Board Members in attendance:
Curtis L. Cloud: Retired, Bureau of Reclamation
Elston K. Grubaugh: Wellton-Mohawk Irrigation and Drainage District
Trina Hamby: Resident of Brawley, CA
Africa Luna-Carrasco: City of San Luis, Councilmember
P. Brian McNeece: Imperial Valley Coalition for Fair Sharing of Water
Patrick O'Dowd: Salton Sea Authority
Lowell Perry: Yuma Crossing National Heritage Area
Meghan Scott: Yuma County Agriculture Water Coalition
Tina Shields: Imperial Irrigation District

USIBWC Staff in attendance:
Daniel Avila, Acting Commissioner, USIBWC, El Paso, TX
Sally Spener, Secretary, USIBWC, El Paso, TX
Xochitl Aranda, Principal Engineer, El Paso, TX
Anna Morales, Area Operations Manager, USIBWC, Yuma, AZ
Daniel Ramirez, IT Specialist, El Paso, TX

Welcoming and Introduction Remarks:
At 4:05PM Citizens Forum Co-Chair Meghan Scott convened the meeting introduced herself and turned it over to Sally Spener who provided instructions on how to use the Microsoft Teams.

Ms. Scott continued with conducting roll call for the board members.

USIBWC attendees were asked to introduce themselves.

Finally, Ms. Scott introduced Acting Commissioner Daniel Avila. Commissioner Avila made opening comments. He thanked the board members for volunteering to serve as well as the presenters for their participation. He mentioned the start of environmental water deliveries to the Colorado River Delta this month in accordance with Minute No. 323 as well as Mexico’s water savings under the Minute’s Binational Water Scarcity Contingency Plan as part of drought management cooperation between the two countries.

Presentation One: Imperial Dam 10-Year Capital Maintenance Plan — David Escobar, General Superintendent, Operations & Maintenance All American Canal River Division, Imperial Irrigation District

David Escobar presented on the 10-year capital maintenance plan for the Imperial Dam. The plan started to get put together in 2014 at the request of Imperial Irrigation District’s (IID) management and the Imperial Dam Advisory Board to assist with planning of all of the major capital works. He presented a table of projects for 2019-2029. He highlighted the following planned work:
Gila Headworks, trunnion repair, at a cost of over $3 million as well as the Gila Headworks radial gate replacement project. Another project is the sludge pipe replacement. The sludge pipes carry silt from the desilting basin back to the Colorado River to the Mittry Lake/Laguna Dam area that is dredged each year. This work will be carried out over three years, 2022-2024, at an annual estimated cost of $5 million.
Imperial Dam was constructed in the 1930s about 18 miles northeast of Yuma, Arizona.

Some projects have already been completed including overhaul of some of the roller gates, electrical upgrades (the biggest project to date), Imperial Dam sluiceway gate replacement project, and Imperial Dam concrete repairs.

Mr. Escobar provided an overview of the projects list timeline and budget. Presentation attached

Questions and Answers (Q&A):

Q: Who owns Imperial Dam?
A: The U.S. Bureau of Reclamation, per agreement the Imperial Irrigation District operates and maintains the facility.

Q: Are taxpayer dollars going to support those costs you mentioned on the plan?
A: No, the costs are shared by all the agencies.

Q: How much water is diverted at Imperial Dam?
A: 5.9 million-acre feet annually, does vary.

Q: Can you explain the sludge pipes? Where are they? What is their function?
A: Slide 2 of the presentation, aerial photo. The sludge pipes are part of desilting works. The water flows through the basins through a set of gates. The silt settles at the bottom of the basins. They have valves which control the flow of the water to the sludge pipes. Approximately 15 feet underground, steel pipe. These pipes carry the silt from the basin back out to the channel to the right of the basins, flows south to the Bureau of Reclamation’s dredge yard. Each pipe is 18 to 36-inch in diameter.

Q: How much electricity does Pilot Knob produce? Is it constant or intermittent?
A: Citizens Forum board member Tina Shields of the Imperial Irrigation District responded that Pilot Knob has a rating of 33MW, but annual production varies depending on water flows and other operational parameters. According to IID 2018 Energy's Integrated Resource Plan, (see Integrated Resource Plan (iid.com)): The facility is 33 MW in capacity, but typically produces no more than 12 MW due to the lack of canal flow for agricultural water demand. Pilot Knob hydro-plant consists of two 16.5 MW generators, was built in 1957 and has a 55-foot head. The facilities are in working condition. In the last 10 years, Pilot Knob only generated for about 7 MW out of the 33 MW plant total generation capacity, mainly using YCWUA water. The plant on average generates only four months during the year, and only one month (July) during the summer. The lower basin of the hydro-plant is normally spilled into Mexico. Regularly, 26MW of the plant capacity are not utilized because of the lack of extra volumes of water spilled into Mexico.

Q: Has Imperial Dam ever experienced earthquake damage?
A: To my knowledge, no. But when there are earthquakes, inspections are done immediately from California to Arizona side of the dam. Luckily, we haven’t had damage to date.

Q: Trunnion repair project, what is that?
A: The trunnion is basically the box or pin that holds the radial gate in place in the structure which allows the radial gate to move up and down to control flow of water into the Gila Gravity Main Canal.

Elston Grubaugh comment: This is rather an expensive project. Trunnion gate arms have been in place since 1936. When Reclamation inspected it, 60% of the metal was gone. Exposed to elements for a number of years. This makes management of the flow a challenge.
Q: Of the 5.9 million acre-feet, how do you account for who gets what water?
A: All the water users on the operation side are held through a master schedule with Reclamation. Orders go up and down throughout the day. Schedule is prepared 7 days in advance. Depending on crops, germination etc., those water orders do change. Based on allotment and entitlement on the Colorado River.

Q: How do you measure it?
A: We do metering as well as USGS and Reclamation, on Monday through Wednesdays. There are limits on gates controlled through SCADA system. Remotely controlled by Operations Center. As order comes in, it is sent to dispatchers and controlled by gate elevations. We calculate the amount of flow going through each gate. All the gates have different ratings, depending on the size of gates.

Elston Grubaugh comment - Each water user has a metering structure at their intake to measure. USGS does the official measurement for decree accounting. This would be a good presentation for a future meeting – decree accounting and how water is measured and accounted for among all the water users.

**Presentation Two: Yuma Area Salinity Management – Daniel Bunk, Chief, Boulder Canyon Operations Office, Bureau of Reclamation, Lower Colorado Basin Region.**

- Mr. Bunk provided a **PowerPoint presentation, attached**
- Mr. Bunk gave a background of Reclamation’s Lower Colorado River Region 8 boundary and operational objectives.

  Reclamation manages water releases from Hoover Dam to Mexico at the international border. The service area includes the Imperial and Coachella Valleys, Southern California, and Central Arizona, in addition to the main stem of the Colorado River.

- The Lower Colorado River operational objectives include scheduling water deliveries, developing annual operating plans, accounting for water use, administer water contracts, maintain an extensive stream gaging network, provide other analysis related to hydrology and operations. The Boulder Canyon Project Act authorized the construction of Hoover Dam as well as the All-American Canal (AAC).

  This is done within the framework related with environmental compliance under the Colorado River Multi Species Conservation Program (MSCP) to meet those requirements.

  Work closely with IBWC and Mexico on administrating the 1944 Water Treaty and related agreements. Meet these water deliveries and salinity agreements consistent with the Treaty and related Minutes.

  Would be happy to come back to do presentation on water accounting. The Reclamation, USGS and each entity that receives Colorado River water, we have gages that monitor on real time basis. Reclamation monitors water use, diversions and return flows in a real time basis, account for about 98% of water use in the basin.

- Yuma Area Water Operations and Salinity Management operations start at Parker Dam. The operators in Yuma coordinate closely with the Boulder Canyon operators. Releases start from Parker Dam, flows down to Imperial Dam and eventually to Mexico. There are a lot of water users in the
system up and downstream of Imperial Dam. Reclamation releases 6.5 million-acre feet on average. Varies from year to year. May be lower nowadays.

The Primary goals are to satisfy water orders in the Yuma, Imperial, Coachella Valley as well as Mexico while meeting salinity requirements. Minimize excess flows to Mexico to conserve system water and maximize groundwater production within salinity limits.

Yuma operations team develops the Parker Dam water orders to meet the daily water requirements that needs to flow to Imperial Dam. They also coordinate with water users along the system such as the Colorado River Indian tribes, Palo Verde Irrigation District, Irrigation Districts in Cibola area and other smaller users along the way.

The travel time for the flow of water from Parker Dam to Imperial dam is three days. It requires a lot of coordination amongst the two offices and the water users as well as with the U.S. and Mexico to best estimate the amount of water that needs to be released on a daily basis. This is also with the understanding the 3-day requirements could change.

There are some regulatory storage in the Yuma and Imperial Valley areas. There is Senator Wash with a capacity of 9000 af and Brock Reservoir with an 8000 af capacity that allows the management of the excesses and shortages on a day-to-day basis.

- Key components to planning water deliveries is how we coordinate with IBWC and Mexico. The 1944 Treaty allowed for delivery 1.5 maf annually. These are subject to Minute 242 of IBWC and other international agreements.

The salinity under the Treaty became a matter of discussion with Mexico in the 1960’s. Minute 242 limits the salinity of Colorado River water to Mexico based on the average annual salinity arriving at Imperial Dam. Subsequently, Congress passed 1974 Salinity Control Act to undertake salinity control measures. The Salinity Control Act has two components, Title I and II. Title 1 relates to this salinity management in the Yuma area related directly to the delivery of water to Mexico. Title 2 is related to actions taken upstream in the Upper Basin on ways to reduce the overall salinity in the system.

There are different ways to coordinate the water deliveries to Mexico. When flows are at the highest, usually 2000 cubic feet per second (cfs) or higher, water is able to be routed through the Pilot Knob Powerplant (PKP). Capacity is used from the All-American Canal to deliver water to the Northerly International Boundary (NIB) to Mexico (blue line on slide 8). This is closely coordinated with the Imperial Irrigation District along with the other required diversions from Imperial Dam. This is the most efficient way to deliver water to Mexico. Takes about 2 hours lead time from Imperial Dam to Morelos Dam.

Another way flows can be delivered when the flows are in the range of 1200 to 2000 cfs, the Yuma Main Canal at Siphon Drop Powerplant is utilized (purple line on slide 8). This is diverted to the Yuma Main and into the Colorado River where it is measured at the Yuma gage, then flows to Mexico into Morelos Dam. This route takes 5 hours from Imperial Dam to Morelos Dam. This route is mainly used because of flow restrictions of what can pass at PKP during flows lower than 2000 cfs.

Another way to route deliveries to Mexico when water orders are below 1200 cfs is into the Colorado River channel below Imperial Dam. There is always a base flow, approximately 600-700 cfs, that flows in the valley, could be higher depending on conditions at the time. This route takes 13 hours to arrive from Imperial Dam to Morelos Dam.
In terms of salinity management, Reclamation closely coordinates with IBWC on managing the salinity differential. Example (see slide 9), the water arriving at Imperial Dam is 700 parts per million (ppm). Along the reach between Imperial Dam, Northerly International Boundary (NIB) and Morelos Dam, there is salt load influxes that comes from measured and unmeasured sources. Groundwater, agricultural runoff, pumping done from groundwater management, subsurface drainage and other sources. There is always water moving through the river channel. Always different sources of salt that are increasing salinity as part of the water that arrives at Imperial Dam. As part of Minute 242, 845 ppm cannot be exceeded for the delivery to Mexico at the NIB, in this particular example. The Minute says the difference in salinity between Imperial Dam and NIB could not exceed 130 ppm (+/- 15).

While we coordinate with IBWC and Mexico, Reclamation is collecting water quality samples at Imperial Dam both through automated and hand samples. We share water samples with IBWC and Mexico to perform independent measurements by the three entities. Similarly, at the NIB, the IBWC collects the samples and shares the same samples with Reclamation and Mexico. Quality assurance (QA) and quality control (QC) are done between Reclamation and IBWC. Reclamation also uses the samples to model flow and salinity to estimate the salinity within the reach to track the differential for the year and model the water flows to meet Mexico’s water order for both delivery and salinity.

Various sources (slide 10) of the salinity influx are: various wasteways, drainages, groundwater, subsurface flow and a small amount of the Gila River that drain into the Colorado River both on the Arizona and California side. All these sources affect the salt load along the reach between Imperial Dam and NIB. Another key component to salinity management is the Mode Outlet Drain (MOD) and the Mode Outlet Drain Extension (MODE). This is the drainage water from Wellton Mohawk Irrigation and Drainage District (WMIDD) that bypasses the river and flows into Mexico to the Cienega de Santa Clara, a wet water area in Mexico.

The reason groundwater is managed, if the groundwater levels get too high in the Yuma Valley and Yuma Mesa, it can negatively affect crop production, worst case scenario do quite of bit of damage. Groundwater is pumped from the Mesa, along the valley and the river to maintain the groundwater levels. There are two options to route these waters. The Yuma Mesa wells can be routed either into the Main Drain and delivered to Southerly International Boundary (SIB). Or can be routed north in the Yuma Mesa Conduit where either it can be diverted into the river to offset system water or into the MODE. The Drainage Pumpage Outlet Channel (DPOC’s), located on the eastern side of map of slide 10, these waters can either divert to the river to be included as part of Mexico water deliveries or diverted into MODE as part of bypass flows. Depending on the salinity differential, this will impact what course the water will be delivered. We try to maximize groundwater resources use but will not exceed the Minute 242 salinity differential.

A breakdown of an example of flows arriving at the NIB (slide 11) calendar year 2018 at NIB was shown. The blue piece of the pie represent water released from Lake Mead which are part of the water orders from Parker Dam arriving at Imperial Dam. This makes up approximately 75% of the total water at a salinity average of 700 ppm during this year. The purple piece represents both measured returns as well as unmeasured or unknown flows which make up 20% of the total flows delivered to Mexico at 1100 to 1200 ppm. The orange includes two sources of the managed groundwater by Reclamation. This particular year the DPOC’s and Yuma Mesa managed groundwater flows delivered to the river made up 3% of total water delivered to Mexico. Reclamation only has management of these groundwater wells which makes it difficult in the salinity management.
Another reason salinity management is difficult is over time the annual salinity arriving at Imperial Dam has been coming down on average. On the graph (slide 12) there are dips in certain years such as 1980’s and 1990’s during high-water situations. If you cancel out those instances and look at normal years, there is a gradual trend downward. This is good, it shows the Salinity Control Act Title I component is effective but makes managing the salinity differential more challenging.

When there is lower salinity at Imperial Dam and actions by the U.S. and Mexico in response to drought conditions - which have resulted in lower flows along the reach of Imperial and Morelos Dam - salinity influx makes it more challenging to meet the differential with the flows arriving at Morelos Dam.

The likelihood of further reduced flows under shortage and low elevation reservoir conditions in the future will make it even more challenging. For 2022 the first ever shortage is projected in the basin. Under Minute 323, Mexico will share shortages with the U.S. and will be asked to take additional reductions in 2022, further reducing flows in the reach. Continued coordination and better understanding of the salt load budget below Imperial Dam is crucial.

- 242 Wellfield Expansion Project was put in place to generate system water and as a long-term tool to help manage the salinity differential. The project began in 2016. Has two pipelines or components.

One is the 242 Wellfield expansion. With this project, water from the 242 Wellfields will be routed north into the Colorado River. It began operational testing in December 2020. It will create 25,000 to 32,000 acre-feet on average of system water each year to help meet Federal Drought Contingency Plan (DCP) efforts. The eastern wells, 14 through 22, will be pumped north, (blue line slide 16), connect to the Yuma Mesa Conduit, and delivered into the Colorado River at above NIB.

The second is the Yuma Mesa Conduit extension. The Yuma Mesa wells are typically used to pump to manage groundwater levels in the Mesa and would flow north. With this project, the water will flow south to the 242 lateral canals and be delivered at to Mexico at the SIB. The Yuma Mesa Conduit Extension is still under construction, to be completed this fall.

**Questions and Answers (Q&A):**

Q: Is there anticipation to put additional wells in the future?
A: There has been discussion of potentially adding wells, those discussions are in the early stage of discussions. There needs to be coordination with some partners before moving forward.

Q: Has Mexico ever delivered water to the US? Is that a possibility, if need be? If not from the Colorado River, from the Gulf of Mexico?
A: I don’t think so would refer to IBWC.

Sally Spener’s response – we do have water deliveries from Mexico to the U.S. on the Rio Grande. There are 6 Mexico tributaries to the Rio Grande. In accordance with the 1944 Water Treaty, of these 6 tributaries, 1/3 of the flow is allotted to the U.S and 2/3 to Mexico. On the Colorado River there are no deliveries from Mexico to the U.S. under the Treaty. There are a number of transboundary rivers along the border that are not covered by the treaty but do flow from south to north.

Q: The original 242 well layout in 1974 was to produce more water, if necessary, under the Minute. The 22 existing wells are not capable to pump that additional volume a year to match the volume in the original plan. Is Reclamation going to develop them?
A: The Minute does say the both countries could pump up to 160,000 af within the 5-mile zone boundary in San Luis. I haven’t been part of the discussions as to why we may or may not expand the pumping.
Q: I have been hearing a lot about the impact of water flow in the lower Colorado about the impact on riparian habitat like the Yuma Wetlands. Is a slight increase even a consideration?  
A: I’m not the subject matter expert on the Lower Colorado River Multi Species Conservation Program (LCRMSCP). What the program tries to do is find existing water to reestablish wetland areas targeted for the program of a certain acreage. The program works with existing rules to find existing water, taking into consideration the system has been altered since the construction of the dams. They won’t be able to fully restore the system but mitigate or offset some of the impacts. Through Minute 323 with Mexico, there are efforts to restore riparian habitat in Mexico as well.

**Opened for Public Comments:** None

**Opened for Board Discussion and Suggested Future Agenda Items:**

Mr. Grubaugh thanked both presenters for taking the time to give their presentations today. The board discussed previous suggested agenda items and new suggestions and agreed to schedule the following for the next meeting:

1. Tina Shield requested a presentation by Reclamation on the forecast and the August 24-month study and will make some operational decisions for next year. Dan Bunk would be happy to arrange for Reclamation to present.  
2. Patrick O’Dowd requested a combining presentation of the Salton Sea and the status report on New River focused on Imperial County issues.

Next meeting September 15, 2021 at 4:00 p.m. MST/PDT. It is unknown if meeting will be in person or via webinar, TBD.

The meeting adjourned at 5:42pm.

*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.*