

Water Pollution from Tijuana: Environmental Challenges for U.S. Jurisdictional Authorities and Policy Implications for San Diego

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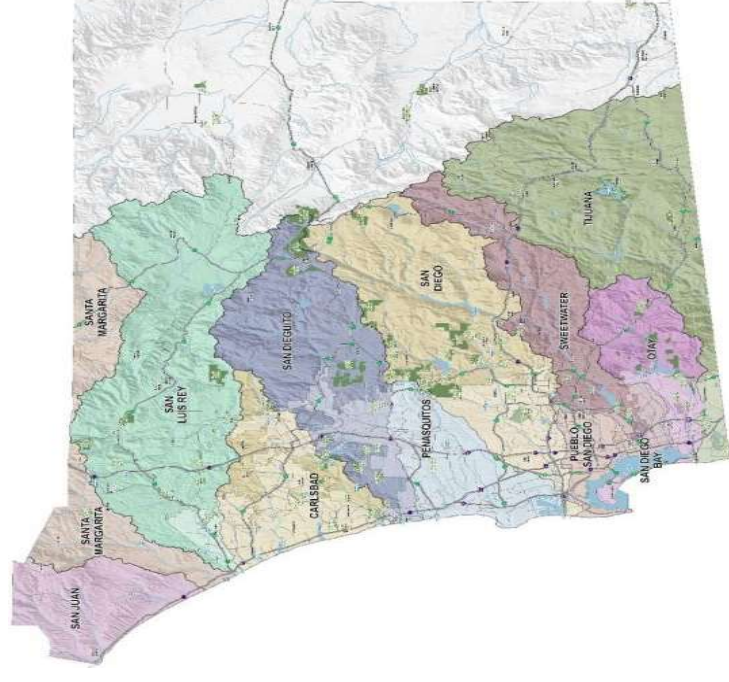
Statement of the Problem

- Regarded as one of the region's oldest & dirtiest problems with >6.3 million gallons of wastewater spilled from Mexico into Tijuana River
- Toxic runoff invades and contaminates beaches in multiple cities in San Diego County with
 - >110 million gallons stormwater runoff in 2 months & millions of gallons of sewage flows into the Pacific Ocean
 - Results in involuntary health risks for ocean/beach users in cities/towns near outlets/on-going sources of contamination
- Officials in affected cities consider this issue a very serious public health risk to their communities



Introduction

- Flooding in the Tijuana River had been a concern for both U.S. and Mexico causes sewage runoff and property damage to surrounding areas
- Tijuana's subterranean network of sewage pipes are in total disrepair and need replacement
- Upgrading Tijuana's sewage treatment plants is estimated to cost \$372 million
- Main source of pollution results from recurring overflows of raw-sewage from canyons along TJ river, are a problem despite cross-border efforts to clean it up
- Additionally, trash moves downstream causing flooding and damage to vegetation



Introduction, Cont...

San Diego County: Quick Facts

- Area = 4,526 sq. miles (> Rhode Island + Delaware)
- 2nd most populous county in California & 5th in the US
- 3.4 million residents with a minority majority population
- Busiest land border crossing/port of entry worldwide
- ~63,000 pedestrians crossing each day
- San Ysidro is the busiest land border crossing: accounts for 1 of 13 people entering the US & processes 70,000 northbound vehicles & 20,000 pedestrians/day
- Largest refugee resettlement in CA & home to 11 watersheds



Introduction, Cont...

Tijuana River: Basic Facts

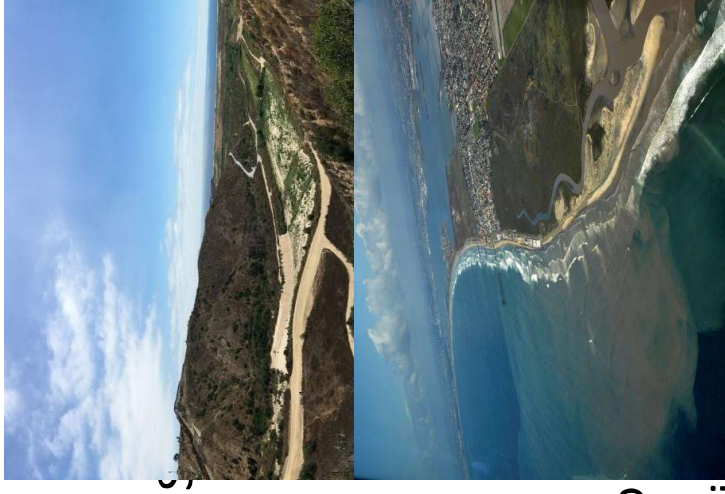
- An intermittent river (flows naturally only during rains) and runs through an arid region along the border of U.S. and Mexico
- Has two main tributaries: Arroyo de las Palmas, flows east out of the mountains and Arroyo de Alamar (or Rio Alamar); Cottonwood Creek in the U.S.
- Enters the Pacific 10 mi (15 km) south of downtown San Diego at [Imperial Beach](#).
- Is impounded in Mexico southeast of Tijuana by the Abelardo L. Rodríguez Dam for [drinking water](#) and [irrigation](#).
- San Diego represents the lower reaches of TJ river and provides the last undeveloped coastal wetlands



Introduction, Cont...

Tijuana River Watershed

- A trans-border river basin that flows across the western portion of U.S. Mexico border into the Pacific Ocean
- San Diego shares Tijuana River Watershed with Tijuana, Mexico
 - Spans a distance of 120 miles across northern Baja California and southern California
 - Split by the U.S.- Mexico border wall ~10 miles south of San Diego
 - Mexico=70% & San Diego=30% of the watershed and the portion in San Diego meanders over wide flood plains and estuary that discharges into the Pacific Ocean



History of TJ-SD Border Sewage Problem

- 1920s: Effluents from septic tanks in the city of Tijuana discharged into Tijuana river and emptied into the Pacific Ocean
- 1930s -1940s: San Ysidro farmers registered complaints of sewage contamination of crops & water wells. A series of trunk sewer lines (International Outfalls) were built in 1939 to transport effluents from TJ & San Ysidro and emptied into the Pacific Ocean
- 1950s: >4 million gallons of sewage flowed into the river each day
- 1960s to 1980s: Rapid urbanized from boom in tourism and gambling magnified the problem and resulted in development of Tijuana river zone/coast, and Mesa de Otay & construction of flood/sewage controls

International Boundary and Water Commission (IBWC)

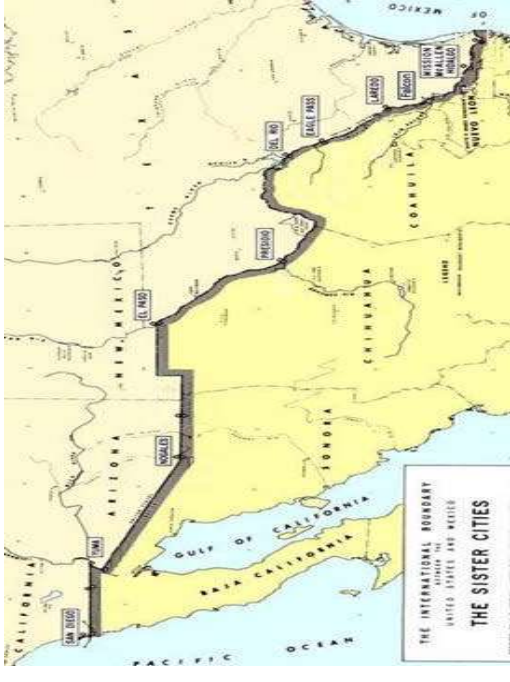


Mission Statement

“To apply the rights and obligations which the Governments of the United States and Mexico assume under the numerous boundary and water treaties and related agreements, and to do so in a way that benefits the social and economic welfare of the peoples on the two sides of the boundary and improves relations between the two countries”

International Boundary and Water Commission (IBWC)

- [Convention 1889](#) created the International Boundary Commission between U. S. & Mexico
- The 1944 Treaty changed the name to IBWC
 - Upgraded to a status of an international body
 - Created both the United States Section and a Mexican Section – each headed by an Engineer Commissioner
 - Covers distribution of the waters of the Rio Grande and Colorado & Tijuana Rivers
- Joint agreement by U.S. [Department of State](#) & Mexico's [Secretariat of Foreign Relations](#)
 - U.S. Section of IBWC is headquartered in El Paso, TX
 - Mexican Section of IBWC is headquartered in Ciudad Juarez, Chihuahua
 - Both characterized by fifteen pairs of sister cities
- U.S. - Mexico boundary extends 1,954 miles, excluding maritime (18 miles in the Pacific Ocean & 12 miles in Gulf of Mexico)



Policy & Legislation

- 1935: Mexico built a larger sewage septic tank system + chlorination
- 1939: 1st attempt to deal with Tijuana River sewage pollution created the International (Marine) Outfall
 - A pipeline or tunnel that discharges municipal or industrial waste water and effluents into the ocean
 - Was proven to be inadequate and ineffective by late 1940s



Policy & Legislation, Cont...

1980s & 1990s

1. 1991: River Diversion & Pump Station constructed upstream of the border
 - a. Operates when flows <22.8 MGD; shutdown when flow exceeds pumping capacity
2. 1993: Point Loma wastewater treatment plant began receiving 13 MGD of raw sewage from TJ
3. 1995: IBWC invested >\$157 million in wastewater treatment
4. [EPA's Clean Water Grant](#) provided to improve [wastewater treatment](#)
 - a. 1997: \$192 million construction of wastewater treatment plant was completed
 - b. 1998: EPA funded \$42 million on sewage projects in Tijuana
 - c. Creation of [San Diego-Tijuana Wastewater Treatment Plant](#) to protect estuary waters

Policy & Legislation, Cont...

2000s

1. 2004: USBWC has identified Alternative 4, Treatment Option C*
 - To expand Mexico's treatment infrastructure/capacity and reduce raw sewage flows into the U.S.
 - Amended the Tijuana River Valley Estuary and Beach Sewage Cleanup Act of 2000
 - To meet long-term needs of the San Diego/Tijuana Region
2. 2009-2010: New sewer line built to maintain river flow in a separate line
3. 2011: Wastewater treatment plant upgraded with \$93 million
4. 2017: Several repairs & preventative measures implemented to avoid discharges into Tijuana River
5. 2017: Cities of Imperial Beach & Chula Vista, and the Port of San Diego sued the federal government for not stopping wastewater/sewage from Tijuana into San Diego County
6. 2018: Earthen berm constructed across Tijuana River to stop sewage into San Diego

*Alternative 4, Option C would result in elimination of the discharge of untreated flows into the shoreline (USBWC's "[Final Supplemental Environmental Impact Statement for Clean Water Act compliance at the South Bay International Wastewater Treatment Plant, San Diego County, California](#)")

Policy & Legislation, Cont...

September 2019

1. San Diego regional leaders pleaded with federal authorities to fund >\$400-million plan to capture and treat Tijuana sewage pollution
2. EPA's blueprint
 - a. Beef up the South Bay International Wastewater Treatment Plan in order to capture, treat and pump out to sea the polluted river water
 - b. Project is estimated to reduce the average #days that beaches are impacted by water pollution from 138 to 12 a year
 - c. Suggested it could be more cost effective to help Mexico reinforce and expand its current system (opposed by regional officials who preferred the investments be on U.S. soil)

October 2019

1. Sen. Dianne Feinstein (D-CA) won approval of 3 provisions in broader appropriation bills for FY 2020
2. EPA received \$19.5 million for oversight to address cross-border sewage flows
 - a. Secretary of State to create an interagency plan to address the impacts of sewage flows in U.S. communities & outlines each agency's responsibility
 - b. U.S. Customs & Border Protection to prepare a report on protection of health of agents exposed to toxic sewage
3. Marcelo Ebrard, Mexican Foreign Minister commits to helping Tijuana with its sewage crisis

Policy & Legislation, Cont...

March 2020

- USIBWC suspended routine in-person services until further notice, to help slow the spread of Coronavirus Disease 2019 (COVID-19)

November 2020

- USIBWC webinar on management/improvements of wastewater pump station & results of water quality and sediment study in Tijuana River and adjacent canyons

Other Proposals and Solutions

- Onsite waste water treatment system should be included as part of negotiations for USMCA or US–Mexico–Canada Agreement (formerly NAFTA)
- Senate Bill 507, authored by Sen. Hueso, approved the reallocation of \$2.1 million for a recovery plan for the Tijuana River Valley
- Proposals for a Tijuana River wastewater recycling project submitted to IBWC

Conclusion

- Measurable plan of action between U.S. & Mexico to increase measurable efforts in mitigating the pollution and minimize/eliminate water deficits to the U.S.
- Onsite waste water treatment system should be included as part of negotiations for USMCA or US–Mexico–Canada Agreement (formerly NAFTA)
- Proposals for a Tijuana River wastewater recycling project must be funded by IBWC
- Need to revisit the binational water treaty rights and/or obligations to protect San Diego’s watersheds
- Promoting a cleaner environment through sustainable control strategies that would minimize cross-border discharges of sewage/wastewater into Tijuana River Watershed cannot be overemphasized

Take Home Message

“There are risks and costs to action. But they are far less than the long range risks of comfortable inaction.”

- John F. Kennedy

Any Questions?



Thank You