri	ngville Road					e: <u>5/8/00</u>				
Client/Owner: Ryland Homes					State: OR						
estigator: P. O'Neill/I. Chane							ty: Washington				
				Yes		Township, Range, Section		N S18			
			No		Plant Community						
Is the a	rea a potential p	roblem area?		No		Sample Plo	t: <u>16a</u>				
	=ION			-				_			
EGETA	TION		0/	Profit Marie	Indicator	I make the first of the state o	G. Start Man	%	<b>新教育教育</b>	ndicator	
Species		Stratum	% Cover	Dom.	status	Species 4	Stratum	Cover		status	
oa prate	ensis	Н	70	X	FAC						
	us pratensis	Н	10		FACW						
Phalaris	arundinacea	Н	30	X	FACW						
		MALE			44.53						
				-			100				
				0	16		-				
SOILS	A										
epth	Matrix Color	Mottle Color	Mottle	Abuno	lance, Size	, Soil Texture, Concretions, et	3年为四年	的語彙的問	素の変数	<b>· 清部和</b>	
-4"	10YR 3/2	7.5YR 4/4	many,	mediu	m, distinct;	clayey silt loam					
4-18"	10YR 3/1	7.5YR 4/6	many,	mediu	m, distinct;	clayey silt loam					
		THE T									
										-	
		low/very low	chroma	matri	x with redo	eximorphic features					
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# APPENDIX B

Site Photographs



Plate 1: View looking northwest showing west channel, Wetland A.

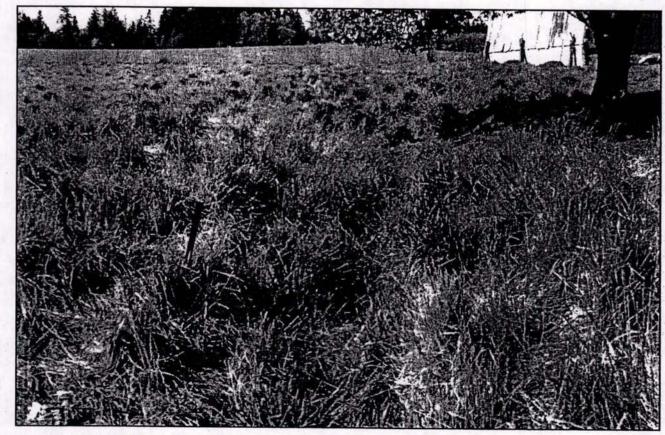


Plate 2: View looking north/northwest showing east channel, Wetland A.

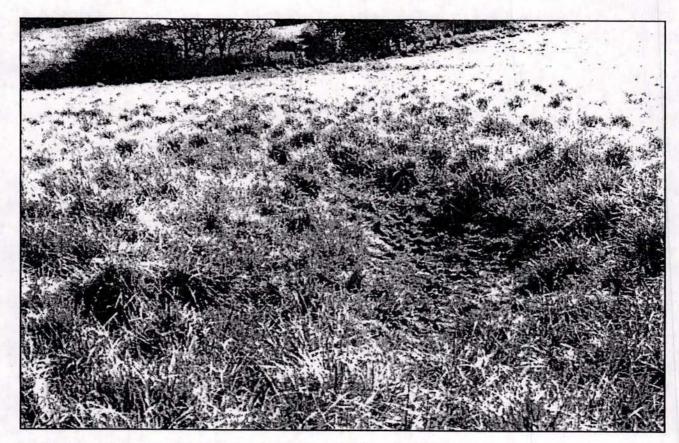


Plate 3: View looking southwest showing depressional wetland area, Wetland B.

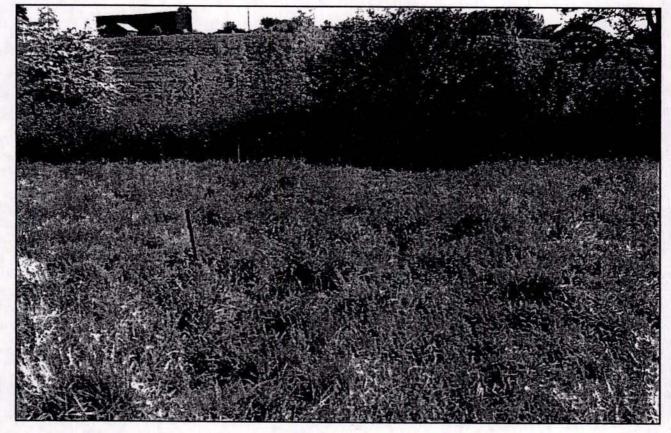


Plate 4: View looking south showing Wetland C.

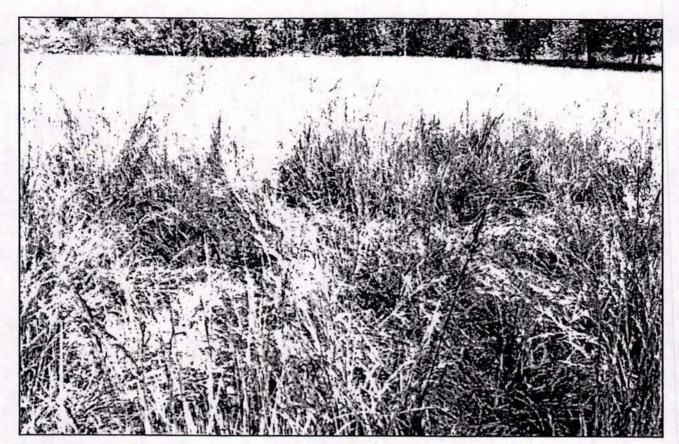


Plate 5: View looking east showing spring area, Wetland D, in the vicinity of sample plot 5A.



Plate 6: View looking south showing wetland area associated with spring #1, Wetland D.

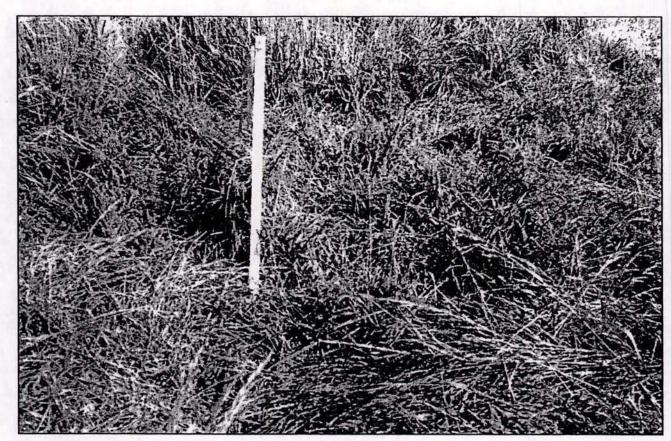


Plate 7: View showing spring/seep area (spring #2) in the vicinity of sample plot 4A, Wetland D.



Plate 8: View looking north showing wetland vegetation (darker green) in shallow channel associated with spring #3, Wetland D.



Plate 9: View looking northwest showing stream channel at south end of Wetland D.

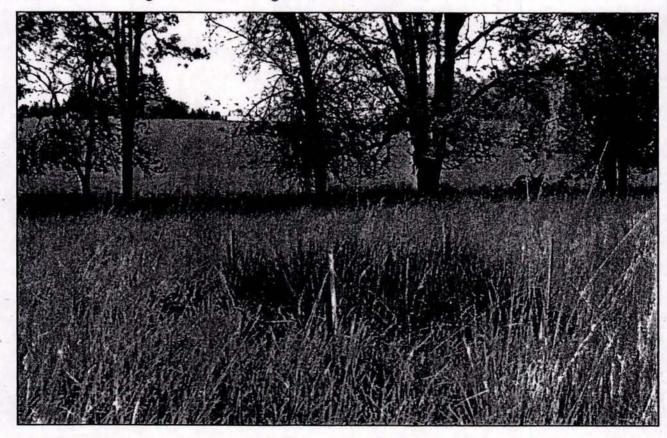


Plate 10: View showing depressional wetland area, Wetland E, south of main stream channel.



# APPENDIX C

Conceptual Mitigation Plan

# WETLAND MITIGATION REPORT

NW Springville Road Beaverton, Oregon

Prepared for

Ryland Homes 10070 SW Murdock Tigard, Oregon 97224

Prepared by
PBS Environmental
1310 Main Street
Vancouver, Washington 98660
(360) 690 - 4331

July 2000

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## WETLAND MITIGATION REPORT

NW Springville Road Beaverton, Oregon

### 1.0 INTRODUCTION

This mitigation plan is intended to compensate for impacts to approximately 1.9 acres of wetland delineated by PBS Environmental (2000). The plan proposes to restore, enhance and create wetlands adjacent to an intermittent stream which flows northeast to southwest across the property. This plan was coordinated with the Oregon Division of State Lands, the U.S. Army Corps of Engineers, the Oregon Department of Fish and Wildlife, and the Washington County Unified Sewerage Agency. The mitigation plan is intended to provide a balance between protection of wetland areas and opportunities for residential development.

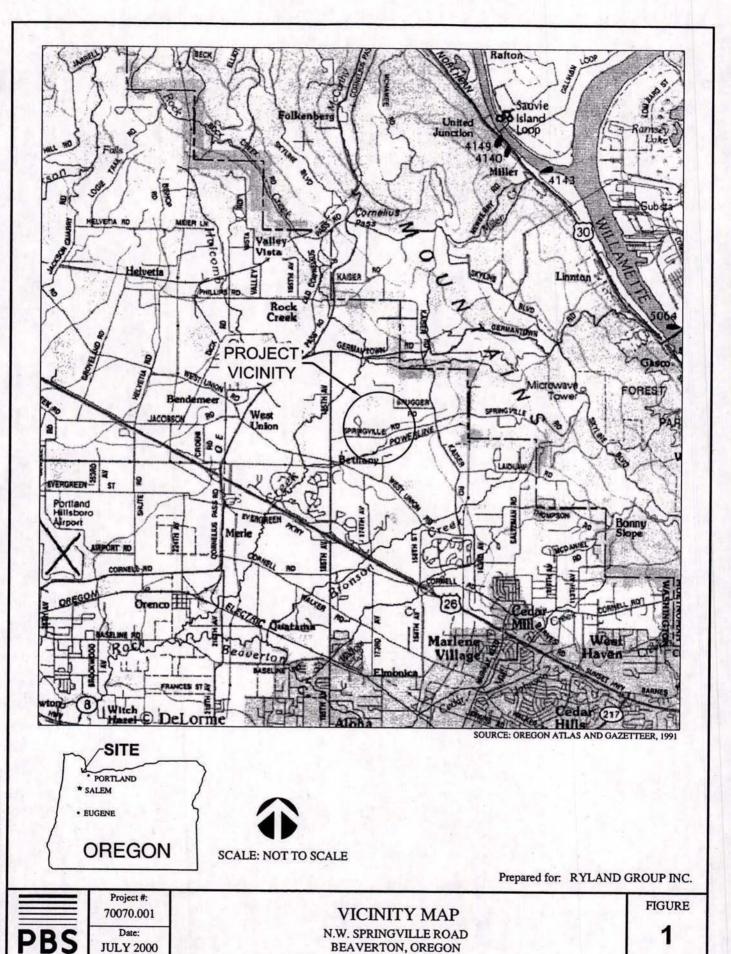
### 1.1 Objective

This plan will enhance structural and plant diversity in existing wetlands, create additional wetlands adjacent to the identified stream, and restore the wetland plant community along an intermittent tributary to the stream. The plan will also create an overflow channel in the floodplain area south of the stream at its eastern end. Wetland areas to be impacted include a 0.7-acre portion of Wetlands A and B, 0.3 acres identified as Wetland C, 1.8 acres in the northern portion of Wetland D, and 0.005 acres of wetland south of the creek in the area of the proposed road crossing.

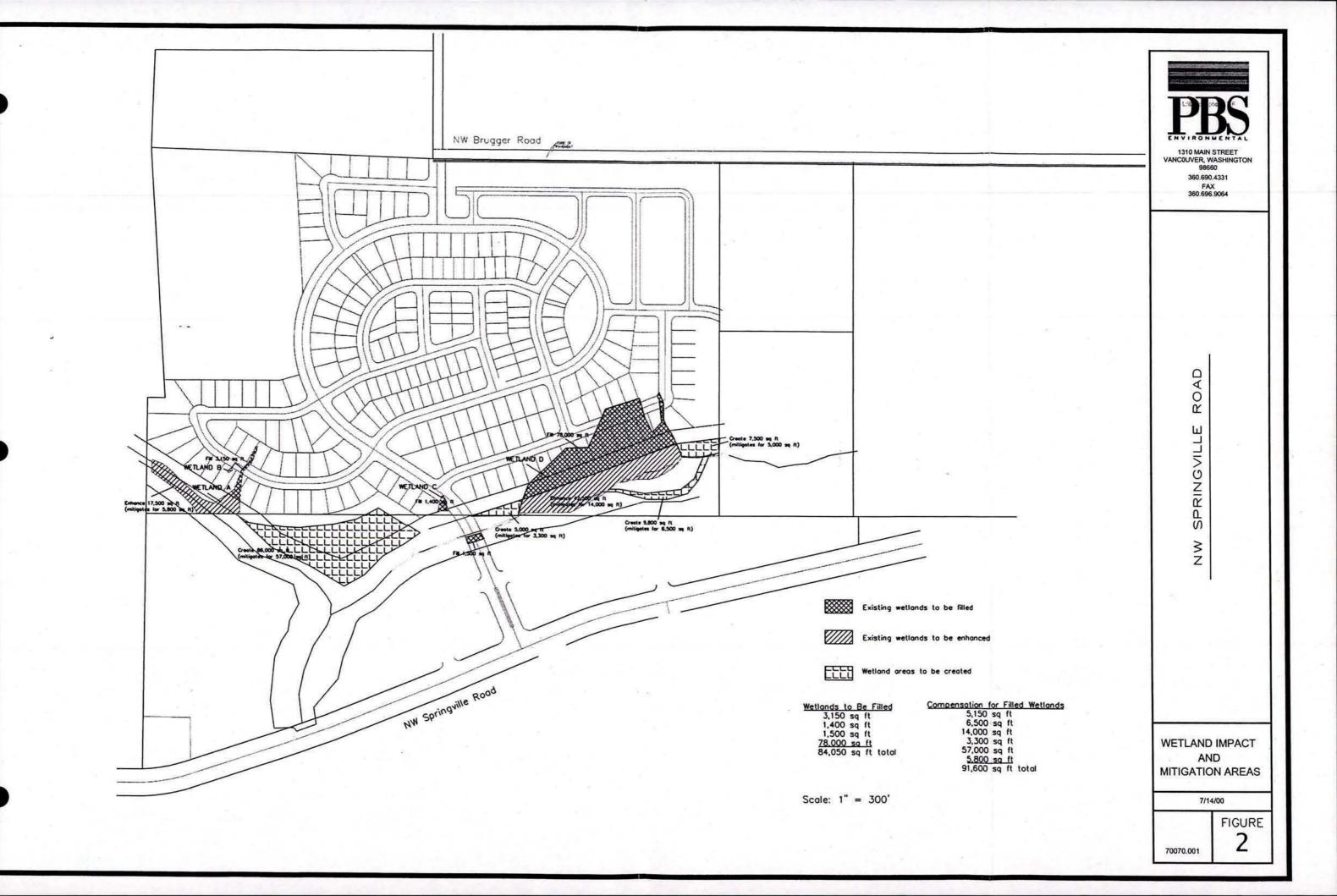
This plan proposes to enhance wetland areas adjacent to the stream by removal of non-native vegetation, followed by establishment of natural riparian and wetland plant communities. New wetlands will be created adjacent to the eastern and middle reaches of the stream on this property. This will be accomplished by selective grading in the floodplain area to create a natural hydrologic regime, accompanied by revegetation with native riparian and wetland plant species. Additional hydrology will be provided by redirecting flow from three springs on the hillside. A high-flow channel will be excavated south of the eastern reach of the stream. Forest and scrub-shrub riparian buffers will be established adjacent to all wetland areas. These modifications will increase the habitat value of this area for fish, wildlife, and waterfowl and contribute to improved water quality and flood control.

## 1.2 Study Area

The identified property is located east of the intersection of NW Springville Road and 185<sup>th</sup> Avenue in Beaverton, Oregon. The location of the property is displayed in the Vicinity Map (Figure 1). The legal land description is Township 1N, Range 1W, Sections 17 and 18. Figure 2 depicts the impact area and proposed mitigation area.



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### 1.3 Report Organization

This report is organized into an overview of existing conditions to provide a basis for evaluating this plan (Section 2.0), a discussion of the proposed mitigation plan detailing the design concept, plant selection, and distribution of plants within the mitigation area (Section 3.0), and a monitoring plan to ensure long term success of the proposed planting (Section 4.0). Reference information is presented in Section 5.0.

### 2.0 EXISTING CONDITIONS

This section represents a summary of information presented in the wetland delineation report (PBS Environmental 2000) and additional field information pertaining to soils, hydrology, and vegetation. This section is intended to provide a framework in the evaluation of the proposed mitigation plan.

The property consists of gently rolling field and pasture bisected by perennial and intermittent drainages. Riparian scrub-shrub and forested plant communities form a narrow corridor adjacent to an unnamed stream that flows across the southern portion of the site.

The wetland areas are located adjacent to the identified stream and its tributary. The stream currently flows in a narrow, incised channel with steep banks. While mapped as intermittent, in most years the stream reportedly carries at least some water throughout the year. Streamside vegetation consists of mature Oregon ash/Oregon white oak (Fraxinus latifolia/Quercus garryana) with minimal understory vegetation along the easternmost reach. The mature ash/oak complex transitions to a predominantly scrubshrub community with some mature trees along the remainder of the creek on this property. The scrub-shrub community is dominated by wild rose (Rosa nutkana, Rosa pisocarpa), Himalayan blackberry (Rubus discolor), and English hawthorn (Crataegus monogyna). Vegetation along the tributary channel consists of reed canarygrass (Phalaris arundinacea) and planted pasture grasses. Remaining floodplain vegetation consists of predominantly planted pasture grasses and weedy annuals. The entire area has been significantly impacted by grazing.

#### 2.1 Wetland Resources

A wetland delineation, completed by PBS Environmental (2000) in accordance with the Corps of Engineers 1987 Wetland Delineation Manual (USACE 1987), identified wetland areas of approximately 3.5 acres (Figure 2). The wetland boundaries were established and flagged for reference. According to the findings of this delineation, these wetlands would be classified as Palustrine Forested (PFO), Palustrine Scrub-shrub (PSS), and Palustrine Emergent (PEM) wetlands (Cowardin Classification System 1979). The wetland area to be filled is the northern portion of the eastern wetland (Wetland D, see Figure 2). This wetland is classified as a Palustrine Emergent wetland.

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The National Wetlands Inventory map for the Linnton, Oregon quadrangle identifies one wetland feature within the property boundaries. The stream channels are identified as palustrine emergent wetlands that are seasonally flooded (PEMC). Our field investigation verified the presence of such wetlands, as well as several other small palustrine emergent (PEM) wetland areas associated with seeps and springs on the hillside north of the main channel.

### 2.2 Topography

Surface elevations across the site range from approximately 320 feet in the northeastern portion of the site to approximately 220 feet along the western half of the southern boundary. The topography slopes gently from the north along Brugger Road toward the channel at the southern boundary. The terrain also slopes from the northwest corner of the site to approximately the center of the western half of the southern boundary in association with an intermittent drainage channel.

### 2.3 Hydrology

Site hydrology is dominated by an unnamed headwater tributary of Rock Creek. This stream enters the site from the east and flows in a southwesterly direction. A smaller intermittent channel flows across the southwestern corner of the site to midway along the southern boundary. This channel continues in a southeasterly direction beyond the property boundary for approximately 200 feet where it joins the main channel described above. In addition to these channels, several springs and seep areas were also observed. Most of these were located on the hillside north of the main stream channel. These seeps and springs represent a major source of surface water hydrology as expressed in channeling and sheet flow across the hillside.

During the field visits, wetland hydrology indicators observed were saturated soils in the upper 12 inches and distinct drainage patterns in the wetland areas. Oxidized rhizospheres were also observed in sample plots throughout the site.

## 2.4 Vegetation

Vegetation on the project site is dominated by pasture grasses and forbs. A forested riparian corridor is present along the stream that flows across the southern portion of the site.

The herbaceous pasture vegetation is dominated by a nearly uniform mix of 80% Kentucky bluegrass (*Poa pratensis*; FAC), 20% meadow foxtail (*Alopecurus pratensis*; FACW), with scattered patches of creeping bentgrass (*Agrostis stolonifera*; FAC), fowl bluegrass (*Poa palustris*; FAC), and reed canarygrass (*Phalaris arundinacea*; FACW).

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Little difference in plant community composition was noted in the seep or spring-fed areas as compared to the surrounding areas. A slightly greater proportion of fowl bluegrass was found in these areas, along with scattered occurrences of common rush (Juncus effusus; FACW) and veronica americana (Veronica americana; OBL).

The riparian forested area along the eastern portion of the creek is comprised of mature Oregon ash (Fraxinus latifolia; FACW) and Oregon white oak (Quercus garryana; UPL). Most of the understory shrub vegetation has been cleared in this area, resulting in an almost entirely herbaceous understory plant community similar to that described above. Vegetation present within the banks of the stream channel includes Himalayan blackberry (Rubus discolor; FACU), nootka rose (Rosa nutkana; FAC), and soft rush (Juncus effusus; FACW). The oak/ash plant community transitions to an herbaceous plant community dominated by soft rush, then to scrub-shrub plant community further downstream.

The intermittent stream in the northwest portion of the site has no distinct riparian vegetation community. Vegetation consists of the same planted pasture grass assemblage described above, with patches of reed canarygrass in the lowest areas.

#### 2.5 Soils

Soils within the study area have been historically impacted by agricultural activities. Soil survey information (Figure 4) identifies the presence of six soil types within the property boundaries:

Cascade silt loam, 0 to 7% slopes (7b) is a somewhat poorly drained soil that formed in silty loess and old mixed alluvium on uplands. Permeability of this soil is slow. Cascade silt loam is not listed as a hydric soil but may contain inclusions of hydric soils in swales.

Cornelius and Kinton silt loams, 0 to 7% slopes (11b) and 7 to 12% slopes (11c) are moderately well drained soils that formed in loesslike material over fine-silty, old alluvium of mixed origin on uplands. Permeability of this soil is slow. Cornelius and Kinton silt loams are not listed as a hydric soil, but may contain inclusions of hydric soils in swales.

Cornelius Variant silt loam, 3 to 7% slopes (12b) and 7 to 12% slopes (12c) are somewhat poorly drained soils that formed in lacustrine silts on broad valley terraces. Permeability of this soil is moderately slow. Cornelius Variant silt loam is not listed as a hydric soil, and generally does not contain inclusions of hydric soils.

Delena silt loam, 3 to 12% slopes (16c) is a very poorly drained soil that formed in mixed alluvium and eolian material on uplands. Permeability of this soil is very slow. Delena silt loam is listed as a hydric soil.

Helvetia silt loam, 2 to 7% slopes (19b), 7 to 12% slopes (19c), 12 to 20% slopes (19d) are moderately well drained soils that formed in old alluvium of mixed origin on old terraces. Permeability of this soil is moderately slow. Helvetia silt loam is not listed as a hydric soil, but may contain wet spots in depressional areas.

Wapato silty clay loam (43) is a poorly drained soil that formed in recent alluvium on floodplains. Permeability of this soil is moderately slow. Wapato silty clay loam is listed as a hydric soil, and may also contain inclusions of other hydric soils.

Evidence of wetland soils included low and/or very low chroma matrix with redoximorphic features in the upper 12 inches.

#### 2.6 Wildlife

This area has been historically impacted by agricultural practices resulting in fragmentation of natural forested areas. Currently, most of the habitat value on this property is provided by riparian forested and scrub-shrub plant communities adjacent to the current stream channels. Grazing and trampling by cattle has reduced and degraded available habitat for birds and small mammals. Several bird species were observed on the site, including a pair of nesting red-tailed hawks. No other signs of wildife use of this area were noted.

Limited wildlife habitat value is currently available within the identified wetland area due to a very narrow vegetated corridor that is dominated by non-native vegetation. The proposed mitigation areas also offer only limited habitat value in the present condition. Significant opportunity exists to increase and improve habitat attributes for fish, birds, waterfowl, and other wildlife. The proposed mitigation concept would improve the structural diversity of this area for wildlife usage through the restoration of wetland and riparian forest, scrub-shrub, and emergent wetland plant communities. The proposed high-flow channel would offer additional habitat opportunities.

#### 3.0 MITIGATION PLAN

### 3.1 Proposed Mitigation

The proposed mitigation will include selective grading within the floodplain adjacent to the creek to create two small wetland areas north of the stream, a larger wetland area north of the confluence of the two drainage channels, and a supplementary channel to

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carry additional flow during peak runoff periods south of the steam. Grading will occur to sufficient depth to insure adequate hydrology to support emergent wetland vegetation in the excavated areas. Additional hydrology will be provided to the wetland areas north of the creek by redirecting flow from three identified springs on the hillside to north of the creek. Hydrologic contributions will also be received from stormwater runoff from the proposed development following appropriate pre-treatment. All grading will be designed to minimize erosion and other damage to stream habitat. Emergent wetland plant communities will be planted in the excavated wetland areas.

Existing wetland areas will be enhanced through removal of non-native species and replanting with native vegetation. The mitigation will also restore historic wetland and riparian plant communities in Wetland areas A and B at the west end of the property. Riparian forest and scrub-shrub plant communities will be planted in buffer areas adjacent to all wetland and water features.

All restoration work will occur within the identified mitigation area (Figure 2). No fill or removal of material will occur in other wetland areas on the property.

#### 3.2 Planting Plan

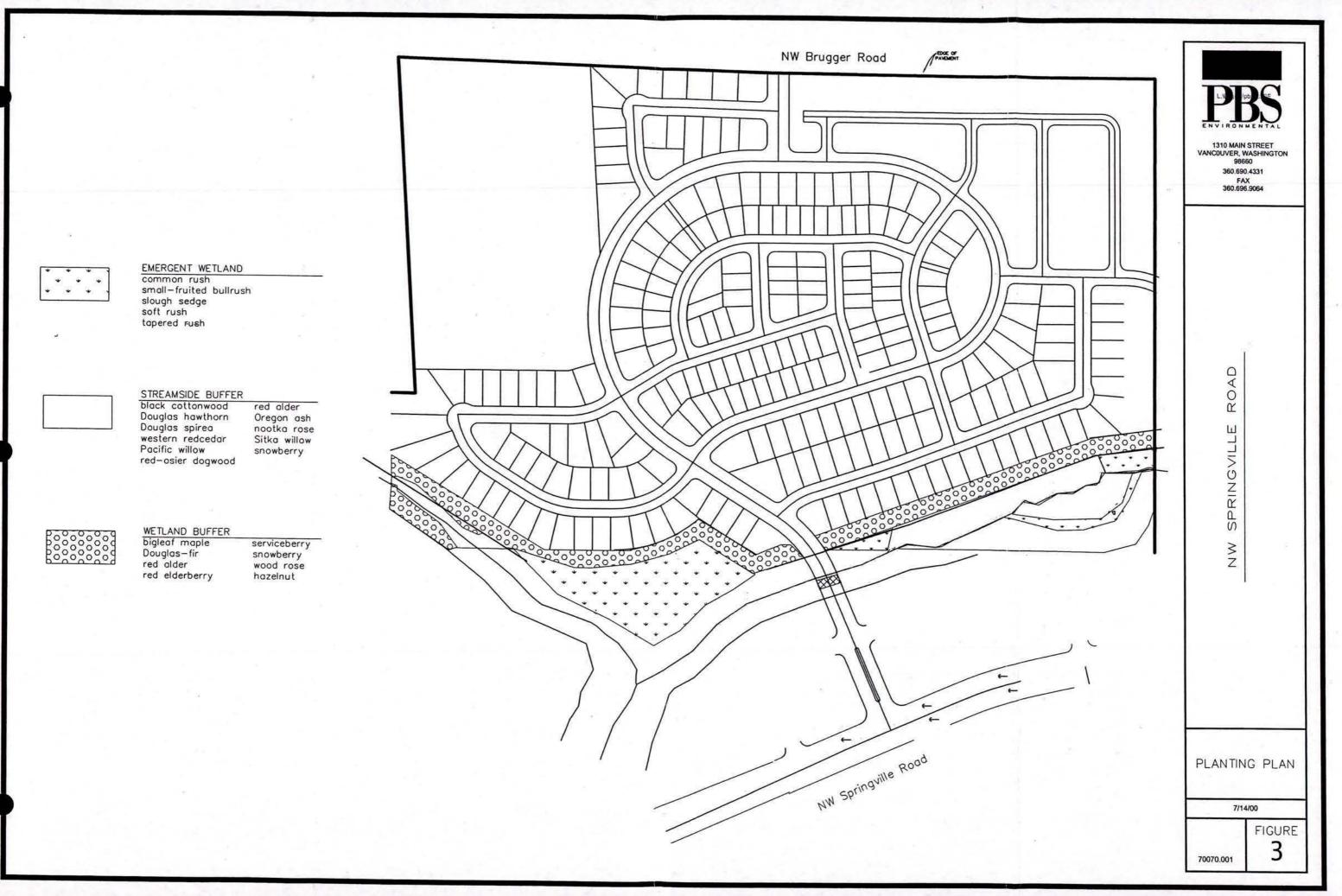
A schematic planting plan is shown in Figure 3. Table 1 contains the list of plant species and their specifications. The planting plan includes a variety of native tree, shrub, and herbaceous vegetation. Plants were selected to provide maximum structural and species diversity that are typical of a high quality natural riparian and wetland habitats. This planting plan provides for the variable moisture levels evident within the mitigation area. Plant densities are high to ensure long-term success of the planting. The planting is designed to provide greater than 50% tree and shrub cover after a three-year monitoring period.

These plant communities are intended to provide maximum habitat diversity as well as important buffer functions to the stream. Shrubs, in particular, were chosen for their high food value for birds and other wildlife. The planting is designed to replicate similar natural riparian and wetland communities in the surrounding area. To accomplish this objective, a total of 800 trees (7 species), 1800 shrubs (10 species), and 700 herbs (5 species) will be planted. These will be supplemented by a hydroseed mix throughout the area containing a variety of grasses and other herbaceous species.

#### 3.3 Installation

Site preparation will include selective grading of the floodplain area with a small dozer to minimize impacts. All other preparation will use hand labor. Areas will be selected and staked, holes dug, and soil amendments added according to accepted landscaping techniques. Plants will be obtained from local nurseries and will be individually chosen to ensure the highest quality planting materials. All grading and planting will be supervised by a qualified ecologist from PBS Environmental.

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#### PLANTING SPECIFICATIONS

#### Installation

- 1. Contractor to time planting to occur during late fall or early spring.
- 2. If species are not available, similar species may be substituted upon agency approval. All species must be native to the Columbia Basin.
- 3. Removal of non-native species:
  - a. Reed canarygrass to be removed by scraping with a small trackhoe to a depth of 2 feet to ensure removal of root mass.
  - b. Himalayan blackberry to be excavated by hand prior to planting.
  - c. Care is to be taken so as not to damage existing trees and shrubs
- 4. Willow and red-osier dogwood stakes to be gathered from existing plants on the property no more than two days prior to planting. Branches are to be stripped of leaves and cut into two foot lengths. Stakes are to be stored in buckets of water until planting. Some willow stakes should be in each bucket to provide its natural growth hormone.
- Container plants are to be kept saturated and shaded prior to installation. Bareroot plants will be covered with mulch, sawdust, or heeled into the ground to prevent desiccation.
- 6. Immediately after planting, plants are to be watered to saturation.
- 7. Trees are to be staked so as to prevent blowover or significant leaning from prevailing wind.
- 8. Placement of all plants shall be supervised by a qualified botanist from PBS Environmental.

#### Maintenance

- 1. Newly installed plant material will be watered a minimum of 1" per week from July1 through October 15 to ensure an 80% survival rate after 3 years.
- 2. After completions of plantings, wetlands and wetland buffers are to remain in a natural, undisturbed state except for periodic maintenance as described.
- 3. Weeding will be performed on an as-needed basis.
- 4. Maintenance and replacement of dead plant material will occur in late fall, or spring for the duration of the 5-year monitoring period.
- Reed canary shall be trimmed with a weed whacker once a year prior to setting seed to allow other plants to grow evenly.
- Recurring Himalayan blackberry shall be dug out by hand and/or treated with a contact herbicide approved for streamside use.

<u>Planting Schedule</u>. Grading will occur during late summer to fall during the instream work window. Grading at this time will facilitate accurate assessment of the dry season water table. Planting will occur in the late fall or early spring.

Maintenance. Maintenance of the wetland and buffer plantings will be the responsibility of the property owner. It shall include:

- ♦ Watering of the entire site with 1" of water every week from July 1 to October 15 during the first two years after planting.
- ♦ Removal of all non-native invasive species for five years after planting: Himalayan blackberry, English ivy, Scots broom, reed canarygrass, morning glory, purple loosestrife, etc.

#### 4.0 MONITORING

Monitoring will be conducted for a period of five years following final installation by a qualified botanist from PBS Environmental. The following criteria will be used to evaluate success of the planting according to established landscape standards for riparian buffer and wetland vegetation communities in the Doulgas fir/Western hemlock zone (Franklin and Dyrness 1973) west of the Cascade Crest.

- 1. The goal of this mitigation is to restore and enhance wetland and riparian habitat native to and typical of undisturbed Washington County lands.
- 2. Vegetation will have at least 80% survival after three years.
- 3. Tree and shrub cover will be greater than 10% after one year, greater than 30% after two years and greater than 50% after 3 years.
- 4. Non-native invasive plants will not make up more than 10% of cover in any growing season.
- 5. If any monitoring report shows that mitigation is not meeting these performance standards, the property owner will work with the County to perform corrective actions appropriate to the mitigation: e.g., failing plants will be replaced, other plant species will be substituted, non-native species will be removed by hand without pesticides, etc.

The monitoring report will consist of the following:

- 1. Vegetation transects (five randomly selected) that detail herb, shrub, and tree aerial cover at radii of 1m, 5m, and 10m respectively.
- 2. Percent of planted materials surviving, classified by condition (e.g., vigorous, living, stressed).
- Report on invasive vegetation, vandalism, dumping, or other conditions actually or
  potentially harmful to the mitigation.

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- 4. Identify maintenance concerns (e.g., plants need to be replaced, etc.).
- 5. At least twelve 4" x 6" original color photographs that show the entire mitigation site, taken from photo points drawn on a map of the mitigation area, keyed to lines of sight from those photo points.

This monitoring will result in an annual report that will be sent to the Oregon Division of State Lands and the property owner by October 31 of each year of the monitoring period. The report will include a summary of the condition of the planting. Those areas which do not meet the above criteria will be identified, and recommendations made for corrective actions to be implemented by the property owner.

#### 4.0 REFERENCES

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- U.S. Geological Survey. (1990). "7.5 Minute Topographic Quadrangle for Linnton, Oregon." United States Geological Survey.

# Supplement to WETLAND MITIGATION PLAN

NW Springville Road Beaverton, Oregon

The following is intended to replace Sections 3.0 and 3.1 in the Wetland Mitigation Plan for this site dated July 2000.

#### 3.0 MITIGATION PLAN (Revised 2/8/02)

#### 3.1 Proposed Mitigation

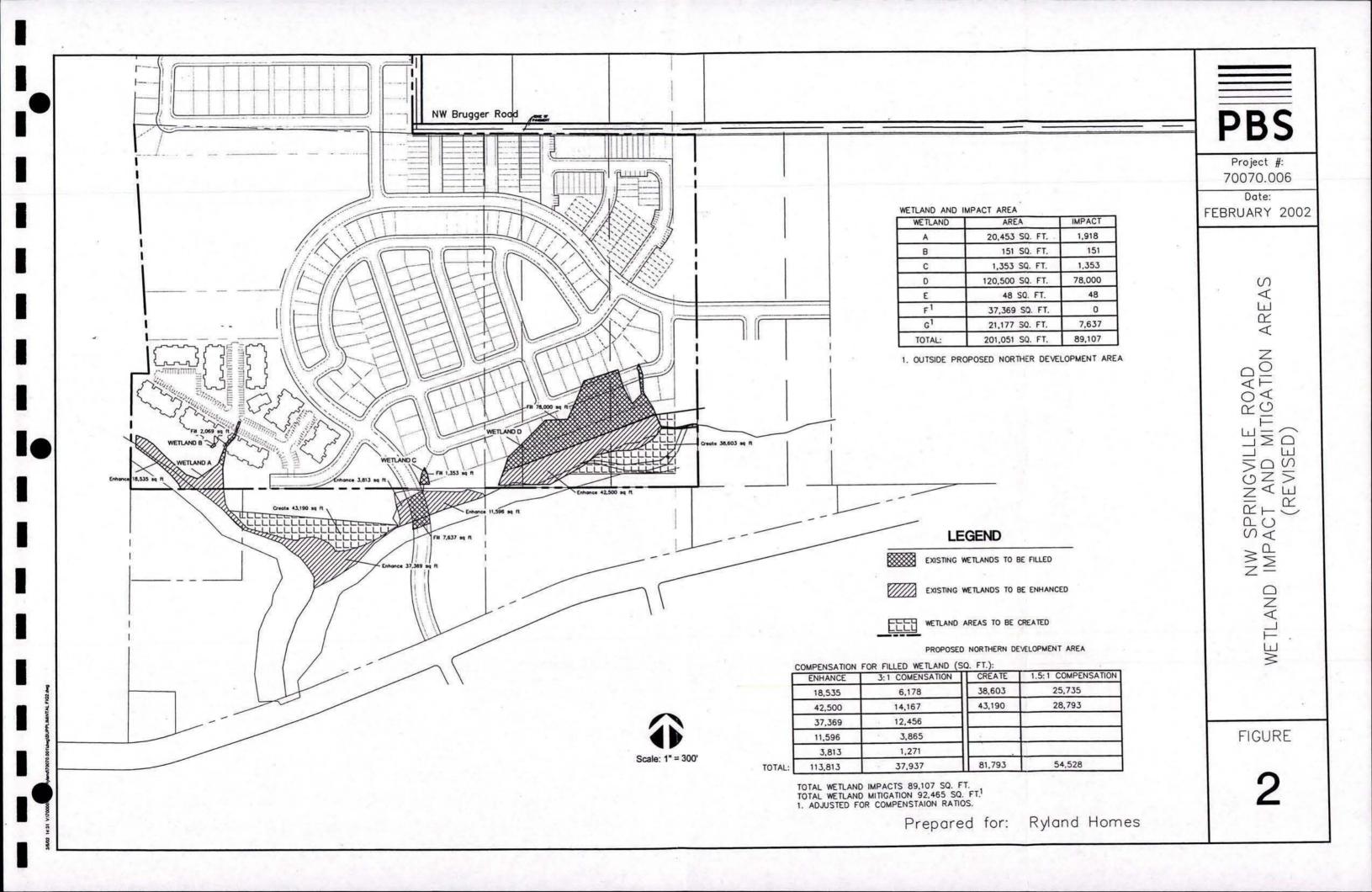
The proposed mitigation will include selective grading within the floodplain adjacent to Springville Creek to create 41,377 square feet of wetland north of the stream and 37,210 square feet of wetland near the southeastern property boundary. The area nar the southeastern boundary will include a supplementary channel to carry additional flow during peak runoff periods (Figure 2). Grading will occur to sufficient depth to insure adequate hydrology to support emergent wetland vegetation in the excavated areas. Additional hydrology will be provided to the wetland areas north of the creek by redirecting flow from three identified springs on the hillside to north of the creek. Hydrologic contributions will also be received from stormwater runoff from the proposed development following appropriate pre-treatment. All grading will be designed to minimize erosion and other damage to stream habitat. Emergent wetland plant communities will be planted in the excavated wetland areas.

To compensate for a total 76,000 square feet of wetland to be filled, this mitigation plan proposes to enhance existing wetlands or create new wetlands as shown in the table below. Total compensation, based on the appropriate mitigation ratios is 87,944 square feet.

MITIGATION TYPE	AREA (sq.ft.)	MITIGATION RATIO	FOR WETLAND FILL (sq.ft.)
Enhancement	13,883	3:1	4,628
Enhancement	42,500	3:1	14,167
Enhancement	37,369	3:1	12,456
Enhancement	5,053	3:1	1,684
Creation	38,603	1.5:1	25,735
Creation	43,911	1.5:1	29,274
Total	181,462		87,944

Existing wetland areas will be enhanced through removal of non-native species and replanting with native vegetation. The mitigation will also restore historic wetland and riparian plant communities in Wetland areas A and B at the west end of the property. Riparian forest and scrub-shrub plant communities will be planted in buffer areas adjacent to all wetland and water features.

All restoration work will occur within the identified mitigation area. No fill or removal of material will occur in other wetland areas on the property.





Subject: Significant Natural Resource Memo

Ryland Homes Development, NW Springville Road

Beaverton, OR

Date: December 6, 2000

Prepared on behalf of: Don Guthrie

Ryland Homes 10070 SW Murdock Tigard, OR 97224

The proposed development of the identified property will impact two wetland areas and sections of an established riparian corridor. Based on PBS' review of item 422-3.6 of the Washington County Code, this development should not significantly interfere with the preservation of fish and wildlife areas or habitats as identified in the Washington County Comprehensive Plan.

Minor interference of wetland and riparian resources will occur during site development and will be mitigated according to the mitigation plan devised by PBS Environmental (July 2000). The main components of this plan were discussed and accepted in an on-site meeting on 6/20/00. The meeting was attended by:

Alison Rhea (Washington County Unified Sewerage Agency)
Ross Van Loo (Washington County Unified Sewerage Agency)
Bill Parks (Oregon Division of State Lands)
John Godsey (CES Northwest)
Jeff Bachrach (Attorney)
Peggy O'Neill (PBS Environmental)

PBS Environmental prepared a Natural Resource Evaluation and Protection Plan (1998) which identified significant riparian and wetland resources on the site and provided recommendations for their protection and enhancement. PBS subsequently delineated all the wetlands on site as well as wetlands south of the creek in an easment for the proposed road crossing. In the Natural Resource Evaluation and Protection Plan, PBS indicated that protection and enhancement of the riparian and wetland resources is important due to benefits for water quality, wildlife habitat, channel morphology, and shoreline stability.

As discussed in the technical report (PBS 1998), some areas within the riparian corridor and wetland area maintain these beneficial functions, while much of the riparian and wetland zones have been significantly degraded by livestock grazing and historical agricultural activities. Because of this degradation, much of the existing riparian zone and wetlands located outside of

the riparian corridor offer minimal value to water quality or wildlife habitat. PBS suggested a variety of enhancement activities in riparian and wetland zones to improve the beneficial functions of these areas for water quality, wildlife habitat, channel morphology, shorline stability, and flood control.

The site development integrated recommendations by PBS to avoid, as feasible, significant riparian and wetland areas and establish a minimum 50-foot buffer adjacent to these areas. The mitigation plan prepared by PBS (2000) is designed to preserve most of the existing riparian corridor and improve the quality of the existing corridor. Riparian corridor quality will be improved by replacing non-native plant species with native plants and by increasing the total vegetated riparian area. This enhancement will increase the overall quality of the riparian habitat for wildlife, water quality, and flood control functions.

Existing vegetation in the riparian corridor is generally sparse and is dominated by non-native, invasive species, such as Himalayan blackberry (Rubus discolor) and reed canarygrass (Phalaris arundinacea). The wetland mitigation plan includes measures to replace non-native species with native plants which will increase the structural complexity and species diversity of the riparian corridor. The only native vegetation that will be removed from the riparian corridor will be within the road crossing area. Planting within the existing riparian corridor and establishment of a minimum 50-foot vegetated buffer adjacent to the corridor will widen the existing vegetated area along most of the stream channel. This will provide increased wildlife habitat, contribute to improved water quality by facilitating bio-filtration, maintain channel morphology through shoreline stabilization, and provide increased flood control.

Wetlands within the proposed development are highly degraded due to livestock grazing and trampling as well as historic agricultural use. Wetlands immediately adjacent to the stream corridor will be preseved and enhanced with plantings of native wetland species. Two wetland areas will be filled and mitigated through creation of a large wetland adjacent to the stream corridor at the confluence of the tributary and main channels. In addition, a high flow channel will be created south of the creek at the eastern end of the site, and wetland areas will be created from upland areas adjacent to the creek to expand the current streamside wetland at the eastern end of the site. The created wetlands will provide greater plant species diversity and structural complexity of wetland vegetation, significantly improving quality of the existing wildlife habitat. The created wetlands will also provide continuity of wetlands along the stream corridor, which represents an important factor in improving wildlife habitat value. The enhanced and created wetlands will improve water quality by providing natural bioswales, and will enhance existing flood control functions through increased water retention capacity.

The recent realignment of the access road from NW Springville Road has slighly changed the lot configuration. In this new version, lots 14 & 15 extend into the proposed buffer adjacent to the created wetland. PBS is suggesting moving the boundary of the created wetland slightly to the west to facilitate establishment of a minimum 50-foot buffer between the created wetland and these lots. This adjustment should result in a minimal reduction of wetland mitigation area. Because the proposed mitigation plan provides an additional 8000 square feet of mitigation area than is required by Oregon statute, this slight reduction in size of the created wetland can be achieved without compromising the mitigation plan for this site.



#### MEMORANDUM

TO: Don Guthrie

FROM: Peggy O'Neill

Ryland Homes

DATE: 5/10/01

RE: Gossamer Hills Master Plan

PROJECT NO: 70070.005

Wetland Mitigation Plan

The following information is presented in response to questions/concerns raised by City of Beaverton and USA staff. This information is based upon a thorough understanding of regulatory issues and concerns as well as extensive field study at the proposed development site by PBS Environmental staff, including evaluation of wetlands, streams, riparian corridors, and wildlife habitat.

#### Coordination with USA staff

Design of the wetland mitigation plan followed the standards set forth in Chapter 3: Standard Design Requirements for Storm and Surface Water of Design and Construction Standards for Sanitary Sewer and Surface Water Management (Unified Sewerage Agency, February 2000). PBS staff has a thorough understanding of the USA requirements and believes that the plan as set forth is feasible and consistent with USA standards. The plan is designed to increase and enhance wetland, riparian, and wildlife habitat within and adjacent to the existing stream corridor.

In addition, PBS staff coordinated a pre-application site meeting at an early stage of the mitigation design in Spring 2000. Present were Alison Rhea of USA, Jeff Bachrach, representing the client, Peggy O'Neill of PBS, and staff from DSL, ODFW, and the Corps. Purpose of the meeting was to discuss proposed impacts and potential mitigation opportunities. Suggestions and recommendations made by agency staff at that meeting were incorporated into the final mitigation design.

Proposed created wetland in southeast corner of site: concern whether wetlands could be successfully created in an area with an 11 to 14% grade.

A grade of approximately this degree exists from Springville Road to about the southern boundary of the proposed development. However, the area proposed for wetland creation in the southeast corner is relatively flat with only a very slight grade from the south toward the creek bed. While further hydrologic study of this area will verify that adequate hydrology is present in this area to

support the created wetland, the existing topography should present no problem.

Small wetland area at far west end of site: concern that this is a perennial stream according to the Perennial Streams Mapping Project.

According to Section 4.0 (b)(2)(a) of Appendix C: Natural Resource Assessment of the Unified Sewerage Agency's Design and Construction Standards for Sanitary Sewer and Surface Water Management:

"......Streams are considered perennial until proven intermittent with adequate field documentation (photos, field data), or determination by the Oregon Division of State Lands."

A wetland delineation conducted by PBS staff in May 2000 documented the presence of a very shallow drainage channel in the far western portion of the site. The wetland delineation report identifies this as "Wetland A." The "channel" is little more than a slight depressional which appears to contain water only during wetter periods of the year. At the time of the delineation (near the end of our traditional wet season) water depth in the channel ranged from approximately ½ to 3 inches. Site visits conducted by PBS staff to the site at other times of the year verify that water is not present in this drainage year around. In addition, maps available from USA show no stream in this area. Based on this information and on our professional opinion, this should be considered an intermittent stream.

#### Proposed future road crossing in wetland in western portion of site:

A proposed future road crossing Wetland A in the western portion of the site may impact and area of wetlands proposed for enhancement in the current mitigation design. Further study at the time of impact will be needed to determine the extent of impact to this area. We believe that ample opportunity exists to mitigate for any impacts that may be necessary in this area.



## APPENDIX D

Site Photographs



PLATE 1: View of incised channel of Springville Creek with adjacent pasture and scattered mature ash and oak.

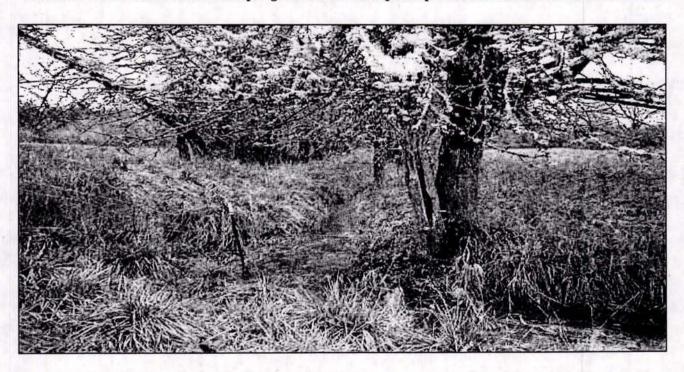


PLATE 2: View of degraded riparian forested community on east end of Springville Creek within proposed development area.

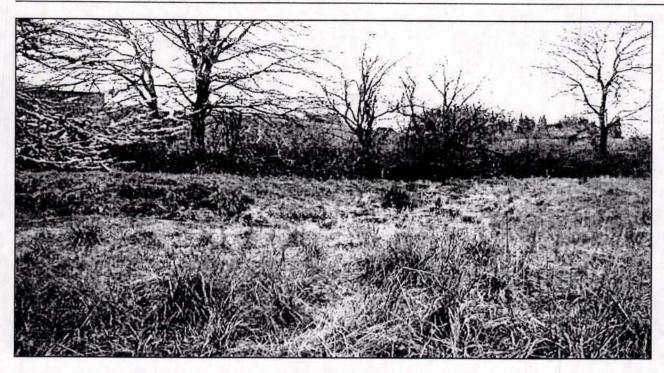


PLATE 3: View of pasture community and stream bank trampling along Springville Creek, within proposed development area. Woody vegetation is along the fenceline.

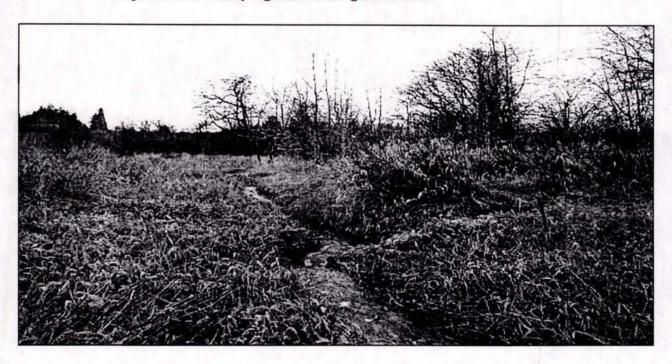


PLATE 4: View of reed canarygrass community adjacent to Springville Creek, south of proposed development area.



PLATE 5: View of cultivated fields and degraded riparian forested community within buffer of Springville Creek, south of the proposed development area, near confluence with Wetland C Tributary.



PLATE 6: View of small "Wetland C" intermittent tributary above confluence of main stem of Springville Creek.

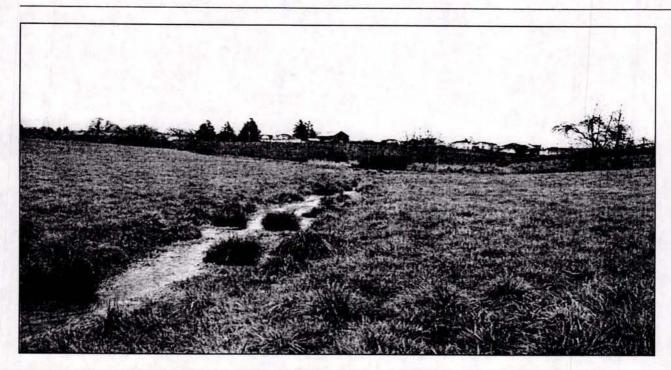


PLATE 7: View of Western Intermittent Tributary looking southeast toward Springville Creek.



PLATE 8: View of Forested Ash Wetland located east of the proposed development area.



## APPENDIX E

Natural Resource Assessment Vegetation Data Forms

ject #:	70070.006	
Date:	12/20/01	
vestigator:	B.Vining	

Sensitive Area Springville Creek Plant CT: OregonWhite Oak-Oregon Ash/ grasses Sample Plot#: SP# 1 Plot size: 20' x 141' - 2820 sq. ft.

10' r (herbs); 30' r (woody); or varible

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rees				Herbs			
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uercus garryana	15	Y		Dactylis glomerata	5	N	
				Other grass sp.	30		
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ME CONTRACTOR OF THE SECOND							
Shrubs		11.00					
		La Land					
		100					
				CIAS III A LES D			

76 Tree Canopy Cover:	30	Corridor Condition	Degraded	
6 Cover by Natives:	30			

\*Invasive: Rubus discolor, Phalaris arundinacea, Dipsacus fullonum, Hedra helix, Solanum sp., Clematis ligusticifolia and C. vitabla

Noxious:Source: Oregon Departmen of Agriculture Noxious Weed List & Portland Plant List

6 Invasive\*/Noxious\*:

PATING CRITERIA  Jative sp. make up:	>80%	50%-80%	<50%
	AND	AND	AND
Tree canopy cover:	>50%	26%-50%	<25%
	OR	OR	OR
Invasive/noxious sp:	<10%	10%-20%	>20%
Condition	Good	Marginal	Degraded

_ ect #:	70070.006	
Date:	12/20/01	
nvestigator:	B.Vining	

Sensitive Area Springville Creek
Plant CT: Pasture
Sample Plot#: SP# 2

Plot size: 314 sq.ft - 10'radius

10' r (herbs); 30' r (woody); or varible

pecies	% Cover	n in	Species	% Cover	N	I/N
rees			Herbs			
			Festuca arundinaceae	90	N	
			Agrostis stolonifera	10	N	
			Juncus effusus	T	Y	
			Lore To A College Vistoria		777	
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hrubs		200		W 1 2 2 2 10 10 10 10 10 10 10 10 10 10 10 10 10		
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I/N=Invasive/Noxious

% Tree Canopy Cover:	0	Corridor Condition	Degraded	
6 Cover by Natives:	T			
% Invasive*/Noxious*:	0			

\*Invasive: Rubus discolor, Phalaris arundinacea, Dipsacus fullonum, Hedra helix, Solanum sp., Clematis ligusticifolia and C. vitabla

Condition	Good	Marginal	Degraded
Invasive/noxious sp:	<10%	10%-20%	>20%
The state of the s	OR	OR	OR
ree canopy cover:	>50%	26%-50%	<25%
	AND	AND	AND
lative sp. make up:	>80%	50%-80%	<50%

ect #:	70070.006	
Date:	12/20/01	
vestigator:	B.Vining	

Sensitive Area Wetland D
Plant CT: Pasture
Sample Plot#: SP# 3

Plot size: 314 sq.ft - 10'radius

10' r (herbs); 30' r (woody); or varible

pecies	% Cover	N IN	Species	% Cover	N	" IN
rees	Opening and the second	Control of the Contro	Herbs	The second secon		
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			Agrostis stolonifera	10	N	111-11
hrubs						

N=Native

6 Invasive\*/Noxious\*:

I/N=Invasive/Noxious

Tree Canopy Cover:	0	Corridor Condition	Degraded	
6 Cover by Natives:	0			

\*Invasive: Rubus discolor, Phalaris arundinacea, Dipsacus fullonum, Hedra helix, Solanum sp., Clematis ligusticifolia and C. vitabla

Condition	Good	Marginal	Degraded
Invasive/noxious sp:	<10%	10%-20%	>20%
AND THE REAL PROPERTY.	OR	OR	OR
Tree canopy cover:	>50%	26%-50%	<25%
	AND	AND	AND
lative sp. make up:	>80%	50%-80%	<50%

ject #:	70070.006	
Date:	12/20/01	All s
vestigator:	B.Vining	

Sensitive Area Wetland C Plant CT: Pasture Sample Plot#: SP# 4

Plot size: 314 sq.ft - 10'radius

10' r (herbs); 30' r (woody); or varible

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Species	% Cover	N: IN	Species	% Cover	N	IN
rees			Herbs			
			Festuca arundinaceae	90	N	
			Agrostis stolonifera	10	N	
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		301 734				
Shamba						
Shrubs						
						-
		2/14				
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% Tree Canopy Cover:	0	<b>Corridor Condition</b>	Degraded	
% Cover by Natives:	0			
% Invasive*/Noxious*:	0			

\*Invasive: Rubus discolor, Phalaris arundinacea, Dipsacus fullonum, Hedra helix, Solanum sp., Clematis ligusticifolia and C. vitabla

Native sp. make up:	>80%	50%-80%	<50%
	AND	AND	AND
Tree canopy cover:	>50%	26%-50%	<25%
	OR	OR	OR
Invasive/noxious sp:	<10%	10%-20%	>20%
Condition	Good	Marginal	Degraded



ject #:	70070.006	
Date:	12/20/01	
vestigator:	B.Vining	

Sensitive Area West Tributary - Intermittent
Plant CT: Pasture
Sample Plot#: SP# 5

Plot size: 314 sq.ft - 10'radius

10' r (herbs); 30' r (woody); or varible

PECIES COMPOSITION						
pecies	% Cover	N IN	Species	% Cover	N	LN
rees	ACCORD STUDIOS CONTRACTOR OF THE PROPERTY OF		Herbs			
			Festuca arundinaceae	90	N	
			Agrostis stolonifera	10	N	
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hrubs			ENLOYEND.			
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		La Louis Editor				

N=Native

I/N=Invasive/Noxious

% Tree Canopy Cover:	0	Corridor Condition	Degraded
% Cover by Natives:	0		
% Invasive*/Noxious*:	0		

\*Invasive: Rubus discolor, Phalaris arundinacea, Dipsacus fullonum, Hedra helix, Solanum sp., Clematis ligusticifolia and C. vitabla

<10%	10%-20%	>20%
OR	OR	OR
>50%	26%-50%	<25%
AND	AND	AND
>80%	50%-80%	<50%
	AND >50% OR	AND AND >50% 26%-50% OR OR

ject #:	70070.006	
Date:	12/20/01	
vestigator:	B.Vining	

Sensitive Area Springville Creek
Plant CT: Cultivated field
Sample Plot#: SP# 6

Plot size: 314 sq.ft - 10'radius

10' r (herbs); 30' r (woody); or varible

pecies:	% Cover						ľN
	% Cover	100	ELV.NE		% Cover	N. N.	TIN
rees				Herbs	100		
				Festuca arundinaceae	100	N ·	
				MADE TO A STATE OF THE STATE OF			
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					100		

N	=	N	a	ti	V	e	

I/N=Invasive/Noxious

% Tree Canopy Cover:	0	Corridor Condition	Degraded
6 Cover by Natives:	2		
% Invasive*/Noxious*:	0		

\*Invasive: Rubus discolor, Phalaris arundinacea, Dipsacus fullonum, Hedra helix, Solanum sp., Clematis ligusticifolia and C. vitabla

PATING CRITERIA  Vative sp. make up:	>80%	50%-80%	<50%
	AND	AND	AND
Tree canopy cover:	>50% OR	26%-50% OR	<25% OR
Invasive/noxious sp:	<10%	10%-20%	>20%
Condition	Good	Marginal	Degraded



ject #:	70070.006	
Date:	12/20/01	
vestigator:	B.Vining	

Sensitive Area Springville Creek
Plant CT: Forested riparian
Sample Plot#: SP# 7

Plot size: 2820sq. ft. - 20 ' x 141'

10' r (herbs); 30' r (woody); or varible

pecies	W Cover	Й	IN	Species	% Cover	N.	I/N
rees			Control of the Contro	Herbs		M.F. Sil	
Fraxinus latifolia	15	Y		Polystichum munitum	20	Y	
Quercus garryana	35	Y		Tolmiea menziesii	5	Y	
seudotsuga menziesii	T	Y					
Alnus rubra	5	Y					
Shrubs							
ubus discolor	35	N	Y				
Rosa nutkana	30	Y					11114
Rubus ursinus	25	Y			1.0		
ordus cornuta	5	Y					

=	N :	a tr	17	P
				•

% Invasive\*/Noxious\*:

I/N=Invasive/Noxious

% Tree Canopy Cover:	55	Corridor Condition	Degraded	
% Cover by Natives:	140			

Invasive: Rubus discolor, Phalaris arundinacea, Dipsacus fullonum, Hedra helix, Solanum sp., Clematis ligusticifolia and C. vitabla

35

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and the same of th	11112	AND
ND	AND	ANTO
0%	50%-80%	<50%
	0% ND	\$16.00 miles

ject #:	70070.006	
Date:	12/20/01	
vestigator:	B.Vining	

Sensitive Area Springville Creek
Plant CT: Riparian Scrub-Shrub
Sample Plot#: SP# 8

Plot size: 2820sq. ft. - 20 ' x 141'

10' r (herbs); 30' r (woody); or varible

pecies Marine	% Cover		T/N	Species:	% Cover	N	Ι/N
pecies la				Herbs		NAME AND DESCRIPTION OF THE PERSON OF THE PE	
Fraxinus latifolia	5	Y		Phalaris arundinaceae	25	N	Y
lnus rubra	5	Y		Equisetum arvensis	5	Y	J. Hu
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				MIN TO LEASE THE SECOND			
Shrubs						1	
osa nutkana	45	Y	THE				
Rubus discolor	35	N	Y		All All All All	11/12	
Cornus stolonifera	5	Y			7/11/2	100	1
						7 10	

N=		

I/N=Invasive/Noxious

% Tree Canopy Cover:	0	Corridor Condition	Degraded
6 Cover by Natives:	65		
6 Invasive*/Noxious*:	60		

\*Invasive: Rubus discolor, Phalaris arundinacea, Dipsacus fullonum, Hedra helix, Solanum sp., Clematis ligusticifolia and C. vitabla

lative sp. make up:	>80%	50%-80%	<50%
	AND	AND	AND
Tree canopy cover:	>50%	26%-50%	<25%
	OR	OR	OR
Invasive/noxious sp:	<10%	10%-20%	>20%
Condition	Good	Marginal	Degraded