Board Members in Attendance:
Alejandro Barcenas, Public Works Director, City of Nogales
Bruce Backer, Supervisor, Santa Cruz County
Kathi Campana, Santa Cruz Board of Realtors
John Combo, Tubac Citizen
Timothy Grotheer, Tubac Citizen
Migonne Hollis, President Elect, Arizona Assoc. of Economic Development
Ben Lomeli, Friends of the Santa Cruz River, Board Member
Harlan Lusk, National Park Service (Retired) Sahuarita Town Council
Edna Mendoza, Arizona Dept. of Environmental Quality
Jaime Rivera, Deputy Director of Conveyance, Pima County
David M. Smith, Mayor, City of Bisbee
Yolanda Soto, Diabetes Prevention & Aid Fund, AKA: Borderlands
Mark Taylor, Vice President, Westland Resources, Inc

USIBWC Staff in Attendance:
Jayne Harkins, Commissioner
John Light – Nogales Area Operations Manager, and Citizens Forum Co-Chair
Daniel Avila, Principal Engineer, Operations and Maintenance
Xochitl Aranda, Chief, Operations and Maintenance
Sally Spener, U.S. Secretary
Daniel Ramirez, IT Specialist
Wayne Belzer, Environmental Engineer
Jennifer Pena, Chief Legal Counsel
Lori Kuczmanski, Public Affairs Officer

Mexican Section
José de Jesús Quintanar Guadarrama

Members of the Public in Attendance:
There were approximately 30 members of the public in attendance.

Welcoming Remarks:
At 5:00 pm, John Light convened the Citizens Forum meeting and called the meeting to order.

Collaboration on Nogales Sanitation: History and Recent Settlement – Jennifer Peña, Chief Counsel, International Boundary and Water Commission

Untreated wastewater would go into the Nogales Arroyo and into the city and down to the Santa Cruz River and so both countries worked with their respective country to initiate this collaborative effort to construct the first Nogales International Sanitation Wastewater Treatment Plant. The project was initially studied in 1943 and authorized in 1947 by Congress and project was built in 1951.

Congress never wanted to take over completely. Congress has always required participation with non-federal participants. In this very first endeavor of the International Treatment Plant, Congress required
that the city furnish the land and easements free of costs, that the city take over operations and maintenance and that the city relieve the government of all liability and hold the government harmless for any damage arising from construction or O&M. The city took over operations of the first treatment plant in 1952.

In 1953 there was difficulty working with Mexico in the operation of the initial treatment plant and the city had to work directly with Mexico in the operation and collection of money. In 1953, the city reached out to the government for help in operating the plant. Congress authorized USIBWC to enter into an agreement for the operation and maintenance of the initial plant. There are provisions in the statute that required the two governments to agree to the cost of operation and provided the City of Nogales would provide assurances that it would contribute an equitable proportion to pay its share of the operations and maintenance costs.

Joint contributions to O & M

With population increasing over the years, the contributions of the wastewater exceeded capacity of the original plant. The city requested that we move the plant north of the city and enlarge the capacity of the plant. The United States and Mexico entered discussions and agreed to move the plant, expand the capacity, and move it north of the city. Minute 227 is where we set out what the cost share with Mexico would be. Mexico would only agree to pay for the expansion of the plant as if the plant was going to be located at the original site.

This slide pertains to the relocated plant north of the city and Minute 227. Mexico did not agree to share in the construction cost of the relocation, nor did it agree to share in the construction cost of the IOI. The IOI is the pipeline that was needed to move the wastewater from the southern Plant location to the northern Plant location. Mexico did not share in the cost of the IOI construction nor in the rehabilitation of it, because that was the result of the city moving the plant north of the city. The Plant was expanded and completed in 1972. The cost was about $2,338,000. Again, the parties both contributed to build the new plant. This shows another example of people working together to solve a problem.

The upgrade provided a capacity of 17.2 million gallons per day and the city paid for 45% of the cost, and USIBWC paid for 55% of the upgrade. Some additional technological improvements were made in 2009 which ultimately resulted in the reduction of the capacity to 14.74 million gallons per day and on the slide, it shows what the parties paid to get the upgrades complete. EPA granted some federal dollars which allowed the city to kick in $500,000 and USIBWC paid roughly $2 million. This was the most recent upgrade.

This is a diagram that was drawn so you can picture what this looks likes. You can see the trunk line, and this is a portion that Mexico is agreeing to and when will talk about this, Mexico is paying their share of this rehabilitation of the Mexican trunk line. This is the expanded pipeline that we call the IOI and here's the treatment plant as it was moved North.

IOI Issues

Because there’s been a lack of system maintenance and an increase in wastewater from Nogales, and the proximity of the infrastructure service life, the trunk line and IOI require rehabilitation. The assessment report prepared by Brown and Caldwell in 2005 noted that the IOI had lost approximately half of its thickness due to erosion and numerous cracks that had developed through its length. It was also noted that the lifetime of the pipe was 50 years and it's almost 50 years old now as it was built in 1971. There has been noted damage and deterioration of the pipeline. Wayne is going to go into that in his presentation. The IOI has been repaired a few times by the USIBWC, and we have spent roughly $5
million on emergency repairs. The IBWC has been trying to keep this pipe going, but we’re all excited to get a new pipeline or a repaired new pipeline so we don’t have a health and safety risk to the community. Beginning in 2010, Congress made its first appropriation to rehabilitate the deteriorated IOI and those annual appropriations have continued. They are roughly, $6 million a year for the last few years and we’re about $34 million as of 2019.

The settlement
Arizona Department of Environmental Quality (ADEQ) filed a lawsuit against USIBWC alleging violations of the Clean Water Act some years ago. Some of those violations were relating to our NPDES permit, with claims of discharges into the Santa Cruz River, failure to report on cadmium and other claims. This case was never decided by the court because we entered into a settlement negotiation, where we continued the case for a number of years while we negotiated with ADEQ to resolve this case. The court noted in an order that some of the claims were simply not enforceable because you can’t force the U.S. government to come up with money. Both sides could see that there were downside risks to each side of the case, so the case was settled earlier this year.

On June 23, 2020, the settlement was completed. The parties executed a Memorandum of Agreement (MOA), to dismiss the legal action. The MOA is part of the settlement agreement. It is incorporated into the settlement agreement. The agreement says that the USIBWC will oversee the rehabilitation of the IOI pursuant to the terms of the MOA, and USIBWC will provide written notice to ADEQ when the repairs to the IOI are complete. The court retains jurisdiction over the settlement—the case has not been dismissed, so the court maintains jurisdiction to resolve any issues that may arise, but we do not anticipate anything happening. Arizona does not dismiss or relieve from all claims that USIBWC until the construction is complete. So that’s why we have this little provision in the settlement that says USIBWC will provide written notice to ADEQ upon completion of the construction and then Arizona agrees to relieve all claims against USIBWC and then the case will be dismissed. Now we are getting rolling on the IOI repairs.

What does the MOA look like? The MOU lays down the facts that there’s a separate pipeline, the IOI, and that Congress appropriated $34.2 million to USIBWC to pay for a portion of the cost of the rehabilitation of the IOI. We don’t anticipate that the current appropriation it will pay for all phases of rehabilitation, but it should pay for the first few phases. This will be discussed in the next presentation.

There’s an expectation by Congress when it appropriated the money to the rehabilitate IOI that there be a non-USIBWC financial match. ADEQ was able to secure some funds—the matching funds, and it’s not 50-50 but they had to pursuant to congresses appropriation, they had to come up with money to contribute to the rehabilitation. This continued the collaboration that we’ve always had in this region. The matching funds that came from ADEQ was a total of $4.95 million from the state of Arizona. One million dollars came from the Freeport McMoRan Foundation, and $2.59 million from ADEQ. In addition to non-USIBWC matching funds, in-kind contributions can be made by ADEQ. These are other type of measures a non-federal entity can tribute which will serve as non-matching federal dollars as required by Congress.

Future Funding:
The parties understood, and this provision is an acknowledgment, that the funding that we currently have from Congress will likely not be adequate to build all phases. We are prioritizing the most urgent areas. There is also a section in the agreement that states that we anticipate that we will recommend to Congress that they appropriate additional funds. We have a law called the Anti-Deficiency law and we can’t ask Congress for money, but we can anticipate that will get those appropriations. We are not allowed to lobby Congress and we can’t spend money that we don’t have. Neither party is assuming liability for phases that we don’t have money to complete. We also agreed that no one is admitting any sort of liability by entering into the settlement agreement.
The construction activities that are part of the MOU spell out that USIBWC will contract for and manage the construction pursuant to federal regulation. We have a big book of those on Construction so we will manage and complete the rehabilitation work which anticipates cooperation from the City of Nogales and the County of Santa Cruz. USIBWC will need to be able to use the right-of-ways to repair the IOI, we’ll need traffic control assistance, and expedited IOI related permit assistance. The city is going to need to deal with the laterals that tie into the IOI and reroute them to manholes as needed during repairs. Ms. Pena stated she believes the city is going to be working with North American Development Bank (NADBANK) to assist with finances to deal with the manhole and the reconnection to the IOI.

The last bullet point was an important thing that we agree to do. We agreed to work together with ADEQ to come up with funding to implement additional protective measures for the sections of the IOI that are the most vulnerable to damage from storm water and debris. That was an effort that ADEQ also agreed to, to work toward finding funds to provide protective measures so the rehabilitated IOI would be protected. There’s also a provision where we discussed what to do in the future, and one of the things that Arizona really wants, is that we agreed to approach Mexico and request that Mexico enter into negotiations, with a goal of creating a new Minute to ensure that the sewage inflows from Nogales Sonora will continue, and that resulting treated effluent will continue to be discharged from the international plant to the Santa Cruz River. We want to keep water in the river for all kinds of environmental benefits. So we’re going to approach Mexico about entering negotiations to develop a Minute that will secure the inflow.

USIBWC agreed to consult with Arizona on that, subject to Mexico is agreement—but we can’t force Mexico to agree to anything. Also, ADEQ agreed to discuss with USIBWC the potential value of the Mexican effluent for purposes of groundwater recharge into the region.

We’ve entered negotiations with Mexico to repair their share of the Trunkline. The Joint Report has already been drafted and the Minute has been drafted but has not yet been signed. Under the terms currently discussed, Mexico’s contribution would be $1.361 million in US dollars, to repair the Trunkline portion. If we could get that signed shortly, we anticipate Mexico will be able to secure funds in 2021 which would coincide with when we would do construction phase 2.

We understand that Arizona ADEQ, has been making efforts to obtain funding to install metal screens in the IOI that would intercept drug bundles and large debris that could otherwise cause sewage spills, so they are looking at getting funding for that project. We anticipate the cost of that will be a $2.6 to $3.3 million with annual maintenance of $360,000 a year.

Mentioned earlier was that USIBWC has spent about $5 million to keep the IOI up and operating and this slide will show our emergency authority. USIBWC is only allowed to invoke this authority when there is an emergency that can threaten health and safety. It must be an immediate emergency, so we’re not allowed to use this emergency authority very often, but we have used it in a limited way to repair the IOI when it was an absolute emergency. In 2007 we invoked the emergency authority for repairs undertaken to prevent catastrophic failure of the IOI. USIBWC and the Army Corp. of Engineers repaired 2007 damage in May and June 2008, with the USIBWC spending $496,266 on repairs. In July 6, 2008, the storm dislodged a panel in the Wash downstream from the newly repaired segment and the USIBWC assisted the City of Nogales with repairs. More repairs were done in July 12, 2008 as a result of damages from a storm. There was major flooding and downtown Nogales where a portion of the Nogales Wash tunnel in Mexico collapsed exacerbated flooding. In August 12, 2008 the storm caused similar damage, with obstructions in the tunnel and border security wall and Mexican sewage pipes contributed to the flooding.

Picture of the 2007 flood
That was the damage and that’s what kind of damage we were looking at and why the USIBWC could invoke the emergency authority in order to make repairs because there was a threat to health and safety.

This is our expenditures that we’ve spent on the IOI and a little description of what we’ve done. It demonstrates we’ve really been a partner in the region. This is the community we work in, our employees work in, and we want to help the community and we’ve been partners. Ms. Peña wants to point out the others have been partners as well—the city has been a partner with us, ADEQ, Mexico, so it’s really been a collaboration to make all of this happen.

Ben Lomeli: When can we expect funding for CIPP and protection of the other 3/5 of the IOI to complete the repairs?

There’s no way for me to answer that. we must wait for Congress to act. I know we’re on a continuing resolution right now, so Congress has not approved a budget and it has not approved any new appropriations. I hope that happens next year, but until Congress acts, I can’t really say.

Q: Jaime Rivera—Who is the agency primarily responsible for the operation and maintenance of the IOI?

A: The city owns the IOI so the city should be repairing and maintaining it. We have lots of contracts and agreements where the city is obligated to maintain because they own it. I will say that is disputed with the city and we are willing to work through that issue with the city and anticipate doing so in the very near future.

Q: Who is responsible for maintaining the highway and who is using the IOI for transportation of the flows from Mexico to the wastewater treatment plant? Is that a free issue?

A: The City. There’s a percentage that Mexico uses but the city also uses it, so we have a Minute that addresses that. I know the City, as mentioned, is in a dispute with us on that issue. It was brought up in the litigation and to be able to settle the case, we set aside that issue. In the settlement documents we both acknowledged that we aren’t resolving that dispute. I can tell you the City owns it, and the City needs to operate it and maintain it. The city is going to stand up and say no we don’t own it, so that’s a legal dispute. But I think there’s a way to move forward and to resolve issues even when you have a legal dispute. That’s what a settlement agreement looks like. You say hey, we dispute a particular area, but let’s find a path to move forward. That’s what we hope to do shortly with the city.

Q: The settlement was not with the city, it was between USIBWC and ADEQ. The court dismissed a portion of the claim that the city was part of the lawsuit.

A: Yes, that’s what I mentioned, that the issue was in the case as well. Even though the city didn’t remain a party to the litigation. Ultimately, we have settled the case without resolving that question, because we thought it was important to get this IOI repaired, because it’s at the end of its service life and we all know that it’s deteriorated and at the end of the day after litigating for seven years, everybody saw the handwriting on the wall that we need to do something and put issues aside and get the IOI repaired.

Comment by Ben Lomeli:
The court says USIBWC is an owner of the IOI.

Enda Mendoza: Part of the cost match does include $1 million from the EPA; it is also to support the City of Nogales laterals project.
Mark Taylor: I understand a fairly large portion of the IOI is the existing erosion hazard setback from the Nogales wash and maybe quartered with a third of it how is that going to be addresses? I know originally, we talked about moving it outside the erosion risk to protect it. It sounds like you’re going to keep it in its existing position within that hazard. Do you have plans how you’re going to protect it or are you going to move out of the wash?

Jennifer: You have given me the perfect segue to turn over to Wayne, because that’s the type of engineering question that I don’t even know the answer.

Wayne: I cover some of your question in my presentation. That’s basically one the areas that are identified for protective measures. It is not in the design to relocate the IOI from its current position.

Q: Alejandro: In addition to the damage potential damage in the wash, we know that we have damage because of the debris that gets in there to the IOI because of stormwater from Mexico. If that proposed structure that was proposed to be put in on the border is not constructed, how are they going to protect the investment that you’re making?

Jennifer: I think Arizona is working on metal screens to guard against that debris. I don’t know much more than what I’ve stated. I’m not really in communication with their technical folks, so all I’ve heard is that they’ve been working to get this funding. I don’t know if somebody else has the answer to that.

John Light: The intention of the screens is not necessarily for debris from stormwater, it’s to counter the contraband smuggling that is occurring. What happens with the contraband smuggling is that entities in the United States end up damaging the IOI through the penetration of a pipeline in order to retrieve the drugs. We’ve seen minimal damage because of stormwater, so that’s the focus is on the screen. That’s an ongoing site project and that can be added later on. It’s not necessarily hand-in-hand with the actual rehab of the IOI itself. It is important that it gets done and maybe other funding sources can be identified for it. I think that’s why ADEQ was working on in conjunction with IBWC, so funding sources are being sought for that and preliminary engineering has been done on that and some consulting work, so it is a project that is important but of course funding is required to get it done. Hopefully that helps with your answer.

Ben Lomeli: Since all of this is underwater during floods which is when ruptures occur in the wash, shouldn’t we install some sensors so we know immediately when the IOI breaks or there’s a blockage such as drugs? Last time it took two days to discover we had a rupture. Sensors are a pretty cheap way of getting some quick detection and action when we do have a problem. Jennifer, that’s a great suggestion. I think maybe this is a question that maybe you wouldn’t get a lawyer to answer, so if anybody has a legal question, I would be happy to try and address those or anything about the settlement. Let me hold off on those questions and if they’re technical—I’m probably the wrong person to ask.

Any legal questions about the settlement, the MOA, how it works? They are public records, so if you’d like copies of them, we are happy to distribute those.

Luke Cole: In the upcoming conversations about a possible Minute, that would quantify flows coming into the treatment plant and then the Santa Cruz river, do you have a sense of whether those Minutes would be geared toward increase flow or preserving it at the current rate of flow that are coming in?
Jennifer, I don’t know what that would look like. Our agreement with Arizona is that we would approach Mexico to see if they’re willing to enter into negotiations and of course what ultimately that would look like, I can’t predict. Part of that discussion is we would want to talk about the value of the effluent as well. It’s hard to predict what ultimately Arizona would be asking for or what Mexico would be receptive to, but we think it’s important to give it consideration. Like I mentioned, it is important to keep those flows in the river and so we all agree that it’s an important part of the agreement.

**Question:** Just to clarify, when you talk about the value of the effluent are you talking solely economically or is there some effort underway to quantify and put a cost of the collective values of effluent?

**Jennifer:** I think everything on the table, we can talk about the value of the effluent. We all see the value in having that water in the river for habitat, so it’s all part of the same discussion. And if we’re able to benefit the community by groundwater recharge, that’s why we want that also on the table, because groundwater is an important thing in Arizona. We also want to keep that groundwater recharged.

**Jaime Rivera:** Is there a flow quantity base contribution for Mexico for the water treated at the U.S. that is coming from their side? I wasn’t clear if there was an exchange of attorney conversation for that sorts. Jennifer, so are you asking whether we compensate Mexico for the flow that comes? No the other way around Jennifer, so they contribute to their treatment, the treatment of their wastewater, they do pay for that.

**John Light:** It can get complicated, but the short synopsis is essentially Mexico pays a certain rate up to 9.9 mgd average flow, and that’s stipulated in the Treaty Minute, how that’s calculated. So it’s essentially adjusted yearly based on indices and the Mexican economy, so any flows above the treaty limitation of 9.9 mgd, we charge Mexico the actual treatment cost dollar for dollar, of what it cost us as a treatment plan to treat those flows.

**Alejandro:** When you say groundwater recharge, is that water that would be discharged to the River that would be available for development?

**Jennifer:** That’s a great question and it’s Arizona groundwater law question and I’m not familiar enough to be able to answer. I know Arizona has groundwater management areas and I don’t know if your region is part of that, but that’s why it’s an important part of the discussion and that’s why we put it in the settlement, because Arizona does have such a robust groundwater management system. We thought it’s an important piece of the puzzle that we should be looking at as part of the settlement.

**Edna Mendoza:** I wanted to add a couple of things, I know that NADBANK is working with the municipality of Nogales Sonora to expand a sediment control project on the Mexican side of the border. So to Alejandro’s point, that question when he asked about that project debris, and settlement. The other point is for the screen project that we’re trying to get funding for, so far, we have not been successful. We have been approaching congressional staff & congressional representatives and just this week the greater Nogales /Santa Cruz Port Authority sent a letter to all Arizona congressional representatives seeking support for some of the funding under the US-Mexico-Canada agreement on the trade agreement, because there’s some funding allocated for border infrastructure products in that agreement. So they’re supporting us by asking Congress to support some of those funding funds to come to Arizona. There’s a lot of emphasis in San Diego-Tijuana and we’re really reaching out to anyone that can help, to make sure we are able to support that project. And the additional funding that is going to be needed to complete the later phases of IOI rehabilitation project.
For the Nogales IOI rehabilitation project Wayne Belzer was the design engineer and Crystal Cadillo will be the construction engineer, are both USIBWC employees.

This is an overview of the International Outfall Interceptor (IOI) rehabilitation project. The IOI Nogales sewer line is the sewer pipe that runs from the border of Mexico to the Nogales International Wastewater Treatment Plant (NIWTP). It carries sewage from the United States and Mexico to the treatment plant for secondary treatment.

The sewer line has some age on it, but it has some abuse on it as well, and it has some structural issues that are causing some problems.

Pictures of existing sewer line issues.

In 2005, Brown and Caldwell did an evaluation of the IOI. They had made some determinations as to the condition of the pipe had already reached a point where it needed some sort of rehabilitation or repair. The high sediment load, sand and grit carried from stormwater flows had caused significant deterioration on the bottom of the pipes. Root intrusions, cracks, holes, inflow and infiltration (I&I), and drug smuggling operations were cutting our pipe in order to capture the drug, caused significant flooding in the entire basement of the house they were doing it. In May of 2014, we awarded a design contract to AECOM, at that time they were called URS.

IBWC had specified that because of the questions of funding and the questions of being able to implement a project of this size, IBWC had enough foresight to say encompass this into phases so we can actually do this in phases if necessary, as funding becomes available, but that also allowed us to try to address the phases that were most critical—that had the most damage to them.

The first phase which has the most damage and is in the unlined Nogales Wash section, near the treatment plant. This is the area that has a lot of movement of the wash due to natural meandering especially during storm flows. The rest of the phases go from the border all the way to the start of phase 1 as they were all consistent with their level of degradation. The intent for us depending on how this is released this is for the first phase to be the section closest to the treatment plant.

The graphic shows the phases broken down into 1.5 to 2.2-mile-long phases sections that are manageable by the design and by the construction project. In this process, there are many alternatives that were presented and the preferred alternative that we're moving forward with really has a lot of advantages both in cost, strength of the repair, the impact to the community and to the environment. This benefits the IBWC so we can do this project in phases, and hopefully do multiple phases simultaneously, if possible.

The process that we're going to use is the preferred alternative called the Cured in Place Pipe, or CIPP. It's a trenchless technology, there's pipe pulling, slip lining. This allows for no disruption to the ground conditions, no disruption or very little disruption to traffic, the air, the community, and it's a very proven technology. The City of Tucson is doing their entire sewer line system using this technology, so they don't have to disrupt the environment or the traffic and still produce a pipe that is like brand new as if they had trenched up the ground and put in a brand-new pipe.
CIPP is like a slip lining, which means a tube is pulled through the old existing tube and the existing tube can be almost completely deteriorated as the existing pipeline is strictly used as a guide for this liner to pull through so you can have up to 50-60% deterioration of pipe and still be able to pull this process. The pipe doesn't have to be a barely cracked pipe— you can have significant erosion, deterioration, and breaks, and still produce what is virtually a brand new pipeline in this process.

The contractor will go in and clean out the system and they will pull this liner through. The liner is made from various materials—polyester, but it can be made from other materials but that was just for the tube and what is done is a resin is distributed using a vacuum process throughout that liner. It’s inflated and then is cured. There are several ways it can be cured—you can use hot water, steam, or ultraviolet light. Hot water is probably the best because it adds additional pressure to the pipe to make sure all the wrinkles are out of the system and to keep folds or cracks from being in the pipe.

It pulls it through, is heated up, and when the resin hardens, it is harder than PVC, fiberglass. It’s as strong in its structural integrity as a brand-new concrete pipe. It is thinner, but its tensile strength is extremely high. It also has a very low coefficient of friction unlike concrete that has high because of all the pits in it and because it has that very low coefficient of friction it can move more water through the same size pipe. We are reducing the diameter of the pipe but we're reducing the diameter by millimeters inside so there's really an imperceptible loss of circumference but because of that increased flow capacity it will actually move slightly bit more water through that pipe just as efficiently as you would have a brand-new concrete pipe.

This shows the liner gets expanded and it's a pipe inside of a pipe. It is its own pipe. It does not glue or adhere to the existing pipe. The existing pipe acts as a form for that product so it is its own separate pipe and any kind of further cracking or anything of the concrete pipe on the outside would have no effect. It doesn’t translate down to the finished pipe.

Pictures of before and after process

This shows an old, deteriorated pipe that gets cleaned out has the new CIPP put in and it shows it'll fill in any cracks, it is seamless. It goes from manhole to manhole, and it ties in at the manhole junction boxes. Any joints that are leaking will become sealed by this process. Any holes, cracks, etc. will become completely sealed and will become one continuous pipe.

That is the process in a nutshell.

The five phases have been completely designed. They were finished, stamped, sealed, and 100% complete, so all five phases have their entire CIPP design completely done as well as identification of additional manhole protective measures being put into place, any right away, any crossings, and things that need to be done to go straight to construction, it can literally start tomorrow.

As was noted though by the presentation from Jennifer, the settlement added in an additional step and as mentioned, there are locations within the wash that even with the CIPP in there. The question is how well is the pipe protected? Both the existing pipe in a new one if anything was to happen, so because of that there's an agreement to make an assessment down the wash of areas of concern that could potentially pose a risk to this pipe. We need to identify areas of concern to determine of those areas if some sort of protective measures need to be put into place and if so what type of protective measures and what can be done to protect this investment. ADEQ, IBWC, City of Nogales, and Santa Cruz County went out to do an inspection along the Nogales Wash in July. There was pre-identification of some of these areas done
ahead of time, such as areas that are parallel to the wash or close to the wash, areas that crossover from one side of the wash to the other and some other known exposure sites were identified. After the meeting, ADEQ and IBWC identified 10 sites along the wash that pose a concern and needed to be further investigated as to whether there was an issue or if protective measures need to put into place. An example that Jennifer had shown of the flood and what had done to the panels and as noted in the picture and as noted in my slide area where concrete has been damaged within the wash do to events these kinds of areas are areas of concern that were identified by ADEQ and IBWC. Of the identified 10 locations of concern, four sites were cleared as not needing any type of protective measures as 2 were already repaired. The areas that crossover from one side of the wash the other side but they are not exposed, there's no concrete exposure, no wash exposure there still underneath the ground and there were two additional sites that were repaired. The 10 sites are not on the slide. Two of the repaired sites—one happens to be manhole 89 which was damaged by significant flood event and it was repaired by IBWC.

Where we stand today
What is pending? What needs to be done? It has been mentioned by Jennifer come that there’s a few city laterals that are not going into junction boxes. They're going directly into the pipeline. Because IBWC is putting in a new CIPP process it'll seal that over there needs to be something done to protect the pipe from the laterals. We would either have to dig up the pipeline and put up a saddle or we could relocate them to the nearest manhole, which is the best alternative. That was the decision that was made. North American Development Bank (NADB) is currently funding the project and they are currently in design to relocate the laterals to the nearest manhole junction box. As was noted of those 10 sites, we reduced them down to six sites where measures may need to be designed and they were ranked from high moderate, or low risk. Two of the sites that have not yet been repaired were cleared because they were rated at a very low risk for any type of damage or anything happening. One site was labeled as a moderate to high risk, and four have been labeled as high-risk sites. Wayne showed a picture on the previous slide where concrete section of the wash has become broken and exposed in the wash. As was noted before this process goes on, there's a handful of permits that need to be acquired. Union Pacific Railroad (UPR) is one permit we need, and we have our application in with them which is currently under review. UPR has asked for some additional information which we provided recently and will need the right of entry permit.

The funding issue:
It was noted by Jennifer there's a significant amount of funding in place for the five phases and the funding for the protective measures hasn’t been discussed or determined. We still need to do some significant work there.

Funding:
When Wayne talks the numbers, they are just estimates—rough estimates. Some of the costs are outdated, some costs are pending, and ultimately the cost of this project isn't going to be fully known until the project is ongoing and we have full proposals. Based on cost of materials, the economy at that time, how hungry the contractors are, etc. the proposals can vary in huge ranges. It is a little bit difficult to say how much funding we have percentage wise until we see this cost, so roughly these are very rough ranges of cost based on how we're opinioned on what these costs should be to be based on engineering costs. Until proposals come in, the costs are not set in stone. Because of the complexity of some of the project locations and because of some of the size length differences, the cost isn't the same for each phase.

The highest complexity is Phase 2. Phase 2 is from the border down and is inside a concrete tunnel. The contractor will have to work inside that tunnel as well as access the manholes in the tunnel from the outside. It’s also concrete laying section, its day lights, and at one point the dealing with the area right at
the border has also presented us with challenges that will have to look. Phase 2 will be the most expensive phase of all the phases because of the location of the IOI. Dealing with it as in phase 1 being in the open area will probably be one of the lower cost phases and Phase 3, 4, and 5 are somewhere in between those two.

IBWC has a range of upwards of $42,000,000 and based on the market, the cost could go up or down. We're estimating it'll be more like $40,000,000 to do this project. The construction costs we have from our cost estimates, but these do not bring in cost such as permitting, traffic control, overhead, etc. We will be able to do 3 of the 5 phases, and the question is what are the costs for phases 4 and 5? Until we get proposals, the actual cost will not be known.

**Question:** Is the CIPP desirable where the IOI is below the water table and groundwater is infiltrating it?

**Answer:** CIPP is the best solution for that type of scenario because of the seamless technology and there are no joints. There’s no way for I&I to occur because we're taking the laterals out of those points where the pipe and taking those to the manhole literally from one manhole to the next manhole and you have a seamless tube. Below the water table is where this is better technology versus replacing it with a similar design of concrete pipe that is 20 feet long and has a joint the only has an O ring that degrades over times.

**Wayne:** It's not anymore current. What we did was we had the as builds and the locations of those as builds where the IOI exists and that is overlaid on top of the current GIS of the satellite imagery and where the wash is so there are in our design drawing the location of the wash the location of the pipe, the height of wash, are known, and that is one of the things being looked at for the protective measures. We looked at those areas based on where those occurrences are to determine exposure hazard. We had the flood that took out Manhole 89, and during that same time a lot of those points that you're bringing up where the unprotected portion of the wash and the IOI were, they were very close to each other, and there was exposure.

**Statement and question from Ben Lomeli:**
The IOI is leaking raw sewage into our drinking water. Groundwater is also leaking into the IOI. The bottom of the IOI is eroded so we have sewage leaking 24-7 into our groundwater aquifers. However, as proposed, “cure-in-place pipe” lining (CIPP) Phases 1 &2 do not address many of the known IOI sewer leaks (exfiltration) into the groundwater aquifer. For example, Phase 1 is between manhole (MH) #85 and MH #99 which would remain in the wash vulnerable to flood erosion where it also runs under and across the wash (*not just in banks*). Phase 2 is between MH #1 and MH #37, but there are no reported leaks between MH #1 and MH #15. Per B&C’s 2005 “Final Report”, leaks are also reported to exist at MH #47 and MHs #60 - #68; but those are not part of Phase 1 or 2. When will all sewage leaks be addressed and repaired?

Exactly how will the IOI be protected where it runs under for long distances and across the wash (*not just in banks*)? (E.G. MH 86 to 87; & 88 to 89).

**Wayne:**
You're asking when will all five phases be done? As Jennifer mentioned, it is potentially with the inclusion of the money that we've already received from Congress and the money that is being brought in by in kind from the state of Arizona, depending on what those cost proposals are, all five phases could possibly be done at once. It's a pretty long process. The need to shut down a length of it to do it, make sure it works, and go to the next one, it will be about a year long process. It is understood that all 5 phases need to be done for the reasons you say—from the leaking from that line into the ground and the INI from
groundwater. Once all five phases are done that seals that portion and Wayne has a picture of what you're talking about and he can show you what he means by it being thoroughly armored,

**Q:** When can we expect funding for CIPP and protection of the other 3/5 of the IOI to "complete repairs"? Please note that the original “trunk line” to the old plant in the city is NOT physically part of the current and different IOI alignment to Rio Rico.

**Jaime Rivera:** Who is the agency primarily responsible for the operation and maintenance of the IOI?

**Ben Lomeli:** Court said IBWC is "an owner of the IOI"

**Edna Mendoza:** Part of the cost match does include $1M from EPA. It is to support the City of Nogales Laterals Project.

**Ben Lomeli:** Since all this is under water during a flood, the July 2017 breach was not discovered for 2 days. Shouldn’t we install sensors, so we know immediately when the IOI breaks, ruptures or has a blockage, or "drugs"?

**Jaime Rivera:** Is there a flow/quantity-based fee or contribution from Mexico for the water treated in the US?

**A:** Yes, they are charged based on flows from Mexico

**Ben Lomeli:** Is CIPP desirable where the IOI is below the water table and groundwater is infiltrating it? CIPP will prevent underground infiltration into the pipe and prevent untreated wastewater from entering groundwater, so yes.

**Jaime Rivera:** Does the IOI project include Manhole Rehabilitation?

Yes, manholes were evaluated and has different levels of rehabilitation for each individual manhole.

**Adriana Zuniga:** What would be the lifetime of this IOI rehabilitation?

50 years

**Public Comment:**
No other public comments

**Board Discussion:**

**Suggested Future Agenda Items:**
Naco sewage
Wastewater treatment alternatives studies that NADB is overseeing in Ambros, Naco
The next meeting is presumed to be held via webinar. The topics will cover the Naco area.

*Meeting adjourned.*

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