Presentation Outline

• Mandates for Colorado River Water Accounting
• Overview of the Water Accounting Process
• General Accounting Principles
• Water Accounting Report
• Yuma Area Accounting
• Questions
Colorado River Water Accounting

- The Secretary is required to account for and report Colorado River water use pursuant to applicable Federal law
  - 1964 Supreme Court Decree
    - Colorado River Accounting and Water Use Report ("Decree Accounting")
      - Official record of diversions, returns and consumptive use
    - Lower Basin Mainstream
  - 1968 Colorado River Basin Project Act
    - Consumptive Uses and Losses Report
    - Upper and Lower Basins
Overview of Consolidated Decree


- Defines terminology
- Provides guidance on Secretarial authority
- Confirms State apportionments
- Requires annual reporting of diversions, returns, and consumptive use of Colorado River water

State apportionments based on consumptive use

- AZ – 2,800,000 AF
- CA – 4,400,000 AF
- NV – 300,000 AF
Accounting Process & Chronology

- Annual Operating Plan development
  - Surplus, Normal, Shortage
- Water order approvals
  - Pursuant to 43 CFR Part 417
  - Review/approve water orders
- Forecasting (real-time, end-of-year)
  - Monitoring of diversion and use
- Water Accounting
  - Official accounting for the diversion/use of Colorado River water
Water Order Approval Process

• Marks beginning of the accounting year
  – Review/approve IOPP and ICS Plans
  – Collect water-user provided schedules
  – Estimate schedules for those who don’t provide schedules

• The schedules provided by water users form the basis for the daily forecast

• Approved amounts create a baseline to determine potential overruns

• Approved orders and monthly schedules are also used for river operations planning and modeling
Water Use Forecasting
Real-Time Forecast

- Approximately 85 gaging sites provide real-time data
  - AZ – 96% : CA – 99% : NV – 90%
  - 98% of total Lower Basin

- Real-time data uploads to the Hydrologic Database (HDB) and is available for the daily forecast

- Daily forecast estimates end of year diversion/use

- Reclamation and water users monitor for potential overruns
  - Provides timely information needed to adjust use during the year

- Allows Junior Priority holders to adjust pumping to match available supply
Water Accounting
Annual Water Accounting Reports

- The report has been published for each year since 1964
- Available on the web at: http://www.usbr.gov/lc/region/g4000/wtracct.html
Water Accounting Report

• Required by Article V of the Consolidated Decree to prepare and maintain (or provide on an annual basis) complete, detailed, and accurate records of:
  – V(A) Releases through regulatory structures (DAMS)
  – V(B) Diversions, returns, and consumptive uses by user and state
  – V(C) Water ordered but not diverted
  – V(D) Deliveries to Mexico
  – V(E) Gila and San Francisco River diversions for the benefit of the Gila National Forest

• Reports additional information, not required by the Decree
Article V(B): Diversions, Returns, and Consumptive Use

Article V(B) – Data of diversions, return flows (measured and unmeasured), and consumptive use by diverter by state

Article V(B) data provides the base data needed for further supplemental accounting
General Accounting Principles

- Consumptive use = Diversions minus the sum of Measured & Unmeasured Returns
- Water is considered a Colorado River diversion at the point where the water leaves the River
- All known diversions are accounted against a state’s apportionment
  - No diversions are free from accounting; Federal, Local or Tribe
  - Diversions are charged to the place of use – not the place of diversion
Diversions

- Gaging sites provide real-time diversion and return flow data; most are operated by the USGS, Reclamation and IBWC
  - Additional sites reported by water users

- For shared canals, such as the AAC deliveries from the canal must be converted to diversions from the river (at Imperial Dam)
  - Diversion to a District is calculated
Method for calculating a user’s diversion at the river

- Where Diversion is equal to deliveries from AAC plus share of Canal Loss
  - Losses due to seepage, evaporation, and ET
- Total Canal Loss = $Q_{in} - Q_{out}$
  - $Q_{in}$ is the flow into the AAC from Imperial Dam, measured at Sta. 60
  - $Q_{out}$ is sum of deliveries from the AAC, including the flow at Sta. 1117
Return Flows

• Defined as returns of Colorado River water available for consumptive use in the United States or in satisfaction of the Mexican treaty obligation

• Returns are credited to the user and to the state
  – Measured Returns: Drainage returning through measurable conveyances
  – Unmeasured Returns: Generally ground water flow to the River, calculated using factors applied to the user’s diversion
Yuma Area Accounting
Surface Diversions

- 98% of water used in Yuma area is delivered as surface water
- Most surface diversions originate as deliveries from the AAC, Yuma Main Canal or GGMC
- As noted earlier, deliveries from these shared canals must be converted to diversions from the river
- Roughly 2% of the diversions are from wells and pumps
Measured Returns

- Examples
  - 242 Wellfield
  - Yuma Mesa Conduit
  - Main Outlet Drain (MOD)
  - Cooper Lateral
  - Yuma Valley Main Drain
  - Drainage Pump Outlet Canals (DPOCs)
  - AAC and GGMC losses
Questions?

Thank you