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REPORT NO. 00-161

ATTENTION: Natural Resources and Culture Committee
Agenda of August 9, 2000

SUBJECT: Status of Border Sanitation Issues and the Continued State of Emergency

SUMMARY

THIS IS AN INFORMATION ITEM ONLY. NO ACTION IS REQUIRED ON THE PART OF THE COMMITTEE OR THE CITY COUNCIL.

BACKGROUND

For 70 years, raw sewage from the Republic of Mexico has flowed unabated into the United States plaguing the residents of San Diego. This flow is a serious threat to the region, creating health hazards, forcing the closure of beaches and impacting local businesses. In September 1993, the City Council declared a State of Emergency in the Tijuana River Valley and has continued to declare a State of Emergency every two weeks.

In 1990, the U.S. and Mexican governments determined that the solution to this problem was the construction of the International Wastewater Treatment Facilities. The facilities were planned to consist of a 25 million gallons per day (mgd) secondary treatment plant in the United States, canyon collectors in Goat Canyon and Smuggler's Gulch to collect renegade sewage, and the South Bay Ocean Outfall.

The following is an update on the status of the International Wastewater Treatment Facilities and the actions that the federal government and the City are taking to address the continuing border sanitation problems.

DISCUSSION

South Bay International Wastewater Treatment Plant (IWTP)

The construction of the advanced primary portion of the IWTP and the canyon collectors was completed in April 1997. The International Boundary and Water Commission (IBWC) is currently operating the IWTP at 25 mgd. The IWTP is currently in violation of its discharge permit which requires secondary treatment, and it is operating under a cease and desist order from the Regional Water Quality Control Board (RWQCB). In 1994, the Final Environmental Impact Statement (EIS) for the IWTP recommended activated sludge secondary treatment. The Sierra Club and Surfrider Foundation sued the IBWC and the Environmental Protection Agency (EPA) on the 1994 EIS, and, as a result, the agencies agreed to study oxidation ponds as a secondary treatment alternative. On December 8, 1999, the EPA and IBWC issued the Final

Supplemental Environmental Impact Statement (SEIS) on the long term operation of the IWTP and selected construction of completely mixed aerated (CMA) ponds at the Hofer site, adjacent to the existing treatment plant, for secondary treatment. This proposal has been opposed by the City of San Diego, Congressmembers Bilbray and Filner and many of the residents of the Tijuana River Valley, due to concerns about odors and the ability to expand the plant in the future.

The IBWC has contracted with CH₂M Hill for the design of the CMA ponds. In April 2000, the IBWC released a 10% design and held a series of public meetings seeking input from the community about plant aesthetics. The major concerns raised by the community were odor control and use of native vegetation to enhance the appearance of the plant. City staff was actively involved in the review of the 10% design and expressed concerns to the IBWC regarding odor control and the ability of the proposed plant to meet the same odor control standards as City of San Diego treatment plants. The Metropolitan Wastewater Department (MWWD) standards are no odors at the nearest receptors and no more than five odor units at the facility fence line. The City has yet to receive a clear response from the IBWC on odor control.

Due to ongoing litigation, the IBWC has not released any information regarding proposed schedules for completion of design or construction. City staff will continue to review the IWTP design plans as they become available.

The IBWC and EPA are also looking at alternatives to improve the performance of the existing canyon collectors at Goat Canyon and Smuggler's Gulch to increase the capture of renegade sewage flows and to improve the access for maintenance. Currently, there is a problem with siltation in the basins. The federal agencies are working closely with Mexico to come up with a plan to possibly locate canyon collection facilities in both the U.S. and Mexico.

Alternative Proposals

The EPA and IBWC have also reviewed a proposal from a private entity, AguaClara, to construct ponds in Mexico to treat and reuse effluent from the IWTP. This project is known as the Bajagua Project. Currently, the IBWC has no authority to enter into or fund contracts with private firms for treatment of effluent from the IWTP in Mexico.

Both Congressmembers Filner and Bilbray have introduced legislation (HR 3310 and 3378) to provide for secondary treatment of effluent from the IWTP in Mexico. This legislation would authorize the IBWC to provide for the development of a privately funded Mexican facility, through the execution of a fee-for-services contract with the owners of such facility, in order to provide for secondary treatment of flows from the IWTP and additional capacity for primary and secondary treatment of up to 50 mgd. This legislation is not expected to be acted upon until after the Congressional Summer recess.

Funding

Congress has placed a cap of \$239 million on the amount of funding it will authorize for the design and construction of the International Wastewater Treatment Facilities. Currently, the

IBWC has funding available for the design of the CMA pond, which is \$1.7 million. EPA has set aside \$54 million in border funds to construct the CMA ponds. However, the IBWC and EPA do not have authorization to spend these funds for construction of the secondary plant because of the congressional funding cap. EPA has requested that Congress lift the cap so a construction contract can be awarded upon completion of the design. Construction of the CMA ponds is estimated to be in the range of \$34 million; the additional \$20 million is required to complete the primary facilities and associated projects, such as a lab and maintenance facilities. No action is expected to be taken on this legislation until after the Congressional Summer recess.

Legal Actions

On August 11, 1999, the Regional Water Quality Control Board (RWQCB) requested the California Attorney General to seek “appropriate judicial enforcement action” against the IBWC in order to force the federal government to comply with their discharge permit and cease and desist order. The cease and desist order contains several milestone dates for selection of the alternative for secondary treatment and construction of the secondary treatment component. The IBWC has requested several extensions of the milestone dates. For instance, the milestone date for the Record of Decision was May 1, 1999, but the Record of Decision was not issued until December 8, 1999. The RWQCB has the authority to fine the IBWC \$1,000 a day, for every day that passes before the federal government files the Record of Decision and \$25,000 a day if a secondary treatment facility is not built by April 10, 2001.

On November 16, 1999, the Surfrider Foundation filed a lawsuit against the IBWC and the City of San Diego for violations of the Clean Water Act. The lawsuit seeks to enjoin the IBWC from discharging less than secondary treated effluent from the IWTP and from having the IBWC or City of San Diego monitor the discharge from the outfall.

A Federal Court Magistrate Judge is conducting extensive settlement talks with all parties to resolve the claims without trial. The State has not joined that litigation but is being included in all negotiations in an attempt to eliminate any duplicate filing in state court. The next settlement conference is August 11, 2000 in federal court.

Effluent and Ocean Monitoring

The South Bay Ocean Outfall (SBOO) began operations on January 13, 1999. This outfall currently discharges advanced primary treated wastewater from the IWTP 3.5 miles offshore at a depth of 95 feet.

The IBWC has contracted with the MWWD for all ocean and surf monitoring associated with the IWTP discharge through the SBOO. In addition to monitoring in U.S. waters, MWWD collects offshore monitoring samples in Mexican national waters and at three shore stations five miles south of the border. The monitoring demonstrates that shoreline contamination is episodic and is probably not related to the operation of the outfall. The most likely sources of shoreline contamination are flows from the Tijuana River or other shore-based discharges. Occasional intrusions of the outfall wastefield into the area designated as the Imperial Beach kelp bed have been brief and consistent with predictions made by pre-discharge wastefield dispersion models.

The IWTP is currently experiencing exceedences of permit limits for acute and chronic toxicity. The primary source of toxicity is likely due to surfactants, which are agents used in detergents to dissolve oils and suspend particles and which are commonly present in wastewater. The IBWC contracted with CH₂M Hill to analyze technologies that could be used to reduce effluent toxicity. Their report found that technologies are available, but it would take at least as long to apply these technologies as to implement the planned secondary treatment facilities. The current operating procedures at the IWTP are being refined to try to reduce the effluent toxicity values until secondary treatment becomes operational.

Ocean Imaging

MWWD, in conjunction with the IBWC and the U.S. EPA, has conducted a small study to investigate the value of satellite-based and airborne remote sensors as adjuncts to routine ship-based monitoring. Ocean Imaging (OI), a local firm based in Encinitas, specializes in the commercial application of satellite and aircraft-based optical, infrared and radar image analysis to assess discharge related environmental impacts, fisheries resources and land use issues. With a limited budget contract from MWWD, OI acquired satellite and aircraft optical images, infrared images and synthetic aperture radar images (SAR) along the coastline from Rosarito in Mexico northward to Point Loma. The images were chosen to coordinate as closely as possible with routine monitoring excursions. OI submitted a report in January 2000 which made it clear that remote sensing is especially useful in providing a synoptic view of ocean current direction, water mass movements and shoreline discharges of surfactant and particle-laden wastes. The resolution of the imagery was sufficient to clearly identify shoreline sources of possible contamination as well as the dispersion of the wastefield from the SBOO. A larger follow-on project has been proposed to further study the application of these technologies and is currently under consideration. Congressman Bilbray is currently trying to get funding in the FY2001 federal budget.

Mexican Facilities

The existing Mexican treatment facilities consist of Pump Station One near the border, a 42-inch force main parallel to the border, an open channel conveyance canal, and a treatment facility at San Antonio de los Buenos, 5.6 miles south of the border. Mexico also operates a low flow diversion structure, located in the Tijuana River. The system is designed to intercept 10 to 12 mgd of low flow in the Tijuana River and to pump it to Tijuana Pump Station No. 1.

Given the increasing growth rate in Tijuana, the production of wastewater is exceeding the existing system capacity. Mexico is currently in the process of constructing a new pumping plant and a parallel conveyance system to the San Antonio plant. Once completed, this parallel pipeline will allow maintenance to take place on the existing pipeline and pump station, and it will provide redundancy for the system, thereby reducing the potential for cross-boundary spills. Construction of this system is expected to be completed by August 2000. There are also plans to make improvements to the San Antonio plant to increase the capacity from 17 mgd to 25 mgd; construction is expected to be completed by the summer of 2001. Mexico is also planning the construction of four regional water reclamation plants with a capacity of approximately 15 mgd,

with funding coming from the Japanese.

Current projections of Tijuana's future wastewater flows indicate flows in the range of 80 mgd by 2005 and over 100 mgd by 2010. Even with the expansion of Tijuana's existing plant and planned future water reclamation facilities, the volume of wastewater generated in Tijuana will exceed capacity. Therefore, it is critical that planning occur for increased wastewater collection and treatment of Tijuana sewage. The EPA and North American Development Bank are discussing a joint Master Planning effort with Mexico to identify current and future water and wastewater infrastructure needs and to address those needs.

IBWC Actions

Responsibility for operation of the IWTP, construction of new facilities and coordination with Mexico on the operation of their facilities resides with the IBWC. In August 1999, the IBWC made a commitment to implement a 5-point plan to minimize the flow of sewage from Mexico into the U.S. This plan included:

Maximizing the permitted flow through the IWTP, thereby reducing the flow of sewage to the San Antonio de los Buenos plant and minimizing the possibility of untreated sewage from being discharged into the surf zone, which might enter the U.S. through northward flowing currents.

The IBWC has been working with Mexico to maximize the flow through the IWTP and the possibility of increasing the permitted capacity of the IWTP to 35 mgd has been raised as an option to minimize potential overflows to the Tijuana River.

Utilizing the emergency connection to the Metropolitan Sewerage System. This will allow up to 13 mgd of raw sewage from Mexico to be treated at the Point Loma Wastewater Treatment Plant, subject to available capacity and reimbursement by the IBWC for treatment.

The City maintains an agreement with the IBWC for the use of the emergency connection and for the last six months (January- June) the IBWC has used the emergency on 15 different occasions for a total flow of 72 mg.

Continuous operation of the Tijuana River low flow diversion system. This will prevent raw sewage from entering the U.S. via the Tijuana River during low flow.

Unfortunately, there have been several instances when the low flow diversion of the Tijuana River in Mexico has been turned off without notice, allowing sewage to flow into the U.S. unabated. Better communication and coordination is required between the IBWC and Mexico to minimize these incidents.

Modifications to improve the efficiency of the canyon collector facilities at Smuggler's Gulch and Goat Canyon.

As stated previously, the IBWC is working with Mexico to look at alternatives to improve the performance of the existing canyon collectors.

Increasing the cooperation with the U.S. Border Patrol to more efficiently alert the IBWC and local governments of flows of renegade sewage across the U.S. border.

The IBWC has worked out a procedure with the U.S. Border Patrol, whereby the Border Patrol will notify the appropriate IBWC representatives if they see any sewage spills along the border.

These steps, when enforced, have helped to improve the water quality and have allowed the South San Diego beaches to remain open.

City Actions

While it is a federal responsibility to resolve the border pollution problem, over the years the City has undertaken several actions to assist the IBWC and EPA.

For the last 30 years the City has allowed the IBWC to use the emergency connection to the Metro Sewerage system, on a cost reimbursable basis, subject to there being available capacity. The 9th Amendment to the Agreement for use of the emergency connection is scheduled to be heard by the Council in mid-September.

The City has provided training to Mexican officials on how to implement and monitor a pre-treatment program in Mexico to prevent heavy metals and toxins from entering the sewage in Mexico and then flowing into the U.S.

The City has provided assistance, on a reimbursable basis, to Mexican agencies to periodically clean out critical wastewater conveyance systems in Tijuana.

The City has provided technical engineering and construction management services and support, including construction of the South Bay Ocean Outfall.

Next Steps

While much progress has been made over the last 12 years, there are several other actions that can be undertaken by the federal government to improve the pollution problem and maintain progress toward a permanent solution to the border sanitation problem. These actions include:

Installation of a pretreatment process at the IWTP to correct the acute and chronic toxicity problem.

Construction of the secondary portion of the IWTP as soon as possible, with either activated sludge secondary in the U.S. or ponds in Mexico.

Planning and construction of additional treatment capacity, up to 50 mgd, to handle the projected growth in Tijuana. The current 25 mgd IWTP is undersized. The IBWC and EPA agree that flows from Mexico, current as well as projected, will continue to overwhelm the combination of the existing Mexican system and the IWTP.

Request an increase in the permitted capacity of the IWTP from 25 mgd to 35 mgd as an interim measure until the plant is expanded.

Master Planning of Tijuana's Water and Wastewater Infrastructure Needs and technical and financial support to Mexico to assist them in upgrading and expanding their existing wastewater collection and treatment system.

Expansion of the Tijuana River Diversion System from 10-12 mgd to 25 mgd. With the recent expansion of Mexican P.S. #1, it seems logical to increase the capacity of the river diversion system which has proved highly effective in keeping dry weather sewage flows out of the river.

Use of remote imaging to detect and track sewage plume migration along the coast from various sources.

Planning, design, and construction of an ocean outfall at Punta Banderas. The recent remote imaging has shown that a sewage plume from Mexico can and does enter U.S. waters under certain oceanographic conditions. It has been shown internationally that it is more cost-effective to construct ocean outfalls with their respective dilution factors than it is to expand treatment capacity at facilities that are only marginally effective.

The City can assist in this endeavor by:

Providing technical engineering support and construction management services, if requested, during design and construction of the secondary portion of the IWTP.

Providing technical seminars for Mexican staff and organizations, continuing to provide assistance and training for implementation of a pretreatment program in Mexico, and providing technical assistance and advice to Mexico on the upgrade of their treatment

facilities, as needed.

Providing assistance on a reimbursable basis to Mexican agencies (CESPT, City of Tijuana) to periodically clean out critical wastewater conveyance systems in Tijuana.

Providing contract ocean monitoring and remote imaging services to the IBWC.

Assisting the IBWC/EPA with long range planning for future expansions of the treatment facilities in Mexico and the U.S. Providing technical expertise, project management and construction management, if requested.

Coordinating with Congressional staff and community leaders to ensure that there is continual support and resources for implementation of a permanent solution.

Supporting IBWC/EPA request to raise the Congressional Cap on funding for the construction of the secondary portion of the IWTP and additional funding for use of the emergency connection.

Supporting legislation and policy that will allow treatment of Mexican sewage in Tijuana.

Until these steps are taken, the City of San Diego is continually at risk from sewage overflows from Mexico. City staff will continue to diligently work with the IBWC and EPA and offer our assistance to help them solve these issues and maintain progress toward a permanent solution. Given the seriousness of this situation, until a permanent solution is reached, it is recommended that the City Council continue to declare a State of Emergency every two weeks.

Respectfully submitted,

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Approved: Frank Belock, Jr.
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