

**NOTICE OF REGULAR MEETING
OF THE
SOUTH ORANGE COUNTY WASTEWATER AUTHORITY**

**ENGINEERING COMMITTEE
TELECONFERENCE MEETING**

**TELECONFERENCE PHONE NUMBER: (213) 279-1455
TELECONFERENCE ID: 560 398 123**

August 13, 2020

8:30 a.m.

NOTICE IS HEREBY GIVEN that a Regular Meeting of the South Orange County Wastewater Authority (SOCWA) Engineering Committee was called to be held by Teleconference on **August 13, 2020** at **8:30 a.m.** SOCWA staff will be present and conducting the call at the SOCWA Administrative Office located at 34156 Del Obispo Street, Dana Point, California. This meeting is being conducted via Teleconference pursuant to the California Governor Executive Order N-29-20.

MEMBERS OF THE PUBLIC ARE INVITED TO PARTICIPATE IN THIS TELECONFERENCE MEETING AND MAY JOIN THE MEETING VIA THE TELECONFERENCE PHONE NUMBER AND ENTER THE ID CODE. THIS IS A PHONE CALL MEETING AND NOT A WEB-CAST MEETING SO PLEASE REFER TO AGENDA MATERIALS AS POSTED WITH THE AGENDA THE WEB-SITE WWW.SOCWA.COM. ON YOUR REQUEST, EVERY EFFORT WILL BE MADE TO ACCOMMODATE PARTICIPATION. IF YOU REQUIRE ANY SPECIAL DISABILITY RELATED ACCOMMODATIONS, PLEASE CONTACT THE SOUTH ORANGE COUNTY WASTEWATER AUTHORITY SECRETARY'S OFFICE AT (949) 234-5452 AT LEAST SEVENTY-TWO (72) HOURS PRIOR TO THE SCHEDULED MEETING TO REQUEST DISABILITY RELATED ACCOMMODATIONS. THIS AGENDA CAN BE OBTAINED IN ALTERNATE FORMAT UPON REQUEST TO THE SOUTH ORANGE COUNTY WASTEWATER AUTHORITY'S SECRETARY AT LEAST SEVENTY-TWO (72) HOURS PRIOR TO THE SCHEDULED MEETING.

AGENDA EXHIBITS AND OTHER WRITINGS THAT ARE DISCLOSABLE PUBLIC RECORDS DISTRIBUTED TO ALL, OR A MAJORITY OF, THE MEMBERS OF THE SOUTH ORANGE COUNTY WASTEWATER AUTHORITY ENGINEERING COMMITTEE IN CONNECTION WITH A MATTER SUBJECT FOR DISCUSSION OR CONSIDERATION AT AN OPEN MEETING OF THE ENGINEERING COMMITTEE ARE AVAILABLE BY PHONE REQUEST MADE TO THE AUTHORITY ADMINISTRATIVE OFFICE AT 949-234-5452. THE AUTHORITY ADMINISTRATIVE OFFICES ARE LOCATED AT 34156 DEL OBISPO STREET, DANA POINT, CA ("AUTHORITY OFFICE"). IF SUCH WRITINGS ARE DISTRIBUTED TO MEMBERS OF THE ENGINEERING COMMITTEE LESS THAN SEVENTY-TWO (72) HOURS PRIOR TO THE MEETING, THEY WILL BE SENT TO PARTICIPANTS REQUESTING VIA EMAIL DELIVERY. IF SUCH WRITINGS ARE DISTRIBUTED IMMEDIATELY PRIOR TO, OR DURING, THE MEETING, THEY WILL BE AVAILABLE IMMEDIATELY ON VERBAL REQUEST TO BE DELIVERED VIA EMAIL TO REQUESTING PARTIES.

AGENDA

- 1. Call Meeting to Order**
- 2. Public Comments**

THOSE WISHING TO ADDRESS THE ENGINEERING COMMITTEE ON ANY ITEM LISTED ON THE AGENDA WILL BE REQUESTED TO IDENTIFY AT THE OPENING OF THE MEETING AND PRIOR TO THE CLOSE OF THE MEETING. THE AUTHORITY REQUESTS THAT YOU STATE YOUR NAME

WHEN MAKING THE REQUEST IN ORDER THAT YOUR NAME MAY BE CALLED TO SPEAK ON THE ITEM OF INTEREST. THE CHAIR OF THE MEETING WILL RECOGNIZE SPEAKERS FOR COMMENT AND GENERAL MEETING DECORUM SHOULD BE OBSERVED IN ORDER THAT SPEAKERS ARE NOT TALKING OVER EACH OTHER DURING THE CALL.

3. Operations Report

Recommended Action:

Information Item

4. Use Audit Flow and Solids Methodology - Annual Update FY 19-20 (under separate cover)

Recommended Action:

Information Item

5. Capital Improvement Construction Projects Report

Recommended Action:

Information Item

6. Innovative Biosolids Update (Project Committee's 2 & 17)

Recommended Action:

Information Item

7. San Juan Creek Ocean Outfall Junction Structure Rehabilitation (Project Committee 5) Update

Recommended Action:

Information Item

Adjournment

I hereby certify that the foregoing Notice was personally emailed or mailed to each member of the SOCWA Engineering Committee at least 72 hours prior to the scheduled time of the Regular Meeting referred to above.

I hereby certify that the foregoing Notice was posted at least 72 hours prior to the time of the above-referenced Engineering Committee meeting at the usual agenda posting location of the South Orange County Wastewater Authority and at www.socwa.com.

Dated this 7th day of August 2020.



Betty Burnett, General Manager/Secretary
SOUTH ORANGE COUNTY WASTEWATER AUTHORITY

Agenda Item

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Engineering Committee Meeting

Meeting Date: August 13, 2020

TO: SOCWA Engineering Committee
FROM: Jason Manning, Director of Engineering
SUBJECT: Capital Improvement Construction Projects Report

Overview

Project Updates:

- PC 15 Sludge Force Main
 - Design to be complete by mid-August, out to bid soon after
 - Coastal Development Permit Application extension going to hearing in August
 - Coastal Development Permit expected soon after the extension is approved
- PC 17 Aeration Upgrades
 - Aeration tank headers and diffuser design is near completion and will likely go out to bid in August

Active Construction Project Updates:

Attached are the updated CIP reports. Please note that there is one new change order for the CTP Facility Improvements Project.

As a reminder, change orders within the General Manager's purchasing authority (less than \$50,000) and within the project contingency will be presented in this report and then to the Board of Directors. This is in accordance with the current purchasing policy, the change order procedure update provided to Engineering Committee in November 2019 and the contingencies approved by the Board in December 2019.

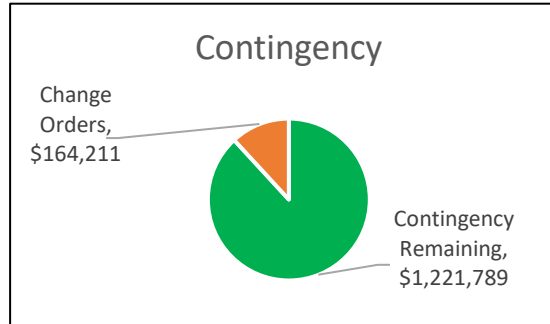
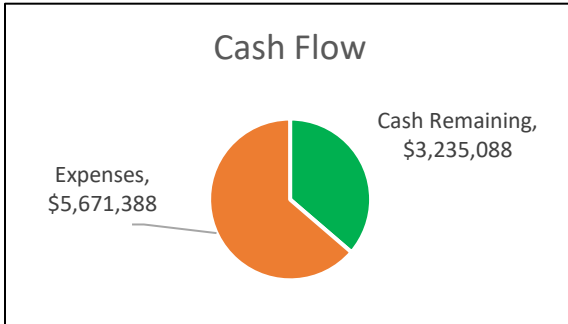
Recommended Action: Information Item; no action required.

Project Financial Status

Data Last Updated

August 4, 2020

Project Committee	2
Project Name	Package B
Project Description	Plant 1 basin repairs, DAF rehabilitation, Energy Building seismic retrofit and minor rehabilitation, Digester 4 rehabilitation



Cash Flow

Collected	\$8,906,476
Expenses	\$5,671,388

Project Completion

Schedule	44%
Budget	29%

Contracts

Company	PO No.	Original	Change Orders	Total	Paid
Olsson	13497	\$ 17,325,000	\$ 155,665	\$ 17,480,665	\$2,839,320
Butier	13647	\$ 1,055,325	\$ -	\$ 1,055,325	\$495,543
Carollo	13616	\$ 846,528	\$ -	\$ 846,528	\$439,496
TetraTech	13605	\$ 94,000	\$ -	\$ 94,000	\$77,806
		\$ 19,320,853	\$ 155,665	\$ 19,476,518	\$3,852,164

Contingency

Area	Project Code	Amount	Change Orders	Total Remaining	Percent Used
Liquids	3220-000	\$ 616,800	\$ 35,048	\$ 581,752	6.0%
Common	3231-000	\$ 96,800	\$ -	\$ 96,800	0.0%
Solids	3287-000	\$ 672,400	\$ 129,163	\$ 543,237	23.8%
		\$ 1,386,000	\$ 164,211	\$ 1,221,789	13.4%

Change Orders

Change Order No.	Vendor Name	Project ID	Description	Status	Status Date	Potential Change Amount	Final Amount
1	Olsson	3287-000	Addition of Loop Piping to the Existing Hot Water Lines Adjacent to Digester 3	Approved by Board of Directors	12/12/2019		\$ 4,725
2	Olsson	3287-000	Asbestos Gaskets in Boiler hazardous disposal	Approved by Board of Directors	6/4/2020		\$ 6,343
3	Olsson	3287-000	Add Analog Infrastructure and Cabling	Approved by Board of Directors	6/4/2020		\$ 37,970
4	Olsson	3287-000	Digester 4 Coating Additional Sealant	Approved by Board of Directors	6/4/2020		\$ 24,002

Change Order No.	Vendor Name	Project ID	Description	Status	Status Date	Potential Change Amount	Final Amount
5	Olsson	3220-000	Valve Handwheel Ergonomic extension	Approved by Board of Directors	8/6/2020		\$ 16,370
6	Olsson	3287-000	Change to DeZurik Plug Valves to match existing	Approved by Board of Directors	8/6/2020		\$ 41,994
7	Olsson	3287-000	Digester 4 Additional Concrete Repair	Approved by Board of Directors	8/6/2020		\$ 7,413
8	Olsson	3287-000	Repair Existing Damaged Electrical Box	Approved by Board of Directors	8/6/2020		\$ (1,829)
9	Olsson	3220-000	Change the Telescoping Valve Boxes and Piping from Carbon Steel to Stainless Steel	Approved by Board of Directors	8/6/2020		\$ 18,678

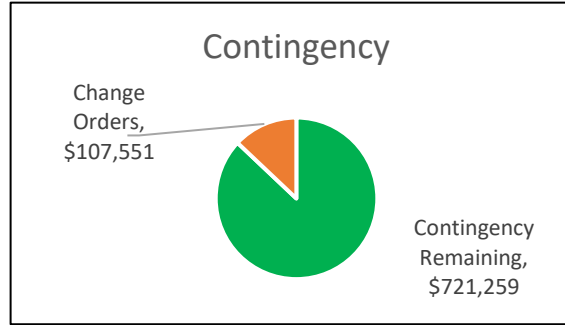
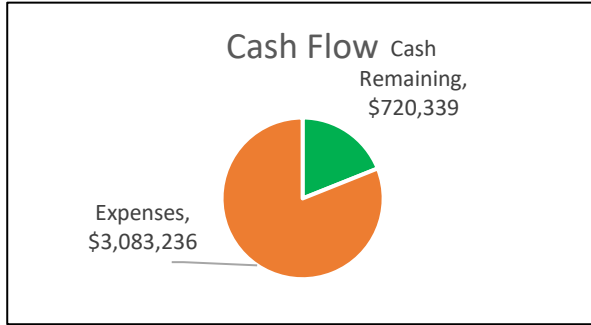
Change Order No.	Vendor Name	Project ID	Description	Status	Status Date	Potential Change Amount	Final Amount
A	Olsson	3287-000	Digester 4 Rail Coating. The coating is not needed and resulting in a credit but some rehabilitation work will be needed.	Potential Change	(blank)	-\$1,000	\$ -
B	Olsson	3287-000	Digester 4 Control Narrative needed	Potential Change	(blank)	\$5,000	\$ -
C	Olsson	3287-000	TWAS Slab Modifications	Potential Change	(blank)	\$50,000	\$ -
E	Olsson	3287-000	Relocation of MCC-F1	Potential Change	(blank)	\$40,000	\$ -
F	Olsson	3287-000	Conduit Routing Conflict	Potential Change	(blank)	\$15,000	\$ -
G	Olsson	3287-000	Digester 4 Compressor Supply Line	Potential Change	(blank)	\$0	\$ -
H	Olsson	3287-000	Additional Concrete Repair	Potential Change	(blank)	\$5,000	\$ -
J	Olsson	3287-000	Ductbank Digester 4 Interferences	Potential Change	(blank)	\$50,000	\$ -
K	Olsson	3287-000	Ductbank O Interferences	Potential Change	(blank)	\$5,000	\$ -
L	Olsson	3287-000	Ductbank J Interferences	Potential Change	(blank)	\$40,000	\$ -
Grand Total						\$209,000	\$ 155,665

Data Last Updated

August 4, 2020

Project Financial Status

Project Committee	15
Project Name	Facility Improvements
Project Description	Basin and Electrical rehabilitation



Cash Flow

Collected	\$3,803,575
Expenses	\$3,083,236

Project Completion

Schedule	54%
Budget	29%

Contracts

Company	PO No.	Original	Change Orders	Total	Paid
PCL	13751	\$ 9,209,000	\$ 107,551	\$ 9,316,551	\$1,260,230
Butier	13647	\$ 812,288	\$ -	\$ 812,288	\$298,263
Hazen & Sawyer	13648	\$ 490,484	\$ -	\$ 490,484	\$157,231
		\$ 10,511,772	\$ 107,551	\$ 10,619,323	\$1,715,724

Contingency

Area	Project Code	Amount	Change Orders	Total Remaining	Percent Used
Liquids	3539-000	\$ 828,810	\$ 107,551	\$ 721,259	14.9%
		\$ 828,810	\$ 107,551	\$ 721,259	14.9%

Change Orders

Change Order No.	Vendor Name	Project ID	Description	Status	Status Date	Potential Change Amount	Final Amount
1	PCL	3539-000	Additional Potholing	Approved by Board of Directors	8/6/2020		\$ 22,936
2	PCL	3539-000	Gas Line Replacement	Approved by Board of Directors	8/6/2020		\$ 41,006
3	PCL	3539-000	Main Switchgear Building Underground Conflicts	Approved by Board of Directors	8/6/2020		\$ 8,683
4	PCL	3539-000	Mud Valve Bolt Removal	Approved by Board of Directors	8/6/2020		\$ 6,577
5	PCL	3539-000	Additional Anchor Bolt Removal	Approved by Board of Directors	8/6/2020		\$ 15,271
6	PCL	3539-000	Slide Gate Concrete Repair	Approved by Board of Directors	8/6/2020		\$ 3,396

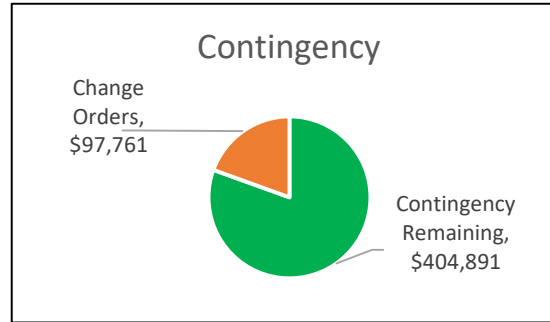
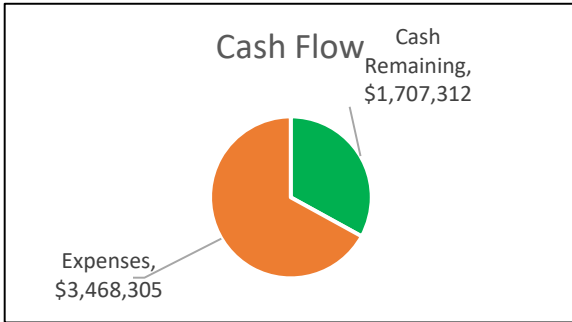
7	PCL	3539-000	Sludge Collector Wear Strips	Approved by Board of Directors	8/6/2020		\$ 5,304
8	PCL	3539-000	SCE Transformer Slab Box	Within Contingency, to be reviewed by Engineering Committee	(blank)		\$ 4,378
B	PCL	3539-000	Additional Pothole Paving	Potential Change	(blank)	\$5,000	\$ -
E	PCL	3539-000	Ferric Containment Foundation	Potential Change	(blank)		\$ -
F	PCL	3539-000	Spray Water Piping Replacement	Potential Change	(blank)		\$ -
H	PCL	3539-000	Telescoping Valve Modifications	Potential Change	(blank)	\$24,000	\$ -
I	PCL	3539-000	Secondary Clarifier Anchor Bolt Replacement	Potential Change	(blank)		\$ -
K	PCL	3539-000	Duct Bank 5 Buried Utility Conflicts	Potential Change	(blank)	\$32,612	\$ -
L	PCL	3539-000	Blasting and Coating in Secondary Tanks	Potential Change	(blank)	\$10,000	\$ -
M	PCL	3539-000	Drainage Pump Station Descope	Potential Change	(blank)	-\$400,000	\$ -
N	PCL	3539-000	RAS Channel Modification Desclope	Potential Change	(blank)		\$ -
Grand Total						-\$328,388	\$ 107,551

Project Financial Status

Project Committee	17
Project Name	Miscellaneous Improvements 2018
Project Description	Secondary electrical upgrades and Primary Gallery rehabilitation, installation of access walkway and Energy Building roof

Data Last Updated

August 4, 2020



Cash Flow

Collected	\$5,175,617
Expenses	\$3,468,305

Project Completion

Schedule	74%
Budget	76%

Contracts

Company	PO No.	Original	Change Orders	Total	Paid
Filanc	13678	\$ 4,181,205	\$ 97,761	\$ 4,278,966	\$2,098,840
Dudek	14164	\$ 137,625	\$ -	\$ 137,625	\$69,320
Lee & Ro	14006	\$ 123,310	\$ -	\$ 123,310	\$84,685
		\$ 4,442,140	\$ 97,761	\$ 4,539,901	\$2,252,844

Contingency

Area	Project Code	Amount	Change Orders	Total Remaining	Percent Used
Liquids	3701-000	\$ 343,593	\$ 87,480	\$ 256,113	34.2%
Common	3769-000	\$ 4,545	\$ -	\$ 4,545	0.0%
Solids	3751-000	\$ 154,514	\$ 10,281	\$ 144,233	7.1%
		\$ 502,652	\$ 97,761	\$ 404,891	24.1%

Change Orders

Change Order No.	Vendor Name	Project ID	Description	Status	Status Date	Potential Change Amount	Final Amount
1	Filanc	3701-000	Additional Conduit Support around Admin Building	Approved by Board of Directors	8/6/2020		\$ 32,929
2	Filanc	3701-000	Primary Deck Conduit Supports	Approved by Board of Directors	8/6/2020		\$ 9,611
3	Filanc	3701-000	Electrical Manhole 2 collar concrete/pavement repair	Approved by Board of Directors	8/6/2020		\$ 2,987
4	Filanc	3701-000	Primary Gallery Concrete Deck Repair	Approved by Board of Directors	8/6/2020		\$ 6,363
5	Filanc	3701-000	VFD Cabinet change from 316 to 304 Stainless Steel	Approved by Board of Directors	8/6/2020		\$ (2,100)

Change Order No.	Vendor Name	Project ID	Description	Status	Status Date	Potential Change Amount	Final Amount
6	Filanc	3701-000	Ductbank Vault size change to accommodate existing utilities and sump	Approved by Board of Directors	8/6/2020		\$ 37,690
7	Filanc	3751-000	Energy Building Roof Steel Beam Anchor Embedment	Approved by Board of Directors	8/6/2020		\$ 10,281
C	Filanc	3701-000	Polymer Room VFD Relocation	Potential Change	(blank)	\$10,000	
Grand Total						\$10,000	\$ 97,761

Agenda Item

7

Engineering Committee Meeting

Meeting Date: August 13, 2020

TO: Engineering Committee

FROM: Jason Manning, Director of Engineering

SUBJECT: San Juan Creek Ocean Outfall Junction Structure Rehabilitation Project

Overview

Please see the attached presentation for an update and background on the San Juan Creek Ocean Outfall Junction Structure Rehabilitation Project

Recommended Action: Information Item; no action required.



SOCWA San Juan Creek Ocean Outfall

Junction Structure Project Update and Background

August 13, 2020

Current Status

- Project Committee 5 approved the Phase I contract with Filanc
 - Constructability Review
 - Minor Metering Station Repairs
 - Internal ROV Inspection of the Junction Structure
- Project Committee 5 approved the addendum for the design contract with Black & Veatch
- California Coastal Commission permit application is going to hearing today (August 13, 2020)

Junction Structure History

- Constructed in 1978 at the same time as the outfall
- The 57-inch outfall was initially designed to a gravity flow up to 42 mgd
- In 1990, the outfall was modified to allow higher pressures and flows but not all of the recommendations to increase the flow were implemented

- **The proposed outfall modifications are:**
 - Seal the existing surge tower to allow pressurization of the outfall. These modifications are presently under construction should be completed in early 1990.
 - Reinforce the existing junction structure at the shoreline to withstand the anticipated operating pressures in the outfall. Construction of these modifications was combined with the surge tower modifications and this work has been completed.
 - Install a hydropneumatic surge tank at the SERRA effluent pump station to control the surge pressures in the outfall. The surge tank should be installed when the effluent pump station is modified.

Lea Fisher, 1990

Junction Structure History

- In 2006, Carollo was hired to estimate the capacity of the outfall and noted structural deficiencies in the Junction Structure that “should be considered now.”

7.5 Recommendations

The recommended hydraulic outfall capacity is 85 mgd. This considers the range of n factors calculated for the conditions with the 21 diffusers either completely blocked or open. The range of resultant capacities is from 85 to 87 mgd. Considering this small difference, coupled with the unknown difference of the diffusers between 2005 and 2006, the more conservative capacity is recommended. To obtain this capacity, recommended improvements include:

- Structural upgrades to the Surge Tower and Junction Structure. The upgrades to the Junction Structure should be considered now. This may require complete replacement. A finite element structural analysis could be performed to determine if upgrades are feasible.

Normal operating pressures have been below 8 psi. This equates to a hydraulic elevation of approximately plus 18 feet above sea level. This is greater than the rated structural capacity of the Junction Structure.

Parameter	Surge Tower	Junction Structure
Hydrostatic Loading Elevation (ft)	+18	+6.5
Hydrodynamic Loading Elevation (ft)	+21	+8.5

Carollo, 2006

Junction Structure History

- In 2007, Carollo provided a 50% design for modifying the Junction Structure (external modifications)
- In 2008, Dudek reviewed the past studies and the Carollo design and recommended against any external modifications

3. In previous sections we have already discussed the high risk associated with shoring, excavation and dewatering the work area to construct the current design. We strongly recommend a design be researched that eliminates the need to excavate around the structure - meaning that the structure needs to be reinforced/upgraded from the inside, using the structure itself as the shoring system. We have brainstormed the following ideas:
- Construct a half pipe that fits through the junction structure that essentially makes the open trench portion of the junction structure a closed conduit. After installing the "half pipe" partially fill the junction structure with concrete, which strengthens the walls.
 - Install a smaller diameter metal sleeve inside of the junction structure that acts like a form that will be used to pour a second 9" thick wall.

Dudek, 2008

Junction Structure History

- In 2014, Black & Veatch provided a design for implementing the Dudek recommendations
 - Beach conditions drastically changed and the design had to be revisited
- In 2019, Black & Veatch was contracted to complete the revised design by mid-2021



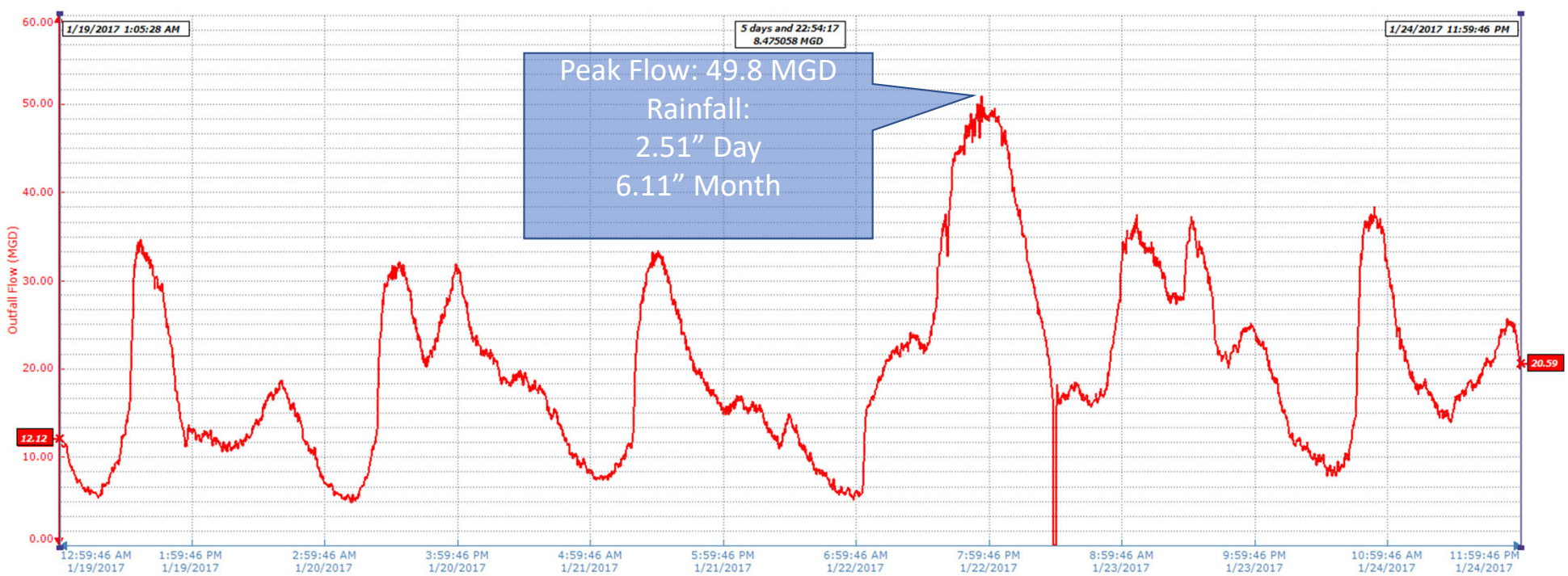
Estimated Peak Flows

- Estimated instantaneous peak flows in MGD during recent (last three years) rain events from upstream facilities. These peak flows did not all occur at the same time but represent potential total flows through the outfall:

JBL	3A	Chiquita	SCWRF	Total
44	6.5	24	10*	84.5

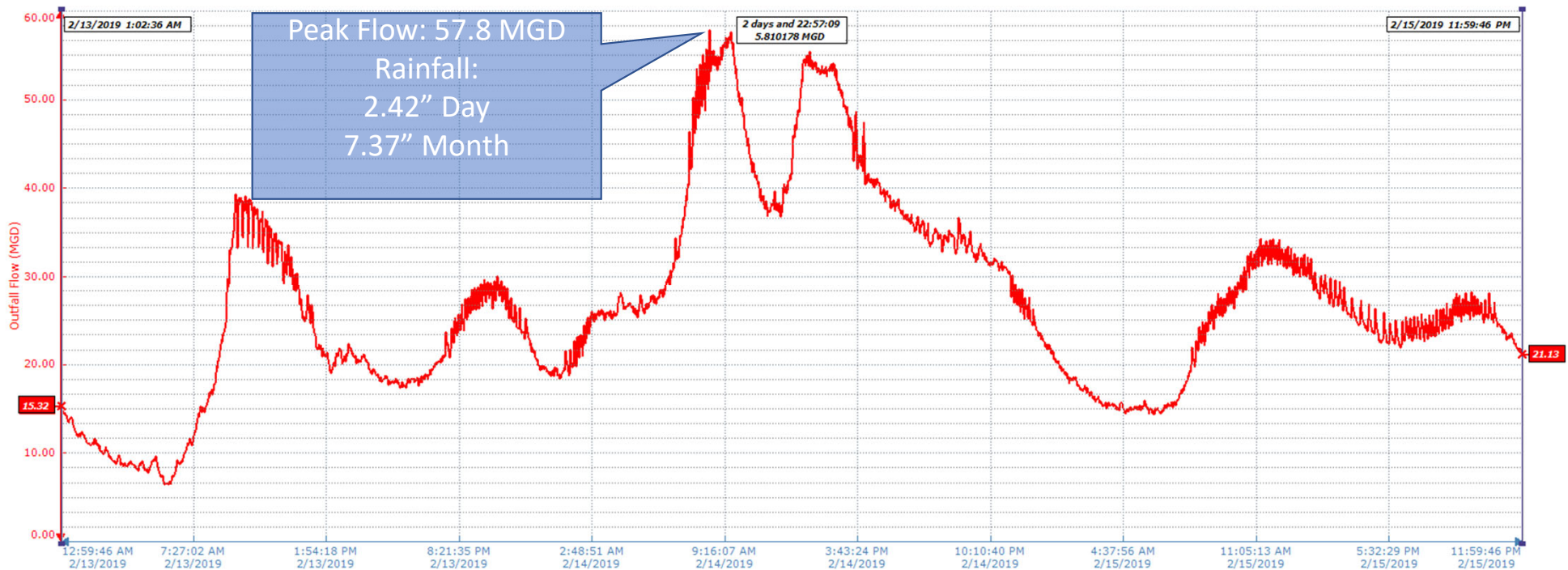
* Estimated based on a doubling of approximate average flows

January 22, 2017 Storm Event



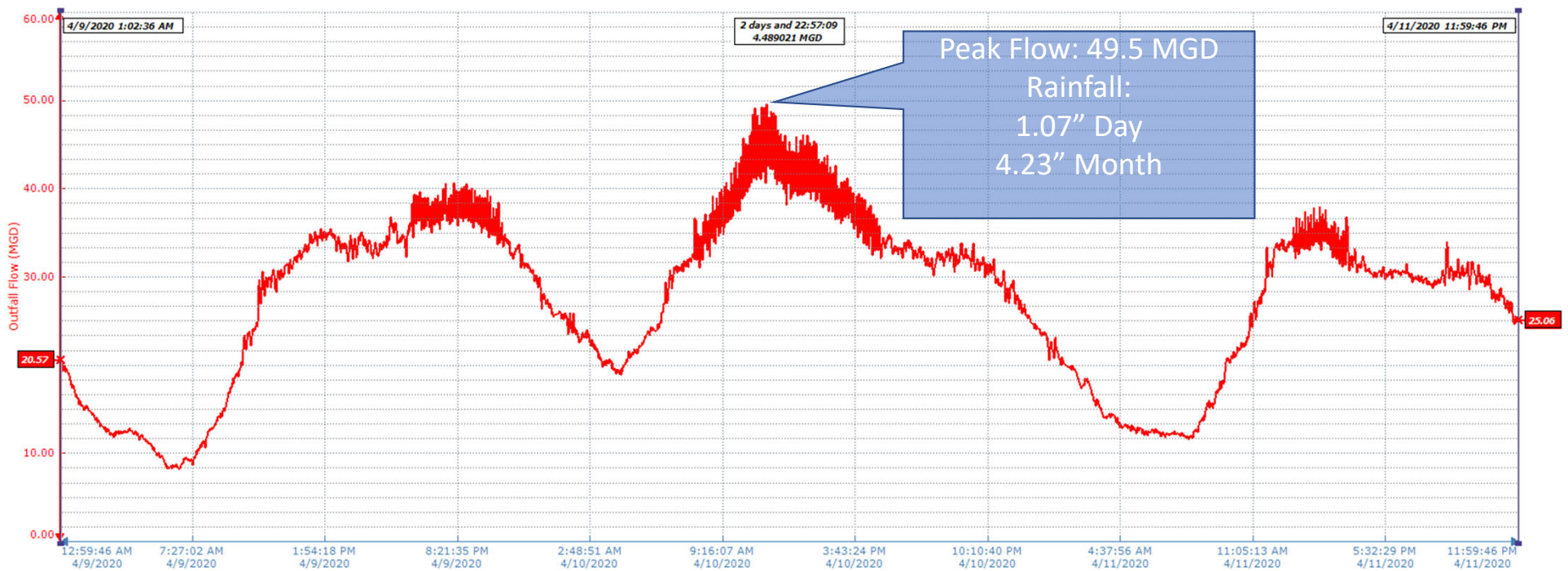
*NOAA Rainfall Data for Orange County

February 14, 2019 Storm Event



*NOAA Rainfall Data for Orange County

April 10, 2020 Storm Event



*NOAA Rainfall Data for Orange County