



City of West Linn

STAFF REPORT PLANNING MANAGER DECISION

DATE: May 22, 2015

FILE NO.: DR-15-02

REQUEST: Class I Parks Design Review and Flood Management Area permits to construct an approximately 0.64 mile public pathway from the Bernert Landing Boat ramp, east along the south side of Volpp St., to a point just east of 4th St and install public art near the trailhead at Bernert Landing.

PLANNER: Zach Pelz AICP, Associate Planner

Planning Manager 

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EXHIBITS

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- PM - 2 COMPLETENESS LETTER
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- PM - 5 LEASE AGREEMENT BETWEEN PGE AND THE CITY OF WEST LINN

GENERAL INFORMATION

OWNER:	Portland General Electric (PGE) and Tri-City Service District
APPLICANT:	City of West Linn Parks Department 22500 Salamo Rd., West Linn, OR 97068
SITE LOCATION:	Bernert Landing to approximately 0.64 mi. east
SITE SIZE:	Approximately 0.64 mile trail corridor with an average width of 10-12 feet (36,960 sq. ft.)
LEGAL DESCRIPTION:	Clackamas County Assessor's Map 3 1E 02 lots 00500, 00400, and 00100; and Map 2 1E 36 lots 01700 and 02000
COMP PLAN DESIGNATION:	Low-density Residential and Industrial
ZONING:	R-10 (Single-family Residential) and GI (General Industrial)
APPROVAL CRITERIA:	Community Development Code (CDC) Chapters 27, Flood Management Areas; 28, Willamette and Tualatin River Protection and 56, Parks Design Review.
120-DAY PERIOD:	This application was deemed complete on March 13, 2015. The 120-day maximum application-processing period ends on July 10, 2015.
PUBLIC NOTICE:	Notice was mailed to property owners within 300 feet of the subject property and the Willamette Neighborhood Association on April 24, 2015. A sign was placed on the property on May 7, 2015. The notice was also posted on the City's website. Therefore, public notice requirements of CDC Chapter 99 have been met.

EXECUTIVE SUMMARY

The City of West Linn currently leases a portion of PGE-owned property (see Exhibit PM - 5) along the Willamette River and proposes to install a public-use pathway from the east end of the Bernert Landing Boat Ramp to a point near the intersection of Volpp St. and 4th St. The City also proposes to install an interpretive public art display which would pay homage to lumber and paper processing operations in this area that helped establish West Linn and the Portland Metropolitan Region as an important center of commerce.

Site Conditions: The proposed public pathway crosses four parcels owned by Portland General Electric (PGE) and Tri-City Service District (wastewater treatment services for Gladstone, Oregon

City and West Linn) and covers a distance of approximately 2/3 mile. The entire length of the pathway is located outside of the Willamette River Floodway but inside the 100-year flood zone (see Figure 2).

As proposed, the pathway runs generally perpendicular to prevailing grades on the site which range from zero to 25 percent. The pathway has been designed to follow the topographical contours of the site.

The site currently exists in an undeveloped state with no habitable structures located along the corridor.

Image 1 Site Aerial View



Source: West Linn GIS, 2015

Project Description: The City of West Linn proposes to construct an approximately 2/3 mile trail from the east end of the Bernert Landing Boat Ramp parking lot, east along the Willamette River to a point near the intersection of Volpp St. and 4th St. (see Appendix 3 and 4).

Surrounding Land Use and Zoning: The site is located in the Willamette Neighborhood of West Linn within the R-10 and G1 zoning districts (see Figure 1). The trail originates at the east end of Willamette Park.

Table 1 Surrounding Land Use and Zoning

DIRECTION FROM SITE	LAND USE	ZONING
North	Single-family residential detached	R-10
East	General Industrial	GI
South	Willamette and Tualatin River Protection	WRG/TRP
West	Single-family residential detached	R-10

Source: West Linn GIS, 2015

Approval Criteria

The applicant requests: 1) Class I Design Review, and 2) Flood Management Area permits to construct an approximately 2/3 mile public-use pathway along the Willamette River, originating at the east end of the Bernert Landing Boat Ramp. The applicant also requests the same approvals to install a piece of public art, located near the proposed trailhead, to pay homage to the area’s lumber processing heritage.

The Community Development Code (CDC) criteria are applicable to this proposal are found in the following sections:

- CDC Section 11.030: R-10, Single-family residential detached
- CDC Section 23.030: General Industrial
- CDC Sections 27.060, 27.070, and 27.090: Flood Management Areas
- CDC Section 28.110 Willamette and Tualatin River Protection
- CDC Section 56.090: Parks and Natural Areas Design Review

Analysis

The CDC permits public-use pathways as transportation facilities in both the R-10 and GI zoning districts. Such pathways are permitted in flood management areas where they are designed in a manner which does not impact the flood storage capacity of the floodplain and where they are designed to withstand the erosive effects of flood waters. Additionally, a pathway is permitted in the Willamette and Tualatin River Protection Area. The Applicant has proposed a public-use pathway and art piece (or interpretive display) that satisfies (or satisfies subject to conditions of approval) all applicable standards in the CDC.

The requested approval for a public art installation to honor this area’s lumber mill-based heritage is shown in the Applicant’s plans. The location is in the floodplain and evidence is provided that it will not be located in the floodway. However, the proposed interpretive display installation, requires more detailed information, such as verification from an engineer that the structure will withstand hydrostatic and hydrodynamic forces. This analysis was not included in the Applicant’s submittal. Staff has proposed Conditions of Approval to ensure that the criteria in 27.060(A), (B)

and (C), 27.060(G), 27.060(H), 27.070(A), 27.070(F), 27.090(B) and 56.090(A)(4) are satisfied prior to constructing the public art piece/interpretive display in the flood management area.

Finally, the Applicant has requested that some flexibility in the exact location of the trail alignment be retained in order to maximize tree and other resource protection as field work commences. Modifications to approved plans are permitted up to 10 percent without further authorization from the decision making body (CDC 99.120). The Applicant therefore, has flexibility to make field corrections to the proposed alignment to protect natural features on-site.

Public comments:

No public comments have been received as of the publication date of this report.

DECISION AND CONDITIONS OF APPROVAL

Staff recommends approval of application DR-15-02 subject to the following proposed conditions:

1. Site Plan. The site plan shall generally conform to Sheet L1 of the Applicant's Submittal. Modifications are anticipated and this condition accommodates revisions to the alignment that better preserve identified trees on site and assure any re-alignment remains outside of the regulatory floodway.
2. Flood resistance. Prior to the installation of the non-residential structure (public art/interpretive display piece), the Applicant shall submit an elevation certificate along with a stamped report prepared by an Engineer licensed to practice in Oregon, which certifies that non-residential structure is designed with structural components having the capability of resisting hydrodynamic and hydrostatic loads and effects of buoyancy.

The provisions of the Community Development Code Chapter 99 have been met.


ZACH PELZ, Associate Planner

May 22, 2015
DATE

Appeals to this decision must be filed with the West Linn Planning Department within 14 days of mailing date. Cost is \$400. An appeal to City Council of a decision by the Planning Director shall be heard on the record. The appeal must be filed by an individual who has established standing by submitting comments prior to the decision date. Approval will lapse 3 years from effective approval date if the final plat is not recorded.

Mailed this 22th day of May, 2015.

Therefore, the 14-day appeal period ends at 5 p.m., on June 5, 2015.

Notes to Applicant.

- Expiration of Approval. This approval shall expire three years from the effective date of this decision.

- Additional Permits Required. Your project may require the following additional permits:
 - Building permit, the final permit after others are completed and conditions of approval are fulfilled. Contact the Building Division at (503) 656-4211, jnomie@westlinnoregon.gov.
- Final inspection: Call the Building Division's Inspection Line at (503) 722-5509.

ADDENDUM

APPROVAL CRITERIA AND FINDINGS

11.030 PERMITTED USES

The following are uses permitted outright in this zoning district

- ...
- 2. Community recreation.
- ...
- 6. Transportation facilities (Type I).

Finding No. 1: Community recreation is listed as a use permitted outright in the R-10 zoning district. Uses permitted outright are those uses which require no approval under the provisions of this code (CDC 11.020(A)). CDC Chapter 2 defines Community Recreation as, "Recreational, social, or multi-purpose uses typically associated with parks, play fields, or golf courses."

The applicant's proposal to construct an approximately 0.64 mile public use pathway from the Bernert Landing Boat ramp in Willamette Park, east along the Willamette River, is a recreational, social and multi-purpose use that is typically associated with parks. This use can therefore be classified as a Community Recreation use and subsequently as a use permitted outright, for that segment (westernmost 0.27 miles) of the pathway within the R-10 zoning district (see map in Figure 1). The use can also be appropriately classified as a Type I Transportation Facility (see Finding 2), which is also permitted outright in this zoning district.

23.030 PERMITTED USES

The following uses are uses permitted outright in this zone:

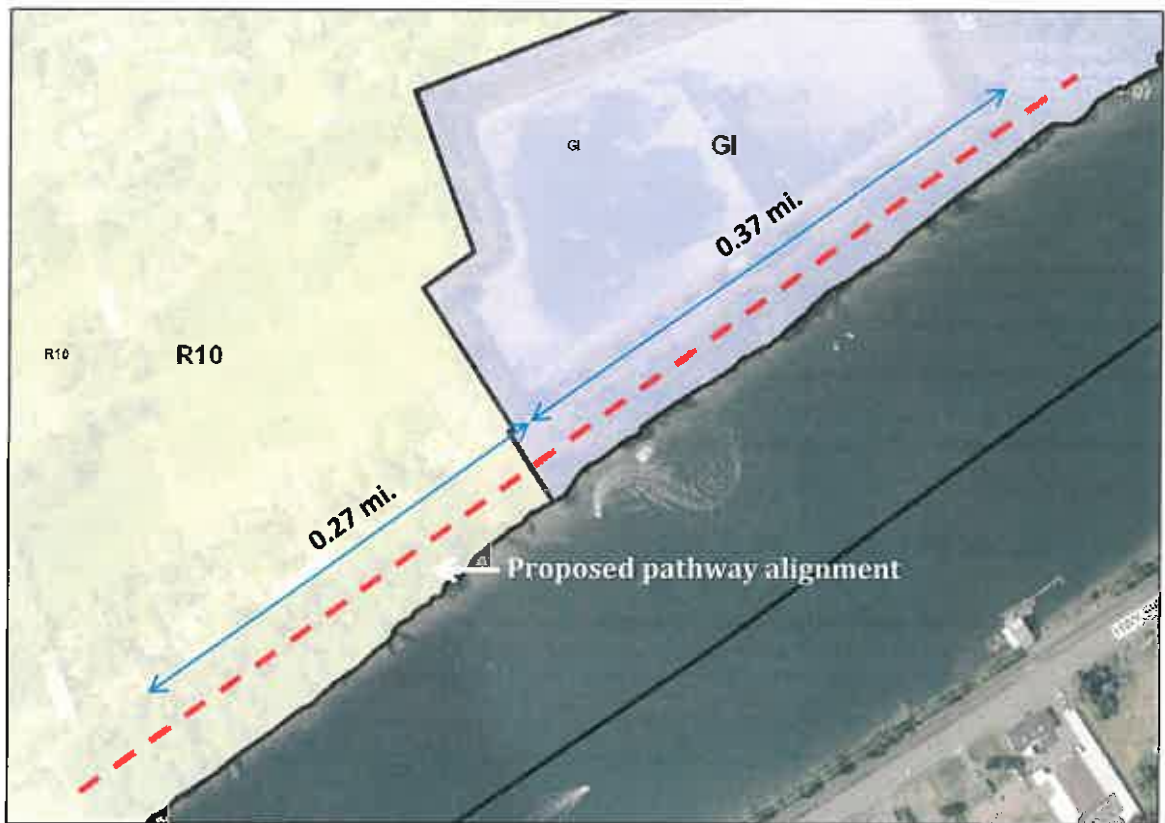
- ...
- 15. Transportation facilities (Type I).

Finding No. 2: Type I Transportation Facilities are listed as a use permitted outright in the GI zoning district. Uses permitted outright are those uses which require no approval under the provisions of this code (CDC 23.020(A)). CDC Chapter 2 defines Type I Transportation Facilities as, "Facilities and amenities that are used for transporting people and goods. Typical uses include streets, highways, sidewalks, transit stops and stations, bicycle and pedestrian facilities, bike lanes, and operation, maintenance, preservation, and construction of these facilities... (1) Transportation facilities (Type I) are those which are designated in the adopted TSP or are part of an approved, active development order. Type I facilities are permitted uses in all zoning districts."

The applicant's proposal to construct an approximately 0.64 mile public use pathway from the Bernert Landing Boat ramp in Willamette Park, east along the Willamette River, is a

bicycle and pedestrian facility that is designated by reference to the West Linn Parks Plan (see footnote in Appendix 3 and 4) in the adopted TSP and is therefore a Type I Transportation Facility that is permitted outright in the GI zoning district, for that segment (easternmost 0.37 miles) of the pathway within the GI zoning district (see map in Figure 1).

Figure 1 City Zoning Districts along Proposed Pathway Alignment



Source: West Linn GIS, 2015

27.020 APPLICABILITY

A flood management area permit is required for all development in the Flood Management Area Overlay Zone. The standards that apply to flood management areas apply in addition to State or federal restrictions governing floodplains or flood hazard areas.

Finding No. 3: The proposed public pathway and art installation is located within the 100-year floodway (see Appendix 1 and 2) and therefore CDC Chapter 27 applies.

27.060 APPROVAL CRITERIA

The Planning Director shall make written findings with respect to the following criteria when approving, approving with conditions, or denying an application for development in flood management areas:

A. Development, excavation, and fill shall be performed in a manner to maintain or increase flood storage and conveyance capacity and not increase design flood elevations.

Finding No. 4: According to the Applicant's submittal (p.2), "No work is proposed that will increase the flood storage and conveyance capacity or increase flood elevations. All trail construction work is proposed to occur on existing grades with minimal ground disturbance. Construction of the trail will be completed by removing the organic materials and soil to a depth of approximately 12 inches from the existing ground surface, placing a gravel base, and paving the trail at close to the existing ground surface elevation."

Additionally, the Applicant's submittal (p.3) anticipates a net reduction of 20 cubic yards of earth resulting from the installation of the trail, indicating an increase in flood storage capacity.

B. No net fill increase in any floodplain is allowed. All fill placed in a floodplain shall be balanced with an equal amount of soil material removal. Excavation areas shall not exceed fill areas by more than 50 percent of the square footage. Any excavation below the ordinary high water line shall not count toward compensating for fill.

Finding No. 5: According to the Applicant's submittal (p.2), "The proposed improvements do not require the import of fill other than the gravel base and trail pavement. Top soil to be removed from the trail alignment will either be reused at another location for trail construction or will be taken offsite as excess. The native materials to be removed for trail construction will roughly balance the amount of non-native material (gravel base and pavement) that will be used to construct the trail."

The proposed public art piece is considered an interpretive display in the Willamette Greenway and is a non-residential structure in the floodplain. This structure is an open design and will not obstruct the flow of flood waters. Any displacement will be minimal.

Excavation below the top of the riverbank is not proposed. The criterion is met.

C. Excavation to balance a fill shall be located on the same lot or parcel as the fill unless it is not reasonable or practicable to do so. In such cases, the excavation shall be located in the same drainage basin and as close as possible to the fill site, so long as the proposed excavation and fill will not increase flood impacts for surrounding properties as determined through hydrologic and hydraulic analysis.

Finding No. 6: According to the Applicant's submittal (p.3), "All necessary excavation and fill for the trail will be located within the area of work. The amount of excavation and fill will be minimal and will be limited to what is necessary to provide an appropriate foundation for the trail."

D. Minimum finished floor elevations must be at least one foot above the design flood height or highest flood of record, whichever is higher, for new habitable structures in the flood area.

Finding No. 7: The proposal does not include habitable structures and therefore this criterion does not apply.

E. Temporary fills permitted during construction shall be removed.

Finding No. 8: The Applicant does not anticipate the need for and has subsequently not proposed any temporary fill. The criterion does not apply.

F. Prohibit encroachments, including fill, new construction, substantial improvements, and other development in floodways unless certification by a professional civil engineer licensed to practice in the State of Oregon is provided demonstrating that encroachments shall not result in any increase in flood levels during the occurrence of the base flood discharge.

Finding No. 9: The proposed pathway and public art installation is located outside of the floodway (see Appendix 2). The criterion is met.

G. All proposed improvements to the floodplain or floodway which might impact the flood-carrying capacity of the river shall be designed by a professional civil engineer licensed to practice in the State of Oregon.

Finding No. 10: According to preliminary estimates, the Applicant anticipates a net cut of approximately 20 cubic yards of earth resulting from the proposed pathway. This net reduction of earth in the floodplain would result in a modest increase in the flood storage capacity of the floodplain. The proposed trail has been designed by Gary Alfson, P.E., a professional engineer licensed to practice in Oregon.

Details regarding the impact of the non-residential structure (the proposed public art piece/interpretive display) will be addressed by Condition of Approval Nos. 2. The successful completion of Condition No. 2 will satisfy this requirement.

H. New culverts, stream crossings, and transportation projects shall be designed as balanced cut and fill projects or designed not to significantly raise the design flood elevation. Such projects shall be designed to minimize the area of fill in flood management areas and to minimize erosive velocities. Stream crossings shall be as close to perpendicular to the stream as practicable. Bridges shall be used instead of culverts wherever practicable.

Finding No. 11: The proposed improvements would be installed at or near the existing surface grade in a manner which results in no net increase in fill material. Preliminary estimates indicate a net cut of approximately 20 cubic yards of material. Based on this evidence, staff believes that flood elevation will not be significantly altered by the Applicant's proposal.

The proposed pathway has a net reduction in fill material and pathways of this type have no vertical profile, thus they do not impact erosive velocities during flood events. Condition of Approval Nos. 2 requires: "Flood resistance: Prior to the installation of the non-residential structure (public art/interpretive display piece), the Applicant shall submit an elevation certificate along with a stamped report prepared by an Engineer licensed to practice in Oregon, which certifies that non-residential structure is designed with structural components having the capability of resisting hydrodynamic and hydrostatic loads and effects of buoyancy."

The completion of this condition of approval will satisfy this requirement of this section.

- I. Excavation and fill required for the construction of detention facilities or structures, and other facilities, such as levees, specifically shall be designed to reduce or mitigate flood impacts and improve water quality. Levees shall not be used to create vacant buildable land.

Finding No. 12: Detention facilities or structures, levees, or similar flood controls are not proposed with this application. This criterion does not apply.

- J. The applicant shall provide evidence that all necessary permits have been obtained from those federal, State, or local governmental agencies from which prior approval is required. (Ord. 1522, 2005; Ord. 1635 § 15, 2014; Ord. 1636 § 25, 2014)

Finding No. 13: Staff contacted representatives from the Oregon Division of State Lands (DSL) and the Federal Emergency Management Association (FEMA) to confirm that additional state or federal permits were not required as part of the Applicant's proposal. The Applicant seeks the necessary local approval as part of this decision. The criterion is met.

27.070 CONSTRUCTION MATERIALS AND METHODS

- A. All new construction and substantial improvements shall be constructed with materials and utility equipment resistant to flood damage using methods and practices that minimize flood damage.

Finding No. 14: According to the Applicant, "The trail will consist of pervious asphalt pavement over a gravel base. Asphalt pavement is a widely accepted material in floodplain construction because it does not wash away like uncovered gravel or other unconsolidated material.

The non-residential improvement (interpretive display/public art) is addressed by Condition of Approval No 2. With the completion of this condition, the requirement of this section is met.

B. Electrical, heating, ventilation, plumbing, and air conditioning equipment and other service facilities shall be designed and/or otherwise elevated or located so as to prevent water from entering or accumulating within the components during conditions of flooding.

C. New and replacement water supply systems shall be designed to minimize or eliminate infiltration of flood waters into the system.

D. New and replacement sanitary sewage systems shall be designed to minimize or eliminate infiltration of flood waters into the systems and discharge from the systems into flood waters.

E. On-site waste disposal systems shall be located to avoid impairment to them or contamination from them during flooding.

Finding No. 15: The Applicant proposes none of the abovementioned service facilities nor does the Applicant propose, new or replacement water supply systems; new or replacement sanitary sewage systems; nor, on-site waste disposal systems. The criteria do not apply.

F. All new construction and substantial improvements shall be anchored to prevent flotation, collapse, or lateral movement of the structure.

Finding No. 16: The proposed pathway will be installed with a finished asphalt surface at or near the existing grade. The Applicant proposes a 3-inch section of pervious pavement overlying 6-inches of aggregate base. As mentioned in Finding No. 14, "Asphalt pavement is a widely accepted material in floodplain construction because it does not wash away like uncovered gravel or other unconsolidated material."

Details regarding the construction methods that will be used to prevent flotation, collapse, or lateral movement were not discussed relative to the proposed public art piece. Staff recommends Condition of Approval No. 2, to satisfy this requirement.

27.090 NON-RESIDENTIAL CONSTRUCTION

New construction and substantial improvement of any commercial, industrial, or other non-residential structure shall either have the lowest floor, including basement, elevated to at least one foot above the level of the base flood elevation; or, together with attendant utility and sanitary facilities, shall:

A. Be flood-proofed so that below the base flood level the structure is watertight with walls impermeable to the passage of water;

Finding No. 17: The proposal includes no structures with walls that are susceptible to flood waters as described above. The public art piece/interpretive display is considered non-residential construction. Condition No. 2 requires an elevation certificate and a stamped engineer's report that certifies the structure is adequately flood proofed. With the completion of this condition, the requirements of this criterion are met.

B. Have structural components capable of resisting hydrostatic and hydrodynamic loads and effects of buoyancy;

Finding No. 18: The proposed pathway will be installed with a finished asphalt surface at or near the existing grade. The Applicant proposes a 3-inch section of pervious pavement overlying 6-inches of aggregate base. As mentioned in Finding No. 14, "Asphalt pavement is a widely accepted material in floodplain construction because it does not wash away like uncovered gravel or other unconsolidated material."

Details regarding the structural components and construction methods that will be used to resist hydrostatic and hydrodynamic loads were not discussed relative to the proposed public art piece. Staff recommends Condition of Approval No. 2, to satisfy the requirement for this non-residential structure.

C. Be certified by a professional civil engineer licensed to practice in the State of Oregon that the design and methods of construction shall prevent seepage, collapse or cracking of basement walls, prevent buckling of basement floors, prevent backup of water from sewer lines, and have all openings located one foot above the base flood elevation. In addition, all protective features must operate automatically without human intervention;

Finding No. 19: The proposal does not include structural elements (i.e., basement walls, floors, openings) that are susceptible to damage caused by seepage, collapse, cracking, buckling, or backup of sewer water as mentioned above. Condition No. 2 addresses the requirements for an elevation certificate along with a stamped engineer's certification. With the completion of this condition, the requirements of this criterion are met.

D. Non-residential construction that is elevated, but not flood-proofed (i.e., the foundation is not at least one foot above the 100-year flood elevation) shall also comply with the standards set forth in CDC 27.080. (Ord. 1522, 2005)

Finding No. 20: The proposed pathway is not elevated above the floodway, however; the standards in 27.080 are intended to regulate structures with enclosable spaces (e.g., walls and crawlspaces). The requirements to evaluate hydrostatic and hydrodynamic loads and the effects of buoyancy are addressed by other findings. The structure will not be elevated and is not a typical building (interpretive display) and as such this criterion is not applicable to this proposal.

28.020 APPLICABILITY

A. The Willamette and Tualatin River Protection Area is an overlay zone. The zone boundaries are identified on the City's zoning map, and include:

1. All land within the City of West Linn's Willamette River Greenway Area.
2. All land within 200 feet of the ordinary low water mark of the Tualatin River, and all land within the 100-year floodplain of the Tualatin River.

28.040 EXEMPTIONS/USES PERMITTED OUTRIGHT

The following development activities do not require a permit under the provisions of this chapter. (Other permits may still be required.)

BB. Construction of a public pathway by dedication or easement accepted by the City.

28.110 APPROVAL CRITERIA No application for development on property within the protection area shall be approved unless the decision-making authority finds that the following standards have been met or can be met by conditions of approval. The development shall comply with the following criteria as applicable:

F. Access and property rights

5. Legal access to, and along, the riverfront in single-family residential zoned areas shall be encouraged and pursued especially when there are reasonable expectations that a continuous trail system can be facilitated. The City recognizes the potential need for compensation where nexus and proportionality tests are not met. Fee simple ownership by the City shall be preferred. The trail should be dimensioned and designed appropriate to the terrain it traverses and the user group(s) it can reasonably expect to attract. The City shall be responsible for signing the trail and delineating the boundary between private and public lands or access easements.

Finding No. 21: The proposed pathway is within the Willamette Greenway Areas. A public pathway is a use permitted outright and may also be subject to other permits in the CDC. A trail has limited criteria specific to trails/pathways; some criterion encourages water permeable material, others require the project minimizes impact on vegetation or maintains access to the Willamette Greenway. This public pathway is not required to use permeable material; it provides access along the river as part of a continuous trail system and thus meets the applicable criterion of this section.

56.020 APPLICABILITY

A. This chapter applies to the development of all new parks and natural resource areas. It also applies to changes including the introduction of new facilities and major repairs at existing parks and natural resource areas. No work, except as exempted in CDC 56.025, may take place in these parks and natural resource areas without first obtaining a permit through this chapter and through the appropriate decision-making body. Chapter 55 CDC, Design Review, shall not apply to park development or structures or facilities in parks. Unless specifically exempted by this chapter, all relevant CDC chapters shall apply.

B. There are two classes of Park Design Review – Class I and Class II. Class I park design review applies to minor changes to park facilities. It is reasonable and appropriate that a simpler but more focused set of standards shall apply. Class II park design review applies to the development of any

new park or significant changes to an existing park or natural area. The specific submittal standards and approval criteria are explained in CDC 56.070 through 56.100.

C. Class I design review. The following is a non-exclusive list of Class I design review activities or facilities.

1. New sidewalks, if over 200 feet long (see CDC 56.025).
2. New trails, if over 200 feet long (see CDC 56.025).
3. New paths, if over 200 feet long (see CDC 56.025).
4. Additional recreation amenities or facilities including playground equipment, picnic shelters, and playing fields so long as those facilities are consistent with the program established for the park and the impacts are expected to be minor. (An example of program consistency would be Class I design review of a proposal to add two more swing sets at an active-oriented park; conversely, it would be a Class II if the proposal would add swing sets in a natural resource area.)

...

12. Freestanding art and statuary under five feet tall.

...

Finding No. 22: The Applicant's proposal is for a public-use path greater than 200-feet in length and therefore qualifies for Class I Design Review. The public-use path will not exist within an extension of Willamette Park but will instead be constructed on property that is not owned by the City of West Linn (property owners include PGE and Tri-City Service District) and upon which the City has permission to use for such purposes (See Exhibit PM - 5).

The Applicant is also proposing a public art installation (see Appendix 6) near the trailhead location. According to CDC Chapter 56, Class I design review applies to public art and statuary under five feet tall (56.020(C)(12)):

"The following is a non-exclusive list of Class I Design Review activities or facilities; (12) Freestanding art and statuary under five feet tall."

Freestanding art and statuary greater than five feet tall is not however, listed under the Class II Design Review activities in this section. Chapter 55 (design review for non-park and natural areas) applies Class I Design Review to public art and statuary *over* five feet tall. Staff finds that the guidance provided in Chapter 55 serves as an appropriate surrogate to make a determination that Class I Design Review applies to all public art and statuary in West Linn. This finding is further supported by the fact that neither Chapter 55 nor 56 include standards specific to public art and/or statuary. Because of this, the CDC effectively treats public art and statuary the same whether inside or outside a park and/or natural area.

56.060 PHASED DEVELOPMENT

The applicant may elect to develop the site in phases, also known as stages. The applicant shall delineate the boundaries of the phases on a map and provide a narrative that explains what improvements or facilities can be expected with each phase and when development for each phase is to be initiated. The decision-making authority must approve phased development with a clearly stated timeline for each phase, per the provisions of CDC 99.125. Once work on a phase is initiated by the approved timeline, it is not necessary that all the work of that phase be completed by the timeline date so long as reasonable progress is being made.

Finding No. 23: The Applicant’s submittal discusses generally, a desire to perform additional work (i.e., viewing platforms, future trail spurs) along this proposed trail at a later date. While the Applicant mentions future phases of work, the submittal does not include sufficient detail regarding future work tasks to make a decision on these elements at this time. The Applicant’s request (and a subsequent decision on the matter) is confined to a 0.64 mile paved pathway from the east end of Bernert Landing to approximately 4th Street and a public art installation.

56.090 APPROVAL STANDARDS – CLASS I DESIGN REVIEW

The Planning Director shall make a finding with respect to the following criteria when approving, approving with conditions, or denying a Class I design review application:

- A. The provisions of the following sections shall be met:
 1. CDC 56.100(C)(1) through (5), Relationship to the natural physical environment, shall apply except in those cases where the proposed development site is substantially developed and built out with no natural physical features that would be impacted.

Finding No. 24: Staff responses to CDC 56.100(C)(1-5) are included in Findings 24a-d below:

56.100.C. Relationship to the natural environment.

1. The buildings and other site elements shall be designed and located so that all heritage trees, as defined in the municipal code, shall be saved. Diseased heritage trees, as determined by the City Arborist, may be removed at the direction of the City Manager.
2. All heritage trees, as defined in the municipal code, and all trees and clusters of trees (“cluster” is defined as three or more trees with overlapping driplines; however, native oaks need not have an overlapping dripline) that are considered significant by the City Arborist, either individually or in consultation with certified arborists or similarly qualified professionals, based on accepted arboricultural standards including consideration of their size, type, location, health, long term survivability, and/or numbers, shall be protected pursuant to the criteria of CDC 55.100(B)(2). It is important to acknowledge that all trees are not significant.

a. Areas of the park that include non-Type I and II lands shall protect all heritage trees and all significant trees through the careful layout of streets, building pads, playing fields, and utilities. The method for delineating the protected trees or tree clusters (“dripline + 10 feet”) is explained in CDC 55.100(B)(2)(a) and in subsection (C)(2)(b) of this section.

b. Areas of the park that include Type I and II lands shall protect all heritage, significant and non-significant trees. Groundcover, bushes, etc., shall be protected and may only be disturbed to allow the construction of trails or accessing and repairing utilities. Exemptions permitted under CDC 55.100(B)(2)(c) through (f) shall apply.

Finding No. 24a: According to the Applicant’s submittal (p.9), the trail alignment and location of the art installation has been designed, and will be further refined in the field, to avoid impacts to significant trees and an existing heritage tree in this area. The City of West Linn’s arborist will be involved in final trail alignment and construction plan review. The intent of this finding is to support those modifications of the final trail alignment and construction plan review that protects significant trees and existing heritage trees in the area. It assumes those alignments must be outside of the regulatory floodway. Subject to those clarifications, the criteria are met.

3. In the case of natural resource areas, the topography shall be preserved to the greatest degree possible. Conversely, in non-natural resource areas, it is recognized that in order to accommodate level playing fields in an active-oriented park, extensive grading may be required and the topography may be modified.

Finding No. 24b: The trail and art piece are proposed to be constructed outside the floodway but within the 100-year floodplain zone. The Applicant is proposing to preserve the existing topography and limit grading along the alignment (see Findings 17-20). The criterion is met.

4. The structures shall not be located in areas subject to slumping and sliding. The Comprehensive Plan Background Report’s Hazard Map, or updated material as available and as deemed acceptable by the Planning Director, shall be the basis for preliminary determination.

Finding No. 24c: The Applicant’s submittal includes a geotechnical analysis (Applicant’s submittal, Appendix C, p.3) dated January 13, 2015, which states that, “Significant geotechnical hazards were not identified along the section of trail alignment evaluated. Excessively soft soil was not encountered and potential slope stability issues were not observed. In our opinion, the proposed trail can be successfully constructed as long as our recommendations in the “Site Development Regulations” section of this report are incorporated into design and construction.” The geotechnical report confirms the proposed pathway can be safely constructed in this area.

Although it is likely that conditions near the site of the proposed public art piece mimic those along the proposed trail alignment, the geotechnical analysis and its supplementary “Site Development Regulations” did not specifically address the proposed public art piece. Staff cannot therefore make a determination as to the compliance with this standard for the public art element of the Applicant’s proposal. Staff recommends Condition of Approval No. 2 (which requires that the Applicant provide confirmation, prior to the public art installation, that the installation of the proposed public art piece is not located in an area subject to slumping or sliding) as a means of satisfying this standard.

5. The park shall be designed in such a way as to take advantage of scenic views and vistas from the park site, as long as such views can be obtained without eliminating significant trees or other natural vegetated areas.

Finding No. 24d: The Applicant’s proposal would construct a public pathway, through an easement on private property, and may not be classified as an extension of Willamette Park. This criterion therefore does not apply. It is likely however, that if approved and constructed, this public pathway along the Willamette River will afford scenic views of the river and valley.

2. CDC 56.100(D), Facility design and relationship to the human environment, shall only apply in those cases that involve exterior architectural construction, remodeling, or changes.

Finding No. 25: The proposal does not include architectural construction, remodeling or changes, and therefore this criterion is not applicable.

3. Pursuant to CDC 56.085, the Director may require additional information and responses to additional sections of the approval criteria of this section depending upon the type of application.

B. The Planning Director shall determine the applicability of the approval criteria in subsection A of this section. (Ord. 1547, 2007)

Finding No. 26: The Planning Director concurs with the applicability status of the abovementioned criteria. The criteria are met.

APPENDIX

- 1. West Linn Pedestrian Plan**
- 2. Flood Management Areas relative to Applicant’s Proposal**
- 3. Transportation System Plan - Parks, Recreation and Open Space Plan**
- 4. Trail T-2 from PROS Plan**
- 5. Proposed Trail alignment**
- 6. Artists rendition of proposed public art installation**

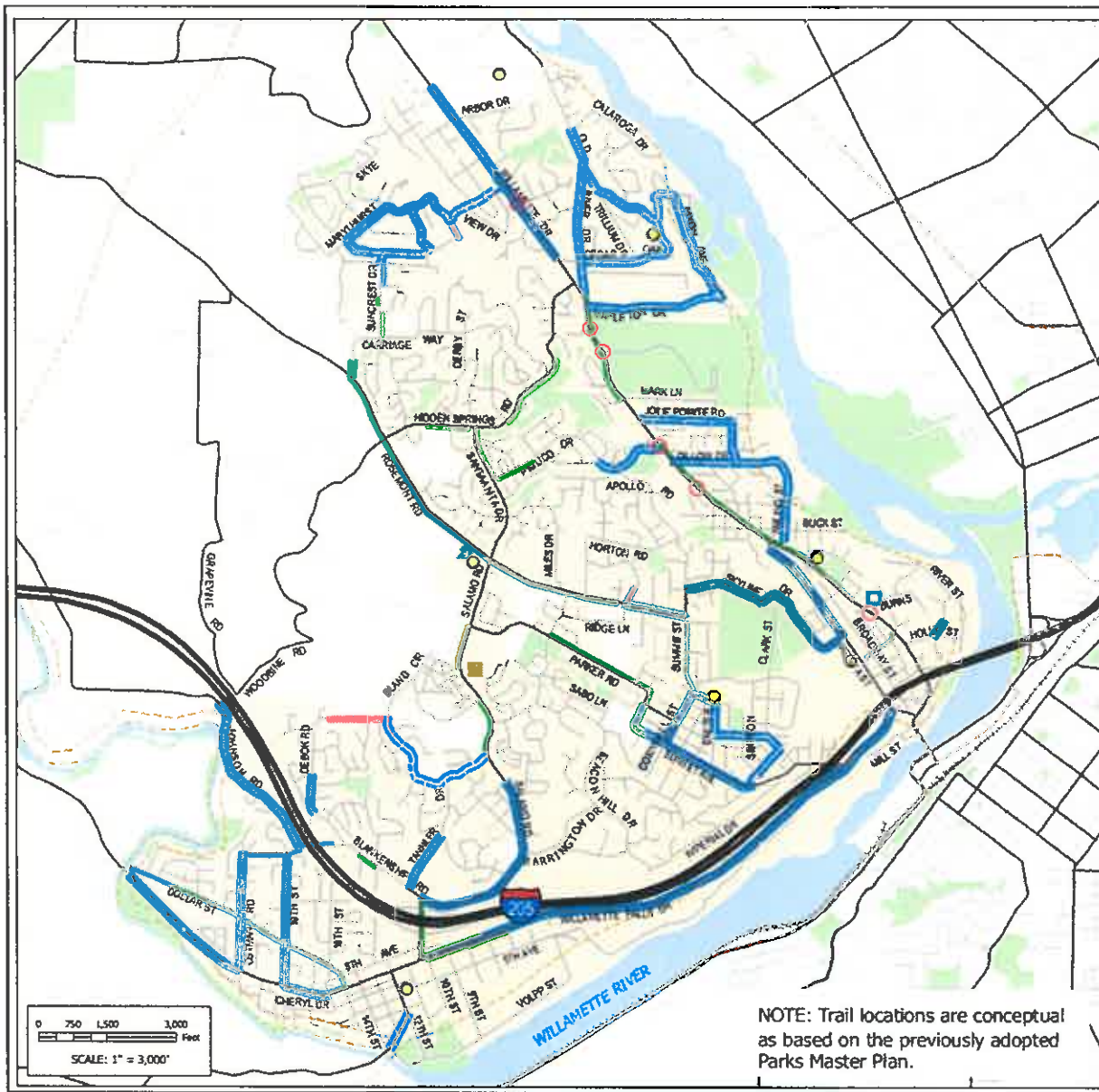
West Linn
**Transportation
 System Plan**

FIGURE 5-1

PEDESTRIAN PLAN

LEGEND

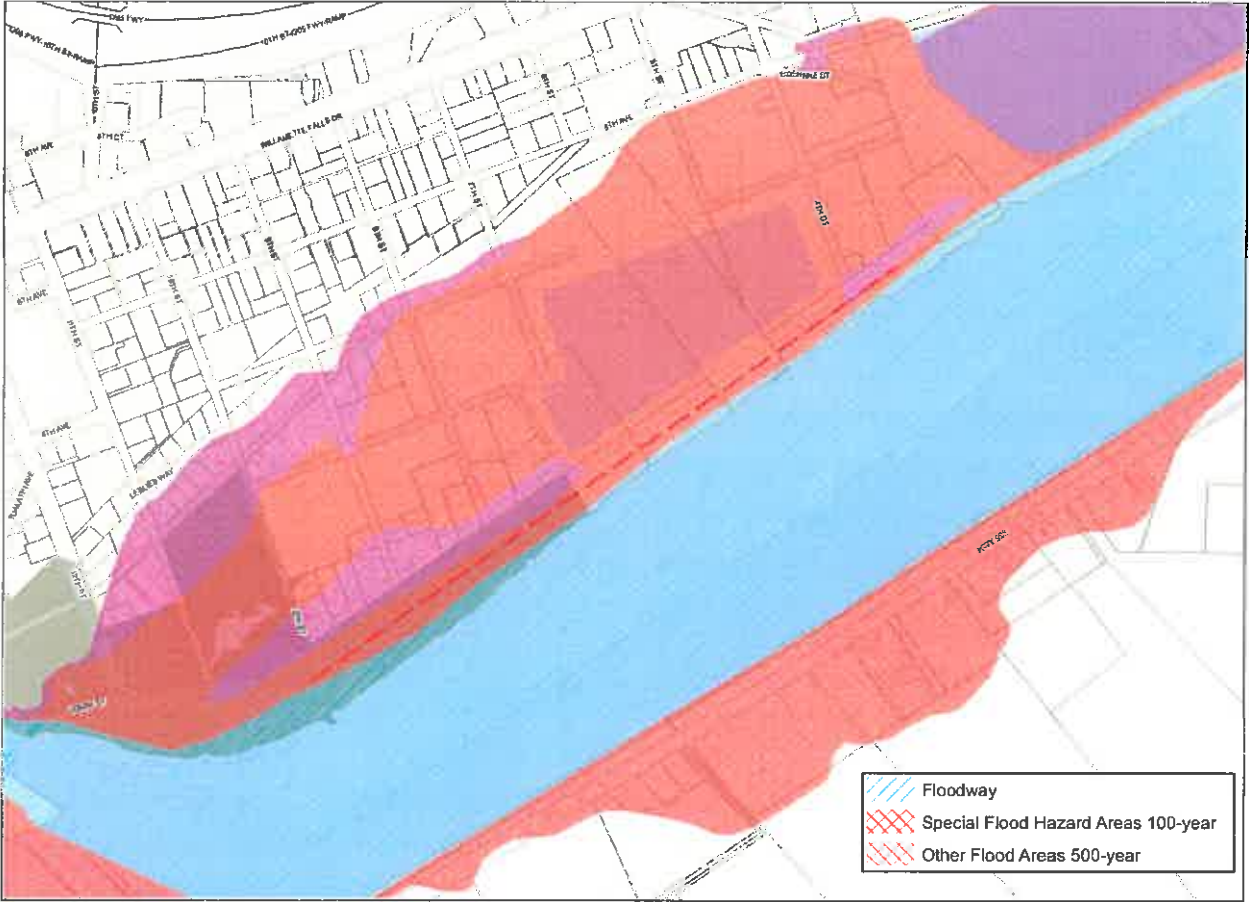
- Pedestrian Projects**
- Sidewalk - One Side
 - Sidewalk - Both Sides
 - Proposed Off-Street Path
 - Proposed Crossing
 - Off-Street Path
 - City Hall
 - Schools
 - Library
 - Parks
 - Community Center
 - Freeway
 - Major Roads
 - Streets
 - +— Railroad
 - Water
 - City Limits



Source: West Linn Transportation System Plan, 2008

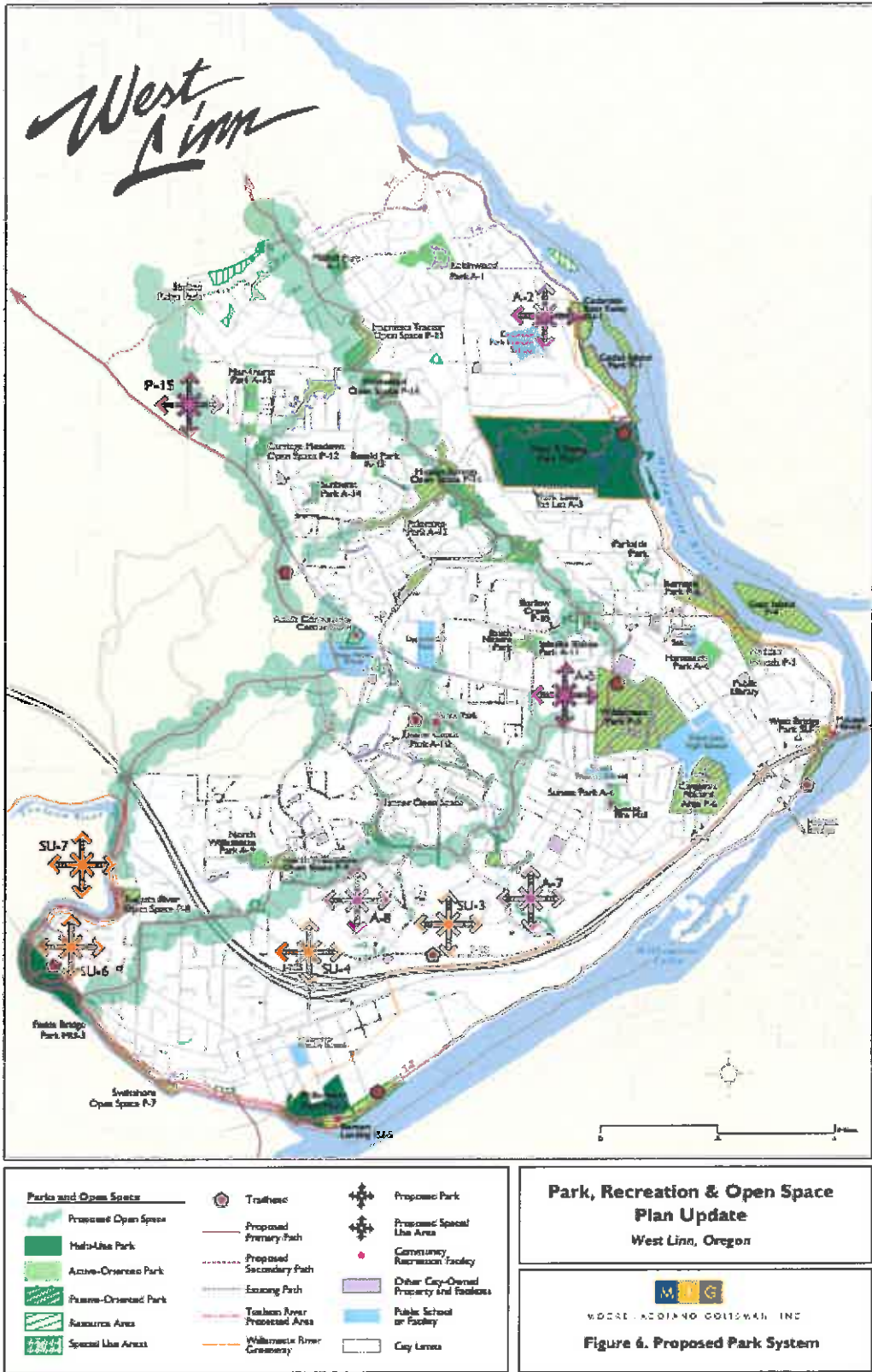


2 Flood Management Areas relative to Applicant's Proposal



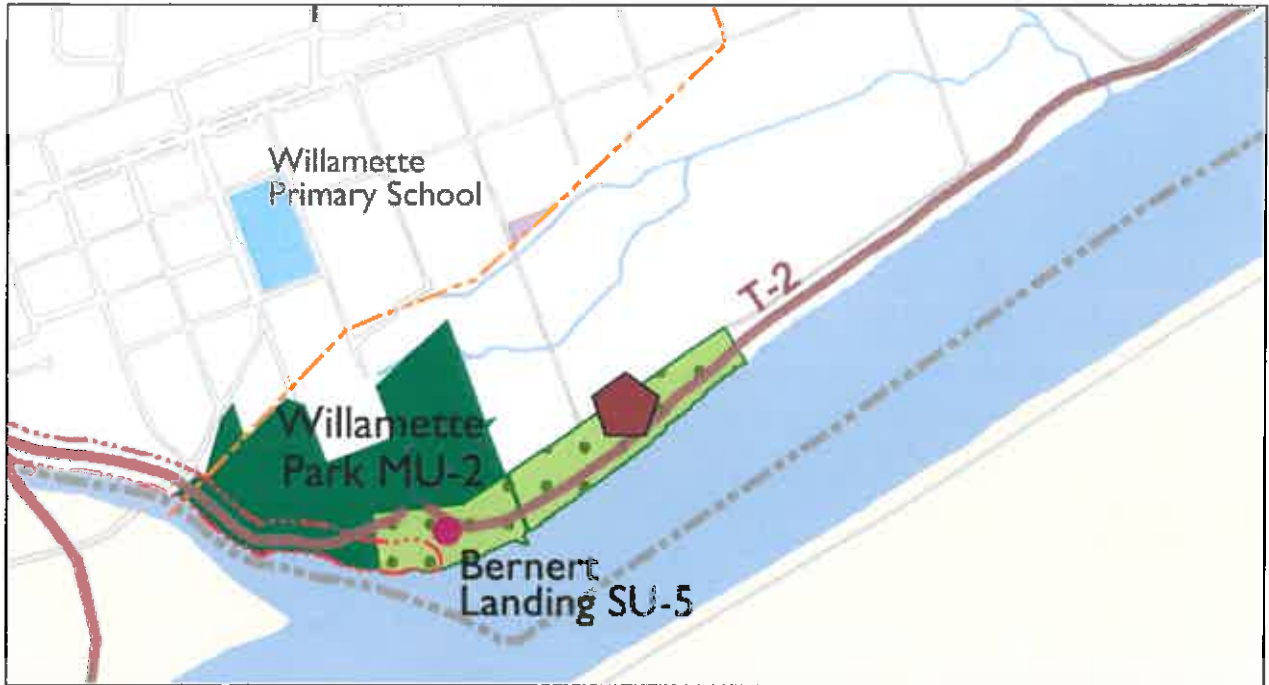
Source: West Linn GIS, 2015

3 West Linn Parks, Recreation and Open Space Plan



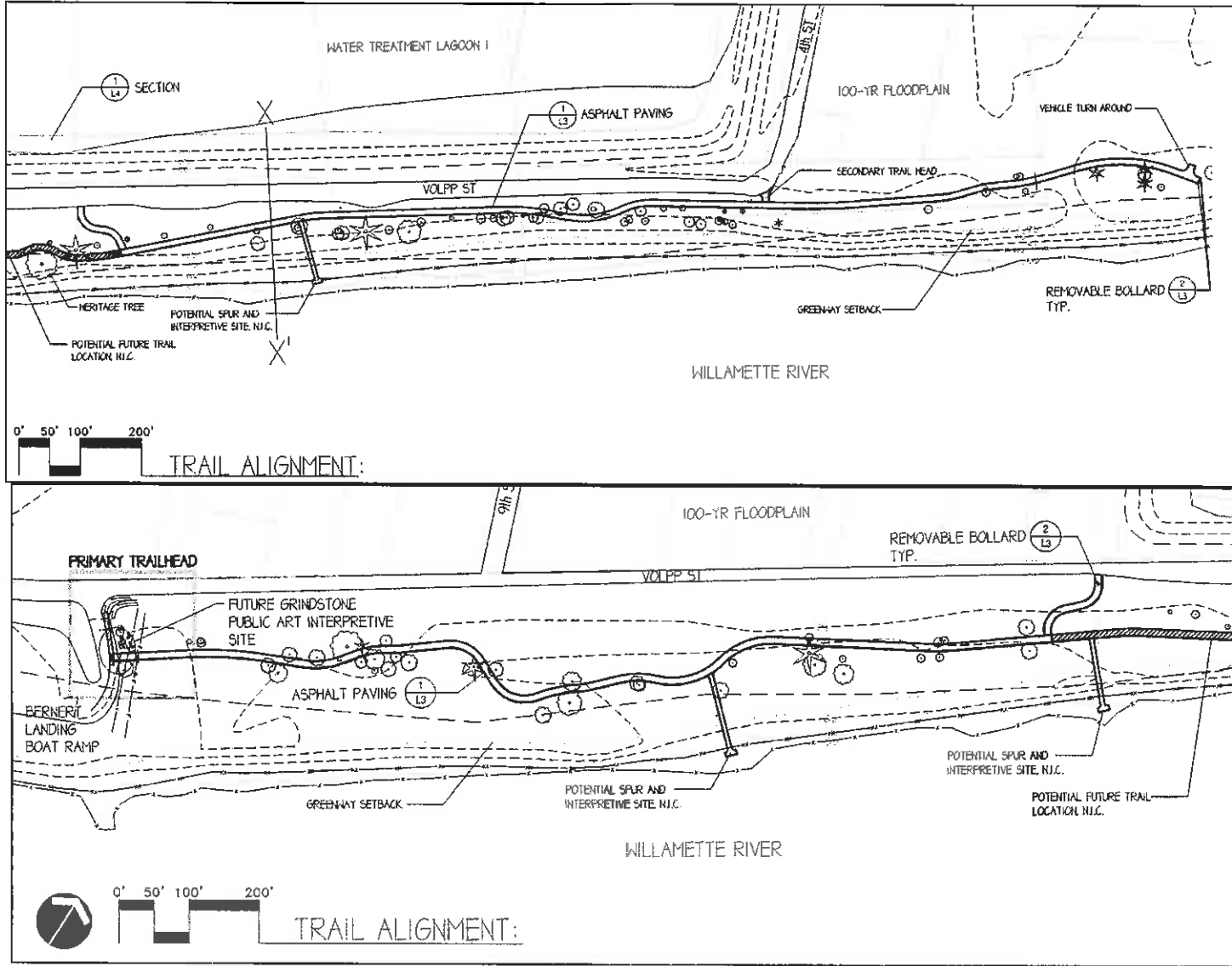
Source: West Linn Parks, Recreation and Open Space (PROS) Plan, July 2007

4 Trail T-2 from PROS Plan



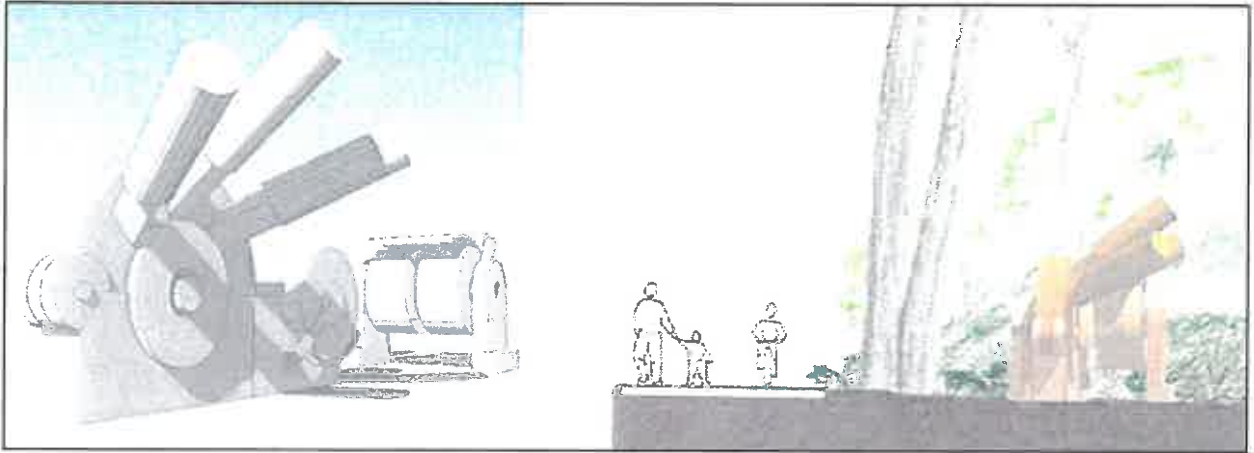
Source: PROS Plan, July 2007

5 Proposed Trail Alignment



- LEGEND**
- 8" CONDUIT
 - MEAN WATER LEVEL, 25'
 - 14" MEAN WATER LEVEL, 40'
 - 100 YEAR FLOOD, 44' 7"
 - TWO LOT LINES
 - FLOODPLAIN
 - GREENWAY SETBACK, 25' FROM HIGH WATER
 - PROPOSED TRAIL, 10' WIDEN EXISTING TRAIL RIGHT-OF-WAY
 - EXISTING ASPHALT
 - PROPOSED REMOVABLE BOLLARDS
 - EXISTING TREES

6 Artist's rendition of proposed Public Art Installation



Source: Applicant's submittal 2015

EXHIBITS

EXHIBIT PM-1 AFFIDAVIT OF NOTICE AND MAILING PACKET

AFFIDAVIT OF NOTICE

We, the undersigned do hereby certify that, in the interest of the party (parties) initiating a proposed land use, the following took place on the dates indicated below:

GENERAL

File No. DK-15-02 Applicant's Name COWL - Parks : Rec Dept
Development Name
Scheduled Meeting/Decision Date 5-8-15

NOTICE: Notices were sent at least 20 days prior to the scheduled hearing, meeting, or decision date per Section 99.080 of the Community Development Code. (check below)

TYPE A

- A. The applicant (date) (signed)
B. Affected property owners (date) (signed)
C. School District/Board (date) (signed)
D. Other affected gov't. agencies (date) (signed)
E. Affected neighborhood assns. (date) (signed)
F. All parties to an appeal or review (date) (signed)

At least 10 days prior to the scheduled hearing or meeting, notice was published/posted:

Tidings (published date) N/A (signed)
City's website (posted date) (signed)

SIGN

At least 10 days prior to the scheduled hearing, meeting or decision date, a sign was posted on the property per Section 99.080 of the Community Development Code.

(date) 5-7-15 (signed) S. Shroyer

NOTICE: Notices were sent at least 14 days prior to the scheduled hearing, meeting, or decision date per Section 99.080 of the Community Development Code. (check below)

TYPE B

- A. The applicant (date) 7-24-15 (signed) S. Shroyer
B. Affected property owners (date) 4-24-15 (signed) S. Shroyer
C. School District/Board (date) (signed)
D. Other affected gov't. agencies (date) 4-24-15 (signed) S. Shroyer
E. Affected neighborhood assns. (date) 4-24-15 (signed) S. Shroyer
WLL: Au

Notice was posted on the City's website at least 10 days prior to the scheduled hearing or meeting.
Date: 4-24-15 (signed) S. Shroyer

STAFF REPORT mailed to applicant, City Council/Planning Commission and any other applicable parties 10 days prior to the scheduled hearing.

(date) (signed)

FINAL DECISION notice mailed to applicant, all other parties with standing, and, if zone change, the County surveyor's office.

(date) 5-22-15 (signed) S. Shroyer

**CITY OF WEST LINN
NOTICE OF UPCOMING
PLANNING MANAGER DECISION
FILE NO. DR-15-02/MISC-15-01**

The West Linn Planning Manager is considering a request for a **Class I Design Review and Flood Management Area permit near the east end of the Bernert Landing Boat Ramp in West Linn (Clackamas County Assessor's Map 3 1E 02 lots 100 and 500 and Map 2 1E 36 lot 2000).**

The decision will be based on the approval criteria in chapters 11, 23, 27 and 56 of the Community Development Code (CDC). The approval criteria from the CDC are available for review at City Hall, at the City Library, and at <http://www.westlinnoregon.gov/cdc>.

You have been notified of this proposal because County records indicate that you own property within 300 feet of this property (tax lots 100 and 500 of Clackamas County Assessor's Map 3 1E 02 and lot 200 of Map 2 1E 36) or as otherwise required by Chapter 99 of the CDC.

All relevant materials in the above noted file are available for inspection at no cost at City Hall, and on the city web site <http://westlinnoregon.gov/planning/class-ii-parks-design-review-willamette-river-trail> or copies may be obtained for a minimal charge per page. A public hearing will not be held on this decision. **Anyone wishing to present written testimony for consideration on this matter shall submit all material before 4:00 p.m. on Friday, May 8, 2015. Persons interested in party status should submit their letter along with any concerns related to the proposal by the comment deadline.** For further information, please contact Zach Pelz, Associate Planner, City Hall, 22500 Salamo Rd., West Linn, OR 97068, (503) 723-2542, zpelz@westlinnoregon.gov.

Any appeals to this decision must be filed within 14 days of the final decision date with the Planning Department. **It is important to submit all testimony in response to this notice. City Council will not accept additional evidence if there is an appeal of this proposal.** Failure to raise an issue in person or by letter, or failure to provide sufficient specificity to afford the decision-maker an opportunity to respond to the issue, precludes the raising of the issue at a subsequent time on appeal or before the Land Use Board of Appeals.



CITY OF West Linn

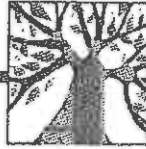
PLANNING MANAGER DECISION 2015-05-22

**PROJECT # DR-15-02
NOTICE DATE: MAIL 4/24/15**

CITIZEN CONTACT INFORMATION

To lessen the bulk of agenda packets, land use application notice, and to address the worries of some City residents about testimony contact information and online application packets containing their names and addresses as a reflection of the mailing notice area, this sheet substitutes for the photocopy of the testimony forms and/or mailing labels. A copy is available upon request.

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City of
West Linn

March 13, 2015

Ken Worcester
Parks Director, City of West Linn
22500 Salamo Rd
West Linn, OR 97068

Mr. Ken Worcester:

On March 12, 2015, the Planning Department received 10 revised copies of the required plans and other submittal materials. This submittal fulfills the applicable requirements necessary to make a determination that **your application packet is now complete**. The City has 120 days to exhaust all local review; that period ends Friday, July 10, 2015.

Please be aware that a determination of a complete application does not guarantee a recommendation of approval from staff for your proposal as submitted – it signals that staff believes you have provided the necessary information for the Planning Commission to render a decision on your proposal.

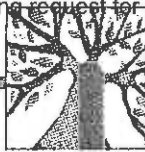
We are determining with our Planning Commission, the best date for which to schedule this project for a public hearing. You will receive written notice of the actual hearing date at least 20 days prior to the hearing. Please do not hesitate to call or email with questions.

Sincerely,

A large, stylized handwritten signature in black ink, appearing to read 'Zach Pelz', is written over the typed name and title.

Zach Pelz, AICP
Associate Planner
Planning Department
City of West Linn
zpelz@westlinnoregon.gov
(503) 723-2542

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City of West Linn

March 6, 2015

Ken Worcester
Parks Director, City of West Linn
22500 Salamo Rd
West Linn, OR 97068

Mr. Ken Worcester:

Thank you for submitting an application for Class II Parks Design Review and Floodway Management Area permits to construct an approximately 1.25 mile public pathway from Bernert Landing east along the Willamette River. Applications such as yours are reviewed for consistency with applicable submittal standards in the West Linn Community Development Code (CDC) to ensure the application contains the information necessary to make a well-informed decision.

The submittal requirements relevant to your application are listed in, and referenced by, CDC Chapters 27 (Flood Management Areas) and 56 (Design Review for Parks and Recreational Facilities). The CDC (99.035(A)) authorizes the Planning Director to request information beyond that explicitly required, where such information is determined to be necessary to properly evaluate the proposal. Similarly, the Planning Director may waive a specific requirement for information where it has been determined that such information is not necessary to evaluate the application (99.035(B)(1)). You have requested a waiver of the following submittal requirements (your rationale for the waiver follow each criterion and are *italicized*):

- Chapter 56 - Parks Design Review
 1. 56.080(A)(4): Architectural drawings, indicating floor plan and elevation - *no buildings are proposed as part of this application*
 2. 56.080(A)(6): A sign plan - *no signs are currently proposed other than possible small trailhead and directional signs*
 3. 56.080(A)(7): A pedestrian and bicycle circulation plan - *The site plan serves as a pedestrian circulation plan and includes trail locations relative to Volpp Street and intersecting streets*

The Planning Director agrees that architectural drawings (item 1 above), a sign plan¹ (item 2), and a pedestrian and bicycle circulation plan (item 3) are not submittal requirements applicable to your proposal to construct a public pathway. **The Planning Director therefore agrees to waive the application of items 1 through 3 above.**

¹ CDC 52.109(C): City signs are exempt from the provisions of the sign ordinance; 52.300(Footnote 5): Signs in parks directed at pedestrians or cyclists within the parks are not limited in number or size.



CITY OF West Linn

The item listed below is not required for us to deem your application complete, however, staff feels these additional details would facilitate our review of your proposal and we request they be provided to supplement your application. Again, these items are *not* necessary to deem your application complete:

- *Please revise your site plan to show the current location of the eastern terminus of the proposed pathway. The site plan submitted as part of your application shows the proposed pathway terminating upon property owned by the West Linn Paper Company. Staff is now aware that the applicant is in the process of amending their site plan to show the pathway terminating in a nearby location.*

Staff has determined that your application, submitted on February 11, 2015, does not include all of the information required by the aforementioned CDC Chapters and is therefore **incomplete** at this time. You have 180 days from the date of your application submittal (until August 10, 2015), to make this application complete. The following information is required to deem your application complete:

- *10 full-sized copies of all required plans.*

Please do not hesitate to call or email with questions.

Sincerely,

A large, stylized handwritten signature in black ink, appearing to read 'Zach Peiz'.

Zach Peiz, AICP
Associate Planner
Planning Department
City of West Linn
zpeiz@westlinnoregon.gov
(503) 723-2542

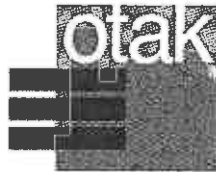
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Willamette River Trail West Linn, Oregon

Request for
Class II Parks Design Review Approval
and
Flood Management Permit Approval

Prepared for
The City of West Linn Parks and Recreation Department

Prepared by



HanmiGlobal Partner

Otak Project No. 17219
March 11, 2015

APPLICATION SUMMARY

REQUEST: A request for approval of **Class II Park Design Review and Flood Management** approval to develop the Willamette River Trail eastward from Willamette Park's Bernert Landing boat launch parking area approximately 1.25 miles along the Willamette River. The proposed trail would be approximately 10- to 12-feet wide, and meander along the alignment to minimize tree removal and grading. The entire trail alignment is located within the 100-year floodplain of the Willamette River and within the Willamette River Greenway.

DESCRIPTION: The trail will be located on portions of Map 3 1E 02, tax lots 100 and 500, and Map 2 1E 36, tax lot 2000 within the City of West Linn, Clackamas County, Oregon.

ZONING: According to the City of West Linn Zoning Map, a portion of the property adjacent to the Bernert Landing Boat Ramp is designated R-10 and is shown as a Park. The larger portion of the properties that would include the trail east of that parcel is all zoned General Industrial. All of the subject properties are covered by the Willamette Greenway and Tualatin River Protection Area overlay district. All affected areas are designated as Habitat Conservation Areas by Metro mapping.

APPLICANT: City of West Linn Parks and Recreation Department
c/o Ken Worcester
22500 Salamo Road
West Linn, OR 97068

APPLICANT'S REPRESENTATIVE: Otak, Inc.
c/o Jerry Offer
808 SW Third Avenue, Suite 300
Portland, OR 97204

(503) 415-2330, jerry.offer@otak.com

PROPERTY OWNERS: Portland General Electric Co. (tax lots 500 and 2000)
PO Box 4404
Portland, OR 97208

Clackamas County – Tri City Service District (tax lot 100)
150 Beaver Creek Road
Oregon City, OR 97045
503-742-4567

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Appendix B Copy of email correspondence between West Linn Planner Tom Soppe and Jerry Offer of Otak, Inc. from May 12, 2014, through July 16, 2014	
Appendix C Geotechnical Report by GeoDesign, Inc. dated January 13, 2015	
V. Plan Set	
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Exhibit A – Field Observations	
Exhibit B – Tax Lot Map	

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I. REQUEST

A request for **Class II Park Design Review and Flood Management Area** approval to allow the City of West Linn Parks and Recreation Department to develop a portion of the Willamette River public pedestrian and bicycle trail. The proposed trail segment would be located on the north side of the Willamette River east of Willamette Park. The trail segment will extend from the east side of the boat launch parking area at Bernert Landing for approximately 1.25-miles eastward along the Willamette River. A public art exhibit constructed with grindstones formerly used at the paper mill at the Willamette Falls downstream will be located near the trailhead at Bernert Landing.

The main portion of the trail will be located outside of the Willamette River Greenway setback area of 35-feet. However, the proposal includes potential future trail spurs from the main trail to viewing platforms located along the river bank. The proposed trail would be paved to approximately 10- to 12-feet in width. The trail will meander along the proposed trail alignment to avoid tree removal. A preliminary trail alignment has been field located, brush has been removed, and the preliminary trail alignment has been surveyed. Sheet L5 is a survey of that alignment. Although the trail is intended to generally follow this preliminary trail alignment, it is noted that field adjustments to the alignment will be made to minimize tree removal and earthwork to construct the trail.

The entire trail alignment is located within the 100-year floodplain of the Willamette River.

The current proposal is similar to an application which was approved by the Planning Commission in 2005 (File DR-05-12), with the exception that that application also included a further eastward extension of the trail than does the current application. No action was taken to implement the plans approved through the 2005 application within the approval period for that application. Therefore, that approval has expired.

Figure 6, Proposed Parks System Plan of the 2007 City of West Linn Parks, Recreation and Open Space Master Plan illustrates a trail in the same general location as is proposed through the current application. The trail in the Parks Master Plan is designated as a portion of trail T-2 which is shown as extending from the confluence of the Tualatin River and the Willamette River extending along the north and west riverbanks as the river flows to the northern city boundary with the City of Lake Oswego. A trailhead is also shown on Figure 6 of the Parks Master Plan in the general location of the proposed trail's trailhead adjacent to the Bernert Landing boat launch parking area. The City of West Linn Comprehensive Trails System Master Plan (2013) calls for development of a trail in the same location and designates this trail as a secondary trail. The City of West Linn Transportation Systems Plan (2008) also shows a trail in this general area, although it is mapped to be on the opposite side of Volpp Street. The Transportation System Plan, however, says that that trail's location will be based upon the Parks, Recreation and Open Space Master Plan.

II. COMPLIANCE WITH APPLICABLE APPROVAL CRITERIA

A pre-application meeting was held with the City of West Linn on March 6, 2014 to discuss the proposed trail. At the meeting, City staff determined that a Class II Parks Design Review, a Willamette Greenway Permit, Water Resource Area Permit, and Flood Management Permit would be required for the proposed development. It was subsequently determined that Willamette River Greenway approval was not necessary for the trail (See email correspondence between West Linn Planner Tom Soppe and Jerry Offer of Otak, Inc. in Appendix 2)

CHAPTER 27 Flood Management Areas

According to Community Panel 410024B of the FEMA maps, the Base Flood Elevation (BFE) at this location is between 70 and 72 feet. The majority of the trail would be constructed at an elevation of 70 feet or higher.

27.060 APPROVAL CRITERIA

The Planning Director shall make written findings with respect to the following criteria when approving, approving with conditions, or denying an application for development in flood management areas.

- A. *Development, excavation, and fill shall be performed in a manner to maintain or increase flood storage and conveyance capacity and not increase design flood elevations.*

Response: No work is proposed that will increase the flood storage and conveyance capacity or increase flood elevations. All trail construction work is proposed to occur on existing grades with minimal ground disturbance. Construction of the trail will be completed by removing the organic materials and soil to a depth of approximately 12-inches from the existing ground surface, placing a gravel base, and paving the trail at close to existing ground surface elevations.

- B. *No net fill increase in any floodplain is allowed. All fill placed in a floodplain shall be balanced with an equal amount of soil material removal. Excavation areas shall not exceed fill areas by more than 50 percent of the square footage. Any excavation below bankful stage shall not count toward compensating for fill.*

Response: The proposed improvements do not require the import of fill other than the gravel base and trail pavement. Top soil to be removed from the trail alignment will either be reused at another location for trail construction or will be taken offsite as excess. The native materials to be removed for trail construction will roughly balance the amount of non-native material (gravel base and pavement) that will be used to construct the trail.

There is no excavation proposed below the top of bank of the river.

- C. *Excavation to balance a fill shall be located on the same parcel as the fill unless it is not reasonable or practicable to do so. In such cases, the excavation shall be located in the same drainage basin and as close as possible to the fill site, so long as the proposed excavation and fill will not increase flood impacts for surrounding properties as determined through hydrologic and hydraulic analysis.*

Response: All necessary excavation and fill for the trail will be located within the area of work. The amount of excavation and fill will be minimal and will be limited to what is necessary to provide an appropriate foundation for the trail.

- D. *Minimum finished floor elevations must be at least one foot above the design flood height or highest flood of record, whichever is higher, for new habitable structures in the flood area.*

Response: No new habitable structures are proposed within the flood area.

- E. *Temporary fills permitted during construction shall be removed.*

Response: There are no temporary fills proposed with the trail construction.

- F. *Prohibit encroachments, including fill, new construction, substantial improvements, and other development in floodways unless certification by a professional civil engineer licensed to practice in the state of Oregon is provided demonstrating that encroachments shall not result in any increase in flood levels during the occurrence of the base flood discharge.*

Response: Some filling will be required at the trailhead to provide an ADA accessible trail towards the east until a point where the trail can be constructed at close to existing grade. The proposed amount of fill for this area has been more than compensated for with cutting elsewhere further east. Sheet L5 shows a profile of the trail illustrating that proposed cutting areas exceed filling areas both in extent and in volume. Preliminary calculations comparing cut and fill show 20 cubic yards more cut than fill for trail construction over the entire. The flood carrying capacity of the site would be improved by the net cut.

- G. *All proposed improvements to the floodplain or floodway which might impact the flood carrying capacity of the river shall be designed by a professional civil engineer licensed to practice in the state of Oregon.*

Response: Although portions of the trail will be located within the 100-year floodplain, no fill from offsite will be used to build the trail up. There is no evidence to suggest that the trail which will parallel the course of the river would impact the flood carrying capacity of the river. The proposed trail has been designed by Gary Alfson, P.E., a professional engineer licensed to practice in the State of Oregon.

If viewing platforms are constructed at a later date, those platforms will be designed by a professional engineer licensed in the state of Oregon to ensure that the improvements are constructed in compliance with accepted building practices within floodplains.

- H. *New culverts, stream crossings, and transportation projects shall be designed as balanced cut and fill projects or designed not to significantly raise the design flood elevation. Such projects shall be designed to minimize the area of fill in flood management areas and to minimize erosive velocities. Stream crossings shall be as close to perpendicular to the stream as practicable. Bridges shall be used instead of culverts wherever practicable.*

Response: No new culverts or other stream crossings are proposed as part of the trail construction. All proposed trail improvements are proposed to be made at roughly existing grade and to be designed for no net increase in fill materials as compared to materials to be removed so there is no reason to believe that trail construction will raise

the design flood elevation.

- I. *Excavation and fill required for the construction of detention facilities or structures, and other facilities, such as levees, specifically shall be designed to reduce or mitigate flood impacts and improve water quality. Levees shall not be used to create vacant buildable land.*

Response: No detention facilities or structures, levees, or similar flood controls are proposed with this application.

- J. *The applicant shall provide evidence that all necessary permits have been obtained from those federal, State, or local governmental agencies from which prior approval is required.*

The applicant and project team are not aware of any federal, state or other local government permits that will be necessary to build the trail other than the permits requested from the City of West Linn through this application.

27.070 *Construction Materials and Methods*

- A. *All new construction and substantial improvements shall be constructed with materials and utility equipment resistant to flood damage using methods and practices that minimize flood damage.*

Response: The trail will consist of pervious asphalt pavement over a gravel base. Asphalt pavement is a widely accepted material in floodplain construction because it does not wash away like uncovered gravel or other unconsolidated materials.

Viewing platforms, if constructed in the future, will be constructed with materials and equipment resistant to flood damage such as composite lumber-like material, wood, concrete and steel.

- B. *Electrical, heating, ventilation, plumbing, and air-conditioning equipment and other service facilities shall be designed and/or otherwise elevated or located so as to prevent water from entering or accumulating within the components during conditions of flooding.*

Response: No new electrical, heating, ventilation, plumbing, and air-conditioning equipment or other such service facilities are proposed with this development. Users of the trail are expected to use the existing restroom facilities located in nearby Willamette Park and at the Bernert Landing boat launch area. The proposed project is limited to trail development only.

- C. *New and replacement water supply systems shall be designed to minimize or eliminate infiltration of flood waters into the system.*

Response: The proposed project is limited to trail development only. No new or replacement water supply systems are proposed as part of this project.

- D. *New and replacement sanitary sewage systems shall be designed to minimize or eliminate infiltration of flood waters into the systems and discharge from the systems into flood waters.*

Response: The proposed project is limited to trail development only. No new or replacement sanitary sewage systems are proposed with this project.

E. *On-site waste disposal systems shall be located to avoid impairment to them or contamination from them during flooding.*

Response: The proposed project is limited to trail development only. There are no new on-site waste disposal systems proposed with this project

F. *All new construction and substantial improvements shall be anchored to prevent flotation, collapse, or lateral movement of the structure.*

Response: Viewing platforms, if constructed in the future, will be anchored as prescribed to prevent flotation, collapse, or lateral movement of the structure.

CHAPTER 28 Willamette and Tualatin River protection

28.040 *Exemptions/Uses Permitted Outright*

Response: "Construction of a public pathway by dedication or easement accepted by the City" is listed at Section 28.040.BB as a use which is one of the types of development exempted from Willamette and Tualatin River Protection review. Therefore, no Willamette River Greenway review of the trail proposal is required under Chapter 28.

CHAPTER 56 Parks Design Review

56.015 *Categories of Parks and Natural Resource Facilities*

Section 56.015 discusses the eight categories of park and natural resource facilities as established in the Parks Master Plan, and discusses pathways and trails as follows:

Pathways and trails. Pathways and trails may be incorporated into park facilities, but may also be stand-alone facilities in open space. Communities provide urban paths and trails for their recreational value as well as their value as part of a community's commitment to the TPR. Trails and paths should be developed to provide linkages between schools, parks, neighborhoods, and the community and even integrate with regional trail systems. An example would be the trails and paths that crisscross the Tanner Basin neighborhood of West Linn and make it possible for children to access school on foot or bicycle in relative safety. Rudimentary gravel foot trails can be three to six feet wide. Paths in high use areas should be in the four- to 10-foot width range and paved. In neighborhoods that are built up with limited space to accommodate the paths or trails, reduced widths and non-traditional designs are encouraged if the alternative is no trail or path at all. Emphasis on providing routes that follow the cognitive patterns of residents is important. Surveillance potential and defensible space are also important considerations.

The proposed trail is consistent with the description of pathways and trails above. The proposal seeks approval to develop an approximately 10- to 12-foot wide paved public trail along the north bank of the Willamette River. The trail would begin at the existing Bernert Landing boat launch parking area on the east side of Willamette Park. The trail would extend eastward from the park within public pedestrian easements across properties owned by Portland General Electric and the Tri-City Service District, and potentially across properties owned by West Linn Paper Company in the future if easements can be obtained.

Development of the trail is called for by the 2007 City of West Linn Parks, Recreation and Open Space Master Plan and by the City of West Linn Transportation Systems Plan. The proposed trail would serve both recreational and transportation purposes. In addition, development of the trail is called for in permitting documents filed by PGE with the Federal Energy Regulatory Commission for PGE's continued operation of the Thomas w. Sullivan Hydroelectric Power Plant at Willamette Falls.

The area located immediately east of the boat launch parking area is zoned R-10 but is also noted as "park" on the City's zoning map. Further to the east in the area of the old Blue Heron Paper Mill treatment pond, the trail would be located on lands zoned GI, General Industrial.

56.20 *Applicability*

D. *Class II design review. The following is a non-exclusive list of Class II parks design review activities or facilities:*

1. *Site preparation for and/or development of a new park or natural area.*
2. *Outward expansion of an existing park or natural area.*
3. *Addition or reduction of more than 10 percent of total square footage of an existing building, including any dimensional change if it would result in encroachment towards a natural resource area.*
4. *Any program change that results in a change in the function and classification of the park or resource area (e.g., from active park with playing fields to passive park with no playing fields. Any change that puts park program at odds with, or in violation of, Parks Master Plan).*
5. *Any change or proposed development which, by its scale or scope of work, requires that a full and comprehensive review be undertaken in the public forum.*

Response: The proposal involves locating a new trail within the Willamette River Greenway and within the 100-year floodplain. Therefore, City Planning Department staff determined that the proposed trail would warrant a comprehensive review due primarily to the presence and location of natural resources along the proposed trail alignment and the necessary site preparation for that facility. The Planning Department staff presented the following analysis of the proposal in their pre-application conference notes:

Responding to 56.020(D)(1,2,4,5) Staff finds that these trails represent: (1.) the development of a natural area; (2.) the eastward expansion of Willamette Park; (3.) a change in the function of the natural area; and, (4.) that the scope of the work is not minor, as in a typical Class I Design Review. Based upon these findings plus the fact the 2005 application was also processed as a Class II Design Review application, staff concludes that Class II Design Review is required.

The applicant does not contest that determination, and has therefore submitted this application for Class II Park Design Review approval.

56.025 *Exemptions*

Response: Trail development, as is proposed, is not one of the types of development exempted from Parks Design Review by this section.

5. *The park shall be designed in such a way as to take advantage of scenic views and vistas from the park site, as long as such views can be obtained without eliminating significant trees or other natural vegetated areas.*

Response: The proposed trail will be constructed at close to the existing ground surface grade. The trail route will meander through the trees along the river. It is intended that the final trail alignment will be field fit to avoid impacts to existing trees. No designated significant or heritage trees will be removed to construct the trail. One designated heritage tree, a black walnut tree, is located along the alignment. Special care will be taken to not impact this tree and other significant trees during trail construction. The City arborist will be involved in final trail alignment and construction plan review for the area near this tree. An interpretive exhibit regarding the black walnut tree may be located along the trail.

The trail is a passive-oriented recreation facility for the City of West Linn, and although located within the 100-year floodplain, the trail will be designed so that it does not interfere with the natural systems onsite. The second phase of the trail that includes development of interpretive kiosks/signs and viewing platforms will help to insure that the public has access to the most scenic views and vistas along the trail.

D. *Facility design and relationship to the human environment*

1. *Architecture. Whereas most park buildings are small in size and compatible with existing structure(s) on site and on adjoining sites, the possibility of larger facilities exists. Larger buildings are defined as those over 1,000 square feet and under 10,000 square feet in size. In those cases, contextual design is required. Contextual design means respecting and incorporating prominent architectural styles, building lines, roof forms, rhythm of windows, building scale and massing, materials and colors of surrounding buildings in the proposed structure. Also important is breaking the larger building into smaller visual components so that the mass of the building is not so apparent. This is especially relevant when the building is near the perimeter of the park. However, certain uses, by virtue of their functional and spatial requirements, are large and can never be made visually equal or even compatible with nearby homes. Such uses shall not be prohibited from locating at active-oriented park facilities on architectural grounds so long as the applicant's architect has broken down the building's horizontal plane into smaller visual components and stepped down the building at the end closest to the offsite structure(s). "Smaller visual components" shall be defined as changes in the horizontal plane every 100 feet created by indentations or pop-outs at least three feet in depth. "Stepping down" shall be defined as bringing the park building's end section that is closest to off-site dwellings to half the distance between the highest ridgeline of the park structure and the highest ridgeline of the nearest off-site structure. In those cases where visual component breakdown or stepping down is not feasible, the applicant may rely on transitions in terms of distance as reasonable mitigation between on and off-site buildings. An appropriate minimum distance to achieve mitigation shall be either 150 feet or an existing public right-of-way.*
2. *Material. Park structures shall emphasize natural material: such as exposed timbers, wood with brick and stone detail. Colors are subdued earth tones: grays, brown, off-whites, black, slate, and greens.*

3. *Light fixtures shall be provided in areas having heavy pedestrian or vehicular traffic and in potentially dangerous areas such as large parking lots, stairs, ramps, and abrupt grade changes during hours of intended use or operation.*
4. *Fixtures shall be placed at a height so that light patterns overlap at a height of seven feet, which is sufficient to illuminate a person. All projects undergoing design review shall use low- or high-pressure sodium bulbs and be able to demonstrate effective shielding so that the light is directed downwards rather than omni-directional.*
5. *Playing fields and court areas shall not be illuminated unless they are separated from nearby homes by adequate distance and/or screening. Adequate distance shall be at least 150 feet. Adequate screening shall be on or off-site fences, walls, terrain variation or vegetation. (trees, etc.)*
6. *Lines of sight shall be reasonably established so that the park and its facilities are visible to police and nearby residents.*
7. *Large or visually inaccessible parks should ensure that at least some emergency vehicle access is provided to the park's interior.*
8. *Closure times may be posted and/or gates may be installed at city parks to discourage their use at night if necessary for crime prevention and/or public safety.*
9. *Park landscaping shall accommodate safety concerns with appropriate use of plant types and ease of maintenance.*

Response: No new buildings are proposed with this development. No lighting or new landscaping other than restoration of disturbed areas with native vegetative materials is proposed as part of trail development. It is the intent of the Parks and Recreation Department to maintain the area along the trail in as natural a state possible. It is noted that limited use of low levels of security lighting in the form of bollard lighting may be added if deemed necessary.

The trail will be lineal and should provide reasonable lines of sight for security. Some removal of invasive vegetation such as blackberries and English ivy is anticipated to occur with trail development, with additional removal of invasive vegetation to continue after the trail is completed and in use. Removal of these invasive vegetation types will improve sight lines between Volpp Street and the trail, which should enhance safety for trail users.

The 10- to 12-foot wide paved trail will be large enough for slow travel by Police Department cars and the Parks and Recreation Department's park ranger car and standard-size pick-ups. A turn-around area is provided at the eastern end of the trail. The turn-around area will be large enough to accommodate pickup trucks and police cars

The Parks and Recreation Department would like to monitor the use of the facility and impose hours of operation and/or add gates only if it is deemed necessary for purposes of crime prevention and public safety.

H. *Public facilities.*

1. *Streets. Sufficient right-of-way and slope easement shall be dedicated to accommodate all abutting streets to be improved to City's Improvement Standards and Specifications. In determining the appropriate sizing of the street, the street should be the minimum necessary to accommodate*

anticipated traffic load and needs and should provide substantial accommodations for pedestrians and bicyclists and in keeping with the character of the neighborhood. Road and driveway alignment should consider and mitigate impacts on adjacent properties and in neighborhoods in terms of increased traffic loads, noise, vibrations, and glare. Streets shall be installed per chapter 85 standards. Sidewalks shall be installed per Sections 85.200(A)(16) and 92.010(H). Both chapters allow reduced sidewalk widths to accommodate topographic limitations or to preserve trees.

- 2. *Parking lots. CDC Section 46.090 explains the parking requirements for the various categories of parks and open space areas. City squares, malls or plazas are exempt from the parking requirements of Chapter 46. Reduced parking requirements are explained in Section 56.170. Except for areas accommodating ADA disabled parking and ADA access, parking lots may be constructed with grasscrete.*

Response: Trailheads are required to provide four spaces, including one ADA accessible space by CDC Section 46.090B.15. Since there is already a grasscrete parking lot at Willamette Park's wetlands picnic shelter across Volpp Street near the western trailhead which can provide the required parking spaces, no new parking is proposed with this application. Disabled person accessible parking spaces are available near the restroom building at the western end of the Bernert Landing boat ramp parking lot.

I. *Paths and trails. Paths and trails connect the various activity areas within the park. They can also serve as part of a greater system of connective trails from one neighborhood or destination to another. Just like streets, there is a hierarchy of paths and trails.*

- 1. *Paths that connect the right-of-way and/or parking lot with the main activity area(s) of the park need to accommodate pedestrians, bicyclists, and persons with disabilities (as grades allow). The path shall be paved and 5 to 8 feet wide. Lesser dimensions are allowed where topography and trees limit width. The grade shall be kept to fewer than five percent where the terrain allows. The path may be illuminated if the facility is programmed for night use.*
- 2. *Paths that provide a link through the park to neighborhoods on either side must be recognized for their value in addressing the TPR, particularly in those cases where connecting roads through the park or natural area are not provided per Section 56.100(C)(6). These trails or paths may be paved, 5-8 feet wide and may be illuminated. Narrower path sections are permitted in response to topography and to preserve trees. Illumination is especially important for this group if these paths are used by early morning and early evening bicycle and pedestrian commuters. Directional signs are needed for this type of trail and user group.*
- 3. *Smaller or reduced width paths, within park boundaries, can be built to link lesser activity areas or areas of attraction. Walkers, cyclists, or runners who do multiple loops for exercise often use these paths. These paths may be crushed gravel or paved and at least six feet wide.*
- 4. *Nature trails are typically three to six feet wide, gravel, hog fuel, or packed earth. These trails are especially attractive to persons seeking quieter parts of the park for natural interpretation or solitude. Other user groups often use them for exercise loops. Trails and footbridges in natural areas should be designed to minimize disturbance of significant resources. Limiting access to creek beds, potentially erosive slopes, or wetlands by humans and dogs is an important measure if habitat or resource protection is to be addressed. At least initially, the use of these trails by all user groups should be encouraged. Changes or restrictions to some user groups shall be based on empirical observations at that specific site.*

5. *Disabled access paths allow disabled persons to access specific activity areas in the park at grades that meet ADA standards. Many parks have special disabled access paths with interpretive areas and viewpoints to allow visual, if not physical, access to natural resource areas. Usually, these paths are 50-200 meters long, 8 feet wide, and clearly identified.*
6. *Paths or trails that link parks, schools, neighborhoods, and the community and even integrate with adjacent cities or regional trails may be paved, 5-10 feet wide. The paths or trails should follow easily identified cognitive routes with good surveillance and defensible space.*
7. *All paths and trails shall be clearly identified with signs. They shall be laid out to attract use and to discourage people from cutting across landscaped areas or impacting environmentally sensitive areas.*

Response: The proposed trail is one section of an integrated trail system that will eventually connect from West Linn's Willamette Park to Lake Oswego and, eventually to, Portland generally to be located along the Willamette River. This particular section of the trail is proposed to be paved to approximately 10- to 12-feet in width, limited in gradients less than 5 percent, and to be accessible and consistent with ADA standards as practical. The trail will include a variety of signs to identify access to roads and to call out interpretive facilities. A second phase of trail development may include the development of interpretive stops and viewing platforms for trail patrons.

- J. *Provisions for persons with disabilities. The needs of a person with a disability shall be provided for. Accessible routes shall be provided between parking lot(s) and principal buildings and site facilities. The accessible route shall be the most practical direct route between accessible building entries, accessible site facilities, and the accessible entry to the site. All facilities shall conform to, or exceed, the Americans with Disabilities Act (ADA) standards, including those included in the Uniform Building Code.*

Response: There are no new buildings or service facilities associated with the proposed development. The trail will be paved and has been designed to be ADA accessible as required.

- K. *Miscellaneous criteria. Selected elements of the following chapters shall be met. It is not necessary to respond to all the submittal standards or approval criteria contained in these chapters, only those elements that are found to be applicable by the Planning Director at the pre-application conference pursuant to CDC Chapter 99.030(B) and (C):*
 1. *Chapter 33, Storm Water Quality and Detention.*
 2. *Chapter 34, Accessory Structures.*
 3. *Chapter 38, Additional Yard Area Required.*
 4. *Chapter 40, Building Height Limitations and Exceptions.*
 5. *Chapter 42, Clear Vision Areas.*
 6. *Chapter 44, Fences & Screening Outdoor Storage.*
 7. *Chapter 46, Off-Street Parking and Loading.*
 8. *Chapter 48, Access.*
 9. *Chapter 52, Signs.*
 10. *Chapter 54, Landscaping. In addition, landscape plans shall incorporate plants which minimize irrigation needs without compromising recreational facilities or an attractive park environment.*

Appendix A



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F. Construction of new sidewalks, paths, and trails that are less than 200 feet long and do not intrude into natural resource areas (NRAs). If they intrude in NRAs, then Class I parks design review is required.

So although the trail is over 200 feet long, it is in a natural resource area and therefore, at minimum, a Class I Design Review is required.

The argument for a Class II Design Review is found in the applicability language of that CDC 56.020(D)(1,2,4,5):

D. Class II design review. The following is a non-exclusive list of Class II parks design review activities or facilities:

- 1. Site preparation for and/or development of a new park or natural area.*
- 2. Outward expansion of an existing park or natural area.*
- 4. Any program change that results in a change in the function and classification of the park or resource area (e.g., from active park with playing fields to passive park with no playing fields. Any change that puts park program at odds with, or in violation of, Parks Master Plan).*
- 5. Any change or proposed development which, by its scale or scope of work, requires that a full and comprehensive review be undertaken in the public forum.*

Responding to 56.020(D)(1,2,4,5) Staff finds that these trails represent: (1.) the development of a natural area; (2.) the eastward expansion of Willamette Park; (3.) a change in the function of the natural area; and, (4.) that the scope of the work is not minor, as in a typical Class I Design Review. Based upon these findings plus the fact the 2005 application was also processed as a Class II Design Review application, staff concludes that Class II Design Review is required.

State of Oregon is provided demonstrating that encroachments shall not result in any increase in flood levels during the occurrence of the base flood discharge.

Willamette River Greenway . The Willamette River Greenway purpose statement: *Protect, preserve and expand legal public use and access to and along the shoreline and river, while recognizing and preserving private property rights.* offers clear support for this trail proposal which offers access to and along the shoreline.

Approval criterion is also supportive:

5. Legal access to, and along, the riverfront in single-family residential zoned areas shall be encouraged and pursued especially when there are reasonable expectations that a continuous trail system can be facilitated. The City recognizes the potential need for compensation where nexus and proportionality tests are not met. Fee simple ownership by the City shall be preferred. The trail should be dimensioned and designed appropriate to the terrain it traverses and the user group(s) it can reasonably expect to attract. The City shall be responsible for signing the trail and delineating the boundary between private and public lands or access easements.

Staff notes that criteria includes a requirement for water permeable materials unless the applicant can justify otherwise:

N. Water-permeable materials for hardscapes. The use of water-permeable materials for parking lots, driveways, patios, and paths as well as flow-through planters, box filters, bioswales and drought tolerant plants are strongly encouraged in all "a" and "b" land classifications and shall be required in all "c" and "d" land classifications. The only exception in the "c" and "d" classifications would be where it is demonstrated that water-permeable driveways/hardscapes could not structurally support the axle weight of vehicles or equipment/storage load using those areas. Flow through planters, box filters, bioswales, drought tolerant plants and other measures of treating and/or detaining runoff would still be required in these areas.

Water Resource Area . This chapter is also supportive of allowing, with mitigation and revegetation, trail alignments across creeks to facilitate planned alignments such as this trail along the river. 32.050(F) states in part "...passive use recreation facilities may be built in and across water resource areas when no other practical alternative exists... Construction shall minimize impacts. Construction to the minimum dimensional standards for roads is required. Full mitigation and revegetation is required, with the applicant to submit a mitigation plan pursuant to CDC 32.070 and a revegetation plan pursuant to CDC 32.080."


If there is more than 500 new square footage of impervious areas the applicant will have to provide storm water treatment to the satisfaction of public works standards.

Jerry Offer

From: Soppe, Tom <tsoppe@westlinnoregon.gov>
Sent: Wednesday, July 16, 2014 3:54 PM
To: Jerry Offer
Cc: Grant Evenhus; Worcester, Ken
Subject: RE: request from listed submittal requirements for Willamette Greenway trail application

Yes, those should all be fine to waive too. I only had issue with the one, so I forgot that I hadn't already approved the waiver for all of the others.

CITY OF
West Linn
100 Years
1913 - 2013
Tom Soppe
tsoppe@westlinnoregon.gov
Associate Planner
22500 Salamo Rd
West Linn, OR 97068
P: (503) 742-8660
F: (503) 656-4106
Web: westlinnoregon.gov



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From: Jerry Offer [mailto:jerry.offer@otak.com]
Sent: Wednesday, July 16, 2014 3:40 PM
To: Soppe, Tom
Cc: Grant Evenhus; Worcester, Ken
Subject: RE: request from listed submittal requirements for Willamette Greenway trail application

Sooooooooooooooooooooo, what about the other normally required items that we requested be waived?

From: Soppe, Tom [mailto:tsoppe@westlinnoregon.gov]
Sent: Wednesday, July 16, 2014 3:19 PM
To: Jerry Offer
Cc: Grant Evenhus; Worcester, Ken
Subject: RE: request from listed submittal requirements for Willamette Greenway trail application

That sounds fine then. If they can be shown on the site plan then it should be fine since they are the only utility.

CITY OF
West Linn
100 Years
1913 - 2013
Tom Soppe
tsoppe@westlinnoregon.gov
Associate Planner
22500 Salamo Rd
West Linn, OR 97068
P: (503) 742-8660
F: (503) 656-4106
Web: westlinnoregon.gov



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From: Jerry Offer [mailto:jerry.offer@otak.com]
Sent: Wednesday, July 16, 2014 2:32 PM
To: Soppe, Tom
Cc: Grant Evenhus; Worcester, Ken
Subject: FW: request from listed submittal requirements for Willamette Greenway trail application

Hi Tom,

I overlooked sending you this email from our project engineer, Grant, with regard to your response to me a couple of weeks ago regarding what we are going to do with regard to a "utility plan" for storm water disposal for the Willamette River trail project. Bottom line is that we will either be using pervious pavement and thus have no runoff to treat, or a swale on the uphill side of the trail. If we have the latter, it will be covered on the site plans and - in my opinion - should not require a "utility plan."

From: Grant Evenhus
Sent: Wednesday, July 09, 2014 11:16 AM
To: Jerry Offer
Subject: RE: request from listed submittal requirements for Willamette Greenway trail application

Usually if we have to do permeable pavement it puts us in a nexus for "added impervious" especially when you don't have "pollution generating" surfaces (bike trail, no cars). I've run the question up the line at the City Engineering department and will let you know, but it's been my hope that we will not need to have treatment. If we do, it will be a swale on the uphill side of the entire trail. Also, the geotech is evaluating the use of pervious pavement and will recommend a trail section when they're finished which will tell us more.

I'll let you know what I find out.
Thanks,
-Grant

Grant Evenhus, PE, ENV SP | Associate | Project Manager
P: 360-356-8466 | F: 360-737-9651

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From: Jerry Offer
Sent: Tuesday, July 08, 2014 2:45 PM
To: Grant Evenhus
Subject: RE: request from listed submittal requirements for Willamette Greenway trail application

Grant,
In relation to my request in the preceding email, the pre-application conference notes say that "if there is more than 500 new square feet of impervious area, the applicant will have to provide stormwater treatment to the satisfaction of public work standards." Also, the pre-app notes comment that the Willamette greenway section of the Code requires the use of "water permeable materials for parking lots, driveways, patios, and paths as well as flow-through planters, box filters, bioswales and drought tolerant plants..." and that "the only exception is... where it is demonstrated that water-permeable driveways/hardscapes could not structurally support the axle weight of vehicles or equipment/storage load using those areas. Flow through planters, boxfilters, bioswales, drought tolerant plants and other means of treating and/or detaining runoff would still be required in these areas."

From: Jerry Offer
Sent: Tuesday, July 08, 2014 11:49 AM
To: Grant Evenhus
Subject: FW: request from listed submittal requirements for Willamette Greenway trail application

Grant,

Will we be providing some sort of stormwater treatment for the Willamette River Trail runoff? Will we have a typical x-section of a swale or something to that effect?

From: Soppe, Tom [mailto:tsoppe@westlinnoregon.gov]
Sent: Tuesday, July 08, 2014 11:34 AM
To: Jerry Offer
Subject: RE: request from listed submittal requirements for Willamette Greenway trail application


Jerry,

Thanks. Will you be providing something showing storm swales, etc., instead of (8)?

Tom

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West Linn
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1913 - 2013

Tom Soppe
tsoppe@westlinnoregon.gov
Associate Planner
22500 Selamo Rd
West Linn, OR 97068
P: (503) 742-8660
F: (503) 656-4106
Web: westlinnoregon.gov



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From: Jerry Offer [mailto:jerry.offer@otak.com]
Sent: Wednesday, July 02, 2014 4:47 PM
To: Soppe, Tom
Cc: Grant Evenhus; Worcester, Ken
Subject: request from listed submittal requirements for Willamette Greenway trail application

Hi Tom,

On behalf of the prospective applicant, the City of West Linn Parks and Recreation Department, I would like to request that the City of West Linn Planning Dept. waive the below highlighted submittal requirements applicable to a Class II Parks Design Review, Flood Management Area, and Water Resource Area application for the proposed Willamette River trail east of the Bernert Landing boat launch parking area to Bernert Creek. The reasons for requesting the waiver of these requirements is listed in red after the submittal requirement.

For Parks Development Review:

56.080 SUBMITTAL STANDARDS FOR CLASS II PARKS DESIGN REVIEW

A. The application for a Class II parks design review shall contain the following elements:

1. A site analysis (per CDC 56.110);
2. A site plan (per CDC 56.120);

H. If necessary, the applicant shall also submit a mitigation plan pursuant to CDC 32.070, and a revegetation plan pursuant to CDC 32.080. (Ord. 1545, 2007) The plans are not yet complete for this area. I am not sure that our disturbance area would necessitate a mitigation plan.

We are working on the application and intend on submitting it within the next few weeks. Therefore, a response to this request for a waiver of submitting the highlighted required materials would be appreciated. I apologize for my tardiness in making this request.

Thanks Tom.



Jerry Offer | Planner

808 SW 3rd Ave., Suite 300, Portland, OR 97204.
Main 503.287.OTAK (6825) | Fax 503.415.2304 | Direct 503.415.2330



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Jerry Offer

From: Soppe, Tom <tsoppe@westlinnoregon.gov>
Sent: Tuesday, May 13, 2014 1:50 PM
To: Jerry Offer
Cc: Worcester, Ken; Grant Evenhus
Subject: RE: Willamette River trail


Jerry,

Yes, it appears that public trails get an exception, as of the code in place now. So the project will need DR, WRA (if still heading east to Bernert), and FMA permits but not Will River Greenway permit.

Thanks
Tom

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100 Years
1913 - 2013

Tom Soppe
tsoppe@westlinnoregon.gov
Associate Planner
22500 Salamo Rd
West Linn, OR 97068
P: (503) 742-8660
F: (503) 656-4106
Web: westlinnoregon.gov



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From: Jerry Offer [<mailto:jerry.offer@otak.com>]
Sent: Monday, May 12, 2014 1:44 PM
To: Soppe, Tom
Cc: Worcester, Ken; Grant Evenhus
Subject: Willamette River trail

Tom,

In preparing to write the application for the WL Parks Department's application for the Willamette River Trail, I ran across the following in the Code:

Chapter 28
Willamette and Tualatin River Protection

28.040 EXEMPTIONS/USES PERMITTED OUTRIGHT
The following development activities do not require a permit under the provisions of this chapter. (Other permits may still be required.)

BB. Construction of a public pathway by dedication or easement accepted by the City. (Ord. 1576, 2008; Ord. 1590 § 1, 2009; Ord. 1604 §§ 22, 23, 24, 2011)

Doesn't this provision exempt the public pathway (trail) project from Willamette River greenway review? It would appear to to me because the Parks Dept. will be acquiring easements for the trail, and ultimately those easements will need to be accepted by the City on behalf of the public. This provision appears to have been adopted since the prior 2005 decision for the trail. That earlier decision included a Greenway permit.

This is not to say that the trail project would not still be subject to Parks Design Review or Flood Management Area review.

Please let us know as soon as you can. Thanks.



Jerry Offer | Planner

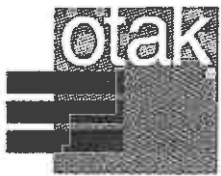
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Appendix C



HanmiGlobal Partner



January 13, 2015

Otak, Inc.
700 Washington Street
Vancouver, WA 98660

Attention: Mr. Gary Alfson

Report of Geotechnical Engineering Services
Proposed Willamette River Trail
West Linn, Oregon
GeoDesign Project: WestLinn-9-01

INTRODUCTION

GeoDesign, Inc. is pleased to submit this geotechnical engineering report for the proposed Willamette River Trail in West Linn, Oregon. Otak, Inc. provided us with preliminary plans for this development. We understand that this phase of the project will include approximately ½ mile of trail construction from near Willamette Park to 4th Street, along the Willamette River. The trail will be paved with permeable asphalt. Future phases of work will include additional trail segments that extend east of 4th Street, foot bridges, overlook structures, and retaining walls, which are outside of our scope of work for this phase and is not addressed in this report.

This report provides a summary of GeoDesign's finding and recommendations for the first segment of the Willamette River Trail. Figure 1 shows the site relative to existing physical features. Figure 2 shows the proposed trail alignment.

PURPOSE AND SCOPE

The purposes of our services were to perform a reconnaissance along the proposed trail alignment from Willamette Park to 4th Street and provide general geotechnical engineering recommendations for trail development. Our scope of work included the following:

- Completed a site reconnaissance to document the vegetation and identify geotechnical-related concerns along the proposed trail.
- Completed shallow hand explorations to depths of up to 1 foot below ground surface (BGS) to observe subsurface conditions and estimate the depth of vegetation at select locations along the alignment.
- Evaluated subsurface conditions at the hand exploration locations using a steel foundation probe. Identified areas where very soft soil is encountered.

- Classified the materials encountered in the explorations.
- Developed preliminary pavement design recommendations.

DISCUSSION

FIELD EXPLORATION

A member of GeoDesign's geotechnical staff explored subsurface conditions along the trail alignment by advancing shallow excavations using a shovel and probing the soil with a hand probe. We performed this field work on July 23, 2014. Prior to our arrival, the trail had been partially cleared of vegetation and marked so that the trail could be easily identified and surveyed. The shovel excavations were generally 1 foot deep and were performed along the trail alignment at select locations to observe the near-surface soil and observe the root zone depth. The soil encountered in the excavations was observed and classified. Soil samples were not collected from the excavations and laboratory testing was not performed. The hand probe was periodically inserted into the ground to estimate the stiffness of the soil. A summary of the root zone depths and soil stiffness observed along the alignment is presented in "Stripping and Grubbing" section of this report. The explorations were performed at representative locations and with sufficient frequency to identify areas with similar soil conditions.

SITE CONDITIONS

The trail begins at Willamette Park, which is located southeast of the intersection of Volpp Street and 12th Street in West Linn, Oregon. This phase of the Willamette River Trail project is for the section of trail alignment that extends from Willamette Park to 4th Street. Figure 2 shows the proposed trail alignment that was evaluated for this project. The following sections describe the surface and subsurface conditions along this segment.

Surface Conditions

The trail is located near the top of the western bank of the Willamette River. The existing ground surface along the trail segment is generally covered with a variety of tree, shrub, and grass vegetation. Most of the alignment is covered with dense trees and shrubs, but there are also a few open areas that are primarily grass fields with only scattered trees. The project will limit the number of significant trees that need to be removed by constructing the trail so that it meanders around large trees that will be left in place. The trail alignment will generally be relatively flat to gently sloping. There will also be occasional small hills along the alignment.

Subsurface Conditions

The subsurface soil conditions along the trail alignment are relatively consistent. The soil encountered in our explorations consists of brown, medium stiff to stiff silt with fine-grained sand. The silt was generally moist at the time of exploration and exhibited low plasticity.

Standing surface water was not observed along the trail alignment and groundwater was not observed in the shallow explorations that were performed. Given the close proximity of the site to the adjacent Willamette River, groundwater at the site is anticipated to be at approximately the same elevation as the river. According to the plans for this project that were prepared by Otak, the mean water and mean high water elevations of the Willamette River at the site are 55 and 60 feet, respectively.

Infiltration testing was not performed as part of our field investigation. However, based on our experience working with similar silt soil on other nearby projects, we anticipate that infiltration rates in the silt will be relatively low.

GEOTECHNICAL HAZARDS

Significant geotechnical hazards were not identified along the section of trail alignment that was evaluated. Excessively soft soil was not encountered and potential slope stability issues were not observed. In our opinion, the proposed trail can be successfully constructed as long as our recommendations in the "Site Development Recommendations" section of this report are incorporated into design and construction.

SITE DEVELOPMENT RECOMMENDATIONS

The following sections present our recommendations for pavements, stripping and grubbing, demolition, subgrade evaluation, subgrade protection, excavation, structural fill, permanent slopes, erosion control, and drainage. Subgrade protection during construction will be a critical geotechnical consideration.

PAVEMENT DESIGN RECOMMENDATIONS

Trail pavements should be installed on subgrade prepared in conformance with the "Site Preparation" and "Structural Fill" sections of this report. Based on our explorations, the design pavement section of 3.0 inches of permeable asphalt concrete (AC) overlying 6 inches of aggregate base is appropriate for the proposed use. The porous asphalt concrete (PAC) should be ½-inch PAC according to Oregon Standard Specifications for Construction - 2015 (OSSC) 00743 (Porous Asphalt Concrete) and rolled until the entire surface has been compacted with at least four coverages by the breakdown and intermediate rollers and finished with additional coverages by the finish roller. Although OSSC 00743 (Porous Asphalt Concrete) indicates the minimum lift thickness is twice the maximum aggregate size, we recommend specifying a minimum lift thickness of 2 inches for ½-inch PAC. A polymer-modified asphalt binder is required in the wearing course. Asphalt binder should be performance graded and conform to PG 64-22ER or better.

These recommendations are based on the assumption that the only vehicle traffic that will occur on the trail is occasional access by maintenance personnel in pickup trucks. If larger trucks or heavy equipment will be using this trail, then we should be contacted so that we can revise our pavement design to accommodate the heavier vehicle loading.

SITE PREPARATION

Stripping and Grubbing

We observed thick vegetation along most of the trail alignment. Vegetation included dense blackberry growth, small to large trees, weeds, and grasses. Our field work was performed in July when vegetation is typically most prevalent. The vegetation will likely be sparser in the winter.

Trees or shrubs present within improvement areas, and for a 5-foot margin around such areas, should be removed. In addition, root balls should be grubbed out to the depth of the roots,

which could exceed 2.5 feet BGS. Depending on the methods used to remove the root balls, considerable disturbance and loosening of the subgrade could occur during site grubbing. We recommend that soil disturbed during grubbing operations be removed to expose firm, undisturbed subgrade. The resulting excavations should be backfilled with structural fill.

The existing topsoil zone should be stripped and removed from all proposed improvement areas. The stripping depth will vary along the alignment, and the actual stripping depth should be based on field observations at the time of construction. Table 1 provides an estimate of stripping depths along the alignment based on our field explorations. Stripped material should be transported off site for disposal or used in landscaped areas. Table 1 also summarizes the relative stiffness of the soil along each section of trail, as determined using a hand probe.

Table 1. Estimated Stripping Depths and Soil Stiffness

Approximate Station	Topsoil Depth (inches)	Relative Soil Stiffness
10+50 to 13+40	4 to 6	Stiff
13+40 to 15+30	2 to 4	Medium stiff
15+30 to 19+50	~2	Medium stiff
19+50 to 23+00	1 to 2	Stiff to medium stiff
23+00 to 24+00	2 to 4	Medium stiff
24+00 to 27+20	0 to 1	Stiff to medium stiff
27+20 to 30+00	0 to 2	Stiff to medium stiff
30+00 to 33+00	4 to 5	Stiff to medium stiff
33+00 to 35+90	~4	Stiff
35+90 to 40+30	~6	Stiff

Demolition

Demolition should include complete removal of existing structures and pavements within 5 feet of areas to receive new pavements or engineered fills. Voids resulting from removal of abandoned utility lines should be backfilled with compacted structural fill, as discussed in the "Structural Fill" section of this report. The bottom of such excavations should be excavated to expose a firm subgrade before filling and their sides sloped at 1.5 horizontal to 1 vertical (H:V) or flatter to allow for more uniform compaction at the edges of the excavations. In general, demolished material should be transported off site for disposal.

Subgrade Evaluation

We recommend that the geotechnical engineer of record, or their representative, observe the exposed subgrade after stripping and site cutting have been completed to determine if there are areas of unsuitable or unstable soil. Unsuitable subgrade should be removed and replaced with structural fill in accordance with the "Structural Fill" section of this report. Within saturated areas, we recommend that the structural fill consist of imported granular material. We do not anticipate over-excavation depths greater than 12 inches.

SUBGRADE PROTECTION

The subgrade generally consists of silt, which is moisture sensitive and easily disturbed during the wet season and when it is moist. If not carefully executed, site preparation, utility trench work, paving, and excavation can create extensive soft areas and will result in significant subgrade repair costs. If construction is planned when the surficial soil is wet of optimum moisture content or during wet weather, the construction methods and schedule should be carefully considered with respect to protecting the subgrade to reduce the need to over-excavate disturbed or softened soil.

The design pavement section for the trail consists of 3.0 inches of permeable AC overlying 6 inches of aggregate base and geotextile. While this section will provide an adequate section for the proposed foot and bicycle traffic of the trail, the most significant demands of the subgrade will likely occur during construction, especially the truck traffic and compaction equipment associated with the base aggregate and asphalt. If construction traffic will have to drive on the aggregate base section, the base thickness should be increased to protect the subgrade as described below.

The primary methods of protecting the subgrade are to schedule the work for the summer dry period and increasing the thickness of the aggregate base. The on-site silt subgrade is least susceptible to disturbance during the driest times of the year. We recommend scheduling the construction for the period of July through August when the weather is typically driest. Even if site preparation occurs during the summer months, the aggregate base and geotextile section alone may not provide adequate support for heavy construction traffic.

The thickness of the granular material for haul roads and staging areas will depend on the construction schedule and the amount and type of construction traffic. During the dry summer period, a 6- to 8-inch-thick mat of granular material underlain by a geotextile will likely be sufficient for light staging areas but is not expected to be adequate to support repeated heavy equipment or truck traffic. Over portions of the trail that will serve as haul roads subjected to repeated heavy equipment traffic, the granular mat typically needs to be increased to between 12 and 16 inches. The staging/haul road sections will need to be increased to 12 to 18 inches and 18 to 24 inches, respectively, if construction does not occur during the summer dry period.

The actual thickness of haul roads and staging areas should be selected by the contractor who has control over site development methods and the amount and type of construction traffic. The granular material should be placed in one lift over the prepared, undisturbed subgrade and compacted using a smooth-drum roller without the use of vibratory action. In addition, a geotextile fabric can be placed as a barrier between the subgrade and imported granular material in areas of repeated construction traffic.

EXCAVATION

General

Significant excavations are not expected for this project. Shallow excavations into the on-site soil should be readily accomplished with conventional earthwork equipment. It is possible that excavation will encounter shallow perched groundwater in isolated areas even during the dry season. Dewatering should be readily accomplished by pumping from sumps.

STRUCTURAL FILL

General

Fills should only be placed over a subgrade that has been prepared in conformance with the "Site Preparation" section of this report. All material used as structural fill should be free of organic matter or other unsuitable material. The material should meet the specifications provided in OSSC 00330 (Earthwork), depending on the application. All structural fill should have a maximum particle size of 4 inches. A brief characterization of some of the acceptable materials and our recommendations for their use as structural fill is provided below.

On-Site Soil

The near-surface material at the site should be suitable for use as general structural fill provided it is properly moisture conditioned, free of debris, organic material, and particles over 6 inches in diameter and meets the specifications provided in OSSC 00330.12 (Borrow Material). We anticipate that some moisture conditioning will be required to dry the soil to a moisture condition near optimum. This will require an extended period of dry weather, typically experienced between early July and mid-October. It will be difficult, if not impossible, to adequately compact on-site soil during the rainy season or during prolonged periods of rainfall.

When used as structural fill, on-site soil should be placed in lifts with a maximum uncompacted thickness of 6 to 8 inches and compacted to not less than 92 percent of the maximum dry density for fine-grained soil and 95 percent of the maximum dry density for granular soil, as determined by ASTM D 1557.

Imported Granular Material

Imported granular material used for structural fill should be pit- or quarry-run rock, crushed rock, or crushed gravel and sand and should meet the specifications provided in OSSC 00330.14 (Selected Granular Backfill) and OSSC 00330.15 (Selected Stone Backfill). Imported granular material should be fairly well graded between coarse and fine material and have less than 5 percent by dry weight passing the U.S. Standard No. 200 Sieve.

When used as structural fill, imported granular material should be placed in lifts with a maximum uncompacted thickness of 12 inches and compacted to not less than 95 percent of the maximum dry density, as determined by ASTM D 1557.

Aggregate Base Rock

Aggregate material used as base rock for the trail pavements should consist of ¾- or 1½-inch-minus material meeting the specifications provided in OSSC 00641 (Aggregate Subbase, Base, and Shoulders), with the exception that the aggregate should have less than 5 percent by dry weight passing the U.S. Standard No. 200 Sieve.

The aggregate base rock material should be placed in lifts with a maximum uncompacted thickness of 12 inches and compacted to not less than 95 percent of the maximum dry density, as determined by ASTM D 1557.

Trench Backfill

If used, trench backfill for the utility pipe base and pipe zone should consist of well-graded, granular material with a maximum particle size of 1 inch and less than 5 percent by dry weight passing the U.S. Standard No. 200 Sieve and should meet the specifications provided in OSSC 00405.14 (Trench Backfill, Class B). The material should be free of roots, organic matter, and other unsuitable material.

Within pavement areas, trench backfill placed above the pipe zone should consist of imported granular material meeting the specifications provided in OSSC 00405.14 (Trench Backfill, Class B). The backfill should be compacted to at least 92 percent of the maximum dry density, as determined by ASTM D 1557, at depths greater than 2 feet below the finished subgrade and 95 percent of the maximum dry density, as determined by ASTM D 1557, within 2 feet of finished subgrade. In all other areas, trench backfill above the pipe zone should be compacted to at least 92 percent of the maximum dry density, as determined by ASTM D 1557.

Stabilization Material

Stabilization material used for staging area/haul roads or for trench stabilization should consist of pit- or quarry-run rock, crushed rock, or crushed gravel and sand and should meet the specifications provided in OSSC 00330.14 (Selected Granular Backfill) and OSSC 00330.15 (Selected Stone Backfill), with a minimum particle size of 4 inches and less than 5 percent by dry weight passing the U.S. Standard No. 4 Sieve. The material should be free of organic matter and other deleterious material. Trench stabilization material should be compacted to a well-keyed, firm condition.

Drain Rock

Drain rock should consist of angular, granular material with a maximum particle size of 2 inches and should meet the specifications provided in OSSC 00430.11 (Granular Drain Backfill Material). The material should be free of roots, organic matter, and other unsuitable material and have less than 2 percent by dry weight passing the U.S. Standard No. 200 Sieve (washed analysis). Drain rock should have at least two fractured faces and be compacted to a well-keyed, firm condition.

PERMANENT SLOPES

Permanent cut and fill slopes may be built to a gradient as steep as 2H:1V. Slopes that will be maintained by mowing should not be constructed steeper than 3H:1V. Slopes should be planted with appropriate vegetation to provide protection against erosion as soon as possible after grading. Surface water runoff should be collected and directed away from slopes to prevent water from running down the face of the slope. Access roads and pavements should be located at least 5 feet from the top of slopes. This setback should be increased to 10 feet for buildings.

EROSION CONTROL

The soil at this site is susceptible to erosion. Erosion control measures should be planned carefully and put in place before construction begins. Measures that can be employed to reduce erosion include the use of silt fences, hay bales, buffer zones of natural growth, sedimentation ponds, and granular haul roads. These erosion control measures should be used in accordance with local and state ordinances. We recommend that any exposed slopes be covered with an appropriate erosion control product if construction occurs during periods of wet weather.

DRAINAGE

The proposed trail will be constructed out of permeable AC pavement that will allow water to flow into underlying aggregate base. Infiltration testing in the native soil was beyond the scope of our work. While some infiltration will likely occur in the on-site soil, we understand that pavement design will not rely on infiltration. Therefore, we recommend that drains be installed within the aggregate base, or that the subgrade be sloped to allow runoff water to drain out of the aggregate base.

OBSERVATION OF CONSTRUCTION

Satisfactory earthwork and paving performance depends to a large degree on quality of construction. Sufficient observation of the contractor's activities is a key part of determining that the work is completed in accordance with the construction drawings and specifications. Subsurface conditions observed during construction should be compared with those encountered during the subsurface field exploration. Recognition of changed conditions often requires experience; therefore, qualified personnel should visit the site with sufficient frequency to detect if subsurface conditions change significantly from those anticipated.

We recommend that GeoDesign be retained to observe earthwork activities, including stripping and grubbing, evaluation of the pavement subgrade and base rock, and repair of any soft areas.

LIMITATIONS

We have prepared this report for use by Otak, Inc. and members of the design and construction team for the proposed project. If grading or site plans change, we should be contacted to review our recommendations and conclusions. In addition, it should be understood that this geotechnical report does not address work that will occur in other project phases, such as the design and construction of trails in other areas, bridges, overlook structures, and retaining walls. The scope of our services does not include services related to construction safety precautions, and our recommendations are not intended to direct the contractor's methods, techniques, sequences, or procedures, except as specifically described in our report for consideration in design.

Within the limitations of scope, schedule, and budget, our services have been executed in accordance with generally accepted practices in this area at the time the report was prepared. No warranty, express or implied, should be understood.

◆ ◆ ◆

We appreciate the opportunity to be of continued service to you. Please call if you have questions concerning this report or if we can provide additional services.

Sincerely,

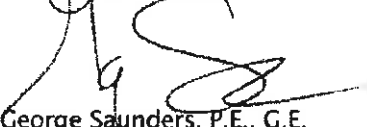
GeoDesign, Inc.



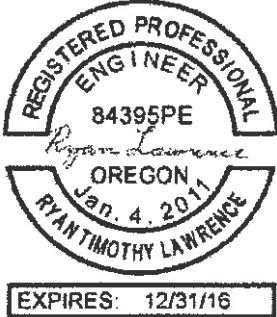
Scott P. McDevitt, P.E., G.E.
Project Engineer



Ryan T. Lawrence, P.E.
Senior Project Engineer

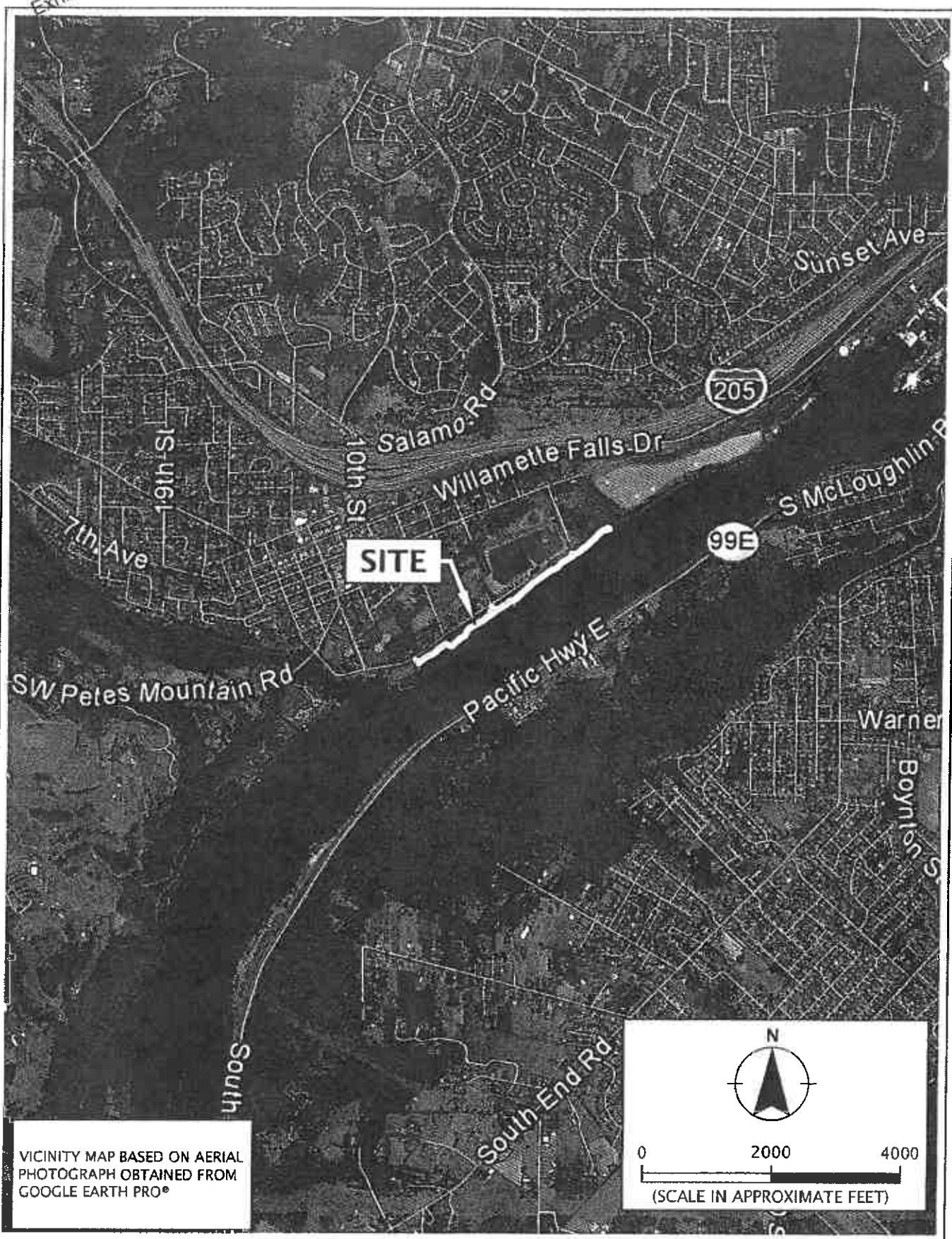


George Saunders, P.E., G.E.
Principal Engineer

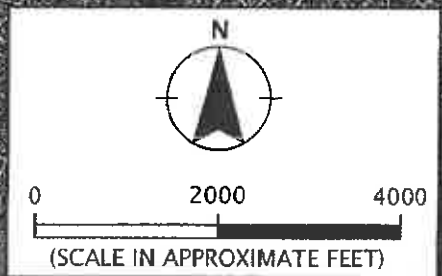


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Attachments
One copy submitted (via email only)
Document ID: WestLinn-9-01-011315-geolr.docx
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FIGURES



VICINITY MAP BASED ON AERIAL PHOTOGRAPH OBTAINED FROM GOOGLE EARTH PRO®

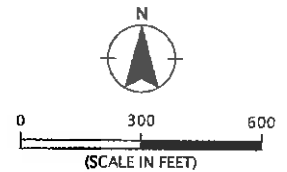


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 File Name: J:\S-Z\WestLinn\WestLinn-9-01-VM01.dwg | Layout: FIGURE 1

GEO DESIGN INC 15575 SW Sequoia Parkway - Suite 100 Portland, OR 97224 Off 503.968.8787 Fax 503.968.3068	WESTLINN-9-01	VICINITY MAP	
	JANUARY 2015	----- PROPOSED WILLAMETTE RIVER TRAIL ----- WEST LINN, OR	FIGURE 1

Exhibit PM-4 Aerial

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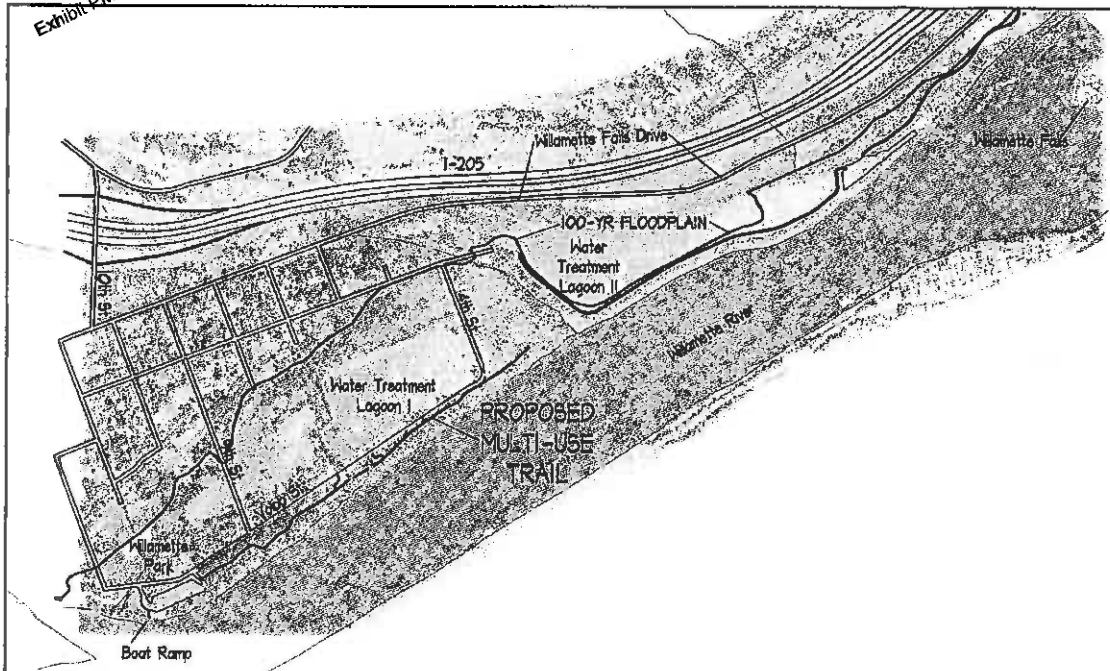
SITE PLAN BASED ON AERIAL PHOTOGRAPH
 OBTAINED FROM GOOGLE EARTH PRO®,
 SEPTEMBER 17, 2014

GEODSIGN <small>15575 SW Second Parkway, Suite 100 Portland, OR 97224 (503) 988-6747 Fax: 503 988-1068</small>	WESTLINN-9-01	SITE PLAN
	JANUARY 2015	PROPOSED WILLAMETTE RIVER TRAIL WEST LINN, OR
		FIGURE 2

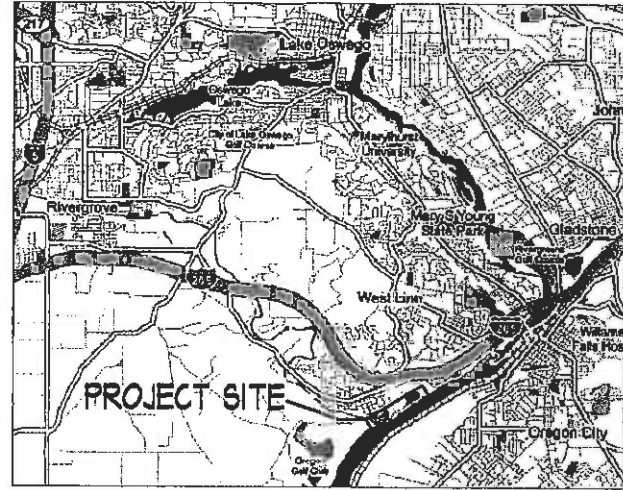
Plan Set



Exhibit PM-4



Site Map



Area Map

DRAWING INDEX

- L0 COVER SHEET/ PROJECT LOCATION MAPS
- L1 TRAIL PLANS
- L2 PRIMARY TRAILHEAD PLANS
- L3 GENERAL DETAILS
- L4 TRAIL SECTION
- L5 PLAN AND PROFILE AERIAL STRIP MAP

EXHIBIT INDEX

- EX. A FIELD OBSERVATIONS
- EX. B TAX LOTS

WILLAMETTE RIVER TRAIL

WEST LINN, OREGON

Date	08/01/14
Designed	CK
Drawn	CA
Checked By	QA
Checked By Date	



City of West Linn

Willamette River Trail

COVER SHEET

Preliminary - 30% - For Review

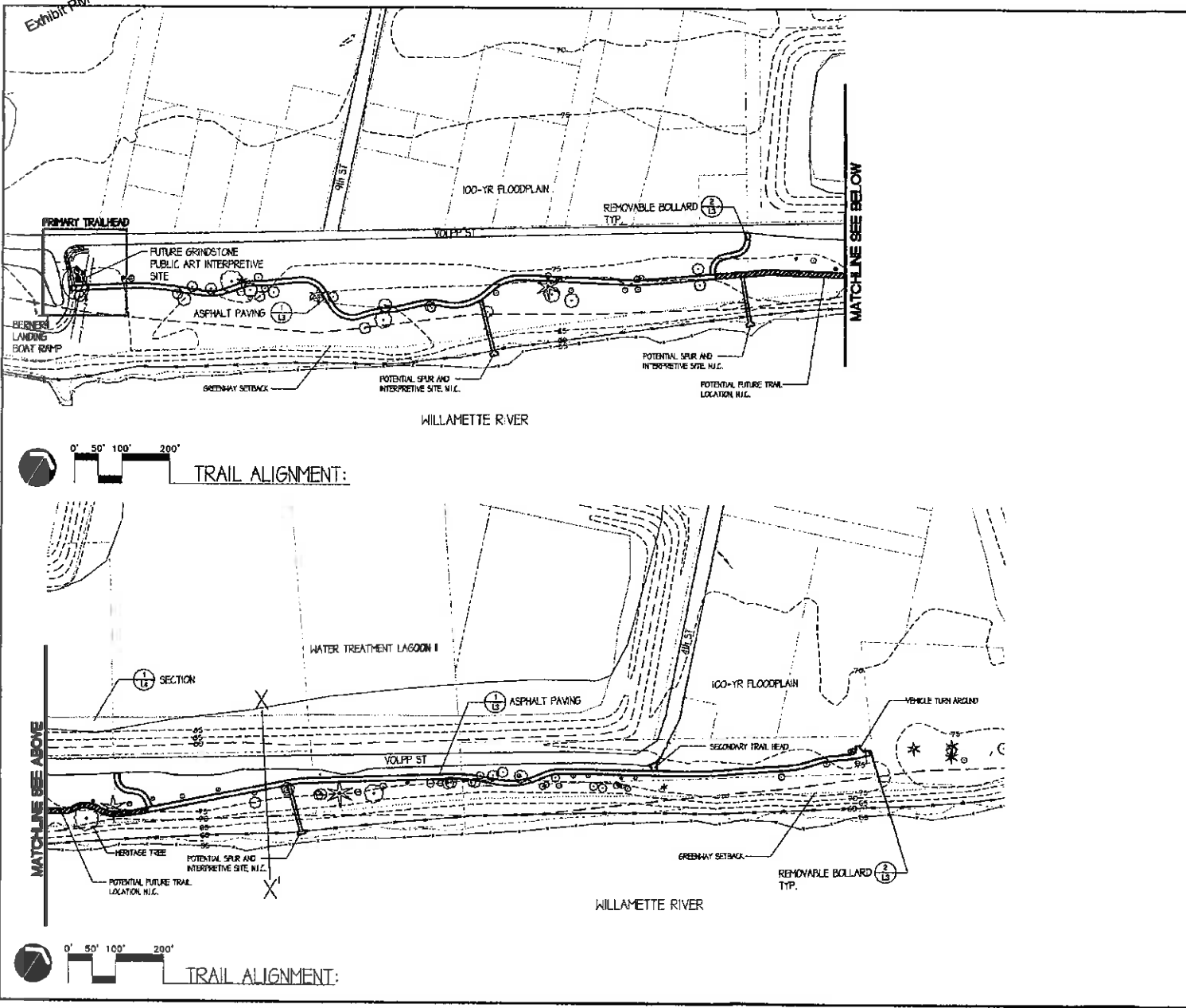
willamette Parks & Recreation Department
City of West Linn
22200 Sullana Rd., #100
West Linn, OR 97146
Phone: (503) 587-4700



Herndon/Otak Partner
700 Washington Street
Suite 40
Vancouver, WA 98660
Phone: (360) 777-8613
FAX: (360) 781-8951
www.otak.com

Project No.	17219
File No.	LO
Sheet No.	LO
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Exhibit PM-4



LEGEND

- 5 ft CONTOURS
- NEAR WATER LEVEL: elev. 57
- NEAR HIGH WATER LEVEL: elev. 67
- 100 YEAR FLOOD: elev. 75
- TAX LOT LINES
- FLOODWAY
- GREENWAY SETBACK: 95' from H&H-1 level
- PROPOSED TRAIL: 10' Arise reference roadbed offset
- FUTURE SPUR: N.I.C.
- PROPOSED REMOVABLE BOLLARDS
- DORMING TREES
- SECTION LINE: SEE L4
- PLAN BOLLARDS: SEE L2

NOTE:
 THAT TRAIL ALIGNMENT TO BE MARKED AND VERIFIED IN THE FIELD FOR THE LANDSCAPE ARCHITECT AND CIVIL ENGINEER. THAT THE TRAIL HEADINGS BETWEEN EXISTING TREES AS FRAGMENTABLE TREES AS SHOWN IN THE DRAWINGS ARE DEEMED AS ALL TREES WITH A DIAMETER OF 4" OR GREATER. TREE REMOVAL PERMITS ARE TO BE OBTAINED FOR ALL REGULATED TREES TO BE REMOVED. REGULATED TREES ARE AS SPECIFIED BY THE CITY OF WEST LINN COMMUNITY TREE ORDINANCE.

Date	08/28/14
Designed	CR
Drawn	CS
Checked By	QA
Checked By Date	



Wilamette River Trail

Public Works & Recreation Department
 City of West Linn
 1000 West Linn, One West Linn, Oregon
 Phone (503) 507-4700

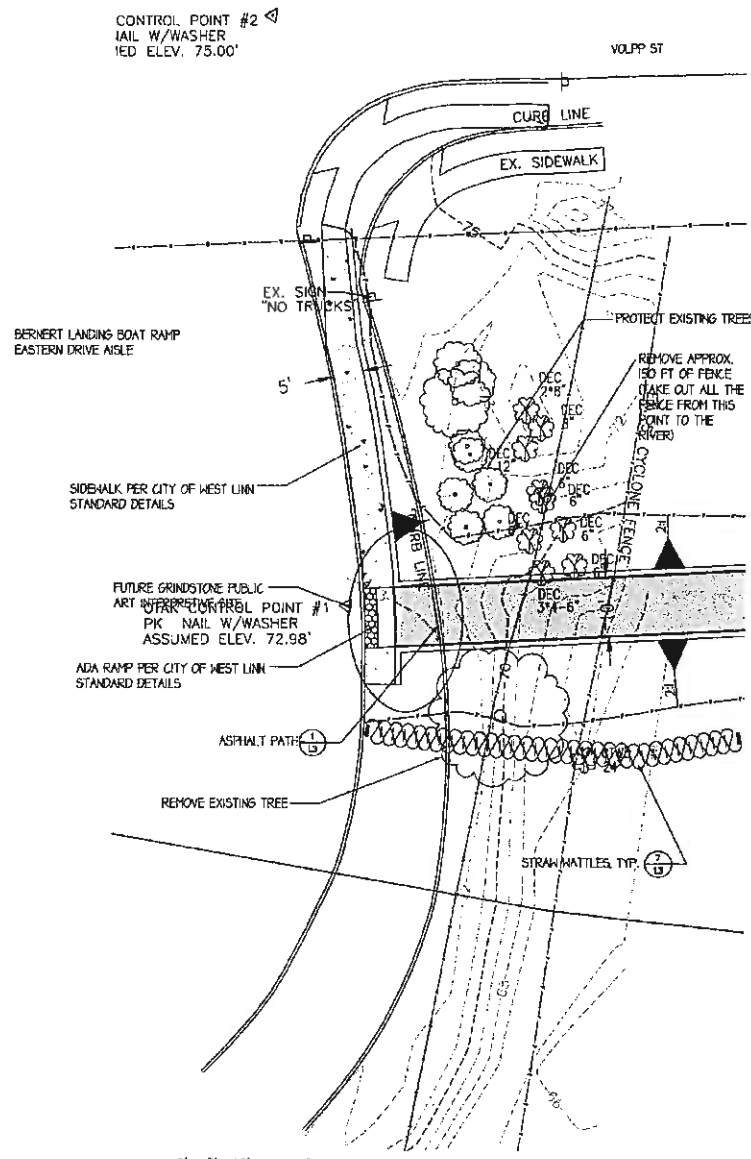


Home/Global Partner
 700 Washington Street
 Suite 400
 Vancouver, WA 98660
 Phone (360) 552-8614
 Fax: (360) 552-8654
 www.otak.com

Preliminary - 30% - For Review

TRAIL PLAN

Exhibit 2M-4 Pr.



LEGEND

- 5 ft CONTOURS
- NEAR WATER LEVEL elev. 55'
- NEAR HIGH WATER LEVEL elev. 60'
- 100 YEAR FLOOD elev. 75'
- TAX LOT LINES
- FLOODWAY
- GREENWAY SETBACK: 30' from PARK level
- PROPOSED TRAIL: 10' unless otherwise noted
- FUTURE SPURS IN/C
- PROPOSED REMOVABLE BOLLARDS
- EXISTING TREES
- SECTION LINE: SEE L4
- PLAN BOLLARDS: SEE L2

NOTE:
TRAIL ALIGNMENT TO BE MARKED AND VERIFIED IN THE FIELD TO THE LANDSCAPE ARCHITECT AND USER CAN VERIFY THAT THE TRAIL HEADINGS BETWEEN EXISTING TREES AS PRACTICABLE TREES AS USED IN THE PROVISIONS ARE DEFINED AS ALL TREES WITH A DIAMETER OF 4" DBH OR GREATER. TREE REMOVAL PERMITS ARE TO BE OBTAINED FOR ALL REGULATED TREES TO BE REMOVED. HEREDITARY TREES ARE AS SPECIFIED BY THE CITY OF WEST LINN COMMUNITY TREE ORDINANCE.

08/2014

Date	CK
Designed	CS
Drawn	CA
Checked By	Date



PRIMARY TRAILHEAD PLANS

Willamette River Trail

Public Works & Recreation Department
City of West Linn
22000 Salmons Trail, #100
West Linn, OR 97146
Phone: (503) 737-4700
Fax: (503) 737-4700



Project No. 17218

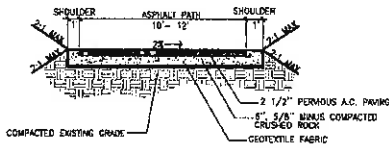
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Sheet No. 5

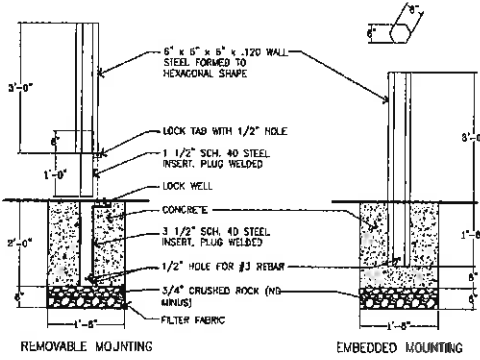
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Preliminary - 30% - For Review

Exhibit PM-4 Rev.

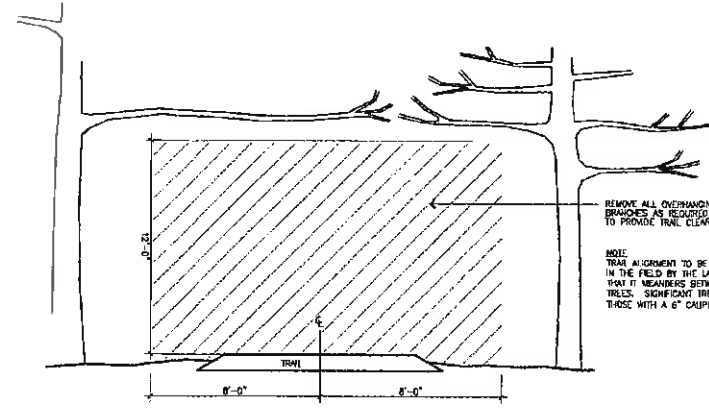


1 ASPHALT PATH
NTS



GEOMETRIC BOLLARD: HEXAGONAL HB-2
FAIRWEATHER SITE FURNISHINGS: POFF ORCHARD, WASHINGTON
808-323-1798; www.fairweatheraf.com

2 BOLLARD
NTS

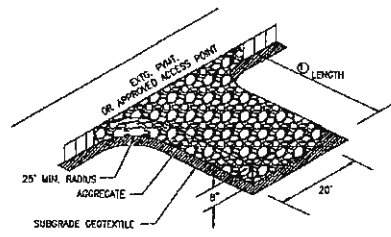


4 VEGETATION CLEARING FOR TRAIL
NTS

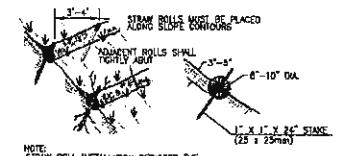
SCIENTIFIC NAME	COMMON NAME	Application Rate*	% of seed mix**	Symbol
EROSION CONTROL COPE (w/c. fl. = coarse)				
Taraxacum x Elytriglo (Hybrid)	Reynolds Inn	20	20	<input type="checkbox"/>
NATIVE PERMANENT GRASS MIX - Erolime #92 (w/c. fl. = coarse)				
Elymus glaucus	blue wildrye	20	60	<input type="checkbox"/>
Habenaria lanchoyasterium	meadow beauty	20	30	<input type="checkbox"/>
Desmodium illinoense	tufted halimolobe	20	10	<input type="checkbox"/>

* Seeding rate of pure live seed (PLS) in pounds per acre for hydroseed application.
** Seed mix application quantity is to be calculated for the planting area and is subject to variability.

5 SEEDING INFORMATION
NTS



6 CONSTRUCTION ENTRANCE
NTS



NOTE: STRAW ROLL INSTALLATION REQUIRES THE SLOPE AND CURVE STRAIGHTENING OF THE ROLL IN THE DIRECTION OF FLOW. AFTER ROLL IS IN PLACE, ALL EXCESS STAKE LENGTH MUST NOT BE ALLOWED TO RUN LONGER OR AROUND ROLL.

7 STRAW WATTLES
NTS

08/20/14
Date: OK
Designed: OS
Drawn: GA
Checked By: Date



Wilamette River Trail
GENERAL DETAILS
Public & Recreation Department
City of West Linn
22000 Salmons Rd., #100
West Linn, OR 97146
Phone: (503) 637-4700



Hammerhead Partner
705 Washington Street
Suite 401
Falls Church, VA 22046
Phone: (703) 727-9615
Fax: (703) 727-9651
www.otak.com

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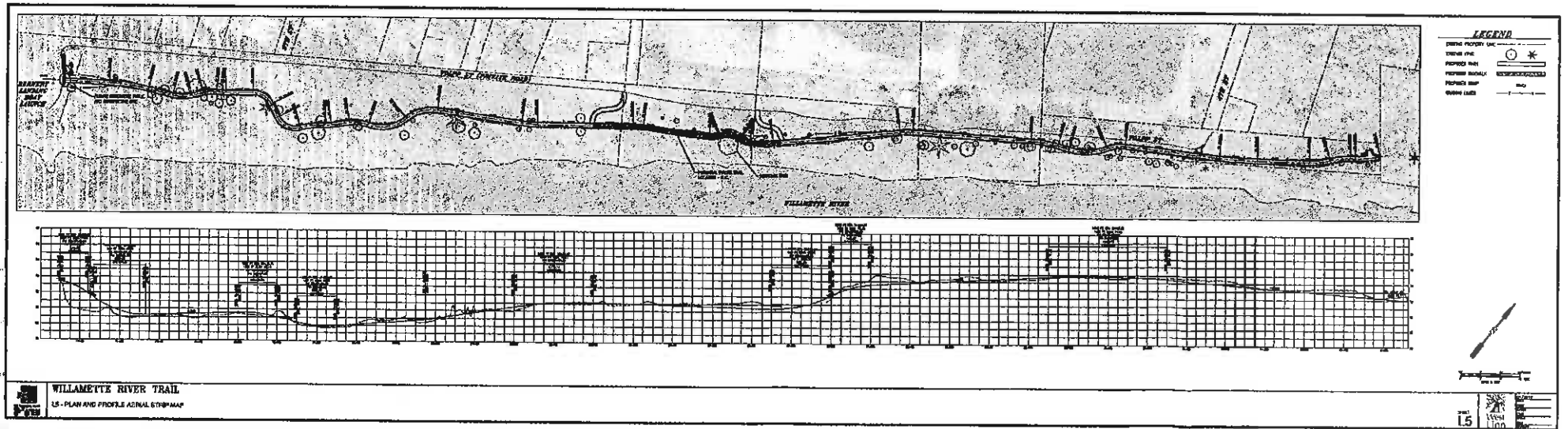
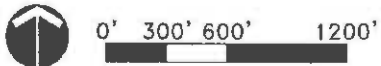
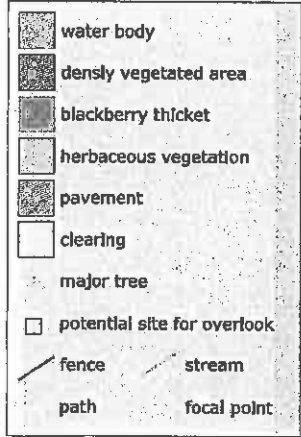


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Date	09/28/14
Designed	CK
Drawn	CS
Checked By	GA
Date	



WILLAMETTE RIVER TRAIL
FIELD OBSERVATIONS

Parks & Recreation Department
City of West Linn
22000 Sublime Rd., #100
West Linn, Oregon 97146
Phone: (503) 637-4720

otak
Otak
1000 Oak Street
Vancouver, WA 98660
Phone: (360) 277-6613
Fax: (360) 737-6462
www.otak.com

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WEST LINN TREE TECHNICAL MANUAL

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INTRODUCTION

This tree Technical Manual is a separately published document issued by the City Manager, through the Departments of Parks and Recreation, Planning and Building and Engineering to establish specific technical regulations, standards, and specifications necessary to implement the Community Tree Ordinance, and to achieve the City's tree preservation goals. These goals are intended to provide consistent care and serve as benchmark indicators to measure achievement in the following areas:

- Ensure and promote preservation of the existing tree canopy cover within city limits.
- Provide standards of maintenance required for protected and city-owned trees.
- Provide standards for preservation and enhancement of existing trees on privately owned property.
- Provide a standardized content for tree reports required by the City.
- Establish criteria for determining when a tree is unsafe and a possible threat to the public health, safety, and welfare.
- Provide standards for the replacement of trees permitted to be removed.
- Increase the survivability of trees during and after construction events by providing protection standards and best management practices.

DEFINITIONS

Basal flare: That portion of a tree where there is a rapid increase in diameter at the confluence of the trunk and root crown.

Building footprint: The two-dimensional configuration of an existing building's perimeter boundaries as measured on a horizontal plane at ground level.

Business days: Monday through Friday – exempting any holidays.

Calendar Days: All days as noted on a calendar, inclusive of weekends and holidays.

Certified Arborist: An individual who has either obtained certification as an arborist from the International Society of Arboriculture, or who is a member of the American Society of Consulting Arborists.

City Arborist: The person designated as such by the City Manager.

City Manager: The City Manager or his/her designee.

City Right of Way: Land that is not owned by a private individual or company that has been either deeded or dedicated to the City for a public purpose. As referred to with a road, the area of the road and area adjacent to the road in City ownership.

Compaction: Compression of the soil structure or texture by any means that creates an upper layer that is impermeable. Compaction is injurious to roots and the health of a tree.

DBH: Diameter at Breast Height is a tree's diameter at 4-1/2 feet or 54 inches above the highest natural ground level. DBH measured in this fashion is considered the accepted method for measuring the size of a tree, by both industry and scientific standards.

Dead Tree: A tree that is dead or has been damaged beyond repair or is in an advanced state of decline (where an insufficient amount of live tissue, green leaves, limbs, or branches exists to sustain life) and has been determined to be such by a certified arborist.

Disturbance: All of the various activities from construction or development that may damage trees.

Drip line Area: The area under the tree's canopy as defined by an imaginary vertical line extending downward from the outermost tips of a tree's natural length branches to the ground.

Erosion: Detachment and movement of soil, rock fragments, mulch, fill, or sediment.

Excessive pruning: Removal of more than one-third of the functioning leaf, stem, or root area of a tree in any twelve-month period, or removal of foliage so as to cause the unbalancing of a tree. Removal of more than one-third of functioning leaf, stem, or root area is considered a tree removal.

Groves: A group of two or more trees with meeting or overlapping canopies. The trees need not be the same species.

Hazard tree: Any tree with a structural defect and/or disease which makes it subject to a high probability of failure, and which threatens persons or property, including other trees.

Hazardous Growth Habit: The development of a tree that, due to a combination of structural defect, disease, or existing disturbance, is subject to a high probability of failure; and such failure would result in a threat to persons or improved property.

Heritage Tree: A tree designated by the City Council as having significant historic or community value to the City of West Linn.

I.S.A.: International Society of Arboriculture.

Injury: A wound resulting from any activity, including but not limited to excessive pruning, cutting, trenching, excavating, altering the grade, or paving/compaction within the tree protection zone of a tree. Injury shall include bruising, scarring, tearing or breaking of roots, bark, trunk branches or foliage, herbicide or poisoning, or any other action foreseeably leading to the death or permanent damage to tree health.

Major Pruning: Removal of over 20 percent of the tree's canopy, or disturbance of over 10 percent of a tree's root system.

Project Arborist: A certified arborist hired by a design review applicant who will handle tree related issues and correspondence with the City Arborist regarding developments in the City. A Project Arborists specific duties are outlined later in this document.

Protected Tree: All trees that are specifically designated to be saved on private property pursuant to an approved development permit, or for which the City Manager has not issued a tree removal permit. Protected trees are to be indicated on building permit or development plans submitted for approval.

Protected Tree Fencing: A temporary enclosure erected around a tree to be protected at the boundary of the tree protection zone. The fence serves three primary functions: 1) to keep the foliage crown, branch structure and trunk clear from direct contact and damage by equipment, materials, or disturbances; 2) to preserve roots and soil in an intact and non-compacted state; and 3) to identify the tree protection zone in which no soil disturbance is permitted and activities are restricted.

Soil Compaction: The compression of soil particles that may result from the movement of heavy machinery and trucks, storage of construction materials, structures, paving, etc. within the tree protection zone. Soil compaction can result in atrophy of roots and potential death of the tree, with symptoms often taking years to manifest.

Street Tree: Any tree existing on or in the City's road right of way.

Topping: The severe cutting back of a tree's limbs within the tree's crown so as to remove the natural canopy and disfigure the tree.

Tree: For the purposes of determining whether a tree removal permit is required, the following definition of Tree is used. Only those trees that meet or exceed the size standards stipulated in this definition require permits to be removed. It is to be explicitly understood, however, that within this Ordinance there are some references to "Tree" or "Trees" (such as with street trees or replacement trees) where the term "Tree" is used (because it would be cumbersome to invent a different term) but to which the size requirements do not apply.

Any woody, perennial plant, deciduous, evergreen, or coniferous, having a main stem or trunk of a minimum 20-inch circumference (6.37-inch diameter DBH) (for Oregon white oak, Pacific madrone or native dogwood), or a minimum 38-inch circumference (12.1-inch diameter DBH) (all other tree species). Trees with multiple trunks will be measured at the 54-inch standard and computed as a total circumference.

Tree Appraisal: A method of determining the monetary value of a tree as it relates to the real estate value of the property, neighborhood, or community. When required, a certified arborist determines the appraisal by adjusting a tree's basic value by its condition, location, and species using the most recent edition of the *Guide for Plant Appraisal*, published by the Council of Tree and Landscape Appraisers.

Tree Canopy: For the purposes of determining tree removal, it is the sum total of the branch and leaf structure of a tree including the trunk and/or trunks. When referred to as the City tree canopy, it refers to the total ground area that is shielded by tree foliage as would be determined from an aerial view of the City

Tree Protection and Preservation Plan: A plan prepared by a certified arborist that outlines measures to preserve protected trees on a project site. This plan shall include requirements for pre-construction, treatments during demolition and/or construction, establishment of a tree protection zone for each tree, tree monitoring and inspection schedule, and provide for continuing maintenance of those trees after construction according to the requirements in this Manual.

Tree Protection Zone (TPZ): unless otherwise specified by a project arborist or City Arborist, the area of temporary fenced tree enclosure. The Tree Protection Zone is a restricted activity zone where no soil disturbance is permitted, unless otherwise approved.

Tree Removal: Any of the following: (1) Complete removal, such as cutting to the ground or extraction, of a tree; (2) Taking any action foreseeably leading to the death of a tree or permanent damage to its health; including but not limited to excessive pruning, cutting, girdling, poisoning, over watering, unauthorized relocation or transportation of a tree, or trenching, excavating, altering the grade, compacting the soil or paving within the drip line area of a tree; (3) removal of more than one-third of functioning leaf and stem area of a tree in any 12-month period, or removal of foliage so as to cause the unbalancing of a tree is considered as removal for purposes of this ordinance.

Visually Prominent: Visible from 1000 feet of the tree. Removal of a visually prominent tree would result in a marked difference in a view from an adjacent property or from a public right-of-way.

TREE MAINTENANCE GUIDELINES

This chapter establishes the minimum standard of care and maintenance for West Linn's trees. These standards apply to all persons who own or are engaged in the business of

repairing, maintaining, or preserving these trees. The following standards of care are set forth for pruning (including utility, fire and traffic encroachment), planting, watering, soil and nutrient requirements, insect, disease and fruit control. Guidelines for selecting an arborist are also given. These standards and guidelines are based on sound arboricultural principles and are applicable to trees, shrubs and woody plants. All owners of trees are to follow the required maintenance standards set forth in this Manual. If special pruning or situations require a variance from these standards, it is the responsibility of the certified arborist and property owner to clarify why the changes are needed and review them with the City Arborist.

PROHIBITED ACTS

Improper maintenance may constitute a prohibited act as defined by the West Linn Municipal Code, and a violation which may be subject to penalty. The following permitted and prohibited maintenance practices for trees apply:

- **Excessive Pruning:** Excessive pruning shall be considered a prohibited act.
- **Topping:** Topping shall be considered a prohibited act.
- **Other prohibited actions:** Taking any action foreseeably leading to the death of a tree or permanent damage to its health, including but not limited to excessive pruning, cutting, girdling, poisoning, over watering, unauthorized relocation or transportation of a tree, or trenching, excavating, altering the grade, or paving within the dripline area of a tree.

PRUNING STANDARDS

The most compelling reason to prune trees is to develop a strong, safe framework. All work to be performed on trees shall be in accordance with the standards set forth in this manual. All specifications for working on trees shall be written and shall be administered by a qualified arborist, and shall be designed to promote the preservation of tree structure and health. All work on trees shall be in accordance with the most current industry standards. Climbing and pruning practices shall not injure the tree except for the pruning cuts. To reduce the probability of insect infestation, disease or infection, seasonal recommendations apply, except when public safety is a concern. All species should not be pruned during the flush of spring shoot growth. Trees with thin bark should not be pruned in summer when sunscald injury may be a factor. Deciduous trees are best pruned November-February. Hazardous trees of any species may be pruned any time of the year for abatement reasons.

Mature Trees

There are six types of pruning that may be required on mature trees. Prior to entering the tree, the tree worker is required to be familiar with these types of pruning as stated in the Performance Standards, ANSI, A300-1995. 'Species-specific' pruning promotes the natural shape of the tree (i.e. excurrent, decurrent, vase-shaped, fast growing, etc.) The six pruning types are:

- Crown Cleaning
- Crown Thinning
- Crown Raising
- Crown Restoration
- Crown Reduction
- Utility Pruning

Distressed Trees

Distressed trees require as much leaf area as possible to overcome stressed conditions. To avoid additional injury, the following measures shall be followed for these trees:

- If a tree has been damaged by injury or disturbance, delay pruning until deadwood becomes evident (typically 1-3 years after injury). Crown cleaning is then recommended.
- Trees that have received little or no care or maintenance may need moderate crown thinning, reduction of end weights or entire crown restoration.

Young Trees

By pruning trees early, it will improve life expectancy and is a proven, cost-effective measure. Added benefits are also reflected in safer trees with fewer branch failures. For trees that serve as a replacement tree, they shall be pruned in the following way:

- Prune during the second year after planting to improve their structure, and only minor crown cleaning every 3-7 years thereafter. Refer to *ISA Tree Pruning Guidelines*.
- Do not top the main leader except to position the lowest main branch. Other main branches should be spaced at least 18-inches apart to alleviate a tight grouping branches.
- Select permanent branching and allow temporary low branching on the lowest part of the trunk to remain.

FERTILIZING

This section outlines performance standards for fertilizing and apply only if fertilizing is specified. Fertilizing mature trees is generally not necessary. Fertilizing may be specified for trees that will be impacted by upcoming disturbance, grade changes or a modified environment. Benefits gained from the increase stored resources may aid the tree to overcome the stress caused by disturbance.

Specifications

Fertilizing, if specified, shall be performed to the following standards:

- **Method of application:** The method shall be subsurface injection, on approximate 3-foot centers (within the root ball on young trees; 2-feet out on older trees) and out to the approximate dripline perimeter. Specific situations may justify other variations such as vertical mulch, soil-fracture or surface-broadcast methods.
- **Material and Rates:** Unless specified otherwise, fertilizer formula shall be a slow-release, complete fertilizer with chelate trace elements (e.g. 22-14-14 or 20-20-20) and mixed at label rates not to exceed 4-pounds nitrogen per 100-gallons of water. Extraordinary cases may require soil and tissue sampling to correct target deficiencies.
- **Amount:** Unless specified otherwise, volume shall be determined by mixing 10-gallons of water per inch of trunk diameter when measured at 54-inches above natural grade.
- **Timing:** Timing should not be detrimental to tree health. Best results are derived from applications made during the prior growing season. Apply fertilizer between May and September for best results.

WATERING

Newly installed trees, including drought tolerant species, are dependent upon supplemental irrigation until established, typically for two years. Periods of extreme heat, wind or drought may require more or less water than recommended in these specifications. The method and amount that is applied may vary depending upon soil composition, heat, wind, companion plantings, rainfall amounts. The watering of trees or their replacements shall follow the standards set forth in this manual.

New Trees

During the establishment period (1-2 years) trees should be watered thoroughly to their root depth as frequently as needed. The minimum standards shall be as follows:

- 3 months in the ground: 4 times per month or as necessary
- 6 months in the ground: 2 times per month or as necessary
- 12 months in the ground: 1 time per month or as necessary

Mature trees

- 1 time per month during irrigation season (usually June through September)

Watering Methods

The following options shall fulfill the watering requirements. One or more of the following may be utilized dependent upon unique circumstances subject to the City Arborist determination. The options are as follows:

- Automated Watering Systems. All new trees shall be provided with one of the following automatic watering systems. Other city maintained systems shall be per Parks Department specifications.
- Bubbler heads (Preferred). One or two bubbler heads mounted on flexible tubing are to be placed adjacent to or on top of the root ball. The placement of bubbler within an aeration tube is not allowed.
- Drip Loop system. A continuous loop of drip tubing circling around the trunk at a point two-thirds out from the trunk to the edge of the root ball (for new trees 36-inch box size and greater, a second loop of drip tubing is required at a point just beyond the root ball on native soil).
- Hand watering systems. Recommended for trees that are part of a development project that must be watered to insure tree survival during the course of construction until automatic irrigation is installed.
- Flood watering. Newly installed trees must be 'flood or basin-watered' on top of the root ball to allow the water to infiltrate through the root zone.
- Subsurface injections using a hydraulic spray pump (practical for use in hard, compacted soils or steep hillsides).
- Soaker hose. Slow, deep watering using a garden type soaker hose.
- Wetting agent. A root ball that has been allowed to dry out beyond the wilting point shall require the addition of a wetting agent to the water (such as Aqua-grow or equivalent).

Amount

Unless otherwise specified, the volume of water applied at each irrigation should be in the range of 10-gallons per inch of trunk diameter when measured at 54-inches above natural grade. The final decision of whether to water or not should be based on accurate soil probe samples that are taken from the root ball.

SOIL IMPROVEMENT

During development, compaction of the soil is the largest single factor responsible for the decline of older trees. Ninety percent of the damage to the upper eighteen inches of soil occurs during the first pass of heavy equipment - and cannot be reversed. Every effort to avoid compaction of soil porosity within the tree protection zone shall be taken at all times. When required as mitigation for injury or a prohibited action, the following performance standards for improvement of compacted or damaged soil shall be implemented:

Aeration

Soil that is damaged or compacted within the dripline of trees shall be loosened or aerated to promote root growth and enhance tree vitality. One of the following aeration methods shall be specified in an effort to correct compacted soil conditions:

- Vertical Mulching: Auger holes 2 to 4-inch diameter, 2 to 3-feet deep, on 4-

foot centers and backfilled with porous material such as perlite, vermiculite or volcanic rock.

- Radial Trenching: With an air excavator, excavate a soil trench 3 to 6-inches wide and a minimum of 12-inches deep from (approximately) 3-feet from the trunk out to the dripline area. The trenches shall radiate out from one foot apart at the closest point.
- Soil-fracturing with a pneumatic air-driven device.
- Subsurface injections under moderate hydraulic pressure using a three foot probe and applied on 3-foot centers under the dripline.

Drainage

Adequate drainage must be provided to the surrounding soil for the planting of new trees. If the trees are to be planted in impermeable or infertile soil, and water infiltration rates are less than 2-inches an hour, then one of the following drainage systems or other approved measures must be implemented:

- French drain, a minimum of three feet in depth
- Drain tiles or lines beneath the trees
- Auger six drain holes at the bottom perimeter of the planting pit, a minimum of 4-inches in diameter, 24-inches deep and filled with medium sand or fine gravel

INSECT AND DISEASE CONTROL

Generally, insect populations do not threaten tree health to the point of mortality. More often, when their populations become too great they create a nuisance. If action is warranted, Integrated Pest Management (I.P.M.) suggests that the pest source be identified and targeted with a specific and timely treatment. If insects or disease can lead to the death of a *protected* tree, then it is the responsibility of the property owner to evaluate the condition according to the guidelines set forth in this manual, and treat the problem in a timely fashion to prevent further deterioration of the tree.

Insects

Accurate timing is critical for success. Nontoxic materials should be used whenever possible to control leaf-chewing insects.

Disease and Decay - above ground

Disease such as heart-rot decay that erodes the health or weakens the structure of a tree may compromise the safety of people or property. It is the property owner's responsibility to correct a known hazardous condition in a timely fashion.

Consult with a certified arborist for remedy possibilities, for example, pruning out infected branches, thinning, or the spray application of a chemical treatment.

Disease - below ground

Soil-borne diseases, such as Armillaria or Phytophthora, are present in West Linn soils. Often, a poor landscape design surrounding old trees encourages harmful, and often lethal diseases. Combined with poorly drained soil, these factors often activate normally dormant fungi to become opportunistic and infect the tree to cause the decline and eventual death of the tree. This decline can be slow and may not be evident for many years. To identify cultural conditions that may lead to diseases such as Verticillium, Phytophthora or other soilborne fungi, review the *Sunset Western Garden Book* or consult with a Certified Arborist. The following conditions that favor a disease environment must be avoided:

- Compacting of the soil within the tree’s dripline, adding fill dirt, roto-tilling, trenching, removing soil from the tree root area.
- Excessive or regular watering on or near the tree trunk area and planting incompatible water-loving plants within the tree’s dripline.
- Landscape Design: When planning landscaping around a tree, an evaluation of the tree and soil must be performed to determine if there is a disease present. If the tree is diseased and landscaping will contribute to decline, permanent damage or render it hazardous, it is the obligation of the property owner to take reasonable measures to reduce or eliminate the conditions that may cause the decline of the protected or designated tree.

Foliar disease

Leaf spot or galls may be chronic or reoccur with specific seasons. Though many of these diseases destroy leaf tissue and become unsightly, they may not significantly reduce the trees health and therefore normally need not be treated unless otherwise specified.

TREE PLANTING SPECIFICATIONS

Planting specifications apply for trees that are planted as a replacement for a tree approved for removal. Using the following specifications will result in consistent city-wide plantings, and superior tree growth and vitality. To achieve this, landscape architects shall incorporate these items into their specifications.

PLANTING STOCK

It is the contractor’s responsibility to supply stock that meets ANSI 760.1-1996 and City of West Linn *Tree Technical Manual Standards*. All plants and trees installed within the City of West Linn shall conform with American Association of Standards, ANSI Z60.1, *Specifications for Acceptance of Nursery Trees at the Time of Delivery*, in all ways.

- Plants shall be sound, healthy, vigorous, and free of plant disease and insect pests and their eggs.

- Container stock shall be grown for at least 8-months in containers in which delivered and shall not be root bound or have girdling roots.
- Trees shall not have been topped or headed.
- Plants and trees with broken tops, branches or injured trunks shall be rejected.

RECOMMENDED STREET TREES

There are many trees available that are appropriate for use as street trees, and new varieties are being developed every year. The City shall maintain a list of appropriate trees for planting in the City, either as street trees, or for use in yards, parks, etc. and is appendix A to this manual. The list will be updated periodically as new varieties are available, or as information is received about diseases, insects and other nuisances. Please consider the location, size of planting area, and other site specific variables when choosing a tree.

MISCELLANEOUS MATERIALS

The following materials shall be used unless otherwise specified:

- **Tree stakes:** Support stakes shall be treated 2-inch diameter pine or equal, two stakes per tree. No cross brace shall be used. After installation, stakes shall be trimmed so that the branches clear the top of the stake.
- **Tree Ties:** Twist brace, fabric-reinforced rubber (3/8-inch minimum), or equivalent approved by the City of West Linn shall be used and installed in a figure eight fashion to support the tree to the stakes.
- **Mulch:** Screened untreated wood chips, bark dust or approved equal, spread to a 2-inch depth out to the edge of the root ball. The mulch should be kept at least two inches away from the trunk and shall be applied to each tree.
- **Mower guards:** For trees in turf areas requiring regular mowing, the tree stem shall be protected with TreeGuard or equivalent.
- **Tree Grates:** Where sidewalk width is less than 8-feet and new trees will be installed in a tree well, metal tree grates shall be used and approved by Public Works. Minimum size grates shall be 4' x 4' unless specified otherwise. All tree grates shall be mounted in frames inset into a concrete foundation within the sidewalk or surface material and shall be flush with the surrounding surface.

SOIL PREPARATION AND CONDITIONING

- All debris, wood chips, pavement, concrete and rocks over 2-inches in diameter shall be removed from the planting pit to a minimum of 24-inch depth, unless specified.
- Trees in a confined planter pit or sidewalk area: The planting hole shall be excavated to a minimum of 30-inches deep x the width of the exposed area.

Scarify the sides of the pit. Soil beneath the rootball shall be compacted to prevent settling.

- Trees in all other areas: Excavate the hole's width a minimum of three times the diameter of the container, and deep enough to allow the root ball of the container to rest on firm soil. Scarify the sides and the bottom of the pit.
- The height of the container root ball should be 1-2-inches higher than grade level, except when structural urban tree soil mix is used, in which case the tree may be planted at level grade.
- If the soil is dry, add a few inches of water in the hole. Let it drain before planting the tree.

PLACING THE TREE

- **Roots:** Remove tree from the container and trim the root ball in the following way: Straighten and/or cut cleanly any thick circling roots. For thin roots make three to four vertical cuts 1/2-inch deep around root ball and spread the bottom out if necessary
- **Orientation:** Locate the tree in the hole, and rotate the tree to direct the main branches away from the street side, if possible.
- **Filling the Hole:** Place the aeration tubes, fill the hole halfway up with original soil (amended soil only when approved), and gently tamp out air pockets with a pole or shovel handle. Add about 1-inch of water, and let drain. Fill the rest of the hole to grade, water the fill soil, and let drain.
- **Staking:** Place the stakes at the edge of the root ball (drive them 2-feet into undisturbed ground), and avoid contact with the branches. If in a windy area, set the stakes in a plane at right angles to the wind. Remove the nursery stake. Loosely place two ties in a figure eight around the trunk, as low as needed to hold the tree upright and nail to the stake. Stakes shall be trimmed so that the branches clear the top of the stake. Do not install a cross-brace.
- **Berm, Mulch and Water:** In non-turf areas, form a soil berm 3 to 4-inches high at the outermost edge of the root ball. Place 1 to 2-inches of mulch or bark over root ball and berm, keeping the mulch away from the trunk a minimum of 2-inches. Fill the berm with water to capacity.
- **Turf Areas:** In turf areas that receive regular watering, the watering berm may be eliminated. The turf shall be maintained a minimum of one foot from the new tree stem, and mulch placed on top of the root ball. The mulch shall not be touching the tree stem. In turf areas, install tree ???
- **Aeration Tubes for Trees:** If required, 4-inch diameter perforated aeration tubes with grated plastic caps placed at the edge of the root ball to the bottom of the pit. Irrigation heads shall not be installed inside the aeration pipes. Any of the above holes, pipes, grates or fixtures shall include the installation of Filter Fabric wrap over the side openings and secured as recommended by manufacturer when connected to an approved aeration system.
- **Alternate Specifications:** Occasionally, tree planting must occur in poor or difficult soil where standard planting techniques will result in poor-to-average performance or mortality (such as unique or unusual regional geology, slope,

soil volume, restrictive physical or chemical properties, poor drainage, etc.). In this case, the responsible party must investigate alternative solutions to enable long term tree growth. Alternative planting specifications or plans that vary from the native or typical soil conditions shall be submitted to the *City Arborist* for approval prior to installation. Alternative or specified soils, such as engineered, amended or structural urban tree soil mix, including written specifications and physical samples, shall be submitted for approval from the City Arborist and/or Landscape Architect.

HAZARDOUS TREES

Property owners are responsible for the trees on their own property. The City requires advance permission for removal of trees in emergencies, unless the tree poses an imminent danger of falling and posing a threat to life and property prior to the ability of the Manager to consider issuing an emergency tree removal permit. However, in such cases the property owner must submit documentation of the problem after the fact. This is to avoid the unlawful removal of sound trees on the grounds that they are hazardous. If there was no immediate danger, and the City determines that there was no reasonable basis for the tree to be removed prior to the ability of the City to issue an emergency tree removal permit, the property owner may face penalties for violating City law.

The health and safety of a tree are two distinct and separate functional characteristics. A vigorous and healthy tree may not necessarily be of sound wood or structure. To remove a dangerous tree, it must first be evaluated and the tree determined to be hazardous as defined in this section.

On private property, it is the responsibility of the property owner to mitigate or abate a known hazardous condition of a tree that may be of questionable structure or deemed as hazardous. Most tree hazards can be prevented with regular checkups by a tree care professional and timely maintenance action by the property owner.

Determining whether or not a tree's defects constitute a condition that presents an imminent hazard to an area requires a high degree of knowledge and experience. Hazard tree assessment of a tree should only be evaluated by an arborist who is familiar with tree physiology and can interpret the external signs of weaknesses, and who can perform internal checks if necessary and make recommendations.

CRITERIA USED BY THE CITY TO DETERMINE IF A TREE IS HAZARDOUS

- **Definition of Hazardous Growth Habit:** The West Linn Municipal Code defines "Hazardous Growth Habit" as: the development of a tree that, due to a combination of structural defect, disease, or existing disturbance, is subject to a high probability of failure, and such failure would result in a threat to persons or improved property.
- **Evaluation Form:** In some cases, the City may require a Hazard Evaluation

Form, before approval is granted. The City uses the national standard, an ISA Hazard Evaluation Form as a basis to determine the hazard rating of a tree. This form, or an approved equivalent, must be completed by a certified arborist. The City Arborist retains discretionary right to approve, request in writing a second opinion of a rating, or recommend action that may reduce the condition to a less-than significant level of hazard.

- **Authorization:** If the hazardous growth habit cannot be mitigated or reduced to a less than significant level then the Manager shall issue a permit authorizing removal of the tree in accordance with the City Municipal Tree Ordinance.

DETERMINING A TREE'S HAZARD RATING

A tree may be a potential hazard if it is: (a) a tree with the potential to fail (b) in an environment that increases the likelihood of failure and (c) a tree that would strike a target. The hazard rating formula is based upon the following factors:

- **Failure Potential Rating:** Failures do not occur at random, but are the result of a combination of defects and aggravating conditions. The scope of the professional evaluation will include structural defects in the tree (including branches, trunk and roots; and if necessary, shall employ the use of the most current methods of internal decay inspection available), soil/slope and/or creek bank stability, individual species susceptibility to failure, pruning, history, decay weaknesses and any other compromising or pertinent factors considered by the consultant.
- **Target Rating:** Evaluation of potential targets shall include people, structures or property use and occupancy that are imminently threatened. Property use shall consider what structures or activities are under or around the tree (e.g. building, parking, pedestrian, recreational, utility lines, hardscape, etc.). Occupancy shall consider frequency of the use (occasional, intermittent, frequent or constant), and whether the *target* will be present when failure occurs. Consideration shall be given as to whether the *target* can be reasonably removed or isolated to reduce the hazard rating to a less than significant level. A target means people or property (public or private).
- **Additional Factors:** Evaluation of other factors that contribute to aggravating conditions shall be considered, such as: size of the affected defect (i.e. a small branch vs. the entire tree uprooting), significant potential of fire, utility line contact or catastrophic effects, etc.

DEVELOPMENT REVIEW, BUILDING PERMITS, AND PROTECTION OF TREES DURING CONSTRUCTION

The objective of this section is to provide guidelines to reduce the negative impacts of construction on trees to a less than significant level. Trees vary in their ability to adapt to altered growing conditions. Mature trees have established stable biological systems in the

pre-existing physical environment. Disruption of this environment by construction activity interrupts the tree's physiological processes causing depletion of energy reserves and a decline in vigor, often resulting in the tree's death. Typically, this reaction may develop from one to twelve years or more after disruption. The tree protection regulations are intended to guide a construction project to insure that appropriate practices will be implemented in the field to eliminate undesirable consequences that may result from uninformed or careless acts, and preserve both trees and property values.

Typical negative impacts that may occur during construction include:

- Mechanical injury to roots, trunk or branches
- Compaction of soil, which degrades the functioning roots, inhibits the development of new ones and restricts drainage, which desiccates roots and enables water mold fungi to develop
- Changes in existing grade which can cut or suffocate roots
- Alteration of the water table - either raising or lowering
- Microclimate change, exposing sheltered trees to sun or wind
- Sterile soil conditions, associated with stripping off topsoil.

STEPS IN THE PROCESS

Construction project managers are required to implement the tree protection practices described in this section. The following steps shall be taken in regard to tree protection on any construction project in the City. For more detailed information regarding these steps, please reference the desired topic later in this section.

- **Site Plans, Tree Surveys and Arborist Reports:** Prior to land use approval or building permit issuance, a property owner shall have prepared an appropriate *Site Plan, Tree Survey, and/or Arborist Report*. Any tree protection plans or reports must be approved and accepted by the City Arborist before proceeding to the next step. Notes and/or changes to the protection plans may be made or requested by the City Arborist at this time.
- **Verification of Tree Protection:** The project arborist or contractor shall verify, in writing, that all pre-construction conditions have been met and that all tree protection measures are in place. Written verification must be submitted to and approved by the City prior to demolition, grading or building permit issuance.
- **Pre-Construction Meeting:** The City Arborist, Project Arborist, Project Manager, Site Superintendent and other pertinent personnel may be required to meet at the site prior to beginning work to review procedures, tree protection measures and to establish haul routes, staging areas, contacts, watering, etc.
- **Project Construction:** Project Managers, Site Superintendents and Project Arborists in conjunction with City inspectors and staff are to ensure that trees on site are protected in accordance with the approved Arborist Report for the project for the duration of construction activity.
- **Post Construction:** Project Managers, Site Superintendents and Project Arborists in conjunction with City Inspectors and staff are to ensure that post construction activity is in accordance with the approved Arborist Report for the project.

SITE PLANS, TREE SURVEYS, TREE APPRAISAL REPORTS, AND ARBORIST REPORTS

A *Site Plan* and/or *Tree Survey* and *Arborist Report* will be required for development projects containing trees. *Site Plans* for individual building permits may be prepared by the applicant. *Tree Surveys* and *Arborist Reports* will be required for projects that require Design Review as referenced in the City Community Development Code (CDC), and must be prepared by a licensed surveyor and certified arborist respectively for the applicant and submitted to the City for the purpose of providing accurate information and opinion regarding the condition, welfare, maintenance, preservation or value of trees on the project site. Occasionally, information about trees offsite will be required if the project will affect them, for example, trees near the property line of a development. *Site Plans* and *Arborist Reports* will be reviewed and approved by the City Arborist. Trees are defined by the City as having a minimum 6 inch DBH for Oregon White Oak, Pacific Madrone, and Pacific Dogwood, and 12 inch DBH for all other species. Any trees not meeting these minimum thresholds need not be shown on any site plans or surveys.

Following are the types of documentation that may be required by the City:

- **Site Plan:** A site plan will be required for all non-interior construction activity that requires a building permit. The site plan shall show the accurate location

of property lines, existing structures, proposed new construction, staging and spoils areas, and all trees at or above the City's minimum threshold, with DBH and species indicated. Other non-tree related, City requirements may be shown on the site plan as well. A copy of the site plan will be reviewed and returned to the applicant with notes, tree protection fence locations, and other requirements. Another copy will be retained in the project file. Applicable building permits will not be issued without approved site plans.

- **Tree Survey:** For projects requiring Design Review (CDC governed), a tree survey shall be submitted to the City at the beginning of the process for the purpose of identifying significant trees. The survey shall indicate property lines, existing structures and other site conditions, as well as all trees at or above the City's minimum threshold, clearly identified by DBH and species on the plan, or in a numbered table. After receiving the survey, the City Arborist shall determine which trees are significant, and clearly indicate these findings on the survey. One copy of this document shall be returned to the applicant, and one copy will go into the project file as an exhibit.
- **Tree Appraisal Report:** Occasionally, the City may require a *Tree Appraisal Report*. Landscape value may contribute from seven to 20-percent of the real estate property value. An individual tree has an inherent value to the real estate that can be determined by an appraisal prepared by a certified arborist. An appraisal is a process for determining a monetary opinion of the value of a tree as it relates to either the property, a group of trees and/or the immediate community. A certified arborist is required to determine this value, and must exercise good and fair judgment by adjusting the basic value by the tree's condition and location. There are two methods to determine tree value; (1) the Replacement Method, based upon the size and availability of the replacement tree or, (2) the Trunk Formula Method, if the tree cannot be replaced (e.g. not sufficient room on site or it is too large to replace). In all cases, the type of formula used must be identified. A certified arborist must prepare the appraisal by using the most current edition of the '*Guide for Plant Appraisal*', published by the Council of Tree and Landscape Appraisers.
- **Arborist Report:** An *Arborist Report* is required for all development projects governed by the Community Development Code and shall be submitted for review by the City as part of the design review documents. The *Arborist Report* shall assume compliance with standards this Manual.

All *Arborist Reports* shall contain the following information:

1. Arborist name and certification number
2. Cover letter
3. Title page
4. Table of contents
5. Site address and date of the inspection(s)

6. Tree survey as outlined above. Failure to show a tree on the plans and later determined to be affected by construction may require the work to stop until mitigation can be agreed upon by the property owner and the City.
7. Tree inventory data for all trees on the project site including tree species, DBH, health, structure, etc. Tables may be used.
8. Written recommendations for the health and long-term welfare of trees, that will be followed during pre-construction, demolition, construction and post construction phases of the project. Recommendations include methods of avoiding injury, damage treatment and inspection schedule. Overall project schedule shall be referenced with these recommendations.
9. A tree protection and preservation plan showing tree protection zones (TPZ) for each tree or group of trees to be protected. The TPZ's shall be shown on all sheets within the document set as a bold dashed line with shading inside, and clearly indicated with proper notation. Additionally, all trunk locations, trunk diameters, and dripline areas shall be accurately plotted on the plans. For large groups of trees to be preserved, accurate trunk locations and dripline areas are not required for interior trees which are not affected by proposed construction activities because of the existence of perimeter trees subject to impact. Notes and details clearly outlining specific measures for protection of the trees during construction shall be included in the plan set. Any approved construction activity within the TPZ will also be clearly indicated.
10. Written recommendations for the maintenance of the trees for a minimum of two years after project completion.

If necessary, other supporting information, ISA hazard ratings, photographs, diagrams, etc. may be required or provided.

After project approval, any changes to the protection measures or preservation plans must be approved in writing by the City Arborist.

SPECIFICATIONS FOR TREE PROTECTION DURING CONSTRUCTION

TREE PROTECTION ZONE (TPZ)

Each tree to be retained shall have a designated tree protection zone (TPZ) identifying the area sufficiently large enough to protect the tree and roots from disturbance. The standard for computing the size of the TPZ shall be a ½ foot radius per caliper inch

measured from the trunk of the tree. For example, a 30 inch DBH tree would have a TPZ with a radius of 15 feet from the trunk, or a 30 foot diameter full circle around it. A diagram of TPZ sizing is included as Appendix C to this manual. The tree protection zone shall be shown on all site plans for the project. Improvements or activities such as paving, utility and irrigation trenching and other ancillary activities shall occur outside the tree protection zone, unless authorized by the City Arborist, or by project approval. Unless otherwise specified, the protective fencing shall serve as the tree protection zone. Activities prohibited within the tree protection zone include:

- Storage or parking vehicles, building materials, refuse, excavated spoils or dumping of poisonous materials on or around trees and roots. Poisonous materials include, but are not limited to, paint, petroleum products, concrete or stucco mix, dirty water or any other material which may be deleterious to tree health.
- The use of tree trunks as a winch support, anchorage, as a temporary power pole, sign posts or other similar function.
- Cutting of tree roots by utility *trenching*, foundation digging, placement of curbs and trenches and other miscellaneous excavation without prior approval of the City Arborist.
- Soil disturbance or grade change.
- Drainage changes.

Activities permitted or required within the tree protection zone include:

- Mulching. During construction, wood chips may be spread within the TPZ to a 4-to 6-inch depth, leaving the trunk clear of mulch to help inadvertent *compaction* and moisture loss from occurring. The mulch may be removed if improvements or other landscaping is required. Mulch material shall be 2-inch unpainted, untreated wood chip mulch or approved equal.
- Root Buffer. When areas under the tree canopy cannot be fenced, a temporary buffer is required and shall cover the root zone and remain in place at the specified thickness until final grading stage.
- Irrigation, aeration, fertilizing or other beneficial practices that have been specifically approved for use within the tree protection zone.
- Erosion Control. If a tree is adjacent to or in the immediate proximity to a grade slope of 8% or more, then approved erosion control or silt barriers shall be installed outside the TPZ to prevent siltation and/or erosion within the tree protection zone.

TREE PROTECTION FENCING

Fenced enclosures shall be erected around trees to be protected to achieve three primary goals, (1) to keep the foliage crowns and branching structure clear from contact by equipment, materials and activities; (2) to preserve roots and soil conditions in an intact and non-compacted state and; (3) to identify the tree protection zone in which no soil disturbance is permitted and activities are restricted, unless otherwise approved.

- **Size and type of fence:** All trees to be preserved shall be protected with six foot high chain link fences. Fences are to be mounted on two inch diameter galvanized iron posts, driven into the ground to a depth of at least 2-feet at no more than 10-foot spacing. This detail shall appear in the construction plan set, and can be referenced in the City's Construction Standards.
- **Area to be fenced:** The fences shall enclose the entire area within the tree protection zone of the tree(s) to be saved throughout the life of the project as mapped by the building permit approval, or as mapped within the tree protection and preservation plan contained in the Arborist Report for the project. The fencing shall remain until final improvement work within the area is required, typically near the end of the project. If the fencing must be located on paving or sidewalk that will not be demolished, the posts may be supported by an appropriate grade level concrete base. For trees situated within a narrow planting strip, only the planting strip shall be enclosed with the required chain link protective fencing in order to keep the sidewalk and street open for public use. Trees situated in a small tree well or sidewalk planter pit, shall be wrapped with 2-inches of orange plastic fencing as padding from the ground to the first branch with 2-inch thick wooden slats bound securely on the outside. During installation of the wood slats, caution shall be used to avoid damaging any bark or branches. Major scaffold limbs may also require plastic fencing as directed by the City Arborist.
- **Duration:** Tree fencing shall be erected before demolition, grubbing, grading or construction begins and remain in place until final inspection of the project permit, except for work specifically required in the approved plans in which case the project arborist or City Arborist (in the case of street trees) must be consulted.
- **Warning Sign:** A warning sign shall be prominently displayed on each fence. The sign shall be a minimum of 8.5 x 11-inches and clearly state: WARNING: Tree Protection Zone.
- **Violations:** The penalty for the unauthorized removal or relocation of a tree protection fence, and/or unauthorized activity within a TPZ, is \$500, plus \$500 per day until the fence is repaired or replaced and any damage to the tree properly mitigated.

CONSTRUCTION MEETING AND INSPECTION SCHEDULE

A certified arborist may be required to be retained by the applicant during the construction of large development projects. This project arborist retained shall conduct the following required inspections for the duration of construction activity. Correspondence may be as simple as e-mail in some cases or may require larger documents with tables, photographs, etc. for others.

- **Inspection of Protective Tree Fencing:** The City Arborist shall be in receipt of a written statement from the applicant or project arborist verifying that the protective tree fencing has been installed and may be inspected by the City

Arborist prior to issuance of a demolition, grading, or building permit, unless otherwise approved.

- **Pre-Construction Meeting:** Prior to commencement of construction, the applicant or contractor may be required to conduct a pre-construction meeting to discuss tree protection with the job site superintendent, grading equipment operators, certified arborist, and City Arborist.
- **Monthly Inspections:** If a project arborist is required for the development project, he/she shall perform monthly inspections to monitor changing conditions and tree health. The City Arborist shall be in receipt of an inspection summary during the first week of each calendar month or, immediately if there are any changes to the approved plans or protection measures.
- **Special Activity Within the Tree Protection Zone:** Work in this area (TPZ) requires the direct onsite supervision of the City Arborist.
- **Project Summary and Conclusion:** A brief summary discussing the project's trees shall be submitted to the City Arborist at the conclusion of all construction activity. It shall include concerns about trees that may have been negatively impacted as well as recommendations for care of the trees in the future.

TREE PRUNING, SURGERY AND REMOVAL

Prior to construction, various trees may require that branches be pruned clear from structures, activities, building encroachment or may need to be strengthened by means of mechanical support or surgery. The most compelling reason to prune is to develop a strong, safe framework and tree structure. Such pruning, surgery or the *removal* of trees shall adhere to the following standards:

- **Minimum Pruning:** If the project arborist recommends that trees be pruned, and the type of pruning is left unspecified, the standard pruning shall consist of '*crown cleaning*' as defined by ISA pruning guidelines. Trees shall be pruned to reduce hazards and develop a strong, safe framework.
- **Maximum Pruning:** Maximum pruning should only occur in special situations approved by the City Arborist. No more than one-third (33 percent) of the functioning leaf and stem area may be removed within one calendar year of any tree, or removal of foliage so as to cause the unbalancing of the tree. It must be recognized that trees are individual in form and structure, and that pruning needs may not always fit strict rules. The project arborist shall assume all responsibility for special pruning practices that vary from the standards outlined in this manual.
- **Tree Workers:** Pruning shall not be attempted by construction or contractor personnel, but shall be performed by a qualified tree care specialist or certified tree worker, according to specifications contained within this Manual.
- **Surgery:** Prior to construction, if it is necessary to promote health and prolong useful life or the structural characteristics, then trees shall be provided

- the appropriate treatments as specified by the project arborist or City Arborist.
- **Tree Removal:** Removal of trees that extend into the branches or roots of protected trees shall not be attempted by demolition or construction personnel, grading or other heavy equipment. A certified arborist or tree worker shall remove the tree carefully in a manner that causes no damage above or below ground to trees that remain.
 - **Stump Removal:** Before performing stump extraction, the developer shall first consider whether or not roots may be entangled with trees that are to remain. If so, these stumps shall have their roots severed before extracting the stump. *Removal* shall include the grinding of stump and roots to a minimum depth of 24-inches but expose soil beneath stump to provide drainage. In sidewalk or small planter areas to be replanted with a new tree, the entire stump shall be removed and the planting pit dug to a depth of 30-inches. If dug below 30-inches, compact the backfill to prevent settling. Large surface roots three feet from the outside circumference shall be removed, including the spoils and backfilled with City approved topsoil to grade, and the area tamped to settle the soil.

CONSTRUCTION ACTIVITY

Construction is normally prohibited in the TPZ. Under certain circumstances it may be necessary to work in the TPZ, however only with approval from the City Arborist. If any construction activity is to occur in the TPZ the following guidelines apply:

- **Excavation and Grading**

The following guidelines shall be followed in regard to excavation and grading activities:

1. Contractor shall notify the Project Arborist and City Arborist a minimum of 24 hours in advance of the activity in the tree protection zone.
2. Roots that are encountered shall be cut to sound wood and repaired. Roots 2-inches and greater must remain injury free and uncut.
3. Any approved excavation, demolition or extraction of material shall be performed with equipment sitting outside the tree protection zone. Methods permitted are by hand digging, hydraulic or pneumatic air excavation technology. Avoid excavation within the TPZ during hot, dry weather. If excavation or trenching for drainage, utilities, irrigation lines, etc.,
4. Grade changes within the tree protection zone are not permitted unless approved by the City Arborist.
5. Grade changes outside of the tree protection zone shall not significantly alter drainage within the TPZ.
6. Grade changes under specifically approved circumstances shall not allow more than 6-inches of fill soil added or allow more than 4-inches of existing soil to be removed from natural grade.
7. Grade fills over 6-inches or impervious overlay shall incorporate an

approved permanent aeration system, permeable material or other approved mitigation.

8. Grade cuts exceeding 4-inches shall incorporate retaining walls or an appropriate transition equivalent.
9. If excavation or trenching for drainage, utilities, irrigation lines, etc., it is the duty of the contractor to tunnel under any roots 2-inches in diameter and greater. Prior to excavation for foundation/footings/walls, grading or trenching within the TPZ, roots shall first be severed cleanly 1-foot outside the tree protection zone and to the depth of the future excavation. The trench must then be hand dug and roots pruned with approved root pruning equipment.
10. If injurious activity or interference with roots greater than 2-inches will occur within the tree protection zone, plans shall specify a design of special foundation, footing, walls, concrete slab or pavement designs subject to *City Arborist* approval. Discontinuous foundations such as concrete pier and structural grade beam must maintain natural grade (not to exceed a 4-inch cut), to minimize root loss and allow the tree to use the existing soil.
11. Basement excavations shall be designed outside the tree protection zone of all protected trees unless approved by the City Arborist, and shall not be harmful to other neighboring property trees.
12. Use of backhoes, steel tread tractors or any heavy vehicles within the TPZ is prohibited unless approved by the City Arborist. If allowed, a protective root buffer is required. The protective buffer shall consist of a base course of tree chips spread over the root area to a minimum of 6-inch depth, layered by 3/4-inch quarry gravel to stabilize 3/4-inch plywood on top. This buffer within the tree protection zone shall be maintained throughout the entire construction process.

• **Trenching, Tunneling and Directional Drilling for Utilities**

1. If trenching or pipe installation has been approved within the tree protection zone, then the trench shall be either cut by hand, air-spade, hydraulic vac-on excavation or, by mechanically boring the tunnel under the roots with a horizontal directional drill and hydraulic or pneumatic air excavation technology.
2. Utility pipe must be installed immediately, backfilled with soil and soaked within the same day.
3. Street Trees that are in conflict with utility infrastructure where the conflict cannot be resolved may be removed if approved by the City Arborist. All Street Tree removals are subject to replacement.
4. Emergency utility repairs shall be exempt from the above restriction zones within the Tree Protection Zone. The City Arborist shall be contacted after any such repairs that may result in significant tree damage or removal.

- **Pavement and Hardscape**

Conflicts may occur when tree roots grow adjacent to paving, foundations, sidewalks or curbs (hardscape). Improper or careless extraction of these elements can cause severe injury to the roots and instability or even death of the trees. The following alternatives must first be considered before root pruning within the tree protection zone of a tree:

1. Grinding a raised sidewalk edge.
2. Ramping the walking surface over the roots.
3. Routing the sidewalk around the tree roots.
4. Install flexible paving or rubberized sections.
5. On private property, new sidewalk or driveway design should consider alternatives to conventional pavement and sidewalk materials. Substitute permeable materials for typical asphalt or concrete overlay, sub-base or footings to consider are: permeable paving materials (such as ECO-Stone or RIMA pavers), interlocking pavers, flexible paving, wooden walkways, porches elevated on posts and brick or flagstone walkways on sand foundations.

Removal of existing pavement over tree roots shall include the following precautions:

1. Break hardscape into manageable pieces with a jackhammer or pick and hand load the pieces onto a loader. The loader must remain on undisturbed pavement or off exposed roots.
2. Do not remove base rock that has been exploited by established absorbing roots.

Replacement of pavement or sidewalk:

1. An alternative to the severance of roots greater than 2- inches in diameter should be considered before cutting roots.
2. If an alternative is not feasible, remove the sidewalk, remove roots only as approved by the City Arborist and replace sidewalk using #3 dowels at the expansion joint if within 10-feet of a street tree. Use a wire mesh reinforcement within if within 10-feet of the trunk of a protected or street tree. Any work in the right-of-way requires a street work permit from Public Works Department.

Conflicts and associated costs can be avoided or reduced by the following planting practices:

1. Plant deep rooted trees that are proven to be non-invasive.
2. Over soil that shrinks and swells, install a sidewalk with higher strength that has wire mesh and/or expansion slip joint dowel

reinforcement.

3. Follow soil loosening planting techniques to promote deep rooting.
4. Install root barrier only along the hardscape area of the tree and allow roots to use open lawn or planter strip areas.
5. Dedicate at least 10-linear feet of planting space for the growth of each tree.
6. When designing hardscape areas near trees, the project architect or engineer should consider the use of recommended base course material such as an engineered structural soil mix.

- **Invasive species removal**

Often, contractors will be required to remove invasive plant species from the understory in TPZ's. In most cases, native understory plants shall be saved and the area will be fully cleared of invasive species. The following practices must be followed when removing invasives:

1. The preferred method for invasive plant removal, is by hand, extracting the entire plant, including the roots. Other manual methods include cutting the plants to ground level, either mechanically, or with hand tools, and spraying the new growth with an approved herbicide. In either case, native understory plants may not be harmed or removed.
2. If heavy machinery is used, for example, a brush rake attached to an excavator, the machine must stay outside of the TPZ and "reach" into the area, carefully extracting the invasives without damaging the protected trees or native understory whatsoever.
3. In some cases, a restoration of native understory may be required. An approved list of native plants is included as appendix B

CONSTRUCTION DAMAGE TO PROTECTED TREES

Any damage or injury to trees shall be reported within 6-hours to the Project Arborist and Site Superintendent or City Arborist so that mitigation can take place. All mechanical or chemical injury to branches, trunk or to roots over 2-inches in diameter shall be reported in the monthly inspection report. In the event of injury, the following mitigation and damage control measures shall apply:

- **Root injury:** If trenches are cut and tree roots 2-inches or larger are encountered they must be cleanly cut back to a sound wood lateral root. All exposed root areas within the TPZ shall be backfilled or covered within one hour. Exposed roots may be kept from drying out by temporarily covering the roots and draping layered burlap or carpeting over the upper 3-feet of trench walls. The materials must be kept wet until backfilled to reduce evaporation from the trench walls.

- **Bark or trunk wounding:** Current bark treatment methods shall be performed by a qualified tree care specialist within two days.
- **Scaffold branch or leaf canopy injury:** Remove broken or torn branches back to an appropriate branch capable of resuming terminal growth within five days. If leaves are heat scorched from equipment exhaust pipes, consult the Project Arborist within 6 hours.

Construction Injury Mitigation

A mitigation program may be required if it is found the approved development will cause drought stress, dust accumulation or soil compaction to trees that are to be saved. To help reduce impact injury, one or more of the following mitigation measures shall be implemented and supervised by the Project Arborist as follows:

- **Irrigation Program:** Irrigate to wet the soil within the tree protection zone to a depth of 24-inches to 30-inches. Or, apply sub-surface irrigation at regular specified intervals by injecting on approximate 3-foot centers, 10-gallons of water per inch trunk diameter within the tree protection zone. Duration shall be until project completion or monthly until seasonal rainfall totals at least 8-inches of rain, unless specified otherwise by the certified arborist.
- **Dust Control Program:** During periods of extended drought, wind or grading, spray wash trunk, limbs and foliage to remove accumulated construction dust.
- **Compaction Mitigation:** If inadvertent compaction of the soil has occurred within the tree protection zone, the soil shall be loosened by one or more of the following methods to promote favorable root conditions: vertical mulching, soil fracturing, core-venting, radial trenching or other method approved by the City Arborist.
- **Aeration System:** If an approved paving, hardscape or other compromising material encroaches within the tree protection zone, an aeration system may be required and shall be designed by the Project Arborist and used within this area.

Non-compliance, Penalty and Enforcement

Non-compliance with any City mandated mitigation shall result in enforcement of penalties set forth in section 8.740 of the West Linn Tree Ordinance.

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Beyond clean water.

Water Quality Protection
Surface Water Management
Wastewater Collection & Treatment

J. Michael Read
Interim Director

October 22, 2014

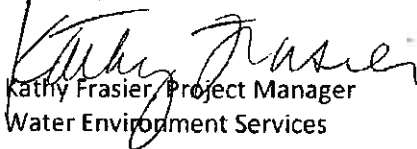
Ken Worcester
Parks and Recreation Director
City of West Linn
22500 Salamo Road
West Linn OR 97068

RE: Willamette River Trail – Property Owner Authorization

Dear Ken:

Enclosed is the Tri-City Service District's authorization for the City of West Linn to submit an application for Class II Parks Design Review and Flood Management approval for the proposed Willamette River Trail.

Sincerely,


Kathy Frasier, Project Manager
Water Environment Services

Enclosure

Exhibit PM-5 Owner Consent

As an authorized representative of the owner of Clackamas County assessors map 3 1E 2, tax lot 100, I hereby authorize the City of West Linn Parks and Recreation Department to submit an application for Class II Parks Design Review and Flood Management Area approval to the City of West Linn Planning Department as it relates to our affected property.

My authorization is given with the understanding that the proposal is consistent with the Plan presented and that consent to participate in the process in no way conveys consent or agreement by the Board of Clackamas County Commissioners or the Tri-City Service District to convey any interest or right in any real property.



Signature

J. Michael Read, Interim Director

Print name please

Tri-City Service District

For (ownership entity)

10/21/2014

Date signed

ORIGINAL

AMENDMENT OF LEASE

THIS AMENDMENT OF LEASE is entered into effective as of the 31st day of December, 2004, by and between *PORTLAND GENERAL ELECTRIC COMPANY*, an Oregon Corporation ("Lessor") and the *CITY OF WEST LINN*, a municipal corporation of the State of Oregon ("Lessee").

RECITALS

- A. Lessor and Lessee entered into a Lease dated April, 1980 (the "Lease"), consisting of certain property described therein located in Clackamas County, Oregon.
- B. Lessor and Lessee have agreed to amend the terms of the Lease to extend the Term of the Lease and to include additional property under the Lease, upon the terms and conditions set forth herein.
- C. Capitalized terms not defined herein shall have the same meaning as set forth in the Lease. References herein to the Lease shall include this Amendment and all prior amendments to the Lease, except where the context otherwise requires.

NOW, THEREFORE, for valuable consideration, the current receipt, reasonable equivalence, and sufficiency of which are hereby acknowledged by each of the parties, the parties each agree as follows:

- 1. **Recitals.** The Recitals are true and correct and incorporated herein by this reference.
- 2. **Term.** The Term of the Lease is extended through the 31st day of December, 2030, subject to and conditioned upon the terms and conditions of Lessor's License with the Federal Energy Regulatory Commission issued in 2005 ("Lessee's License"). Notwithstanding the foregoing, the Lease shall terminate, at Lessor's option and upon not less than one hundred eighty (180) days prior written notice to Lessee in the event Lessee's License is terminated. Lessor shall have no Lessee improvement obligations in connection with the extension of the Term and/or this Amendment.
- 3. **Premises.** The description of the property subject to the Lease as set forth in the Lease is hereby deleted in its entirety and replaced with the property described in Exhibit "A" hereto (the "Premises"). Nothing contained in the Lease or this Amendment shall grant any right to any property owned by third parties (e.g., Blue Heron Paper, West Linn Paper, or the like). Lessee accepts the Premises "AS IS" in its present state and condition and further understands and agrees that such third party land ownership may limit the ability to use certain portions of the Premises. Any use of the Premises by Lessee shall be in such a manner as to protect sensitive resources and the public.
- 4. **Rental.** Lessee shall pay Lessor the sum of 0 Dollars (\$0.00) for the term commencing January 1, 2005, and extending through and including December 31, 2030. Said sum shall be paid to Lessor in advance on or before the 30th day of September, 2005. In the event the Lease is terminated earlier in accordance with the terms of Section 2 above for reasons other than the default of Lessee, Lessee shall receive a pro rata refund of the rent for the remaining stated Term of the Lease. Lessee represents, covenants, and warrants that except as provided herein, this Lease remains unmodified and in full force and effect; that Lessor has not breached any duty or obligation to Lessee to date; that Lessee does not dispute any sum owed or paid to Lessor; and Lessee further acknowledges and agrees that said sums are and were justly due Lessor without defense or setoff in accordance with the terms of this Lease and that Lessee is unconditionally liable therefore.
- 5. **ODFW.** Lessee represents, covenants, and warrants that Lessee's obligations pursuant to that certain Public Access Agreement by and between Lessee and the State of Oregon, by and through its Department of Fish and Wildlife ("ODFW") dated August 22, 1980, have been satisfied in accordance with the terms of that agreement and that Lessee does not have any remaining obligations to ODFW or any third party with respect to the Premises.

6. Revisions to the Lease. The following provisions are hereby added to the Lease:

6.1 "Homeland Security. Notwithstanding anything to the contrary contained herein, Lessor reserves at all times the right to enter upon the Premises at any time upon the request of the Oregon Office of Safety and Security/Homeland Security or the US Department of Homeland Security and/or any other State or Federal security agency to allow access to representatives of such agencies at all times. Lessor shall not be liable to Lessee or to any third party for any action taken by any governmental authority, public safety personnel, or any third party, nor shall Lessor be liable for any act or omission of Lessor that Lessor deems reasonable or appropriate to protect life or property under such circumstances."

6.2 "Limitation on Remedies/Damages. In no event shall Lessor be liable to Lessee for any lost or prospective profits or any other special, punitive, exemplary, consequential, incidental or indirect losses or damages (in tort, contract or otherwise) under or in respect of this Lease or for any failure or performance related hereto howsoever caused, whether or not arising from Lessor's sole, joint or concurrent negligence. The obligations of Lessor under this Lease shall not be personally binding on, nor shall any resort be had to the private properties of, any of its trustees or board of directors and officers, as the case may be, the general partners thereof, or any beneficiaries, stockholders, employees, or agents of Lessor, or its property managers. It is expressly understood and agreed that any money judgment against Lessor resulting from any default of other claim arising under this Lease shall be satisfied only out of the real property upon which the Premises are located. No other real, personal or mixed property of Lessor, wherever situated, shall be subject to levy on any such judgment obtained against Lessor. If such income is insufficient for the payment of such judgment, Lessee shall not institute any further action, suit, claim, or demand, in law or in equity, against Lessor for or on account of such deficiency."

6.3 "Compliance with Laws. At all times, Lessee shall promptly comply with all laws, orders, rules, and regulations of all State, Federal, municipal and local governments, departments, commissions, boards, or similar body (including without limitation the Federal Energy Regulatory Commission) which shall impose any requirement, order or duty upon Lessor or Lessee with respect to the Premises, including without limitation, those relating to adverse effects on the environment, arising out of or in any way related to Lessee's use or manner of use or occupancy thereof, and shall indemnify and hold Lessor harmless therefrom. The parties recognize and agree that the Lease and the relationship of the parties is subject to all applicable state or federal laws, including without limitation, *The Money Laundering Control Act*, and *The USA Patriot Act and Bank Secrecy Act*, as any of same may be amended from time to time, and/or by any rules and regulations promulgated thereunder or under any other comparable federal or state statute (individually and cumulatively "Laws"). The term "Laws" is used in this Agreement in its very broadest sense. Lessee represents, covenants and warrants to Lessor that (1) Lessee is not listed on the US Treasury's Office of Foreign Assets Control ("OFAC") Specially Designated Nationals and Blocked Persons ("SDN") List; (2) Lessee is not an entity that Lessor is prohibited from conducting business with under any Laws; (3) Lessee will not violate any Laws at any time during the Term of the Lease. In the event of the breach of the all or any portion of the foregoing representations, covenants and/or warranties, and/or the violation of any Laws, Lessee shall immediately report the same to Lessor in writing and supply Lessor with all information and reports with respect to the same. All information described herein shall be provided to Lessor regardless of any claim by Lessee that it is confidential or privileged. Within three (3) business days of request by Lessor, Lessee shall provide Lessor with certification or other evidence, in a form and substance reasonable acceptable to Lessor, confirming Lessee's compliance with the foregoing. In addition to the indemnity obligations contained in the Lease, Lessee shall indemnify, defend and hold harmless Lessor and the property upon which the Premises are located to the fullest extent allowed by law, but subject to Article XI Section 7 of the Oregon Constitution and ORS 30.260 through ORS. 30.300 (the Oregon Tort Claims Act), from and against all claims, losses, damages, monitoring costs, response costs, liabilities, and other costs and expenses arising during or after the Term caused by, out of, or in connection with, the breach of the all or any portion of the foregoing representations, covenants, and or warranties, and/or the violation of any Laws. This indemnity shall survive the expiration or earlier termination of the term of the Lease or the termination of Lessee's right of possession and shall remain fully enforceable thereafter."

Exhibit PM-5 Owner Consent

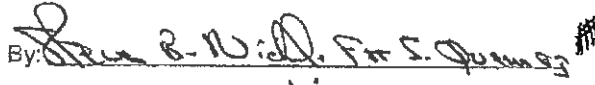
7. **Brokers.** Lessor shall not have any obligation to Lessee or to any third party with respect to any real estate broker in connection with the extension of the Term and/or this Amendment.

8. **Controlling Agreement.** In the event of any conflict between any other part of the Lease and this Amendment, the terms and conditions of this Amendment shall control. To the extent that this Amendment may have been executed following any effective dates set forth herein, said effective dates are hereby ratified, confirmed, and approved. This Amendment may be executed in counterparts, and such counterparts together shall constitute but one original of the Amendment. Each counterpart shall be equally admissible in evidence, and each original shall fully bind each party who has executed it.

9. **Entire Agreement.** This instrument, along with any exhibits and attachments or other documents affixed hereto or referred to herein, constitute the entire and exclusive agreement between Lessor and Lessee relative to the Premises, and the Lease, and the Lease may be altered and/or revoked only by an instrument in writing signed by both Lessor and Lessee. Lessor and Lessee hereby agree that all prior written and oral agreements, understandings and/or practices relative to the leasing of the Premises are superseded by this instrument. Except as set forth in this Amendment of Lease, the terms and conditions of the Lease shall remain unmodified and in full force and effect.

The parties have executed this Amendment effective as of the 31st day of December, 2004. This Amendment shall be binding upon and inure to the benefit of the parties hereto and their successors and assigns. Lessee shall not record this Amendment.

LESSOR: PORTLAND GENERAL ELECTRIC COMPANY

By: 
Title: VP, Generation

LESSEE: CITY OF WEST LINN


By: 
Title: City Manager

EXHIBIT A

All that part of the Ambrose Fields and Ann Fields, his wife's Donation Land Claim No. 52 in Sections 2 and 3, Township 3 South, Range 1 East, of the Willamette Meridian, in the City of West Linn, County of Clackamas and State of Oregon, lying Easterly of the Easterly line of that property contained in Deed to Harvey and Mary Schroeder recorded September 22, 1977 as Fee No. 77-38490, and lying Westerly of the Westerly line of Parcel V of that property contained in Deed to West Linn Paper Properties Company, an Oregon Corporation recorded April 4, 1997 as Fee No. 97-024884, and lying between the Willamette and Tualatin Tracts as platted and on record in the office of the county recorder of Clackamas County, Oregon and the meander line of the North bank of the Willamette River and the center line of the Tualatin River. Said tract of land being more particularly described as follows:

Beginning at a point which is South 53° 45' West 306.9 feet distant from the Southeast corner of the said Ambrose Fields Donation Land Claim; thence North 39° West 200 feet to the Southeast corner of Tract No. 15 of the Willamette and Tualatin Tracts; thence along the Southeasterly side line and a continuation of said Southeasterly side line of Tract No. 15 South 54° 23' West 415 feet to a point; thence South 35° 7' East 203 feet to a point; thence South 53° 45' West 330 feet to a point; thence North 35° 7' West 208 feet to a point, said point being also the Southeast corner of Tract No. 16 of the Willamette and Tualatin Tracts; thence tracing the Southerly side line of Tracts 16, 19, 20 and 23 of the Willamette and Tualatin Tracts, South 54° 23' West a distance of 1576 feet to a point; thence tracing the Southerly side line of Tracts 23 and 24 of the Willamette and Tualatin Tracts, South 82° 21' West 587 feet to a point; thence South 72° 8' West across Twelfth Street and along the Southerly side line of Tract No. 35 of the Willamette and Tualatin Tracts, 459 feet to a point; thence North 45° 38' West along the Westerly side line of Tract No. 35 and across the right of way of the Portland General Electric Company's transmission line and along the Southwesterly side line of Tract No. 36 of the Willamette and Tualatin Tracts to a point in the county road, a distance of 459 feet; thence North 77° 25' West along the Southerly side line of Tracts 44, 45, 48, 50 and 51, all in the Willamette and Tualatin Tracts, a distance of the 2328 feet to a point; thence South 72° 35' West tracing the Southerly side line of Tracts 51 and 54 of the Willamette and Tualatin Tracts 315 feet to a point; thence North 51° 40' West tracing the Southeasterly side line of Tracts 54, 55 and 57 to a point in the Southwesterly side line of Tract No. 57 where the said Southwesterly side line of said tract intersects the line between the Jos. A. Fields and Ambrose Fields Donation Land Claims; thence West along the line between the Jos. A. Fields and Ambrose Fields Donation Land Claims to the center line of the Tualatin River; thence tracing the center line of the Tualatin River in a general Southeasterly direction to a point where the center line of the Tualatin River intersects the meander line of the North bank of the Willamette River; thence in a Northeasterly direction tracing the said meander line of the North bank of the Willamette River to the place of beginning.

