

Job No.: ANK-124

Date: July 22, 2013

To: Bob Galati, P.E. – City of Sherwood

From: Ben Austin, P.E.



**Project/Subject: Sherwood Community Center and Railroad Parking Lot – Stormwater Management Narrative**

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The purpose of this memorandum is to document stormwater management for the Sherwood Community Center and the Railroad Parking Lot. The Sherwood Community was included in the stormwater management report for the Sherwood Cannery Planned Unit Development. The stormwater management facility constructed as part of the Cannery improvements is proposed to be removed as part of the Sherwood Community Center development. This memorandum documents the amount of impervious surface created by the development that will be treated in the Columbia Street regional water quality facility.

**Existing**

Data from the Sherwood Cannery Final Stormwater Management Report:

Pollution Control Manhole:

25 year storm event flow = 1.4 cfs  
Volume of Sump = 20 cf / 1.0 cfs = 1.4 cfs \* (20 cf / 1 cfs) = **28 cf**

60" diameter manhole sump volume = 58.9 cf min : 98.1 cf max      28 cf < 58.9 < 98.1 cf **OK**

Water Quality Swale:

Proposed Swale Design Criteria

Minimum Residence Time	9 min
Maximum Treatment Depth	0.50 ft
Minimum Swale Length	100 ft
Minimum Bottom Width	2 ft
Maximum Side Slope	4:1
Manning "n"	0.24
Minimum Slope	0.50 %

Water Quality Volume = (0.36)(Impervious Area) / 12 = (.36)(59390) / 12 = 1782 cf  
Water Quality Flow = Water Quality Volume / 14400 = 1782 / 14400 = 0.12 cfs  
25 year storm event (from above pollution control manhole calculations) = 1.4 cfs  
25 year storm event flow depth = 0.89 feet

Impervious Area (sf)	Water Quality Volume (cf)	Water Quality Flow (cfs)	Swale Length (ft)	Bottom Width (ft)	Residence Time (min)	Slope (%)	Treatment Depth (ft)	Provided Swale Flow (cfs)
59390	1782	0.12	100	2	11.1	0.50	0.27	0.12

### Proposed

The proposed railroad parking lot will include 12,500 square feet of impervious surface not previously included in this system. **The total impervious surface contributed by the development is 71,890 square feet.**

#### Existing Water Quality Swale:

A portion of the existing water quality swale will remain as conveyance for onsite runoff to the public storm system until such time as additional development on the site requires removal of the swale and a storm piping system to be installed. The depth of flow in the existing swale in the 25 year storm event (from above pollution control manhole calculations) is 0.97 feet. This is an increase in the 25-year flow depth as originally designed from 0.89 feet to 0.97 feet, but the swale will still maintain a minimum 1.0 feet of freeboard from this depth.

Runoff from the proposed Community Center site and the Railroad Parking Lot will drain to the existing storm sewer system in Columbia Street. This storm system conveys runoff to the planned Columbia Street regional water quality facility for treatment. No on-site treatment is proposed.