APPENDIX 5D

Trash Rack Selection Process Letter

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WEST YOST ASSOCIATES
Consulting Engineers

March 7, 2018

Project No.: 285-10-17-13
SENT VIA: EMAIL

Mr. Manu Dhaliwal
City of Yuba City
1201 Civic Center Blvd
Yuba City CA 95993

SUBJECT: Trash Rack Selection Process for Yuba City Basin Storm Water Resource Plan Projects

Dear Manu:

A feasibility screening process was used in the Yuba City Basin (YCB) Storm Water Resource Plan (SWRP) to identify potential projects that would meet SWRP requirements and also provide trash capture to satisfy the California Trash Amendment requirements. Through this screening process, nine implementation projects were selected to be evaluated further. These nine projects involved trash removal at locations near the downstream end of sub-watersheds, meaning treatment of high flow rates in large channels, pipes, or detention basins.

The California Trash Amendments certified devices list categorizes devices as either Catch Basin Insert Devices (15 devices) or High Flow Capacity Trash Devices (12 devices). The High Flow Capacity Devices are further categorized as hydrodynamic devices (5 devices) and physical barrier devices, i.e. nets or screens (7 devices). The nature of the nine Yuba City projects required us to focus on device selection from the list of High Flow Capacity Devices. Five manufacturers of High Flow Capacity Devices were contacted to obtain general product and performance information, and budget-level pricing. Below is a summary of the information received during our review, as relevant to the Yuba City projects:

- Hydrodynamic separators / baffle systems required off-line diversion chambers at larger flow/pipe sizes and cost in the range of $1,800/acre treated (estimated at $490,000 for the original Lincoln storm drain project, $1.3M for the original Walton trunk drain SWRP project, and $2.2M for the original Onstott storm drain, for a total combined cost of $3.9M).
- End-of-pipe net-based devices were generally not reliable for pipe diameters greater than 42-inches due to high flows causing nets to detach from the headwall or pipe (also confirmed by Water Board contact).
- In-channel, net-based devices were more reliable than the end-of-pipe nets, but the estimated cost was in the $1.4M range for the projected flow (200 cfs in Gilsizer Slough for a 1-year storm).

In an attempt to reduce the cost of the trash projects, we reviewed the design parameters and suitability of the smaller Catch Basin Insert Devices for larger flow/pipe/channel applications. One

of the devices, the Connector Pipe Screen, WCS-1 (see Figure 1 below) accommodated pipe sizes up to 48-inch. The manufacturer confirmed the Connector Pipe Screen could be installed in pipes larger than 48-inches in diameter. The manufacturer also suggested a custom "rigid basket" for end-of-pipe and in-channel use (see Figure 2 and 3 below). The installation cost of the configuration in Figure 2 was quoted around $30,000.

Based on our discussions with manufacturers, consultation with the Water Board, cost information, and engineering judgement, we have selected a rigid basket structure developed by Interline Engineering (formerly West Coast Storm) who also manufactures the Connector Pipe Screen device WCS-1 from the certified devices list (Figure 1). This rigid basket structure can be installed in channels such as Gilsizer Slough and in end-of-pipe configurations (e.g. at outlets to detention basins). This device is the most economical of the reviewed options. The selection of this screen device allowed us to combine the Walton, Onstott, and Lincoln trunk drain projects into one project.

The rigid basket structure is not currently included on the certified Trash Amendment devices list. Although the devices shown in Figures 2 and 3 do not meet the 5-mm screen requirement, the devices can be constructed with a 5-mm screen to meet the Trash Amendment requirements for a full capture system (5-mm screening and treatment of the 1-year,1-hour storm event). As we discussed on February 28, 2018, the City could seek water Board approval of this use of a rigid basket constructed with a 5-mm screen. This approval would allow the City to maintain their Track 1 Trash Amendment status.

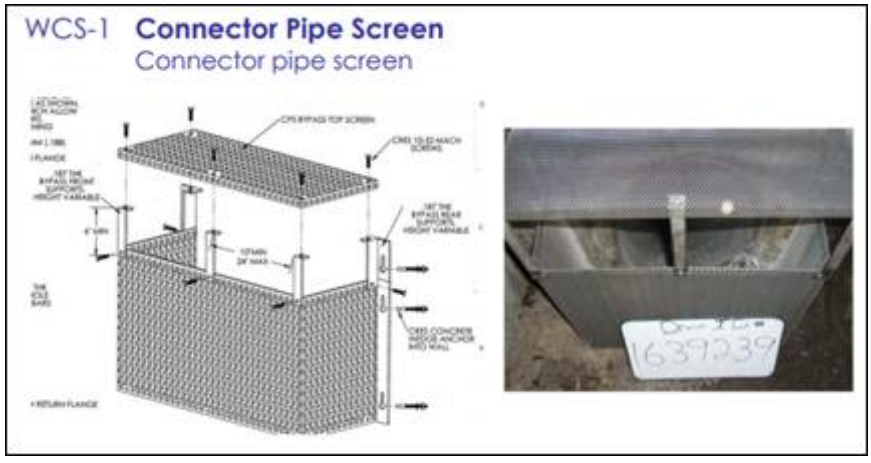

Figure 1 - Connector Pipe Screen, certified product

Figure 2- Rigid Basket, End-of-Pipe Configuration

Figure 3- Rigid Basket, In-line Configuration

Sincerely,

WEST YOST ASSOCIATES

Natalie Muradian, RCE 84895
Associate Engineer

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