



## **MEMORANDUM**

To: City of Oregon City

From: Atalia Raskin, PE  
Water Resource Senior Project Engineer

Date: July 2, 2015

Project: Cove: Garden Apartments

Cardno#: 21509220

Re: Floodplain Balance Report – Cut and Fill Calculations

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This memorandum highlights the cut and fill calculations completed at the Cove: Garden Apartments site to document compliance with the provisions of Oregon City Municipal Code (OCMC) Section 17.42 in support of the Concept Development Plan (CDP).

### **Floodplain Elevation**

The floodplain elevation was determined from the Flood Insurance Rate Map (FIRM) panel number 0276 of 1175 dated June 17, 2008. FEMA lists the Base Flood Elevation as 48 at the project site. Oregon City has a design flood elevation (DFE) that was set based on the 1996 flood inundation level. The DFE is 50.7 North American Vertical Datum of 1988 (NAVD88). This elevation is being used to determine cut and fill balance and applies to whole Cove development.

Phase 1 of the project encroaches into the DFE as noted on the grading plan sheets included on sheets C3.0 – C3.6 in the Detailed Development Plan (DDP) plan set included in Exhibit B of the land use application package.

### **Cut and Fill Calculations – Phase 1**

Cut and fill calculations were completed to ensure a balance of floodplain storage below the DFE. AutoCAD comparative surfaces were used to calculate the cut and fill information. A fixed elevation of 50.7 NAVD88 per the DFE, was used as a boundary to establish the amount of water storage volume below this elevation in existing and proposed conditions. The existing surface was generated from survey data.

The resulting calculations found that approximately 107,984 cubic yards (CY) of fill will be placed below 50.7 NAVD88 in Phase 1 of the project. This fill amount will be balanced with the following compensatory measures:

- Excavation of approximately 3,819 CY of material from Lot 1.
- Excavation of approximately 81,710 CY of material from the North Park
- Allocation of 22,455 CY of floodplain storage created with the City's "jughandle" project, per the April 1, 2015 Soil Excavation and Site Improvement Agreement between Grand Cove LLC (GCLLC) and the Urban Renewal Commission of the City of Oregon City (URC).



### **Cut and Fill Calculations – Phase 2**

It is anticipated that approximately 77,000 CY of additional fill will be placed below the DFE on Lots 3, 4, 5, 6 and 7 in Phase 2. It is anticipated that approximately 74,000 CY of floodplain capacity will be created in Phase 2 with excavation at Lot 1 and that Main Street improvements completed with Phase 2 will result in an additional 3,000 CY of floodplain storage creation below the DFE. No further floodplain fill is anticipated with future phases. It is anticipated that a refined assessment of compliance with OCMC Section 17.42 will be prepared and provided in conjunction with the Detailed Development Plan (DDP) application submitted with Phase 2 after more detailed grading plans are created and final grades are established at the completion of Phase 1 grading activities.

#### **Attachments:**

- > The Cove – Phase 1 Floodplain Summary Plan
- > The Cove – Phase 2 Floodplain Summary Plan