8 May 2012

RWP Task No. 2.19 Technical Memorandum

To: Joel Komarek and Dave Prock, City of Lake Oswego

From: Brad Moore, P.E., Kennedy/Jenks Consultants

Subject: Lake Oswego Raw Water Pipeline (RWP) and Finished Water Pipeline (FWP) – City of West Linn Erosion Control
K/J 1191016.10

The purpose of this memorandum is to address erosion control requirements under the City of West Linn Community Development Code (CDC), Chapter 31 - Erosion Control.

Breakdown of Specific CDC Sections in Chapter 31

CDC Section 31.040-C-1 requests the name, address, phone number, mobile phone number, and fax number of the site steward responsible for erosion control at the project site throughout project duration. A construction contract has not been awarded to a contractor. As such, the site steward responsible for erosion control at the project site throughout the project duration (typically an employee of the contractor) has not been identified.

CDC Section 31.040-C-2 requests the name, address, and 24-hour contact number of the designated emergency contact person. A construction contract has not been awarded to a contractor. As such, the designated emergency contact person (typically an employee of the contractor) has not been identified.

CDC Section 31.040-C-3 requests a description of existing topography and soil characteristics described in the Clackamas County Soil Survey. The topography in the vicinity of the FWP varies with elevations ranging between 155 feet and 210 feet. The topography of the RWP generally slopes in an easterly direction, from an elevation of 135 feet near the Water Treatment Plant to an elevation of 50 feet at the HDD entry pit. The soils of the RWP consist of a series of alluvial and river-cut bedrock terraces near the Willamette River. Quaternary alluvium is mapped on a majority of the terraces next to the river and generally consist of unconsolidated silt, sand, and gravel deposits. Upland, Troutdale Formation sand and gravel deposits have been mapped along the pipeline alignments. Shallow basalt bedrock has also been mapped along the pipeline alignments. The soils of the FWP generally consist of poorly consolidated sand to silt deposits near the Water Treatment Plant and poorly to moderately consolidated, semi-cemented subrounded to rounded silt, sand, and gravel along Highway 43.

CDC Section 31.040-C-4 requests plans drawn to an appropriate scale (in order of preference: one inch equals 10 feet to one inch equals 30 feet), which contains the following information:

a. Existing and proposed contour lines at the following minimum intervals:

1) Two-foot intervals for slopes zero to 25 percent; and

2) Five- or 10-foot intervals for slopes in excess of 25 percent slope;

b. Location of proposed stormwater facilities including cross-sections;

c. The location of all existing natural features including, but not limited to, delineation of water quality resource areas (if applicable) and trees of a caliper greater than six inches in diameter at breast height (DBH).

Figures 15 through 25 (scale of 1"=30') have been prepared to address this requirement. The topographic survey performed for this project was prepared with 1-foot contours throughout, which exceeds the requirement of this code section. There is no increase in impervious area associated with this project. As such, stormwater facilities are not proposed for this project. Water resource areas are shown where the proposed pipeline is located within them. Trees with a 6-inch caliper and larger are shown throughout the Erosion Control Plans.

CDC Section 31.040-C-5 requests locations of all existing and proposed channels, swales, or drainage pipes which either convey off-site stormwater through, or route stormwater around, the construction area. Identify the nearest receiving stream. There are no proposed channels, swales or drainage pipes associated with this pipeline project. Existing channels, swales or drainage pipes are shown within the immediate vicinity of the pipeline alignment.

CDC Section 31.040-C-6 requests locations and detailed designs of all proposed erosion and sedimentation control facilities as required by Chapter 32 CDC. Proposed erosion and sedimentation control facilities are shown in Figures 15 through 25. Figures 15 through 25 are the detailed design. For erosion control measures on disturbed areas, the RWP and FWP projects will secure 1200-C permits from the Oregon Department of Environmental Quality (ODEQ) and additionally comply with CDC Section 31 and Clackamas County Water Environment Services (WES) Erosion Prevention and Sediment Control – Planning and Design Manual.

CDC Section 31.040-C-7 requests that phasing of any proposed erosion and sedimentation control work clearly indicated on the plan. Include an activity schedule for each phase outlining specific best management practices for the duration of the project. There is no proposed phasing of erosion and sedimentation control work. The schedule for the project currently reflects a June 17 2013 through September 25 2014 duration for the RWP and an April 3, 2014 through June 30, 2015 duration for the FWP in West Linn city limits. Erosion control measures will be in place and maintained for these durations for their respective projects.

CDC Section 31.040-C-8 requests details and notes on the site plan for mulching and revegetation. This is information that was to be provided on the landscape plans provided by David Evans and Associates.

CDC Section 31.060-A requests that 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). There does not appear to be a Department of Utilities. As stated above, it is proposed that the erosion and sediment control plan follows the WES Erosion Prevention and Sediment Control – Planning and Design Manual.

CDC Section 31.060-B requests that all developments be designed to minimize the disturbance of natural topography, vegetation, and soils. There is not a development associated with this project. There is no impervious area being created, and existing topography will be restored to pre-construction conditions, slopes, and contours.

CDC Section 31.060-C requests that designs minimize cuts and fills. There are no cuts or fills proposed for this project.

CDC Section 31.060-D requests that the plan prevent erosion by employing prevention practices such as non-disturbance, construction phasing, seeding and mulch covers. Appropriate erosion prevention practices such as gravel construction entrances, sediment fence, biofilter bag inlet protection, seeding, and mulch covers will be utilized, as indicated in Figures 15 through 25.

CDC Section 31.060-E requests that the plan 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. Appropriate erosion prevention practices such as gravel construction entrances, sediment fence, biofilter bag inlet protection, seeding, and mulch covers will be utilized to minimize the increase in natural stream turbidities, as indicated in Figures 15 through 25.

CDC Section 31.060-F requests that the applicant actively manage and maintain erosion control measures and utilize techniques described in the permit to prevent erosion and control sediment during and following development. The site steward responsible for erosion control at the project site throughout the project duration will actively manage and maintain erosion control measures and will utilize techniques previously identified, measures that will remain in place until disturbed soil areas are permanently stabilized.

CDC Section 31.060-H requests that projects with a minimum development size of one acre, including subdivisions, apartments, commercial and industrial, 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.

There is not a development size of one acre or more associated with this project.

General Description of Erosion Control Measures Proposed

The potential for sediment along the roadways will be addressed with erosion and sediment control measures and best management practices (BMPs) to be sure that appropriate measures are implemented and thereby minimize the chance of soil washing off the site onto streets, drainage systems, and adjacent properties. Standard construction BMPs for erosion and sediment control will be used throughout the length of the alignment. The Contractor will install appropriate perimeter controls around the linear construction areas, including storm inlet protection and sediment fencing where appropriate. Erosion control measures are shown in Figures 15 through 25.

Prior to the start of construction, construction trailers, a designated area for construction worker parking, and locations for material storage and stockpiling will be established. Before construction begins, a pre-construction meeting will be held to train and inform construction personnel on erosion and sediment control BMPs. The designated Project site area boundary will be described during the meeting. Following the meeting, Project sensitive areas will be identified and protected through the installation of perimeter controls, such as construction fencing.

In conjunction with the installation of perimeter controls, areas where natural vegetation is to be preserved will be identified specifically and flagged. Well defined construction site entrances will be constructed at key locations, such as at the HDD entry point on Oregon Parks and Recreation Department (OPRD) property. The construction site entrances will be made up of wood curb ramps, gravel construction entrances, or other feasible applications. Use of wheel washes will be addressed in the 1200-C permit and the contractor's site-specific Erosion and Sedimentation Control Plan (ESCP). Type V catch basin inserts will be installed at catch basins located within the Project site area. Silt fencing will be installed. After initial erosion control measures are installed, heavy construction equipment will be mobilized at the site. Equipment to be mobilized on the OPRD property includes excavation equipment and horizontal directional drilling (HDD) equipment. Additionally, secondary containment and spill prevention BMPs will be implemented in surrounding areas where equipment mobilization (HDD drill assembly) and

equipment transport will occur. The contractor will be responsible for submitting site specific ESCPs and PCPs.

In addition to the measures described above, other erosion and sediment control BMPs will be considered for site specific application including inlet protection, biofilter bags, sediment fences, construction entrances, tire wash, sediment control mats, wattles and other BMPs as indicated in Chapter 4 – Erosion and Sediment Control Measures and BMPs, and Chapter 5 – Pollution Control Measures and BMPs of Clackamas WES Erosion Prevention and Sediment Control – Planning and Design Manual.

cc: Aaron Eder, KJ Portland

