

INDIVIDUAL WATER QUALITY ASSESSMENT REPORT

Site Name/Facility:	San Carlos Channel
Master Program Map No.:	54
Date:	May 15, 2018
Civil Engineer (name, company, phone number):	N/A
Register Civil Engineer Number & Expiration Date (place stamp here):	N/A

Instructions: This form must be completed for each facility prior to the completion of the Individual Maintenance Plan and prior to any work being conducted in the facility. Attach additional sheets if needed.

EXISTING CONDITIONS

The site of the emergency maintenance is characterized by three sections of a concrete-lined storm water channel. The first section, the Beaver Lake section, is 7 foot wide by 950 foot long, and occurs east of Cowles Mountain Boulevard, south of Beaver Lake Drive, north of Lake Cayuga Drive, and west of Lake Badin Avenue. The second section, the Golf Course section, is 1 foot wide by 180 foot long and occurs west of Cowles Mountain Boulevard inside the San Carlos Golf Course. The third section, the Lake Badin section, is 8-foot-wide and 1,050-foot-long, and occurs east of Lake Badin Avenue.

The emergency maintenance was performed in two phases. The first phase was required to remediate flooding caused by a clog in the culvert beneath Cowles Mountain Boulevard. The clog was formed by vegetation within the Beaver Lake section becoming dislodged by a high rainfall event, and accumulating at the entrance to the culvert. The second phase was conducted to remove remaining vegetation within the channel further upstream of the Cowles Mountain Boulevard channel to prevent a re-occurrence of a clog.

The first phase began on November 1, 2014 within the Beaver Lake and Golf Course sections, and was completed on November 8, 2014. The initial work to clear the culvert was conducted with a Gradall and backhoe from the area above the culvert entrance. In addition, vegetation and sediment were removed for a distance of approximately 180 feet within a concrete channel downstream of the culvert. In order to preclude a similar problem from occurring in the future, vegetation was cut and removed by hand from the sloped sections along the entire length of the Beaver Lake section of the channel. The excavated material was taken to an approved disposal site. Approximately 158 tons of material was removed from the channel.

In order to further protect against a problem at the Cowles Mountain Boulevard culvert, vegetation and sediment within the channel east of Lake Badin Avenue was removed on December 1, 2014. Removal was performed with hand tools, and less than one truck-full of material (approximately 4 cubic yards) was removed and hauled to the Miramar Landfill.

The Individual Hydrologic and Hydraulic Assessment (IHHA) for the Beaver Lake section concluded that maintenance of the channel should include full removal of vegetation and sediment, due to the susceptibility of the culvert to being clogged. Partial removal of vegetation would increase the likelihood that high flows would dislodge the vegetation and sediment creating the potential for clogging the downstream culvert. Therefore, full removal of sediment and vegetation within the channel was performed to prevent future uprooting and clogging of the downstream culvert.

Downstream impacts from increased sedimentation would not be expected to occur as a result of the

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maintenance. As a concrete-lined channel, the maintenance did not expose soil and increase the potential for erosion and sedimentation. In fact, the maintenance removed sediment that could have potentially been transported further downstream by runoff. Increases in downstream water-borne pollutants would also not be expected. The relatively short length of channel and associated vegetation does not offer substantial capacity to remove pollutants from storm water runoff.

As a result of all of these factors, a water quality assessment was not conducted nor was it considered necessary.

Description of creek/channel geometry (length, width, and depth):

N/A

Description of Sediment Sampling Activities (location(s), depth, shipment/deliverer to laboratory(s)):

N/A

Note: Attach Chain of Custody Sheet(s), Table of Chemical Analysis Results, and Laboratory Sieve Analysis Results

Description of Flow Measurement Activities (location(s) and equipment):

N/A

Note: Attach Field Notes and Model Calculation Worksheets

Description of Volume Measurement Activities (interval, total number, equipment):

N/A

Description of Water Quality Sampling Activities (location(s), shipment/delivery to laboratory(s)):

N/A

Description of Wetland Assessment (Existing) Activities (personnel, general conditions):

N/A

Description of Wetland Assessment (Recovery) Activities (personnel, general conditions):

N/A

Sediment Pollutant Loading Estimates:

N/A

MAINTENANCE IMPACTS**Evaluation of Benefits / Impacts:**

Are there constituents that have potential impacts greater than benefits?

Yes No

If so, identify constituents here and compare measured concentrations to thresholds.

N/A

MITIGATION

If impacts are identified, list potential mitigation efforts (e.g., BMPs type(s) and number(s)) that may be implemented in the watershed:

N/A

ADDITIONAL COMMENTS OR RECOMMENDATIONS

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LIST OF ATTACHMENTS (Check All That Apply):

- ✓ Site Photos
- Chain of Custody Sheet(s) for Sediment Sampling
- Analytical Results of Sediment Sample(s)
- Chain of Custody Sheet(s) for Water Column Sampling
- Analytical Results of Water Column Sample(s)
- Flow Measurement Model
- Volume Measurement Model (Existing Condition)
- Wetland Land Assessment Scoring Sheet (Existing Condition)
- Wetland Land Recovery Assessment Scoring Sheet (Maintained Storm water facility)
- Sieve Analysis Laboratory Results
- Sediment Pollutant Loading Model (Load Removal in Sediment)
- Potential Water Quality Impacts Model and Comparison to Benefits
- Potential Mitigation Efforts Model

SITE PHOTOS:



Photo 1. General condition of the San Carlos Channel and adjacent area, on 11/1/2014 after initial storm, prior to work beginning and prior to second storm began.



Photo 2. Condition of opening to culvert on 11/1/2014 after initial storm, prior to work beginning and prior to second storm began.

SITE PHOTOS:



Photo 3. Condition of upstream portions of San Carlos Channel on 11/6/2014 after rain event. Note the concrete panels that have broken off and washed down into the channel.



Photo 4. Condition of channel east of Cowles Mountain Blvd after first rain event on 11/1/2014, prior to emergency maintenance commencing, looking at outlet to culvert.

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SITE PHOTOS:



Photo 5. Condition of channel east of Cowles Mountain Blvd prior to emergency, 10/30/2014, looking west of culvert.



Photo 6. Condition of channel west of Cowles Mountain Blvd after rain event on 11/1/2014, prior to emergency maintenance commencing.

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SITE PHOTOS:



Photo 7. Condition of channel west of Cowles Mountain Blvd after emergency maintenance activities commenced.