

Southeast Arizona Citizens Forum
Cochise County Board of Supervisors
Bisbee, Arizona
June 14, 2018
*Tentative Meeting Notes

Board Members in Attendance:

John Light, USIBWC, Nogales Area Operations Manager and Citizens Forum Co-Chair
Rosanna Gabaldon, Arizona State Rep – LD2 and Citizens Forum Co-Chair
Ben Lomeli, Friends of the Santa Cruz River, Board Member
Raleigh Ormerod, Green Valley and Sahuarita Chamber of Commerce, Toastmasters International
Firat Sever, Quake Wrap, Environmental Engineer
Charles (Chuck) Graf, Tucson Resident
Yolanda Soto, Santa Cruz County Resident
Jenny Neeley, Program Manager, Conservation Science, Pima County Office of Sustainability and Conservation
Jacob Petersen-Perlman, University of Arizona Water Resources Research Center, Research Analyst
Mark Taylor, Vice President, Westland Resources, Inc.
Barbara Escobar, Pima County Regional Wastewater Reclamation Department

USIBWC Staff in Attendance:

Alison Lamb, Administrative Assistant, Nogales Field Office

Members of the Public in Attendance:

There were approximately 46 members of the public in attendance.

Welcoming Remarks:

At 5:00 p.m. Rosanna Gabaldon, Co-Chair, convened the Citizens Forum meeting and called it to order. Ms. Gabaldon went over the purpose of the board, which is to promote the exchange of information between the United States Section of the International Boundary and Water Commission and the community regarding Commission projects and related activities in Pima, Cochise and Santa Cruz Counties. Would like to begin the meeting with introductions, Board members first and then audience attendees. Ms. Gabaldon thanked Cochise County for allowing the Forum to have the meeting at their facilities. Ms. Gabaldon also reminded everyone to please sign in, then introduced the first presenter, Catlow Shipek.

Presentation One: Opportunities for Stormwater to Restore Community and Riparian Health – Catlow Shipek, Policy and Technical Director, Watershed Management Group:

Mr. Shipek began his presentation by stating he is the Policy and Technical Director with the Watershed Management Group—they are a nonprofit organization based in Tucson, AZ. He said he's going to give a couple of different case studies, first is our living lab and learning center in Tucson, one is from Nogales, Sonora, which was a project the organization worked on, and lastly, returning to the Sierra Vista area to talk about as we move forward how can we better utilize storm water as a resource. When we think about storm water, everybody comes at it from a different perspective. During my presentation, I'm going to show how we manage storm water and how we can turn that into a resource.

Our first study is on the living lab in Tucson, if you're ever in the area, I encourage you to stop by, we are usually open from 9:30 a.m. to 5:00 p.m. and we usually have volunteers on site that can give you a tour. We also do tours once a month. It is a 1940's adobe home that was retrofitted. We took it over about five or six years ago, and it was a residence that was gifted to us. It was converted to a residence that depends totally on rain water to meet all the indoor and outdoor needs. There are 18 staff onsite. We have fruit trees, chickens and a number of different visitors, through classes and a variety of events and training. We also produce food onsite with our gardens, we also have solar systems which produce energy. The average rainfall in Tucson is 10 inches. I like to look at it as supply and demand and balance. We do a lot of water budgeting at the site level, at the community level. The first full year that we were entirely on rainwater (2014-2015), we had a surplus of water, we were putting more into the ground than we were demanding/extracting from the environment. The water came from rooftop rainwater, landscape rainwater, and greywater. We went from being a consumer to a producer. How do we as residents, in often urban centers which are typically extractive, consume a lot of resources? How can we go from a consumer to a producer? We have developed a number of different guides, some of them are available on our website where you can go and learn more. It focuses mostly on water harvesting. www.watershedmg.org

We must be careful when we are approaching certain community members or certain areas of the Tucson community that are typically underserved. What are they facing and what are their issues? We see a lot of flooding, so they don't have storm water infrastructure, so we are dealing with how to mitigate flooding, particularly through the water harvesting perspective.

Nogales, Sonora is plagued with chronic flooding, steep hill slopes often with unpaved streets, which is sending a lot of sediment downstream. That becomes a problem for clogging sewer systems causing backups, so you now have an unintentional combined storm water, wastewater sewer system. We are also looking to reduce some of that flood risk and that sediment risk and utilize that rainwater as a resource. Another colleague of ours, Dr. Joaquin Murrieta, led this work in cooperation with several other organizations and entities in the Nogales Sonora area. We did a number of different capacity building trainings, presentations, and looked at how can we take this site that has been dealing with chronic flooding, erosion and sedimentation and lack of vegetation and how we can go green (infraestructura verde). From 2016 – 2017, we put in a number of earthwork systems to support vegetation and reduce the erosion. The focus was a park area (Parque de Lluvia) upstream from a community center. Having held a number of community workshops, everyone had a sense of involvement. We recorded how much sediment was being accumulated at this site that would have been traveling downstream and causing a problem.

Coming back to the Sierra Vista, Arizona area, we've been working a number of years with the City of Sierra Vista looking at how to better utilize storm water as a resource. A lot of this was looking at reducing outdoor consumption. That is where green infrastructure or low-impact development practices retain some of that storm water onsite and puts it to a beneficial use. We chose a site at Cochise College where there is a downspout that originally took the storm water straight to the parking lot. We now route that storm water thru a space where it feeds a variety of desert adaptive vegetation.

We also did a similar project at the underutilized McFadden Park in the City of Sierra Vista where we did a simple retrofit bringing storm water into the park to then enhance the vegetative response. Retrofitting green storm water infrastructure is a cost benefit, usually earning \$3.00 to \$6.00 return in benefits for every dollar spent (comparing cost of installation and maintenance and benefits based on the volume of water harvested and the number of trees planted). Can we continue to move forward doing retrofits? In 2015 we worked to develop a storm water action plan for the City of Sierra Vista,

where it focused on this idea of: Can we turn around the deficit for the Sierra Vista watershed and start recharging that aquifer? The community depends on riparian health. If we can restore our rivers that are groundwater connected, that is an indicator of future sustainable health of our aquifers.

For the New Infill Residential Development Case Study in Sierra Vista, we asked the question of: Can development be net-water positive and work towards community and river health? It was originally designed for 92 homes. We were looking at ways we could shift a development to be net water positive. We looked at the base plan, what is the water demand and what would be returned flow to the treatment plant. The original plan was about 57 acre-feet with an estimated 7-acre foot of assumed effluent recharge. We looked at the storm water annual runoff from pre-development to post development and that's the delta we can work with. We decided to put in multi-family homes that are clustered which provided more shared space. It went from the original 92 homes to 104 homes. Each cluster will be put with a central rainwater tank that will feed the remaining landscape for each home plus flushing toilets. Doing this, we were able to get the groundwater demands down to 9 ½ acre feet per year. Now if we can figure out how to utilize the storm water runoff, we can now make this development net water positive. What is the future for our rivers? Can we return groundwater levels to support the rivers? In thinking about the San Pedro River, which is still intact, can we preserve and protect it while still having vibrant economic growth? It all is based upon how much we are willing to drive down our demand and better utilize our storm water and how we, as a community, can move forward collectively.

Questions:

Q) I found it interesting that the number of homes went from 90 – 104, the effluent stayed the same? How did you do that?

A) Yes. We used higher efficiency appliances

Q) With the development, were there any limitations on outdoor water use?

A) Yes, these houses will have no turf, and not allowed a number of other things.

Q) In purifying rainwater that has run off the roof, do you use reverse osmosis to make it drinkable?

A) For example, at the living lab in Tucson, we have a rain head, which basically removes any debris, leaves etc. We then have a first flush, which diverts the first ten gallons coming off the roof and then after that it starts going into the tank. We only use reverse osmosis when we have to go on city water.

Presentation Two: Binational Water Cooperation Between the U.S. and Mexico, Lessons Learned and Future Directions – James Callegary, PhD, Hydrologist, U.S. Geological Survey:

Mr. Callegary began his presentation by giving a briefing on what he is going to cover, one being the San Pedro/Santa Cruz basins, but he has also been working on the Colorado River Limitrophe and Delta. Although the Colorado River is not necessarily in your area, it does show what your neighbors are doing in a complicated area. He has been working on this since about 2007. Why do we even care about these things, why are we studying binational aquifers? We had white map syndrome, which means we had lots of data on the maps on the U.S. side and in Mexico it was just a big white spot. The same happened in Mexico. They had data on their side, but a big white spot on the U.S. side. This was an opportunity in this water-scarce region to talk about what is going on with these aquifers that actually cross boundaries.

We will start with lessons learned from the assessment of the Mexico – United States transboundary San Pedro and Santa Cruz aquifers. We did the work in two phases. The first phase was laying the ground work and the second phase was the implementation. In the first phase, we conducted

binational meetings with various stakeholders and key actors to develop an understanding of the physical, institutional, historical and socio-political context. This work will constantly be ongoing. \

In the United States, in 2006 legislation was passed which allowed the work to go forward. In 2007, there were initial stakeholder meetings held between the United States and Mexico. Some other things that were important were to understand the physical system, like what were the rocks like underground, how much water is there, are there trees, how much rain? We wanted to understand the institutional systems. On the U.S. side, you have the U.S.G.S. Is there an institution on the Mexican side that does the same thing? We found that there is not.

One of the things we got to in the implementation phase was an agreement to proceed with the study of four focus aquifers and the development of technical teams. We came up with data compilations, what data exists and what has already been published. You need to know what is already known so that you don't duplicate previous efforts. Fact sheets in English and Spanish were prepared. Field visits were also conducted. You need to visit sites in order to know what is really going on. In both aquifers on both sides of the border there has been geophysical work. Geophysics is a way of looking underground and investigating underground without having to dig it all up. Geologic mapping was also used. There was a problem with geologic maps being different on each side of the border, so those maps had to be integrated. We needed to find what data was out there and if it needed to be integrated as well. An example is feet and miles and acre feet vs. meters. Water use was also classified differently on each side of the border; examples would be whether water is characterized as industrial use or farming use.

In the Sierra Vista area, I worked with a grad student and we did a runoff-recharge measurement and modeling. There were 11 stream gauges installed on the fort and around the city to look at what urbanization was doing. This work has been published if you are interested. Another grad student looked at groundwater vulnerability due to contamination in which the EPA DRASTIC model was used. There were quite a few of binational maps created so we were able to integrate data on both sides. This is a binational landcover, so what kind of vegetation types are there. Vegetation is important for a couple of reasons. Vegetation extracts water and then it transpires into the air. Vegetation is a pretty significant part of the water budget in any system. Different plants suck up water at different rates, so that needs to be known as well.

Dr. Callagary presented the binational geologic map that they completed. There is a problem with the binational soils map, the two methods for classifying soils in each country were completely different. The reason we care about soils for hydrology is it affects how fast water can infiltrate, it affects erodibility, how easily can it be compacted so it is really critical to understand.

In the Santa Cruz basin we developed a geochemical database. Sampling was done on the U. S. side for emerging concerns such as pesticides, pharmaceuticals and personal care products.

A stream gage was installed in the Nogales Wash in conjunction with the Arizona Department of Environmental Quality (ADEQ) to look at what's coming out of the City of Nogales. A real important part in both looking at contamination issues and flood issues.

Hydrogeologic framework models - If you have an aquifer (an aquifer is like a big bucket of sand) you need to know how big the bucket is in order to be able to say how much water there is and where the water might be flowing to and from. That is what is meant by having a hydrogeologic framework model.

When drilling a well often times the driller will record what kind of things they went through, was it soil, rock, etc. They might even record the type of rock or soil that it was. That information is important to understand how aquifers are working.

Dr. Callegary listed some of the publications that are available and also some of the binational reports (which are published by the IBWC) in English and in Spanish. The first report is on the San Pedro and was published in 2016 and the report for the Santa Cruz is currently in review.

Lessons Learned - Before you dive in, you want to know what the history between the two countries is and how will that affect how we work together. How do we identify team members - it seems trivial, but it is really kind of a big issue. Resources – how much money is available and what technical resources do we need. Communication, we need to decide who talks to who and when. How do you communicate with the community, with the public and the scientific community? We built a binational partnership and it is highly successful.

Some of the challenges we faced were mostly misunderstandings as far as the correct channels to use to carry out binational work and not being aware of the correct protocols to use.

Solutions –We had to adapt – we had to accommodate and persevere in dealing with the complexity and the unexpected issues. We had to develop some political and cultural sensitivity. Time - patience is important when dealing with governments. Things happen on different schedules.

Dr. Callegary went on to briefly discuss Minute 319, a Commission agreement on the Colorado River, and the so-called Colorado River Pulse Flow, the very first time the two countries agreed that the environment deserved some water. The water in the river didn't belong solely to humans. This is a really big deal considering the Colorado River Delta was one of the richest ecosystems on the planet and was almost completely eliminated. Pulse flow meant we were going to release water into the river for environmental purposes in a big pulse, which is designed to mimic a flood, and this happened in 2014. There was a lot of monitoring, looking at discharge, what happened to the vegetation, birds, groundwater, groundwater quality, sediment and other items.

Dr. Callegary went on to cover Commission Minute 323, "Extension of Cooperative Measures and Adoption of a Binational Water Scarcity Contingency Plan in the Colorado River Basin." He explained that it allows Mexico to defer delivery of a portion of its Colorado River allotment in the event of emergencies or the result of water conservation projects. Dr. Callegary also explained that it provides for proactive basin operations during certain low-level elevation reservoirs conditions at Lake Mead by applying water delivery reductions and it implements measures to address salinity impacts stemming from joint cooperative actions. The Minute also provides water for the environment, funding for environmental monitoring and habitat restoration, and U.S. investment in water infrastructure and environmental projects in Mexico. He then went on to discuss some of the environmental goals of Minute 323, including using water to create habitat, and understanding relationships between restored habitat quality and restoration practice. Some of the restoration objectives include creating and enhancing habitat to support diverse wildlife species, promote additional recreational and economic opportunities for local communities in the Delta region and effectively utilize water resources to create sustainable and functional ecosystems.

Questions:

Q) Has this study ended or are there other phases of it – for the binational aquifers?

A) No, Santa Cruz Study is ongoing, we are hoping to have funding through 2020.

Q) Regarding Minute 323, what type of committees are there or what is the process of implementing the Minute, now that it's approved?

A) I know for the environment part there is a whole separate group and that is all they do, and within that environmental working group there are subcommittees for monitoring, etc. I assume for other parts of the Minute there are working groups that might do that as well.

Q) Are all the committees discussed on a federal or state level?

A) All those committees have representation from both countries, and from the non-profit NGO's, so it is multiple groups including universities. Membership is not restricted to federal and state government.

Q) What is going to happen with the study when all of this is done?

A) As far as making decisions and policy points, it will probably be a group decision, it certainly won't be USGS as we are a scientific agency and we don't deal with that.

Ms. Gabaldon asked if Mr. Light could introduce a member of the audience and ask him to speak briefly on his projects. Mr. Light introduced Mr. Roberto Molina – Regional Manager for the North American Development Bank (NADB).- Mr. Molina spoke briefly on dealing with different transboundary sanitation issues in Tijuana and Naco and he is working very closely with IBWC to try and resolve these issues.

Q) Is there actually a plan of making an International Treatment Plant for Naco?

A) That is one of the alternatives. One of the alternatives is to improve the system in Naco, Sonora. Another alternative is to treat the sewage in the United States but that entails a presidential permit and a treaty, so we are looking at all possible solutions.

Q) Is there a place online where we can look at all the alternatives?

A) Not yet, but we could as soon as we get more documents.

Q) Are we going to get notified on proposed timelines, schedules, proposals on when this is going to happen?

A) Currently there is not a website that you can go to and look at this information. We are also working very closely with ADEQ.

Public Comment:

There is a grave concern here in the San Pedro Riparian area, currently Bureau of Land Management (BLM) is currently in court seeking 24,000-acre feet per year from the San Pedro watershed and at the same time the 9th District Court has ruled that treated influent cannot go into waters of the United States – and the San Pedro River is a water of the United States. Our residential wells are at risk if the court grants BLM access to the 24,000-acre feet, and we can't put treated influent into the river to recharge our river, our wells are at risk so what are you folks going to do about that?

Mr. Lomeli responded:

Take a close look at the claim – a lot of the acre footage is actually flood flow so it doesn't have much to do with groundwater. Take a close look at that claim because much of it is actually peak flows designed to or intended to flush out. It's actually an ecological requirement that the government has to keep flushing flood flows through the ecosystem to keep the riparian area viable and regenerated. It really doesn't affect the groundwater.

The audience member responded that the court already gave BLM the water, so how much water do they get? It is going to have a negative impact on our wells.

Ms. Neely stated that she thinks it would be appropriate to discuss what the IBWC actually does, even though Mr. Lomeli has a lot of knowledge regarding the San Pedro, this is really outside of our scope of influence or anything so maybe Mr. Light could give a little talk at what it is that this group actually is and does as we have nothing to do with this.

Ms. Gabaldon asked if we could possibly point the member of the public in a direction to get her questions/concerns addressed.

It was suggested that she contact Bureau of Land Management directly.

Comment:

I understand the IBWC/CILA is responsible for the wastewater overflow, is that correct? Is that part of the treaty or just because of certain Minutes in the treaty? Without an actual specific idea, is it possible for us in Bisbee and Naco to get some support for the problems we are facing? It seems to me that unless we are politically connected, these overflows that have been happening for years, and no one really pays attention until a rancher or somebody who knows a Senator makes a phone call. The water from Naco, Sonora, the sewage that is flowing over has been happening a lot longer than I have been around here. I feel as a citizen that we need some support. Our local authority, our county supervisors, our mayors are doing everything that they can. They get all of these promises from our elected officials and then we hear nothing about it.

Ms. Gabaldon responded that she was at a congressional briefing this morning in regard to border issues. They want to hear about these issues and would look at federal funding and getting a bill through Congress that would get federal funding to address the concerns of this area. What they are saying is yes, we hear about it once a year and that is it. They need to hear from the constituency.

Mr. Light stated that the Mexican Section of the IBWC has taken the lead and there are things that are being done.

Board Discussion

Ms. Neeley asked if there was any way that this board could recommend that the IBWC on this side of the border prioritize communication to the public and get whatever information out. A website could take five minutes to set up or a Facebook page that you could direct people to just provide brief updates. Is that something that IBWC could do? Possibly contact USIBWC Public Affairs Officer Lori Kuczanski? Ms. Neeley strongly recommends that the board propose to IBWC some way to disseminate information to the local community on what is going on with Naco.

Ms. Gabaldon asked who do we contact?

Mr. Light stated the most effective way is for someone on the board to write a letter to the Commissioner with board member signatures (minus Mr. Light). Ms. Gabaldon asked Ms. Neeley if she could draft something up. Ms. Neeley agreed and will forward to Ms. Gabaldon to forward to IBWC.

Next meeting to be held in Santa Cruz County on September 13 and will start at 5:00 pm to be chaired by Mr. John Light. Plan on meeting in Nogales, in order to also tour the treatment plant.

Suggested future agenda items

Future agenda items suggested:

- Update on the International Outfall Interceptor (IOI) - have the update and maybe someone address where we are on the repair on the last rupture.
- Info on the Sonoran side of the Los Alisos treatment plant – capacity and plans for the future.
- Border 2020 project – Hans Huth would present.
- Field trip for the wastewater treatment plant.

Meeting adjourned.

**** 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.**