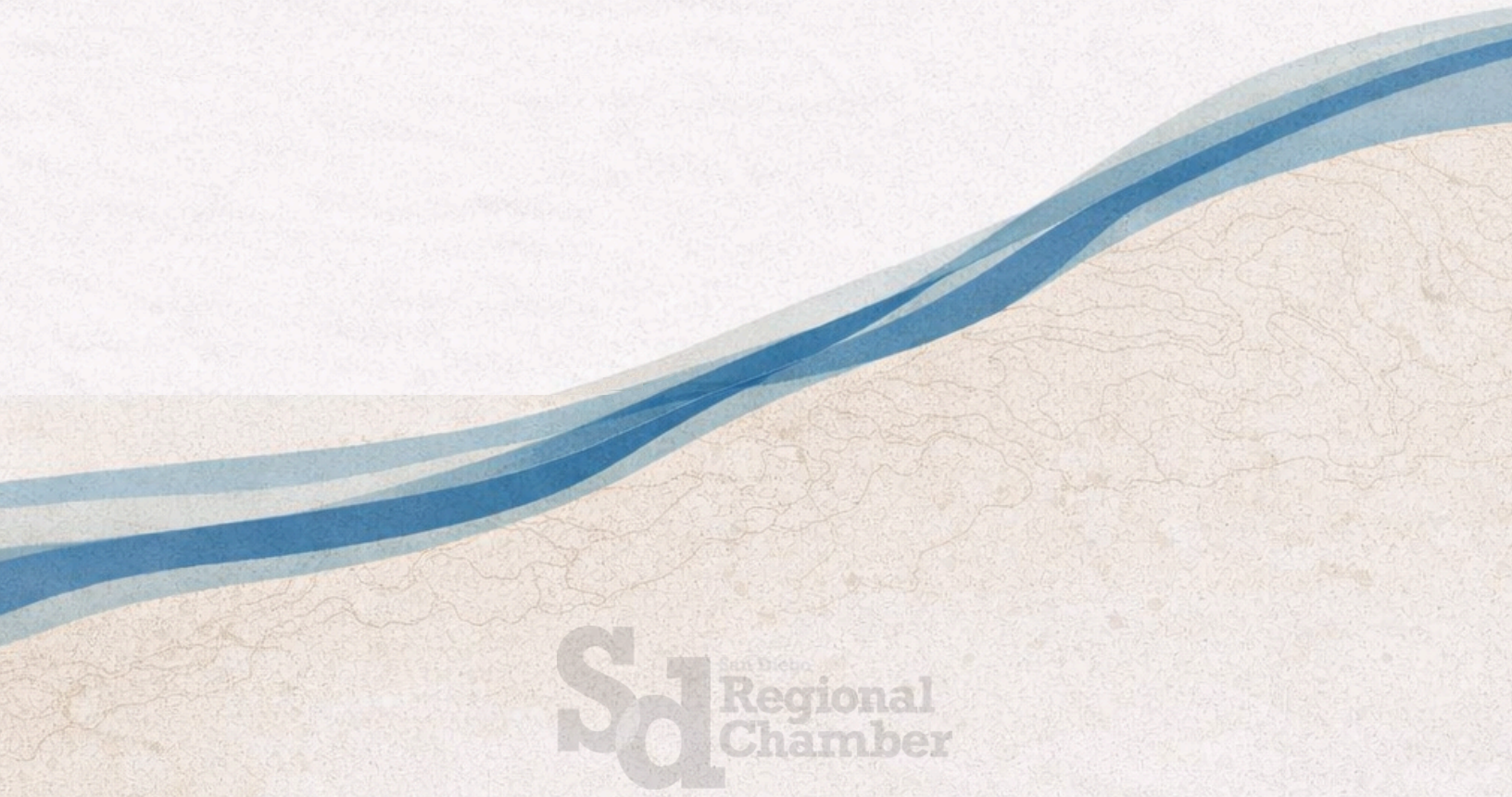
Tijuana River Contamination Crisis:

A Five-Pillar Framework for Binational Solutions



San Diego Regional Chamber

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Attributions

This report was commissioned by the Prebys Foundation for the San Diego Regional Chamber of Commerce to inform binational dialogue and policy solutions addressing the Tijuana River contamination crisis.

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Executive Summary

The persistent contamination of the Tijuana River and nearby Pacific coastline stems from historic chronic infrastructure failures, insufficient operations and maintenance (O&M), and fragmented binational governance. This report presents both a synopsis of the problem and a comprehensive, long-term, and binational solution built around five mutually reinforcing pillars. Together, these pillars create a roadmap for eliminating dry-weather transboundary sewage flows, restoring coastal water quality, and establishing accountable and financially sustainable wastewater management in the San Diego-Tijuana region. By addressing these challenges comprehensively, the roadmap safeguards public health, supports economic resilience, and improves the overall quality of life for the communities and businesses across the San Diego-Tijuana binational region.

Pillar 1. Reliable Infrastructure Funding & Rehabilitation of Critical Assets

A durable solution depends on completing, funding, and sustaining the infrastructure commitments already made under Minute 328, while planning for additional needs.

Key elements of Pillar 1:

- Complete all Minute 328 projects on both sides of the border, including Mexico's remaining approximately $93 million in unfunded commitments.
- Fully modernize and expand the South Bay International Wastewater Treatment Plant (ITP) to 50 million gallons per day (MGD) average (75 MGD peak) with backup systems and long-term budget certainty.
- Update and publicly release Mexico's *Formulación del Programa de Saneamiento de la Frontera Norte a Nivel Gran Visión Tijuana, Baja California* (Gran Visión Tijuana 2020), ensuring an accurate, current assessment of pipeline, pump station, and collection system deficiencies.
- Institutionalize asset-management programs for both the International Boundary and Water Commission (IBWC, or CILA in Spanish) and Tijuana's Public Utilities Commission (Comisión Estatal de Servicios Públicos de Tijuana, in Spanish, or CESPT) to move from emergency repairs to data-driven capital planning.
- Conduct a CESPT rate study to determine adequacy of revenues for drinking-water and wastewater O&M.

This pillar emphasizes that unfinished construction or underfunded O&M will perpetuate failures, even after major capital investments.

Pillar 2. A More Reliable and Modernized Operations & Maintenance Program

O&M deficiencies—not just old infrastructure—are a major driver of repeated system failures. This pillar focuses on:

- Securing predictable U.S. operation and maintenance (O&M) appropriations, recognizing that the ITP is a federally owned plant

competing annually with broader State Department priorities. Historically, O&M has been severely underfunded due, in part, to lack of an asset management program that would serve as the basis for budget planning. For example, between 2010 and 2021, only $4 million in maintenance was invested in the plant.

- Create a Binational Technical Committee, as mandated by the National Pollutant Discharge Elimination System (NPDES) permit, to conduct regular border inspections, identify sources of spills, and coordinate real-time responses.
- Creating a tiered rate structure for ITP operations to incentivize Mexico to prevent transboundary river flows.
- Reinstating industrial pretreatment coordination between IBWC, CESPT, and the City of San Diego.
- Establishing a binational maintenance fund to support routine inspections, spare parts, preventive maintenance, and border pump-station reliability.
- Deploying predictive-maintenance technologies, supervisory control and data acquisition (SCADA) modernization, and real-time flow sensors throughout Tijuana's collection system.

Robust O&M programs will reduce spills, extend asset life, and cut long-term costs, often providing the highest return on investment of any intervention.

Pillar 3. Strengthened Governance & Accountability Through a Two-Tier Oversight Structure

Long-term progress requires formal structures that transcend political cycles and fragmented agency responsibility. The proposed model includes:

A. Continuation of the Binational Technical Workgroup

- Includes federal and state engineering and water-agency staff (IBWC, CILA, U.S. Environmental Protection Agency (EPA), its counterpart Secretaría de Medio Ambiente y Recursos Naturales (SEMARNAT), Mexico's National Water Commission (CONAGUA), Baja California, California).
- Tracks project milestones, coordinates communications, reviews spill responses, and updates project lists.
- Meets monthly.

B. Binational Executive Oversight Committee

- Unblocks stalled projects, mobilizes political support, and resolves funding obstacles.
- Semi-annual or quarterly high-level leadership meetings.

This two-tier system creates continuity, escalation channels, and shared responsibility, reducing the risk of stalled commitments or unclear ownership.

Pillar 4. Enhanced Public Communication & Transparency

Stakeholder trust and political support depend on consistent, accessible, science-based communication. Key actions include:

- Maintaining Scripps' Plume Forecasting Model for the San Antonio de los Buenos Wastewater Treatment Plant (SAB) and Tijuana River discharges.
- Publishing quarterly metrics of dry-weather transboundary flow days.
- Holding an annual high-level U.S.-Mexico meeting aligned with the San Diego Chamber's visit to Mexico City.
- Hosting an annual "State of the River" forum to report progress and solicit public input.
- Updating Baja California's State Water Commission's (CEA) annual indicators report (last updated in 2022).

Better communication improves accountability, accelerates binational alignment, and sustains public confidence.

Pillar 5. Long-Term Water Management, Reuse, and Planning

This pillar recognizes that Tijuana's growth will overwhelm current systems without a coordinated long-term water strategy.

Core components:

- A Binational Wastewater & Water Management Master Plan, updated every five years, guiding future treaty Minutes and investment.
- Study of U.S.-side diversion or treatment options, compared against Mexico-side solutions such as expanded reuse or increased diversion capacity.
- Development of large-scale wastewater reuse projects for La Morita, Arturo Herrera, SAB, Tecate, and the ITP to reduce river flows and create new water supplies.
- Ensuring future ocean desalination projects in Mexico do not unintentionally increase wastewater discharges to the river or coast.

This pillar reframes wastewater not as a waste byproduct but as a strategic resource, reducing dependence on the Colorado River and decreasing cross-border contamination.

Conclusion

The five-pillar framework provides a binational, actionable, and long-term roadmap for resolving chronic transboundary contamination. Its success hinges on:

- Completing Minute 328 infrastructure projects and securing funding for all remaining commitments.
- Establishing predictable, adequate O&M funding for both U.S. and Mexican facilities.

- Creating formal binational oversight structures with clear accountability.
- Improving public transparency and communication to maintain stakeholder trust.
- Planning strategically for long-term water management and wastewater reuse.

Together, these pillars shift the region from reactive crisis response to proactive, durable, binational water management, protecting public health, coastal ecosystems, and the shared economic vitality of the San Diego-Tijuana region.

Minute 333, signed in December 2025, represents an important step forward by both countries. A couple of the solutions proposed in this report are reflected in the Minute. The Minute also includes actions to address the trash, sediment and stormwater issues that contaminate the river valley, increase flood risks, and damage wastewater infrastructure. While trash and sediment management fall outside the scope of this report, we applaud their inclusion in the latest minute.

Introduction: Background and Context

The Tijuana River watershed spans approximately 1,750 square miles, with nearly 75% of its area in Mexico and 25% in the United States. The watershed drains from the mountains east of Tijuana through the city's dense urban corridor before crossing the border into San Diego County and discharging into the Pacific Ocean near Imperial Beach. The river channel in Mexico is largely concrete lined to convey high storm flows and urban runoff rapidly through developed areas and reduce flooding, whereas the U.S. portion remains mostly unlined to preserve natural habitat and support floodplain and wetland functions within the Tijuana River Valley.

Figure 1. Tijuana River Watershed and Sub-Basins

Source: Tijuana River National Estuarine Research Reserve (TRNERR)

This region embodies both opportunity and challenge: it is a dynamic economic hub and one of the busiest border crossings in the world, yet it continues to grapple with aging infrastructure, limited financial capacity, and rapid urbanization. Home to over two million residents, Tijuana has expanded faster than its wastewater and drainage infrastructure can keep pace.

According to CILA's *Gran Visión Tijuana 2020*, the city's population is projected to grow by almost 40% by 2050—placing further strain on an already fragile system and increasing the risk of transboundary pollution. [1]

Since the 1944 Water Treaty, the United States and Mexico have tried to address shared water and sanitation challenges through the International Boundary and Water Commission (IBWC in the U.S./CILA in Mexico), most recently under Minute 328 (2021), which focuses on modernizing Tijuana's wastewater infrastructure and improving binational coordination.

[1]Comisión Internacional de Límites y Aguas (CILA). (2020). *Programa de Saneamiento de la Frontera Norte – Informe Especial Tijuana (Gran Visión)*. Ciudad de México: CILA. Available at: https://www.cila.gob.mx/syca/SUIF/PSFN_IF01_Tijuana_A_Informe.pdf

Cooperative frameworks such as the North American Free Trade Agreement (NAFTA)'s *Border XXI* and *Border 2020* programs, along with financing through the North American Development Bank (NADB)—including funds from the U.S. EPA Border Water Infrastructure Program (also known as BWIP)—enabled significant progress, helping Baja California and other border states increase wastewater collection and treatment service. Investment in Mexico by the U.S. government also incentivized the federal government in Mexico to prioritize funding for this region.

Persistent deficiencies in operation, maintenance, and governance, however, continue to undermine these gains. After more than a decade of relative stability with limited transboundary flows, the lack of preventive maintenance and timely rehabilitation of Tijuana's wastewater collection and treatment systems has resulted in recurring failures and accelerated transboundary flows since 2016, eroding much of the progress achieved through prior binational efforts.

The purpose of this report is to distill the technical, policy, and institutional dimensions of the Tijuana sewage crisis into a single, accessible framework for U.S. decision-makers—clarifying where Mexico's shortfalls lie, how U.S. investments yield benefits, and which governance reforms are needed to prevent recurring transboundary flows and consequent contamination.

To help facilitate a better understanding of the history of the situation since 2017 (when dry-weather flows in the Tijuana River substantially increased) timelines of major events in both countries are included as an attachment. The actions described in the timelines demonstrate progressive cooperation between United States and Mexico across various state and federal administrations. Consistent, permanent, and close cooperation will be critical to providing a long-term and sustainable solution to transboundary pollution in the region.

Chapter 1: Challenges in Tijuana

Tijuana Wastewater System Overview

Tijuana's wastewater system serves more than two million residents through an extensive network of collectors, pump stations, and treatment facilities that convey flows to 14 plants across the city. Of the wastewater treated, four facilities—San Antonio de los Buenos (SAB) Treatment Plant, South Bay International Wastewater Treatment Plant (SBIWTP), La Morita Treatment Plant (LMT), and Arturo Herrera Treatment Plant (AHT)—are responsible for the majority of treatment. A timeline of recent activities in Mexico is included as an attachment.

Table 1. Capacity of Wastewater Treatment Plants

Wastewater Treatment Plant	Capacity (MGD)
South Bay* (ITP)	25
San Antonio de Los Buenos (SAB)	18
La Morita (LMT)	6
Arturo Herrera (AHT)	10

**South Bay was recently increased temporarily to 35 MGD while construction of expansion is ongoing.*

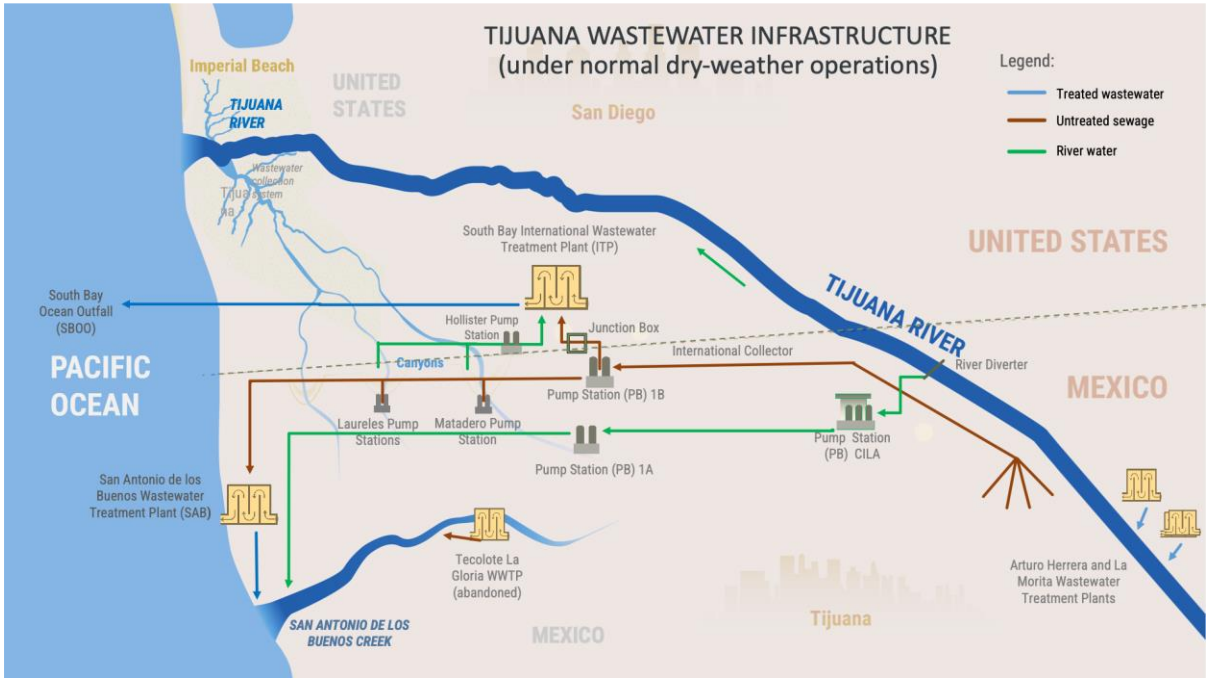
The LMT and AHT facilities discharge into the Tijuana River roughly seven miles upstream from the border, while the SBIWTP discharges through the South Bay Ocean Outfall. The SAB facility, located on the Pacific coast, is designed to discharge treated wastewater directly to the ocean.

Another significant source of transboundary flow originates at SAB that effectively ceased sustained operation in 2017 and was not rebuilt until early 2025. This resulted in all flows directed to the facility being discharged as untreated sewage directly into the Pacific Ocean. During periods of strong south-to-north coastal currents—particularly summer swells—these untreated discharges impacted shorelines in the United States, most notably in Imperial Beach.

Minute 283, signed by the U.S. and Mexican sections of the IBWC in 1990, requires that no sewage, whether treated or not, crosses into the U.S. via the Tijuana River during dry weather. To fulfill this obligation, Mexico built a series of "defensive" diversion structures, collectors, and pump stations to intercept flows in the river and in the canyons before reaching the U.S. When the infrastructure is working properly, flows are diverted and directed to the coast. Recent upgrades to the PBCILA pump station just south of the border increased capacity and improved reliability. Modernization of Pump Station 1 is forthcoming.

The map below highlights the key infrastructure used to capture dry-weather Tijuana River flows and to collect and convey most of Tijuana's sewage toward the two main wastewater treatment plants—the International Treatment Plant (ITP) and the San Antonio de los Buenos Treatment Plant (SAB).

Figure 2. Tijuana Wastewater Infrastructure Map



During wet weather, the Tijuana River and tributary canyons along the border function as natural stormwater channels that drain from Tijuana into the Pacific Ocean. Large storms can generate hundreds of millions of gallons per day of runoff which dilute sewage concentrations. However, during smaller storms, or when storm-induced flow begins to decrease, the fraction of untreated sewage in the river on the U.S. side of the border can be very high.

Infrastructure Deficiencies and Population Growth

As noted in *Gran Visión Tijuana 2020*, Tijuana's wastewater infrastructure is in critical condition, marked by widespread deterioration and insufficient capacity across its collection, pumping, and treatment systems. More than three-quarters of the sewer network requires urgent rehabilitation. Within the Tijuana River watershed, most major collectors and sub-collectors—many built before 1990—are damaged or beyond their service life, with 55 of 72 pipelines identified as needing immediate attention.

Although the city's topography allows sewage to move primarily by gravity, key pump stations such as PB-1, PB-3 (Matadero), and Laureles I and II operate beyond design limits or lack redundancy, resulting in frequent mechanical failures, bypasses, and untreated discharges to the Tijuana River or canyons. More than half of Tijuana's pump stations require short-term rehabilitation. These systemic deficiencies already cause persistent dry- and wet-weather overflows, undermining treatment performance and contributing to recurring transboundary pollution that affects communities on both sides of the border.

Looking ahead, population growth will intensify these challenges. Tijuana's population, estimated at 1.8 million in 2020, is projected to reach 2.4 million by 2050—a 40 percent increase. Assuming Tijuana develops other sources of drinking

water or is provided a larger allocation from the Colorado River, this will increase wastewater flows from 2,900 to over 4,000 liters per second (67-92 mgd), far exceeding current system capacity. Without significant, sustained investment in collectors, pump stations, and treatment facilities, infrastructure failures and cross-border discharges will continue to escalate, threatening public health, coastal ecosystems, and binational water quality.[2]

Financial Constraints and Competing Priorities

Tijuana's water and wastewater utility faces chronic financial constraints that limit its ability to maintain reliable operations and invest in long-term infrastructure improvements. Approximately 96 percent of CESPT's revenues come from service fees and surcharges, yet these revenues are insufficient to keep up with maintenance needs or move toward proactive system management. Operating budgets are consumed largely by energy, chemical, and labor costs, leaving little for equipment replacement or capital renewal. Electricity expenses, particularly for pumping Colorado River water from Mexicali, further strain finances.

Federal contributions from CONAGUA provide essential funding for capital improvements; however, these resources are typically insufficient to meet the full scope of infrastructure needs. To access and utilize available funds, CESPT must have fully developed projects ready before federal approval, which adds another layer of complexity since the utility often lacks the financial and technical capacity to prepare designs and documentation in advance. Once approved, projects must be implemented and completed within the same fiscal year, as CONAGUA construction funds cannot be carried over to subsequent years. This short funding cycle and limited development capacity make it difficult to plan larger, multi-year projects and often result in fragmented investments that fall short of addressing the system's long-term rehabilitation needs.

Tijuana depends on a single, highly vulnerable source for its water supply—over 95 percent of the city's water comes from the Colorado River, conveyed through a single aqueduct, the Río Colorado-Tijuana Aqueduct. This reliance underscores the importance of diversifying the city's water portfolio to enhance long-term resilience. At the same time, competing priorities related to expanding water supply to accommodate rapid urban growth divert resources and attention away from wastewater infrastructure. This growth not only redirects funding but also generates additional wastewater that the fragile system cannot absorb or treat effectively. Without a dedicated, multi-year capital investment strategy and a fee structure that supports full cost recovery, CESPT will remain in a reactive posture, addressing emergencies rather than achieving sustainable water and wastewater management.

The ability to collect and treat sewage at the source depends on the operational stability of the Tijuana utility (CESPT), which struggles with aging infrastructure, limited capital reserves, and fiscal constraints that delay critical repairs. Finally, wastewater infrastructure repair is costly, disruptive to traffic, and typically less popular politically than projects that provide new and more reliable drinking water. This means that the utility will often wait until a catastrophic break in a collector pipe before replacing it.

[2] Gran Visión, 2020

Water Governance

Effective management of Tijuana's water and wastewater system involves multiple Mexican federal and state institutions with distinct yet interconnected roles.

SEPROA (Secretaría para el Manejo, Saneamiento y Protección del Agua – Baja California)

SEPROA is the state-level water authority responsible for policy direction, planning, and oversight of water and sanitation services in Baja California. It establishes state priorities for water supply, wastewater treatment, and reuse; coordinates funding allocations among utilities; and supervises the performance of the state's public service commissions, including CESPT. SEPROA serves as the principal policy and coordination body for Baja California's water sector.

CEA (Comisión Estatal del Agua de Baja California)

CEA is the state agency responsible for operating and maintaining Baja California's major aqueduct systems, most importantly the Río Colorado-Tijuana Aqueduct, which conveys water from the Colorado River to Tijuana, Tecate, and Playas de Rosarito. The City of Tijuana receives over 95 percent of its water supply from the Colorado River, making this aqueduct essential to the city's economic and social resilience.

CESPT (Comisión Estatal de Servicios Públicos de Tijuana)

CESPT is the state-owned utility that provides drinking water, wastewater collection, and treatment services to the municipalities of Tijuana and Playas de Rosarito. It operates the city's network of collectors, pump stations, and treatment plants and is responsible for billing, maintenance, and customer service. CESPT reports administratively to SEPROA and financially to the state government. It is the frontline operator implementing infrastructure projects and managing day-to-day system performance.

CILA (Comisión Internacional de Límites y Aguas entre México y los Estados Unidos)

CILA, known as the International Boundary and Water Commission (IBWC) – Mexican Section, is a federal agency that manages water treaties and boundary issues between Mexico and the United States. In Tijuana, CILA plays a coordinating and diplomatic role, ensuring Mexico's compliance with international agreements such as the 1944 Water Treaty and IBWC Minutes 270, 283, 298, 320, and 328, related to transboundary sanitation, river flows, and coastal water quality. CILA facilitates binational projects and monitors cross-border flows.

CONAGUA (Comisión Nacional del Agua)

CONAGUA is the federal water authority responsible for national water policy, regulation, and investment. It allocates federal funding for water and sanitation infrastructure, enforces environmental and water-quality standards, and regulates water concessions and discharge permits. In Tijuana, CONAGUA provides technical and financial oversight for wastewater projects, supports CESPT through federal programs, and collaborates with CILA on binational sanitation initiatives. Many of these programs require matching funds from the state government, necessitating close coordination and alignment of priorities with the State of Baja California.

SEMARNAT (Secretaría del Medioambiente y Recursos Naturales)

SEMARNAT is the federal cabinet-level agency that houses CONAGUA and is the EPA's counterpart in Mexico. CONAGUA, however, typically answers directly to the President.

Key Takeaways

- Aging system: 75% of Tijuana's wastewater network and over half of its pump stations require urgent rehabilitation.
- Rising demand: 40% population growth by 2050 will increase wastewater flows, overwhelming current capacity.
- Demand for more reliable drinking water: Persistent water shortages in Tijuana mean that new drinking water projects tend to be more politically popular and will compete for resources with critical wastewater projects.
- Funding limits: Short-term federal programs and insufficient utility revenues hinder long-term infrastructure planning.
- Reactive operations: CESPT lacks resources for proactive maintenance and infrastructure expansion, keeping the system in emergency mode.
- Binational stakes: Persistent overflows impact public health, ecosystems, and water quality on both sides of the border.

Chapter 2: Challenges in the U.S.

Beaches in southern San Diego County are frequently closed due to sewage contamination originating from two primary sources: seasonal discharges of raw or partially treated sewage into the Pacific Ocean at Punta Bandera (San Antonio de los Buenos) and continuous transboundary flows in the Tijuana River. [3]

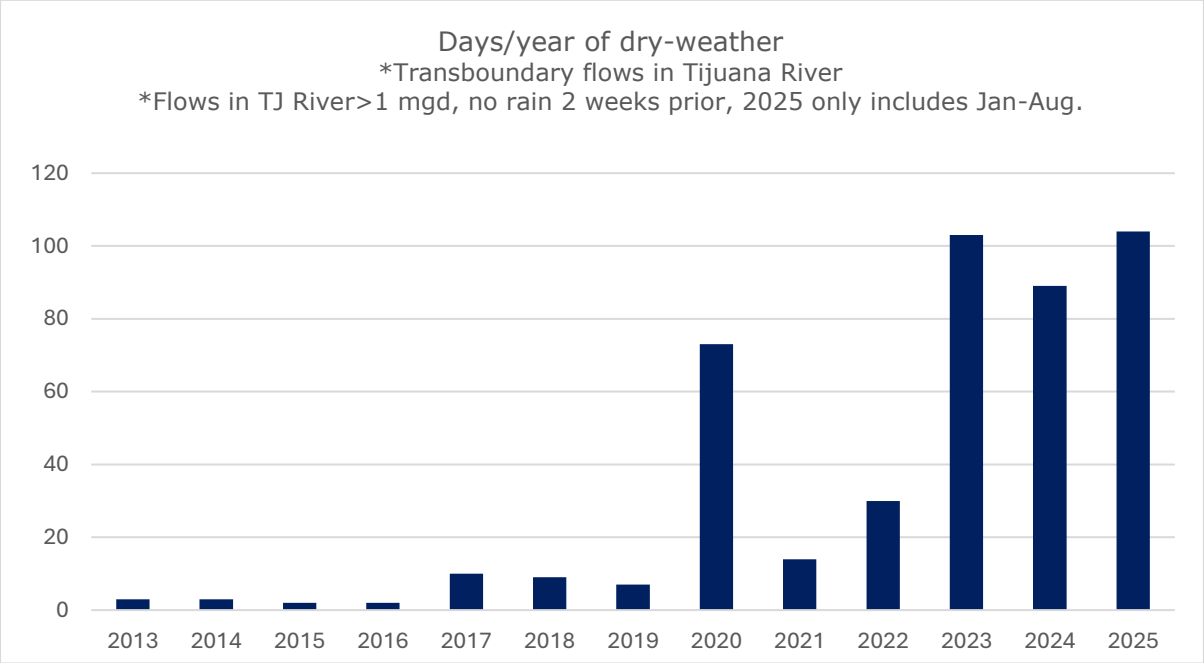
According to the U.S. Environmental Protection Agency, the San Antonio de los Buenos (SAB) facility in Tijuana faced failures and bypasses that allowed large volumes of untreated wastewater to reach the ocean.[8] Northward coastal currents transported this pollution toward Imperial Beach, where bacterial exceedances systematically forced prolonged closures. While the wastewater treatment plant at SAB was rebuilt in 2025, its capacity is limited to 18 MGD. Approximately 20 MGD bypasses the plant during dry weather and will continue to do so until the South Bay International Wastewater Treatment Plant (ITP) is expanded from 25 MGD to 50 MGD. During wet weather, bypassed flows are less because the river diversion at Pumping Station CILA (PBCILA, in Spanish) is turned off.

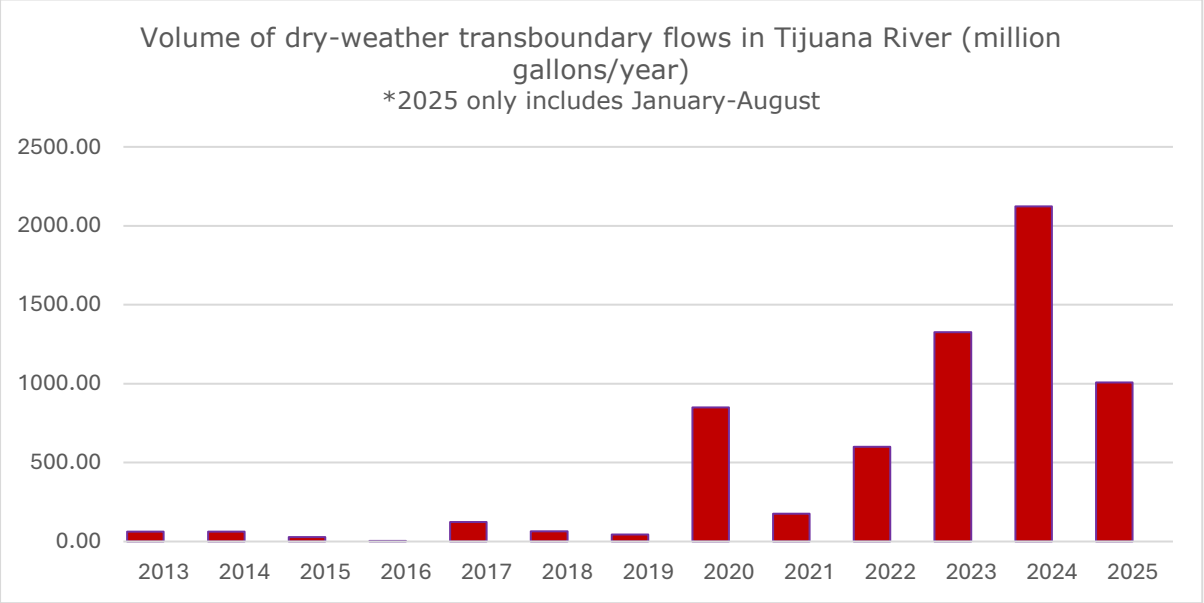
Another source of sewage contamination at the coast is the Tijuana River. As described in Chapter 1, during the rainy season and during ongoing infrastructure failures, the Tijuana River conveys contaminated flows year-round, exacerbating coastal water quality contamination.

Monitoring data shows that dry-weather transboundary flow days in the Tijuana River—excluding rainfall events and the 14-day recovery period that follows—have increased sharply since 2017, marking a shift from isolated pollution episodes to chronic contamination throughout most of the year. This worsening trend underscores the sustained infrastructure stress and the absence of reliable containment of sewage flows at the source. (Note: the goal of binational efforts should be to eliminate dry-weather flow days and to fix Mexico's collection system as much as possible to lessen the impacts of sewage contamination in wet weather. While Tijuana is not technically a Combined Sewer System, it behaves as such. Tijuana has a street-level stormwater drainage system that easily infiltrates its sewer collection system through the manholes. As a result, Tijuana experiences the same types of sewage overflows during storms as the U.S. experiences throughout the east coast and in San Francisco.)

[3]U.S. Environmental Protection Agency (EPA). (2021). *The Tijuana River Valley: Overview of Issues and Efforts*. Available at: https://www.epa.gov/sites/default/files/2021-04/documents/tijuana_valley-overview-final.pdf

Tables 2 and 3. Number of transboundary flow days per year and total dry-weather flow per year (excluding rainy days and 14 days after rain events), 2005–2025 (due to issues with NOAA's website, 2025 only includes data to August).





Source: rainfall data from NOAA, river flow data from IBWC.

The flooding of Pump Station 1 on November 28, 2019 resulted in Mexico's inability to send wastewater and river flows to the coast. As a result, dry-weather transboundary flows increased dramatically in 2020 while the pump station was being repaired. The flooding was caused, in part, by a combination of debris in Tijuana and the failure to fully open the security gates in the Stewart's Drain culvert prior to the storm. During this same event, Smuggler's Gulch in Tijuana also flooded. This flooding, which threatened infrastructure in the U.S., was also

caused by a combination of debris and a damaged six-foot drainage pipe. These are two of many examples that show the need to address both the solid waste problem in Tijuana and to operate and maintain the stormwater drainage infrastructure.

The collapse of Tijuana's two main sewage pipelines on July 31, 2022, severely exacerbated coastal pollution. The rupture released millions of gallons of raw sewage per day into the Tijuana River, overwhelming conveyance capacity on both sides of the border. A partial replacement of these lines was performed over the next two years. As a result of these breaks, Mexico's ability to send river and wastewater flows to the coast was once again compromised. Beaches from Border Field State Park through Coronado experienced frequent closures. Imperial Beach suffers the greatest brunt of these closures. For a few months, the IBWC was able to mitigate the transboundary flows by accepting more wastewater at the ITP in San Ysidro. However, this mitigation measure ended when the IBWC realized that the plant, already in poor condition, could not maintain the higher flows without suffering even greater damage.

In 2025, high transboundary flows continued due partially to the inability to accept peak flows above 25 mgd while repairs were being made and due to various infrastructure failures in Mexico.

Sewage-laden discharges from Tijuana contaminate the Tijuana River, its estuary, and adjacent coastal beaches, creating persistent public-health and ecological risks. Untreated and partially treated wastewater carries high concentrations of pathogens—including fecal coliforms, E. coli, enterococci, and viruses—that can cause gastrointestinal, respiratory, and skin illnesses. The cumulative result is a chronic public-health hazard for nearby communities and recreational users.

A study conducted by Scripps Institution of Oceanography determined that 3.8% of all swimmers entering the ocean at Imperial Beach (over 34,000 individuals) may have been sickened by ocean water in 2017, based on a plume tracking model, data on beach visits, and a norovirus dose-response model.[4]

Scientific Evidence of Contamination

The *Minute 320 Binational Water Quality Study* (2021) provides a comprehensive analysis of the Tijuana River watershed. The study found widespread exceedances of U.S. and Mexican water quality standards for fecal indicator bacteria, nutrients, and organic pollutants.[5]

Key findings included:

- Fecal coliform bacteria concentrations frequently exceeded both Mexican (NOM-001-SEMARNAT-1996) and U.S. (Clean Water Act) standards for recreational water contact.
- High concentrations of ammonia, total nitrogen, and total phosphorus indicated insufficient wastewater treatment.

[4]Gronewold, A. D., et al. (2021). *Estimating the Number of Individuals Exposed to Fecal Contamination at a Coastal Beach via Ocean Plume Modeling*. Environmental Science & Technology. Available at: https://pmc.ncbi.nlm.nih.gov/articles/PMC8581746/
[5]International Boundary and Water Commission. (2021). *Minute 320 Binational Water Quality Study of the Tijuana River Watershed*. Available at: https://www.ibwc.gov/wp-content/uploads/2023/08/Min320_Binational_Report_TJ_River_Watershed_with_Appendix090120.pdf

- Chemical oxygen demand (COD) and biochemical oxygen demand (BOD) levels confirmed the presence of organic pollutants from domestic sewage.
- Untreated or poorly treated domestic sewage is the dominant source of contamination affecting transboundary water quality.

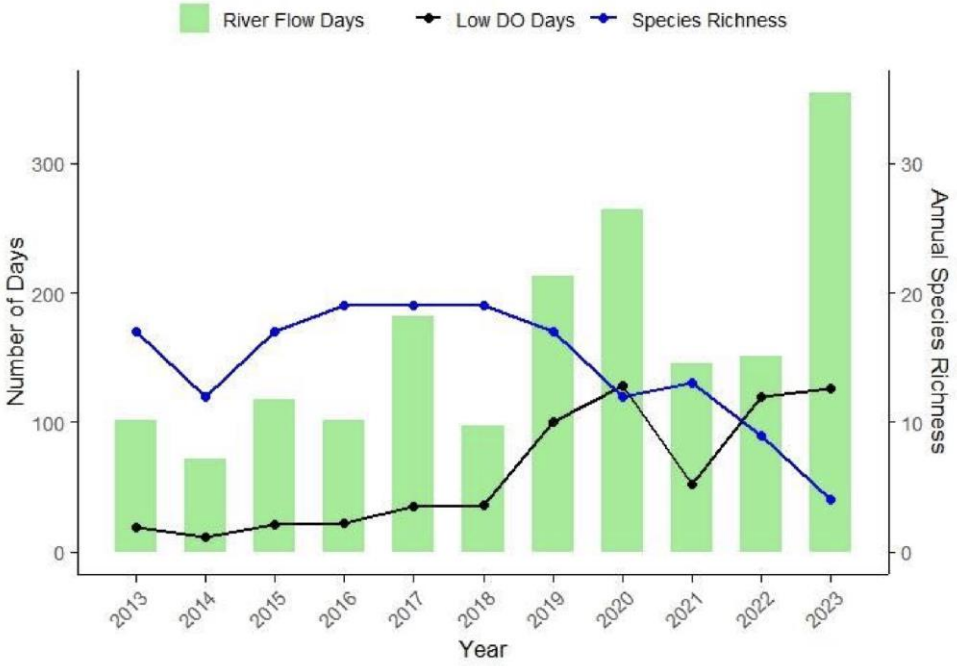
Metals such as copper, nickel, and zinc, commonly associated with plating and industrial processes, were also detected at concerning levels. Additionally, the study found bis-2-ethylhexyl phthalate (DEHP), a plasticizer linked to solid waste, present at all monitored river sites and exceeding U.S. standards, underscoring the interconnection between waste management and water contamination. These contaminants not only impact the estuarine and marine environment but can affect biological treatment at the ITP and the other wastewater treatment plants in Mexico. As part of updated permit conditions issued by the San Diego Regional Water Quality Control Board for the South Bay International Wastewater Treatment Plant, the IBWC is now required to conduct continuous water-quality sampling in the Tijuana River Valley and nearby canyons. This new mandate expands upon earlier requirements that focused solely on monitoring the treatment plant's outfall and effluent. On October 17, 2024, the U.S. Section of the IBWC awarded a five-year, $1.9 million contract to the EGC-AGEISS Joint Venture to implement the Tijuana River Valley Monitoring Program, which includes continuous sampling of water, sediment, and trash to better characterize transboundary flows and maintain a comprehensive data record of river and canyon conditions. This study is currently ongoing, and results have not been published to date. The information generated from this study will provide the first continuous, scientifically defensible record of transboundary flow conditions. These data are needed to guide infrastructure, public-health protections, and future binational actions.

Air quality is also affected by the dry-weather transboundary flows in the river. Monitoring of hydrogen sulfide conducted by San Diego State University (SDSU) and UC San Diego in 2024 show the impact of sewage on air quality in region. Flows in the river containing high concentrations of sewage and low winds led to nighttime H_2S peaks, reaching 4.5 parts per million (ppm).[6] While below the OSHA 8-hour exposure limitation of 10 ppm, prolonged exposure at levels seen in the river valley may cause nausea, tearing of the eyes, headaches or loss of sleep, as well as bronchial constriction in some asthma patients.[7]

Recent studies have documented the ecological impacts of transboundary flows on the Tijuana River Estuary. Analysis shows that higher numbers of transboundary flow days are associated with more frequent low-oxygen conditions and corresponding reductions in species richness—clear evidence of ecosystem stress. A study by SDSU, funded by the EPA, revealed a major deterioration in water quality after persistent, long-term cross-border sewage flow. The continuous cross-border sewage flow also delivered organic matter and nitrogen to the estuary, which appears to have prompted low-oxygen conditions.[8]

[6] https://pubmed.ncbi.nlm.nih.gov/40875844/
[7] https://www.osha.gov/hydrogen-sulfide/hazards
[8] https://pmc.ncbi.nlm.nih.gov/articles/PMC11629095/

Table 3. Dissolved Oxygen and Species Richness in the Tijuana River Estuary versus Number of Days of River Flows



Source: De Wet, 2025. Data from University of California Santa Barbara

U.S. Infrastructure Response: South Bay International Wastewater Treatment Plant

The ITP was constructed in 1997 as an advanced primary treatment system and subsequently upgraded in 2011 with secondary biological treatment. It has suffered from decades of deferred maintenance. A 2022 condition assessment found that 36 percent of its assets were in critical condition, requiring approximately $150 million in rehabilitation. Between 2010 and 2021, only $4 million total had been invested in maintenance, leading to extensive deterioration across structural, mechanical, and electrical systems. The assessment identified an immediate need for nearly $30 million in urgent repairs at ITP, including replacement of key components at Junction Box 1 (JB1) and restoration of the primary treatment systems, which were not functioning and consequently not meeting discharge permit standards.

In January of 2020, Congress allocated, through the United States-Mexico-Canada Agreement (USMCA) implementation bill, $300 million to the EPA for construction and infrastructure. Over the next two years, the EPA worked with a group of 20 local, state, and federal agencies to develop a binational comprehensive plan, of which all $300 million would be dedicated to the rehabilitation and expansion in treatment capacity of the ITP from 25 mgd to 50 mgd. Another $350 million were appropriated toward this expansion by Congress in 2024, totaling $650 million for improvements and treatment capacity increase at the ITP (see Minute 328 discussion in next chapter to learn how this $300 million was used to solicit investment from Mexico).

In 2022 and 2023, the IBWC redirected approximately $25 million in federal funds to the ITP to repair infrastructure damaged by Tropical Storm Hilary and to remove debris and address high-flow conditions from Mexico that interfered with treatment processes and caused temporary non-compliance with the plant's discharge permit. These emergency repairs focused on restoring hydraulic capacity, stabilizing key treatment components, and mitigating debris accumulation in the influent channels. Following these interventions, the plant achieved permit compliance in November 2024, marking a major milestone in restoring operational reliability.

In August 2024, the U.S. Section of the International Boundary and Water Commission (IBWC) awarded a progressive design-build contract to PCL Construction and Stantec to modernize and expand the plant's treatment and conveyance systems. When completed, the upgraded facility will be capable of treating an average of 50 MGD, with a peak hydraulic capacity of 75 MGD.

As part of the aforementioned progressive design-build at the ITP, an interim expansion to 35 MGD in October of 2025 was completed as a strategy to provide immediate relief while the full expansion is in design. This incremental improvement has reduced transboundary flows and hint at the benefits that should come from a full 50 MGD facility.

The plant will be one of the largest federally operated wastewater treatment plants in the country. Because it is not operated by a local water utility using funds from local water fees, it must compete for funds with the State Department's other national and international priorities. This can pose issues if funds sufficient to operate and maintain the plant are not appropriated by Congress. Despite increased U.S. appropriations, progress remains constrained by structural and funding gaps. The absence of a sustained operations and maintenance (O&M) budget and asset management program have resulted in a recurring cycle of system failures—where urgent fixes only occur following major operational disruptions instead of coordinated, preventive investment in the shared watershed.

To minimize risks associated with similar issues in the future and prevent further decline, IBWC must secure sustained, dedicated funding for operations and maintenance and fully implement its Asset Management Program. This system will provide the tracking, data, and justification necessary to move from reactive to proactive maintenance, ensuring long-term reliability and compliance—especially as plant capacity doubles. Institutionalizing this program will be key to supporting funding requests and maintaining continuous performance monitoring.

The IBWC also faces urgent rehabilitation needs across its broader wastewater, flood control, and river infrastructure along the entire U.S.-Mexico border, creating competing demands on limited federal resources. These pressures reinforce the need for a coordinated, 20-year capital plan that prioritizes investments, sequences major upgrades, and ensures stable funding.

A long-term sustainable solution to the problem of dry-weather transboundary sewage flows in the Tijuana River and Pacific Ocean will ultimately require a coordinated, binational investment strategy that aligns U.S. and Mexican infrastructure commitments, establishes a joint funding mechanism for O&M, and institutionalizes transparent data sharing and performance reporting. Without

such a framework, both nations will remain vulnerable to recurring sewage crises that undermine public health, coastal ecosystems, and cross-border trust.

Key Takeaways

- Persistent Public Health Risks: Chronic sewage contamination from Tijuana continues to close beaches from Imperial Beach through Coronado year-round, posing health and economic risks to U.S. communities.
- Infrastructure Failures Drive Pollution: The 2022 collapse of Tijuana's main sewage pipelines and recurring bypasses at the San Antonio de los Buenos plant have intensified cross-border pollution, transforming seasonal issues into a continuous crisis.
- Scientific Evidence Confirms Severity: The Minute 320 Binational Water Quality Study found widespread exceedances of U.S. and Mexican standards for bacteria, nutrients, and organic pollutants—confirming untreated domestic sewage as the dominant source of contamination.
- Focus needs to be on addressing dry-weather flows: Eliminating contamination in all stormwater-related flows is unrealistic. Fortunately, while large storms carry lots of sediment in the river due to erosion, the concentration of untreated sewage in the river decreases due to dilution of the stormwater. Eliminating dry-weather flows provides the greatest benefits at the lowest cost. Furthermore, by working to eliminate dry-weather transboundary flows by treating more wastewater, sewage in the river will be reduced during both dry- and wet-weather.
- Monitoring and Compliance Improving: Under a new permit, IBWC has initiated continuous sampling in the Tijuana River Valley and achieved permit compliance at the ITP in late 2024 after emergency repairs and system upgrades.
- Asset Management and Sustained Funding: Decades of deferred maintenance have left the ITP with critical asset failures. Sustained funding and full implementation of IBWC's Asset Management Program are essential to ensure reliability, compliance, and proactive maintenance as capacity expands.
- Reactive Response Cycle: The urgency of the crisis often leads to short-term fixes that delay structural solutions. A coordinated, binational plan is needed to move from reactive crisis management to proactive, long-term resilience.

Chapter 3: Binational Cooperation Framework: Progress and Gaps under Minutes 320, 328, and 333

Minutes are formal agreements between the U.S. and Mexican sections of the IBWC to address specific issues related to the border. These Minutes outline actions, agreements, and measures to ensure the expected implementation of water treaties and border sanitation projects. A list of Minutes related to Tijuana sanitation are included as an attachment. Minute 320, 328, and 333 are the three most recent Minutes related to addressing transboundary river flows and are discussed in more detail below.

Minute 320 (2015): Binational Cooperation on the Transboundary Sanitation Problem in Tijuana

Adopted in October 2015, Minute 320 represented a formal acknowledgment by both governments that chronic transboundary flows of sewage, trash, and sediment in the Tijuana River watershed required a coordinated response. The Minute established a Binational Core Group—co-chaired by the U.S. Environmental Protection Agency (EPA), Mexico's Secretariat of Environment and Natural Resources (SEMARNAT), and the International Boundary and Water Commission (IBWC/CILA)—to facilitate data exchange, define priority actions, and promote joint infrastructure planning and investment.

To support this framework, the Minute created technical workgroups focused on trash and sediment control, infrastructure evaluation, and water-quality monitoring. In its early years, CILA prepared the Gran Visión Tijuana 2020, which evaluated the condition of wastewater and stormwater systems in the Tijuana River watershed and identified major infrastructure deficiencies contributing to transboundary pollution.

Following several inactive years, the Binational Core Group (BCG) and its workgroups were reactivated in 2022 after the COVID-19 pandemic and the settlement of the U.S. lawsuit brought by the City of Imperial Beach, San Diego County, and the Surfrider Foundation against the U.S. Section of the IBWC. Since then, meetings have been held to revisit earlier discussions, refine stakeholder priorities, and align activities with Minute 328.

Minute 328 (2021): Sanitation Infrastructure Projects for Immediate Implementation and Future Development

Minute 328 was signed in July 2022 to respond to escalating cross-border contamination and strong advocacy from local and congressional leaders in San Diego County. The Minute established a comprehensive binational framework for infrastructure investment, monitoring, and limited maintenance, and formalized U.S. and Mexican funding commitments totaling roughly $474 million—$330 million from the United States (through EPA and IBWC) and $144 million from Mexico (through CONAGUA, SEMARNAT, and CESPT).

The Attachment outlined a portfolio of 16 priority projects, including rehabilitation of the South Bay International Wastewater Treatment Plant (ITP), expansion of treatment capacity in Tijuana, rehabilitation of major pump stations and collectors,

and construction of new infrastructure to prevent untreated discharges into the Tijuana River and Pacific Ocean. The Minute also committed both countries to enhanced binational monitoring and transparency mechanisms to track progress and performance.

Despite these advances, implementation has faced challenges. While the United States has made significant progress in programming its share of the funding, Mexico has only secured approximately $51 million of the $144 million pledged, with remaining commitments still in early formulation. Major works completed to date include the rehabilitation of Pump Station CILA (PB CILA), the Oriente Collector, and the International Collector, as well as the construction of the new San Antonio de los Buenos Treatment Plant.

Minute 333 (2025): The Latest Framework to Address Both Stormwater and Wastewater Issues.

In December 2025, the United States and Mexico signed Minute 333, which builds upon the foundation established by Minutes 320 and 328 and a Memorandum of Understanding (MOU)[9] signed earlier in the year by EPA and SEMARNAT. The MOU among other commitments, includes a timeline for the completion of Minute 328 projects. Minute 333 includes actions to address the trash, sediment and stormwater issues that contaminate the river valley, increase flood risks, and damage wastewater infrastructure. The Minute also recognizes the need for better wastewater planning both through the creation of a Master Plan and potential improvements to the treatment plant at San Antonio de Los Buenos.

[9] https://www.epa.gov/system/files/documents/2025-07/proy-mde-semarnat-epa-23jul25-ing-rev2-us-rev-24jul25rev-clcsc.pdf

Chapter 4: Five-Pillar Solution Framework

This chapter provides detailed recommendations across five pillars that together create a comprehensive roadmap for resolving the Tijuana River crisis. Each pillar addresses a critical dimension of the problem and includes specific, actionable steps.

Pillar 1: Reliable Infrastructure Funding & Rehabilitation of Critical Assets

Key Actions:

- Complete all Minute 328 projects (see page 29) on both sides of the border, with particular focus on securing Mexico's remaining approximately $93 million in unfunded commitments.
- Fully expand and modernize the International Treatment Plant (ITP) to 50 MGD average capacity (75 MGD peak) with redundant systems and long-term budget certainty.
- Update and publicly release Mexico's Gran Visión Tijuana assessment to provide an accurate, current evaluation of pipeline, pump station, and collection system deficiencies.
- IBWC should adopt an asset management plan similar to those used by municipal utilities in the United States. Mexico should report out on their asset management plan at binational meetings. An annual budget for O&M of wastewater infrastructure should be identified.
- CESPT should conduct a rate study to determine if domestic and commercial water rates are adequate to cover utility operations. The study should also evaluate physical and commercial efficiency (water loss and revenue loss from unpaid bills).

Pillar 2: More Reliable Operations and Maintenance Program

Key Actions:

- U.S. Congress needs to ensure reliable O&M funding for the ITP. The O&M budget will likely need to reach $25 to $30 million annually once the plant is fully expanded to protect both public health and the historic capital investment.
- IBWC should formally convene a binational technical committee (BTC), as required by Section 6.3.2.2.1 of their National Pollutant Discharge Elimination System (NPDES) permit. These meetings should focus on performing regular inspections of the Tijuana River, canyons, and critical infrastructure along the border.
- IBWC should consider reconvening quarterly pretreatment meetings between IBWC, CILA, CESPT, and the City of San Diego to provide technical support for Mexico's industrial pretreatment program.
- IBWC should consider establishing a tiered fee structure for the ITP that significantly penalizes CESPT for any wastewater discharged to the Tijuana River, while offering substantially lower charges for flows properly conveyed

to the treatment plant. The rates could be tied to the frequency and/or quantity of dry-weather flows in the river.

- IBWC and EPA should consider developing a binational maintenance fund, jointly administered by IBWC and CILA with participation from CESPT, EPA, and CONAGUA, to finance routine maintenance, preventive inspections, and emergency response for critical border infrastructure.
- IBWC should employ predictive maintenance technologies, modernize SCADA (Supervisory Control and Data Acquisition) systems, and deploy real-time flow monitoring within large collectors in Tijuana to better understand flow patterns and identify leaks and spills.

Pillar 3: Strengthened Governance & Accountability: Two-Tiered Oversight Structure

To strengthen accountability, accelerate project delivery, and ensure sustained binational coordination, a two-tiered oversight structure should be formalized in a future Minute.

1. Binational Technical Workgroup

Technical staff from U.S. and Mexican federal and state water agencies currently meet monthly to review progress on all Minute 328 projects. This workgroup has proven effective at identifying stalled projects, diagnosing delays, and elevating technical or financial barriers.

Composition:

- Federal agencies: IBWC, CILA, EPA, SEMARNAT, CONAGUA, U.S. Department of State.
- State governments: California and Baja California.

Recommended monthly responsibilities:

- Monitor progress on all Minute 328 commitments and financial disbursements.
- Review compliance data (e.g., ITP NPDES performance, CESPT collection-system metrics).
- Coordinate new project identification arising from updated studies.
- Align binational communications to ensure consistent, fact-based public messaging.
- Receive updates on spills and responses from the NPDES-mandated BTC.
- Prepare inputs for semi-annual public progress summaries.

2. Binational Executive Oversight Committee (Semi-Annual or Quarterly)

To advance issues beyond the Technical Workgroup's authority, a high-level decision-making body—the Binational Executive Oversight Committee (BEOC)—should be established. This committee would meet twice per year (or quarterly) to resolve stalled issues, authorize adjustments to project schedules or scopes, and secure political or financial support when needed.

Purpose and value:

- Bring federal and state executives together to resolve policy, funding, or institutional obstacles.
- Ensure Minute commitments maintain momentum and adapt to evolving conditions.
- Provide a formal mechanism for elevating critical issues to the political and managerial level.
- Strengthen U.S.-Mexico accountability by establishing shared governance of major decisions.

Pillar 4: Enhanced Public Communication & Transparency

Key Actions for consideration:

- EPA and/or IBWC should work with Scripps to further refine its coastal beach Plume Forecasting Model, ensuring adequate real-time data on transboundary flows and sewage percentages at SAB and the Tijuana River. Also, funds will need to be secured to keep the website up and running (link to the site can be found here: https://pfmweb.ucsd.edu).
- Mexico, with technical support from SDSU, should establish a long-term monitoring program of the Tijuana River, especially during dry-weather, as a means of determining how much sewage is in the river. Trends can be used to measure efficacy of investment in infrastructure improvements in Tijuana.
- Using local precipitation and river flow data, IBWC should develop a dry-weather transboundary flow metric, which should be reported quarterly on its website. This metric will help measure the efficacy of new infrastructure.
- A high-level meeting with CONAGUA Director, Commissioners, EPA Director, the U.S. Ambassador to Mexico, and members of the San Diego Chamber of Commerce could coincide with the Chamber's annual visit to Mexico City.
- IBWC or EPA should convene annual stakeholder forums as a State of the River to review progress, gather feedback, and strengthen cross-border engagement.
- IBWC should establish routine public communication with the public about system performance, planned upgrades, and funding for capital and O&M needs. Because the U.S. government owns and operates the ITP, regular communication from the IBWC to U.S. taxpayers is essential—just as municipalities routinely keep their ratepayers and elected officials informed.
- Baja State government water utility should resume the publication of annual reports on water management indicators, which were last published in 2022[10]. Among other data, the indicators report showed amount of wastewater generated, treated, reused, and both physical and commercial efficiency of water deliveries throughout northern Baja. CESPT could also begin publishing online effluent data from major wastewater treatment plants in Tijuana, Rosarito, and Tecate monthly.

[10] http://www.cea.gob.mx/indicadores.html

Pillar 5: Long-Term Water Management, Reuse, and Planning

While short-term actions are important, achieving long-term compliance with Treaty Minute 283, which stipulates that no treated or untreated sewage should enter into the U.S., will require continued diplomatic cooperation, strategic expansion of Tijuana's infrastructure, and reliable long-term O&M that can keep pace with the region's population growth.

Key Actions:

- Establish a Binational Wastewater and Water Management Master Plan, updated every five years, to evaluate progress, reassess priorities, and integrate new data from asset-management programs, CILA studies, and regional growth projections.
- Conduct a study on the feasibility of a U.S.-side river diversion and/or treatment system that includes, at a minimum, both capital and O&M costs for operations and solids disposal, operating parameters, effluent discharge requirements, availability of flood-protected land for both river treatment facility and any future reuse facilities, potential need to channelize river in U.S. to divert river, future dry-weather flows of river needing treatment after upstream reuse projects are realized, and costs/benefits of locating diversion system in U.S. vs the existing or an expanded diversion system in Mexico.
- Develop with Mexico a long-term wastewater reuse project to determine feasibility of reuse from all major treatment plants along the Tijuana-San Diego border and the possibility of Colorado River water trade between U.S. and Mexico in exchange for U.S. investment in wastewater reuse. Note: The Water Infrastructure Finance Authority of Arizona (AZ WIFA) is currently financing a study to determine the feasibility of reusing wastewater treated at the ITP in San Ysidro in exchange for water rights.[11]
- Require Mexican government to ensure that any new water sources, such as ocean desalination, will not result in additional flows of treated or untreated sewage in the Tijuana River. A large-scale desalination project could create a significant source of new wastewater that could increase transboundary contamination.

[11] https://ltwaf.azwifa.gov/importation.

Chapter 5: A Path Forward

Addressing the Tijuana River crisis requires steady, cumulative progress over time. No single Minute or agreement can resolve every need; rather, each builds on the technical work, commitments, and investments that came before it. Together, these five pillars provide a structured roadmap for completing Minute 328, maintaining cross-border accountability, and ensuring that future investments build lasting resilience and move toward a long-term solution to transboundary flows. They reflect a continuum of action—from infrastructure to operations, governance, communication, and long-term planning—culminating in policy alignment that acknowledges our shared reality as neighbors. Because we share a border, our solutions must be coordinated, and this roadmap must be reviewed periodically and adjusted as conditions evolve to ensure continued relevance and effectiveness. Achieving a lasting solution will require continuous binational diplomacy, institutional stability, and sustained cooperation to protect public health and the environment on both sides of the border.

Key Principles:

- Finish what has been started: Completing Minute 328's rehabilitation and expansion projects is the most immediate and achievable path to reducing transboundary pollution.
- Use Existing Frameworks: Ensure IBWC compliance with existing NPDES permit to establish asset management plan, pretreatment program, and Binational Technical Committee. Continue to focus on agreements already made in existing treaties (Minutes 283, 320, 328, etc.). Colorado River water discussions should consider U.S. investment in Tijuana wastewater reuse in exchange for Colorado River water allocation.
- Fund operations, not just construction: Sustained O&M funding for the South Bay International Wastewater Treatment Plant is essential to prevent a recurrence of the compliance failures experienced between 2022 and 2024 and to adequately plan for the increased operational demands associated with the plant's expansion. Reliable O&M funding for Tijuana's wastewater systems is equally critical to maintain functionality, prevent infrastructure deterioration, and ensure long-term performance as capacity and service demands continue to grow. U.S. and Mexico should begin exploring creative ways to incentivize investment by Mexico in O&M, such as the tiered fee structure mentioned above.
- Institutionalize asset management: Both IBWC and CESPT must use data-driven asset-management programs for budgeting, performance reporting, and ultimately to shift from reactive to preventive and predictive maintenance.
- Empower joint oversight: Formalize a Minute Oversight Group consisting of Binational Executive Oversight Committee and Binational Technical Group of federal and state entities that will provide continuity, transparency, and policy alignment.
- Plan for the long-term, which needs to include wastewater reuse projects: Develop and annually update a ten-year Tijuana Water and Wastewater Master Plan that guides investments, reassesses priorities, and incorporates new data from asset management and CILA's updated Estudio de Gran

Visión Tijuana. Wastewater reuse must remain the highest priority for future infrastructure. Short-term quick fixes that undermine sustainable solutions must be avoided. As part of this long-range strategy, evaluate the use of remaining IBWC land (outside the floodplain) for advanced filtration facilities needed to support reuse, and require Mexico to provide transparent information on any proposed large-scale ocean desalination projects to ensure regional coordination and consistency with long-term planning. A long-term wastewater sludge management plan should also be developed.

- Increase transparency: Adopt a joint binational communication strategy to share consistent, fact-based information; improve real-time monitoring and beach-closure alerts; and convene an annual State of the River Forum to reinforce community trust and stakeholder engagement. Monitoring in the river valley should also be used to gauge the impacts of infrastructure projects on both sides of the border.

Action Checklist: Key Tasks by Timeline

Timeline	Action Item	Responsible Party	Status
Immediate (0-1 year)	Complete IBWC asset management plan per NPDES permit	IBWC	☐ Pending
	Establish NPDES-mandated Binational Technical Committee	IBWC, EPA, CILA, CESPT, CONAGUA	☐ Pending
	Secure predictable O&M appropriations for ITP	U.S. Congress, State Dept	☐ Pending
	Reinstate industrial pretreatment coordination	IBWC, CESPT, City of San Diego	☐ Pending
	Publish quarterly dry-weather flow metrics	IBWC, EPA	☐ Pending
	Expand Scripps' Plume Forecasting Model	Scripps Institution, EPA	☐ Pending
	Formalize Binational Executive Oversight Committee	U.S. & Mexico Federal Leadership	☐ Pending
	Conduct CESPT rate study	CESPT, CONAGUA	☐ Pending
Near-term (1-2 years)	Complete all Minute 328 projects on both sides	IBWC, CILA, CESPT	☐ In Progress
	Secure Mexico's $93M in unfunded commitments	Mexico Federal Government	☐ Pending
	Expand ITP to 50 MGD average (75 MGD peak)	IBWC, U.S. Congress	☐ In Progress
	Update and release Gran Visión Tijuana	CILA, CONAGUA	☐ Pending
	Deploy SCADA modernization and flow sensors	CESPT, IBWC, CILA	☐ Pending
	Establish binational maintenance fund	U.S. & Mexico	☐ Pending
	Conduct U.S.-side diversion/treatment study	EPA, IBWC	☐ Pending
	Publish an annual water indicators report	CEA CESPT	☐ Pending
	Hold annual State of the River forum	EPA, IBWC, Stakeholders	☐ Pending
Long-term (2-5 years)	Create tiered rate structure for ITP operations	IBWC, CILA	☐ Pending
	Conduct study on wastewater reuse from ITP for Tijuana consumptions	AZWIFA, U.S. & Mexico	☐ Pending
	Develop a Binational Wastewater and Sludge Management Master Plan	IBWC, CILA, EPA, CONAGUA	☐ Pending
	Develop large-scale wastewater reuse projects	U.S. and Mexico	☐ Pending
	Implement asset management programs	IBWC, CESPT	☐ Pending

Glossary of Terms

AZ WIFA: Water Infrastructure Financing Authority of Arizona—State agency currently financing a study on various possible binational water augmentation projects, including reuse of wastewater from the ITP.

CEA: Comisión Estatal del Agua de Baja California — State agency responsible for operating and maintaining Baja California's major aqueduct systems.

CESPT: Comisión Estatal de Servicios Públicos de Tijuana — State public utility commission responsible for water and wastewater services in Tijuana, Baja California.

CILA: Comisión Internacional de Límites y Aguas — The Mexican section of the International Boundary and Water Commission.

CONAGUA: Comisión Nacional del Agua — Mexico's National Water Commission, responsible for managing and regulating the nation's water resources.

EPA: Environmental Protection Agency — The U.S. federal agency responsible for environmental protection and regulation.

Gran Visión Tijuana: A comprehensive Mexican planning document (Formulación del Programa de Saneamiento de la Frontera Norte a Nivel Gran Visión Tijuana, Baja California) that assesses infrastructure needs for Tijuana's wastewater system.

IBWC: International Boundary and Water Commission — A binational agency established to manage boundary and water treaties between the United States and Mexico.

ITP: International Treatment Plant (also known as South Bay International Wastewater Treatment Plant) — A federally owned wastewater treatment facility operated by IBWC near the U.S.-Mexico border.

LMT: La Morita Treatment Plant — A wastewater treatment facility in Tijuana that discharges into the Tijuana River.

MGD: Million Gallons per Day — A unit of measurement for water or wastewater flow rate.

Minute 283: A 1990 binational agreement requiring that no sewage (treated or untreated) cross into the U.S. via the Tijuana River during dry weather.

Minute 320: A 2015 binational agreement establishing cooperation framework for addressing transboundary sanitation problems in the Tijuana River watershed.

Minute 328: A 2022 binational agreement establishing infrastructure commitments and investment priorities to address transboundary water contamination in the Tijuana River watershed.

Minute 333: A 2024 binational agreement building upon Minutes 320 and 328, including commitments for new treatment facilities and improved planning.

NADB: North American Development Bank — Provides financing for environmental infrastructure projects in the U.S.-Mexico border region.

NPDES: National Pollutant Discharge Elimination System — A permit program under the Clean Water Act that regulates point source discharges of pollutants to waters of the United States.

O&M: Operations and Maintenance — Ongoing activities required to keep infrastructure functioning properly, including routine inspections, repairs, and preventive maintenance.

PBCILA: Planta de Bombeo de la Comisión Internacional de Límites y Aguas — A major pump station operated by CILA that conveys wastewater to treatment facilities.

SAB: San Antonio de los Buenos — A wastewater treatment plant in Tijuana, Baja California.

SBOO: South Bay Ocean Outfall — A pipeline system that discharges treated wastewater from the ITP into the Pacific Ocean.

SCADA: Supervisory Control and Data Acquisition — A computerized system for monitoring and controlling industrial processes, including wastewater treatment operations.

SEMARNAT: Secretaría de Medio Ambiente y Recursos Naturales — Mexico's Ministry of Environment and Natural Resources.

SEPROA: Secretaría para el Manejo, Saneamiento y Protección del Agua — Baja California's state-level water authority responsible for policy and oversight.

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Attachment: Timelines

Major Events in U.S.

Date	Major Event in U.S.
February 2017	Increase in transboundary flows to Tijuana River due to a collapse of a major wastewater collector (Oriente collector). Flows lasted about three weeks; spill report filed by USIBWC on 2/24 indicated total of 143 million gallons.
July 2019	Arcadis releases EPA-funded report, "Tijuana River Diversion Study" outlining potential projects dealing with transboundary pollution.
2020	Transboundary flows in river increase dramatically due to flooding of Pump Station 1 in Tijuana in November of 2019.
January 2020	Congress authorizes the USMCA with $300 million to EPA for construction and infrastructure. EPA is appropriated the $300 million in July.
2021	EPA conducts technical feasibility analysis and alternatives analysis to define suite of projects and costs. Provides estimate of $350 million for expansion of ITP with anaerobic digesters.
November 2022	EPA and USIBWC publish the final Programmatic Environmental Impact Statement.
June 2023	EPA and IBWC sign joint Record of Decision finalizing environmental review phase (NEPA) for the ITP and allowing design/construction phase to begin.
2023	Dry-weather transboundary flows increase significantly in Tijuana River as a result of parallel line rupture in Tijuana.
August 2023	Tropical Storm Hilary hits Mexico/Southern CA and disables primary treatment.
November 2023	IBWC completes updated cost estimate and assessment of critical repair and replacement needs for the ITP, identifies additional financial need for rehab and full expansion. Identifies $900 million in need.
March 2024	IBWC receives additional $100 million for ITP rehab and expansion FY24 budget.
June 2024	Spill at US-side Hollister Pump Station leads to public inquiries/complaints.
August 2024	IBWC awards progressive design/build contract to Stantec/PCL. EPA transfers remaining USMCA funds ($290 million) to IBWC.
September 2024	Issues with wastewater conveyance line to coast in MX leads to surge in flows to Tijuana River during severe heat wave.
September 2024	EPA and IBWC meet in Tijuana with Mexico to restart river diversion system (PBCILA). Mexico repairs siphons and dry-weather flows to Tijuana River are significantly reduced.
September 2024	Construction begins on new Junction Box 1, where wastewater enters the ITP from Mexico. Will allow IBWC to control flow entering the plant.
November 2024	New trash boom inaugurated across Tijuana River Channel from Regional/State Water Quality Control Board funding.
December 2024	Congress provides $250M to USIBWC from Disaster Supplemental for the ITP, resulting in total budget of $650 million for ITP rehab and expansion.
October 2025	IBWC sends additional 10 mgd through primary treatment, resulting in significant decrease in dry-weather flows.

Major Events in Mexico

Date	Major Events in Mexico
February 2017	Increase in transboundary flows to Tijuana River due to collapse of Oriente collector. Binational flows lasted about three weeks.
Circa 2017	21 mgd treatment plant at San Antonio de los Buenos becomes fully incapable of adequately treating wastewater, resulting in poorly treated sewage discharged to coast.
November 2019	Storm event results in flooding of both Smuggler's Gulch (aka, "Matadero Canyon") in Tijuana and flooding of Pump Station 1, which takes months to repair.
October 2021	Mexico completes PBCILA rehabilitation ($4.4 million) expanding river diversion capacity by 50%, up to 35 mgd.
July 2022	Parallel sewage and river conveyance lines accidentally ruptured during highway construction. Results in large sewage flows to canyon collectors, ITP, and river. One line repaired in three weeks, other in two years.
June 2023	First Min 328 project completed - Oriente Collector in Tijuana ($2M, 50% BWIP funds) replaces ~500 meter of pipelines. Prevents spill of up to 7MGD to Tijuana River.
September 2024	Repairs to siphons in coastal conveyance line are conducted.
October 2024	Mexico funds and completes rehabilitation of Pump Station Los Laureles I to reduce wastewater flows into Goat Canyon. $1M.
March 2025	Mexico funds new San Antonio de los Buenos 18MGD plant online and operating. $35M.
June 2025	Minute 328 project completion: Mexico completes new International Collector project. $9M.
Total Minute 328 investment	**~$51 million (out of $144 commitment)**

IBWC Minutes (Chronological Order)

More information: https://www.ibwc.gov/minutes-by-project/

Year	Minute	Summary
1965	222	Construction of sewage line from Tijuana to San Diego.
1984	270	Comprehensive actions to resolve border sanitation problems in San Diego-Tijuana region.
1990	283	Conceptual plan for international solution to border sanitation, aiming to halt untreated discharges.
1997	298	Recommendations for SAB upgrades. Analysis of possible ITP capacity increase by 25 mgd to 50 mgd. Contemplates return line for ITP effluent to Mexico.
2000	311	U.S. investment of $156M in Mexico for 59 mgd secondary treatment plant, 25 mgd from ITP. Unused effluent returned to U.S. for SBOO discharge.
2015	320	Framework for binational cooperation on transboundary issues in Tijuana River Basin, including sediment and trash management.

2022	328	Authorizes sanitation infrastructure projects in San Diego and Tijuana for wastewater conveyance improvements and pollution reduction.
2025	333	Comprehensive agreement addressing wastewater, sediment, and solid waste pollution. Includes infrastructure studies, construction planning, and plans for river sediment cleanup.