



22500 Salamo Road
West Linn, Oregon 97068
<http://westlinnoregon.gov>

PLANNING COMMISSION MEETING

Wednesday, October 17, 2012

6:30 p.m. - Prehearing meeting - Rosemont Room

7:00 p.m. - Regular Meeting - Council Chambers

1. Call to Order
2. Public Comment
3. Public hearing: CUP-12-02/DR-12-04 (water treatment plant) and CUP-12-04/DR-12-14 (water transmission line)
4. Items of interest from the Planning Commission
5. Items of interest pertaining to the Commission for Citizen Involvement
6. Items of interest from staff
7. Adjourn

Attachments (Planning Commission members only):

Memo regarding revisions to CUP-12-02/DR-12-04 (water treatment plant)
Staff report for CUP-12-04/DR-12-14 (water transmission line)

Tentative agenda for upcoming Planning Commission meetings:

October 18: continued hearing if needed

Meeting Notes:

The Council Chambers is equipped with an induction loop and a limited number of neck loops for the hearing impaired. Please let the City know if you require any special assistance under the Americans with Disabilities Act, please call City Hall 48 hours prior to the meeting date, 503-657-0331.



CITY OF West Linn

22500 Salamo Road
West Linn, OR 97068

STAFF REPORT FOR THE PLANNING COMMISSION

FILE NUMBER: CUP-12-04/DR-12-14/MISC-12-10/WA-12-03/WR-12-01

HEARING DATE: October 17, 2012

REQUEST: Conditional Use, Class II Design Review, Class II Parks Design Review, Flood Management Area (FMA), Water Resources Area (WRA), and Willamette River Greenway (WRG) approval to install a 42-inch raw water pipe (RWP) and 48-inch finished water pipe (FWP) in the City of West Linn.

APPROVAL CRITERIA: Community Development Code (CDC) Chapters 11, R-10; 14, R-4.5; 19, General Commercial; 27, FMA; 28, WRG; 32, WRA; 55, Design Review; 56, Parks Design Review; and, 60, Conditional Uses

STAFF REPORT PREPARED BY: Zach Pelz, Associate Planner/Peter Spir, Associate Planner

Planning Director's Initials *JP*

City Engineer's Initials *ESC*

EXECUTIVE SUMMARY

The applicant proposes to expand its existing water treatment plant (WTP) to increase treatment capacity and to increase the size of the pipeline that brings the water to the plant and carry the treated water to Lake Oswego. The Planning Commission reviewed the staff report and heard public testimony on the proposed treatment plant expansion on May 16, 2012. This staff report is focused on the proposed water lines to and from the WTP.

The applicant proposes to install a 42-inch-diameter raw-water pipeline (RWP) from Meldrum Bar State Park in Gladstone under the Willamette River and Mary S Young Park at a depth of approximately 34-60 feet. The RWP would rise gradually toward the surface as it extends toward two Oregon Parks and Recreation District (OPRD) lots at the south end of Mapleton Drive, until arriving at the drilling operations staging area on one of OPRD lots (see Exhibit PC-3, Section 6, Figure 1). It would extend from there to the water treatment plant at 4260 Kenthorpe Way via an open trench within Mapleton Drive. A proposed 48-inch-diameter finished-water pipeline (FWP) would be installed from the water treatment plant via trenching within the Mapleton Drive and Highway 43 rights-of-way to West Linn's



northern city limits. Following construction, Mapleton Drive, Kenthorpe Way and affected portions of Highway 43 would be repaved to their existing width.

This proposal is the result of a partnership between the Cities of Lake Oswego and Tigard to upgrade treatment capacity at the Lake Oswego Water Treatment Plant, increase storage capacity in Lake Oswego and supply water to residents in Tigard.

According to the applicant, the pipelines would provide a critical water supply of local and regional importance.

The proposal avoids most environmental impacts by boring deep below the Willamette River and the streams, wetlands and habitat areas in Mary S Young Park and by trenching in paved streets above streams contained in culverts. However, as proposed, the 7,715 square-foot staging area would entail the removal of 19 non-significant trees in fair to poor condition and adjacent understory (shrubs, groundcover, etc.). Following the installation of the pipe, all disturbed surfaces would be restored and revegetated with native groundcover, plants, shrubs and trees.

The project has potential to produce significant construction impacts, including traffic congestion (see Finding 14, response to Comprehensive Plan Goal 12) and noise (see Finding 14, page 31). Periodic traffic delays and inconveniences during construction are proposed to be mitigated by limiting construction, on a daily basis, to one discrete 100- to 150-foot long section of the affected street. The applicant's proposal provides emergency vehicle access along all roadways at all times except at three locations (for a total of 3- to 6-days) on Mapleton Drive where the open-cut trench moves to the opposite side of the street. The applicant's contractor will be required to notify TVF&R of any access closures on Mapleton Drive. Emergency access to within 150-feet of all homes, as required by TVF&R would be maintained at all times. (See Finding 14, page 31).

During the approximately 48 hour, continuous "pull-back" phase of the drilling operation, mud and water would be pulled back through the pipe and a considerable volume of material would exit the bore hole at the staging area on the OPRD lots. The applicant proposes to contain this material, collect it in vacuum trucks, and dispose of it offsite. This activity will generate considerable truck traffic and relative high noise levels which could be intolerable for immediate neighbors.

The applicant has provided several studies and plans that address potential impacts and has agreed to accept these plans and the recommendations contained therein as conditions of approval.

Staff has reviewed the applicant's proposal relative to all applicable CDC requirements (see the Approval Criteria and Findings addendum for details) and finds that there are sufficient grounds for approval, subject to the recommended Conditions of Approval (see page 10).



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GENERAL INFORMATION

APPLICANT: Lake Oswego-Tigard Water Supply Partnership
Eric Day
4101 Kruse Way
Lake Oswego, OR 97035

**APPLICANTS/
REPRESENTATIVES:** Joel Komarek
City of Lake Oswego
4101 Kruse Way
Lake Oswego, OR 97035

**PROPERTY
OWNER:** City of Lake Oswego
PO Box 369
Lake Oswego, OR 97034

Oregon Parks and Recreation District (OPRD)
725 Summer St., NE Suite C
Salem, OR 97301-1266

Oregon Department of Transportation
6000 SW Raab Rd.
Portland, OR 97221

City of West Linn
22500 Salamo Rd.
West Linn, OR 97068

SITE LOCATION: Multiple (Mary S. Young Park, OPRD Parcels, Mapleton Drive public right-of-way, and Highway 43 public right-of-way)

**LEGAL
DESCRIPTION:** Clackamas County Assessor's Map 2-1E-24AC , tax lots 00200, 00100, and Map 2-1E-24 tax lot 00600. Public rights-of-way are not legally described.

SITE SIZE: N/A

ZONING: R-10, Single-family Residential Detached; R-4.5, Single-family Residential Detached and Attached/Duplex; GC, General Commercial

**COMP PLAN
DESIGNATION:** Low-density Residential; Medium-density Residential; Commercial



120-DAY PERIOD: The application was deemed complete on August 14, 2012. The 120-day maximum application-processing period has been waived by the applicant (see Exhibit PC-6, page 2). A local decision on this application must be reached no later than August 14, 2013.

PUBLIC NOTICE: Public notice was mailed to the Robinwood Neighborhood Association and to affected property owners on September 25, 2012. The property was posted with a sign on October 5, 2012. In addition, the application has been posted on the City's website and was published in the West Linn Tidings on October 4, 2012. The notice requirements have been satisfied.

BACKGROUND

In an effort to develop a sustainable and cost effective supply of clean drinking water for their residents, the Cities of Lake Oswego and Tigard entered into a partnership to jointly construct facilities to, treat, store and supply potable water. The Lake Oswego/Tigard Water Partnership (LOTWP) proposes a system of facility upgrades and new facilities that would begin in Gladstone on the Clackamas River, extend to the Lake Oswego Water Treatment Plant (WTP) in West Linn and pump treated water to Lake Oswego and then Tigard. In addition to providing water to Lake Oswego and Tigard, the upgraded system would enable implementation of a critical component of West Linn's approved Water Master Plan by increasing the backup or emergency water supply when a need arises, pending execution of an IGA.

As part of the overall project, the applicant proposes to install a 42-inch-diameter raw-water pipeline (RWP) and 48-inch-diameter finished-water pipeline (FWP) below-ground. According to the applicant, the RWP/FWP is a critical water supply of local and regional importance. The existing RWP/FWP has provided municipal drinking water since it was constructed under the jurisdiction of Clackamas County in 1967. Also according to the applicant, the pipelines have operated safely and efficiently for 45-years but are currently undersized to meet current and long-term needs and are vulnerable based on current knowledge of local seismic hazards.

The Conditional Use criteria recognize that certain uses, such as schools, religious institutions and major utilities, do not fit neatly within the City's various zoning districts but that these uses can be made to be compatible with surrounding uses through the use of sympathetic design and other techniques to mitigate the impacts. To be approved as a Conditional Use, applicants must demonstrate that the site size is physically adequate for the proposed use, that granting the proposal will provide a facility that meets the overall needs of the community, that adequate public facilities are available to serve the property at the time of occupancy and that the proposal is consistent with applicable sections of the City's Comprehensive Plan and CDC.



As previously noted, the City's evaluation of project impacts predominately relates to impacts associated with the proposed use, and the impacts that construction would have on displaced or impacted trees, wetlands and other environmental features. The RWP/FWP is somewhat unique in that it is clearly a major utility that is expected create traffic and noise impacts during construction, but following construction is expected to have a negligible impact to the community, adjacent properties, or the environment. Similarly, many CDC standards (e.g., Design Review, Parks Design Review, Stormwater Quality and Detention, etc.) do not address below-ground structures in the public right-of-way. For this reason, many of the staff findings later in this report conclude that various CDC criteria are not applicable to the decision regarding this proposal.

The primary impacts associated with this proposal come about during the construction phase of the RWP/FWP project. As such, the City requested a detailed construction management plan to identify the location, duration and extent of construction-related activities. Subsequently, the applicant supplied a series of detailed plans (Construction Management Plan, Exhibit PC-3, Section 10; Construction Noise Analysis Memo, Exhibit PC-3, Section 11; and, Traffic Management Plan, Exhibit PC-3, Section 12) and technical memoranda (Water Resource Area and Habitat Conservation Area Technical Memorandum, Exhibit PC-3, Section 5; Horizontal Directional Drill Disturbance Evaluation, Exhibit PC-3, Section 6; Seismic and Geologic Hazards, Exhibit PC-3, Section 8; and, Erosion Control and Sediment Plan, Exhibit PC-3, Section 13) to offer solutions that mitigate for potential impacts during construction as well as to provide technical documentation addressing the long-term safety issues of the RWP/FWP facility. The applicant has agreed to accept these plans and the recommendations contained therein as conditions of approval for the application.

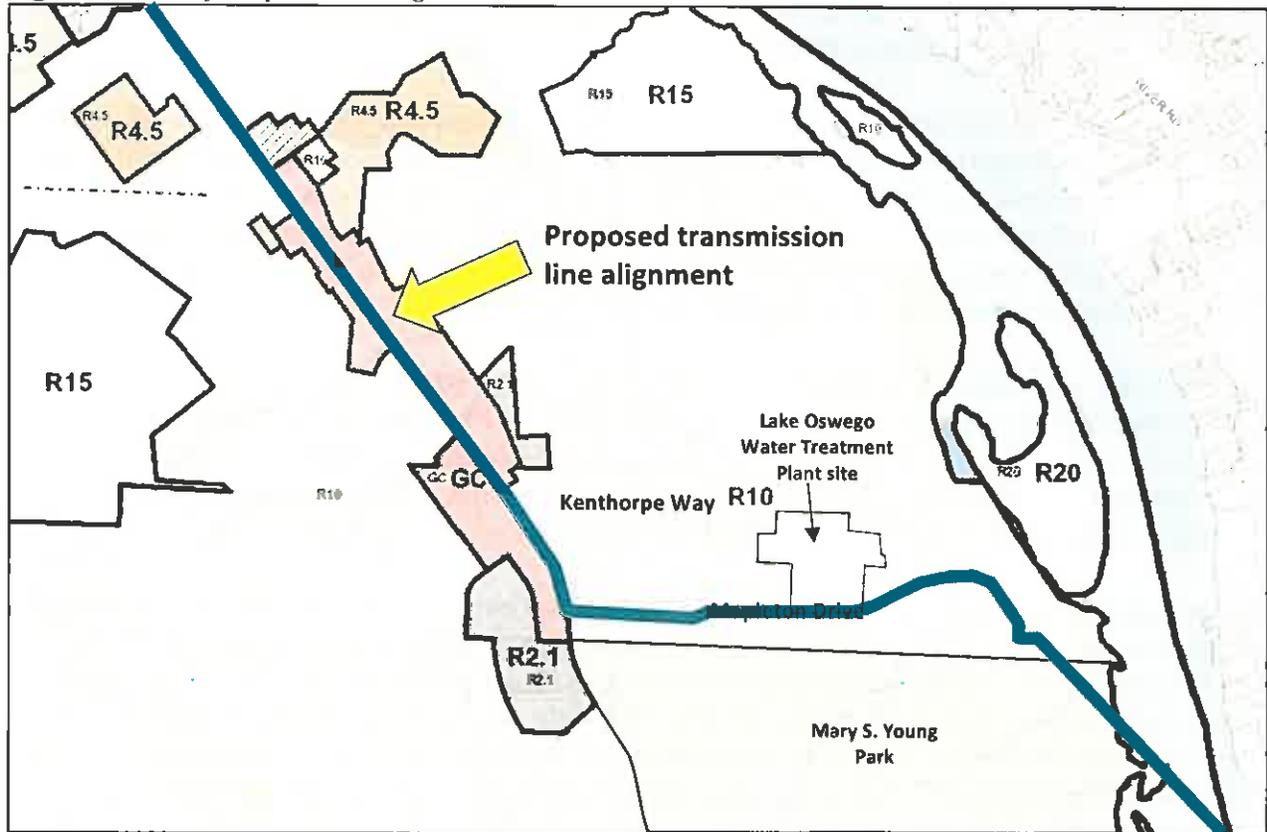
Previous approvals. The Lake Oswego WTP has been in operation in West Linn since 1967 and has been serviced by raw- and finished-water pipelines originating from the Clackamas River since that time. The current raw- and finished-water transmission lines enter the City just south of Mary S. Young Park and then head north, through the park, then along Mapleton Drive, entering the WTP site from the east end of Kenthorpe Way. The existing finished-water line exits the WTP site via Kenthorpe Way and then extends along Highway 43 to Lake Oswego.

Since 1967, the City of Lake Oswego has received approval from the City of West Linn for five modifications to the WTP facility. In January 2012, the Partnership submitted a land use application to the City of West Linn for Conditional Use and Class II Design Review approval for an expansion of the Lake Oswego Water Treatment Plant (WTP) at 4260 Kenthorpe Way (CUP-12-02/DR-12-04). On May 16, 2012, the West Linn Planning Commission granted the Partnership's request to suspend the proceedings on the application in order to combine the WTP and RWP/FWP land use applications.

Surrounding Land Use and Zoning: As shown of Figure 1 below, the subject property lies within the R-10, R-4.5 and GC zoning districts. Residential and commercial uses surround RWP/FWP alignment through Mary S. Young State Park and along Mapleton Drive and Highway 43 (see Table 1). Areas proposed to accommodate the pipeline along State Highway 43 are generally characterized by commercial uses with single-family uses near the northern end of the City limits.



Figure 1 Vicinity Map and Zoning



Source: Applicant submittal, 2011

Table 1 Surrounding Land Use and Zoning

DIRECTION FROM SITE	LAND USE	ZONING
North	Single-family residential, Commercial	R-10, R-4.5, GC
East	Single-family residential, Mary S. Young State Park	R-10, R-20
South	Single-family residential, Mary S. Young State Park	R-10
West	Single-family and multi-family residential, and Commercial	R-10, R-2.1, GC

Project Description:

As previously noted, the applicant requests approval to install a 42-inch RWP from Meldrum Bar State Park in Gladstone under the Willamette River via horizontal directional drilling (HDD) at an approximate depth of 60 feet. The boring would continue at a depth between 60 and 34 feet under the wetlands and streams in Mary S Young Park. Then the RWP would rise gradually toward the surface as it extends toward two Oregon Parks and



Recreation District (OPRD) -owned lots (tax lots 100 and 200) at the south end of Mapleton Drive, until arriving at the terminus of drilling operations/staging area on tax lot 200, 7-feet below grade (see Exhibit PC-3, Section 6, Figures 1-3).

As proposed, the creation of an approximately 7,715 square-foot staging area on the OPRD lots and associated trenching would entail the removal of 19 non-significant trees in fair to very poor condition and adjacent understory (shrubs, groundcover, etc.). Following the installation of the pipe, the trench would be filled and all disturbed surfaces would be restored and revegetated with native groundcover, plants, shrubs and trees (although trees cannot be planted over the shallow sections of the pipeline).

During the approximately 48 hour pull-back phase of the HDD operation beneath the Willamette River, mud and water would be pulled back through the HDD pipe and a considerable volume of material would exit the bore hole on the OPRD lots. The applicant proposes to contain this material, collect it in vacuum trucks, and dispose of it offsite. Erosion control measures would contain and spills associated with this phase.

The applicant proposes to transition to an open-cut trench on OPRD tax lot 200 at a depth of approximately 5- to 7-feet that would extend north and west along Mapleton Drive, terminating at the Lake Oswego Water Treatment Plant (WTP) at 4260 Kenthorpe Way. (see Exhibit PC-3, Section 7, pages 38-57). The FWP would be installed via open-cut trench from the WTP to Mapleton Drive and then west at a depth of approximately 5- to 7-feet beneath Mapleton Drive, in an open-cut trench, to its intersection with Highway 43 where it would then extend north in the Highway 43 right-of-way to Lake Oswego. Following construction, Mapleton Drive, Kenthorpe Way and affected portions of Highway 43 would be repaved to their existing width. All of the work areas would be contained by erosion control measures.

Site Conditions:

The proposed pipeline alignment underlies the Willamette River and Mary S. Young Park, extends across two OPRD owned lots and follows the Mapleton Drive and Highway 43 rights-of-way. The topography along the proposed alignment includes a gradual elevation gain of 125 feet from the Willamette River to the Water Treatment Plant. Most of the gain is in the first 1,200 feet of the RWP route in the Mapleton Drive ROW from the OPRD lots. (See Exhibit PC-3, Section 19, Figures 11-13).

The Mary S. Young Park and OPRD parcels are developed as passive- and active-oriented parkland, are wooded and exhibit moderate to flat topography. The approximately 7,715 square-foot staging area, proposed for drilling operations on the OPRD lots, is designated as Habitat Conservation Area (see Exhibit PC3, Section 5, Figure 3, on page 13 regarding the HCA and Section 7, page 57 regarding tree protection). The site contains numerous trees, 19 of which would be removed along with the adjacent understory (shrubs, groundcover, etc.). Reportedly the trees (black cottonwood, red alder, big leaf maple and bitter cherry) are in fair to poor condition and deemed by the City's Arborist to be non-significant.



The Mapleton Drive and Highway 43 portions of the alignment are developed as public streets. Mapleton Drive is functionally classified as a collector roadway in the West Linn Transportation System Plan (TSP) and exhibits substandard pavement width. State Highway 43 is functionally classified as a major arterial in the City's TSP.

The proposed alignment spans nine streams protected as Water Resource Areas (WRAs) in the City: Arbor Creek, Robinwood Creek (2 branches), Fern Creek, Robin Creek (2 branches), Gans Creek, Trillium Creek, and Heron Creek. (See Exhibit PC 3, Section 5, page 2 for the descriptions of each of the proposed stream crossings and Figure 1 on page 11 to see their locations). All of these streams are in pipes buried beneath paved streets. As proposed, the pipeline alignment does not extend beyond the edge of existing roadway pavement through riparian corridors and water resource areas after it passes the OPRD lots and the streams and trees along the route are proposed to be protected. (See Exhibit PC- 3, Section 7, starting at sheet 3-C-17). However, the proposed alignment may impact some existing private encroachments in the public right-of-way, potentially impacting landscaping and mailboxes in the public right-of-way.

APPROVAL CRITERIA AND ANALYSIS

The applicant's proposal described above qualifies as a major utility per Chapter 2 of the CDC:

"A utility facility or service that will have, or the installation of which will have, a significant impact on the surrounding uses or the community in terms of generating or disrupting traffic, interfering with access to adjacent properties, creating noise or causing adverse visual effects. "Major utility" includes, but is not limited to, a substation, pump station, water storage tank, sewer plant, transmission lines for water, drainage or sewerage collection systems, gas or electric, or other similar use."

Major utilities, such as the raw- and finished-water lines are allowed as conditional uses in the R-10, R-4.5 and General Commercial districts pursuant to CDC sections 11.060, 14.060, and 19.060. Further, a conditional use is subject to the provisions in CDC Chapter 55 (per CDC subsections 60.070(B) and 60.030(B)). Due to its location, the proposed water transmission line is subject to the following additional CDC approval standards: CDC Chapter 56 (Parks Design Review), CDC Chapter 27 (Flood Management Areas), CDC Chapter 28 (Willamette River Greenway), and CDC Chapter 32 (Water Resource Areas).

Prior to proposing the RWP and FWP alignment, the applicant considered several alternatives (see Exhibit PC-3, page 13). After evaluating alternative routes through Mary S. Young Park, Mark Lane, and Cedar Island, they concluded that the proposed route least impacts to environmental resources. The use of existing paved streets (Mapleton Drive and Highway 43) would involve crossing piped sections of streams whereas routes outside of the rights-of-way would have required traversing open channel streams with the attendant adverse environmental consequences.



Following construction, the raw- and finished-water pipes would be undetectable above-ground except for occasional manhole covers located within the public rights-of-way. However, the construction of the proposed project over the course of 32-months will create environmental impacts (most notably at the 7,715 square foot staging area on the OPRD lots) and affect residents and travelers along the proposed pipeline alignment. Accordingly, much of staff's review is concerned with the methods to reduce construction impacts.

KEY CONCERNS

Impact during construction.

Construction of the RWP/FWP will be lengthy, noisy in some areas, and inconvenient for residents and drivers along the pipeline alignment. Construction impacts are expected to be greatest at the proposed staging area that would be graded to accommodate noisy drilling operations and along the rights-of-way where construction activity would affect travelers and area residents.

The applicant supplied a series of detailed plans (Construction Management Plan, Exhibit PC-3, Section 10; Construction Noise Analysis Memo, Exhibit PC-3, Section 11; and, Traffic Management Plan, Exhibit PC-3, Section 12) and technical memoranda (Water Resource Area and Habitat Conservation Area Technical Memorandum, Exhibit PC-3, Section 5; Horizontal Directional Drill Disturbance Evaluation, Exhibit PC-3, Section 6; Seismic and Geologic Hazards, Exhibit PC-3, Section 8; and, Erosion Control and Sediment Plan, Exhibit PC-3, Section 13) to offer solutions to mitigate potential impacts during construction as well as to provide technical documentation addressing the long-term safety issues of the RWP/FWP facility. The applicant also proposed to institute a neighbor advisory committee that will meet monthly to evaluate project progress and resolve problems as they arise.

Traffic. Periodic traffic delays and inconveniences during the construction are proposed to be mitigated by limited construction, on a daily basis, to one discrete 100- to 150-foot long section of the affected street. The Construction Management Plan (see Exhibit PC-3, Section 10) also states that emergency vehicles will have access 24 hours a day, except during three periods of open-cut trench construction, totaling 3- to 6-days, on Mapleton Drive when the RWP/FWP alignment moves to the opposite side of the street. The applicant's contractor will be required to notify TVF&R of access closures. Emergency access to within 150-feet of all homes, as required by TVF&R would be maintained at all times. (See Exhibit PC-3, Section 10, Subsection 4.2.5 and Exhibit PC-5 – September 27, 2012, memo regarding project updates, issue number 7: Emergency Access)

During the two-day long pipe pullback phase when the 42-inch raw water line is pulled through the tunnel from Gladstone, 144 trips are expected per 24-hour period. Most of these trips will be trucks hauling the drilling mud from the site. This activity will go on continuously for up to 48 hours.



The traffic management plan (Exhibit PC-3, Section 12) identifies existing conditions as well as proposed access and traffic control strategies for all travel modes and satisfactorily demonstrates an acceptable level of automobile and non-automobile circulation for the duration of the proposed construction. As such, the Partnership has committed to construction management practices such as:

- Bussing construction workers to the job site from a remote location, thus keeping additional cars from parking along Mapleton Drive and Kenthorpe Way;
- Providing access for emergency responders at all times of the day and night and daily contact with Tualatin Valley Fire and Rescue (TVF&R) on the status of emergency access; and
- Providing pedestrian access and bicycle access around the work zones and to Mary S. Young Park at all times.

Noise. Proposed night work along Highway 43 to reduce traffic impacts as called for the Oregon Department of Transportation (ODOT) could result noise impacts for area residents. The approximately 48 hour, continuous HDD pull through phase (see Exhibit PC-3, Section 11) at the staging area on the OPRD lots is estimated to generate a maximum of 69 dBA, which will exceed the Oregon DEQ 10pm-7am standards. Despite the fact that daytime construction noise is exempt from the Municipal Code standards, ENVIRON (Exhibit PC-3, Section 11) has recommended a range of measures to reduce the number and volume of noise sources, including a 16-foot tall sound wall and, potentially, the relocation of adjacent homeowners to a hotel for that period. A special permit from the City Manager is required for the pull through phase as well as for nighttime work on Highway 43.

Environmental impact. There are a number of small streams that bisect the RWP and FWP route along Mapleton but the applicant will tunnel under the stream channels and culverts to avoid any disturbances. Streams bisecting Highway 43 in pipes are deep enough that the FWP can be trenched above. The trenching process on Mapleton and Highway 43 will be exclusively in the paved ROW through these WRAs which will be bracketed by erosion control measures. No impacts on adjacent storm drainage channels, streamside vegetation, and water quality or water quantity are expected. (see Findings 14, page 28; 23; 32; and 34).

The applicant's proposal avoids impacts to the Willamette River and water resource areas in Mary S. Young Park and OPRD tax lots 100 and 200 by tunneling beneath these areas. Exhibit PC-3, Section 6 contains a technical memorandum prepared by ecologists which demonstrates that the HDD that will occur between 65- to 7-feet below the park and OPRD lots and therefore will not disturb the soils, wetlands, and vegetation associated with nearby WRAs.

The drilling staging area on the OPRD lots is proposed to occur in a high Habitat Conservation Area (HCA) located 450-feet from the ordinary high water mark of the Willamette River. The objective of CDC Chapter 28, which regulates HCAs, is to avoid or



minimize development in high HCAs. Per Subsection 28.110(A)(2), development is supposed to be directed to areas outside of the HCA or areas of lesser HCAs unless there is no option (see Finding 22). Initially it was believed that the RWP could transition to a trench in the Mapleton Drive ROW, which is classified as a medium HCA. Further study revealed that existing buried sewage pipelines which feed the nearby City of West Linn sewage pump station located on Tax Lot 101, block the use of the southern or lower portion of the Mapleton Drive ROW. As previously noted, the approximately 7,715 square-foot staging would result in removal of 19 non-significant trees and adjacent understory. The impacted area would be revegetated following construction. In staff's opinion, this would provide adequate mitigation (see Finding 14, page 29; and Finding 23).

With the exception of the staging area where the pipeline would surface, due to installation of the pipe via deep boring, and by trenching primarily on paved areas of rights-of-way, the proposal appears to have no impact on the Willamette River, associated riparian areas, WRAs or HCAs.

Related code interpretations:

WRA Disturbance – Chapter 32 limits the amount of disturbance allowed in a Water Resource Area (WRA). The applicant contends that using HDD construction methods well below (up to roughly 60 feet) a WRA is not a disturbance. Protected WRA's include the drainage channel, creek, wetlands, and the required setback and transition areas that exist above ground while the wetland component of a WRA can extend below-ground to a depth that is, "inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions." This definition provides a limit upon which to measure the below-ground extent of wetlands and therefore, water resource areas. The applicant's plans demonstrate that their RWP alignment avoids WRAs by going around (beneath) them and containing impacts to WRAs in Mapleton Drive and Highway 43 to already disturbed areas of the right-of-way.

HCA disturbance – CDC 28.110(L)(3) limits the development of utilities in those portions of HCAs that include WRAs to no more than 25-feet wide, and disturbance of no more than 200 linear feet of WRA, whichever is greater. The applicant proposes to locate the HDD staging area on OPRD tax lot 200, in the HCA, but outside of a WRA and therefore this standard does not apply to the project. Revegetation of this temporarily disturbed HCA, per 32.050(F), is proposed.

Earthquake hazards. The proposed pipeline alignment passes through moderate- and high-relative earthquake hazard areas in the City of West Linn. The City has historically relied on design and construction techniques to mitigate such earthquake hazard risks. The applicant's seismic design study (Degenkolb Engineers) (Exhibit PC-3, Section 8) states that the pipeline will be built to address a one in 2,473 year earthquake episode, consistent with standards used for hospitals and other emergency response buildings and in accordance with the "Pipeline Research Council International Guidelines for the Seismic Design and Assessment of Natural Gas and Liquid Hydrocarbon Pipelines." (Also see Exhibit PC-3, Section 4, p. 37). The RWP/FWP would provide greater resilience in an extraordinary

earthquake, compared to the existing RWP/FWP. In staff's opinion the applicant has appropriately addressed the seismic risk.

Overall Community Need. Chapter 60 requires every conditional use proposal to demonstrate how it will fulfill a community need. Community need is broadly expressed in the West Linn Comprehensive Plan policies and expanded on through the supporting documents, such as park, trail, water, and natural hazard plans. The West Linn Comprehensive Plan and the West Linn Water System Master Plan state that provision of potable water is essential to the present population and over the 20-year planning horizon. A reliable supply of potable water and for fire suppression is critical in every community. Both the West Linn Comprehensive Plan and the Water System Master Plan make it clear that enhancing the emergency water service intertie fed by the FWP would fulfill an essential community-wide need. The applicant's proposal would result in additional water capacity potentially available to West Linn in the event of an emergency through 2041. To realize this potential, execution of an Inter Governmental Agreement offered by the cities of Lake Oswego and Tigard (Exhibit PC-8) would need to be approved by the West Linn City Council and the South Fork Water Board (which includes three West Linn City Council members) and a new intertie would need to be constructed to replace the existing intertie on the pipe that would be abandoned if the proposed project is implemented.

According to the applicant, the proposed new and upsized RWP/FWP, in conjunction with an expansion and modernization of the WTP, would potentially save West Linn ratepayers approximately \$11.6 million in avoided costs for high priority emergency supply capacity and reliability projects identified in the adopted Water System Master Plan by: 1) downsizing the Bolton Reservoir Replacement; and, 2) expanding the existing West Linn emergency intertie pump station.

Based on findings evaluating the applicant's proposal relative to all applicable CDC requirements (see the Approval Criteria and Findings addendum for details) staff believes that there are sufficient grounds for approval, subject to the recommended Conditions of Approval below.

Public comments: Please see Exhibit PC-4 for public comments.

RECOMMENDATION

Staff recommends approval of the proposed project subject to the following conditions:

1. **Approved plans.** The project, including relocated utilities, shall conform to the Site Plan, Exhibit PC-3, Section 19, Figures 15-27, except where revised by the Draft 60% Alignment, dated September 18, 2012, in Exhibit PC-5; the pedestrian and circulation plan, Exhibit PC-3, Section 19, Figure 28, except where revised by the Draft 60% Alignment, dated September 18, 2012, in Exhibit PC-5; the tree protection plan, Exhibit PC-3, Section 7; and the Erosion Control and Sediment Plan, Exhibit PC-3, Section 13, except as modified in conformance with these conditions of approval.



2. Safe Operations, Construction Management and Traffic Control and Management plans. The applicant shall implement all applicable provisions and recommendations of the Safe Operations Plan, Exhibit PC-3, Section 9; the Construction Management Plan, Exhibit PC-3, Section 10, as revised by Exhibit PC-5, except the additional mitigation items in Subsection 4.7; and, the traffic control and management plan and recommendations in the DKS Traffic Memorandum, Exhibit PC-3, Section 12, including revisions in Exhibit PC-5.
3. Noise.
 - a. The ENVIRON Noise Mitigation recommendations contained in Exhibit PC-3, Sections 11 and 10 shall be implemented.
 - b. Noise generating construction activities outside the hours of 7 AM to 7 PM on weekdays or 9 AM to 5 PM on weekends may only be permitted with written approval from the City Manager. Any request to the City Manager to extend work hours shall include justification for the proposed construction outside allowed work hours, beginning and end dates, a description of the equipment and activities proposed during that time, and documentation that this information was presented at least 7 days earlier to the Robinwood Neighborhood Association president.
 - c. Reverse signal alarms shall be not permitted for construction activities outside of the hours of 7 AM to 7 PM on weekdays or 9 AM to 5 PM on weekends; spotters or other alternative methods approved by OSHA working will be required.
4. Street restoration.
 - a. The applicant shall be responsible for full structural street improvements along Mapleton Drive for the existing width and length of this street from tax lot 2900 (at the east end of Mapleton Drive) to its intersection with Highway 43.
 - b. The applicant shall also restore any damaged bike paths and pedestrian walkways to their original condition.
 - c. The applicant shall be responsible for street restoration along Old River Road in those locations impacted by the replacement intertie connection.
 - d. All street, utility, bicycle path and pedestrian walkway restoration will be subject to review and approval by the City Engineer in accordance with the City of West Linn Public Works Design Standards.
5. Abandoned facilities. The applicant shall be required to remove all abandoned water system facilities as determined to be appropriate by the City Engineer.
6. Revegetation. Following construction, the disturbed portion of tax lots 100 and 200 shall be revegetated with native plant materials and trees in accordance with a revegetation plan approved by the Planning Department consistent with CDC Section 32.080.



7. HDD Disturbance Evaluation. Methods and recommendations from Horizontal Directional Drill Disturbance Evaluation in Exhibit PC-3, Section 6 shall be followed.
8. HDD area fencing. The applicant shall contain the HDD transition and staging area within cyclone fencing for the duration of the use of that site.
9. AC pipe replacement in Mapleton Drive. The applicant shall replace the existing 6-inch asbestos cement water distribution line in Mapleton Drive with an 8-inch ductile iron water distribution line (including fire hydrants and service lines to the meter boxes) as a result of the applicant's conflicting alignment. The design and specifications of this water line replacement will be subject to the review and approval by the City Engineer.
10. Connection to intertie pump station. The applicant shall construct a replacement water line connection from the existing intertie pump station at Old River Road to the new 48-inch finished-water line. The design and specifications of this replacement will be subject to review and approval by the City Engineer.
11. Construction lighting. All lighting in the HDD staging area shall be located, shielded or directed to avoid illumination and glare off-site.
12. Traffic control at intersection of Nixon Ave. and Mapleton Dr. During construction on Mapleton Dr. where work is west of Nixon Ave., the applicant shall use a traffic control method approved by the City Engineer, at the intersection of Nixon Ave. and Mapleton Dr.
13. Removal of construction offices and staging. The applicant shall be required to remove all materials, staging and offices associated with project construction immediately after the completion of project construction.

Notes to applicant.

- Expiration of Approval. This approval shall expire three years from the effective date of this decision.
- Additional Permits Required. Your project will require the following additional City permits:
 - Public improvement permit: contact Engineering at (503) 723-5501 or prich@westlinnoregon.gov
 - Public works permit: contact Engineering at (503) 723-5501 or prich@westlinnoregon.gov
 - On-Site Utilities: contact the Building Division at (503) 656-4211, jnomie@westlinnoregon.gov.



ADDENDUM

APPLICABLE APPROVAL CRITERIA AND FINDINGS¹

CHAPTER 11, R-10 SINGLE-FAMILY RESIDENTIAL DETACHED ZONING DISTRICT

11.060 CONDITIONAL USES

The following are conditional uses which may be allowed in this zoning district subject to the provisions of Chapter 60 CDC, Conditional Uses.

9. *Utilities, major.*

Finding No. 1: The requested raw water pipeline (RWP) and finished water pipeline (FWP) are defined under CDC Chapter 2 as “Utilities, Major” since they are “transmission lines for water.” These major utilities are permitted in the R-10 zoning district pursuant to the conditional use criteria established in CDC Chapter 60.

11.080 DIMENSIONAL REQUIREMENTS, CONDITIONAL USES

Except as may otherwise be established by this code, the appropriate lot size for a conditional use shall be determined by the approval authority at the time of consideration of the application based upon the criteria set forth in CDC 60.070(A) and (B).

Finding No. 2: The permanent raw- and finished-water lines within the OPRD lots will be placed below ground and will be separated from other utilities in this area in accordance with West Linn Public Works Standards for below ground utilities.

Similarly, the raw- and finished-water lines proposed within the Mapleton Drive and Highway 43 rights-of-way will also be below ground and will be separated from other utilities in the right-of-way per West Linn Public Works Standards. The applicant has stated that some existing utilities within the Mapleton Drive and Highway 43 rights-of-way will need to be relocated to accommodate the proposed transmission line; therefore coordination with affected utility providers will be ongoing.

The criteria in CDC 60.070(A) and (B) are addressed below. The criterion is met.

11.090 OTHER APPLICABLE DEVELOPMENT STANDARDS

- A. *The following standards apply to all development including permitted uses:*
 1. *Chapter 35 CDC, Temporary Structures and Uses.*

¹ Except where otherwise noted, Staff concurs with the analysis and findings provided by the applicant in their application in Exhibit PC-3, Section 4.



2. Chapter 42 CDC, Clear Vision Areas.

B. The provisions of Chapter 55 CDC, Design Review, apply to all uses except detached single-family dwellings, residential homes and residential facilities.

Finding No. 3: Findings regarding the above “Other Applicable Development Standards” are included under the associated Chapters later in this report. See finding number 15 regarding CDC Chapter 55.

CHAPTER 14, R-4.5 SINGLE-FAMILY RESIDENTIAL ATTACHED AND DETACHED/DUPLEX ZONING DISTRICT

14.060 CONDITIONAL USES

The following are conditional uses which may be allowed in this zoning district subject to the provisions of Chapter 60 CDC, Conditional Uses.

14. Utilities, major.

Finding No. 4: The requested RWP and FWP are defined under CDC Chapter 2 as “Utilities, Major” since they are classified as “transmission lines for water.” Major utilities are permitted in the R-4.5 zoning district pursuant to the conditional use criteria established in CDC Chapter 60.

14.090 OTHER APPLICABLE DEVELOPMENT STANDARDS

A. The following standards apply to all development including permitted uses:

2. Chapter 35 CDC, Temporary Structures and Uses.

6. Chapter 42 CDC, Clear Vision Areas.

B. The provisions of Chapter 55 CDC, Design Review, apply to all uses except detached single-family dwellings. (Ord. 1590 § 1, 2009)

Finding No. 5: Findings regarding the above “Other Applicable Development Standards” are included under the associated Chapters later in this report. See finding number 15 regarding CDC Chapter 55.

CHAPTER 19, GENERAL COMMERCIAL, GC ZONING DISTRICT



19.060 CONDITIONAL USES

The following are conditional uses which may be allowed in this zoning district subject to the provisions of Chapter 60 CDC, Conditional Uses.

10. *Utilities, major.*

Finding No. 6: The requested RWP and FWP are defined under CDC Chapter 2 as “Utilities, Major” since they are classified as “transmission lines for water.” These major utilities are permitted in the General Commercial zoning district pursuant to the conditional use criteria established in CDC Chapter 60.

19.090 OTHER APPLICABLE DEVELOPMENT STANDARDS

A. *The following standards apply to all development including permitted uses:*

2. *Chapter 35 CDC, Temporary Structures and Uses.*
5. *Chapter 42 CDC, Clear Vision Areas.*

B. *The provisions of Chapter 55 CDC, Design Review, apply to all uses except detached single-family dwellings.*

Finding No. 7: Findings regarding the above “Other Applicable Development Standards” are included under the associated Chapters later in this report. See finding number 15 regarding CDC Chapter 55.

CHAPTER 60 CONDITIONAL USES

60.070 APPROVAL STANDARDS AND CONDITIONS

60.070(A). *The Planning Commission shall approve, approve with conditions, or deny an application for a conditional use, except for a manufactured home subdivision in which case the approval standards and conditions shall be those specified in CDC 36.030, or to enlarge or alter a conditional use based on findings of fact with respect to each of the following criteria:*

1. *The site size and dimensions provide:*
 - a. *Adequate area for the needs of the proposed use; and*
 - b. *Adequate area for aesthetic design treatment to mitigate any possible adverse effect from the use on surrounding properties and uses.*

Finding No. 8: The applicant proposes installing the RWP under the Willamette River from Gladstone and making “landfall” in Mary S. Young Park at a depth of approximately 60 feet below grade. The 42-inch RWP would rise gradually toward the surface as it makes its way northwest, toward two OPRD-owned parcels (tax lots 100 and 200) at the south end of Mapleton Drive, until arriving at the terminus of HDD operations at tax lot 200, 7-feet below grade. The RWP would “daylight” and transition to a 5-7 foot deep open cut/trench in two OPRD-owned parcels north of Mary S. Young Park and then proceed within the Mapleton Drive rights-of-way to the Lake Oswego Water Treatment Plant (LOWTP) at 4260



Kenthorpe Way. From the LOWTP the FWP would continue west on Mapleton Drive then north on Highway 43 to Lake Oswego.

The Highway 43 right-of-way between Mapleton and Arbor Drives varies between 67- and 96-feet wide and contains sufficient width to accommodate the applicant's proposed FWP. The Mapleton Drive right-of-way is approximately 50-feet wide. Although the applicant's proposal would compete for space with existing utilities beneath Mapleton Drive, sufficient space exists for relocated utilities to be placed above or below the applicant's proposed pipeline and therefore adequate area for the proposed use exists.

The sole surface indication of the applicant's RWP and FWP will be occasional manhole covers in the Mapleton Drive and Highway 43 right-of-way. As such, there is no adverse design treatment to mitigate for. The criteria are met.

2. The characteristics of the site are suitable for the proposed use considering size, shape, location, topography, and natural features.

Finding No. 9: The applicant's proposed RWP and FWP would span nearly two miles of West Linn, from mid river on the Willamette River to the City's northern boundary with Lake Oswego (see Exhibit PC-3, Section 19, Figure 1B). Throughout this alignment, the pipeline is proposed to be installed entirely within publicly-owned land or public rights-of-way; the paved width of Mapleton Drive is 16-feet at minimum and the paved width of Highway 43 is 45-feet at minimum. Although the alignment is constrained by the horizontal dimensions of Mary S. Young Park, OPRD parcels and the Mapleton Drive and Highway 43 rights-of-way, placement below ground enables the applicant to adjust the depth of its pipe, or relocated utilities, to ensure that sufficient space for the proposal and existing utilities is available.

The applicant's proposed RWP and FWP alignment is the preferred alternative among a number of route alternatives evaluated (see Exhibit PC-3, page 13). The applicant examined alternative routes through Mary S. Young Park, Mark Lane, and Cedar Island and concluded that the proposed route least impacts the environmental resources protected by the CDC. Additionally, the proposed alternative is shorter than other alternatives examined and should therefore reduce the footprint of construction and, therefore, the potential disturbance to adjacent residents and people relying on the affected streets

The proposed alignment spans nine protected Water Resource Areas (WRAs) in the City: Arbor Creek, Robinwood Creek (2 branches), Fern Creek, Robin Creek (2 branches), Gans Creek, Trillium Creek, and Heron Creek. The proposal does not encroach beyond the edge of existing roadway pavement so disturbance of the WRAs will be minimized. Disturbance to Habitat Conservation Areas is confined to the area of HDD operations and the transition from HDD to open trench on OPRD tax lots 100 and 200. Approximately 7,715 square feet of this HDD staging area will be disturbed, including the removal of 19 non-significant trees and adjacent understory (shrubs, groundcover, etc.). The applicant proposes revegetation of the site following construction. All other natural resources and associated water resources will be avoided and unaffected.



The topography along the proposed alignment includes a gradual elevation gain of 125 feet from the Willamette River to the WTP. Most of the gain is in the first 1,200 feet of the RWP route in the Mapleton Drive ROW from the OPRD lots. Nonetheless, the topography will have little influence on the proposal's ability to transmit water, considering the pipes placement below ground and the pressurization of the water system. The criterion is met.

3. *The granting of the proposal will provide for a facility that is consistent with the overall needs of the community.*

Finding No. 10: The City of West Linn Water System Master Plan identifies improvements to the West Linn-Lake Oswego emergency water intertie as a top priority for improving West Linn's water supply reliability. The Water Master Plan states:

"The City's existing emergency supply connection to Lake Oswego is interruptible and its delivery capacity is dependent on Lake Oswego's supply and demand conditions at the time of the City's need. Under peak use and high demand conditions, the actual capacity of this connection may approach zero as Lake Oswego's current maximum water demands are approaching the existing supply system's capacity. The City of Lake Oswego is currently in discussions with the City of Tigard concerning long-term-water supplies. With the Tigard/Lake Oswego emergency supply connection operational, Lake Oswego could supply an equal amount of water to the City through the West Linn/Lake Oswego supply connection. A preliminary review indicates that this connection may have a hydraulic capacity in excess of 6 mgd, potentially making an equal amount available to the City in an emergency event.

The applicant's proposal would result in additional water capacity potentially available to West Linn in the event of an emergency for several years. To realize this potential, execution of an Inter Governmental Agreement offered by the cities of Lake Oswego and Tigard (Exhibit PC-8) would need to be approved by West Linn City Council and the South Fork Water Board and a new intertie would need to be constructed to replace the existing intertie on the pipe that would be abandoned. These actions would result in improved emergency water supply reliability.

4. *Adequate public facilities will be available to provide service to the property at the time of occupancy.*

Finding No. 11: The applicant proposes the installation of a public facility on public lands and within the public rights-of-way. The criterion is not applicable.

5. *The applicable requirements of the zone are met, except as modified by this chapter.*

Finding No. 12: The proposed RWP and FWP are permitted as conditional uses in the R-10, R-4.5 and GC zoning districts. The dimensional standards for conditional uses are based upon the criteria in CDC Section 60.070(A) and (B). Findings regarding these Sections are found above. The criterion is met.



6. *The supplementary requirements set forth in Chapters 52 to 55 CDC, if applicable, are met.*

Finding No. 13: CDC Chapters 52-54 are not applicable to the applicant's proposal (Chapter 52 regards signs, of which none are proposed; Chapter 53 regards sidewalk use, of which none is proposed; and, Chapter 54 regards landscaping, of which none is proposed) as it is an underground utility transmission line. Please see Finding 15 regarding applicable sections of CDC Chapter 55. The criterion is met.

7. *The use will comply with the applicable policies of the Comprehensive Plan.*

Finding No. 14: Compliance with applicable policies of the West Linn Comprehensive Plan and its supporting documents are addressed below:

Goal 1: Citizen Involvement

Policy 4: Provide timely and adequate notice of proposed land use matter to the public to ensure that all citizens have an opportunity to be heard on issues and actions that affect them.

Policy 5: Communicate with citizens through a variety of print and broadcast media early in and throughout the decision-making process...

CDC Chapter 99 specifies the public involvement necessary for quasi-judicial projects such as this. It calls for a meeting with the neighborhood (CDC 99.038), a notice of a public hearing regarding the proposal (CDC 99.080), and a public hearing. The applicant conducted the required meeting with the Robinwood Neighborhood Association on March 15, 2012, to present their proposal and to hear comments from members of the audience. Additionally, between December 2011 and January 2012, the applicant visited each business and multi-family complex along the Highway 43 portion of the alignment to deliver a letter and informational packet about the project. This informational packet was also mailed to residents along Mapleton Drive in January 2012.

The applicant placed signs, visible from the public right-of-way, along the finished-water alignment that identified the site as potentially the subject of a proposed development and which included the name and contact information of the applicant. Section 14 of the applicant's submittal summarizes the coordination with the Neighborhood.

In addition, the Partnership provided financial support to retain the services of a professional facilitator in an effort to engage community members and the applicant in discussions regarding the proposed project and potential mitigation measures.

Goal 2: Land Use Planning

Residential Development

Policy 8: Protect residentially zoned areas from the negative impacts of commercial, civic, and mixed-use development, and other potentially incompatible land uses.



Policy 9: Foster land use planning that emphasizes livability and carrying capacity.

The applicant proposes the installation of a below-ground public utility and not a traditional land use as referred to in Policy 8 above. Policy 8 is not applicable.

The applicant is proposing new pipelines to accommodate future development in the cities of Lake Oswego and Tigard and to ensure these areas are capable of supporting new residents projected in coming decades. Additionally, the City of West Linn's Water System Master Plan identifies supply reliability and capacity upgrades at the West Linn-Lake Oswego emergency water intertie as a way to ensure West Linn is able to meet its future water need.

Intergovernmental Coordination

Policy 1: Maintain effective coordination with other local governments, special districts, state and federal agencies, Metro, the West Linn-Wilsonville School District, and other governmental and quasi-public organizations.

Policy 2: Coordinate the City's plans and programs with affected governmental units in developing solutions to environmental quality problems, hazardous physical conditions, natural resource management programs, public facilities and services programs, transportation planning, annexation proceedings, and other municipal concerns with intergovernmental implications.

The cities of West Linn and Lake Oswego are parties to an Intergovernmental Agreement (IGA) permitting the mutual use of the West Linn-Lake Oswego emergency water intertie, which provides a backup source of water for both cities during times of emergency. The cities of Lake Oswego and Tigard (the Partnership) have approved an updated IGA (Exhibit PC-8) that, pending West Linn Council and South Fork Water Board approval, provides for a new intertie in the event the proposal is approved.

Consistent with Policy 2 above, the City is coordinating with Lake Oswego to upgrade a 6-inch asbestos cement water line in Mapleton Drive during this proposal. If approved, Lake Oswego will contribute a portion of the cost to upgrade this line to an 8-inch ductile iron water line as outlined in the West Linn Water System Master Plan. Additionally, the Regional Water Providers Consortium has endorsed the Partnership's proposal (see Exhibit PC-3, Section 18) and has declared it a "model of integrated water supply planning, as anticipated by the Regional Water Supply Plan of 2004."

Goal 5: Open Spaces, Scenic and Historic Areas and Natural Resources

Scenic and Historic Areas

Policy 1: Promote site design standards for development that enhances the urban landscape and prevents or minimizes obscuring views enjoyed by the community.

Policy 2: Preserve prominent scenic views as seen from public streets, parks, and open spaces in a manner consistent with other goals and policies to protect natural resources.

The applicant's proposal for an underground water transmission line will not be visible and therefore, the scenic and historic area policies of Goal 5 are not applicable.



Natural Resources

Policy 2: Where appropriate, require the planting of trees as a condition of approval for any land development proposal, consistent with the City's street tree ordinance and recommendations of the City Arborist.

Policy 3: Provide buffer areas around heritage trees, significant trees, and tree clusters to ensure their preservation.

Policy 4: Require the areas containing tree clusters, significant trees, and native vegetation along natural drainage courses and waterways in areas of new development be maintained to the maximum extent possible to preserve habitats, prevent erosion, and maintain water quality.

Policy 5: Preserve important wildlife habitat by requiring clustered development or less dense zoning in areas with wetlands and riparian areas, natural drainageways, and significant trees and tree clusters.

Policy 6: Restore, enhance, and expand the existing habitats found along rivers and streams, including planting native trees to reduce water temperatures.

Policy 7: Enhance and expand vegetation, particularly native species, on hillsides and in natural areas to prevent erosion and improve wildlife habitat.

Policy 8: Require and enforce erosion control standards for new development

Policy 9: Maintain and improve existing storm water detention and treatment standards to ensure that the impact of new development does not degrade water quality and wildlife habitat.

Policy 10: Manage open space, habitat, and ecological/scientific areas as identified in the West Linn Goal 5 inventory and protection plan in order to preserve their unique qualities.

Policy 11: Control activities and uses within the areas identified above to maintain ecological values, while providing for compatible recreational and educational activities.

Policy 12: Protect open space areas along hillsides and areas with potential erosion hazards through development controls and appropriate zoning.

Policy 14: Prohibit access by wheeled motorized vehicles onto the Willamette and Tualatin River beach areas except on public boat launch pads still in active use.

Policy 17: Work with other jurisdictions to coordinate efforts related to river planning.

Policy 20: Comply with the provisions of a State Goal 5 natural resources inventory.

The proposed alignment of the proposed raw- and finished-water transmission lines in West Linn would pass through a number of natural resources. Consequently, the proposal must also satisfy: the flood management area regulations in Chapter 27 of the CDC; the Willamette River and habitat conservation area regulations in Chapter 28 of the CDC; and, the Water Resource Area regulations of Chapter 32 of the CDC. Findings regarding these standards are found later in this report.

The proposal requests approval to remove 19 non-significant trees to accommodate temporary staging for the horizontal-directional-drilling rig within the regulated habitat



conservation area on OPRD-owned tax lot 200. The applicant proposes to fully mitigate for the loss of these trees using native trees (see Exhibit PC-3, Section 5, Figures 4 and 5).

Goal 6: Air, Water and Land Resources Quality

Water Quality

Policy 1: Require that new development be designed and constructed to prevent degradation of surface and groundwater quality by runoff

Policy 5: Where feasible, use open, naturally vegetated drainageways to reduce stormwater runoff and improve water quality.

Policy 6: Meet the goals of Title 3 of the Metro Urban Growth Management Functional Plan

Policy 7: Require up-to-date erosion control plans for all construction and actively enforce applicable City codes and regulations.

As proposed, the raw- and finished-water transmission lines will be constructed completely underground and will not result in additional surface water runoff. Additionally, the proposed construction activities are subject to the erosion control standards in CDC Chapter 31 (see Findings 26-29 later in this report).

Noise Control

Policy 2: Require development proposals that are expected to generate noise to incorporate landscaping and other techniques to reduce noise impacts to levels compatible with surrounding land uses.

Policy 3: Require new commercial, industrial and public facilities to be designed and landscaped to meet Department of Environmental Quality (DEQ) and City noise standards.

Policy 4: As part of the land use application submittal for a noise generating use, require the applicant to include a statement from a licensed acoustical engineer, and, if necessary, from DEQ, declaring that all applicable standards can be met.

The proposed raw- and finished-water transmission lines are proposed to be installed completely underground and will not generate noise audible aboveground. Construction associated with the pipeline installation will temporarily generate continuous, moderate to loud noise audible to properties adjacent the HDD rig and proposed pipeline alignment. The applicant has prepared a construction noise analysis (Exhibit PC-3, Section 11) in consultation with a licensed acoustical engineer, to identify and mitigate temporary construction noise impacts. Recommendations from the acoustical engineering analysis to mitigate noise impacts are suggested as Condition of Approval 3.

Goal 7: Areas Subject to Natural Disasters and Hazards



Policy 1: Require development and associated alterations to the surrounding land to be directed away from hazardous areas.

Policy 2: Restrict development except where design and construction techniques can mitigate adverse effects.

Policy 3: Require soils and geologic studies for development in hazardous areas.

Policy 4: Promote slope and soil stability and the use of natural drainageways in areas with landslide potential by retaining existing vegetation in those areas to the greatest extent possible.

Policy 5: Follow state and regional designations and construction standards regarding earthquake hazards.

Policy 6: Retain storage capacity of flood waters by protecting flood plains.

Policy 7: Prohibit any alteration to the landscape or development that would result in a rise in elevation of the 100-year flood plain.

Policy 8: Minimize impacts to natural vegetation within the flood plain by restricting development and related human activity.

Policy 11: Meet the goals of Title 3 of the Metro Urban Growth Management Functional Plan to protect floodplains and other hazard areas.

Policy 12: Refer to current seismic information during development review, including in the pre-application meeting, and when enacting new regulations governing the location of structures and land uses.

The proposed pipeline alignment passes through moderate- and high-relative earthquake hazard areas in the City of West Linn. Because moderate- and high-relative earthquake hazard areas occupy large portions of the City of West Linn, the City has historically relied on design and construction techniques to mitigate earthquake hazard risks.

The applicant proposes design and construction techniques that mitigate earthquake hazard risks, as outlined in their site specific seismic analysis (Exhibit PC-3, Section 8). From the applicant's submittal narrative (Exhibit PC-3, Section 4, p. 37):

Conservative construction materials and techniques have been selected to ensure that the pipelines will be able to withstand an earthquake with a 2 percent probability of exceedance in 50 years without any pipe leaks or ruptures. This level of earthquake is the standard, applicable to life-sustaining structures such as hospitals and emergency response facilities and is the highest earthquake standard accepted worldwide. This return interval includes consideration of the magnitude 9.0 Cascadia Subduction Zone megathrust event... The construction materials and techniques proposed for the RWP and FWP are consistent with the current standard practice for many innovative water utilities located in high seismic areas such as the San Francisco Public Utility Commission and Los Angeles Department of Water and Power...

Finally, the pipeline is proposed to be routed through steep slopes near the east end of Mapleton Drive. Because this work will occur entirely within the paved portion of Mapleton Drive, the proposal retains all native vegetation within the public right-of-way.



Goal 8: Parks and Recreation

Policy 8. Require land divisions and major developments to set aside or dedicate land based on standards that provide for:

- *An area composed of developable lands that may provide active recreational space;*
- *An adequate passive open space area to protect natural resources at the site and protect development from hazard areas; and,*
- *A link between existing public-owned parks or open space areas and/or public rights-of-way.*

CDC Chapter 56 includes standards applicable to development within City parks and open spaces. Findings regarding these standards are found below. Additionally, the applicant's proposal will not result in an impact to the City's park system sufficient to justify a dedication as described in Policy 8.

Goal 9: Economic Development

Policy 5: Maintain public facilities (specifically right-of-way improvements) in established commercial and industrial districts to promote economic activity.

Policy 8: Maximize the use of regional, state, and federal funding for infrastructure planning and development.

The applicant's proposed raw- and finished-water transmission lines will pass through residential and commercial districts in West Linn. The applicant's construction management and traffic control plan propose to ensure that access to local businesses along Highway 43 will be provided during all daytime and nighttime construction hours (see Exhibit PC-3, Section 10, Subsection 4.2.6). Because West Linn relies on emergency water from the West Linn-Lake Oswego intertie, commercial uses in West Linn will potentially benefit from a reliable source of water for fire suppression, public health and sanitation in the event of a loss of the City's water supply.

Additionally, the Regional Water Providers Consortium has endorsed the Partnership's proposal (see Exhibit PC-3, Section 18) and has declared it a "model of integrated water supply planning, as anticipated by the Regional Water Supply Plan of 2004."

Goal 11: Public Facilities and Services

Policy 1: Establish as the City's first priority, the maintenance of existing services and infrastructure in all areas within the existing City limits.

Policy 5: Where appropriate, monitor, coordinate with, and regulate the activities of the following as they affect existing and future residents and businesses:

- *Water supply*
- *Fire and rescue protection*



Policy 6: Encourage cooperation and coordination between all public service agencies to maximize the orderly and efficient development and provision of all services.

Policy 11: Assure that costs for new infrastructure and the maintenance of existing infrastructure are borne by the respective users except when it is determined that improvements are of benefit to the whole community, or that a different financing mechanism is more appropriate

Policy 12: Whenever feasible, utilize environmentally sensitive materials and construction techniques in public facilities and improvements.

As proposed, the existing intertie will be on an abandoned line. However, the applicant's water transmission upgrade will potentially result in improved supply reliability of a new West Linn-Lake Oswego emergency water supply intertie. The proposal would also improve fire suppression capacity for TVF&R (Exhibit PC-3, Section 18, Attachment I), pending approval of a new IGA (Exhibit PC-8) that gives the City access to water under certain circumstances and construction of a new intertie.

The applicant's proposal includes letters of support from both the Regional Water Providers Consortium and Clackamas River Water Providers, both of whom praise the Partnership for their efforts in coordinated regional water supply planning. Additionally, the City of West Linn is coordinating the replacement of a 6-inch asbestos cement water line in conjunction with the Partnership's proposal.

Infrastructure and maintenance costs of the proposed raw- and finished-water lines will be borne by residents of Lake Oswego and Tigard. The applicant's proposal avoids impacts to the Willamette River, riparian areas and wetlands in Mary S. Young Park by boring beneath these areas and eliminates direct impacts to water resource areas along Mapleton Drive and Highway 43 by containing all construction activity through environmentally sensitive areas to paved areas of the public rights-of-way. No surface activities will occur in Mary S. Young Park.

Water System

Policy 2: Coordinate water service to future users to allow for the most efficient provision of service within the City and projected subsequent expansion of the City limits within the Urban Growth Boundary as it existed in October 2002, calculated to serve a build out population not to exceed 31,000.

Policy 3: Require funding for the installation of new water storage and distribution facilities to be the responsibility of the property owners/developers or those receiving direct benefit from those facilities. Where appropriate, the City may participate in the development of those facilities to the extent that they benefit residents or businesses in addition to those directly involved, or if they improve the overall efficiency of the system.

The West Linn Water System Master Plan recommends improving the capacity and reliability of the Lake Oswego emergency supply connection as the most economical means of meeting the City's supply and reliability needs. The applicant's proposal is consistent with this recommendation. The applicant has presented an updated IGA (Exhibit PC-8) to



West Linn, Tigard and the South Fork Water Board outlining the details associated with this water sharing agreement. The West Linn City Council has agreed to wait to make a decision on this IGA until the Partnership's land use applications have been decided.

The applicant proposes to fully fund the installation of the raw- and finished-water transmission lines as well as has proposed to partner with the City of West Linn to replace a 6-inch asbestos cement water line in Mapleton Drive.

Storm Drainage

Policy 2: Require adequate maintenance of culverts and drainageways in coordination with property owners to ensure that the natural drainage system operates at maximum efficiency.

Policy 3: Protect downstream areas from increased storm water runoff by managing runoff from upstream development and impacts on adjacent natural drainageways and their associated vegetation.

Policy 4: Require that construction practices for all land development projects, private and public, be conducted in such a way as to avoid exposing cuts, grading areas, and trenches to stormwater so that soil erosion is minimized, and soil will not be washed into natural drainage areas.

Policy 7: Require that riparian vegetation along the streams and drainageways be maintained and preserved or re-established where necessary. In order to maintain or operate public facilities, selective cutting, trimming, and thinning will be allowed along waterways.

Regarding Policy 2, by keeping virtually all work in the paved portions of the existing ROWs of Mapleton Drive and Highway 43, and tunneling over or under storm pipes that run perpendicular to the street, the applicant will be able to avoid disturbance to any storm water pipes, culverts or adjacent storm water facilities or WRAs. Staff notes that the applicant states in Exhibit PC-3, Section 10, page 4 of the submittal that "*the presence of large storm drain culverts perpendicular to the roadway along the pipeline alignment may require short lengths of pipe installation via trenchless construction methods.*" This language applies to construction on both Mapleton Drive and Highway 43. It will entail trenching the RWP or FWP over the storm water pipe that bisects the street. In at least one instance, the pipeline will be bored under the storm water pipeline. Both methods will ensure that the storm line will be undisturbed and will function without interruption. The fact that there will be no modification of existing storm drainage facilities (including culverts or pipes) or any increase or decrease in storm water runoff, during the construction phase or in post construction, means that the existing facilities will be able to function at their maximum efficiency.

Regarding Policy 3, WRAs, roadside swales and other elements of the storm drainage system will not be part of the work areas. Work will be confined to the road surface and available adjacent areas. The edge of the work areas will be protected with full erosion control measures to avoid sedimentation of WRA and storm water, consistent with the Public Works Development Standards. The function of WRAs, roadside swales and other



elements of the storm drainage system, as the means of conveyance of storm water, will not be interfered with. Similarly, native vegetation in these areas will not be modified. Once the trenched route is complete, backfilled and paved over, the RWP/FWP will not be noticeable and will have no effect on any WRAs, roadside swales and other elements of the storm drainage system.

Regarding policies 4 and 7, the transition from the HDD tunnel to a trench or open cut will result in temporary surface disturbance on OPRD owned tax lots 100 and 200 (see Brown and Caldwell WRA and HCA Technical Memorandum, Exhibit PC-3, Section 5, page 7). The disturbance will cover an area of 7,715 square feet. It will involve the removal of 19 trees (assessed in the arborist's report as being in fair to very poor condition determined by the City's arborist to be not significant), removal of adjacent understory (bushes, groundcover, etc.) and grading and excavation of the trench. This work will be followed by backfilling the trench and restoration and revegetation of the site with native groundcover, plants, shrubs and trees. All of the work and staging areas will be contained by erosion control measures. The impact area is shown on Figure 3 of Exhibit PC-3, Section 5 of the Brown and Caldwell WRA and HCA Technical Memorandum.

The construction practices are designed to minimize impacts to water resources. By tunneling the RWP below the riverbed from Meldrum Bar under the Willamette River and then continuing at a depth between 60 and 34 feet under the wetlands and stream corridors in Mary S Young Park before daylighting the RWP on tax lot 200, there is no impact on overlying resources. On tax lot 200 the RWP transitions to a trench. Whereas concern about trenching is rooted in the expectation that the trench would cross and disturb a creek or wetland, the trenching process on Mapleton and Highway 43 will be exclusively in the paved ROW through these WRAs which will be bracketed by erosion control measures. No impacts on adjacent storm drainage channels, streamside vegetation, and water quality or water quantity are expected.

Private Utilities and Telecommunications

Policy 1: Work closely with the appropriate utility and telecommunications companies to keep them informed of new developments and redevelopment. The City will likewise expect the private utility companies to report any changes in their plans or policies that could have an impact on the City or its Comprehensive Plan

Policy 3: Encourage undergrounding of existing facilities.

Policy 4: Require utilities to remove abandoned facilities.

Policy 6: As part of franchise agreements, the City shall seek full and free access to the services being offered in the community.

In an August 23, 2012, memorandum from Eric Day of the Lake Oswego-Tigard Water Partnership (Exhibit PC-5), the liaison's work with 21 utility providers is explained. The applicant's memorandum anticipates that these lines of communication will avoid or minimize service interruptions during the construction phase. West Linn Public Works is currently discussing options with the applicant for the reuse of the existing raw- and finished-water transmission lines. Finally, the City is currently negotiating with the



Partnership in the development of a franchise-type agreement for the use of West Linn's public right-of-way.

Goal 12: Transportation

○ *General Policies*

- *1. Protect the entire rights-of-way of existing City streets for present and future public use*
 - *Evaluate land development projects to determine possible adverse traffic impacts and to ensure that all new development contributes a fair share toward on-site and off-site transportation system improvement remedies.*
 - *Require infrastructure improvements to mitigate traffic impacts of the proposed development.*
- *2. Design and construct transportation facilities to meet the requirements of the Americans with Disabilities Act.*

○ *Streets*

▪ *Policies*

- *4. Ensure that adequate access for emergency services vehicles is provided throughout the City.*
- *8. Ensure that development brings adjacent road frontages to illumination levels that are identified with the CDC and City Engineering standards and specifications for street lighting.*

Staff finds that the completed trenched FWP and the trenched and tunneled RWP will have no long-term impact on transportation and will not produce increased trip generation. Thus, there is neither nexus nor proportionality to justify improvements beyond restoration (repairing cuts and repaving) of Mapleton Drive and Highway 43; which the applicant has agreed to do (see recommended Condition of Approval 4).

During construction, the Mapleton Drive trench/open cut construction phase is expected to generate an additional 86 trips (ADT) per day (7am-7pm). The Highway 43 trench/open cut construction phase is expected to generate an additional 86 trips (ADT) per day (8pm-5am).

The HDD construction, centered at the east end of Mapleton Drive near Mary S Young Park, is expected to vary in its trip generation depending on the phase of the work. Preliminary site assembly and pilot bore drilling is expected to generate 12 trips per day. During the two-day long pipe pullback phase when the 42-inch raw water line is pulled through the tunnel from Gladstone, 144 trips are expected per 24-hour period. Most of these trips will be trucks hauling the drilling mud from the site. This activity will go on continuously for up to 48 hours. Once the pullback phase is complete, an additional 12 trips per day will be required for HDD demobilization. Up to 32 trips per day may occur as part of daily construction management and inspections.



The applicant has also supplied detailed construction management (Exhibit PC-3, Section 10) and traffic control plans (Exhibit PC-3, Section 12) to address construction-related trip generation and access impacts and to manage private site access, construction routes, traffic control and emergency vehicle access. Staff finds that these plans reflect a comprehensive and thoughtful approach to these issues.

Regarding the Oregon Highway 43 Conceptual Design Plan, staff finds that neither nexus nor proportionality exists to justify implementing the design plan.

Street lighting will be provided contiguous to the WTP but not along the pipeline corridors as there is no nexus nor proportionality to support such a street improvement.

Noise impacts have been addressed in the Construction Management Plan and explained in depth in the Noise Analysis by ENVIRON (Exhibit PC-3, Section 11). The study recognizes that construction noise is permitted so long as it meets Municipal Code section 5.487 Sound Levels and Noise:

d) The erection, excavation, demolition, alteration or repair of any building or structure at any time other than during the following hours, except by special permit granted by the City Manager:

(i) Between the hours of 7:00 a.m. and 7:00 p.m. Monday through Friday;

(ii) Between the hours of 9:00 a.m. and 5:00 p.m. on Saturday and Sunday

Despite the fact that daytime construction noise is exempt from the Municipal Code standards, ENVIRON (Exhibit PC-3, Section 11) has recommended a range of measures to reduce the number and volume of noise sources. The HDD pull through phase will generate a maximum of 69 dBA which will exceed the Oregon DEQ 10pm-7am standards during these 48 hours of the project. To address the noise levels, ENVIRON recommends a number of mitigation measures including a 16-foot tall sound wall and, potentially, the relocation of adjacent homeowners to a hotel for that period. Once the project is complete, the RWP and FWP will not generate measurable noise. A special permit from the City Manager is required for the pull through phase as well as for nighttime work on Highway 43. Staff finds that the noise impacts are adequately addressed.

- *Bicycles*

- *Policies*

- *3. Provide striped and signed bicycle lanes on all arterial and collector roadways consistent with the policies of the Transportation System Plan.*
 - *5. Design new streets and retrofit older streets to enhance safety for bicyclists using the roadways.*

- *Pedestrians*

- *Policies*

- *1. Promote a comprehensive cohesive network of pedestrian paths, lanes and routes that accomplish the following objectives:*



- *Connects the four commercial centers in Willamette, Bolton, Robinwood and Tanner Basin.*
- *Provides connections to schools, recreation facilities, community centers, and transit facilities.*
- *Use off-street pedestrian short-cut pathways to provide routes where physical constraints or existing development preclude the construction of streets with sidewalks.*
- *Provide safe, secure and desirable walkway routes, with a preferred spacing of no more than 330 feet, between elements of the pedestrian network.*
- *Eliminate gaps in the existing walkways network and provide pedestrian linkages between neighborhoods.*
- *2. Employ a variety of methods to promote safe and convenient pedestrian access in addition to, or instead of, sidewalks in older developed areas of West Linn without sidewalks.*
- *3. Pursue all available funding sources for pedestrian projects. Coordinate with Clackamas County, ODOT, the School District, Metro and other agencies to obtain funding to complete walkway network improvements.*
- *7. The City will enforce regulations requiring developers to include pedestrian facilities and walkway connections within proposed developments and to adjacent land uses and rights-of-way in accordance with adopted policies and standards. Developer agreements for the provision of walkways will be implemented and enforced as needed.*
- *Freight and Goods Movement*
 - *Policies*
 - *2. Discourage non-local freight trips on Highway 43 through West Linn; encourage local freight trips to be made during non-peak hours.*

The applicant will, upon completion of the pipeline, restore any impacted pedestrian and bicycle facilities on Highway 43 and elsewhere to their original state (recommended Condition of Approval 4).

During the construction phase, interim bicycle and pedestrian facilities will be provided per the applicant's Construction Management Plan (Exhibit PC-3, Section 10). The plan makes provisions for both modes of transportation on Mapleton Drive, Kenthorpe Way and Highway 43. The Construction Management Plan also maintains access to Mary S. Young Park throughout the construction period including the HDD phase.

Freight and Goods movement and transit and school bus access will be facilitated under the Traffic Control Strategies (Exhibit PC-3, Section 10, Subsections 4.2.3 and 4.2.7). Periodic delays and inconveniences during the construction are mitigated by the fact that construction will be limited, on a daily basis, to one discrete 100- to 150-foot long section



of the affected street. The Construction Management Plan also states that emergency vehicles will have access 24 hours a day, except for a total of between 3- to 6-days during the duration of construction on Mapleton Drive when the RWP/FWP alignment moves to the opposite side of the street. The applicant's contractor will be required to notify TVF&R of access closures. Emergency access to within 150-feet of all homes, as required by TVF&R will be maintained at all times.

- *Goal 13: Energy Conservation*

- *Policies*

- *6. Encourage the use of energy-conscious design and materials in all public facilities.*
- *7. Encourage the construction and maintenance of sidewalks and bike paths/ways to promote alternative modes of transportation.*

Staff anticipates that the replacement of an older asbestos-cement water line with a new ductile-iron line will reduce water loss and will conserve energy and resources.

Staff finds that there is neither nexus nor proportionality associated with the installation of a below grade pipeline to justify the construction of new bicycle and pedestrian facilities.

- *Goal 14: Urbanization*

- *Policies*

- *1. Promote cooperation between the City, County, and regional agencies to ensure that urban development is coordinated with public facilities and services within the Urban Growth Boundary.*
- *6. Oppose the formation of a new service district within the Urban services Boundary and outside of the Urban Growth Boundary.*
- *9. Ensure that new development pays for needed new infrastructure and impacts to existing infrastructure.*

As noted above, the cities of Lake Oswego and Tigard have signed an intergovernmental agreement (Exhibit PC-8), yet to be signed by West Linn and the South Fork Water Board, which would, upon execution, oblige the Partnership to provide emergency water to the City of West Linn through 2041. If ultimately supported by the City of West Linn, this IGA will help address water storage deficiencies during emergency conditions, as discussed in the West Linn Water Master Plan.

Regarding Policy 9 above, the City of West Linn benefits from the existing water pipeline infrastructure per the current IGA agreement and the existing intertie. The applicant's proposal offers an opportunity to improve the supply capacity and reliability of this intertie consistent with the recommendations of the 2008 West Linn Water Master Plan

Infrastructure improvements and/or restoration proposed by the applicant also include the replacement of an existing 6-inch asbestos-cement water line along Mapleton Drive, repaving Mapleton Drive and repaving affected portions of Highway 43.

- *Goal 15: Willamette River Greenway*



- *Policies*
 - 4. *Require a conditional use permit for any intensification of uses, changes in use or developments within the Willamette River Greenway boundary except as otherwise provided by the Willamette River Greenway Zone, subject to the following:*
 - *Where feasible, provide the maximum landscaped area, open space, or vegetation between the activity and the river.*
 - *Where feasible, provide access to and along the river by appropriate legal means.*
 - 6. *Require adequate public access to the river as part of the development of public land.*
 - 7. *Preserve identified scenic qualities and views.*
 - 8. *Protect the natural vegetative fringe along the river.*
 - 10. *Require non-water related or dependent structures to be set back from the river in accordance with an established setback line in order to protect, maintain, and preserve the Willamette River Greenway.*

The Willamette River Greenway resource is not impacted by this application except for the temporary construction activity associated with the transition from the HDD to the open cut trench on OPRD-owned tax lots 100 and 200. This temporary activity will occur in a high Habitat Conservation Area (HCA) area located 450 feet from the ordinary high water mark of the Willamette River.

The objective of CDC Chapter 28 is to avoid or minimize development in high HCAs. Per Subsection 28.110(A)(2), development is supposed to be directed to areas outside of the HCA or areas of lesser HCAs unless there is no option. Initially it was believed that the RWP could transition to a trench in the Mapleton Drive ROW, which is classified as a medium HCA. Further study revealed that existing buried sewage pipelines which feed the nearby City of West Linn sewage pump station located on tax lot 101, block the use of the southern or lower portion of the Mapleton Drive ROW. Thus the guidance is met.

Per CDC Chapter 28.110(D) development of high HCA lands is permitted when it can be shown that the use is water dependent. Staff finds that the RWP is water dependent in that it, "requires access to, or use of, the river[s]," consistent with the definition for water-dependent uses established in Chapter 2 of the CDC. Furthermore, this disturbance is the minimum necessary to avoid the existing City of West Linn pump station and sewage lines in tax lot 100.

Following construction, the disturbed area is proposed to be revegetated with native plant materials and trees (see recommended Condition of Approval 6).

Staff notes that the potential exists for temporary impacts to the WRG and associated water resource areas (wetlands, streams, etc.) during the HDD tunneling. In the applicant's technical memorandum in Exhibit PC-3, Section 6, ecologist Ethan Rosenthal, et al, explains the HDD process and identifies the very small risks associated with HDD (see pages 2-3).

Throughout the HDD process, pressurized drilling fluids are continuously pumped through the drilling equipment to stabilize the bore, cool the cutting tools, lubricate the drill pipe and transport soil cuttings back to the entry location on tax lots 100 and 200. The pressurized drilling fluids are comprised of 97-99 percent water, with the remaining fluid additives consisting mainly of the non-toxic chemical bentonite.

The memo in Exhibit PC-3, Section 6 concedes that while under normal conditions the drilling fluid will be restricted to the borehole (page 3, paragraph 3) there is a slight chance of leaching into adjacent soils in the event of a hydrofracture. In paragraph 4, Rosenthal, et al explain that, *“As resistance to hydrofracture is primarily dependent on depth and soil strength, it is worth noting that substrates of sufficient strength to resist hydrofracture are anticipated for large portions of the RWP alignment.”*

A reader may also interpret the statement to mean that while large portions of the HDD route can resist hydrofracture, smaller portions of the HDD route may not. This hazard is noted on page 7, paragraph 1 of Exhibit PC-3, Section 10: “Construction Management Plan for Raw Water and Finished Water Pipelines in West Linn”: *“The risk of hydrofracture is limited to the first several hundred feet of the HDD alignment....”*

Ecologist Ethan Rosenthal, et al, provide a solution: containing the bore hole within a casing for the first 200 feet or so until the bore hole is at a depth of 35 feet where the external pressure of the soil and rock surrounding the bore hole will be greater than the pressure inside the bore hole. To reduce the risk even further, Rosenthal states that the contractor will use a “down hole pressure tracking system” which will monitor real time fluid pressure just behind the drill bit. If drilling pressure spikes above the limiting pressure, the driller will be required to shut-off the pump immediately – effectively preventing the uncontrolled release of drilling mud/solutions. Staff is satisfied with the analysis and mitigation measures.

As previously noted, the temporary construction activity will cover an area of 7,715 square feet. It will involve the removal of 19 trees (assessed in the arborist’s report as being in fair to very poor condition), removal of adjacent understory (bushes, groundcover, etc.) and grading and excavation of the pipe trench. This will be followed by backfilling the trench, site restoration and revegetation. All of the work and staging areas will be contained by erosion control measures. The temporary construction area is shown in Exhibit PC-3, Section 5, Figure 3.

By tunneling the RWP from Meldrum Bar in Gladstone under the Willamette River at a depth of 60-feet below the riverbed and then transitioning to a minimum depth of 34 feet beneath the wetlands and stream corridors in Mary S. Young Park, before daylighting in a trench five feet below grade on tax lot 200, staff finds that there is no permanent impact to the above mentioned resources (Willamette River and adjacent HCAs (wetlands, riparian areas) and WRAs).

Public access between Mapleton Drive and Mary S. Young Park is proposed to be accommodated through the construction phase and is proposed to be fully restored upon



completion of construction. Throughout the construction phase, the applicant proposes the maintenance of full public access and use of the Willamette River shoreline in Mary S. Young Park and publicly owned lands adjacent to tax lots 100 and 200.

Robinwood Neighborhood Plan

- *Goal 1: Willamette Drive shall provide superior transportation facilities for all modes of transportation*
 - *Policies*
 - *1.1. Provide continuous and wide transportation facilities on both sides of Willamette Drive.*
 - *1.3. Beautify the length of Willamette Drive with a comprehensive and consistent streetscape.*
 - *1.4. Provide a continuous bike lane along Willamette Drive.*
- *Goal 3: Preserve the character of existing single-family residential neighborhoods in Robinwood:*
 - *Policies*
 - *3.3. Provide appropriate pedestrian facilities along residential streets.*
 - *3.4. Implement green street concepts for residential streets.*
 - *3.7. Use pedestrian shortcuts to connect existing streets.*
 - *3.9. Ensure that the Lake Oswego Water treatment Facility on Kenthorpe Drive remains compatible with the surrounding residential areas and provides benefits to Robinwood's residents as well as those of Lake Oswego.*
- *Goal 4: Preserve and maintain natural areas within Robinwood and allow public access to them where appropriate.*
 - *Policies*
 - *4.1. Preserve natural riparian corridors through Robinwood and enhance their value as wildlife habitat.*
 - *4.3. Properly maintain publicly-owned natural areas.*
- *Goal 5: Use Robinwood's parks for the benefit and enjoyment of the neighborhood's residents.*
 - *Policies*
 - *5.2. Provide better access from Robinwood to Mary S. Young Park and its amenities*
- *Goal 6: Encourage cooperation between Robinwood and other City neighborhoods, organizations, public agencies, and commercial property owners and businesses.*

Once the pipelines are installed, backfilled and paved over there will be no visible evidence of them in the neighborhood, with the possible exception of the occasional manhole cover. as previously noted, impacts to riparian corridors are expected to be negligible since the work will be largely done within the existing paved areas of the rights-of-way. The containment of construction work on tax lot 100 and 200 and within the street ROWs as well as the subsequent restoration of tax lot 100 and 200 with native plants and trees addresses the Neighborhood Plan's desire to preserve and maintain the neighborhood's



natural areas. The Construction Management Plan ensures continued access, throughout the construction phase, to Mary S. Young Park and the Willamette River per Goals 4 and 5 of the Neighborhood Plan.

The application also addresses the neighborhood plan, in the long-term sense, through the facilities that will be provided or improved as conditions of approval or offered voluntarily. Improvements include repaving Mapleton Drive, Kenthorpe Way and affected portions of Highway 43. The streets will be repaved to their existing width. No sidewalks will be added. The proposed transportation facility improvements satisfy the Neighborhood Plan's ambition to achieve an efficient multi-modal street system that still preserves the character of the neighborhood. These improvements will also benefit drivers, bicyclists and pedestrians with smoother travel surfaces.

Water Master Plan

The City of West Linn Water System Master Plan recommends improving the emergency supply capacity and reliability of the Lake Oswego Emergency Supply Connection to meet West Linn's water supply need. The following is taken from the summary of the Water Supply Evaluation on page ES-5 of the West Linn Water System Master Plan:

(Page ES-5) Water Supply Evaluation – A comprehensive and system wide supply system evaluation of City supply facilities was completed that included consideration of a number of approaches, methodologies and solution option development. The supply analysis was completed based on capacity needs, reliability, and redundancy and included consideration of piping, pumping, aquifer storage and finished water storage options. The analysis considered the following four solution approaches:

- *Solution Approach A: Construction of a new 8.4 million gallon Bolton Reservoir*
- *Solution Approach B: Build back-up supply transmission from SFWB*
- *Solution Approach C: Improve the emergency supply capacity and reliability of the Lake Oswego Emergency Supply Connection*
- *Solution Approach D: Aquifer Storage and Recovery (ASR)*

The four solution approaches presented above provide varying degrees of certainty, risks and costs. Based on input from and discussion with City staff and policy makers it is recommended that Solution Approach C be pursued. Once fully developed and implemented this approach most economically meets the City's supply and reliability needs...

The applicant's proposal to install new raw- and finished-water pipelines would result in additional water capacity potentially available to West Linn in the event of an emergency through 2041. To realize this potential, execution of an Inter Governmental Agreement offered by the cities of Lake Oswego and Tigard (Exhibit PC-8) would need to be approved by West Linn City Council and the South Fork Water Board and a new intertie would need to be constructed to replace the existing intertie on the pipe that would be abandoned if the



proposed project is implemented. These actions would advance the objective established in the West Linn Water Master Plan.

Furthermore, the proposal would result in the replacement of more than 3,000-feet of 6-inch asbestos cement water line in Mapleton Drive, which is identified as a high priority capital maintenance project in the Water Master Plan.

The criteria in CDC 60.070(A) are met.

60.070(B). An approved conditional use or enlargement or alteration of an existing conditional use shall be subject to the development review provisions set forth in Chapter 55 CDC.

Finding No. 15: The purpose and intent of design review is explained in CDC section 55.010:

The purpose of the design review provisions is to establish a process and standards for the review of development proposals in order to conserve and enhance the appearance of the City and to promote functional, safe, and innovative site development. Attention will be paid to the proposal's scale, layout and design, its compatibility with the surrounding natural environment, and the character of the surrounding neighborhood or area. The intent is to ensure that there is general compatibility between adjoining uses, that private and common outdoor space is provided, that vehicular access and circulation are safe, and that areas of public use are made aesthetically attractive and safe. Also of concern are the needs of persons with disabilities.

Once installed, the entire RWP and FWP are completely underground, which means that there will be nothing visible from the public right-of-way to review, with the exception of manhole covers. Consequently, most of the criteria contained in Chapter 55 are not applicable.

Regarding Compatibility, review of the approval criteria 55.100(B)(6)(b) reveals that compatibility is concerned with architectural compatibility or the visual relationship of the proposed structure with adjacent structures:

The proposed structure(s) scale shall be compatible with the existing structure(s) on site and on adjoining sites. 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.

There is also another section of the approval criteria that makes use of the term "Compatible":

- C. Compatibility between adjoining uses, buffering, and screening.
 - 1. *In addition to the compatibility requirements contained in Chapter 24 CDC, buffering shall be provided between different types of land uses; for example, buffering between single-family homes and apartment blocks. However, no*



buffering is required between single-family homes and duplexes or single-family attached units. The following factors shall be considered in determining the adequacy of the type and extent of the buffer:

- a. The purpose of the buffer, for example to decrease noise levels, absorb air pollution, filter dust, or to provide a visual barrier.*
 - b. The size of the buffer required to achieve the purpose in terms of width and height.*
 - c. The direction(s) from which buffering is needed.*
 - d. The required density of the buffering.*
 - e. Whether the viewer is stationary or mobile.*
2. *On-site screening from view from adjoining properties of such things as service areas, storage areas, and parking lots shall be provided and the following factors will be considered in determining the adequacy of the type and extent of the screening:*
- a. What needs to be screened?*
 - b. The direction from which it is needed.*
 - c. How dense the screen needs to be.*
 - d. Whether the viewer is stationary or mobile.*
 - e. Whether the screening needs to be year-round.*
3. *Rooftop air cooling and heating systems and other mechanical equipment shall be screened from view from adjoining properties.*

This criterion asks whether the proposed use or structure is compatible with surrounding uses or structures. If it is not compatible, it seeks out the appropriate distance, or the appropriate screening or buffering needed to successfully separate or buffer those different uses and structures. Staff finds that this section has no relevance to a buried utility. Both the RWP and FWP will be invisible above ground meaning that this criterion does not apply.

Regarding “*Relationship to the Natural and Physical Environment*” and 55.100(B)(1)(2), in particular, staff finds that an area approximately 7,715 square feet in size on tax lots 100 and 200, designated as Habitat Conservation Area, is proposed to be graded and used as a staging area for boring operations and excavation of a trench. This would result in removal of 19 trees and adjacent understory (shrubs, groundcover, etc.). Upon completion of the boring and trenching, the area is proposed to be restored and revegetated with native groundcover, plants, shrubs and trees. None of the nineteen trees proposed to be removed are considered to be significant according to the project arborist who was accompanied on the site visit by the City of West Linn’s arborist. Additionally, there are no heritage trees along the pipeline route or otherwise affected by this application.

55.100(B)(3) regarding the preservation of natural topography and drainage, staff finds that site clearing and grading will occur prior to the HDD phase, however, that phase is temporary and once complete, the original topography will be restored and, as stated above, revegetated.



There are no drainageways that will be impacted or modified by this project either temporarily or permanently. To underscore the protection of drainageways, there are a number of small streams that bisect the RWP and FWP route along Mapleton but the applicant will tunnel under the stream channels and culverts to avoid any disturbances. Streams bisecting Highway 43 in pipes are deep enough that the FWP can be trenched above.

Regarding 55.100(B)(4) and the requirement that projects not be placed in areas subject to slumping or sliding based on the City's hazard map, staff finds that no slump or slide areas are along the RWP or FWP route. The RWP and FWP route is within a moderate to high-risk earthquake hazard area per the West Linn Natural Hazards Map. In response, the applicant undertook a seismic design study (Degenkolb Engineers) (Exhibit PC-3, Section 8). The seismic design study concluded with the comment that the pipeline will be built to address a one in 2,473 year earthquake episode, consistent with standards used for hospitals and other emergency response buildings and in accordance with the "Pipeline Research Council International Guidelines for the Seismic Design and Assessment of Natural Gas and Liquid Hydrocarbon Pipelines."

Regarding 55.100(M) and the requirement that the developer make necessary arrangements with utility companies or other persons or corporations affected for the installation of underground lines and facilities, the applicant supplied a list of affected utility providers in the area (Exhibit PC-5) and outlined the coordination efforts to date. The applicant held meetings and phone conversations to: provide an overview of the project, discuss possible utility conflicts and request as-built drawings. Furthermore, the applicant will continue to coordinate through written correspondence with each respective utility agency that will need to relocate facilities.

Regarding 55.125 and the understanding that the City may require a Traffic Impact Analysis (TIAs) in situations where ODOT determines that a project will have operational impacts on a State Highway: the City has requested that the applicant provide a traffic management plan (Exhibit PC-3, Section 12) due to the fact that all traffic impacts are related to temporary construction activity. The traffic management plan identifies existing conditions as well as proposed access and traffic control strategies for all travel modes and satisfactorily demonstrates an acceptable level of automobile and non-automobile circulation for the duration of the proposed construction.

The criteria in CDC 60.060(B) and CDC 55 are met.

60.070(C). The Planning Commission may impose conditions on its approval of a conditional use which it finds are necessary to assure the use is compatible with other uses in the vicinity. These conditions may include, but are not limited to, the following:

- 1. Limiting the hours, days, place, and manner of operation.*



2. *Requiring design features which minimize environmental impacts such as noise, vibration, air pollution, glare, odor, and dust.*
3. *Requiring additional setback areas, lot area, or lot depth, or width.*
4. *Limiting the building height, size or lot coverage, or location on the site.*
5. *Designating the size, number, location and design of vehicle access points.*
6. *Requiring street right-of-way to be dedicated and the street to be improved including all steps necessary to address future street improvements identified in the adopted Transportation System Plan.*
7. *Requiring participation in making the intersection improvement or improvements identified in the Transportation System Plan when a traffic analysis (compiled as an element of a conditional use application for the property) indicates the application should contribute toward.*
8. *Requiring landscaping, screening, drainage, and surfacing of parking and loading areas.*
9. *Limiting the number, size, location, height, and lighting of signs.*
10. *Limiting or setting standards for the location and intensity of outdoor lighting.*
11. *Requiring berming, screening, or landscaping and the establishment of standards for their installation and maintenance.*
12. *Requiring and designating the size, height, location, and materials for fences.*
13. *Requiring the protection and preservation of existing trees, soils, vegetation, watercourses, habitat areas, and drainage areas.*

Finding No. 16: Staff proposes the conditions listed in the Recommendation section of this staff report as means to ensure the project mitigates for environmental impacts, such as glare and, noise and impacts caused by construction traffic in and through the residential and commercial areas adjacent the proposed raw- and finished-water lines.

56.100 APPROVAL STANDARDS – CLASS II DESIGN REVIEW

The approval authority shall make findings with respect to the following criteria when approving, approving with conditions, or denying a Class II parks design review application.

Finding No. 17: Staff agrees with the applicant’s findings relative to this application.

Staff believes that the regulations in Chapter 56 were not designed to respond to a tunneled utility through Mary S. Young Park with no surface disturbance. Section 56.020(C)(10) does reference minor upgrades to utilities but this work is contemplated in the context of surface excavation and grading, none of which will take place in Mary S. Young Park with this proposal. Staff believes the standards in this Chapter are not applicable.



Chapter 27 – Flood Management Areas

27.010 PURPOSE

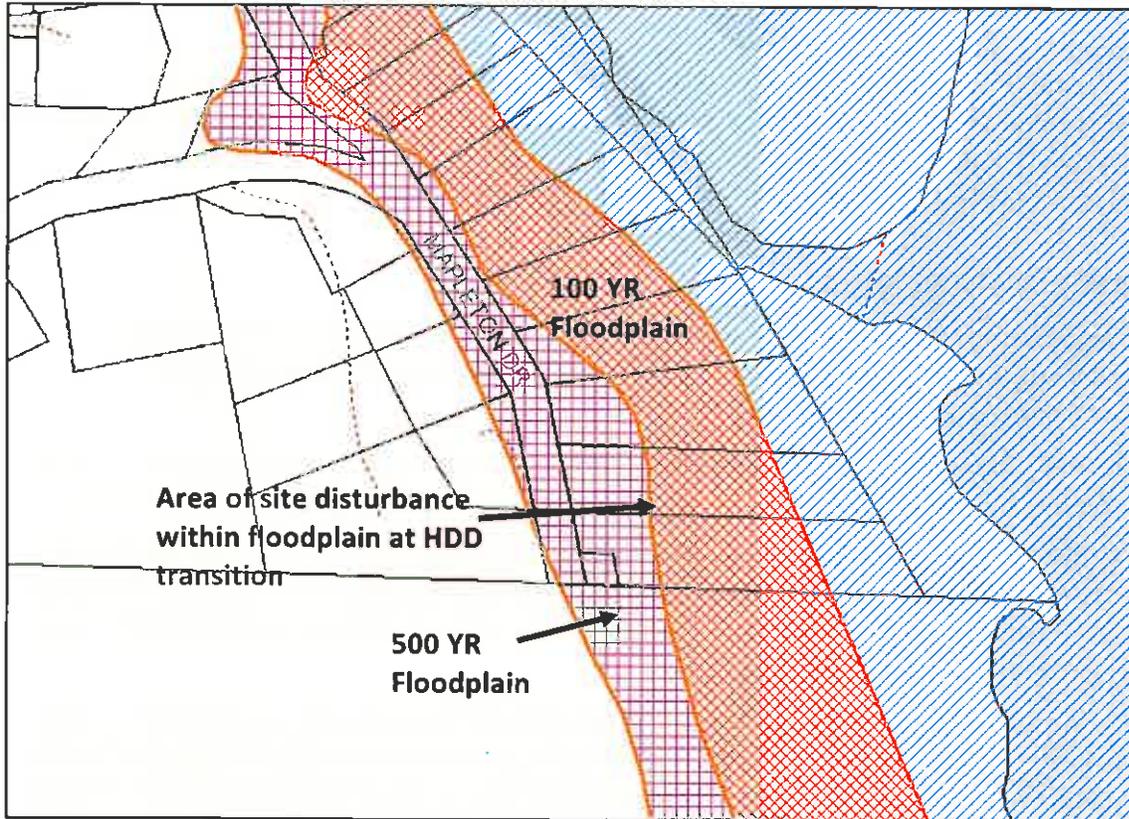
The purpose of this chapter is to create a Flood Management Area Overlay Zone in order to protect flood management areas that are identified on the flood management area map incorporated by reference as a part of this chapter. Flood management areas contain land identified by the Federal Insurance Administration in a scientific and engineering report entitled "The Flood Insurance Study for Clackamas County, Oregon, and incorporated areas," dated June 17, 2008, with accompanying Flood Insurance Maps; the area of inundation for the February 1996 flood based on data provided by Metro; and lands that have physical or documented evidence of flooding within recorded history. Flood management areas provide the following functions: protect life and property from dangers associated with flooding; flood storage, reduction of flood velocities, reduction of flood peak flows and reduction of wind and wave impacts; maintain water quality by reducing and sorting sediment loads, process chemical and organic wastes and reduce nutrients; recharge, store, and discharge groundwater; provide plant and animal habitat; and support riparian ecosystems. (Ord. 1522, 2005; Ord. 1565, 2008)

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. 18: Staff finds that the HDD to open cut/trench transition site on tax lots 100 and 200 is within the 100 year floodplain which is part of the Flood Management Area Overlay Zone. Chapter 2 defines Flood Management Areas as: "All lands contained in the Flood Management Area Overlay Zone, which include: lands within the 100-year floodplain, flood area, and floodway as shown on the FEMA flood insurance map dated June 17, 2008; the area of inundation for the February 1996 flood; and lands which have documented evidence of flooding." Consequently, a Flood Management Area permit is required.





27.045 CRITICAL FACILITIES

Construction of new critical facilities shall be, to the greatest extent possible, located outside the limits of the SFHA. Construction of new critical facilities shall only be permissible within the SFHA if no feasible alternative site is available. Critical facilities constructed within the SFHA shall have the lowest floor elevated three feet or to the height of the 500-year flood, whichever is higher. Access to and from the critical facility should also be protected to the height utilized above. Flood-proofing and sealing measures must be taken to ensure that toxic substances will not be displaced by or released into floodwaters. Access routes elevated to or above the level of the base flood elevation shall be provided to all critical facilities to the extent possible.

Finding No. 19: The RWP is one part of a larger critical facility that includes the Raw-water intake station (RIPS) on the Clackamas River in Gladstone, the FWP, and the Lake Oswego Water Treatment Plant (WTP) in West Linn. The applicant examined three Willamette River crossing alternatives (open-cut trench, HDD and aerial crossing) and concluded that there is no feasible way to bring water from the east side of the Willamette River to the west side of the river without crossing a SFHA, as floodplains abut the river in its entirety.

According to the applicant, the open-cut method would impact both the floodplain and floodway, and a pipe suspended from a bridge over the river would not only be prohibitively expensive but would also require permanent supporting piers within the floodplain and river. The applicant asserts, and staff agrees, that the HDD method has the

advantage of creating no water turbidity issues during construction and will be located between 7- and 65-feet below ground. There will be no permanent above ground structures and no changes in surface grade from present conditions. Finally, the RWP is an impermeable steel pipe with welded joints and is designed to carry water from the Clackamas River, and not toxic substances. The criterion is met.

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.

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.

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.

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.

E. Temporary fills permitted during construction shall be removed.

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.

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.

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.

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.

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)

Finding No. 20: Staff defers to and adopts the applicant's findings in the submittal. Staff notes that the overarching concern of this chapter is not to modify existing and mapped flood boundaries or anticipated flood characteristics through the introduction of new structures or by grading. Staff finds that the RWP will be underground and that no permanent modifications to existing grades or the topography will take place. As a result, the flood flow characteristics should remain unchanged by the development. Furthermore, the applicant submitted certification by a professional civil engineer (Exhibit PC-3, Section 15) stating that the proposal will not result in any increase in flood levels under any circumstance. The criteria are met.

Chapter 28 – Willamette and Tualatin River Protection

28.110 APPROVAL CRITERIA

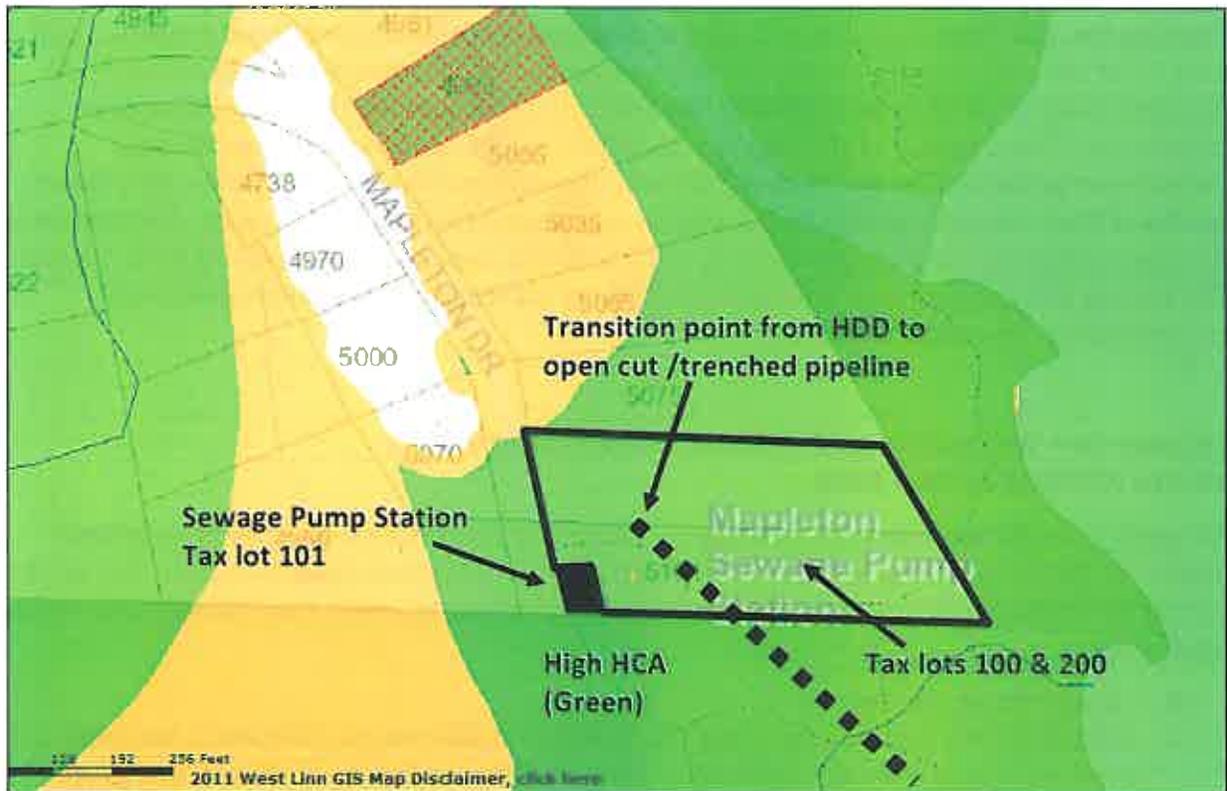
No application for development on property within the protection area shall be approved unless the decision-making authority finds that the following standards have been met or can be met by conditions of approval. The development shall comply with the following criteria as applicable:

- A. Development: All sites.*
 - 1. Sites shall first be reviewed using the HCA Map to determine if the site is buildable or what portion of the site is buildable. HCAs shall be verified by the Planning Director per CDC 28.070 and site visit. Also, "tree canopy only" HCAs shall not constitute a development limitation and may be exempted per CDC 28.070(A). The municipal code protection for trees and Chapters 55 and 85 CDC tree protection shall still apply.*
 - 2. HCAs shall be avoided to the greatest degree possible and development activity shall instead be directed to the areas designated "Habitat and Impact Areas Not Designated as HCAs," consistent with subsection (A)(3) of this section.*
 - 3. If the subject property contains no lands designated "Habitat and Impact Areas Not Designated as HCAs" and development within HCA land is the only option it shall be directed towards the low HCA areas first, then medium HCA areas and then to high HCA as the last choice. The goal is to, at best, avoid or, at least, minimize disturbance of the HCAs. (Water-dependent uses are exempt from this provision.)*
 - 4. All development, including exempted activities of CDC 28.040, shall have approved erosion control measures per Chapter 31 CDC in place prior to site disturbance and be subject to the requirements of CDC 32.070 and 32.080 as deemed applicable by the Planning Director.*

Finding No. 21: Staff agrees with and adopts the applicant's findings relative to this chapter. Staff finds that the proposed transition between the HDD pipeline and the open cut/trenched pipeline on tax lot 100 and 200 is in a High HCA area. Subsequent findings



will demonstrate why it is necessary to locate in this high HCA. There are no “non-HCA” or lower level HCA on these two properties. Findings also show that the HDD/open-cut trench is water dependant and therefore exempt from this provision. The applicant has provided an Erosion Control Plan (Exhibit PC-3, Section 13) which is accepted by the City.



D. Development of lands designated for industrial, commercial, office, public and other non-residential uses.

1. *Development of lands designated for industrial, multi-family, mixed use, commercial, office, public and other non-single-family residential uses shall be permitted on the following land designations and in the following order of preference with “a” being the most appropriate for development and “d” being the least appropriate:*
 - a *“Habitat and Impact Areas Not Designated as HCAs”*
 - b *Low HCA*
 - c *Moderate HCA*
 - d *High HCA*
2. Developing HCA land.
 - a. *Where non-HCA or areas designated as “Habitat and Impact Areas Not Designated as HCAs” are lacking or are in such limited supply as to render uses allowed by the underlying zone (e.g., general industrial) functionally*

impractical, the HCA may be utilized and built upon but shall emphasize “b” and “c” designations.

- b. Where it is proposed that a “d” or high HCA classification be used, the property owner must demonstrate that the proposed use is clearly a water-dependent use. Proximity to the river for the purpose of views is not valid grounds. However, public interpretive facilities of historic facilities such as the government locks will be permitted as well as wildlife interpretive facilities and ADA-accessible platforms.*

Finding No. 22: The objective of CDC Chapter 28 is to avoid or minimize development in high HCAs. Development is to be directed to areas out of the HCA or areas of lower quality HCAs unless there is no option.

Initially it was thought that the RWP could transition to a trench in the Mapleton Drive ROW, which is in a more desirable medium HCA. Further study revealed that existing sewage pipelines that feed the nearby City sewage pump station located on tax lot 101, block the development of a RWP HDD/Open cut trench transition facility in the Mapleton Drive ROW.

Per CDC Chapter 28.110(D), development of high HCA lands is permitted when it can be shown that the use is clearly “water dependent.” CDC Section 2.030 defines Water-dependent uses as, “Any use that requires access to, or use of, the rivers.” The applicant’s proposed raw-water transmission line requires access to and use of water from the Clackamas River to serve its intended function of supplying water to the Lake Oswego Water Treatment Plant and then to residents in Lake Oswego and Tigard. Therefore, the work in the high HCA of tax lots 100 and 200 is allowed.

The applicant proposes to revegetate temporarily disturbed areas of tax lots 100 and 200 following the completion of construction with native plant materials and trees (see Exhibit PC-3, Section 5, Figures 4 and 5). The criteria are met.

L. Roads, driveways, utilities, or passive use recreation facilities. Roads, driveways, utilities, public paths, or passive use recreation facilities may be built in those portions of HCAs that include wetlands, riparian areas, and water resource areas when no other practical alternative exists but shall use water-permeable materials unless City engineering standards do not allow that. 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. The maximum disturbance width for utility corridors is as follows:

- 1. For utility facility connections to utility facilities, no greater than 10 feet wide.*
- 2. For upgrade of existing utility facilities, no greater than 15 feet wide.*
- 3. For new underground utility facilities, no greater than 25 feet wide, and disturbance of no more than 200 linear feet of water quality resource area, or 20 percent of the total linear feet of water quality resource area, whichever is greater.*



Finding No. 23: Staff concurs with the applicant's response to these criteria. Although the applicant's proposed utility facility can be described as a water-dependent use in a high-HCA area, the pipeline alignment will not include disturbance of wetlands, riparian areas or other water resource areas. As will be discussed in findings responding to Chapter 32, later in this report, the HDD alignment passes beneath wetlands, riparian areas and water resource areas at sufficient depth to avoid impact, as described below, therefore these criteria are not applicable. Full revegetation will be undertaken at the HCA site. Mitigation is not required since no wetland, riparian area, or water resource areas are within the work area.

According to the applicant's proposal, "the RWP enters West Linn approximately 65-feet below Mary S. Young Park. The top of the RWP rises to approximately 30-feet below grade where WRA-C ends (at the boundary between the southern and northern OPRD lots – see Exhibit PC-3, Section 6, Figure 2). Consequently, the HDD is between 65- and 30-feet below the HCA and WRA between the Willamette River and the northern OPRD lot..."

Staff has reviewed the applicant's boring logs in the location of Wetland A (Exhibit PC-5, *email from Pete Oveson*) and concurs that there is no potential for boring activities to drain the wetland and no other potential impacts are likely:

The project draft geotechnical report (GeoDesign 2012) shows that below Wetland A there is a layer of soft silt alluvium roughly 10-feet thick. Below this silt layer, substrates transition to soft and medium hard basalts. At 50- to 70-feet below the wetland, where the bore will occur, substrates are medium hard to vary hard basalt. Due to the substantial depth of the bore below the wetland and because the bore will be going through a thick layer of hard rock, there is no potential for boring activities to drain the wetland and no other potential impacts are likely (Exhibit PC-3, Section 6, p.4).

M. Structures. All buildings and structures in HCAs and riparian areas, including all exterior mechanical equipment, should be screened, colored, or surfaced so as to blend with the riparian environment. Surfaces shall be non-polished/reflective or at least expected to lose their luster within a year. In addition to the specific standards and criteria applicable to water-dependent uses (docks), all other provisions of this chapter shall apply to water dependent uses, and any structure shall be no larger than necessary to accommodate the use.

Finding No. 24: The proposed transmission line will be completely below-ground and therefore there are no aboveground structures to provide screening for. The criterion is not applicable.

U. Protect riparian and adjacent vegetation. Vegetative ground cover and trees upon the site shall be preserved, conserved, and maintained according to the following provisions:

- 1. Riparian vegetation below OHW removed during development shall be replaced with indigenous vegetation, which shall be compatible with and enhance the riparian environment and approved by the approval authority as part of the application.*



2. *Vegetative improvements to areas within the protection area may be required if the site is found to be in an unhealthy or disturbed state by the City Arborist or his designated expert. "Unhealthy or disturbed" includes those sites that have a combination of native trees, shrubs, and groundcover on less than 80 percent of the water resource area and less than 50 percent tree canopy coverage in the primary and secondary habitat conservation area to be preserved. "Vegetative improvements" will be documented by submitting a revegetation plan meeting CDC 28.160 criteria that will result in the primary and secondary habitat conservation area to be preserved having a combination of native trees, shrubs, and groundcover on more than 80 percent of its area, and more than 50 percent tree canopy coverage in its area. The vegetative improvements shall be guaranteed for survival for a minimum of two years. Once approved, the applicant is responsible for implementing the plan prior to final inspection.*
3. *Tree cutting shall be prohibited in the protection area except that:*
 - a. *Diseased trees or trees in danger of falling may be removed with the City Arborist's approval; and*
 - b. *Tree cutting may be permitted in conjunction with those uses listed in CDC 28.030 with City Arborist approval; to the extent necessary to accommodate the listed uses;*
 - c. *Selective cutting in accordance with the Oregon Forest Practices Act, if applicable, shall be permitted with City Arborist approval within the area between the OHW and the greenway boundary provided the natural scenic qualities of the greenway are maintained.*

Finding No. 25: Staff finds that the transition area on tax lots 100 and 200 is above the Ordinary High Water Mark of the Willamette River and is therefore excused from the provisions of subsection U(1). The site was not described as "Unhealthy or disturbed" so subsection U(2) does not apply.

Section U(3) allows tree removal for those uses listed in Subsection 28.030(C). Subsection 28.030(C) states that the uses are those uses allowed by the underlying zone; which is the case of tax lots 100 and 200 is R-10. Major utilities are allowed in the R-10 zone by CUP so an application to remove trees is allowed with City Arborist review so long as the Arborist finds that it will not compromise the scenic qualities of the greenway. The City Arborist has already approved the removal of 19 non-significant trees. The area of tree loss will be behind a 400-foot deep screen of other trees that extend to the river. The trees will be replaced as part of the applicant's revegetation plan. The criteria are met.

Chapter 31 - Erosion Control

31.060 APPROVAL CRITERIA

The City Engineer or designee shall make a written finding, as applicable, with respect to the following criteria when approving, approving with conditions, or denying an erosion control permit.



A. The erosion and sediment control plan shall follow the guidelines of the Erosion Prevention and Sediment Control Plans, Technical Guidance Handbook (Clackamas County Department of Utilities, most current edition).

Finding No. 26: Staff agrees with and adopts the findings of the applicant found in Technical Memorandum 13 prepared by Kennedy/Jenks Consultants. In response to 31.060(A) requirement that the guidelines of the *Erosion Prevention and Sediment Control Plans, Technical Guidance Handbook* be followed, Kennedy/Jenks states that those guidelines do not exist and propose Water Environment Services' (WES) standards instead. According to City of West Linn Public Works Department, WES provides erosion control, water quality and storm water management services for Clackamas County, so it is appropriate to use their standards.

B. All developments shall be designed to minimize the disturbance of natural topography, vegetation, and soils.

Finding No. 27: The project boring is in sensitive locations under and beside the river. It involves open-cut trenching the RWP from the HDD transition on tax lots 100 and 200 to the WTP and then open-cut trenching the FWP from the WTP to Lake Oswego. Except for the transition area which possesses natural topography, the entire route proposed for trenching is developed Mapleton Drive and Highway 43 rights-of-way with no vegetation or natural topography being disturbed. The disturbance area on tax lots 100 and 200 is limited to a small area (approximately 7,715 square feet) to allow the RWP to transition from the daylighted HDD to an open cut/trench. Once the connection is completed the site will be regraded and revegetated. The criterion is met.

C. Designs shall minimize cuts and fills.

Finding No. 28: Cuts and/or fills are not proposed for this project. The criterion does not apply.

D. The plan shall prevent erosion by employing prevention practices such as non-disturbance, construction phasing, seeding and mulch covers.

E. The plan shall be designed to allow no more than 10 percent cumulative increase in natural stream turbidities, as measured relative to a control point immediately upstream of the turbidity-causing activity. However, limited duration activities necessary to address an emergency or to accommodate essential dredging, construction, or other legitimate activities, and that cause the standard to be exceeded, may be authorized provided all practicable turbidity control techniques have been applied.

F. The applicant shall actively manage and maintain erosion control measures and utilize techniques described in the permit to prevent erosion and control sediment during and following development. Erosion prevention and sediment control measures required by the



permit shall remain in place until disturbed soil areas are permanently stabilized by landscaping, grass, approved mulch, or other permanent soil stabilizing measure.

G. No mud, dirt, rock, or other debris shall be deposited upon a public street or any part of the public stormwater system, surface water system, water quality resource area, or any part of a private stormwater system or surface water system that drains or connects to the public stormwater or surface water system.

H. Projects with a minimum development size of one acre, including subdivisions, apartments, commercial and industrial, shall meet the following requirements:

1. The erosion prevention and sediment control plan is designed by a certified erosion control specialist; and

2. The developer enters into an agreement with the City stating that in the event an erosion emergency occurs and is not repaired within 24 hours of the time the City notifies the developer, the City may hire a contractor or employ City staff to repair the erosion problem and bill the developer 125 percent of the cost to the City.

Finding No. 29: The applicant's erosion control plan will follow the Water Environment Services *Erosion Prevention and Sediment Control – Planning and Design Manual* and as such addresses items D-G above. Regarding item H above, the applicant is proposing a utility transmission line and not a subdivision, apartment, commercial or industrial use and therefore H does not apply. The criteria are met.

Chapter 32 – Water Resource Area Protection

32.050 APPROVAL CRITERIA

No application for development on property containing a water resource area shall be approved unless the decision-making authority finds that the following standards have been satisfied, or can be satisfied by conditions of approval.

A. *Proposed development submittals shall identify all water resource areas on the project site. The most currently adopted Surface Water Management Plan shall be used as the basis for determining existence of drainageways. The exact location of drainageways identified in the Surface Water Management Plan, and drainageway classification (e.g., open channel vs. enclosed storm drains), may have to be verified in the field by the City Engineer. The Local Wetlands Inventory shall be used as the basis for determining existence of wetlands. The exact location of wetlands identified in the Local Wetlands Inventory on the subject property shall be verified in a wetlands delineation analysis prepared for the applicant by a certified wetlands specialist. The Riparian Corridor Inventory shall be used as the basis for determining existence of riparian corridors.*

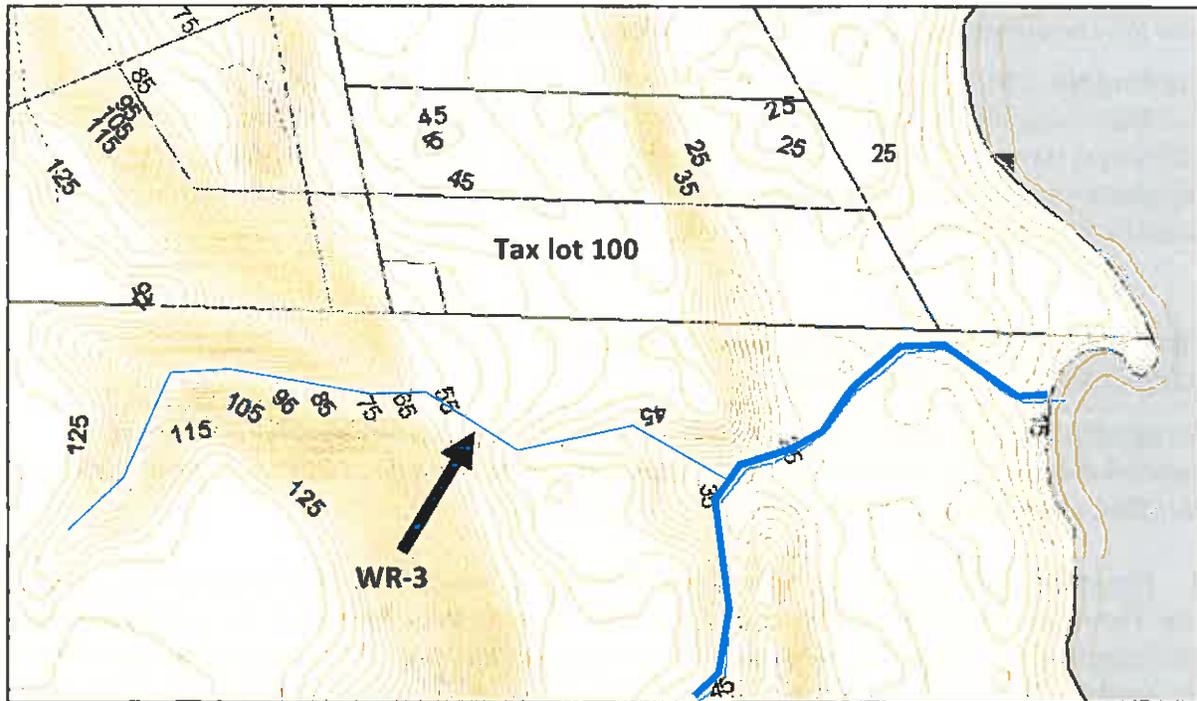
Finding No. 30: The applicant correctly identified all streams shown on the Surface Water Management Plan. In addition, a small tributary of Turkey Creek which runs just south of tax lot 100 was identified by the applicant as "WR-3." This stream does not appear on the Surface Water Management Plan. This is a small seasonal or intermittent stream that carries water during brief periods after rainfall. Applying the combined 65 foot transition



and setbacks of this chapter, the transition and setbacks would not reach or apply to the HDD work area 165 feet to the north.

Another correction to City mapping is appropriate in that the riparian corridor protection, which is supposed to extend 100 feet from the edge of Turkey Creek, is shown on the City of West Linn's GIS map extending 270 feet northwards from the creek's edge. (Staff finds that the GIS map agrees with the adopted 2002 Riparian Corridor Inventory.) Even if the mapped riparian corridor is allowed to exist as shown, it does not reach the HDD work area perimeter on tax lots 100 and 200 which is a further 45 feet north.

There are no wetlands in, or adjacent to, the HDD work area. The RWP travels at a depth of 65 feet below the wetlands and Turkey Creek and Mary S. Young Creek in Mary S. Young Park.



B. Proposed developments shall be so designed as to maintain the existing natural drainageways and utilize them as the primary method of stormwater conveyance through the project site unless the most recently adopted West Linn Surface Water Management Plan calls for alternate configurations (culverts, piping, etc.). Proposed development shall, particularly in the case of subdivisions, facilitate reasonable access to the drainageway for maintenance purposes.

Finding No. 31: Construction of the RWP will take place below Mary S. Young Creek, Turkey Creek and WR-3 (shown above) and associated wetlands in Mary S. Young Park. The RWP will transition at the HDD work area on tax lots 100 and 200 then travel over Heron Creek (which is piped further under the ROW) within the existing paved ROW of Mapleton Drive. Construction of the FWP will occur over Trillium, Gans, Robin, Fern,

Robinwood, and Arbor Creeks plus associated unnamed tributaries (WR-8, WR-6) (see Figure 1 of Exhibit PC-3, Section 5 by David Evans and Associates). No drainageways will be used for storm water conveyance for this project and none shall be modified. The criterion is met.

C. Development shall be conducted in a manner that will minimize adverse impact on water resource areas. Alternatives which avoid all adverse environmental impacts associated with the proposed action shall be considered first. For unavoidable adverse environmental impacts, alternatives that reduce or minimize these impacts shall be selected. If any portion of the water quality resource area is proposed to be permanently disturbed, the applicant shall prepare a mitigation plan as specified in CDC 32.070 designed to restore disturbed areas, either existing prior to development or disturbed as a result of the development project, to a healthy natural state.

Finding No. 32: The applicant's proposal minimizes adverse impacts on water resource areas by tunneling beneath wetlands and water resource areas in Mary S. Young Park and OPRD tax lots 100 and 200 and containing open-cut trench activities to paved portions of the Mapleton Drive and Highway 43 rights-of-way where the project passes through water resource areas. Therefore, the project will avoid all adverse environmental impacts to WRAs along Mapleton Drive and Highway 43.

Section 6 of the applicant's proposal (Exhibit PC-3, Section 6) contains a technical memorandum prepared by ecologists from David Evans and Associates, which demonstrates that the HDD that will occur between 65- to 7-feet below the park and OPRD lots will not disturb the soils, wetlands, and vegetation associated with nearby WRAs. Consistent with CDC 32.050(C), the applicant has selected an alternative that avoids all adverse environmental impacts to the WRAs associated with the park and the two OPRD lots.

The mitigation requirements of Section 32.070 do not apply. The criterion is met.

D. Water resource areas shall be protected from development or encroachment by dedicating the land title deed to the City for public open space purposes if either: (1) a finding can be made that the dedication is roughly proportional to the impact of the development; or (2) the applicant chooses to dedicate these areas. Otherwise, these areas shall be preserved through a protective easement. Protective or conservation easements are not preferred because water resource areas protected by easements have been shown to be harder to manage and, thus, more susceptible to disturbance and damage. Required 15-foot-wide structural setback areas do not require preservation by easement or dedication.

Finding No. 33: Water resource areas will not be impacted by development through the applicant's proposal. The criterion does not apply.



E. The protected water resource area shall include the drainage channel, creek, wetlands, and the required setback and transition area. The setback and transition area shall be determined using the following table:

Table 32-1. Required Widths of Setback and Transition Area

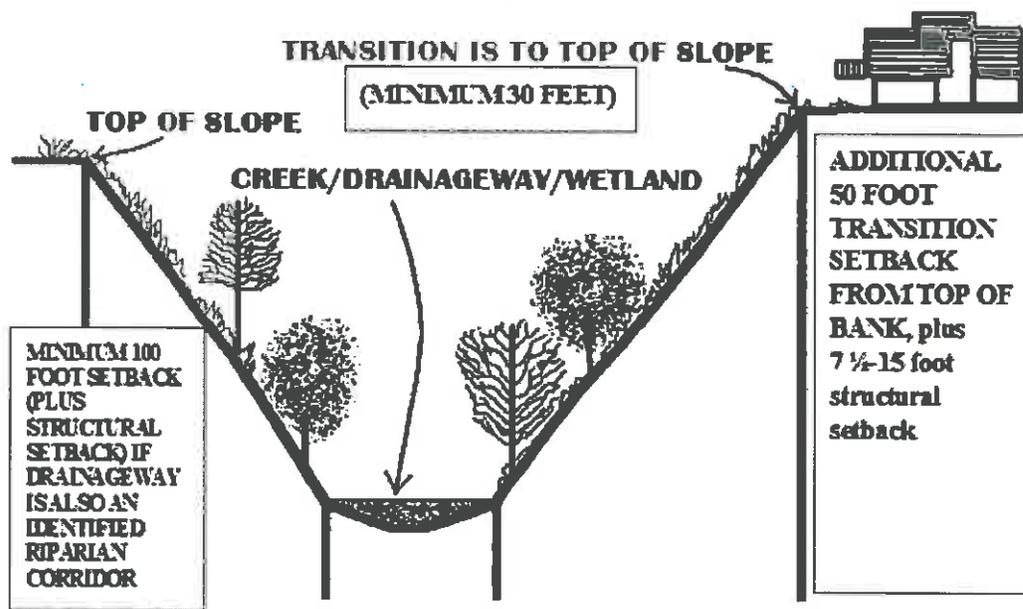
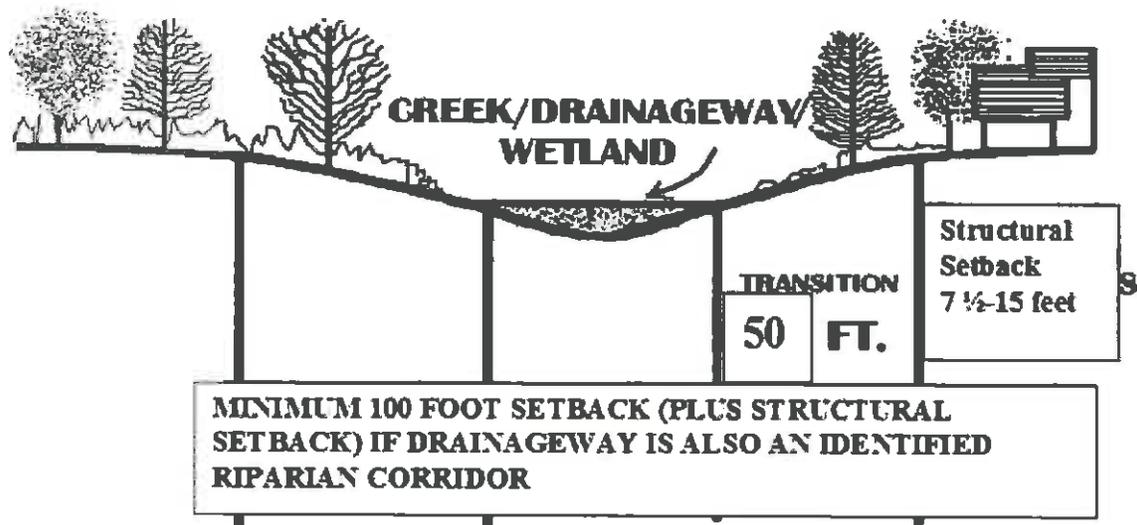
Protected Water Feature Type (See Chapter 02 CDC, Definitions)	Slope Adjacent to Protected Water Feature	Starting Point for Measurements from Water Feature	Width of Setback and Transition Area on Each Side of the Water Feature
Wetland, Major Drainageway, Minor Drainageway	0% – 25%	<ul style="list-style-type: none"> • Edge of bankful flow or 2-year storm level • Delineated edge of wetland 	50 feet plus structural setback.
Wetland, Major Drainageway, Minor Drainageway	≥ 25% to a distinct top of ravine ¹	<ul style="list-style-type: none"> • Edge of bankful flow or 2-year storm level • Delineated edge of wetland 	Distance from starting point of measurement to top of ravine ¹ (30 feet minimum), plus an additional 50-foot setback, plus structural setback.
Wetland, Major Drainageway, Minor Drainageway	≥ 25% for more than 30 feet, and no distinct top of ravine for at least 150 feet	<ul style="list-style-type: none"> • Edge of bankful flow or 2-year storm level • Delineated edge of wetland 	200 feet, plus structural setback
Riparian Corridor	any	<ul style="list-style-type: none"> • Edge of bankful flow or 2-year storm level 	100 feet or the setback required under major and minor drainageway provisions, whichever is greater, plus structural setback
Formerly Closed Drainage Channel Reopened (see CDC 32.050(N))	n/a	<ul style="list-style-type: none"> • Edge of bankful flow or 2-year storm level 	Variable: See CDC 32.050(N)

¹Where the protected water feature is confined by a ravine or gully, the top of ravine is the location where the slope breaks at least 15 percent and the slope beyond the break remains less than 25 percent for at least 50 feet.

At least three slope measurements along the water feature, at no more than 100-foot increments, shall be made for each property for which development is proposed. Depending upon the width of the property, the width of the protected corridor will vary.

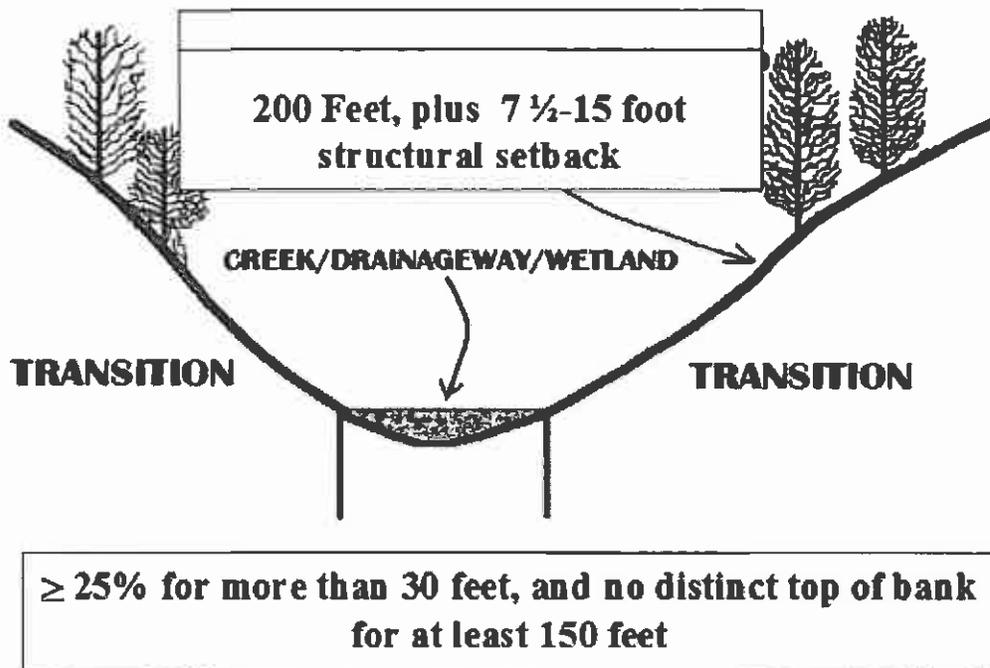


SLOPE IS UNDER 25 %



WELL DEFINED RAVINE. SLOPES OVER 25%. DISTINCT EDGE





F. Roads, driveways, utilities, or 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. The maximum disturbance width for utility corridors is as follows:

- 1. For utility facility connections to utility facilities, no greater than 10 feet wide.*
- 2. For upgrade of existing utility facilities, no greater than 15 feet wide.*
- 3. For new underground utility facilities, no greater than 25 feet wide, and disturbance of no more than 200 linear feet of water quality resource area, or 20 percent of the total linear feet of water quality resource area, whichever is greater.*

Finding No. 34: The applicant has identified water resource areas in Exhibit PC-3, Section 5, Figures 1 and 2. As outlined earlier in this report, the applicant’s proposal includes boring beneath WRAs in Mary S. Young Park and OPRD tax lots 100 and 200 and containing the open-cut trench portion of the transmission line to the Mapleton Drive and Highway 43 rights-of-way. Where the alignment passes through WRAs in the paved portions of Mapleton Drive and Highway 43, the applicant proposes to trench over or tunnel underneath piped streams and therefore the alignment will not disturb water resource areas.

Alternative routes were considered for the RWP and FWP but the use of existing paved streets (Mapleton Drive and Highway 43) was seen as being the least disruptive, particularly since the streams in those corridors are piped whereas routes outside of the ROWs would have required traversing open channel WRAs with the attendant adverse environmental consequences.

G. Prior to construction, the water resource area shall be protected with an anchored chain link fence (or approved equivalent) at its perimeter and shall remain undisturbed except as specifically allowed by an approved water resource area permit. Such fencing shall be maintained until construction is complete. The water resource area shall be identified with City-approved permanent markers at all boundary direction changes and at 30- to 50-foot intervals that clearly delineate the extent of the protected area.

Finding No. 35: Because all pipeline passage over or under the streams or WRAs will be at locations where the streams are piped, there is no need for cyclone fencing. Per recommended Condition of Approval 8, the applicant will be required to contain the HDD transition area within cyclone fencing. The nearest WRA to that fence is the riparian corridor associated with Turkey Creek. The riparian area edge will be 45-feet away from the fenced work area.

H. Paved trails, walkways, or bike paths shall be located at least 15 feet from the edge of a protected water feature except for approved crossings. All trails, walkways, and bike paths shall be constructed so as to minimize disturbance to existing native vegetation. All trails, walkways, and bike paths shall be constructed with a permeable material and utilize low impact development (LID) construction practices.

Finding No. 36: The applicant proposes none of the above-listed bicycle and/or pedestrian facilities as part of this project and therefore, the criterion does not apply.

I. Sound engineering principles regarding downstream impacts, soil stabilization, erosion control, and adequacy of improvements to accommodate the intended drainage through the drainage basin shall be used. Storm drainage shall not be diverted from its natural watercourse. Inter-basin transfers of storm drainage shall not be permitted.

J. Appropriate erosion control measures based on Chapter 31 CDC requirements shall be established throughout all phases of construction.

Finding No. 37: The applicant's Erosion Control Plan will prevent downstream impacts and erosion. No diversion of storm drainage will occur nor will any inter-basin transfers. During the pull-back phase of HDD beneath the Willamette River, mud and water are being pulled back through the HDD pipe and there will be a considerable volume of material exiting the bore hold on tax lot 100 and 200. The applicant proposes that this material be contained and collected by vacuum trucks and driven off site for disposal during a brief 48 hour period. The erosion control measures will contain spills associated with this phase.

K. Vegetative improvements to areas within the water resource area may be required if the site is found to be in an unhealthy or disturbed state, or if portions of the site within the water resource area are disturbed during the development process. "Unhealthy or disturbed" includes those sites that have a combination of native trees, shrubs, and groundcover on less



than 80 percent of the water resource area and less than 50 percent tree canopy coverage in the water resource area. Vegetative improvements will be documented by submitting a revegetation plan meeting CDC 32.080 criteria that will result in the water resource area having a combination of native trees, shrubs, and groundcover on more than 80 percent of its area, and more than 50 percent tree canopy coverage in its area. Where any existing vegetation is proposed to be permanently removed, or the original land contours disturbed, a mitigation plan meeting CDC 32.070 criteria shall also be submitted. Interim erosion control measures such as mulching shall be used to avoid erosion on bare areas. Upon approval of the mitigation plan, the applicant is responsible for implementing the plan during the next available planting season.

Finding No. 38: The applicant states that the project will not disturb any WRA so no vegetative improvements are required. Staff agrees. The applicant will however be revegetating the 7,715 square-foot disturbed area on tax lots 100 and 200, where the HDD transitions to an open cut trench.

L. Structural setback area. Where a structural setback area is specifically required, development projects shall keep all foundation walls and footings at least 15 feet from the edge of the water resource area transition and setback area if this area is located in the front or rear yard of the lot, and seven and one-half feet from the edge of the water resource area transition and setback area if this area is located in the side yard of the lot. Structural elements may not be built on or cantilever over the setback area. Roof overhangs of up to three feet are permitted in the setback. Decks are permitted within the structural setback area.

Finding No. 39: Staff agrees with the applicant's finding that no above ground structures are proposed so structural setbacks are not relevant.

M. Stormwater treatment facilities may only encroach a maximum of 25 feet into the outside boundary of the water resource area; and the area of encroachment must be replaced by adding an equal area to the water quality resource area on the subject property. Facilities that infiltrate stormwater on site, including the associated piping, may be placed at any point within the water resource area outside of the actual drainage course so long as the forest canopy and the areas within 10 feet of the driplines of significant trees are not disturbed. Only native vegetation may be planted in these facilities.

Finding No. 40: No storm water treatment facilities are proposed for the underground RWP and FWP. Therefore this criterion does not apply.

N. As part of any proposed land division or Class II design review application, any covered or piped drainageways identified on the Surface Water Quality Management Plan Map shall be opened, unless the City Engineer determines that such opening would negatively impact the affected storm drainage system and the water quality within that affected storm drainage



system in a manner that could not be reasonably mitigated by the project's site design. The design of the reopened channel and associated transition area shall be considered on an individualized basis, based upon the following factors:

1. *The ability of the reopened storm channel to safely carry storm drainage through the area.*
2. *Continuity with natural contours on adjacent properties.*
3. *Continuity of vegetation and habitat values on adjacent properties.*
4. *Erosion control.*
5. *Creation of filters to enhance water quality.*
6. *Provision of water temperature conducive to fish habitat.*
7. *Consideration of habitat and water quality goals of the most recently adopted West Linn Surface Water Management Plan.*
8. *Consistency with required site mitigation plans, if such plans are needed.*

The maximum required setback under any circumstance shall be the setback required as if the drainageway were already open.

Finding No. 41: All WRAs (streams) that are bisected by the RWP or FWP are in pipes buried beneath paved streets. Daylighting these streams would require the construction of nine bridges along Mapleton Drive and Highway 43 which would entail considerable cost and would not improve water quality. Daylighting streams beneath Mapleton Drive and Highway 43 would also require significant utility relocation. Staff finds that because the applicant is not creating any new impacts to WRA, neither nexus nor proportionality can be established to require the applicant to undertake the work in (N) above.

O. The decision-making authority may approve a reduction in applicable front yard setbacks abutting a public street to a minimum of 15 feet and a reduction in applicable side yard setbacks abutting a public street to seven and one-half feet if the applicant demonstrates that the reduction is necessary to create a building envelope on an existing or proposed lot of at least 5,000 square feet.

Finding No. 42: The criterion does not apply as no above grade structures are being built.

P. Storm drainage channels not identified on the Surface Water Management Plan Map, but identified through the development review process, shall be subject to the same setbacks as equivalent mapped storm drainage channels. (Ord. 1545, 2007)

Finding No. 43: The unnamed and unmapped stream in Mary S. Young Park, identified as WR-3 by the applicant, is duly noted in the applicant's submittal and by City staff. A combined transition and setback of 65-feet has been applied to WR-3 since the slope adjacent to the stream is in the 0-25% range. The 65-foot transition and setback boundary is 90- to 100-feet shy of the HDD work area on tax lot 100 and 200. Staff finds that the unidentified stream exists beyond the required setback distance established in O above.



