

**Economic, Social, Environmental, and
Energy (ESEE) Analysis
for the A+O Apartments in Tigard, Oregon**

(Township 1 South, Range 1 West, Section 35AC, Tax Lots 4000, 4100, 4200, 4300,
and 4400 and Township 1 South, Range 13 West, Section 35AD, Tax Lot 1303)

Prepared for

Attn: DBG Oak Street, LLC
Walter O. Grodahl, Manager
2164 SW Park Place
Portland, OR 97204

Prepared by

John van Staveren
Tricia Sears
Pacific Habitat Services, Inc.
9450 SW Commerce Circle, Suite 180
Wilsonville, Oregon 97070
(503) 570-0800
(503) 570-0855 FAX
PHS Project Number: 5341

December 8, 2014



TABLE OF CONTENTS

Page

1.0 INTRODUCTION.....	1
2.0 ESEE ANALYSIS	1
2.1 Identification of Impact Area	2
2.1.1 Overview of Existing Local Land Uses	2
2.1.2 Overview of Local Natural Features	3
2.1.3 Natural Resources within the Development Property	3
2.1.4 Identification of Impact Area	4
2.2 Potential Conflicting Uses within the Impact Area.....	4
2.3 Site Specific ESEE Analysis	7
2.3.1 Environmental Consequences	7
2.3.2 Economic Consequences	10
2.3.3 Social Consequences	11
2.3.4 Energy Consequences.....	11
3.0 COMPARISON WITH OTHER COMPARABLE SITES WITHIN THE TIGARD PLANNING AREA	12
4.0 ESEE DECISION.....	13
 APPENDIX A: Figures	

1.0 INTRODUCTION

DBG Oak Street, LLC proposes to develop 215 multi-family residential dwelling units within four, 4-story multi-family residential buildings on 11.17 acres south of SW Oak Street in Tigard. The property encompasses tax lots 1303, 4000, 4100, 4200, 4300, and 4400. A wetland delineation conducted in February 2014 by Pacific Habitat Services, Inc. (PHS) identified 6.62 acres of wetland within the proposed development site, plus Ash Creek, which flows to the west at the site's southern boundary.

The wetland is designated as "significant" (i.e. a Statewide Planning Goal 5 resource) on the City of Tigard's "Wetlands and Streams Corridors Map" and is protected. The City does not allow any land form alterations or developments within or partially within a significant wetland, except as allowed/approved pursuant to Section 18.775.130. As described in Section 18.775.130 Plan Amendment, the City allows applicants to impact significant wetlands if one of two options can be demonstrated. The first option is to conduct an Economic, Social, Environmental, and Energy (ESEE) Analysis that shall consider the consequences of allowing the proposed conflicting use. The second option is to demonstrate the wetland's "insignificance." PHS reviewed the significance thresholds included as an addendum to the City of Tigard's Local Wetlands Inventory and determined that even though the quality of the wetland, its connection to Ash Creek still ensures it would be regarded as significant. As such, the applicant is submitting an ESEE analysis for a quasi-judicial comprehensive plan amendment under a Type IV procedure.

This document focuses on the significant wetland and does not include a significant habitat evaluation. It is understood the significant habitat evaluation is an incentive based, non-regulatory element within the City's regulatory frame work.

2.0 ESEE ANALYSIS

The applicant has prepared an ESEE consequences analysis in accordance with OAR 660-23-040. The ESEE analysis is used to determine whether a jurisdiction will allow, limit or prohibit a use that may conflict with preservation of the significant natural resource. For the proposed development on SW Oak Street, the subject properties include a Goal 5 resource considered significant (i.e. the wetland that borders Ash Creek).

The Goal 5 ESEE analysis involves evaluating the tradeoffs associated with different levels of natural resource protection. As required by the Goal 5 rule, the evaluation process involves identifying the consequences of allowing, limiting or prohibiting conflicting uses in areas containing significant natural resources. Specifically, the rule requires the following steps:

- **Identify conflicting uses** – A conflicting use is "any current or potentially allowed land use or other activity reasonably and customarily subject to land use regulations that could adversely affect a significant Goal 5 resource." [OAR 660-23-010(1)]
- **Determine impact area** – The impact area represents the extent to which land uses or activities in areas adjacent to natural resources could negatively impact those resources. The impact area identifies the geographic limits within which to conduct the ESEE analysis.

- **Analyze the ESEE consequences** – The ESEE analysis considers the consequences of a decision to either fully protect natural resources; fully allow conflicting uses; or limit the conflicting uses. The analysis looks at the consequences of these options for both development and natural resources.
- **Develop a program** – The results of the ESEE analysis are used to generate recommendations or an “ESEE decision.” The ESEE decision sets the direction for how and under what circumstances the local program will protect significant natural resources.

The site of the proposed development has been evaluated in a prior ESEE Analysis. The ESEE Analysis (*Tualatin Basin Goal 5/ Natural Resources ESEE Analysis*) was prepared in March 2005 by the Tualatin Basin Partners for Natural Places and by Angelo Eaton & Associates. It addressed Riparian Corridors (OAR 660-023-0090); Wildlife Habitat (OAR 660-023-0110); and Inner and Outer Impact Areas. The report divided their study area into sixty nine “streamsheds”. The proposed project is located within the Ash Creek Streamshed (Local site #2) (Figure 1). The ESEE analysis also included information from Metro. For its Goal 5 inventory, Metro divided the entire region into twenty-seven “Regional Sites”. The Metro “Regional Sites” were developed using 5th and 6th field watershed mapping. The proposed project is located in Regional Site #12 (Figure 2).

2.1 IDENTIFICATION OF IMPACT AREA

Under the Goal 5 rule, “local governments shall determine an impact area for each significant resource site. The impact area shall be drawn to include only the area in which allowed uses could adversely affect the identified resource. The impact area defines the geographic limits within which to conduct an ESEE analysis for the identified natural resource” (OAR 660-23-040(3)).

2.1.1 Overview of Existing Local Land Uses

As stated above, the proposed project is located within the Ash Creek Streamshed (Local site #2). Land uses within the streamshed primarily include low density single family residential and high density commercial and mixed use located along major roads. The streamshed is largely developed, with only 40 acres (4%) of the streamshed identified in the City buildable lands inventory (BLI) as vacant or redevelopable. Within the resource areas, 17 acres are designated as buildable. Tigard’s BLI includes vacant sites, consisting of individual or combinations of parcels, ¼ acre or larger. It excludes all Title 3 protected areas (floodplain, wetlands, and buffers). The 17 acres in question are designated for either light or moderate protection. The resource type involved is upland wildlife habitat.

Located within the streamshed are the Washington Square Mall, Lincoln Center, and other commercial developments. While the amount of vacant land within this streamshed is small, the potential for redevelopment is relatively large because a major portion of the area falls within the *Washington Square Regional Center Plan* area. The Washington Square Plan calls for higher density urban development. This higher density includes mixed use developments within the plan area. Other uses in the streamshed include single family attached and detached structures, multi-family developments, Metzger Park, a public golf course, Metzger Elementary School, offices, retail establishments, and eating and drinking establishments. Also present is the subject property and the adjacent pasture located south of Ash Creek and north of Highway 217.

According to Clean Water Services (CWS), the amount of overall effective impervious area (EIA) within the regional site is 21%. The EIA is a very high 42-70% in the area of the Washington Square Mall and a high 23-41% in the other commercially developed areas. In contrast, the EIA within the residentially developed areas is a low 1-13%.

2.1.2 Overview of Local Natural Features

According to Metro's *Regionally Significant Riparian and Wildlife Inventory*, Regional Site #12 (2,693.5 acres) contains streams that generally have a medium gradient. Anadromous fish are present in 7 of the 46 stream miles located within the regional site. The *Natural Resource Assessment Technical Report* for the *Washington Square Regional Center Implementation Plan* indicates that Ash Creek offers poor habitat for fish. This is because important habitat elements such as large woody debris, cold water temperatures, pool and riffle complexity, and quality spawning gravel areas are largely absent from the area's stream system.

The *Tualatin Basin Existing Environmental Health Report* (EEHR) rates the overall health of the Regional Site as fair. In terms of the individual components used to assess health, wildlife habitat is rated as fair, water quality as poor and riparian vegetation as fair.

Conifer and hardwood forests are identified as the predominant habitat types within the resource site, with wetlands accounting for 13% of the site's wildlife habitat. The regional site accounts for nearly 4% of the regional wetlands and ranks 6th among the 27 resource sites in terms of wetland acreage. The site is characterized as having relatively small habitat patches with little forest interior, but reasonably good connectivity and very good water resources.

The City's local Goal 5 inventory, conducted in 1994, indicates that water quality is excellent in the stream's upstream reach (including the south fork of Ash Creek). Water quality deteriorates as the stream flows downstream through residential areas and receives stormwater run-off from these areas. This conclusion is consistent with the finding of the EEHR and the *Natural Resource Technical Assessment Report*, prepared for the *Washington Square Regional Center Implementation Plan*.

2.1.3 Natural Resources within the Development Property

Land use adjacent to the proposed development includes residential, commercial, and open space. The proposed development consists of six tax lots with four houses. The houses are located in the northern portion of the study area along SW Oak Street and include paved driveways, accessory buildings, and existing landscape vegetation. One of the houses is vacant; the other three are currently occupied. Within the study area, PHS identified one large wetland (designated as Wetland A), a stormwater ditch, and Ash Creek. PHS conducted the wetland delineation in February, 2014 (Figure 3).

Wetland A: Wetland A is located in the southern half of the study area, and is approximately 288,490 square feet (6.62 acres). The Cowardin class is palustrine, emergent, seasonally flooded (PEMC) and the HGM class is Slope. The wetland slopes gently from north to south, and

continues to the edge of Ash Creek. Vegetation within the wetland consists of pasture grasses; meadow foxtail (*Alopecurus pratensis*), tall fescue (*Festuca arundinacea*), creeping bentgrass (*Agrostis stolonifera*), and velvet grass (*Holcus lanatus*, FAC). Reed canarygrass (*Phalaris arundinacea*) is present in the western portion of the wetland. Other facultative pasture grasses are likely present, but due to the time of year, identification was not possible. Vegetation in the adjacent upland consists of the same pasture grasses as in the wetland, however Canada thistle (*Cirsium arvense*) and Himalayan blackberry (*Rubus armeniacus*) are also present.

Soils within the wetland meet the definition for redox dark surface (F6), and are considered hydric. The soils within Wetland A were generally not saturated; hydrology was satisfied using the oxidized rhizospheres indicator, or secondary indicators, including raised ant mounds and geomorphic position. Wetland A continues east, west, and south outside of the study area.

A 48,228 sq. ft. (1.11 acre) vegetated corridor regulated by Clean Water Services exists adjacent to the wetland to the north. Due to past disturbance, the quality of the vegetated corridors is considered to be degraded.

Stormwater Ditch: A stormwater ditch is located in the northwestern portion of the study area. It covers approximately 471 square feet (0.01 acre) within the study area. The ditch carries stormwater from SW Oak Street, as well as from the existing condominium complex located north of SW Oak Street, and empties into Wetland A.

Ash Creek: Ash Creek provides rearing and migration habitat for Lower Columbia River winter steelhead trout to river mile 1.53 (including the reach adjacent to the project site). Ash Creek is a straightened channel within the project area, with a degraded riparian area.

2.1.4 Identification of Impact Area

The Impact Area for the ESEE is defined as the 11.17 acres south of SW Oak Street in Tigard, which includes tax lots 1303, 4000, 4100, 4200, 4300, and 4400, all of Wetland A, the stormwater ditch, the vegetated corridor, and Ash Creek.

2.2 Potential Conflicting Uses within the Impact Area

The proposed development is located within District C (Lincoln Center-Ash Creek), one of five districts within the *Washington Square Regional Center Plan*. The Regional Center Plan describes strategies that make the most efficient use of urban land in the face of dramatic population growth. Regional centers aim to reach densities of 60 people an acre through housing and employment - the metro area's second-highest density after downtown Portland. Residents of high density neighborhoods (Lincoln Center is designated as one of the highest within the plan area) will have easy access to nearby jobs, essential services and retail resources. One important component of developing within the property is adherence to the plan's vision of maintaining the functions of Ash Creek and adjacent sensitive areas. As described in the plan: "plantings, setbacks and other mitigation and enhancement techniques will buffer Ash Creek and adjacent sensitive areas from disturbance." As will be described in detail below, the proposed

development achieves a high residential density, while preserving and enhancing Ash Creek and adjacent sensitive areas.

Within the property, 0.33 acres of right-of-way will be dedicated for the widening of SW Oak Street across the site's frontage leaving a potential development area of 10.84 acres; however, the property includes 6.62 acres of jurisdictional wetland and Ash Creek, which flows to the west along the southern property boundary. The project proposes to unavoidably impact 0.42 acres of this lower quality wetland closer to Oak Street, but will preserve 6.2-acres of remaining wetland, which will be protected in perpetuity (Figure 4). There are also 1.02 acres of vegetated corridor impacts and the preservation and enhancement of 0.09 acres. Of the 6.2 acres, 3.2 acres will be enhanced with native tree and shrubs plantings, leaving 3 acres unplanted to create habitat diversity within the floodplain of Ash Creek. The 3.2 acres of enhancement is a voluntary action by the applicant and is not proposed as required mitigation (credits from a local wetland mitigation bank will be purchased to satisfy the Department of State Lands and US Army Corps of Engineers' mitigation requirements).

The density of the project will be 51.8 units per net acre on the development portion of the site, and 19 dwelling units per acre for the entire site. The project site includes six existing parcels, which will be consolidated into a single parcel prior to site development. If a separate tract is required to be created for the open space area, a property line adjustment application will be submitted and the parcels will be reconfigured to create a development parcel and a tract prior to or concurrent with consolidation of the parcels. All existing buildings and site improvements will be removed from the site with initial site grading.

Four, 4-story buildings are proposed and will be between 47-feet and 53-feet tall when viewed from SW Oak Street. All together, the proposed buildings will contain 64 studio units of less than 500 square feet in size, 98 one-bedroom units, and 53 two-bedroom units. The apartment buildings will have similar appearances. Variations amongst the buildings will be provided by their varied sizes and by different paint schemes and minor variations in trim packages. The development will include a landscaped plaza with benches, community gardens for the use of residents, landscape beds, and a bicycle parking pavilion. A 20-foot wide public pedestrian easement will be provided along the western edge of the site and into the wetlands area to the south for future development of a public pedestrian trail to connect with a future east-to-west public trail near Ash Creek. The east-to-west trail is described in the City of Tigard's Parks Master plan as a portion of a planned Washington Square Regional Center Trail. The applicant will work with the City on the provision of and the final locations for these public pedestrian easements.

A total of 278 on-site parking spaces will be provided. Partially below-ground level parking garages will provide covered parking spaces for 37 vehicles. A surface parking lot will be located to the south of the buildings. A total of 241 surface parking spaces will be provided. The applicant will work with a car share provider to encourage project residents to utilize shared vehicles in order to reduce the demand for on-site parking. Information on a car share program(s) will be provided to residents. A small number of conveniently located parking spaces may be reserved for car share vehicles.

The application to the City of Tigard requests a 9.15 percent reduction in the number of required onsite parking spaces due to anticipated less than normal demand for parking spaces by project residents, and in order to not increase the amount of proposed wetland impact to create additional parking spaces. Less than normal demand is anticipated for parking due to the relatively small size of the units providing housing for fewer residents (prevalence of studios and 1-bedroom units compared to typical suburban apartment complexes); the availability of car share vehicles, the availability of nearby transit; and the proximity to nearby shopping and employment opportunities.

Construction of the proposed project will result in the placement of fill within 0.42 acres of the wetland and 1.02 acres of the vegetated corridor. Mitigation for the wetland impacts are described below, but will include the purchase of credits from the Tualatin Valley Environmental Bank. The planting of 3.2 acres within the wetland and riparian area of Ash Creek is not regarded as wetland mitigation, but is being voluntarily proposed by the applicant.

Numerous development plans have been proposed for the property since at least 1996. All of the previous proposals would have resulted in greater than the proposed 0.42 acres of wetland impact proposed in this application. Figures 5A-5C show previous development proposals.

Alternative 1: This alternative shows development of the entire site, from SW Oak Street all the way to the banks of Ash Creek (Figure 5A). This scenario would have proposed impacts to almost the entire 6.62 acres of wetlands and would have impacted the riparian area of Ash Creek.

Alternative 2: This alternative shows development of the central and northern portions of the site (Figure 5B). Although impacts to the wetland are less than Alternatives 1 or 3, impacts to Wetland A are still significant.

Alternative 3: This alternative shows development of the entire site, from SW Oak Street all the way to the banks of Ash Creek (Figure 5C). Again, this scenario would have proposed impacts to almost the entire 6.62 acres of wetlands and would have impacted the riparian area of Ash Creek. In addition, this scenario shows a portion of Wetland A excavated to create a pond.

The Applicant also considered an alternative site plan that completely avoided Wetland A. This alternative results in no impact to any jurisdictional wetlands; however, because of the City of Tigard's requirements for density and parking, this alternative reduces the amount of developable area and does not meet project specific criteria as well as the preferred alternative.

For this proposal, the impact to the wetland is lessened significantly from prior proposals. The project proposes to unavoidably impact 0.42 acres of this lower quality wetland closer to SW Oak Street, but will preserve the 6.2 acres of remaining wetland, which will be protected in perpetuity as described earlier. Of the 6.2 acres, 3.2 acres will be enhanced with native tree and shrubs plantings, leaving 3.0 acres unplanted to create habitat diversity within the floodplain of Ash Creek (Figures 6-6A).

The proposed design minimizes impacts by proposing underground parking, increasing the building heights, and reducing the proposed number of units. The proposed development is

clustered together. The proposed residential density is well below that desired by Metro for the property.

Ash Creek provides rearing and migration habitat for steelhead trout, which is listed as Threatened under the Federal Endangered Species Act. There will be no direct effects to steelhead from the proposed development plan. The project includes a buffer of between approximately 260 to 300 feet from the creek to the southern edge of the proposed development. The list of trees and shrubs to be planted in the wetland and the riparian area is included below.

Wetland Enhancement – 3.2 acres (139,480 SF)

Botanical Name	Common Name	Height (in feet)	Planting density (on center)	Quantity
Trees				
<i>Alnus rubra</i>	Red alder	5-6'	10'	139
<i>Crataegus douglasii</i>	Douglas hawthorn	5-6'	10'	349
<i>Fraxinus latifolia</i>	Oregon ash	5-6'	10'	446
<i>Salix lasiandra</i>	Pacific willow	5-6'	10'	349
<i>Thuja plicata</i>	Western red cedar	5-6'	10'	112
Total				1,395
Shrubs/Small Trees				
<i>Cornus alba</i>	Red osier dogwood	2-3'	5'	2,092
<i>Spiraea douglasii</i>	Douglas spiraea	2-3'	5'	1,744
<i>Lonicera involucrata</i>	Twinberry	2-3'	5'	1,394
<i>Physocarpus capitatus</i>	Ninebark	2-3'	5'	1,744
Total				6,974

In addition to the buffer and the proposed plantings, all stormwater will be treated to that required by the National Marine Fisheries Service’s Standard Local Operating Procedures for Endangered Species (SLOPES) V. As such, there will be minimal impact to Ash Creek and the majority of the wetland. Storm drainage runoff will be collected by building laterals and catch basins for onsite runoff. Runoff will be treated using mechanical treatment devices such as StormFilter catch basins and storm drain splitter manholes and StormFilter manholes. The private storm drainage system will discharge to riprap pads above the wetlands in four locations south of the parking area and retaining wall. Stormwater from these discharge points ultimately will flow to Ash Creek through the intervening wetlands. It is anticipated that no on-site storm water detention will be necessary. A Storm Drainage Report for the project is included as an attachment to this application. Stormwater management will comply with SLOPES V, as described in the Stormwater Management Plan prepared by Otak.

A discussion of alternatives for impacts to the vegetated corridor is included in Appendix B.

2.3 Site Specific ESEE Analysis

This section considers the economic, social, environmental and energy consequences of the following:

- a. Prohibit conflicting uses providing full protection of the resource site.
- b. Limit conflicting uses offering limited protection of the resource site (balance development and conservation objectives).
- c. Allow conflicting uses fully with no local protection for the resource site.

2.3.1 Environmental Consequences

Prohibit Conflicting Uses: If all conflicting uses are prohibited, then the wetland in its current condition would be conserved. The wetland is privately owned and the property owner has no plans to enhance the property should all conflicting uses be prohibited. Any proposed development would likely be restricted to the redevelopment of the existing houses on SW Oak Street and the wetland in its current condition would remain intact.

The wetland provides functions and values, but these are degraded due to past disturbance to the site. Ash Creek likely flowed freely through the property prior to human settlement of the area, but it was straightened decades ago and now forms the southern property boundary. The wetland was grazed for many years and as a result many of the trees and shrubs that dominated the wetland, such as Oregon ash and western red cedar, have been replaced by non-native pasture grasses.

Even with the impacts from past human use, however, the wetland still provides important functions and values. Water quality treatment is provided due to the fact that the stormwater ditch discharges into the wetland before reaching Ash Creek. As such, the non-native grasses within the wetland filters the stormwater flowing untreated from impervious surfaces upstream. Wildlife habitat is provided by the open space adjacent to the creek and by the proximity of the creek itself. The property likely serves as a travel corridor for a variety of common urban wildlife species, but also for more uncommon species such as coyotes and deer. The property is partially within the 100-year floodplain. Although the property does not detain flood flows for any appreciable time, it likely provides temporary habitat for steelhead when water levels rise above the top of the bank. The wetland also provides a visual buffer from the adjacent developed areas.

Limit Conflicting Uses: If conflicting uses are limited, there will be a balance of development and conservation objectives. The proposed development will unavoidably impact 0.42 acres of the wetland, but will conserve 6.2 acres. As such, only approximately 6% of the wetland is proposed for impact and approximately 94% of the wetland will be preserved in perpetuity (the property owner will record a conservation easement on the undeveloped portion of the property).

There are short term construction-related impacts, which would occur when preparing land for and constructing the proposed development. Construction activity will result in the excavation

and removal of vegetation, or “ground disturbing activities.” However, these disturbances can be restored through native plantings and a strictly enforced erosion control plan will ensure that impacts are limited to the footprint of the proposed development. Construction noise can have a detrimental impact on wildlife, especially during nesting periods.

The proposed development will impact a small portion of the total wetland on the site, but it will have little effect on the overall functions and values that the wetland currently provides. It can be argued that allowing the conflicting use will actually enhance the wetland by ensuring the remaining portion of the wetland is enhanced. Limiting conflicting uses would ensure that the remainder of the wetland is enhanced through the planting of native trees and shrubs. A total of 1,395 trees and 6,974 shrubs will be planted within 3.2 acres of the wetland. The remaining 3 acres will remain open to ensure there is a diversity of habitats within the remaining wetland. Open wet meadows surrounded by dense woody vegetation provide an important niche for many species of wildlife and can be uncommon in urban settings. The plantings will be focused on the riparian area on the north side of Ash Creek, which will moderate water temperatures and enhance the quality of instream habitat for salmonids by providing a source of food. The enhancement will also be focused within the northern portion of the wetland adjacent to the proposed development. The dense woody plant community adjacent to the development will provide both a visual and a sound buffer between the wetland and the proposed development.

The proposed development will impact a small portion of the 100-year floodplain, but there will be no net rise in floodplain elevation. The addition of 8,369 trees and shrubs to the wetland and the floodplain will, over time, attenuate flood flows, ensuring water is released downstream slower than under current conditions.

The proposed development will result in increased impervious surfaces. The proposed 11.28 acre residential development project will consist of 4.39 acres of impervious surface, of which 3.93 acres will be new impervious surface. Allowing conflicting uses, however, will not degrade the quality of the remaining wetland or Ash Creek. The applicant proposes to manage stormwater through the use of proprietary water quality treatment filters, Low Impact Development Approach (LIDA) planters, and underground detention chambers. The A+O Apartments site will be divided into public and private stormwater management systems. Most of the private runoff will be collected and conveyed to a proprietary water quality treatment filter facility and then to an underground detention facility at the south side of the site. Runoff from two small private areas at the eastern and western sides of the site will be treated with proprietary water quality treatment filters and discharged directly to the Ash Creek floodplain without detention. The new impervious area within the SW Oak Street public right-of-way frontage will be treated by LIDA treatment facilities (infiltration planters and/or swales). These structures will also provide detention for smaller storm events. All onsite stormwater treatment facilities will be designed to treat the water quality design storm event, which SLOPES V has identified as 50% of the 2-year, 24-hour storm event. Runoff water quality treatment standards will be met using proprietary filter cartridges for the private basins and LIDA facilities for the public impervious areas. The water quality storm event generates 4,010 cubic feet of runoff from the onsite basin under proposed conditions. As the proprietary treatment filters are a flow-based system, a design flow of 1.04 cubic feet per second will be used for sizing the private water quality facilities. New impervious surfaces within the public right-of-way will be treated using LIDA facilities sized to meet CWS design standards.

LIDA swales and infiltration planters function by collecting runoff generated by the water quality event and filtering it through 18-inches of water quality mix material, which is comprised of topsoil, sand, and compost. Beneath the water quality mix layer is a section of open-graded rock surrounding a perforated pipe. What stormwater does not infiltrate into the native soil is collected and conveyed to the storm sewer system.

Allow Conflicting Uses: If conflicting uses are allowed, then theoretically a much larger proportion of the wetland could be impacted by development. Obviously any impacts to the wetland will need to be reviewed and approved by the Oregon Department of State Lands and the US Army Corps of Engineers.

Allowing conflicting uses will result in the removal of vegetative cover and habitat for a variety of wildlife. Lost habitat would include feeding places for birds, and loss of feeding and refuge areas for mammals, reptiles, amphibians, and insects. Existing habitat may be replaced with lawns and ornamental, non-native vegetation. Impervious surfaces may permanently replace native habitats. The wildlife migration corridor that the property currently provides will likely be lost or severely impacted depending on the level of wetland filled. The property currently provides habitat connectivity along Ash Creek. Fences and other development can form barriers to wildlife migration. As the range of habitat for indigenous wildlife becomes restricted and isolated, opportunities for recruitment from other areas are limited and wildlife populations become vulnerable to disease, predation and local extinction.

Increased impervious surface and vegetation loss can lead to increased storm runoff and peak flows in streams, resulting in erosion, bank failure, flooding, and significant loss of fish and aquatic habitat function. It is assumed, however, that the development resulting from allowing conflicting uses will still need to adhere to the water quality and detention standards set by the National Marine Fisheries Service and CWS.

The increase in impervious surface and storm runoff also leads to reduced groundwater recharge and altered volumes of water in wetlands and streams contributed by groundwater. This can alter an area's hydrology by lowering surface water levels or groundwater tables and removing a local source of water essential to the survival of fish, amphibians and aquatic organisms as well as terrestrial animals. Clearing and grading activities can reduce the capacity of soil to support vegetation and absorb groundwater by reducing soil fertility, microorganisms, and damaging soil structure.

As with allowing limited conflicting uses, there are short term construction-related impacts, which occur when preparing land for and constructing the proposed development. Construction activity results in the excavation and removal of vegetation, or "ground disturbing activities." However, these disturbances can be restored through native plantings and a strictly enforced erosion control plan will ensure that impacts are limited to the footprint of the proposed development. Construction noise can have a detrimental impact on wildlife, especially during nesting periods.

2.3.2 Economic Consequences

Prohibit Conflicting Uses: Prohibiting conflicting uses would keep the wetland intact and likely limit the footprint of the proposed development activity to the existing houses on SW Oak Street. The houses would be remodeled or torn down and replaced by new houses. As there will be no change in density, prohibiting conflicting uses would impact the potential densities planned for (and required) in the *Washington Square Regional Center Implementation Plan*. The economic benefits for local businesses from developing a high density apartment complex would not be realized. The applicant would also realize far less economic benefit from remodeling or replacing the four houses.

There will be a loss in short term construction jobs required when the apartment complex is developed. There are many studies that state living next to an open space increases property values. As such, prohibiting conflicting uses could benefit property values on SW Oak Street in the long term.

Limit Conflicting Uses: Balancing development and conservation goals for the property will result in an economic gain for local businesses, while ensuring that adjacent properties benefit from an enhanced and largely intact open space. The applicant's proposed development of 215 multi-family residential dwelling units will economically benefit businesses in the area, such as Washington Square and Lincoln Center. The applicant will also receive income generated by the proposed development. There will be a gain in construction jobs generated by the construction of the apartment complex.

Allow Conflicting Uses: Allowing conflicting uses would increase the population of people residing in the apartment complex and would thus be expected to increase the economic gains of local businesses. There would be more short term construction jobs required to construct the larger complex.

Adjacent properties could be negatively impacted by the loss of open space and the increased footprint of the apartment complex, which (at least temporarily) would not be in keeping with adjacent developments.

2.3.3 Social Consequences

Prohibit Conflicting Uses: Prohibiting conflicting uses would result in the redevelopment of the area of the houses along SW Oak Street, with the wetland remaining in its current degraded condition. The wetland and the creek would remain in private property and would not be accessible for educational purposes. As such, there would not be any benefit from passive recreation (e.g. bird watching); however, the social benefits afforded from living adjacent to an open space would remain intact.

Limit Conflicting Uses: Limiting conflicting uses would allow the development of the 215 unit apartment complex and the enhancement of the wetland. The enhanced wetland and its proximity to a relatively large population would establish new connections for people to the outdoors.

Although access to the enhanced wetland will be restricted by the home owners association, the proximity of the enhanced resource will benefit passive recreation, such as bird watching.

By increasing the amount of buildable land inside the Urban Growth Boundary (UGB), expansion of the UGB onto farm and grazing land could be slightly delayed.

Allow Conflicting Uses: Allowing conflicting uses would result in the loss of open space and views, which could negatively affect adjacent properties and the local area as a whole. The property is partly visible from Highway 217, so the visual impact of a large development, with no associated enhancement, could have a negative social effect.

Wetlands provide educational opportunities for those living near them, which would be lost if conflicting uses are allowed. Wetlands also provide opportunities for urban quiet and solitude, the lack of which has adverse social consequences.

2.3.4 Energy Consequences

Prohibit Conflicting Uses: Prohibiting conflicting uses would result in the redevelopment of the houses on SW Oak Street. This would increase the pressure to expand the UGB in the long term, which could result in people needing to travel farther to work, school, and to shop, which would increase energy consumption. This could also result in the need for new roads and infrastructure further from population centers.

Limit Conflicting Uses: Limiting conflicting uses would result in the proposed enhancement of the wetland and the addition of over 8,000 trees and shrubs to the wetland. Trees provide shade that cools buildings in the summer and serve as a windbreak in the winter. Plants absorb sunlight and transpire during the growing season, which can slightly reduce ambient air temperatures. Trees help capture carbon dioxide, a contributing factor to global warming. Trees also reflect and absorb solar radiation before it heats the ground, buildings, or pavement. Trees planted to the south of a building, as will be the case with the proposed development, can reduce air conditioning costs by blocking the sun during the summer.

Although access to the enhanced wetland will be limited, it can still provide local recreational opportunities, thus reducing the need to drive for outdoor experiences (i.e. passive recreation such as bird watching).

The applicant has asked the City of Tigard for permission to install less than the normally required amounts of on-site parking so as to avoid additional impacts to the wetland. The understanding is that fewer people will rely on owning their own vehicles. The development property has excellent access to transportation corridors for public transportation, pedestrian and bike routes, and local shopping areas, which will reduce energy consumption.

Allow Conflicting Uses: Allowing conflicting uses would increase the footprint and the density of the proposed development. This would diminish the need to expand the UGB and ensure that people were more centrally located to businesses, jobs and schools. The need for new infrastructure to support the increase in population would be less. However, the loss of over

8,000 trees and shrubs, which are proposed to be planted could negatively impact local climate conditions. The larger property may not be buffered from the south by shade, which could increase energy costs during the summer and winter.

3.0 COMPARISON WITH OTHER COMPARABLE SITES WITHIN THE TIGARD PLANNING AREA AND ALTERNATIVE SITE PLANS

DBG Oak Street, LLC conducted a thorough analysis of other comparable sites within the Tigard planning area and concluded that none are available. Two potentially available properties were identified as comparable to the proposed development site. Both properties are zoned MUR-1 (no maximum density; 50 units per acre minimum density). Despite the lack of a maximum density requirement, the small size of these parcels and the surrounding pattern of development (detached single-family homes and 2-story multi-family development) make the likelihood of developing this site with over 75 units very unlikely.

The first site, known as the Davis property, is located on several parcels to the east, west, and south of the proposed development site. The LWI maps large wetland areas within these parcels, including Ash Creek and a large pond. The applicant expects that these parcels contain at least as much wetland, if not more, than the proposed development site. Although these parcels together total an acreage large enough for the proposed development, the landowner was unwilling to sell the property when the proposed development was being designed.

The second site potentially available to the applicant is the Hunziker Road site. This site is located approximately 1.5 miles southeast of the proposed development, west of Highway 217. Although only encumbered by 1.25 acres of wetland (WD2011-0270), this parcel is steeply sloped. As such, creating a relatively flat area for the development of high density housing would require a large amount of earthwork. Because of the location of the wetland in the west-central portion of the site, it is likely that the entire wetland would need to be filled to create a flat, developable area.

The Hunziker Road property is zoned I-P industrial park, which does not allow for multi-family development. This parcel is the largest remaining industrial site within the City of Tigard, and the applicant inquired about the potential for a zoning change. Initial conversations with City staff indicated that they are not supportive of a zoning change. The site abuts a low density residential development, which could make it difficult and controversial for adjacent high-density residential development.

Lastly, the presence of Highway 217 and Highway 99W between the Hunziker Road site and the Washington Square Regional Center and the associated traffic congestion in that area functionally disconnects these properties from the Regional Center. It is unlikely that the City of Tigard would allow enough roadway improvements (i.e. sidewalks and bike lanes) to make this area attractive for non-vehicular traffic. The lack of readily available sites of sufficient size and zoning led the applicant to choose the proposed development site as the preferred development site.

4.0 ESEE DECISION

Prohibiting conflicting uses within the impact area would preserve the existing wetland, but will remove the opportunities to enhance the resource. The property could not be developed with a higher density, so the pressure to expand the UGB could be slightly increased. Local businesses would not benefit from the larger population base. Construction jobs will be fewer. The open space would be preserved in its current condition, which will preserve property values for adjacent property owners.

Limiting conflicting uses would allow for the development of 215 dwelling units and the planting of greater than 8,000 trees and shrubs in the adjacent wetland. The goals of the *Washington Square Regional Center Implementation Plan*, which calls for higher densities closer to urban centers, would be realized. The enhancement to the resource would ensure that wildlife habitat is improved and the travel corridor along Ash Creek is preserved. When mature, the trees and shrubs will attenuate flood flows. The trees will also moderate air temperatures during the summer, which will decrease energy costs. The increased population density and the focus on mass transit and car share programs will decrease energy reliance.

Allowing conflicting uses within the impact area will increase the population density and ensure that local businesses receive the maximum economic gains. Short term construction jobs will be increased. The loss of the open space would negatively impact wildlife habitat (e.g. travel corridor) and wetland functions, such as groundwater recharge, water quality treatment, and hydrologic enhancement. Impacts from increased development in the floodplain could negatively impact adjacent properties. The loss of a visual buffer and open space could negatively impact adjacent property values and investment values. The loss of the open space could diminish recreational opportunities, such as bird watching. The lack of trees to the south of the proposed development could decrease shading and increase energy costs during the summer.

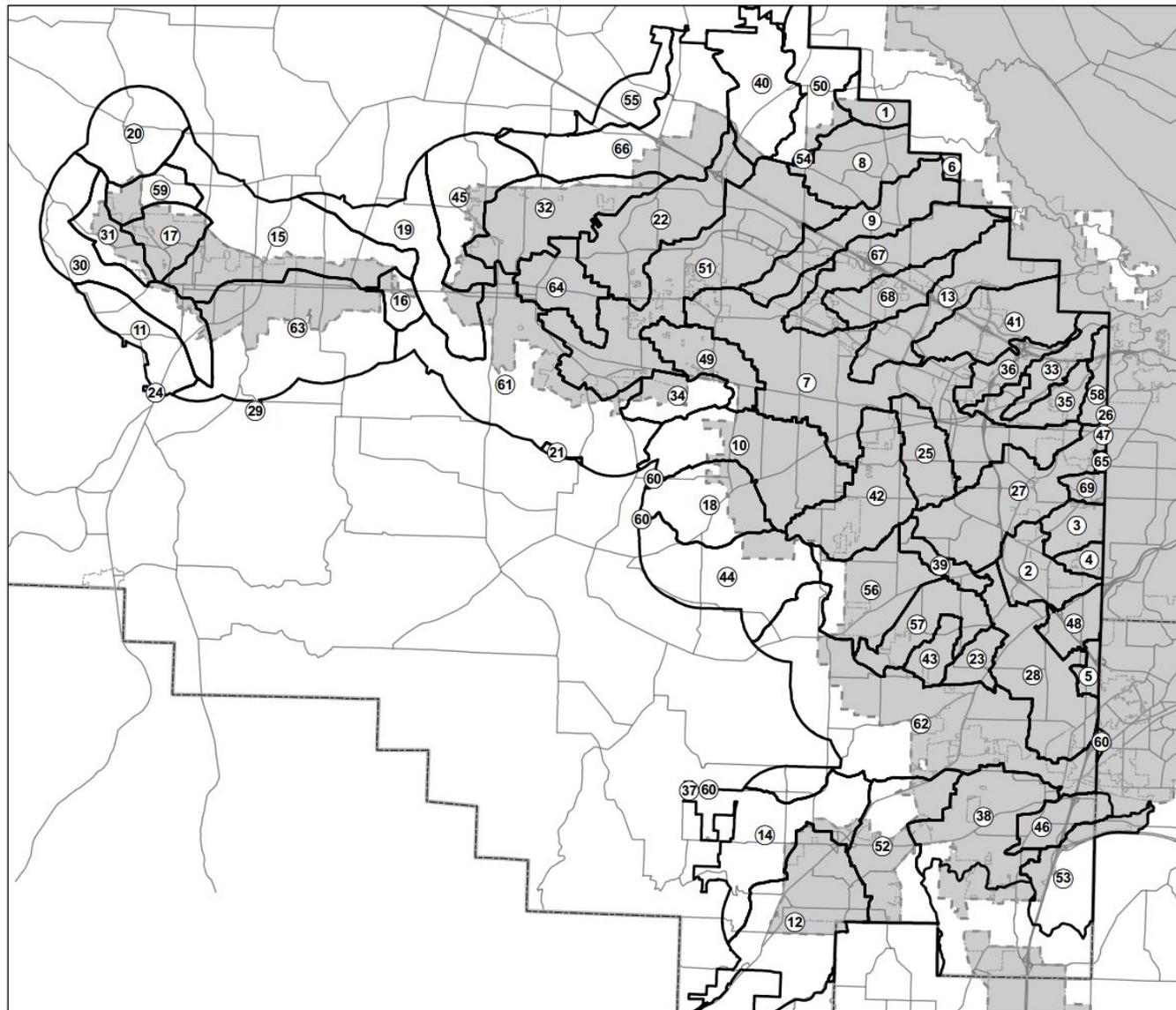
Decision: The analysis concludes that **limiting conflicting uses** would result in the most positive consequences of the three decision options. A limit decision will avoid many of the negative consequences attributed to either allowing or prohibiting all conflicting uses. Through the application of site design and development standards to conflicting uses, the impacts on the significant wetland can be minimized (only 6% will be impacted) and the remaining resource can be enhanced. There will be a relatively high level of economic, social, environmental and energy benefits achieved. Limiting conflicting uses offers the most benefit to the wetland (through its enhancement) and to the community, and strikes a balance between conflicting uses and planning goals. The recommendation is to limit conflicting uses within the significant wetland.

Appendix A

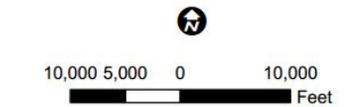
Figures



Figure 4b:
Local Site / Streamshed Boundaries



-  Streamshed Boundary
-  Urban Area
-  City Limits
-  County Line
-  Urban Growth Boundary



5341
5/21/14



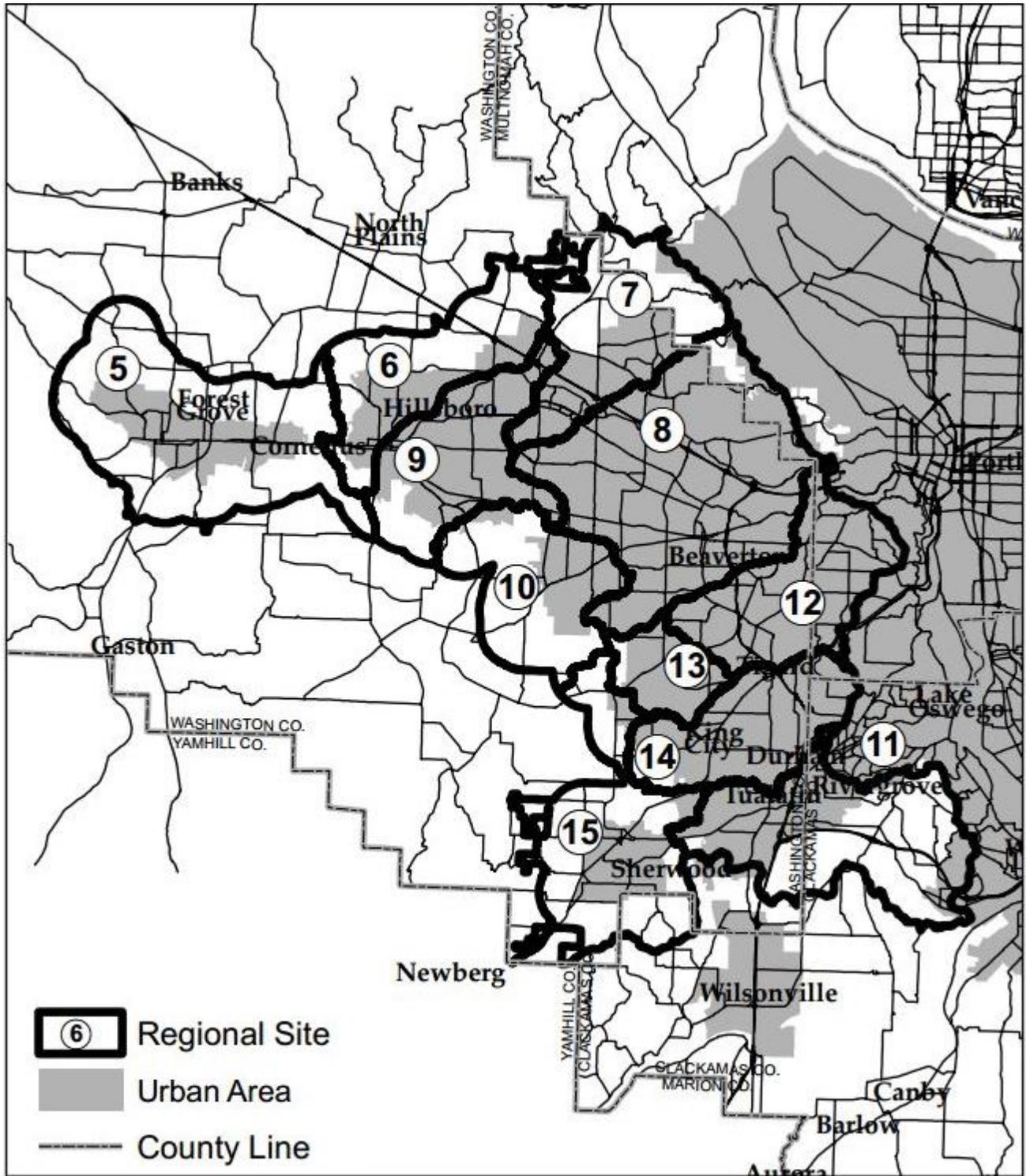
Pacific Habitat Services, Inc.
9450 SW Commerce Circle, Suite 180
Wilsonville, OR 97070

Tualatin Basin Goal 5/ Natural Resources ESEE Analysis - Streamshed Boundaries A+O Apartments, Tigard, Oregon

Tualatin Basin Partners for Natural Places and by Angelo Eaton & Associates, 2005

FIGURE

1



5341

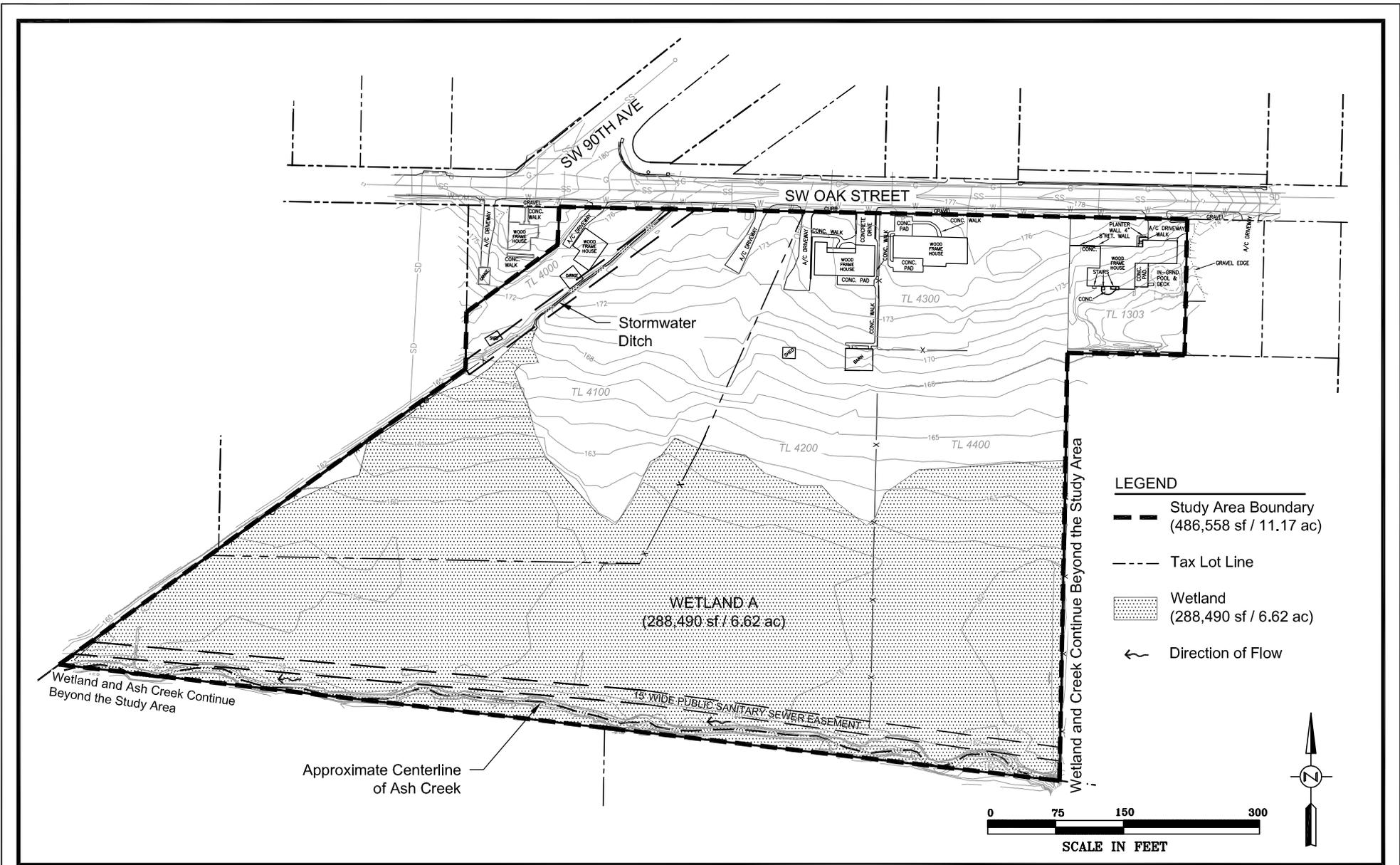
5/21/14



Pacific Habitat Services, Inc.
 9450 SW Commerce Circle, Suite 180
 Wilsonville, OR 97070

Metro's Goal 5 Inventory Regional Sites
 A+O Apartments, Tigard, Oregon
 Metro,

FIGURE
 2



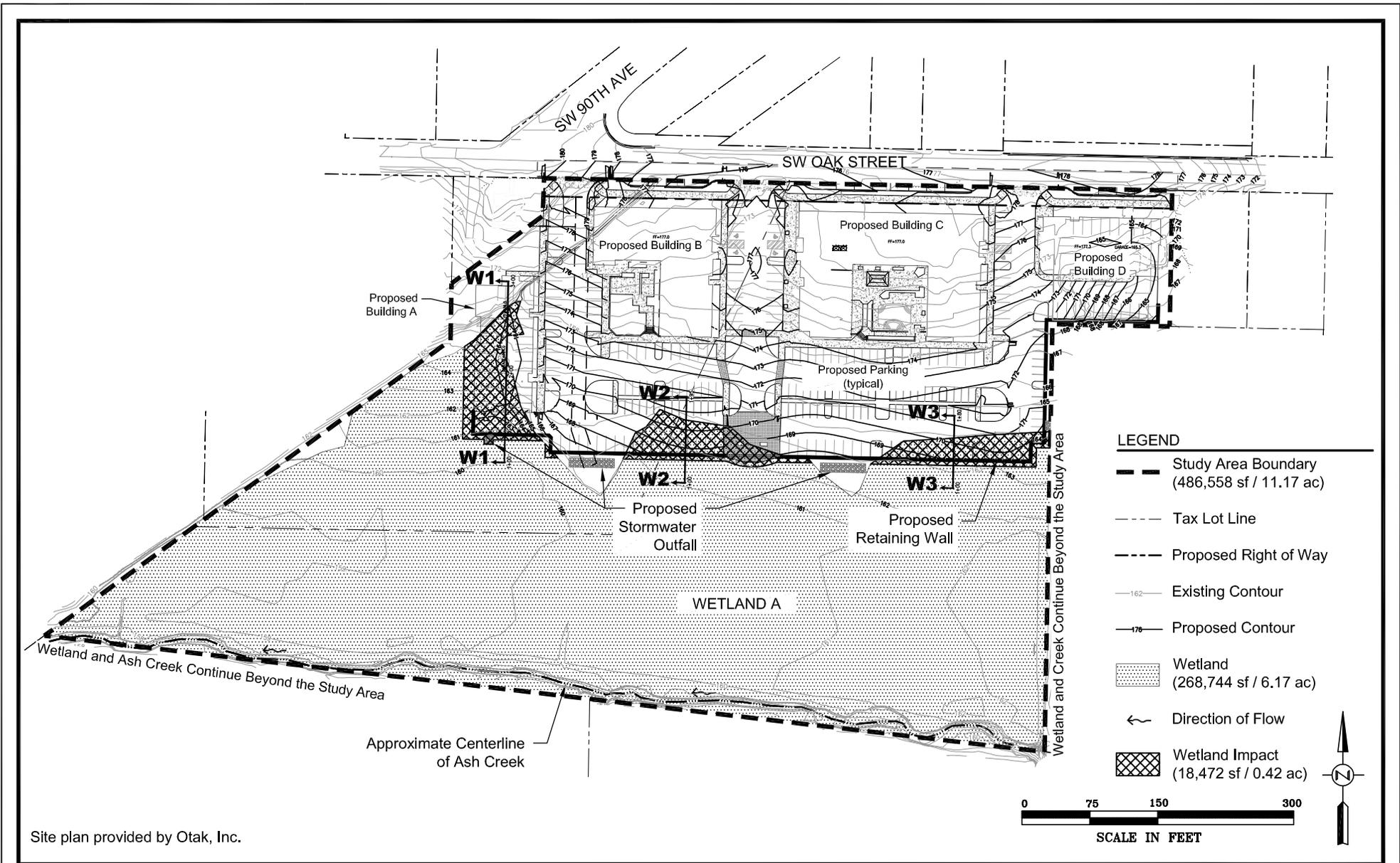
Pacific Habitat Services, Inc.
9450 SW Commerce Circle, Suite 180 Wilsonville, Oregon 97070
Phone: (503) 570-0800 Fax: (503) 570-0855

Site plan provided by Otak, Inc.

Existing Conditions
A+O APARTMENTS - Tigard, Oregon

FIGURE
3

5-14-2014



Proposed Site Plan, Wetland Impacts and Cross-Section Locations
A+O APARTMENTS - Tigard, Oregon

FIGURE
4

5-14-2014

1996 Urban Mixed Use approx. 100 d.u./acre



8

OVERALL SITE PLAN

MASTER PLAN



Alternative Plan Provided by OTAK, Inc.

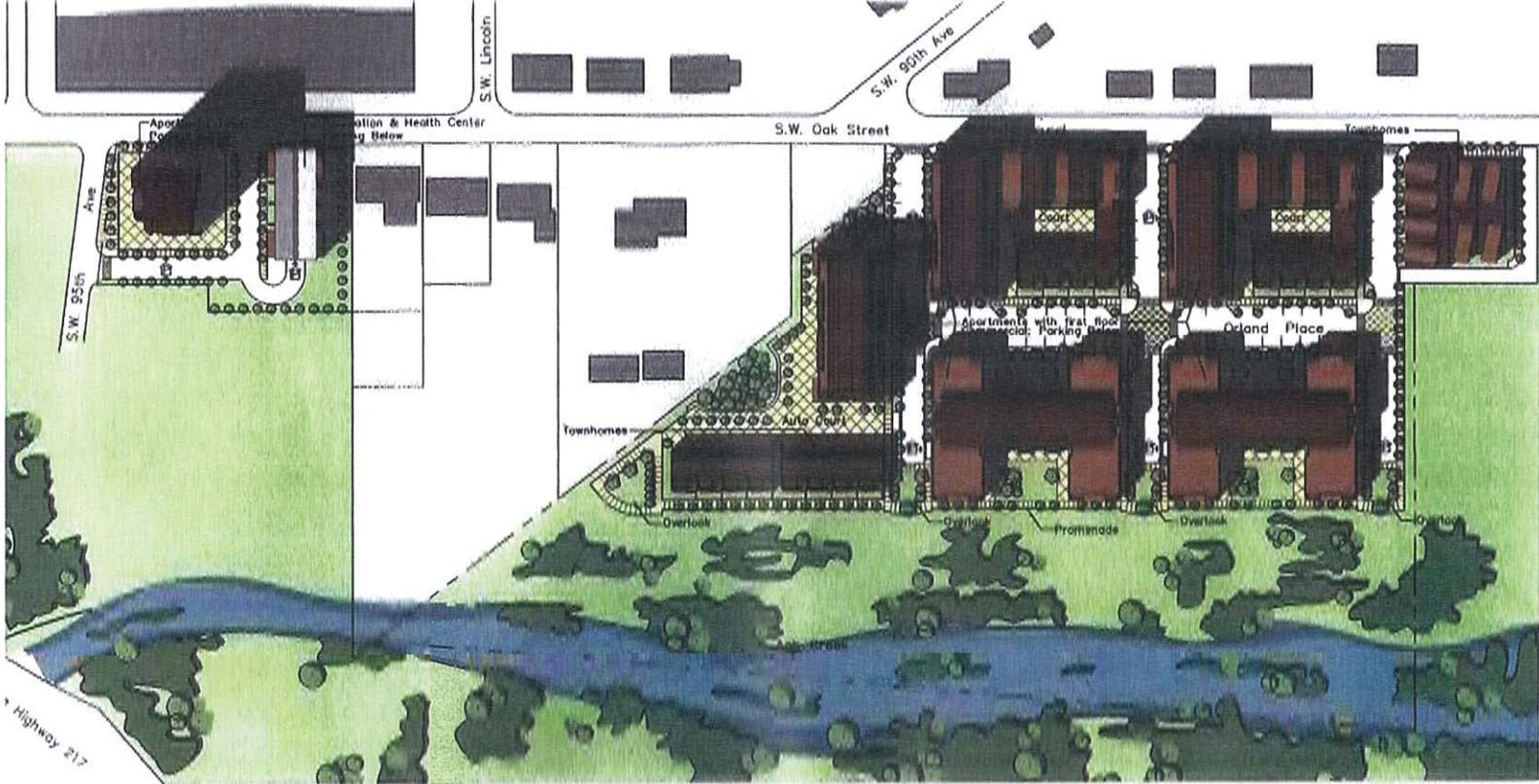
Pacific Habitat Services, Inc.
9450 SW Commerce Circle, Suite 180 Wilsonville, Oregon 97070
Phone: (503) 570-0800 Fax: (503) 570-0855

Alternative Site Plan (Alternative 8)
A+O APARTMENTS - Tigard, Oregon

FIGURE
5A

05-14-2014

1996 - Orland Property Only



12

ALTERNATIVE PLAN

MASTER PLAN



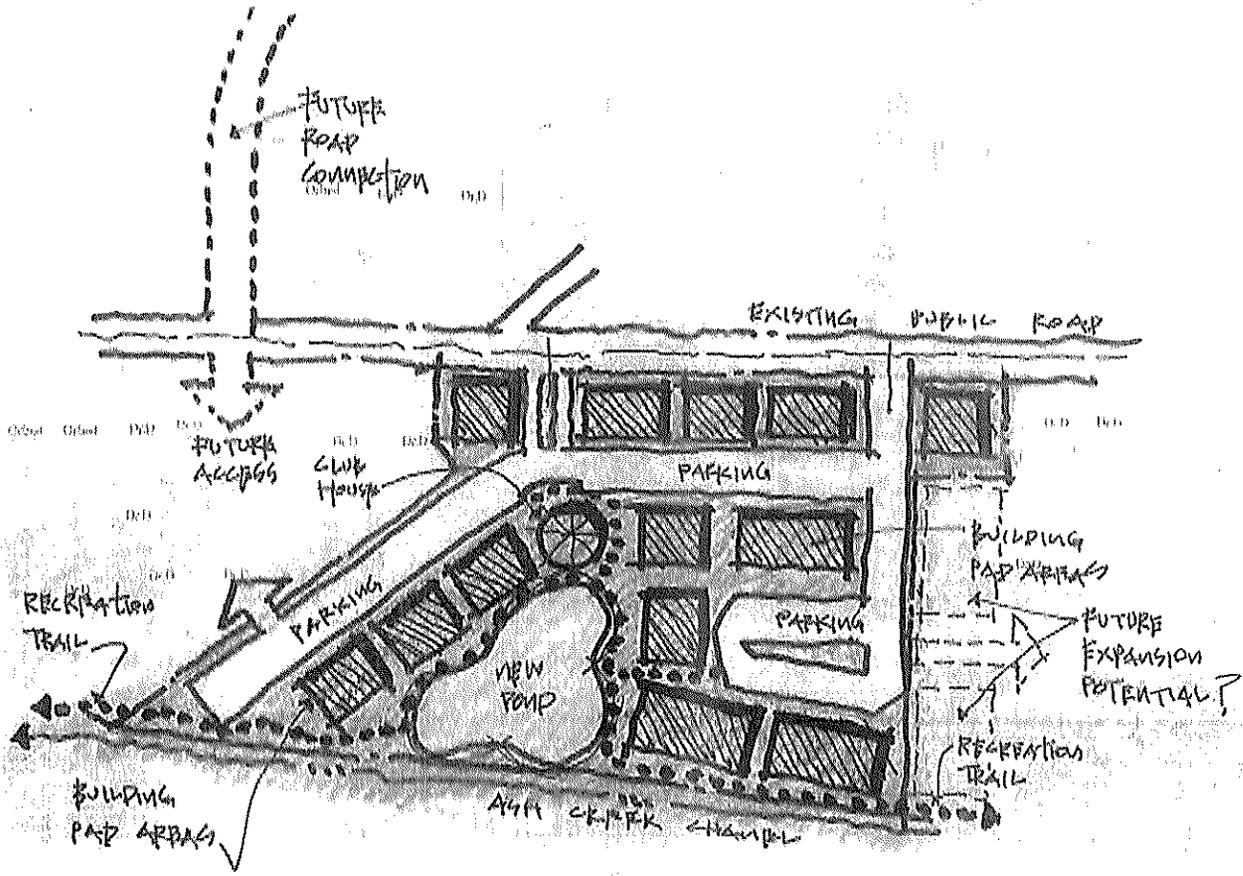
Pacific Habitat Services, Inc.
 9450 SW Commerce Circle, Suite 180 Wilsonville, Oregon 97070
 Phone: (503) 570-0800 Fax (503) 570-0855

Alternative Plan Provided by OTAK, Inc.

Alternative Site Plan (Alternative 12)
 A+O APARTMENTS - Tigard, Oregon

FIGURE
5B

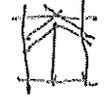
05-14-2014



SITE DIAGRAM

DBG DEVELOPMENT

1" = 200' . 9/11/2013



NORTH



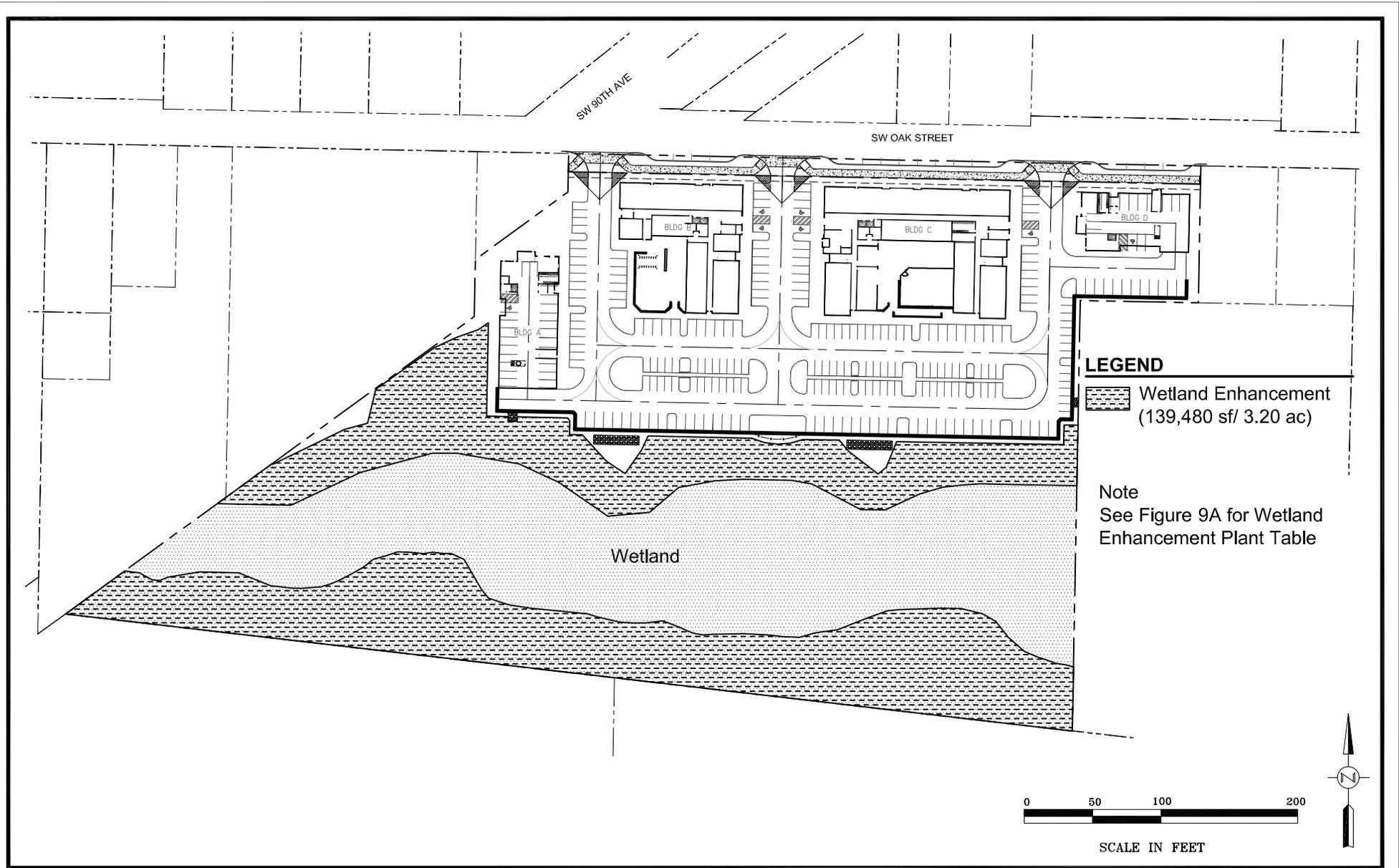
Pacific Habitat Services, Inc.
 9450 SW Commerce Circle, Suite 190 Wilsonville, Oregon 97070
 Phone: (503) 570-0800 Fax: (503) 570-0855

Alternative Plan Provided by OTAK, Inc.

Alternative Site Plan (Diagram)
 A+O APARTMENTS - Tigard, Oregon

FIGURE
5C

05-14-2014



Site plan provided by Otak, Inc.

Wetland Enhancement Planting Plan
A+O APARTMENTS - Tigard, Oregon

FIGURE
6

5-14-2014

Appendix B

Vegetated Corridor Alternatives Analysis Memorandum





9450 SW Commerce Circle, Suite 180
Wilsonville, OR 97070

PACIFIC HABITAT SERVICES, INC

(800) 871-9333 • (503) 570-0800 • Fax (503)570-085

June 27, 2014

Damon Reische and Amber Wierck
Clean Water Services - Environmental Review
2550 Southwest Hillsboro Highway
Hillsboro, Oregon 97123

Re: A+O Apartments; CWS File No. 14-001441
PHS Number: 5341

Damon and Amber:

Pacific Habitat Services, Inc. (PHS) has prepared this memorandum to address the mitigation requirements pursuant to the development of the proposed A+O Apartments in Tigard, OR (Figures 1 and 2). As discussed in the Natural Resources Assessment (NRA), the project proposes to construct 215 multi-family residential dwelling units within four, 4-story buildings.

Plant Community A (48,228 square feet) encompasses the corridor adjacent to the northern and western boundary of Wetland A. Approximately 44,295 square feet of permanent vegetated corridor encroachment will result from the construction of the parking areas and stormwater treatment outfalls (Figure 3). Mitigation for this encroachment will be accomplished through the enhancement of Wetland A.

Mitigation for the encroachment will be accomplished through the enhancement of Wetland A. Wetland enhancement (Figure 4) will consist of two areas planted to CWS' densities for native trees and shrubs. The southern planting area is located along Ash Creek, within the southern portion of Wetland A. Under current conditions, the riparian area adjacent to Ash Creek is narrow, and dominated by Oregon ash (*Fraxinus latifolia*), one-seed hawthorn (*Crataegus monogyna*), and Himalayan blackberry (*Rubus armeniacus*). The northern planting area is located along the northern portion of Wetland A, in an area dominated by non-native grasses, including reed canarygrass (*Phalaris arundinacea*), meadow foxtail (*Alopecurus pratensis*), tall fescue (*Festuca arundinacea*), and creeping bentgrass (*Agrostis stolonifera*).

A central planting area, located in the central portion of Wetland A, will consist of three smaller areas that will be planted with native herbaceous species. This area of Wetland A is dominated by non-native grasses, very similar to the northern planting area. Small areas will be cleared, and plugs of native herbaceous species will be planted within the mixed grasses.

The following table shows the proposed planting densities.

Wetland Enhancement for Northern and Southern Areas – 3.20 acres (139,480 SF)

Botanical Name	Common Name	Height (in feet)	Planting density (on center)	Quantity
Trees				
<i>Alnus rubra</i>	Red alder	5-6'	10'	139
<i>Crataegus douglasii</i>	Douglas hawthorn	5-6'	10'	349
<i>Fraxinus latifolia</i>	Oregon ash	5-6'	10'	446
<i>Salix lasiandra</i>	Pacific willow	5-6'	10'	349
<i>Thuja plicata</i>	Western redcedar	5-6'	10'	112
			Total	1,395
Shrubs/Small Trees				
<i>Cornus alba</i>	Red osier dogwood	2-3'	5'	2,092
<i>Spiraea douglasii</i>	Douglas spiraea	2-3'	5'	1,744
<i>Lonicera involucrata</i>	Twinberry	2-3'	5'	1,394
<i>Physocarpus capitatus</i>	Ninebark	2-3'	5'	1,744
			Total	6,974

Wetland Enhancement for Central Area – 0.38 acre (16,670 SF)

Botanical Name	Common Name	Minimum rooting size	Planting density (on center)	Quantity
Herbs				
<i>Juncus effusus</i>	Soft rush	4" plugs	Cluster	3,000
<i>Scirpus microcarpus</i>	Small-fruited bulrush	4" plugs	Cluster	2,500
<i>Juncus patens</i>	Spreading rush	4" plugs	Cluster	1,919
			Total	7,419

The encroachment into the vegetated corridor meets the following criteria, as required under a Tier II analysis:

1. The proposed encroachment area is mitigated in accordance with Section 3.08.

As discussed above, mitigation for permanent impacts to the vegetated corridor will be achieved through the enhancement of Wetland A with native trees and shrubs. Section 3.08.4 allows for enhancement of the existing vegetated corridor as mitigation, at a ratio of no less than 2:1. This project is proposing wetland enhancement at a ratio of 3.5:1 (3.6 acres). Two acres of the enhancement area is proposed for required mitigation; the additional 1.6 acres of enhancement is proposed for public benefit to water quality. The enhancement of Wetland A meets CWS' requirements for mitigation and public benefit as described below.

Wider, forested riparian buffers, with densely planted native trees and shrubs, prevent and reduce pollutants, garbage, and human/domestic animal disturbance within wetlands and creeks. Forested riparian areas also provide habitat functions for a variety of wildlife.

The existing vegetated corridor, north of Wetland A, is in degraded corridor condition. Vegetation consists of non-native grasses, and Himalayan blackberry; no trees are present. The existing corridor provides little in the way of creek or wetland protection or habitat function. The riparian area adjacent to Ash Creek is narrow, and is dominated by Himalayan blackberry; water quality and wildlife habitat functions and values within the creek and within Wetland A are low. Enhancement of approximately 139,480 acres of Wetland A will more than compensate for the encroachment of the degraded vegetated corridors north of Wetland A.

The southern area of enhancement will elevate many functions and values within Ash Creek. Trees and shrubs will provide shade to protect and improve water quality; native trees and shrubs will improve wildlife habitat; a wider forested riparian buffer will reduce human and domestic animal disturbance within the creek.

The northern area of enhancement, adjacent to the new development, will also provide several important functions. This area is wetland, and native trees and shrubs will increase the wetland's functions for wildlife habitat. This area will act as a buffer, reducing the likelihood that area residents will use the wetland in inappropriate ways.

Planting in the northern and southern mitigation enhancement areas will occur at 100 percent of CWS densities for trees and shrubs. As such, 1,395 trees ($139,480 \times 0.01$) and 6,974 shrubs ($139,480 \times 0.05$) will be planted within Wetland A. Planting in the central enhancement areas will occur at a density that achieves 100% areal coverage; as such, 7,419 plugs will be planted within Wetland A.

2. The replacement mitigation protects the functions and values of the Vegetated Corridor and Sensitive Area.

As discussed above, the vegetated corridor to be impacted is in degraded corridor condition, and is not forested. The vegetated corridor provides very little in the way of protecting the functions and values of the wetland or of Ash Creek. The enhancement of Wetland A as mitigation will occur at a ratio of 3.5 to 1. This large ratio ensures that the functions and values lost through vegetated corridor encroachment will be more than adequately recovered through the enhancement mitigation process. Increasing the width of the riparian corridors adjacent to Ash Creek will greatly improve the functions and values of this area. Native trees and shrubs will provide shade, protecting water quality. A wider, forested riparian area along Ash Creek will reduce human/domestic animal disturbance in the area. Native plantings in the northern enhancement area will increase the wetland's overall functions and values, as well as provide elevated wildlife habitat.

3. Enhancement of the replacement area, if not already in Good Corridor Condition, and either the remaining Vegetated Corridor on the site or the first 50 feet of width closest to the resource, whichever is less, to a Good Corridor Condition.

The wetland enhancement area will be planted to CWS densities for trees and shrubs. The southern enhancement area will occur within the 50 feet closest to Ash Creek, with widths ranging from 50- to 110-feet from Ash Creek. The northern enhancement area will occur south of the development area. The remaining VC will be planted to good corridor condition, at CWS' densities for trees and shrubs.

4. A District Stormwater Connection Permit is likely to be issued based on proposed plans.

The applicant reasonably expects to obtain a District Stormwater Connection Permit based on proposed plans for the project.

5. Location of development and site planning minimizes incursion into the Vegetated Corridor.

The proposed development plan is located in the northern portion of the site. Retaining walls were used to minimize impacts to wetlands and the vegetated corridor. Permanent impacts are necessary to meet the housing goals and density of the Washington Square Regional Plan Center, minimum parking requirements (assuming the 10% parking reduction variance is approved), neighborhood compatibility with building heights, as well as stormwater treatment outfalls.

Encroachment into the adjacent vegetated corridor has been minimized to the maximum extent practicable. Vegetated corridor encroachments are limited to those necessary for construction of the plan as proposed, to accommodate buildings, parking areas, stormwater treatment outfall, and garbage/recycling dumpster areas. The overall development has sought to maximize the developable area on the northern portion of the site because the southern portion is encumbered by the remaining portion of Wetland A and its vegetated corridor. The encroachment is required to adequately site the proposed buildings, drive aisles (access and emergency vehicles), and parking areas within the developable northern portion of the site. The multi-family residential “product” proposed on-site is dimensioned to meet the market demands of this specific housing type and address the neighborhood compatibility concerns of the nearby property owners. Any decrease to the unit count may impact the marketability of this development. As such, the proposed encroachment is limited to the greatest practical extent to make this project economically feasible.

A site alternatives analysis is provided (see Attachment 1) that shows a matrix of development alternatives (A-D) that were considered, and a qualitative comparison of impacts, as well as comments regarding building type, parking, stormwater treatment, and site design options.

6. No practicable alternative to the location of the development exists that will not disturb the Sensitive Area or Vegetated Corridor.

Alternative site designs were considered, and the current design was chosen due to site constraints. There are multiple benefits of locating the development at the proposed site, which would be negated if the development were moved off of this site. The site will be a residential development, which is in keeping with adjoining land uses. The project site is located within District C (Lincoln Center-Ash Creek) one of five districts within the *Washington Square Regional Center Plan*. The Regional Center Plan describes strategies that make the most efficient use of urban land in the face of dramatic population growth. Regional centers aim to reach densities of 60 people an acre through housing and employment - the metro area's second-highest density after downtown Portland. Residents of high density neighborhoods (Lincoln Center is designated as one of the highest within the plan area) will have easy access to nearby jobs, essential services and retail resources. The sites location is within walking distance from public transportation, and is centrally located among commercial and retail development, public schools, public parks, as well as many commercial businesses that provide employment opportunities for future tenants.

7. The proposed encroachment provides public benefits.

The public benefit of vegetated corridor encroachment includes supporting City and Regional Goals for “smart growth” via affordable housing. The site is located near the Washington Square Mall, which will provide close-in access to retail, restaurant, office, and service businesses, much of it within walking distance of the site.

The general objectives in proposing the Planned Development Combined Concept Plan and Detailed Development Plan for the A+O Apartments and the open space protection for a large portion of the site are to:

- Help meet the need for multi-family housing in Tigard;
- Provide market rate multi-family housing within a reasonable distance from the Washington Square Shopping Center, Lincoln Center, and other nearby commercial uses in a location that is (or is planned to be) well connected to those areas by pedestrian and bicycle pathways, public transit, and roads;
- Provide an attractive living environment for project residents;
- Border the apartment project with preserved open space to the south in order to provide a buffer between the apartments and Highway 217, as well as between the apartments and a developed neighborhood of detached single-family homes to the southeast;
- Preserve and enhance valuable open space areas while utilizing portions of the overall site which are not significantly constrained by floodplain, wetlands, riparian areas, or significant vegetation for residential purposes;
- Provide adequate parking for the needs of residents and visitors; avoid parking overflow into nearby neighborhoods.

Allowing encroachment into the vegetated corridor allows for maximum build out of the site and for the greatest developmental density. Maintaining the high density as proposed reduces the need for development of larger tracts of land and reduces the need for automobile travel. These are not only financial, social, and commercial benefits realized by the public, but are also an overall air and water quality benefit because it requires less disturbance of land, the development of less impervious surface, and the generation of fewer pollutants associated with auto travel.

As discussed above, the enhancement of Wetland A at a ratio of 3.5:1 will elevate the functions and values within Wetland A and Ash Creek, providing water quality improvements for public benefit.

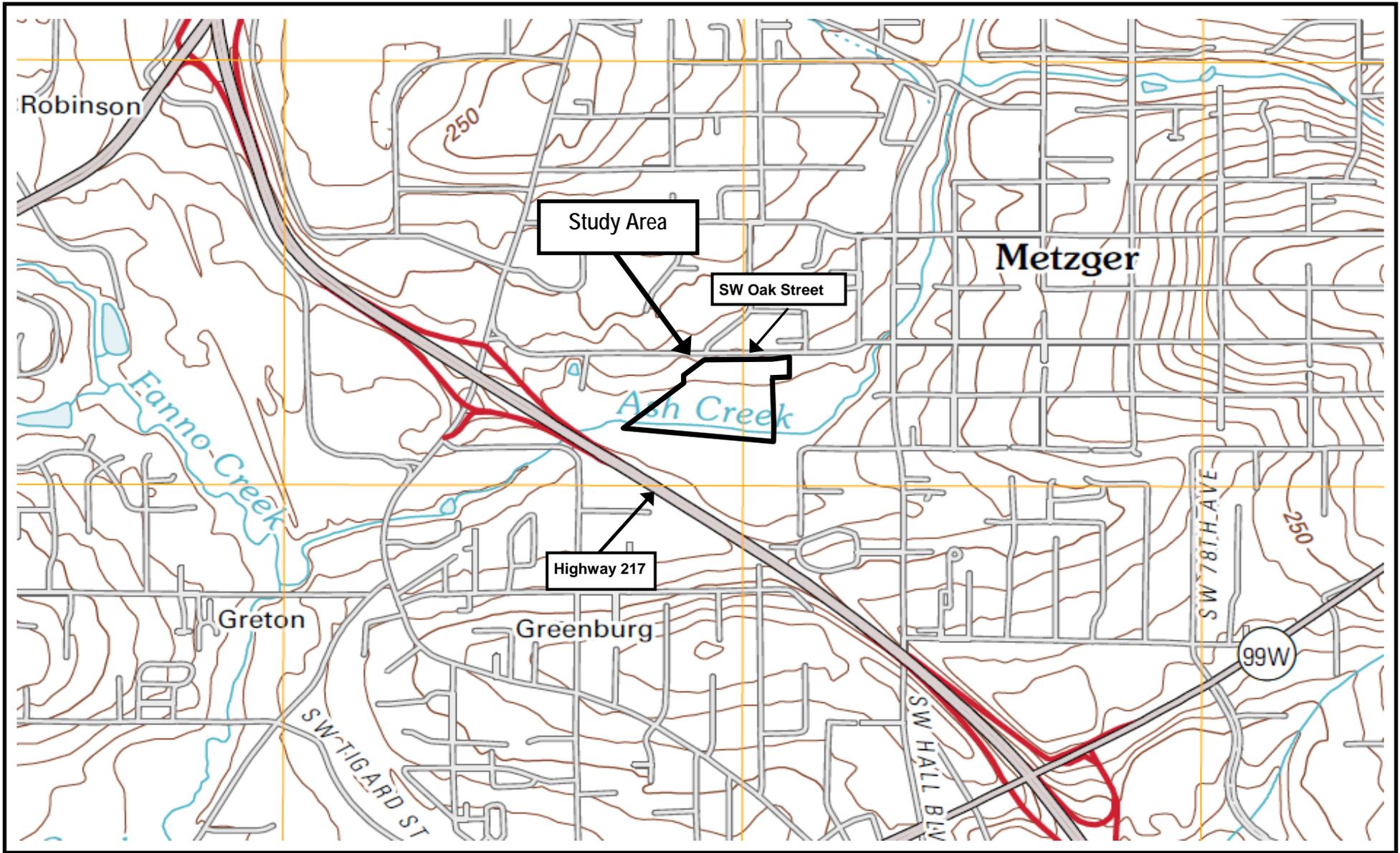
If you have any questions, please feel free to call.

Sincerely,



Amy Hawkins, PWS
Project Manager

Attachments:
Figures 1-4
Alternatives Analysis Matrix and Exhibits



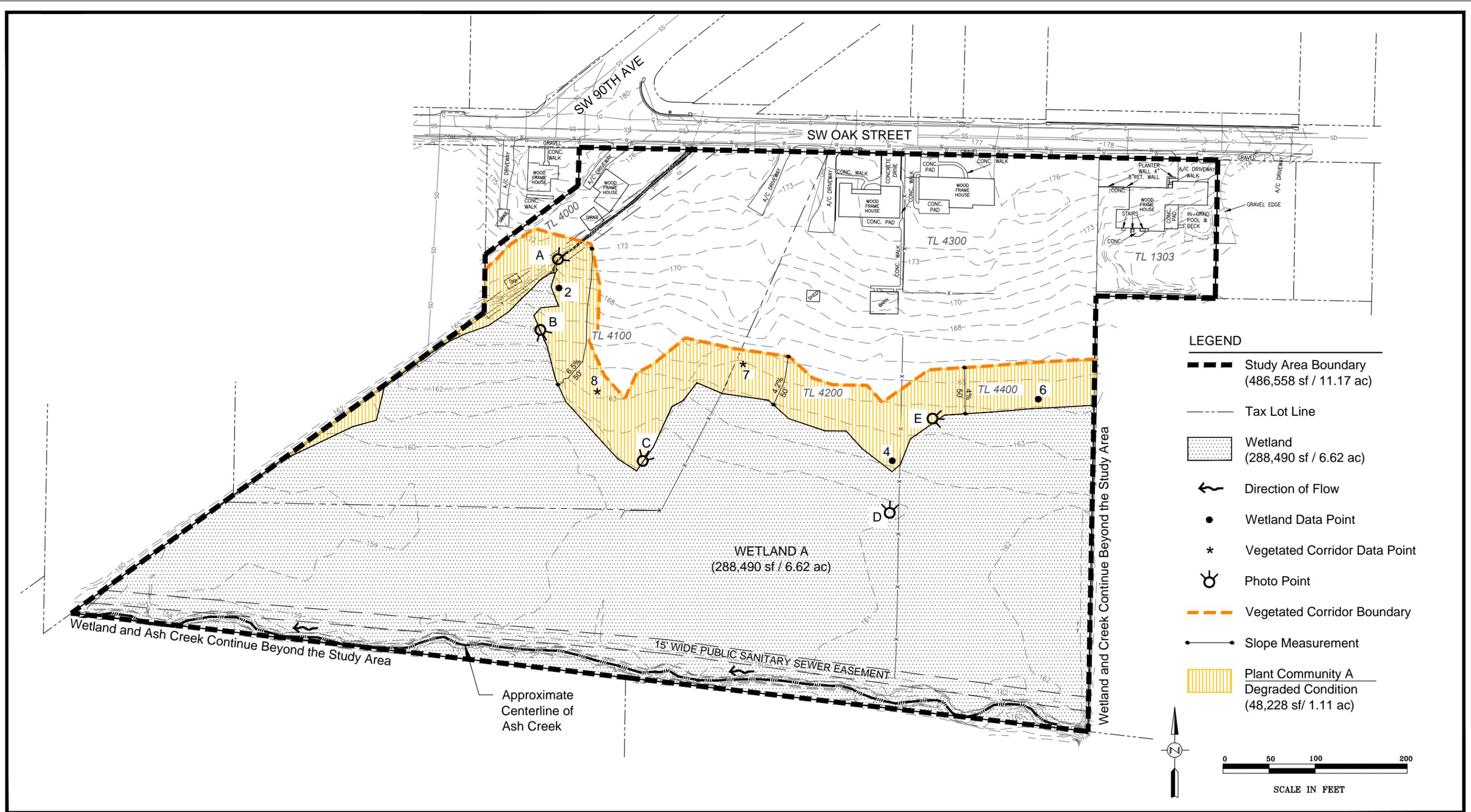
5341
01/21/2014



Pacific Habitat Services, Inc.
9450 SW Commerce Circle, Suite 180
Wilsonville, OR 97070

General Location and Topography
SW Oak Street Development Site - Tigard, Oregon
(USGS Beaverton, Oregon Quadrangle, 2011)

FIGURE
1



LEGEND

- Study Area Boundary (486,558 sf / 11.17 ac)
- Tax Lot Line
- Wetland (288,490 sf / 6.62 ac)
- Direction of Flow
- Wetland Data Point
- Vegetated Corridor Data Point
- Photo Point
- Vegetated Corridor Boundary
- Slope Measurement
- Plant Community A Degraded Condition (48,228 sf / 1.11 ac)

0 50 100 200
SCALE IN FEET



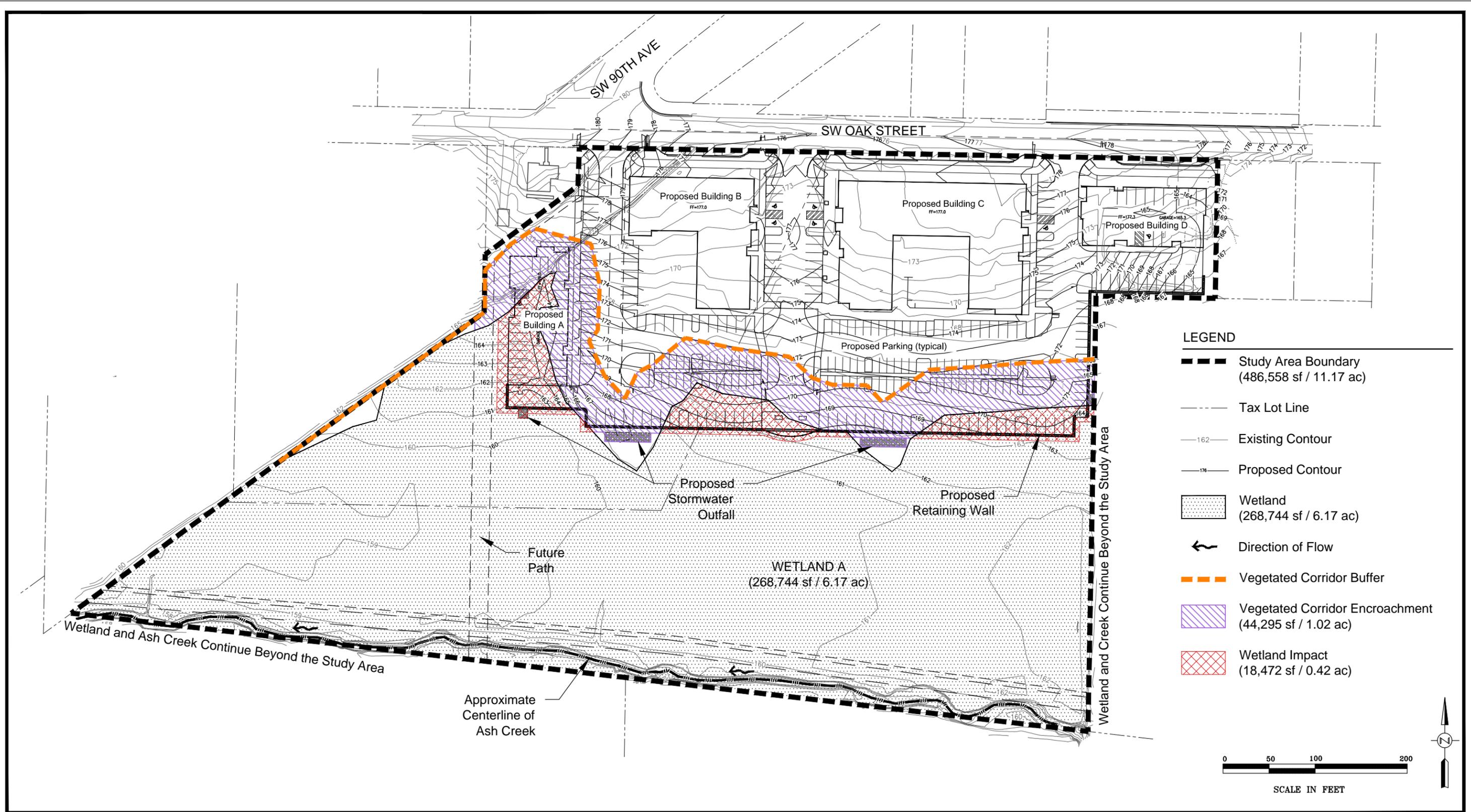
Site plan provided by OTAK Inc.

Existing Conditions
A+O APARTMENTS - Tigard, Oregon

FIGURE
2

5-16-2014

X:\Project Directories\5300\5341 Oak Street\AutoCAD\Plot Dwgs\NRA\ExCond.dwg, 5/16/2014 1:02:46 PM



Site plan provided by OTAK Inc.

Site Plan and Wetland/Vegetated Corridor Impacts
A+O APARTMENTS - Tigard, Oregon

FIGURE
3

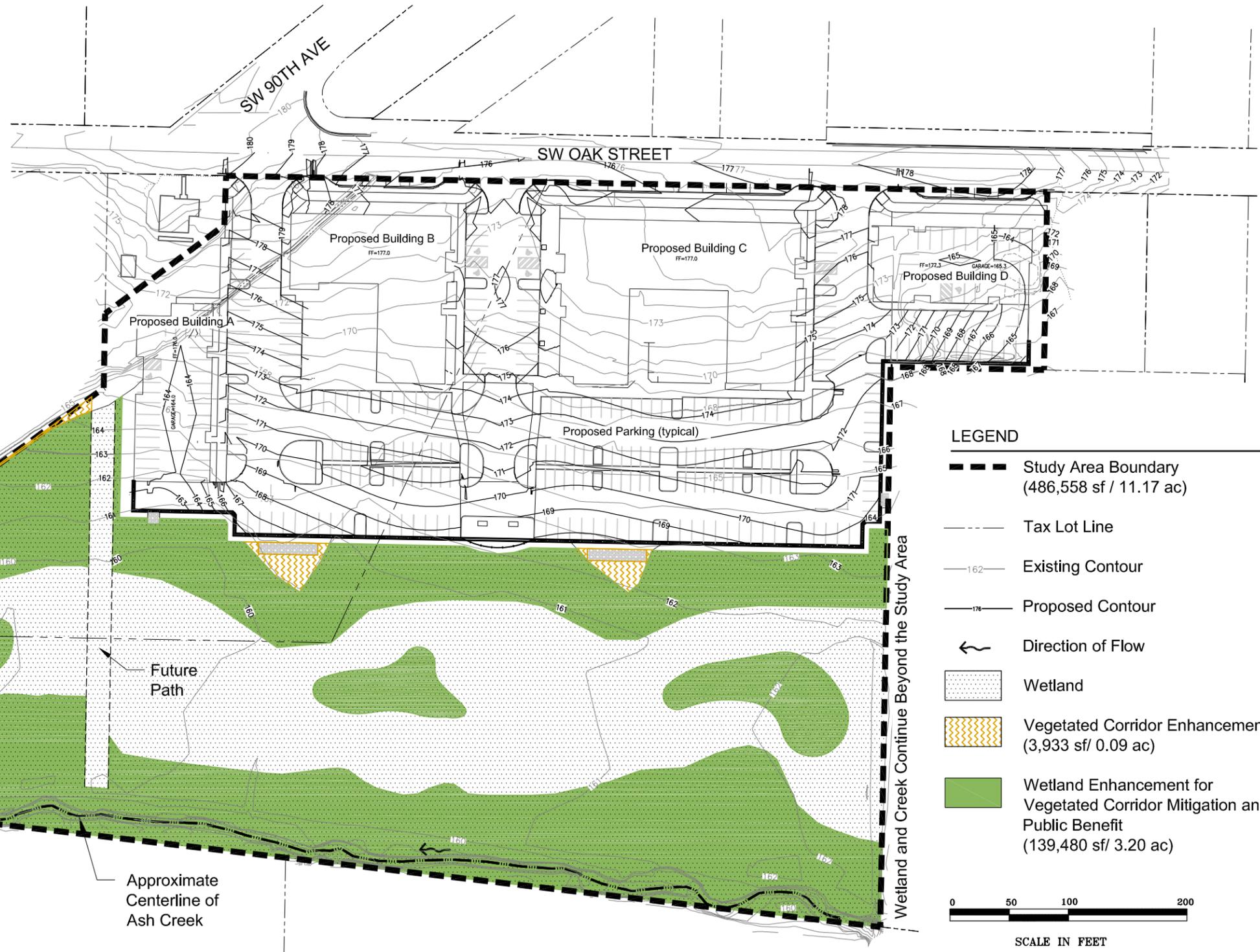
5-19-2014

Wetland Enhancement for Northern and Southern Areas – 3.20 acres (139,480 SF)

Botanical Name	Common Name	Height (in feet)	Planting density (on center)	Quantity
Trees				
<i>Alnus rubra</i>	Red alder	5-6'	10'	139
<i>Crataegus douglasii</i>	Douglas hawthorn	5-6'	10'	349
<i>Fraxinus latifolia</i>	Oregon ash	5-6'	10'	446
<i>Salix lasioandra</i>	Pacific willow	5-6'	10'	349
<i>Thuja plicata</i>	Western redcedar	5-6'	10'	112
Total				1,395
Shrubs/Small Trees				
<i>Cornus alba</i>	Red osier dogwood	2-3'	5'	2,092
<i>Spiraea douglasii</i>	Douglas spiraea	2-3'	5'	1,744
<i>Lonicera involucrata</i>	Twinberry	2-3'	5'	1,394
<i>Physocarpus capitatus</i>	Ninebark	2-3'	5'	1,744
Total				6,974

Wetland Enhancement for Central Area – 0.38 acre (16,670 SF)

Botanical Name	Common Name	Minimum rooting size	Planting density (on center)	Quantity
Herbs				
<i>Juncus effusus</i>	Soft rush	4" plugs	Cluster	3,000
<i>Scirpus microcarpus</i>	Small-fruited bulrush	4" plugs	Cluster	2,500
<i>Juncus patens</i>	Spreading rush	4" plugs	Cluster	1,919
Total				7,419



Wetland and Ash Creek Continue Beyond the Study Area

Future Path
Approximate Centerline of Ash Creek

On-Site Wetland and Riparian Planting Plan
A+O APARTMENTS - Tigard, Oregon

FIGURE
4

5-19-2014



Site plan provided by OTAK Inc.

A+O Apartments (Orland Property) - Site Alternatives Analysis

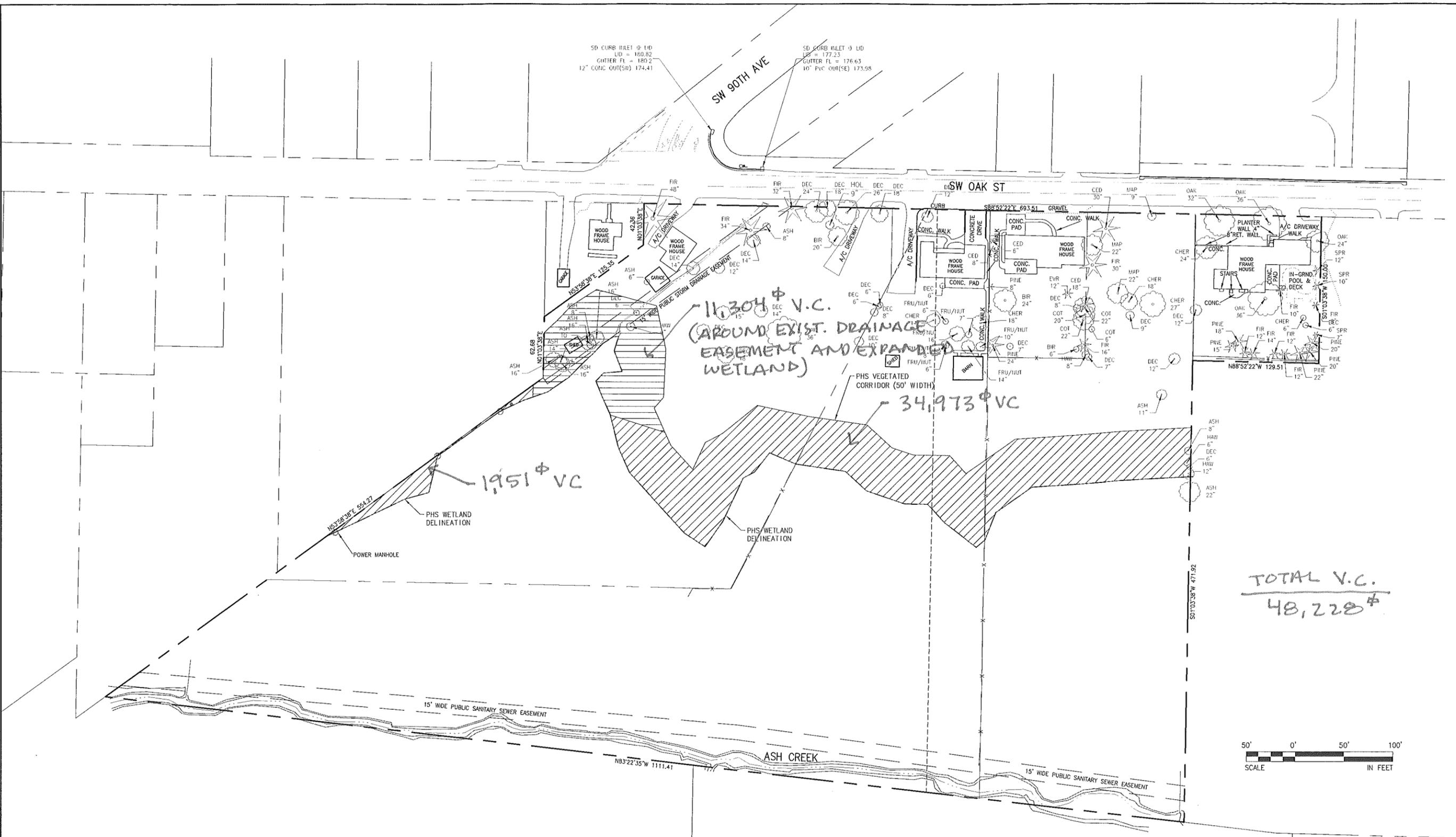
Otak #17044

6/25/14

Alternative	Description Comments	Approx. Net Developable Site Area (ac)	Minimum Density (50 units/acre)	Buildings	Units	Parking Types	Minimum Parking Required	Parking Provided	% below Minimum Parking	Total Vegetated Corridor (sf)	Vegetated Corridor Encroachment (sf) (around existing drainage easement/expanded wetland area)	"Remaining" Vegetated Corridor (sf)	Undisturbed Vegetated Corridor (sf)	Vegetated Corridor Encroachment "Remaining" VC (sf)	Vegetated Corridor Encroachment Total (sf)
Existing		n/a	n/a	n/a	n/a	n/a	n/a	n/a		48,228					
Alternative A	Residential (apartments). Buildings adjacent to Oak Street. 9-story and 4-story buildings over 2-parking levels. Surface and structured parking. Very dense layout. "High-rise" buildings. Not compatible with existing neighboring properties. (assumes 200 unit as reasonable number to meet Wash Square plan goals/objective for housing). Building/structured parking is financially infeasible.	2.8	140	2	200	surface, structured	300	300	0.0%	48,228	-	48,228	48,228	0% of remain VC	0% of total VC
Alternative B	Residential (apartments). Building adjacent to Oak Street. 3 story buildings. Surface parking, tuck under parking and tandem parking. Lower unit count does not meet goals of Wash Sq plan, parking well below minimum required. Tandem parking reduces footprint, but not practical parking for unit mix.	3.1	155	4	170	surface, tuck-under, tandem	299	207	30.8%	48,228	11,304	36,924	31,058	16% of remain VC	36% of total VC
Alternative C	Residential (apartments). Building adjacent to Oak Street. Surface parking. 3 and 4 story buildings. Increased studio/one bdrm units to condense building layout. Lower unit count does not meet goals of Wash Sq plan, minimum parking not met but close to 10% variance threshold. Tandem parking removed since not practical with increased studio/one bedroom units. Plan incorporates surface landscape areas for stormwater treatment (swales, rain gardens)	4.2	212	4	230	surface	324	289	10.8%	48,228	11,304	36,924	4,670	87% of remain VC	90% of total VC
Alternative D	Residential (apartments). Buildings adjacent to Oak Street. 4 story buildings. Surface parking and added structured parking. Reduce site/surface area allocated for storm water treatment, go to underground filter vaults. Provides enough area to meet City's active/passive open space requirements. Maximize use of compact spaces to reduce parking limits. Parking under smaller buildings. Minimum parking not met, but within target 10% variance threshold.	3.9	196	4	215	surface, structured under bldg, maximizes compact spaces	306	278	9.2%	48,228	11,304	36,924	3,933	89% of remain VC	92% of total VC
Alternative D-1	Same as Alternative D, but reduces VC encroachment at south boundary of parking area, reduces parking count. Not efficient preservation of vegetated corridor, creates "pockets" of VC at base of wall, requires irregular shaped wall construction. Reduces parking below 10% variance threshold.	3.8	192	4	215	surface, structured under bldg, maximizes compact spaces	306	258	15.7%	48,228	11,304	36,924	7,633	79% of remain VC	84% of total VC

XREF LIST
 Ltscale: 50
 Resolved
 P17044X230
 P17044X001
 S17044X190

Printed: Jun 27, 2014 - 8:47am
 mikes L:\Project\17044\17044A\Drawings\Alternative Analysis\Impacts\EX-1.dwg Layout Name: EX1TING



TOTAL V.C.
 48,228 #



NO.	DATE	BY	REVISION COMMENTS

Design Drawn Checked Date Initial Issue Date:
 MAP MAP MAP
 DBG OAK STREET, LLC
 2164 SW PARK PLACE
 PORTLAND, OR 97204
 (503) 244-2554

A+O APARTMENTS
 CITY OF TIGARD, OREGON
 ALTERNATIVES ANALYSIS IMPACT AREAS

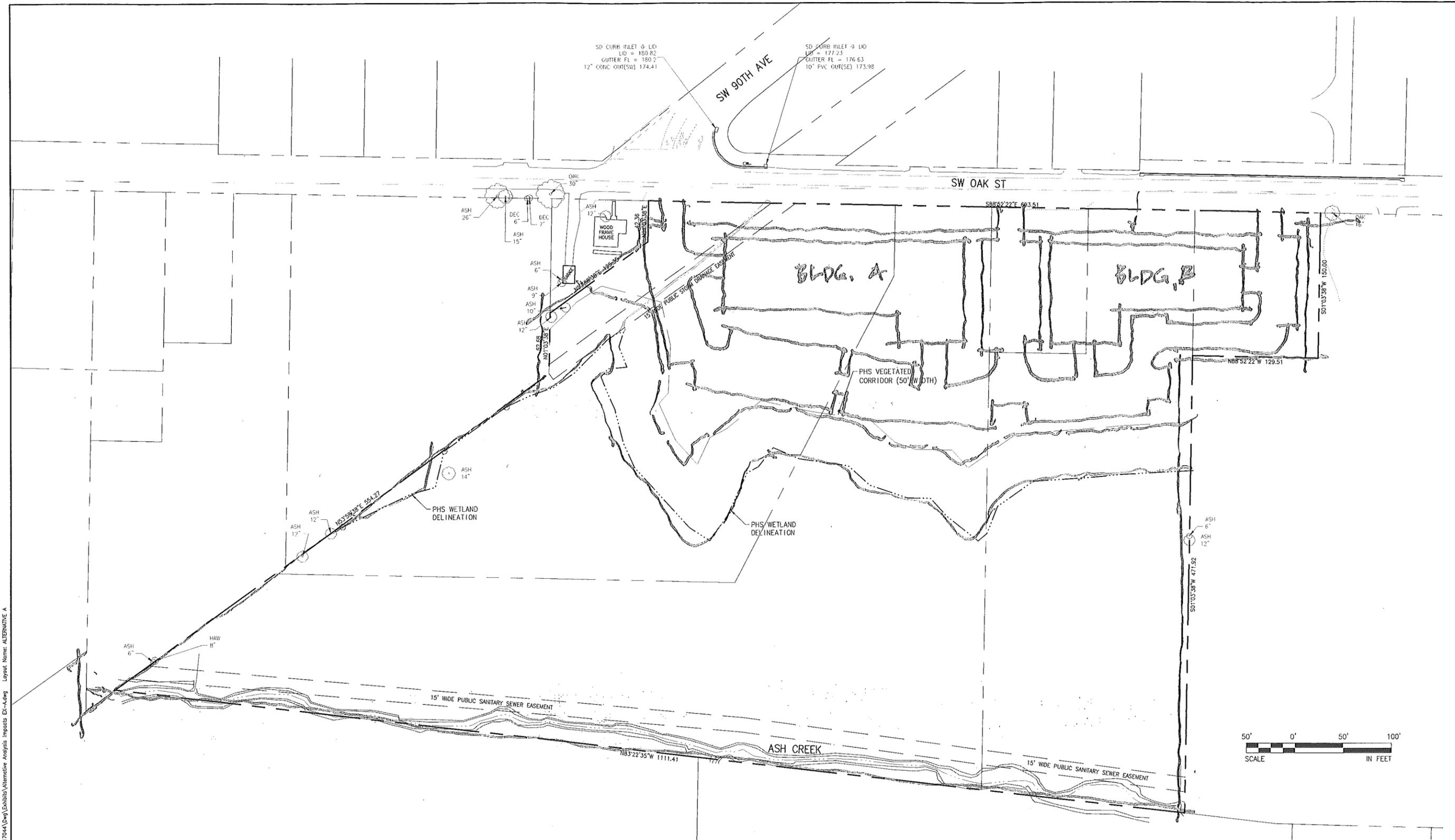
HanmiGlobal Partner
 808 SW 3rd Ave, Ste. 300
 Portland, OR 97204
 Phone: (503) 287-6825
 Fax: (503) 415-2304
 www.otak.com

17044
 Project No. Drawing No.
EX-1
 Sheet No.
 © Otak, Inc. 2014

EXISTING CONDITIONS

6/25/14

XREF LIST
 Liscate: 50
 Resolved
 P17044X230
 P17044X001
 S17044X190



NO.	DATE	BY	REVISION COMMENTS

DBG OAK STREET, LLC
 2164 SW PARK PLACE
 PORTLAND, OR 97204
 (503) 244-2554

A+O APARTMENTS
 CITY OF TIGARD, OREGON
 ALTERNATIVES ANALYSIS IMPACT AREAS

otak
 HanmiGlobal Partner
 808 SW 3rd Ave., Ste. 300
 Portland, OR 97204
 Phone: (503) 287-6825
 Fax: (503) 415-2304
 www.otak.com

ALTERNATIVE A

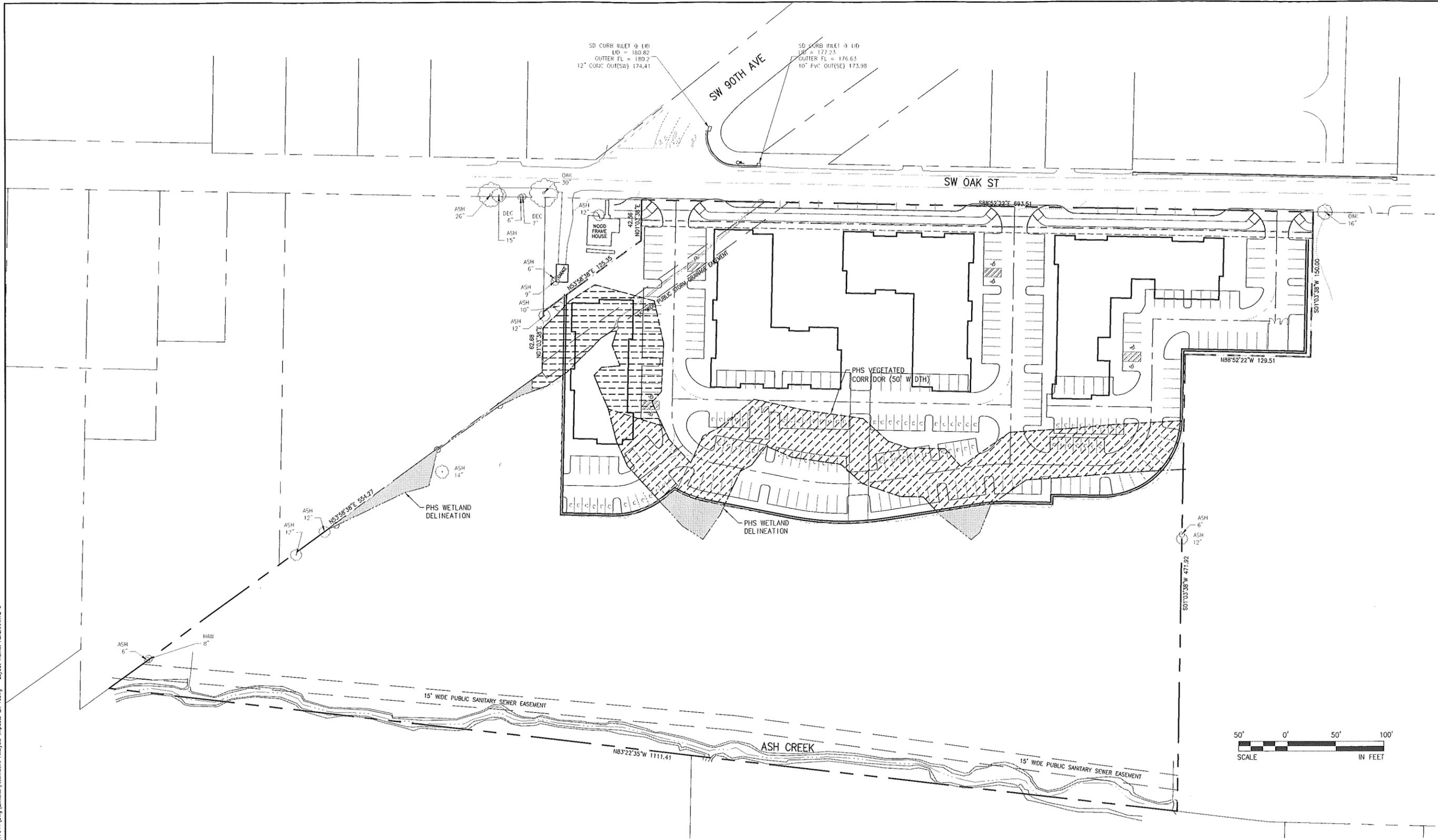
6/25/14

17044
 Project No. Drawing No.
EX-1A
 Sheet No.
 © Otak, Inc. 2014

Plotter: sun 26, 2014 - 12:25:00 m:\wp L:\Project\17000\17044\Draw\Exhibit\Alternative Analysis Impact Areas EC-A.dwg Layout Name: ALTERNATIVE A

XREF LIST
 Ltscale: 50
 Resolved
 P17044X230
 P17044X001
 S17044X190

Printed: Sun, 26, 2014, 12:56pm m:\p\p\17044\Draw\Exhibits\Alternative Analysis Impacts EC-A.dwg Layout Name: ALTERNATIVE C



ALTERNATIVE C

6/25/14

NO.	DATE	BY	REVISION COMMENTS

DBG OAK STREET, LLC
 2164 SW PARK PLACE
 PORTLAND, OR 97204
 (503) 244-2554

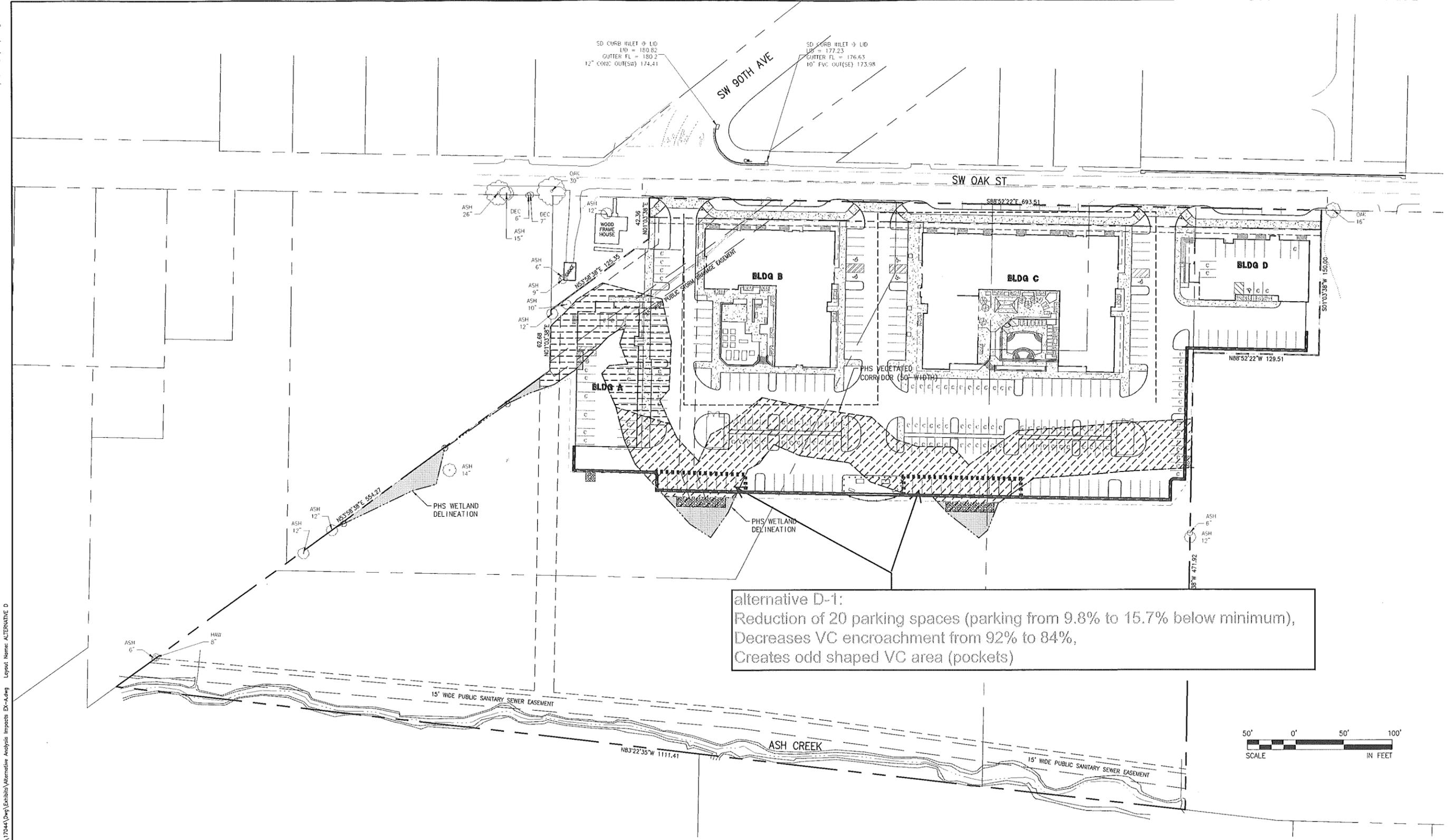
A+O APARTMENTS
 CITY OF TIGARD, OREGON
 ALTERNATIVES ANALYSIS IMPACT AREAS



HanmiGlobal Partner
 808 SW 3rd Ave, Ste. 300
 Portland, OR 97204
 Phone: (503) 287-6825
 Fax: (503) 415-2304
 www.otak.com

17044
 Project No. Drawing No.
EX-1C
 Sheet No.
 © Otak, Inc. 2014

XREF LIST
 Ltscale: 50
 Resolved
 P17044X23D
 P17044X001
 S17044X190



alternative D-1:
 Reduction of 20 parking spaces (parking from 9.8% to 15.7% below minimum),
 Decreases VC encroachment from 92% to 84%,
 Creates odd shaped VC area (pockets)



NO.	DATE	BY	REVISION COMMENTS

DBG OAK STREET, LLC
 2164 SW PARK PLACE
 PORTLAND, OR 97204
 (503) 244-2554

ALTERNATIVES ANALYSIS IMPACT AREAS

A+O APARTMENTS
 CITY OF TIGARD, OREGON
 ALTERNATIVES ANALYSIS IMPACT AREAS

otak
 HanmiGlobal Partner
 808 SW 3rd Ave., Ste. 300
 Portland, OR 97204
 Phone: (503) 287-6825
 Fax: (503) 415-2304
 www.otak.com

17044
 Project No. Drawing No.
EX-1D
 Sheet No.
 © Otak, Inc. 2014

ALTERNATIVE D (and D-1)

6/25/14

Path: Jun 25, 2014 - 12:58pm m:\map L:\Project\17000\17044\17044\Map\Alternatives Analysis Impacts Ex-1d.dwg Layout Name: ALTERNATIVE D