

SOUTHEAST ARIZONA CITIZENS FORUM
September 15, 2016
Town of Sahuarita - Council Chambers
375 W. Sahuarita Center Way
Sahuarita, AZ

***Tentative Meeting Notes**

Board Members in Attendance:

Lee Jacobs, City of Nogales
Christopher Teal, US Department of State - US Consulate General, Nogales, Sonora
Rosanna Gabaldon, Arizona State Representative LD 2 and Citizens Forum, Co-Chair
Ann Marie Wolf, Sonoran Environmental Research Institute, Inc. (SERI)
Amanda Stone, Arizona Department of Environmental Quality
Martin D. Jakle, Friends for the Santa Cruz River (FOSCR)
Luis Ramirez Ramierez, Advisors Inter-National, LLC
John Light, USIBWC Nogales Area Operations Manager and Citizens Forum, Co-Chair

USIBWC Staff in Attendance:

Alison Lamb, USIBWC
John Light, USIBWC Nogales Area Operations Manager
Jose A. Nuñez, USIBWC El Paso
Lorenzo Ortiz, USIBWC

Members of the Public in Attendance:

Chuck Williams, Stantec
Manuel Bonorand, landowner
Manual Bonorand Jr., Citizen, Land Owner
Renee Fleming
Rene Pina, CPE Consultants
Andre Bonorand
Sherry Sass, Friends of the Santa Cruz River
Ruben Reyes, Representative Raul Grijalva's Office
Shay Saucedo, Senator McCain's Office
Sandra Espinoza, DEMA
Jose A. Segovia, Mexican Section of IBWC

Welcoming Remarks:

At 5:06pm John Light, Co-Chair, convened the Citizens Forum meeting and called it to order. He began with welcoming everyone and an introduction to USIBWC - The United States Section of the International Boundary and Water Commission. He explained that USIBWC's Southeast Arizona Citizens Forum Board consists of committee members from three counties in Arizona; Pima, Santa Cruz, and Cochise. He continued by saying thank you to the audience for attending the meeting, then gave an outline of the presentations for the evening, and asked the board and public attendees to introduce themselves.

In addition, Rosanna Gabaldon, Co-Chair of the Citizens Forum, thanked the Town of Sahuarita for their hospitality and their IT Department for setting up the presentation.

John Light introduced the first presenter, Lee Jacobs, Utility Director in Nogales, Arizona.

Presentation One: Pena Blanca Highlands Force Main Repair at Potrero Creek - Elizardo (Lee) Jacobs, P.E., CPM, Utility Director, City of Nogales, Arizona:

Lee Jacobs began with an overview of the project and its purpose. The main goal is to repair the flood-damaged 10-inch force main in Potrero Creek originally installed in 1992, which comes from a subdivision of 70 homes and one elementary school. However, the project has already been going on for two years. They completed an initial engineering study to determine channel flow and the result was 21,000 cubic feet per second for a 100-year flood. Stantec was then contracted to complete a hydraulic study and Cooper Aerial was hired to complete the photo topography. Next, they started looking at design alternatives.

The project overview is outlined below:

Project Issues

- We can't just bury the pipe, the solution must be sustainable
- State Permitting-ADEQ-Scour, Lateral Migration, Design
- Federal Permitting-404 permit
- Construction Method Options-Open Trench, Horizontal Directional Drilling (HDD), Boring, Microtunneling
- Funding-Significant for City of Nogales budget, what are other types of funding
- Schedule-ASAP, the existing temporary fix could fail

Project Status

- Geotech completed for river hydraulics studies
- Stantec has completed river hydraulics and design alternatives (Open Trench vs HDD)
- CON has new photo-topo of site
- Stantec has completed preliminary JD determination

Next Steps

- Contract for 100% documents and permitting with Stantec
- Secure Funding
- Obtain necessary State & Federal permits
- Bid & Build

Project Location Map & Aerial Photographs

The map showed the overall project site in relation to the Nogales Border, with manhole covers labeled by number with green dots. Both the location of the Gravity Line and Force Main are shown with red arrows. One 12" gravity line is used by one warehouse and two pipes pump sewage across I-19 from the west side. In addition, Lee Jacobs showed two additional aerial images.

History of Failed Force Main

- Originally designed by Cella Barr and Associates in 1992
- Designed to handle the capacity of the master planned community with one lift station and one 10-inch force main and one 12-inch gravity line. Both lines flow into the

International Outfall Interceptor (IOI) and to the Nogales International Wastewater Treatment Plant (NIWTP).

- Service area for collection system includes 70 homes and one elementary school
- Failed during a flood event in 2014, the line didn't break, but the bank eroded leaving the pipe suspended 60' in the air. In the interim, restraints and supports were placed on it to stabilize it.
- Temporary repair failed again soon after

Lee Jacobs showed two photographs showing on-site damage and the current conditions of exposed pipeline. The bank has eroded due to trees, vegetation, and roots. The County has installed gabions to try to mitigate damage and they are part of the future design.

Federal, State and Flood Control District Permitting

Federal U.S. Army Corps of Engineers 404 permit

- Preliminary Jurisdiction established
- Impaired Waters for E .coli
- ~ 0.7 acre disturbed for Open Trench Alternative

Arizona Department of Environmental Quality (ADEQ) Construction Authorization

- Design Report
- Scour analysis (completed)
- Bed Degradation may have stabilized
- Lateral migration analysis (completed)

Flood Control District

- Bank Stabilization on east bank
- Demonstrate no rise in floodway water surface elevation

Jack and Bore Technology & Microtunneling

Jack and Bore is a method of horizontal boring sewer construction. Construction crews drill a hole underground horizontally between two points without disturbing the surface between sending and receiving pits. Microtunneling is a process that uses a remotely controlled Microtunnel Boring Machine (MTBM) combined with the pipe jacking technique to directly install product pipelines underground in a single pass.

Evaluation of Construction Alternatives

- Option 1: Open Cut Trench with Dewatering
- Option 2: Open Cut Trench with Shoring
- Option 3: Horizontal Dimensional Drilling

Federal 404 Permitting

The basic premise of the program is that no discharge of dredged or fill material may be permitted if: 1) a practicable alternative exists that is less damaging to the aquatic environment or 2) the nation's waters would be significantly degraded. In other words, when you apply for a permit, you must first show that steps have been taken to avoid impacts to wetlands, streams and other aquatic resources; that potential impacts have been minimized; and that compensation will be provided for all remaining unavoidable impacts.

Evaluation of Construction Alternatives Open Trench Repair

- A 404 permit will be required by the Corps as well as 401 certification from ADEQ

- The maximum 22-foot excavation depth will require either an extensive engineered shoring or trench box protective system
- Will require vegetation removal
- A comprehensive dewatering plan will be required
- Concern about flash flooding during construction
- Time to design, permit, construct estimated to be up to 16.5 months

Evaluation of Construction Alternatives Horizontal Directional Drilling (HDD)

- 404 and 401 permit are not needed
- Additional geotechnical investigation is necessary
- Dewatering is not required
- Minimal or no vegetation removal
- Concern about flash flooding potential during construction is minimal
- Time to design, permit, construct estimated to be up to 8 months

Comparison of Construction Alternatives

- Open trench method will cost less but take more time
- HDD - 8 month time frame

The overall goal is a 100% design for bid in approximately 3 months - closer to 90% plan there will be a clearer idea of cost.

The presentation ended with questions and comments.

Q: Will the Directional Drilling also be at a 20' depth?

A: Yes, at its deepest. We will re-establish with gabions and minimize distance we have to go towards the east. You currently see the force main in the air, and the bank eroding - we would reestablish the bank with gabions. But yes, on the west side it would be deeper - 2' below scour, it really is 9'.

Q: There hasn't been much scour there, will you scour at 1 or 2 feet?

A: According to the 1992 plan, it was 6' under and now it is exposed. So, assuming that it was built to plan, it is now 16' under the original plan. We will be a few feet below scour. We will build up the bank and the contractor will tie in with the county's gabions that are already installed. Also, at some point it looks like someone grouted the slopes, the plan is to go further back than the grouted slopes with the gabions for bank protection.

Comment: There is a lot at stake with 70 houses that might not have sewer for a while and 10 private wells. If we don't have to wait for permitting it is cheaper to do the Horizontal Directional Drilling. Directional Drilling seems the way to go.

A: Yes, we don't want to contribute to what is already there. We are monitoring it three times a week and after every flood event. The pipe is still there, but the bank is not.

Q: How far were you going out from the bank with the Directional Drilling alternative?

A: 400 feet (total length).

Q: Was this designed for a 100 year flood?

A: Yes, that is what we designed to; there are significant storm events in Nogales.

Q: In your slide you said that the HDD would only take 8 months, is that correct?

A: Yes.

Comment: The wash itself is 5-6' deeper than it was a few years ago.

A: Yes, from 1992 to today, elevations show a 5-6' depth change.

Comment: They put up Johnson Jacks in the wash - it lasted one flood and after that it was all gone. My neighbor tried steel and those are also gone.

A: The County's gabions should work well and in future implementation.

Comment: The gabions have stayed in place. Also of note, if the force main breaks at night, we will not know until 10-12 noon the next day.

Q: How are the 70 homes and 10 private wells downstream being impacted?

A: I'm not sure about the wells downstream, if there was effluent in the aquifer bed that would not be good. If it was to break in the wash we can manually turn it off and pump it elsewhere. If you have a concern, we can test and sample the water. There have been minor spills showing E .coli. ADEQ does a lot of sampling and it is available to you. If there were a break in the wash, we would start pumping it out and dumping it into manholes.

Q: What do we do in an emergency to maintain our water?

A: Shut pumps off, pump wells, haul, and discharge. You can contact us and in the middle of the night call 911, they will be in touch with us. If you have concern about water quality USIBWC can sample it for E .coli. Again, turn wells off if you suspect contamination. When water is sampled it is public record and would be available online. Note: Attendee mentioned concern due to three wells being located along wash, however this water belongs to SW Utilities out of Tucson.

John Light calls for a break between presentations; Rosanna Galbadon takes a moment to welcome Ruben Reyes from Congressman Raul Grijalva's office.

5 Minute Break was taken between presentations.

John Light calls meeting back to order and introduces Jose Nuñez.

Presentation Two: Rehabilitation Improvements for the Nogales International Outfall Interceptor (IOI) and Trunkline - Jose Nuñez, Principal Engineer, Engineering Department, USIBWC:

Jose Nuñez gave an overview of the presentation: an update on the Trunkline Project, a sewer line rehabilitation project. He showed the location on an aerial map of the project site in relation to Nogales, AZ and Mexico. The sewer line portion from the border to the location of original Nogales International Wastewater Treatment Plant (NIWTP) is called the "trunkline." The remaining sewer line portion necessitated because the NIWTP was relocated north to Rio Rico is called the "IOI."

Background

- Under Minute 206, signed in January of 1958, Nogales International Sanitation Project was originally constructed to serve Nogales, Sonora, and Nogales, Arizona.
- The project as authorized consisted of (1) a sewer pipeline with 7,200 feet in Mexico; (2) 8,146 feet of sewer pipeline in U.S.; and (3) a treatment plant.
- Nogales International Wastewater Treatment Plant (NIWTP) was situated approximately 1.5 miles north of the border and had a 1.6 million gallons per day (mgd) treatment capacity.

- In 1967, under Minute 227, a larger plant with 8.2 mgd capacity was constructed. At the request of the City of Nogales, the larger plant was constructed in Rio Rico, AZ, approximately 9 miles north of the border. Construction completed in 1972.
- In 1992, under Minute 276, there was a subsequent expansion of the NIWTP to a capacity of 15.75 mgd.
- In 2009, with further technological treatment improvements, plant capacity was reduced to 14.74 mgd..
- Currently, domestic and industrial wastewater generated in Nogales, Sonora, is conveyed north by a gravity collection system through the sewerline and across the international border to Nogales, Arizona. Wastewater from the City of Nogales, Arizona is collected into the trunkline and IOI. The combined wastewater flows from both countries are conveyed northward to the NIWTP, where treatment takes place prior to discharge into the Santa Cruz River.
- The sewer line has over one-hundred manholes within its alignment.
- The sewer line ranges in size between 24 inches and 42 inches in diameter, comprised of unlined reinforced and unlined unreinforced concrete sections.

IOI Damage, 2010 Repair and 2014 Nogales Wash Flood Damage

Pictures were shown depicting the trunkline's damage. It was built in the 1930's and runs under the Nogales Wash for 1.5 miles. For many miles it isn't lined with concrete and this has caused erosion. In 2010, a portion of the Wash was encased with concrete to stop the risk of the sewer line breaking and causing contamination. One million dollars were spent to concrete encase, line, and add re-bar to the area near Circle K. Lastly, pictures of the Nogales Wash showed flooding and concrete panels dislodging and flowing downstream. It was noted that the trees are a problem at the edge of the Wash and the roots are pushing the concrete panels.

Purpose of Sewer Line Rehabilitation Project

- To rehabilitate an almost 50-year old sewer line that has reached its useful life.
- To avert a spill or leakage of sewage in order to ensure the continued health and safety of the communities of Ambos Nogales as well as downstream communities along the Nogales Wash and Santa Cruz River in Arizona.
- To rehabilitate and repair any existing structural damage.
- Analyze all of pipeline using sonar, run camera to see condition of pipe, and to prevent sewage leak.

Project Description

- This rehabilitatin will utilize the Cured-in-Place Pipe (CIPP) process. CIPP is generally considered to be a trenchless technology with little or no disruption to the existing ground conditions. Pima County has used CIPP for over 100 plus miles.
- A resin filled polyester felt tube, or liner, is inserted or inverted into an existing pipe, inflated with water or steam and cured-in-place.
- Resulting pipe inside of a pipe is a structural replacement of the host pipe.
- Rehab will address operational defects such as current accumulation of debris, groundwater inflow and infiltration, current root intrusion in manholes and pipeline throughout the sewer line. However, vegetation along pipeline route must be managed to avoid future root intrusion and trees should be removed along the edge.
- Rehab will address current structural defects including corrosion, cracks, wall penetrations, and invert erosion as well as current root intrusion also growing into the pipe.

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Existing Sewer Line Issues

Two photographs were shown, one of pipe deterioration and the other showing inflow & infiltration. Deterioration is shown with metal corrosion and concrete deterioration. The Inflow and Infiltration image showed water coming into the line, where chemicals, wastewater and hydrocarbons can be damaging.

Q: Will there be a decrease in pipe volume because the CIPP thickness will change the pipe's diameter and capacity?

A: No, it can accommodate the volume.

Q: Are bypasses done above ground?

A: Yes, the bypass is above ground.

Q: How is the sonar used?

A: They run the sonar before and after the CIPP is installed.

Design Work

- In January 2015, the USIBWC entered a cost-share agreement with the City of Nogales, Arizona for the design of rehabilitation improvements to the pipeline.
- In May 2014, the USIBWC awarded an engineering design contract to AECOM/URS Corporation for the sewerline rehabilitation design.
- The project is divided into five (5) phases. So, five separate sets of plans and specifications will be developed.
- Phase 1: Between Manhole (MH) #85 and MH #99
- Phase 2: Between MH #1 and MH #37 - manhole #1 is closest to the international border
- Phase 3: Between MH #37 and MH #51
- Phase 4: Between MH #51 and MH #66
- Phase 5: Between MH #66 and MH #85

Q: Total estimate cost of the project?

A: 30-40 million dollars

Design Work Schedule

Currently the design for Phase 1 of this Project is nearing 100% completion, 100% submittal for Phase 5 design is March 2017. Below is a summary table showing the revised due-dates of the phased 90% and 100% deliverables:

Task	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5
90% Submittal	27 Jun 2016	12 Sep 2016	12 Sep 2016	19 Dec 2016	19 Dec 2016
90% Comments	18 Jul 2016	03 Oct 2016	03 Oct 2016	16 Jan 2017	16 Jan 2017
Pre-final Submittal	01 Aug 2016	24 Oct 2016	24 Oct 2016	06 Feb 2017	06 Feb 2017
Pre-final Comments	15 Aug 2016	14 Nov 2016	14 Nov 2016	27 Feb 2017	27 Feb 2017
100% Submittal	29 Aug 2016	05 Dec 2016	05 Dec 2016	13 Mar 2017	13 Mar 2017
Bid Services	13 Mar 2017	N/A	N/A	N/A	N/A

Upon review of the design schedule and discussion of funding, a representative from Senator McCain's office shared that language was passed in the Senate on 9/15/16 in the Water Resources Development Act to deal with the current state of the City of Nogales. It still needs to go for a final vote and it will be tracked throughout the process - it has not yet passed in the House. It revises the agreement from the 1950's, requiring the IBWC to pay for IOI improvements, not the City of Nogales. If it passes, Nogales would not be responsible for the cost of the trunkline repair project. This topic was recommended for discussion at the next meeting, with an update from Senator McCain's office.

Q: When will Phase 1 begin construction?

A: Construction is dependent on cost sharing with the City of Nogales. The design work may be complete, but funding still needs to be identified and agreed upon. Phase 1 would be an estimated 5-10 million dollars.

Q: If this passes in the House, how will the project be funded, and what is IBWC's commitment? Will it go back on the shelf? Are we still looking at March '17 date for design completion with new legislation and potential funding changes?

A: The USIBWC would request funding through other budgetary processes.

Comment: The CIPP liner cannot be installed with the pipes wet, to put the liner in it has to be dry.

A: To some extent yes - not completely dry - but yes. If you have water between the liner and the pipe they will clean it, inspect it, and then use a bypass while it is being fixed.

Q: How will the bypasses happen when the CIPP liner is installed?

A: Bypasses will be installed in long stretches to minimize impact on traffic and to the community.

Q: The Mexican sewer line has broken many times over the years and the raw sewage comes down the line. What provisions are you making to fix the broken sewer lines on the Mexican side?

A: Each country is responsible for operating and maintaining their side of the channel.

Suggested Future Agenda Items:

- Update on the Legislation regarding IOI funding that passed in the Senate and how it may affect funding of the Trunkline Project.
- Presentation on engineering studies of Grand Tunnel on both sides, review of preliminary GSA report by the end of the month, including information from the Mexican Section of the International Boundary and Water Commission about the tunnel condition in Mexico to be ready by December.
- Presentation on smaller drinking water systems in Southern Arizona and results of audit.
- Presentation on Pima County's cured-in-place technology, possibly, scheduling a site visit to observe the technology, as well as before and after visuals.
- Flood control and storm water management issues in Nogales.

Rosanna Gabaldon requested all future meeting topics mentioned to be emailed to John Light or herself with a suggestion for who to contact and/or present.

The next meeting date on December 15, 2016 was announced, with the location to be determined.

Official Public Meeting was adjourned at 7:02PM

*Meeting notes are tentative and summarize in draft the contents and discussion of Citizens Forum Meetings. While these notes are intended to provide a general overview of Citizens Forum Meetings, they may not necessarily be accurate or complete, and may not be representative of USIBWC policy or positions.