



INTERNATIONAL BOUNDARY AND WATER COMMISSION
UNITED STATES AND MEXICO
UNITED STATES SECTION

For Immediate Release
Sept. 13, 2023

URGENT SOUTH BAY WASTEWATER PLANT REPAIRS NEEDED FOLLOWING TROPICAL STORM HILARY; PLANT REHABILITATION AND EXPANSION MOVING FORWARD

The U.S. Section of the International Boundary and Water Commission (USIBWC) has identified urgently needed repairs at its South Bay International Wastewater Treatment Plant (SBIWTP) and a plan on how and when these fixes will be made. In addition, the USIBWC continues to make progress on efforts to rehabilitate and expand the plant.

“Tropical Storm Hilary exacerbated the vulnerabilities of an already at-risk treatment plant, accelerating damage through excessive flows and incoming debris,” Dr. Maria-Elena Giner, USIBWC Commissioner, said. “We want everyone to know we are working hard and have a plan to bring the plant back up to normal operations. We are also making critically needed improvements to achieve water quality permit compliance.”

Commissioner Giner outlined the strategy during a presentation to the San Diego Regional Water Quality Control Board on Sept. 13, 2023.

The USIBWC has created a recovery plan that will cost approximately \$8 million, which will require the agency to realign other priorities by paying for the work out of the agency's salaries/expenses and construction budgets.

This amount is in addition to \$10 million in previously-awarded contracts to address the impact from excess flows the plant has been receiving for more than a year. The money was to help the plant comply with water quality standards.

The goal is for the plant to recover the ability to fully treat 25 million gallons a day (MGD) of wastewater and meet discharge quality permit parameters. Although the timeline to achieve compliance is nine months to a year, incremental progress may be seen earlier as repairs are made. In parallel, some of the work to recover from Hilary may be completed within 30 to 90 days.

The Hollister Street Pump Station, responsible for pumping transboundary flows from Goat Canyon and Smuggler's Gulch into the plant, recently shut down when all four pumps became inoperable. Efforts are underway to restore operations. Until that station is fixed, flows containing untreated sewage can pass through the canyons into the Tijuana River and Estuary.

The USBWC is prioritizing replacement of the pumps at the Hollister station within the items included in the \$8 million recovery program. USBWC will provide updates via X (formerly Twitter) and email in response to residents' concerns.

The storm caused excessive flows into the plant, exceeding its capacity by 100 percent for six hours (25 MGD vs 50+ MGD) and by 320 percent for another six hours (80 MGD) from Aug. 20 to Aug. 21.

Secondary treatment was bypassed for 10 hours on Aug. 20, and untreated sewage mixed with stormwater had to be discharged through the South Bay Ocean Outfall, 3.5 miles into the Pacific Ocean.

Plant Rehabilitation and Expansion

Commissioner Giner also informed the Regional Board of progress on the SBIWTP rehabilitation and expansion project to reduce transboundary flows by 90 percent. The effort includes rehabilitation of the essential processes and infrastructure at the SBIWTP as well as expansion of the plant treatment capacity from 25 MGD to 50 MGD, plus a peaking factor to temporarily treat even higher flows.

The USBWC will solicit bids for the project in fall 2023. The current project exceeds the funding available by approximately \$300 million, so the agency will construct the expansion in phases as funding becomes available.

She also provided an update on Minute 328, a US-Mexico agreement signed in summer 2022 that describes a package of sanitation projects in San Diego and Tijuana. On Aug. 7, high-level U.S. and Mexican government officials met in Mexico City to reiterate their commitment to implement the Minute. Mexican officials reported the new San Antonio de los Buenos Wastewater Treatment Plant will go out to bid in 2023, with various sewer line and pump station projects also in various stages of implementation.

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INTERNATIONAL BOUNDARY AND WATER COMMISSION

UNITED STATES SECTION

South Bay International WWTP Expansion Project PROJECT UPDATE

Dr. Maria-Elena Giner, P.E.
USIBWC Commissioner

September 13, 2023

Where are we now?



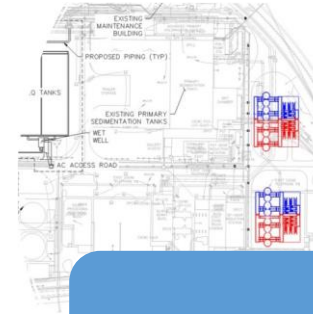
What is the
problem?



Repairs due to
Excess Flows



Tropical Storm
Hilary
Recovery



Rehabilitation
and Expansion



Minute 328
Update



What is the problem?

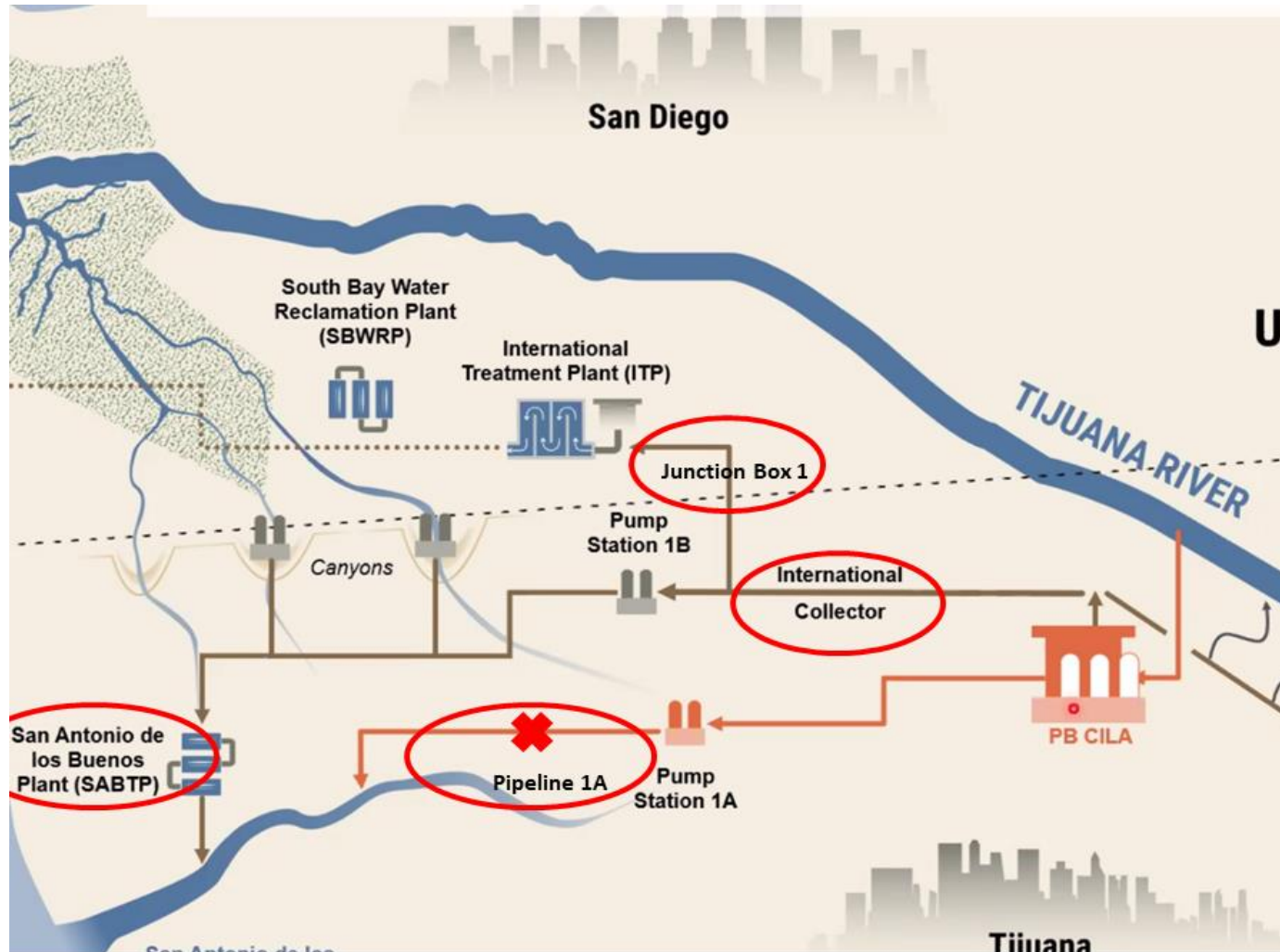
Infrastructure Flow Weak Points

Issues:

- JB1- in operable
- Weak International Collector
- Pipeline 1A collapse
- SAB is inoperable

Impact:

- Cannot throttle back flow, leads to excess flows
- Limited capacity in conveyance to SAB
- Increased dry weather flows in Tijuana River
- Untreated flows to Tijuana beaches





July 30, 2022



July 31, 2022

August 15, 2022



What is the problem?

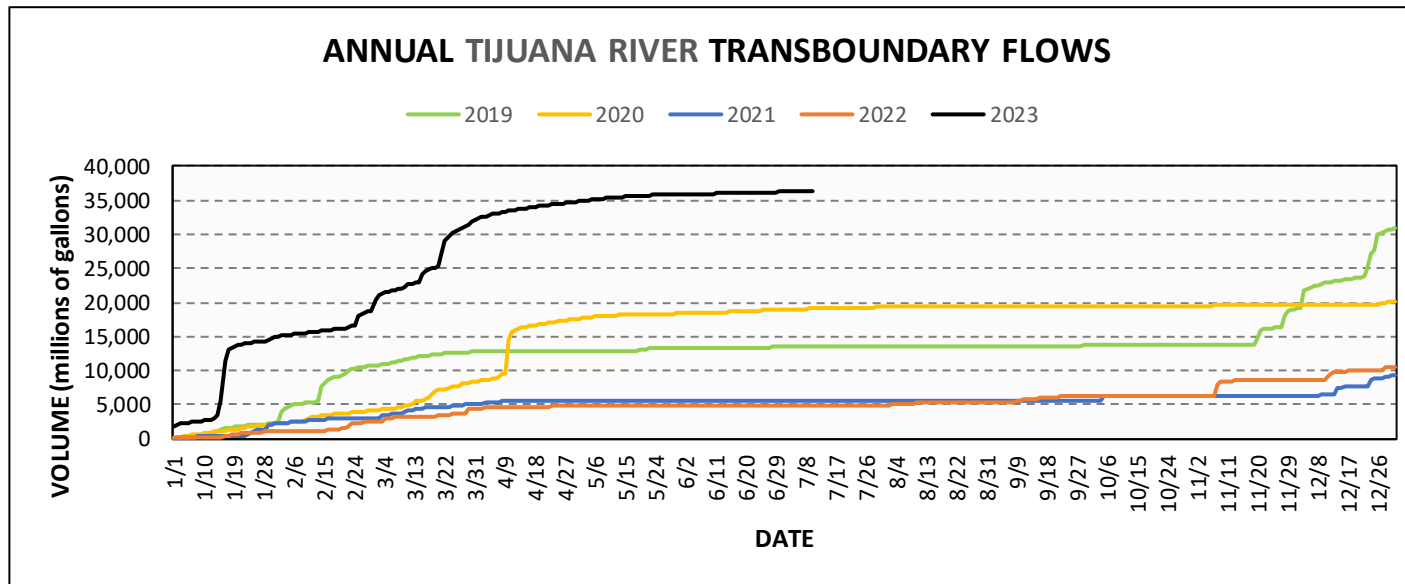
Excess Flows - PB1A 42" Pipeline Rupture at Matadero Canyon

- Rupture July 2022
- Loss of 25 MGD wastewater system capacity
- Flows diverted to the SBIWTP as excess flows
- Flows diverted to the Tijuana River as transboundary flows



Tijuana River - Current Challenges

Transboundary Flows



Funding Challenges

- Little investment in existing WWTP infrastructure
- ~\$100 to \$150 M in urgent rehabilitation needs
- Expansion cost greatly exceeded original estimates
- (\$910M +/- 30% vs \$300M +50%/-25%)

What is the problem?

Excess Flows to Plant

	Monthly Average Effluent Flow (MGD)	Water Quality Permit Exceedances
July 2022	23.6	
August 2022	31.4	8
September 2022	33.7	10
October 2022	32.5	12
November 2022	31.5	12
December 2022	28.6	14
January 2023	27.5	13
February 2023	29.2	14
March 2023	24.9	13
April 2023	21.2	15
May 2023	26.8	14
June 2023	29.4	17
July 2023	33.1	
August 2023	27.6	

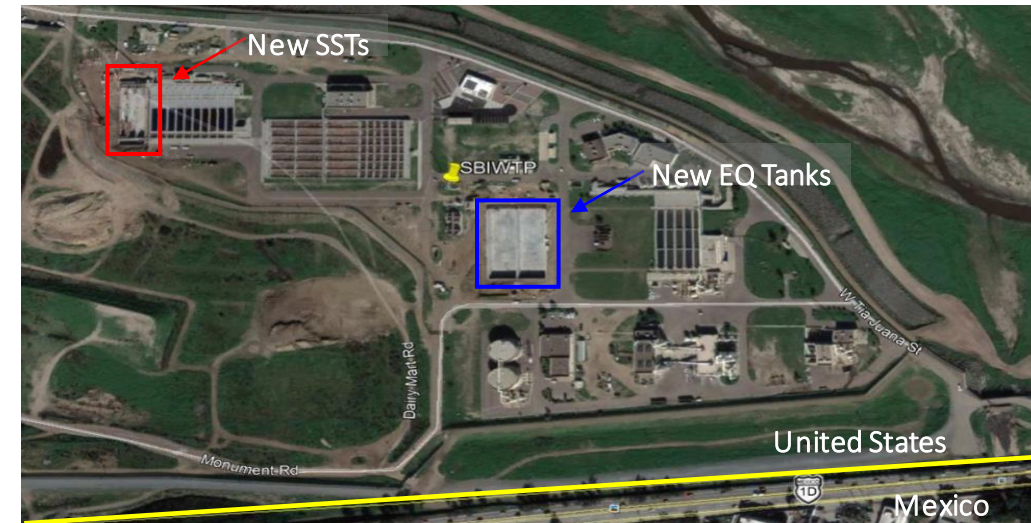
35 Permit parameters regulated



Background

- 1997: SBIWTP in operation
Construction cost= \$147M
25 MGD average/ 75 MGD peak Advanced Primary Treatment
- 2011: Secondary treatment in operation
Construction cost= \$93.3M
25 MGD average/ 48.75 peak Secondary Treatment
- 2018: Secondary treatment expansion in operation
Construction cost= \$18.2M
3 additional secondary sedimentation tanks, 2 new equalization tanks, return activated sludge tanks improvements to meet NPDES permit

Repairs due to excess flows

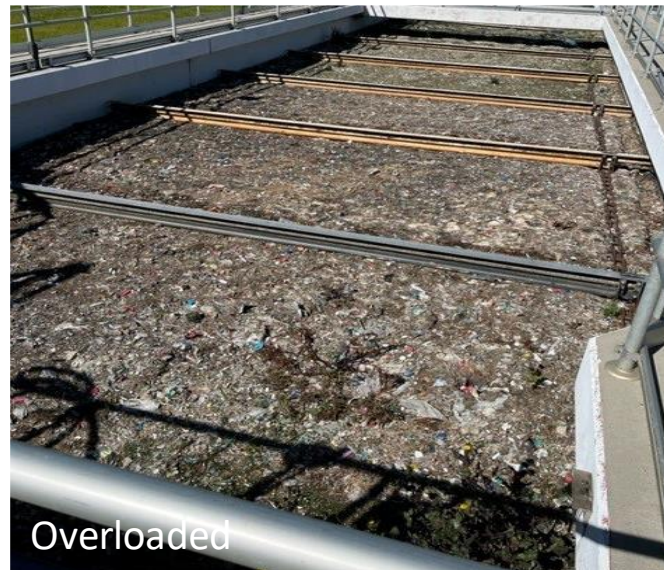




Primary Sedimentation Tanks



Normal



Overloaded

Repairs due to excess flows

Excess Flows - Challenges

- Clogging of bar screens with trash & sediment
- Excessive wear and tear of influent pumps – 3/6 pumps operational
- Overloaded grit chambers
- Overloaded primary sedimentation tanks – no solids removal
- Solids carryover into the secondary treatment
- Permit exceedances in volume & effluent quality



Steps Forward for SBIWTP Compliance

Repairs due to excess flows

Outcome: Achieve a permit compliant SBIWTP within 9 to 12 months. Incremental improvements expected.

IBWC has **awarded \$10M in FY 2023** in capital improvements for:

- ✓ Replacing **Junction Box 1** as a design build
- ✓ Rehabilitation of all the **mechanical parts** for primary sedimentation tanks, which have long lead times
- ✓ Cleaning out the **primary sedimentation tanks**
- ✓ Replacement of **influent pumps #1 and # 5**

Mexico is replacing the **42-inch wastewater line** to SAB –

- ✓ Estimated completion of **November 2023**
- ✓ Will reduce dry weather **transboundary flows**
- ✓ Will reduce **excess flows** to plant



Tropical Storm Hilary Impacts

Tropical Storm Hilary recovery

- Exacerbated vulnerabilities primarily through excessive flows and influx of debris:
- Excessive Inflows
 - Exceeded the design flow capacity of the plant **by 100% for 6 hours** (25 vs 50+ MGD) and by **320% for 6 hours** (80 MGD) on Sunday August 20, 2023 to Monday, August 21, 2023.
 - Filled the **equalization tanks** within the first hour of storm
 - Secondary treatment was **bypassed** at 5pm Sunday for 10 hours and flow discharged through outfall
 - **Flooding** of headworks- pump and electrical issues
- Trash, Sediment, and Debris impacted the entire plant
 - Excess build-up in **wet wells, tanks, and basins**
 - Carried by **flow into pumps** (influent, WAS, USST, non-potable water)
 - **Entanglement of trash** in impellers and check valves – pump failures

Tropical Storm Hilary Impacts Evaluation

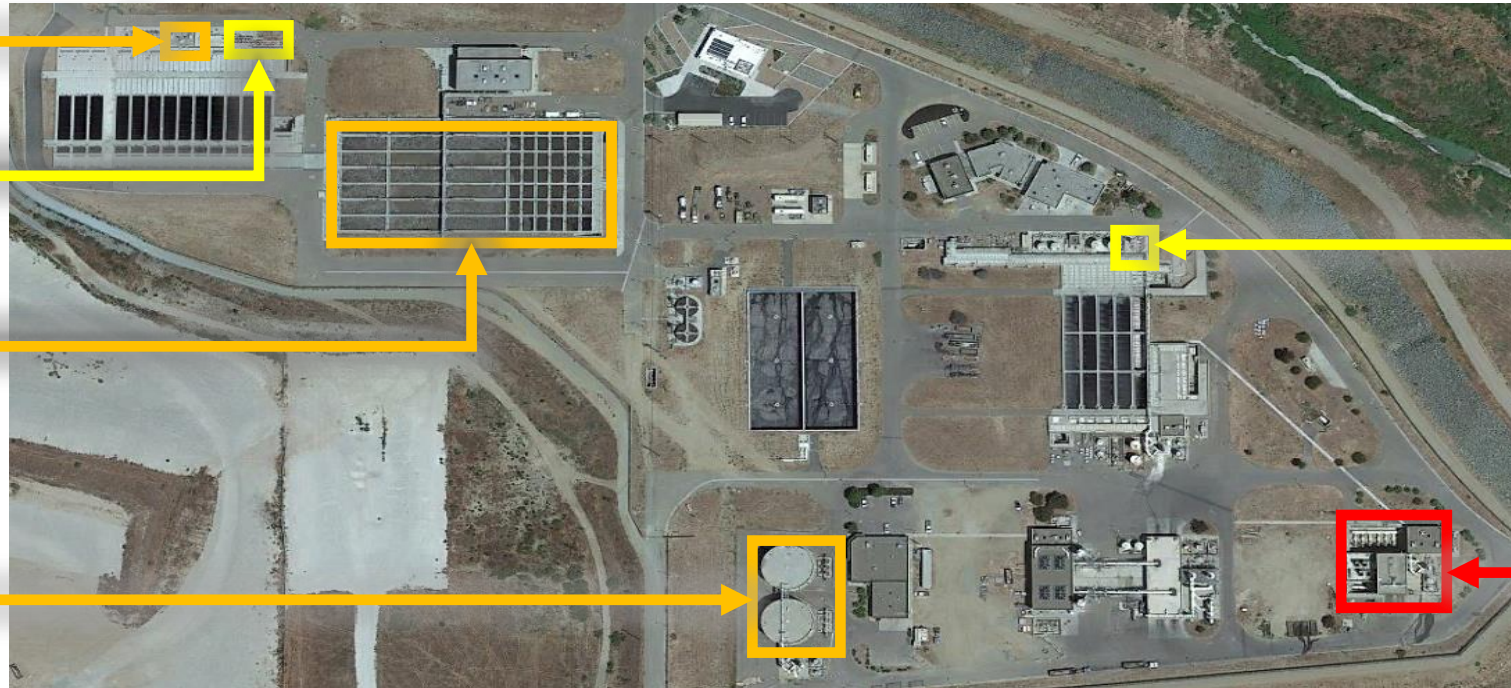
Tropical Storm Hilary recovery

Medium Risk-
WAS Pumps

Low Risk-
Non-Potable
Water

Medium Risk-
AST Pumps

Medium Risk-
USST Pumps



Low Risk-
Non-Potable
Water

High Risk-
Headworks

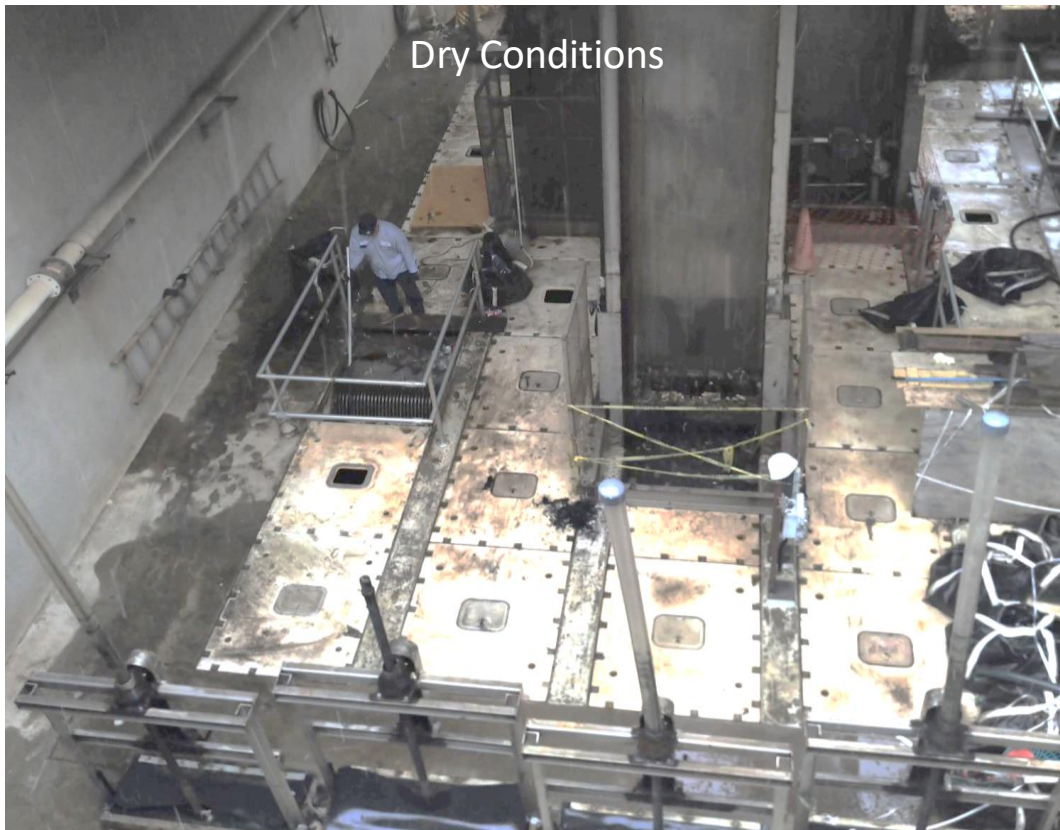
High Risk- Failure leads to SBIWTP shutdown and 100% untreated sewage flow in Tijuana River

Medium Risk- Failure leads to partial treatment of sewage discharged through ocean outfall

Low Risk- Impacts operations and may lead to partial treatment of sewage discharged through ocean outfall

Bar Screens - Inoperable

Tropical Storm Hilary recovery

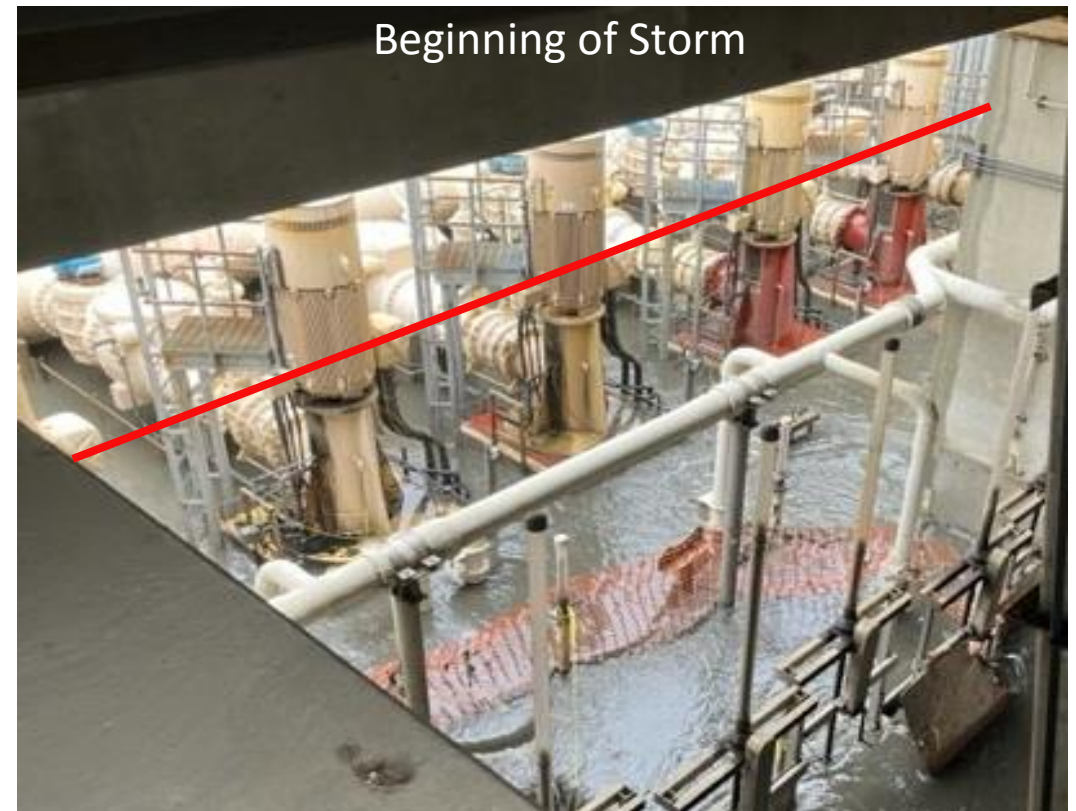
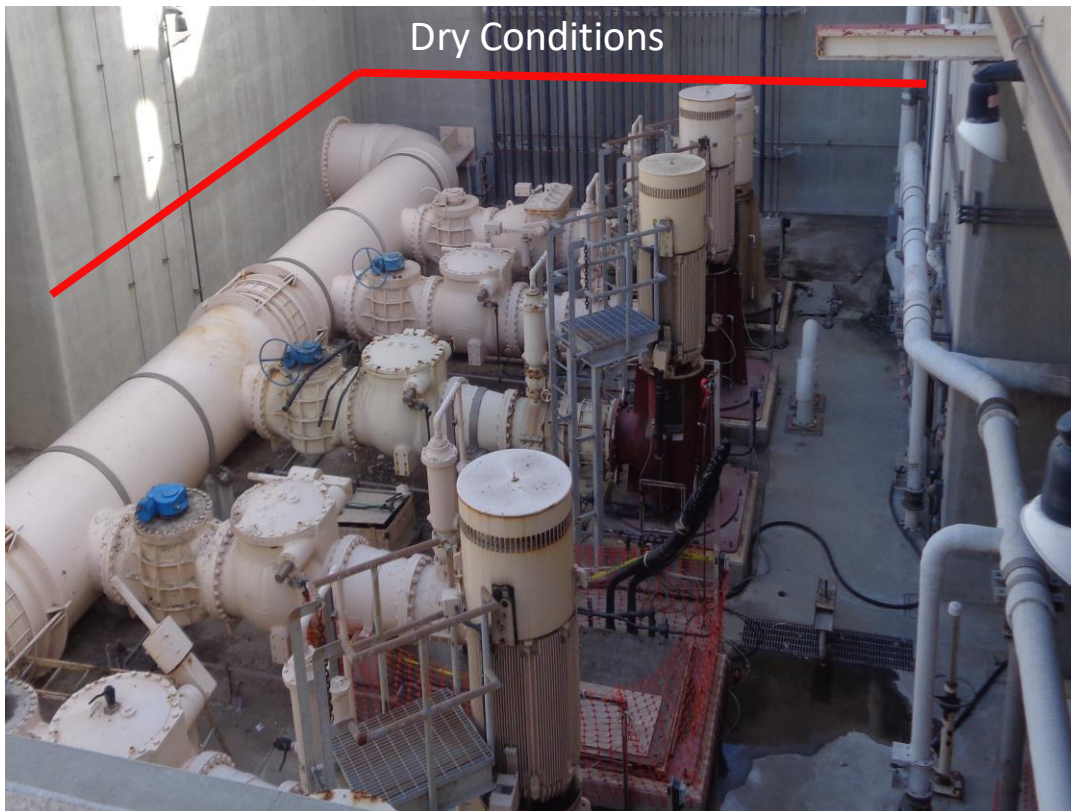


— Waterline at peak storm, approx. 8 ft.



Influent Pumps – 4 of 6 Inoperable

Tropical Storm Hilary recovery

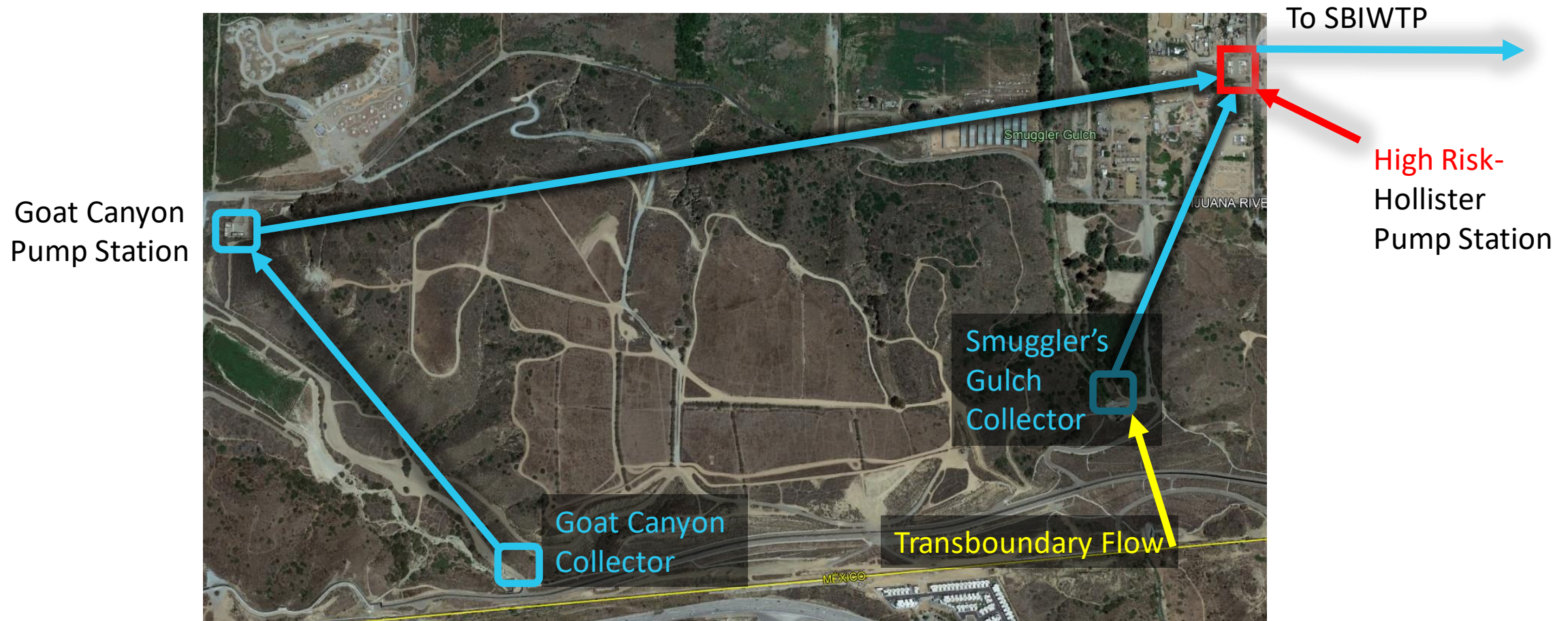


— Waterline at peak storm, approx. 8 ft.



Canyon Collectors Pump Stations

Tropical Storm Hilary recovery





Hillary Recovery Plan

Tropical Storm Hilary recovery

Recovery: Estimated Cost of \$8,000,000.

Funding has been redirected from IBWC's budget for recovery

- Repair will be done in parallel with WWTP compliance
- Incremental improvement should be seen within 30 days
- Recovery elements
 1. Emergency pump and electrical repairs at headworks
 2. Replace influent pumps: Install 2 pumps previously ordered to arrive Oct 2023. Order 4 additional pumps
 3. Replace 11 inoperable pumps throughout (WAS, AST, non-potable water, Hollister pump station)
 4. Rehabilitate USST #1 pumps, and piping

Immediate Preparedness: Estimated Cost of \$32,000,000

- Elements are included in the essential rehabilitation budget for expansion



Program Management Contract

Rehabilitation and expansion

Phase I— Facility Assessment/Pre-design/Procurement Start: Oct 2022

- Existing Facility Assessment and Rehabilitation - **Complete**
- Evaluation of Largest Possible Expansion - **Complete**
- Evaluation of Contracting Methods - **Complete**
- Procurement Scope of Work and Opinion of Probable Cost – **Under Development**
- Procurement Services – **Pending**

Phase II— Design and Construction



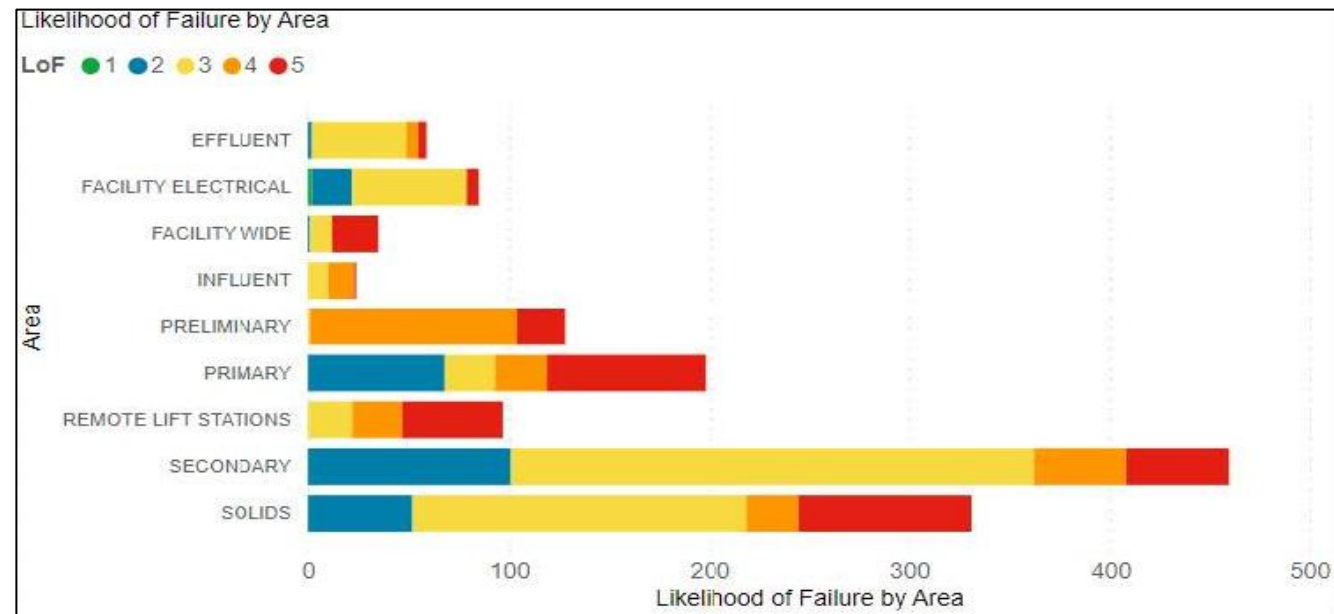
Existing Facility Assessment and Rehabilitation

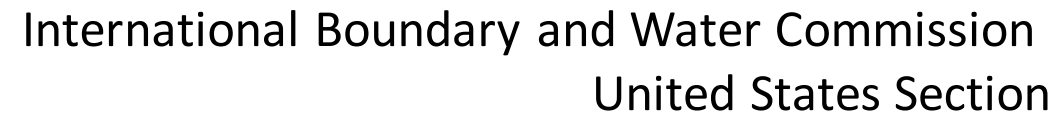
- Site Survey
- Geotechnical
- Physical Condition Assessment
- Performance Assessment
- Prioritization
- Essential Rehab for Expansion
- Opinion of Probable Cost

Rehabilitation and expansion

*Equipment failures, conditions, and age are impacting performance.
(Assets in 4-5 need immediate attention)*

570 assets/40% need immediate attention





Rehabilitation and expansion

-
- EXISTING MAINTENANCE BUILDING
- PROPOSED PIPING (TYP)
- Q TANKS
- TRAILER STORAGE
- EXISTING PRIMARY SEDIMENTATION TANKS
- WET WELL
- AC ACCESS ROAD
- ADVANCED PRIMARY CHLORINATION FACILITY
- PST EFF CHANNEL
- DPC2
- SP-1/4
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Results to Date

Rehabilitation and expansion

- Based on **previous estimates**, the EPA expected that the full project (including a 50 MGD plant expansion with a peaking factor and anaerobic digesters) would cost \$300M +50%/-25%.
- **Updated IBWC estimates** show those same project elements from above plus plant rehabilitation may cost \$910 M +/- 30%. Rehabilitation costs were unexpected.
- The **IBWC project** will be a 50 mgd expansion with a peaking factor of 25 mgd. Construction will be phased, based on availability of funds. It is estimated that this **project has exceeded** its funding availability by \$300 M +/- 30%.
- The IBWC will **solicit bids** in the fall of 2023. Schedule to be developed by Design Firm and Construction Contractor.
- IBWC and EPA are working with NADB on a funding strategy for the **anaerobic digesters** and energy recovery.



Minute 328 – Participants

August 7th Meeting in Mexico City

High-level US and MX government participation

- US Ambassador, Tijuana Consul General
- Chief of N. America for Mexico's Ministry of Foreign Relations, SD Consul General
- IBWC Commissioners
- EPA Regional Administrator, Deputy Assistant Administrator for international affairs
- CONAGUA Director General
- Head of Baja California water agency
- Mexico's treasury (Hacienda) and public works funding agencies
- Head of Tijuana utility

Minute 328 update





Minute 328 – Mexico's Project Status

Minute 328 update

• August 7th Meeting in Mexico City

- San Antonio de los Buenos Wastewater Treatment Plant – goes out to bid in 2023.
- Repair of ruptured pipeline PB1A at Smugglers Gulch by 11/23
- Work underway on International Collector (BWIP) along border
- Oriente Collector (BWIP) – Completed
- Pumping Plant projects - PB CILA (BWIP) completed, PB Laureles about to go to bid
- Other Mx projects pending NADB certification, CONAGUA review and funding



Preparatory work underway for pipeline repair/replacement at Smugglers Gulch/Matadero Canyon



Minute 328 Follow up

Minute 328 update



Completed PB CILA rehabilitation

August 7th Meeting in Mexico City

- Both governments affirmed commitment to Min. 328 projects.
- MX agencies meeting regularly with Hacienda to submit material for funding requests.
- Ambassador Salazar to continue follow-up with Hacienda and USG.
- Regular high-level binational meetings will be held to track Min. 328 progress.
- Proposed high-level site visit in Fall 2023.



Conclusion

Complying with our discharge permit is a priority

- Self-Reporting
- Realigned \$18M to address work required due to impact of excess flows from PB1A break in July 2022 and Tropical Storm Hilary in August 2023.
- These improvements will achieve compliance of the plant independent of the bigger project.
- Tijuana River Valley Monitoring Work Plan is being addressed through Minute 320. USIBWC funded a Secretariat for a 3 year contract to oversee the Minute 320 binational activities.

Other Funded Infrastructure Activities

- Manpower Study
- Asset Management System
- Capital Plan



Conclusion

Communication with stakeholders

- Frequently brief legislative and executive branch of the federal government
- Three citizens forum meetings per year
- Periodic public meetings through USMCA process
- Twitter and email communication

Activities with Mexico

- Binational meetings to identify solutions are held regularly at field office and HQ level.
- USIBWC-CILA Rapid Response notification for local officials
- High-level communication was held with to Mexico to urge repair of pipeline PB1A to reduce excess flows
- Minute 328 regular meetings held to ensure advancement of projects

Questions?

