

# MEMO

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**To:** Paul Geiger, Summit County Engineer; Robert Jacobs, Summit County Engineer

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**Cc:** Rebecca Stone, Oz Architecture

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**From:** Keaton Scanlan, Chris Durluo

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**Date:** May 4, 2022

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**Subject:** One River Run – Drainage Report Update

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This report presents updates to the drainage plan and design for the development of the One River Run project and is being submitted as a part of the Summit County development review process. This report and analyses have been prepared in conformance with the Summit County Land Use and Development Code criteria and requirements to meet the overall water quality protection strategy for the River Run area. This report includes modifications to previously proposed basin delineations and associated runoff rates for the drainage system for proposed conditions.

## **Project Location**

The One River Run project location is unchanged from the time the One River Run Preliminary Drainage Report dated February 29, 2008 was initially submitted.

## **Existing Conditions**

The existing conditions on the project site are unchanged from the time the One River Run Preliminary Drainage Report, dated February 29, 2008 was initially submitted, with the exception of the relocation of the gondola and removal of the existing ski rental/locker building.

## **Proposed Conditions**

The proposed project is unchanged from the time the One River Run Preliminary Drainage Report, dated February 29, 2008 was initially submitted. However, the proposed drainage basin delineations and associated peak flow rates have been modified based on further development of the project's design. The updated basin delineations are shown in the Proposed Drainage Plan attached to this memo. The updated proposed basins were delineated differently than in the original drainage report to reflect the current site design, and some basins lost or gained acreage. This plan shows the delineation of the proposed project site into six drainage basins.

- Basin A – This basin includes the proposed building, driveways, walkways and landscape areas. Runoff from Basin A is captured in a storm sewer system and treated for water quality prior to discharge to the Snake River.
- Basin B – A small portion of this basin includes proposed driveways, walkways and landscape, however the majority of the basin includes existing buildings, roadway and landscape areas. Runoff from Basin B is ultimately captured in a storm sewer system and conveyed to an existing water quality pond at the southeast corner of the site prior to discharging to the Snake River.

- Basin C – This basin is a small drainage area on the southeast side of the site that sheet flows directly to the Snake River.
- Basin D – The majority of Basin D is comprised of proposed buildings, landscape and paved plaza areas. Basin D drains from the center of the site to the south. Runoff from Basin D is captured by the garage mechanical storm system and a storm sewer system and treated for water quality prior to discharging to the Snake River. The area of Basin D has increased and accounts for the previous location of Basin E.
- Basin E – The runoff from Basin E is comprised of proposed buildings and paved plaza areas. Basin E discharges to an existing storm sewer system that was previously designed to carry a larger capacity from the One River Run site.
- Basin F – The runoff from Basin F is captured by both storm sewer system and curb and gutter. Runoff from Basin F is conveyed to a water quality pond at southwest side of the site prior to discharging into the North Fork of the Snake River.

For information on the proposed drainage design including surface conveyance, storm sewer and inlets, see Sheets C-106 to C-108 Detailed Grading & Drainage Plan and Sheets C-215 to C-219 Storm Sewer Plan & Profiles.

### Runoff Calculations

The Rational Method was originally used to estimate the peak flow rate and volume of runoff for the proposed drainage basins for the project site. The same methodology was used to modify the estimates from the original drainage report, where applicable, to account for the changes in the proposed basin acreages and land use characteristics. The results are shown below:

Basin	Area (ac)	Runoff Coeff. (C <sub>25</sub> )	Tc (min)	Q <sub>25</sub> (cfs)	Q <sub>100</sub> (cfs)
Basin A	1.83	0.83	5.00	8.28	10.45
Basin B	0.71	0.86	5.00	3.33	4.20
Basin C	0.20	0.75	5.00	0.82	1.03
Basin D	1.58	0.90	5.00	7.75	9.78
Basin E	0.28	0.90	5.00	1.37	1.73
Basin F	0.77	0.62	5.00	2.60	3.28

Per the letter from Wright Water Engineers included in the original drainage report, detention will not be required for this project and water quality vaults will be used to remove sediment from the runoff before entering the Snake River.

### Water Quality

One water quality vault was previously installed and one additional water quality vault is still proposed on site, which is in conformance with the original drainage report. A Contech Vortech Model 5000 was previously installed as a part of the One River Run Infrastructure Phase in 2008. This existing water quality vault is sized to treat approximately 8.28 cfs of runoff from Basin A. Basin D will include a water quality vault sized to treat approximately 7.75 cfs of flow. Basin E ties to an existing storm sewer system to the south of the plaza with an existing water quality vault. The existing system and water quality vault were sized to carry future runoff from the In addition to the two water quality vaults, a water quality pond located at the southwest side of the site is proposed to

treat runoff from Basin F, prior to discharging into the North Fork of the Snake River. An existing water quality pond will treat runoff from Basin B, before discharging to the Snake River.

Drainage in the parking garage will be captured by the mechanical storm system and treated by an oil/sand/water separator before discharging to the Snake River.

Based on the current effective Flood Insurance Rate Map information provided on the survey by Peak Land Consultants, Inc., the project site is completely outside of the 100-yr floodplain for the Snake River and North Fork of the Snake River.

### **Summary**

This memo provides updated analysis of the proposed hydrologic conditions to the One River Run Preliminary Drainage Report, dated February 29, 2008. The updated drainage plan and design for the One River Run project is in conformance with the requirements and general strategy for water quality and drainage for the project site as determined in the original drainage report.

