Colorado River Citizens Forum
Yuma County Dept. of Development Services, Aldrich Hall
Yuma, Arizona
January 24, 2018
*Tentative Meeting Notes

Board Members in attendance:
Roberta (Bobbi) Stevenson-McDermott, Yuma Natural Resource Conservation District Member, Arizona Association of Conservation Districts Board Member
Gary Knight, Yuma City Councilmember, Yuma, AZ
Juan Leal-Rubio, Senior Planner, Yuma County Department of Development Services
Jim Buster, Southwest Resource Strategies
Glen Freeman, Retired Bureau of Land Management
Alex Seenstra, Northern Arizona University Professor
Bruce Kuhn, Imperial Irrigation District

USIBWC Staff in attendance:
Anna Morales, Yuma Area Operations Manager
Miles Lampo, Yuma Hydrologic Technician (OA)

MXIBWC Staff in attendance:
Diana Rosales, Mexicali, BC
Pedro, Ortiz, Mexicali, BC

20 Members of the public in attendance

Welcoming and Introduction Remarks:
At 4:00PM Citizens Forum Co-Chair Anna Morales convened the meeting by welcoming the group and provided a brief description of the meeting agenda items. Board members and audience attendees were asked to introduce themselves.

Presentation One: Vegetation Management by Mike Pacheco Water Manager IID (Imperial Irrigation District)
Mike Pacheco provided a brief background of the problem of invasive plant species in the region and how the (IID) handles it.

IID utilizes the Integrated Pest Management (IPM) system to determine the best vegetative control methods for the District. The IPM system uses a combination of techniques to identify and preserve desirable/beneficial plant species; identifies and eliminate undesirable/noxious weeks.

Two types of vegetation control methods used are mechanical control and biological control. Mechanical control is physically removing undesirable weed species like mowing, pulling, grading, dredging etc. A biological method used is the release of Triploid Grass Carp in canals to reduce vegetation.

Chemical Control methods include the use of herbicides to control undesired weed species. In this situation, a Pest Control Adviser (PCA) must write a recommendation. The PCA inspects the drain and canal to determine the species to control. The PCA prepares a recommendation of chemicals to control undesirable weed species. The recommendation is then forwarded to the weed spray contractor. The contractor then generates a schedule and returns to PCA and Division for approval. After completion of spraying PCA inspects work and may approve or ask weed spray contractor for re-spray.

IID just implemented a new Geographic Information System (GIS) Weed Spray Map. It is a digital map tool that can be updated after sprays so IID and PCA can check for quality control and verify that the control methods are working correctly.

Undesirable Species-Target Pests

Salt Cedar (Tamarix spp)

- Cause issues in drains and tile lines
- Diverts water

Arrowweed (Pluchea sericea)

- Roots break and ruin concrete
- Causes concrete buckles
- Water then further erodes concrete
- Mechanical removal works best for non-concrete canals

Common Reed (Phragmites australis)

- Rapid and intense growth
- Causes issues with power lines
- Overgrowth issues in non-concrete lined channels
- Causes erosion on earthen channels

Curly Dock (Rumex crispus)

- Causes issues mainly in agriculture fields
- Seeds can spread into adjacent fields

Mexican Sprangletop (Lepochloa fusca)

- Invasive but not too bad
- Chemical spray is the best method

Beneficial species

Salt Grass (Distichlis spicat)

- Good for banks and channel stabilization
- Keeps water from eroding structures

Salt Heliotrope (Heliotropium curassavicum)

- Very little seen in the system

Bermuda Grass (Cynodon dactylon)

- Helps stabilize the banks

Some Herbicides Used

- Glyphosate (Roundup)- Systemic, non-selective- controls virtually all annual and perennial weeds, but is most phytotoxic to annual grasses. *Most used.
- Triclopyr (Amine)- Systemic selective foliar, controls many annual broadleaf weeds as well as many tree and brush species. Does not harm grass species.
- Imazapyr- Non-selective, controls many annual and perennial weeds such as grasses, broadleaves, vines, brush and trees (salt cedar).
- Imazamox- Systemic aquatic herbicide that moves throughout the plant tissue and prevents plants from producing a necessary enzyme.

The National Pollutant Discharge Elimination System (NPDES) permit program, created in 1972 by the Clean Water Act, helps address water pollution by regulating point sources that discharge pollutants (pesticides) to water of the United States. The NPDES monitors applications of each pesticide the District

uses. The District submits monitoring data and vegetation control methods to the state annually. Any pesticides sprayed is reported to the County and State (where, what and when) due to the Act.

Mechanical Cleaning is used for example to remove Salt Cedar and Curly Dock infestation from drains to improve hydrology. An ideal drain doesn't have any Salt Cedar or Curly dock but does have Bermuda grass on the banks for erosion control.

Question and Answer (Q&A):

Q: Is IID considering using something other than Round-up due to studies showing controversy?
A: Yes, we are keeping an eye on the research and currently are looking into using other chemicals.

Q: We have seen a lot of Arundo donax (giant cane). Have you dealt with that?
A: We have not seen or dealt with it however are keeping an eye out for it.

Q: Common reed is called Phragmites?
A: Yes

Q: Is any of the green waste used for example to create electricity or heat?
A: Used as dust cover at the Salton Sea Playa.

Q: Are any of the herbicides harmful to fish species?
A: IID stays at least 10 feet from the water when spraying, and we are also careful not to go near organic farms.

Q: Grass Carp don't go in drains just canals, right?
A: Yes

Q: Are the grass carp sterile?
A: Yes, there is no reproduction

Presentation Two: *Managing Water in the West,* Colorado River Basin: System Status Update and Outlook for 2018 and 2019

Overview of the Colorado River System:

- 16.5 million acre-feet (maf) are allocated from the Colorado River annually.
  - 7.5 maf are allocated to the Upper and Lower Basins under the 1922 Colorado River Compact
  - 1.5 maf to Mexico per year per the 1994 Water Treaty.
  - 13-14.5 maf of basin-wide consumptive use annually.
- 16 maf of average annual "natural flow" in the Colorado River (based on historical record).
  - 14.8 maf in the Upper Basin from snow melt run-off
  - 1.3 maf in the Lower Basin.
- Inflows are a highly variable year to year
- There is 60 maf of storage (nearly 4-times the annual inflow).
- The System is operated on a type hydrologic budget.

Natural Flow in the Colorado River at Lees Ferry gaging station in Arizona averages have slowly been declining since 1905 and has dropped more due to the drought. The 10-year moving average is also declining.

The Water budget at Lake Mead – with the current water demands in the Lower Basin and Mexico, and a normal year release from Lake Powell (8.23 maf), Lake Mead storage declines by about 1.2 maf annually (equivalent to about 12-14 feet in elevation).

Lake Mead end of month elevation has been dropping since 1999 when it was at 95% capacity. Capacity in July 2016, Lake Mead was at its lowest elevation of 1,071.61 feet since it was first filled in the 1930s. During the 1950s drought, Lake Mead reached a low of 1,083.23 feet in April 1956. In December 2017 capacity was at 39%.

The Conservation Program the last few years has helped stabilize the system some and delay shortages.

Lake Mead key elevations based on 2007 Interim Guidelines for the U.S. and Minute 323 for Mexico- As of January 23, 2018, the elevation was at 1,086 feet (10.5 maf), 11 feet above level 1 shortage conditions of 1,075 feet (9.6 maf). At level 1 shortage conditions, the U.S. lower basin shortages would be 333 thousand acre-feet (kaf) and Mexico 50 kaf. If the elevation reaches 1,050 feet (7.7 maf) it would trigger level 2 shortage conditions where the U.S. would be reduced by 417 kaf and Mexico by 70 kaf. At 1,025 feet (6.0 maf) it would trigger level 3 shortage conditions where U.S. would be reduced 500 kaf and Mexico 125 kaf.

The Upper Colorado River Basin water year 2018 snowpack and forecast:
As of January 22, 2018, snowpack is at 66% of average, its lowest in history.

Lake Mead end of month projections from January 2018 24-month study:
The 24-month study is used to make projections on future elevation levels.
The most probable end of calendar year (CY) 2018 projection is 1,079.5 feet (38% full). Min/Max projections range from 1,076 to 1,083 feet. In 2018, we will have a normal year with no shortages.
The most probable end of CY 2019 projection is 1,074.7 feet (37% full). Min/Max projections range from 1,062 to 1,108 feet. Projecting 15% chance of shortage for 2019.

Drought response activities through 2017:
Storage and conservation programs such as the U.S. intentionally created surplus, Mexican deferred deliveries, Lower Basin Drought MOU voluntary protection volumes, pilot system conservation program and other system conservation agreements all helped to raise Lake Mead elevation which resulted in nearly 20 feet of additional elevation in Lake Mead.
Additional Lower Basin drought response discussions are on-going and the goal is to reduce the risk of reaching critically low Lake Mead elevations through voluntary actions.

Lower basin shortage and surplus projection 5-year outlook shows that from 2018-2022 there is a rising trend line that reaches approximately 53% probability of shortage, and only about 18% probability of a surplus.

The Colorado River Basin continues to experience an unprecedented drought. Even with above average inflow and a slight improvement in the system conditions in 2017, there is a chance for Lower Basin shortage as early as 2019. Cooperation and collaboration will be key in finding sustainable solutions and addressing current and future challenges.

Question and Answer (Q&A):

Q: Is climate change included in the models?
A: When projecting for a 1 to 2-year period, there is enough ground data to make projections so climate isn't considered. If planning for a longer future such as 50 to 100 years, climate hydrology would be used.

Q: Have the aquifers been affected?
A: Not familiar with the aquifers adjacent to the irrigated areas, but as for the aquifers near Lake Powell and Lake Mead, they have not been affected.

Q: Explain level 3 shortage.
A: It will be a consultative process.

Q: Can agriculture afford desalted water?
A: Not sure, it would be expensive.

Q: How does the proposed pipeline from Utah to Lake Powell affect the water budget?
A: Any additional water use could affect overall releases and projections.

Q: Does salinity in the lower basin affect usable water in the model projections?
A: Water quality is not included in the model, just quantity or supply of water.

Q: Do conservation programs cost money?
A: Mexico's water storage did not cost the United States any money. The system conservation programs did cost money.

Q: Did the Minute 319 projects and Pulse Flow cost money?
A: The Pulse Flow was Mexico's stored water. Minute 319 provided project system efficiency improvements in which U.S. water users did provide funding.

Q: How close are the Drought Contingency Plan (DCP) discussions to being completed?
A: More work is needed, but it's getting close.

Q: When developing the sensitivity analysis, did any variables pop up that were not obvious?
A: Main variables were hydrology related, there were no strange or hidden variables.

Public Comments:

Arizona Department of Water Resources (ADWR) is having the Governor's Water Augmentation Council Desalination Committee meeting on January 29th at ADWR Phoenix office. Agenda and meeting information available at azwater.gov

Board Discussion and Future Agenda Items:

1. Reclamation's water Accounting of the Colorado River
2. IID's Grass Carp hatchery program

Next meeting April 25, 2018 in Imperial County, location to be determined. The meeting adjourned at 5:50pm.

*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.