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TRANSBOUNDARY ISSUES IN THE TIJUANA RIVER BASIN NEWSLETTER

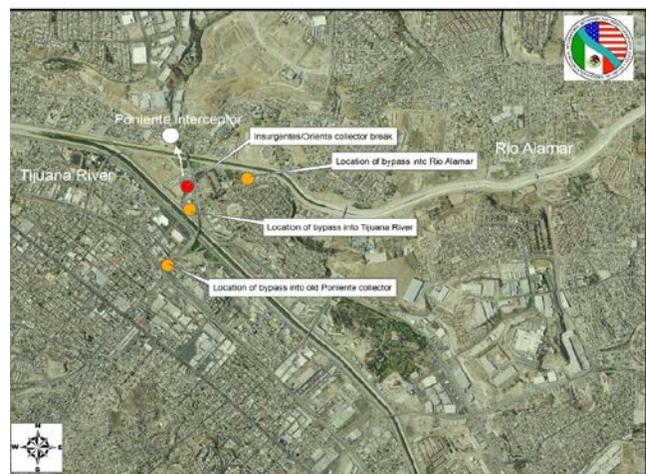


Minute 320 Spill Investigation

On February 1, 2017, the 48-inch diameter “Insurgentes” Sewer Collector collapsed near the confluence of the Rio Alamar and Tijuana River, in Tijuana, Baja California. Emergency repairs were immediately undertaken but they were complicated by rain, abandoned underground structures, the failure of a new bus shelter, and overhead and buried power lines. Base flow in the collector was diverted to other pipes, but peak flows were diverted to the Tijuana River. The difficulty of the repairs and the expansion of the wastewater infrastructure led to a protracted period of repairs, which were completed February 23, 2017.

The International Boundary and Water Commission, United States and Mexico (IBWC), directed an investigation of the spill that would develop recommendations for the IBWC Minute 320 Binational Workgroups to implement and prevent such incidents in the future. The report identified deficiencies that led to the event and feasible solutions to prevent a recurrence.

This newsletter is developed to provide updates and news on the implementation and status of the recommendations that were offered by the Binational team. The following sections of this newsletter present the recommendations, what is being developed to address the recommendations, and their current status.





Equipment needed to address emergency situations.

This spill highlighted the need for the Comisión Estatal de Servicios Públicos de Tijuana (CESPT) to have the appropriate equipment to divert and route flows within the collection system, rather than bypassing the flows into the Tijuana River or other adjacent streams.

To date, CESPT has acquired one of the two pumping trucks needed to divert the flow in a 60-inch line similar to the pipe that ruptured in February. The pump can handle 300 liters per second, to include solid waste. A second truck is being purchased and should be acquired by the end of the year.

CESPT contemplates a total investment of \$39.2 million pesos (\$2.2 million U.S. dollars) to purchase compressors and also soil compaction equipment to repair the affected sites.

CESPT also plans to purchase:

Sediment removal equipment to clean drains and prevent sewer overflows, including miniature equipment for access points in narrow and sloping roads; two (2) cameras to replace those damaged during the spill, which will allow CESPT to inspect all of the collection network; five (5) hydraulic hammers, since roads are being converted from asphalt to concrete; and five (5) light systems for night work.

Flow Meters

U.S. Section IBWC (USIBWC) - A flow meter was installed between the diversion and the wet well at Pump Station - CILA (PB-CILA) and is just awaiting final conduit to begin operation. The meter will be able to transmit data via the Internet on the status of the pump and the flow. The transmitter for the flow meter is being repaired and will be installed in the coming days.

USIBWC is also discussing with Mexico the installation of a means of measuring flow in the wastewater channel going to the San Antonio de los Buenos Wastewater Treatment Plant. Upon reaching an agreement, we should be able to perform the installation in a few months.

Mexican Section IBWC (MXIBWC) – In the next month, the MXIBWC plans to install flow measuring systems in the Rio Alamar and two in the Tijuana River. The systems in the Tijuana River will be located a couple of meters upstream of the international boundary, and upstream of PB-CILA, to provide real-time alerts of any flows not captured by PB-CILA. In the rainy season when the flow is over 1,000 liters per second (25 MGD), the station is turned off. These meters will allow dry weather reports. The sensor upstream of PB-CILA will measure flows near the intake, using a radar system that will be installed on a bridge above the water. According to the agreed protocol, debris must be removed from the intake of PB-CILA every two (2) hours. The radar sensor will help indicate when the level is rising, and will provide alerts by text or email. The equipment has already been ordered and delivered, with installation expected by the end of September.

MXIBWC is also considering in the future putting a flow meter in the Tijuana River upstream of the confluence with the Rio Alamar.



Communication

Another area of concern is the communication between governmental agencies in Mexico and the United States and the timely notification of the public in both countries when a spill occurs. To address this issue, the joint report recommended development of an inter-government notification protocol to formalize timely notification whenever there is an event that could lead to a transboundary spill, so the proper agencies can take protective measures.

The joint report called for two (2) separate protocols, a Mexican protocol governing communication lines from the various agencies in Mexico to the MXIBWC, and an international protocol providing for notification from the Mexican Section to the USIBWC and the affected stakeholders in the United States.

IBWC Notification Protocol – A final protocol has been developed. When the USIBWC gets a notification from the MXIBWC or other entities in the United States, USIBWC sends out a preliminary listserv notification of a transboundary flow and requests from its Mexican counterpart more information about the incident. Details about the incident are established during the back and forth between various agencies of both countries. A final spill report is provided by USIBWC to the State of California Regional Control Board within 72 hours.

Mexican Notification Protocol – The joint report’s recommendation also recommended a notification protocol assuring that CESPT would include the MXIBWC in its Contingency Plan. CESPT confirmed they have added the notification to MXIBWC in their current protocol. Also, a CESPT official has been assigned to notify MXIBWC on spills with a potential transboundary impact, including possible effects on potable water. The protocol was finalized and signed in August.

PB-CILA Operations Protocol –Minute 320 recommended written procedures for the operation of Pump Station CILA. The Operation Protocol was developed jointly by both Sections of IBWC together with CESPT, and it outlines operations for both wet and dry seasons. A final protocol was written and is being translated into both English and Spanish. An exchange of IBWC letters formalizing the protocol should be completed by the end of September 2017.

Infrastructure Assessment

The February spills demonstrated the need to evaluate needs for repairing and expanding current infrastructure. The IBWC is considering expansion of the current defensive works in the United States or Mexico, or constructing new ones. The USIBWC developed a Scope of Work (SOW) to assess these options, determining their feasibility, costs, and possible designs. The Border Environmental Cooperation Commission (BECC) has taken the USIBWC SOW and finalized the SOW to address the joint report recommendations and fund the study. The SOW will look at the existing works in an effort to improve the system by analyzing options such as additional pumps, larger and more efficient pumps, and other ways of increasing flow capacity. The desired improvements will help bring pumps back on line, reduce flows to the Tijuana River through reuse and aquifer recharge, and mitigate the effects on transboundary flows.

CESPT is evaluating their current infrastructure needs and has developed a current Master Plan based on the assessment of their lines and expansion of the system to serve a growing population. The current plans are as follows:

- Evaluate the conditions of the sanitation infrastructure including pumping plants, collector lines, and treatment plants.
- Define the infrastructure needs for sanitation according to current and future operational needs and requirements for the rehabilitation of sanitary sewer systems and sanitation, as well as projected wastewater needs so that CESPT can identify and develop the best alternative for each identified need.
- Identify and develop viable alternatives for reuse of treated wastewater.
- Establish a comprehensive plan for cost-effective investment in the construction and rehabilitation of sanitation infrastructure.

Infrastructure Works

CESPT's priority is the rehabilitation of collectors affected by the past rains. CESPT is involved in emergency and comprehensive repairs to their sewer collection system. Works done under the emergency declaration consist of the rehabilitation of several damaged sections of the Insurgentes, Oriente, Poniente, and San Martín-Canyon del Sainz collectors.



To date, the government of the State of Baja California through CESPT has invested under the emergency declaration \$68.6 million pesos (\$3.9 million dollars), in rehabilitation of damaged sewer lines, equipment and cleaning of sewer collectors. Mexico will also exercise another \$102.1 million pesos (\$5.8 million dollars) for a total investment of \$170.7 billion pesos (\$9.7 million dollars).

Water Quality Sampling

The joint report recommended developing a Binational Water Quality Monitoring Program to gather data to better understand the current conditions in the Tijuana River. Additionally, a routine monitoring program could have also alerted everyone to the prevailing issues.



In accordance with this recommendation, the IBWC developed a draft water quality monitoring program for review. The IBWC is looking at establishing seven (7) routine sites in the Tijuana River: four (4) sites in the United States, and three (3) in Mexico, one (1) of which is in the Rio Alamar before its confluence with the Tijuana River. These sites would be sampled for basic parameters such as bacteria and nutrients on a monthly basis.

Additionally, Comisión Nacional del Agua de México (CONAGUA) has determined that the Rio Tijuana and Rio Alamar are to be included in their national monitoring network. CONAGUA is proposing to establish several sites, including two (2) sites on the Tecate River in Tecate, Baja California (before it becomes the Rio Alamar), three (3) sites in the Rio Alamar (one of them immediately upstream from the confluence with the Tijuana River), one (1) site in Arroyo Florido before its confluence with the Tijuana River, and six (6) sites on the Tijuana River where a monitoring site is included in the vicinity of the international border. The sampling frequency of the CONAGUA sites will be bimonthly and will collect conventional parameters (e.g. ammonia, phosphorous, nitrates, among others), metals, and bacteria.

Binational Observations

After the February spill, the public's lack of familiarity with the infrastructure and defensive works led to confusion about the condition of the sewer system and the location of the damaged pipes. The Minute 320 committee made a recommendation to conduct routine, binational observations of the system and locations that contain transient flows, damaged infrastructure, discharges to the river, and /or ongoing rehabilitation projects. The IBWC already conducts monthly inspection tours of the Tijuana River in an effort to detect spills. The IBWC developed an initial plan to conduct joint tours on the sewer system prior to binational technical committee meetings to gain a visual understanding of the issues and the progress. An initial set of locations was developed with the understanding that the locations can be modified based on public interest, the recommendations of the committee members, and emerging challenges requiring attention. The plan for the tours should be finalized by the end of the year so that committee members can begin the site visits in early 2018.

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