



GEND

 SAN BENITO RIVER SANTA ANA CREEK

TERMINAL BASIN

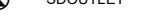
U.S. DEPARTMENT OF AGRICULTURE



100

CONCLUSION

SECRET/REL



ch = 469 Feet



PROJECT NOTES:
 MAP PROVIDED BY
 BENITO COUNTY.
 FROM GIS DEVELOPED
 BY WALLACE GROUP
 FROM AUTO CAD SEWER
 SYSTEM BASE MAP
 FROM RTK FIELD SURVEY.
 DEVELOPED FOR
 FROM DRAIN FACILITY
 MANAGEMENT. NOT TO BE
 USED FOR DESIGN OR
 CONSTRUCTION. PUBLISHED
 FEBRUARY 2011.



GEND

ROARK: 2011.

ROARK: 2011.

ARM DRAIN FACILITY
AGEMENT. NOT TO BE
D FOR DESIGN OR
STRUCTION. PUBLISHED
UARY 2011.

MEMORANDUM

City of Hollister West Street Diversion Structure 1011-0003 (0034)



Date: October 17, 2016
To: David Rubcic, PE
From: Kari Wagner, PE
Subject: West Street Diversion Structure Analysis

CIVIL AND
TRANSPORTATION
ENGINEERING

CONSTRUCTION
MANAGEMENT

LANDSCAPE
ARCHITECTURE

MECHANICAL
ENGINEERING

PLANNING

PUBLIC WORKS
ADMINISTRATION

SURVEYING /
GIS SOLUTIONS

WATER RESOURCES

The City of Hollister (City) owns and operates a combined industrial sewer/storm water main. During the summer the sewer main conveys food processing tomato waste from San Benito Foods on Hawkins Street at East Street to the City's Industrial Wastewater Treatment Plant (IWWTP). Once food processing is complete in September, the sewer main is cleaned and then used during the winter to convey stormwater to the Apricot Outfall. A diversion structure, located in a manhole on West Street, 50 feet south of Hawkins Street, allows the City to divert to either the IWWTP or to the Apricot Outfall.

Existing Diversion Structure

The existing diversion structure is a 6-foot diameter manhole with one 18-inch sewer main inlet, one 18-inch sewer main outlet to the IWWTP, and one 24-inch storm drain outlet to the Apricot Outfall. The manhole is approximately 13-feet deep. There is a manually operated stainless steel slide gate in front of both outlets. During the summer, the slide gate to Apricot Outfall is closed, while the slide gate to the IWWTP is open and vice versa during the winter. The City installed the stainless steel slide gates after the previous metal slide gates failed due to the highly corrosive tomato waste.



West Street Diversion Structure

If a failure occurs on the storm drain outlet gate, then tomato wastewater will flow to the Apricot Outfall, requiring the City to report the discharge as a spill to the Regional Water Quality Control Board (RWQCB).

Current Operational Concerns

During the summer operations, approximately 2.0 mgd of tomato wastewater constantly flows through the manhole at a relatively high velocity and high temperature. Temperatures range between 120-130 degrees, and can reach as high as 160 degrees. The tomato wastewater banks 90 degrees off of the closed slide gate to the Apricot Outfall, and then flows to the IWWTP. Since the slide gate is

WALLACE GROUP
A California Corporation

612 CLARION CT
SAN LUIS OBISPO
CALIFORNIA 93401

T 805 544-4011
F 805 544-4294

www.wallacegroup.us

rectangular in a round manhole, concrete has been built up behind the slide gate to seal the outlet. In the summer of 2016, the high velocities and the corrosive tomato wastewater eroded the concrete behind the slide gate and caused wastewater to bypass the slide gate into the downstream storm water collection system. In late July/early August 2016, the tomato wastewater reached the unlined channel downstream of the Apricot Outfall, but was contained prior to reaching the San Benito River. From the Apricot Outfall the City pumped the wastewater to the IWWTP. The City then plugged the storm water main just downstream of the diversion structure to prevent more tomato wastewater to flow to the outfall. In late August 2016, the plug failed and more tomato wastewater flowed to the Apricot Outfall channel and ultimately reached the San Benito River.



Apricot 48" Outfall: August 4, 2016 Tomato Waste Spill

Scope of Work

The City of Hollister has requested Wallace Group to assist with developing a solution to prevent tomato wastewater from flowing into the stormwater collection system. The analysis will include evaluating two options:

- Option 1: Eliminate the Diversion Structure and convey all tomato waste and storm water to the IWWTP
- Option 2: Construct New Diversion Structure

Option 1: Eliminate Diversion Structure

Wallace Group, in conjunction with the City, is preparing a Watershed Plan to be submitted to the RWQCB that will provide options for new developments to utilize the IWWTP for stormwater treatment and percolation for the 95th percentile storm to mitigate for the RWQCB Post-Construction Requirements, in lieu of developing on-site storage. Since the IWWTP is not used for wastewater treatment during the winter, it is proposed to utilize the facility for stormwater treatment and retention.

Option 1 would operate status quo during the summer. During the winter, all storm water upstream of the diversion structure (36.3 acres) would now be conveyed to the IWWTP during all storm events, in lieu of the Apricot Outfall. This proposed alternative is in line with the purpose of the Watershed Plan to send more stormwater to the IWWTP for treatment and percolation; however, during larger storms it will also result in sending stormwater peak flows above and beyond the 95th percentile storm through the downstream IWWTP collection system.



Per the Storm Drain Master Plan, prepared by Wallace Group in August 2011, there are two downstream Second Priority Capital Improvement Projects that are proposed (2nd Priority CIP #2 and #4). Both storm drain systems surcharge during a 25-year storm. If the diversion structure is eliminated, all stormwater from the 36.6 acres will flow to the IWWTP, and an additional 14.1 cfs of stormwater will be added to the already taxed storm drain collection system. Further analysis of the collection systems shows that the storm drain system is capable of handling up to approximately a 2 to 5-year storm, and will also surcharge during the 10-year storm. Therefore, it is recommended that these two projects be completed prior to eliminating the diversion structure, to ensure that the storm drain collection system is capable of conveying the 25-year storm, per recommendations from the Storm Drain Master Plan. The CIP cut sheets from the Storm Drain Master Plan are provided as attachments.

Proposed Upgrades

The following are the proposed upgrades and engineer's opinion of probable costs:

- Diversion Structure Upgrades
 - Remove existing diversion manhole structure and replace with standard manhole with 18-inch inlet and one 18-inch outlet towards the IWWTP.
 - Identify the locations of any curb storm drain inlets between the diversion structure (F12-9) and the downstream storm drain manhole in West Street (F12-15). A new manhole will need to be installed in West Street upstream of the last curb inlet, to provide maintenance access for the storm drain collection system.
 - Estimated Cost: \$45,000 (Engineering and Construction)
- Construct 2nd Priority CIP #2: Suiter Street. This includes replacing 1,080 feet of 24-inch with new 36-inch pipe.
 - Estimated Cost: \$680,000 (Cost escalated by 15% from Storm Drain Master Plan, includes Engineering and Construction)
- Construct 2nd Priority CIP #4: South to IWWTP. This includes replacing 4,200 feet of 30-inch with new 54-inch pipe.
 - Estimated Cost: \$4,463,000 (Cost escalated by 15% from Storm Drain Master Plan, includes Engineering and Construction)

The proposed schedule to engineer and construct Option 1 is approximately 12 months.

Total cost for proposed upgrades: \$5,188,000. Note, this cost could be included in the Watershed Plan and incorporated into the proposed in-lieu fee for post-construction mitigation.

Option 2: Construct New Diversion Structure

Option 2 proposes to construct a new diversion structure that would allow the City to continue operating the combined sewer/storm drain system as is. Therefore, during the winter, there would be no additional impacts to the downstream IWWTP collection system.



It is proposed to install a pre-fabricated fiberglass diversion structure with integral slide gates that would not allow water to bypass when closed. Per the City's request, a secondary fiberglass manhole with a slide gate is proposed to be installed in the storm drain manhole in West Street downstream from the existing diversion structure, for secondary containment. This will provide redundancy and reduce the potential that the tomato waste reaches the Apricot Outfall. The pre-fabricated fiberglass unit is capable of handling the high temperatures from the tomato waste. Due to the customization of the diversion structure unit, the lead time for drawing review and construction of the unit will be 14 to 18 weeks once the company receives the purchase order.

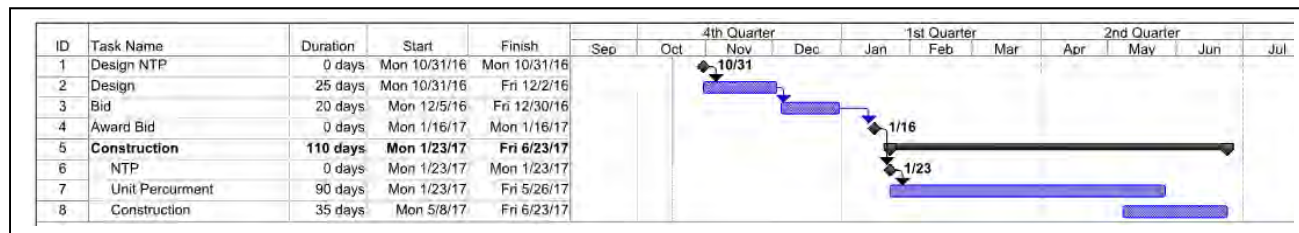


Proposed Upgrades

The following are the proposed upgrades and engineer's opinion of probable costs:

- Diversion Structure Upgrade: Pre-fabricated, 13-ft deep fiberglass structure, Plasti-fab or approved equal, with one 18-inch inlet, one 18-inch outlet with slide gate, and one 24-inch outlet with slide gate.
- Approximately 13-ft deep pre-fabricated fiberglass manhole, Plasti-fab or approved equal, with one 24-inch inlet and one 48-inch outlet with slide gate.
 - Estimated Cost: \$220,000 (Engineering and Construction)

The proposed schedule to engineer and construct Option 2 is approximately 8 months (see schedule below).





Conclusion and Recommendations

Two options were analyzed: Option 1 - eliminate the diversion structure or Option 2 - replace the diversion structure. From a risk management and long term stormwater compliance perspective, Option 1 is the preferred alternative. However, Option 1 is significantly more costly and will not be able to be completed prior to the summer of 2017, the start of the next canning season. ***Therefore, it is recommended that Option 2 be implemented in the near term, and that the City incorporates Option 1 projects into the Watershed Plan for future funding.***

