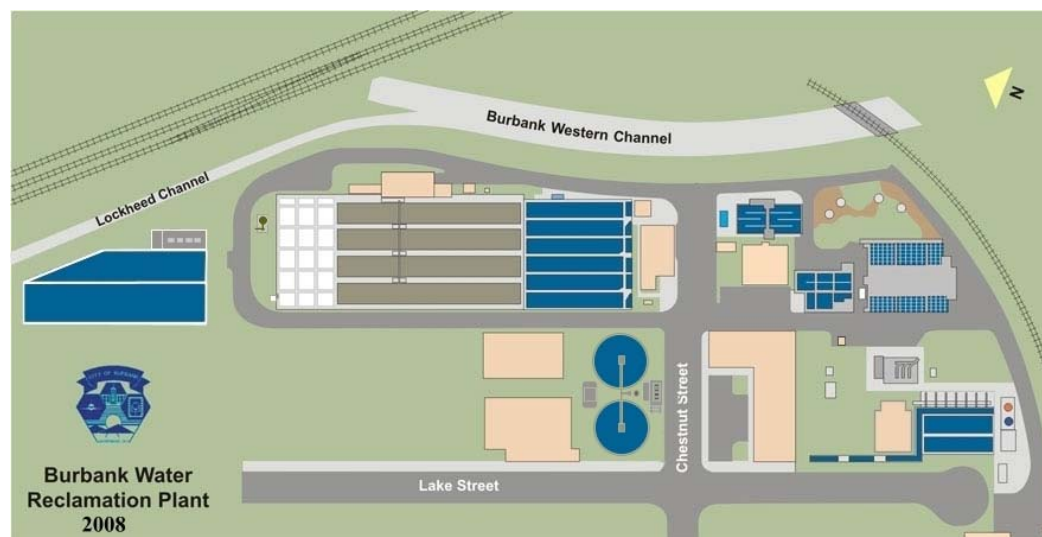


# CITY OF BURBANK RECYCLED WATER

DECEMBER 3, 2019



# Source of Recycled Water



- ▶ Produced at the Burbank Water Reclamation Plant (BWRP)
  - In use since 1967
  - Treats 8.5 MGD of sewage
  - Produces Tertiary Treated Wastewater



# Recycled Water Uses

- ▶ Surface Irrigation
- ▶ Cooling Tower Makeup
- ▶ Industrial Processes
- ▶ Structural/Wildfire Fire Fighting
- ▶ Decorative Fountains
- ▶ Dust Control
- ▶ Sewer Flushing
- ▶ Cleaning roads, sidewalks, and outdoor areas

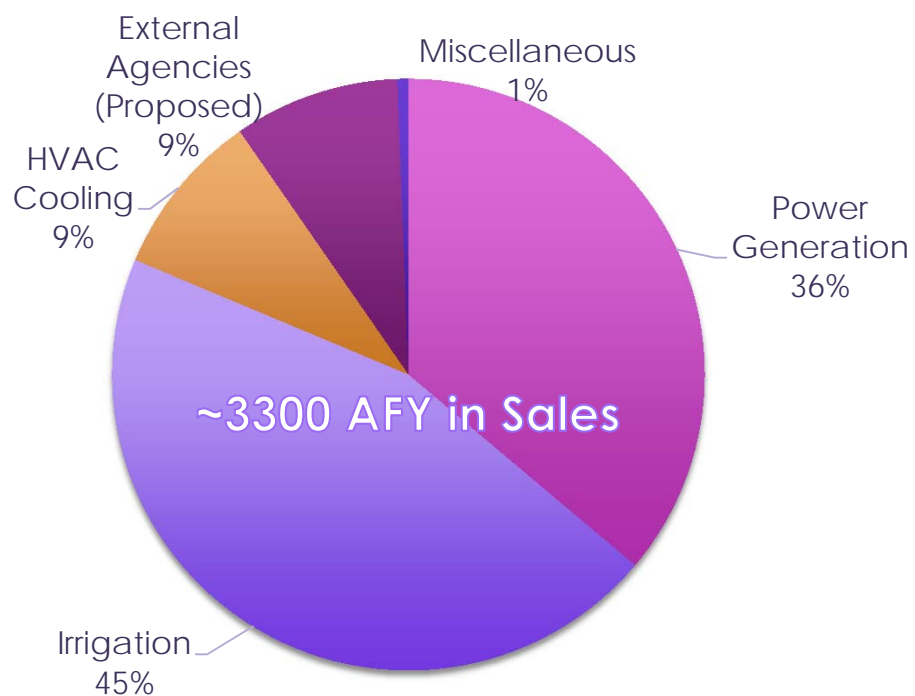


# Power Generation

- ▶ Magnolia Power Project
  - ▶ 310 MW natural gas-fired combined cycle generating plant
  - ▶ Uses our recycled water for:
    - ▶ Cooling Towers
    - ▶ Heat Recovery Steam Generator (demineralized)
- ▶ Lake One Power Plant
  - ▶ 45 MW natural gas-fired “peaker” plant
  - ▶ Uses our recycled water for:
    - ▶ Cooling Towers

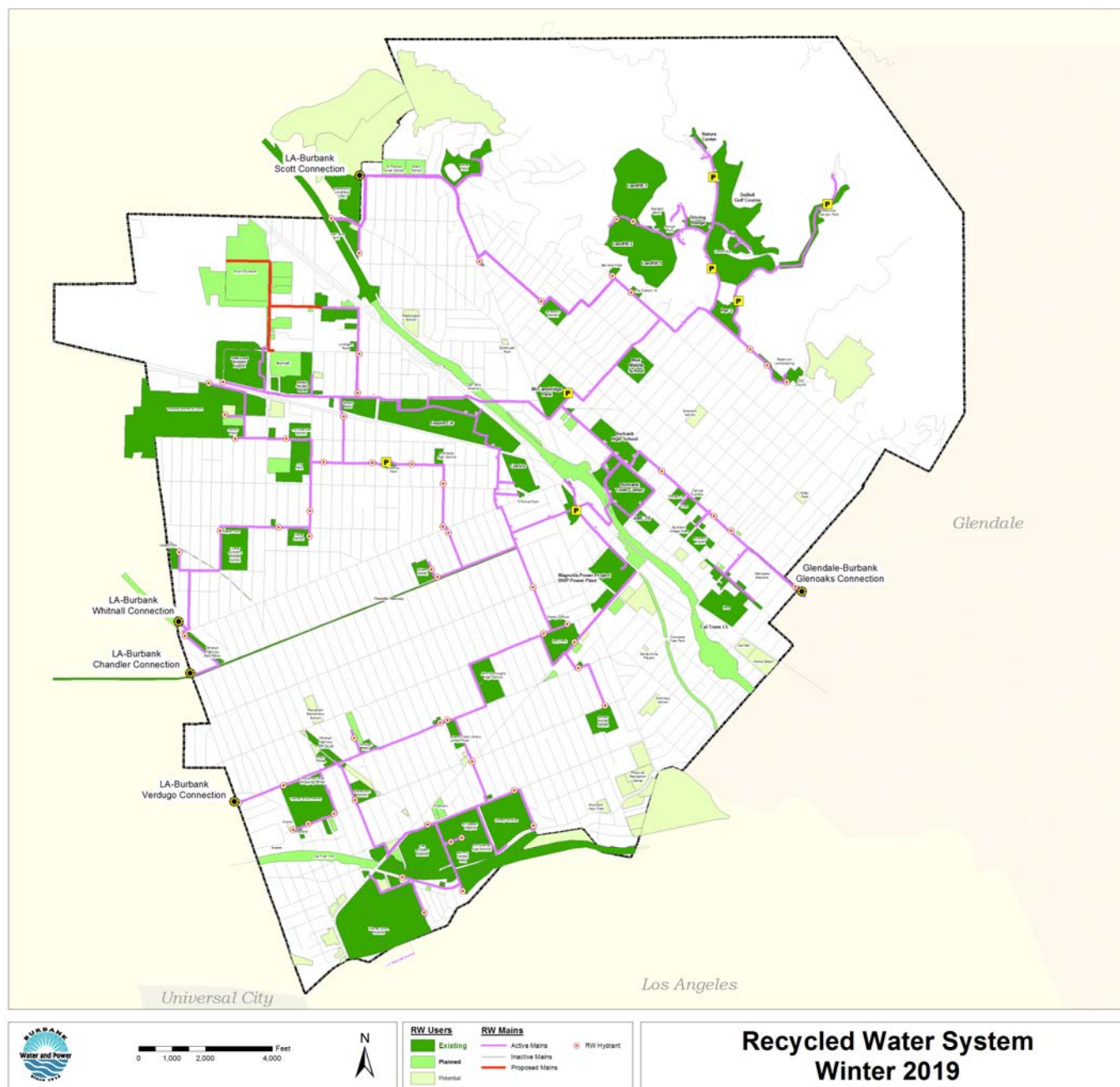


# Recycled Water Usage



Source: Burbank Leader





# Major Partners

- ▶ Burbank Town Center
- ▶ Burbank Unified School District
- ▶ Caltrans SR-134 and I-5
- ▶ City of Burbank Parks and Recreation
- ▶ Costco Wholesale
- ▶ Debell Golf Course
- ▶ Empire Center
- ▶ Fry's Electronics
- ▶ Hollywood Burbank Airport
- ▶ Ikea
- ▶ Los Angeles Department of Water and Power
- ▶ Providence Saint Joseph Medical Center
- ▶ Talaria Burbank
- ▶ Valhalla Cemetery
- ▶ Walt Disney Studios and ABC7
- ▶ Warner Brothers
- ▶ Worthe Real Estate Group



# Future Partners

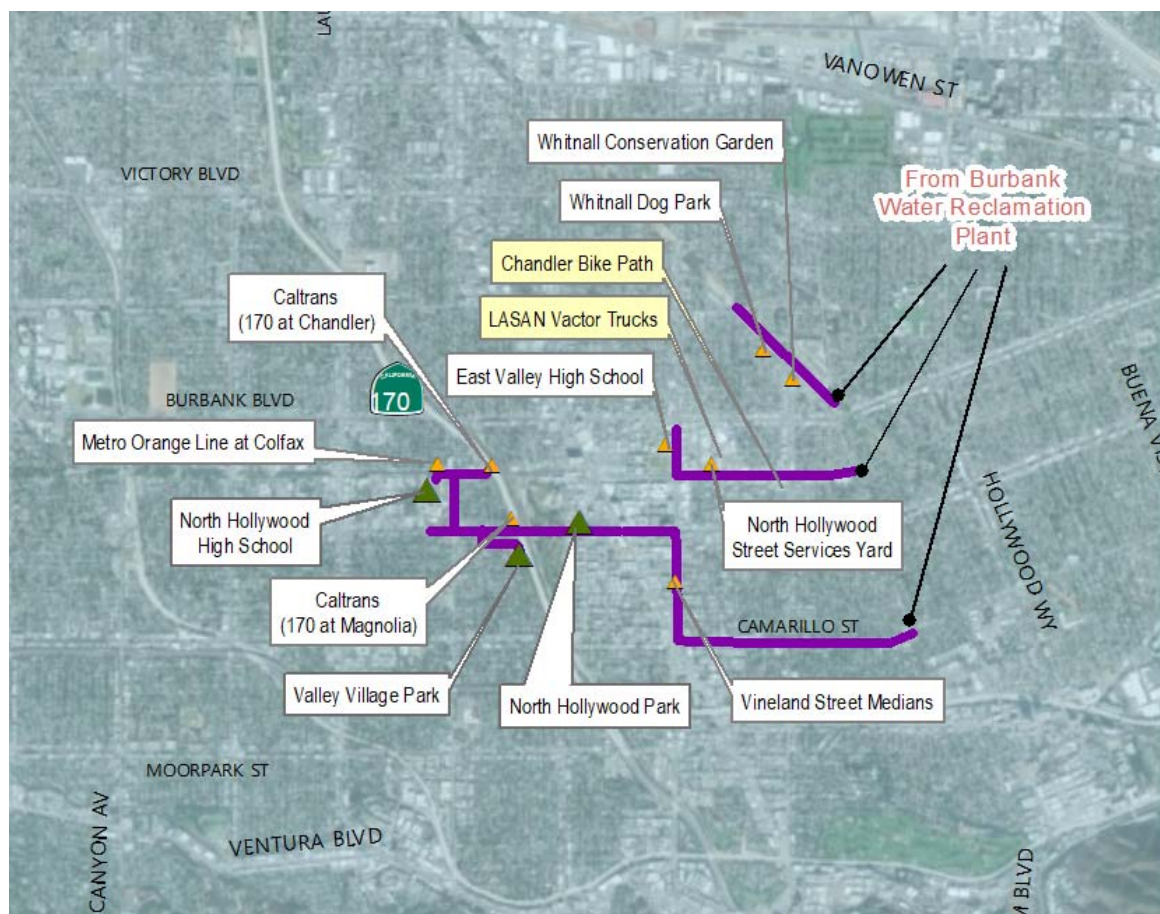
- ▶ Avion Burbank
- ▶ Warner Bros. Second Century Project
- ▶ Burbank Community Chevrolet
- ▶ Hollywood Burbank Airport Replacement Terminal
- ▶ Caltrans I-5 Realignment
- ▶ Burbank Channel Bikeway



Source: Avion Burbank



# Recycled Water Exchange with City of Los Angeles



Source: LADWP

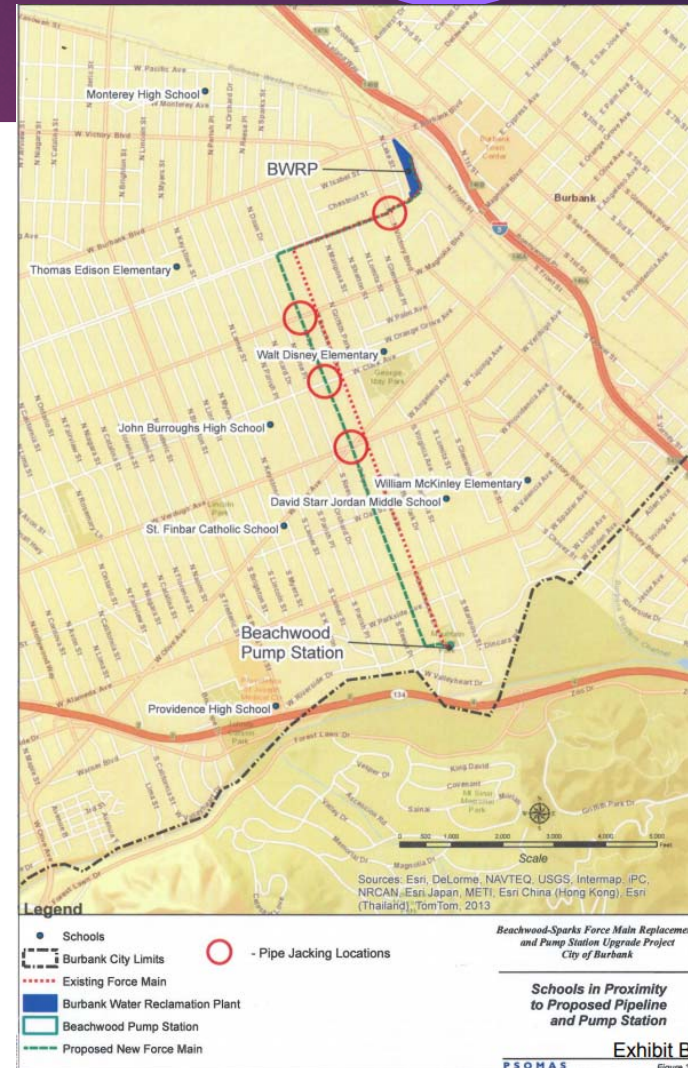


# Losing Half of your RW Supply



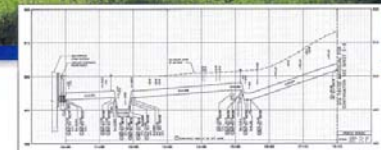
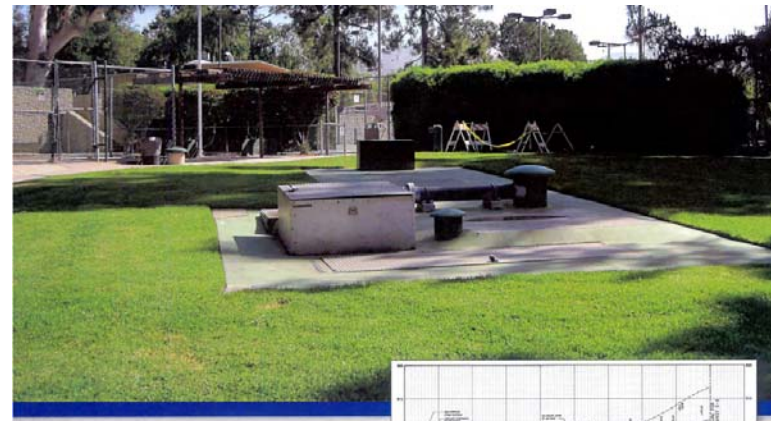
# Beachwood Pump Station

- ▶ Burbank Sewage Flow
  - ▶ Northern half of the City reaches the BWRP under gravity conditions
  - ▶ Southern half flows into the Beachwood Pump Station
- ▶ BWRP treats 8.5 MGD
  - ▶ Design Capacity of 12.5 MGD, requires upgrade
- ▶ Pump Station and Force Main Upgraded in 2015

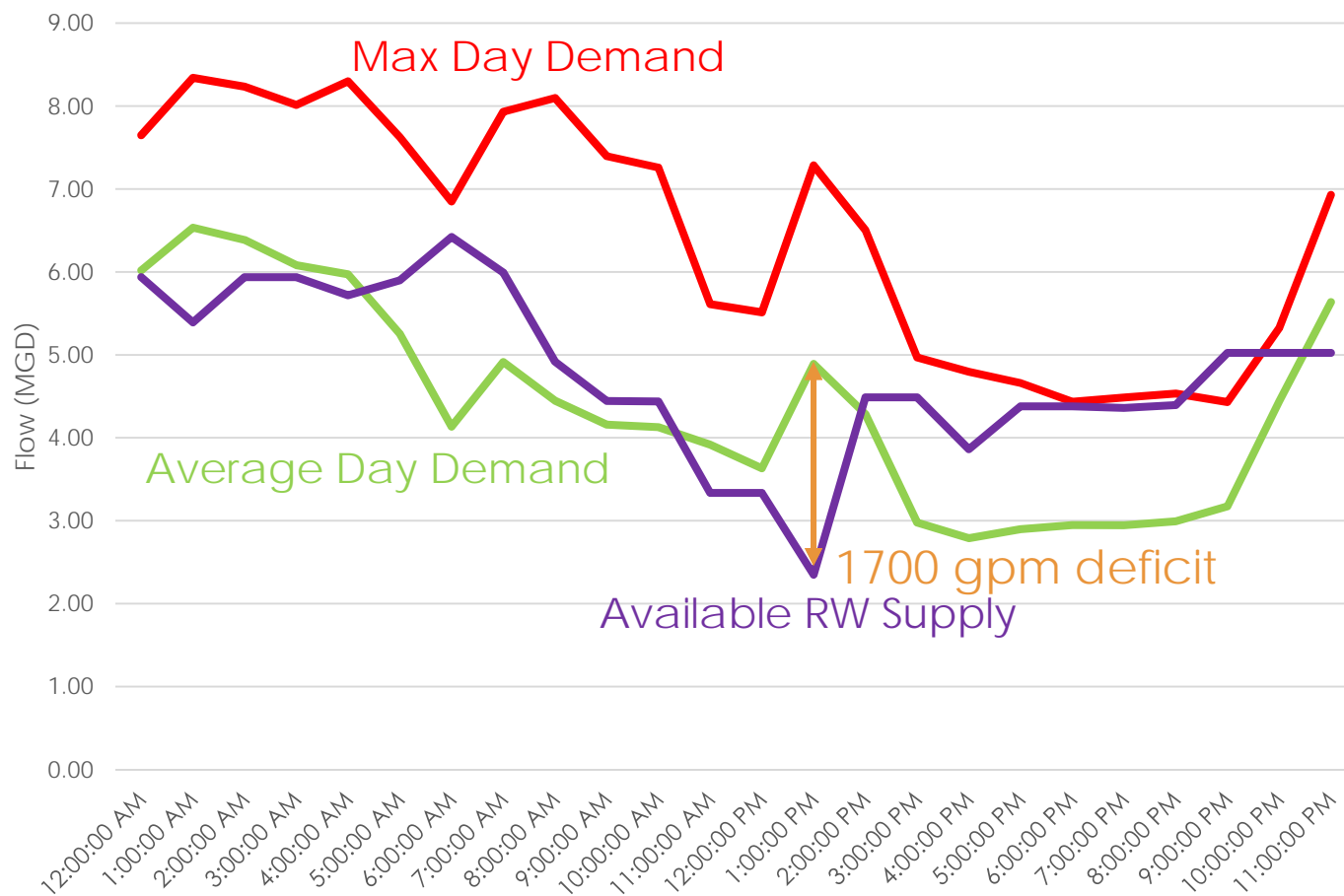


# Pump Station Failure

- ▶ Complete Failure of Pumping Capability in April 2018
  - ▶ Three pumps failed one at a time across a number of months
  - ▶ Noise/vibration issues
  - ▶ Long lead times for repair materials
  - ▶ Limited availability of repair contractors
- ▶ Pump Station Bypassed to City of LA North Outfall Sewer (\$\$\$)



# Affected Supply and Demand



# Supply Mitigation Efforts

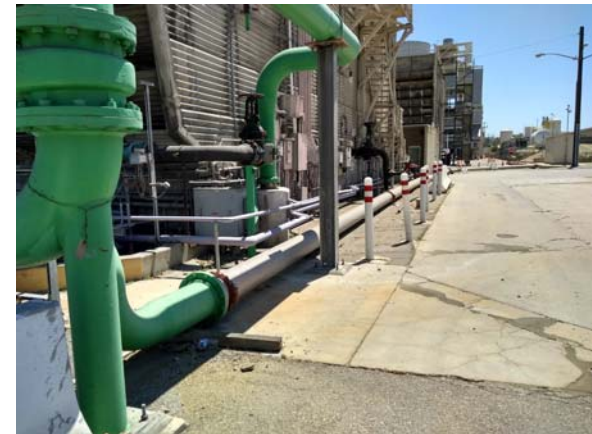
- ▶ Rain For Rent Temporary Pumping
  - ▶ Expensive
- ▶ BWRP Optimization
  - ▶ Difficulty with permit compliance due to 50% reduction in influent
  - ▶ Focused on minimizing exceedances



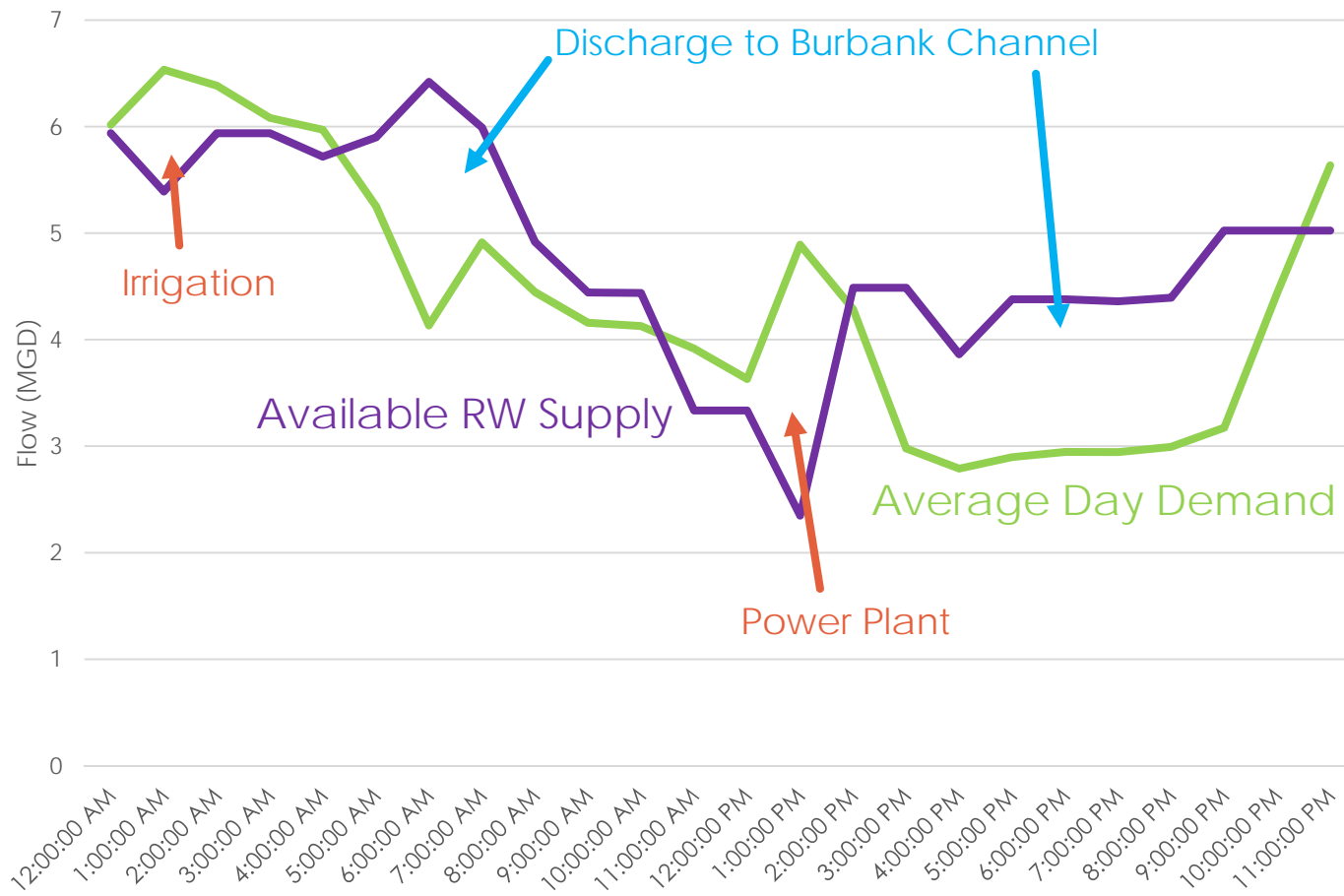
PHOTOGRAPH 1. BWRP Discharge Point 002 into a concrete-lined rectangular open channel looking downstream to the southeast.

# More Supply Mitigation

- ▶ Lake Street GAC Plant (Powerplant Only)
  - ▶ Powerplant Demands typically 500 gpm
  - ▶ Lake Street Well 7 can produce up to 1050 gpm of raw groundwater
- ▶ Glendale Interconnect
  - ▶ Part of the RW system can be supported through RW provided by GWP
- ▶ Potable Makeup



# Demand Mitigation

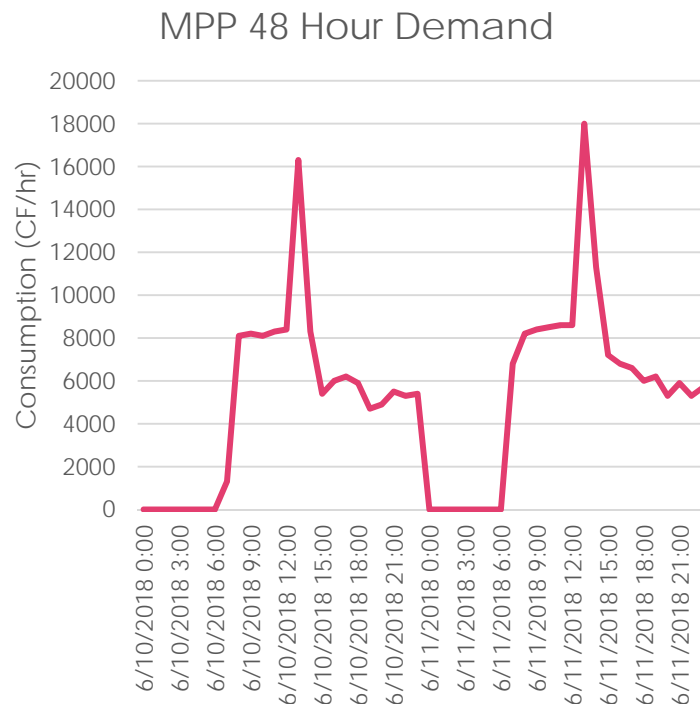


# Demand Mitigation

- ▶ Focused Targets
  - ▶ Magnolia Power Plant
  - ▶ City Owned RW Sites
    - ▶ Parks and Recreation
    - ▶ Medians, City Facilities
    - ▶ Municipal Golf Course
  - ▶ Burbank Unified School District
- ▶ Private Customers Not Targeted
  - ▶ Valhalla Cemetery
  - ▶ Empire Center
  - ▶ Disney
  - ▶ Warner Brothers
  - ▶ Hollywood-Burbank Airport
  - ▶ HVAC Cooling Tower Customers



# Magnolia Power Plant

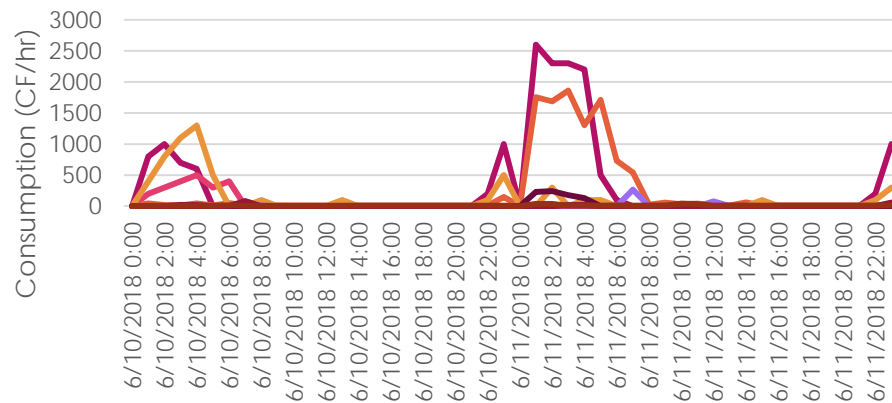


- ▶ Must always have water
- ▶ Regulatory Requirements
  - ▶ Uptime
  - ▶ Must maintain 24 hours of cooling water at max power demand
- ▶ Asked MPP to dial back usage around noon.
- ▶ Developed new Operating Procedures to take RW
- ▶ MPP Operators can turn on GAC Plant at press of a button.

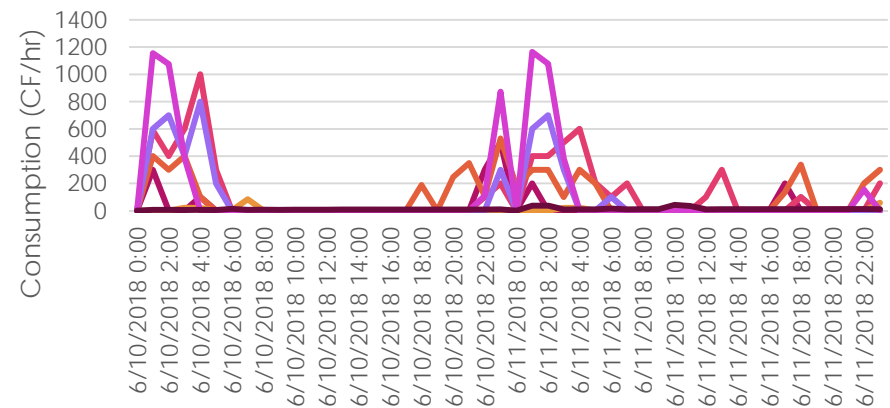


# AMR to the Rescue

## Largest Parks – 48 Hour Demand



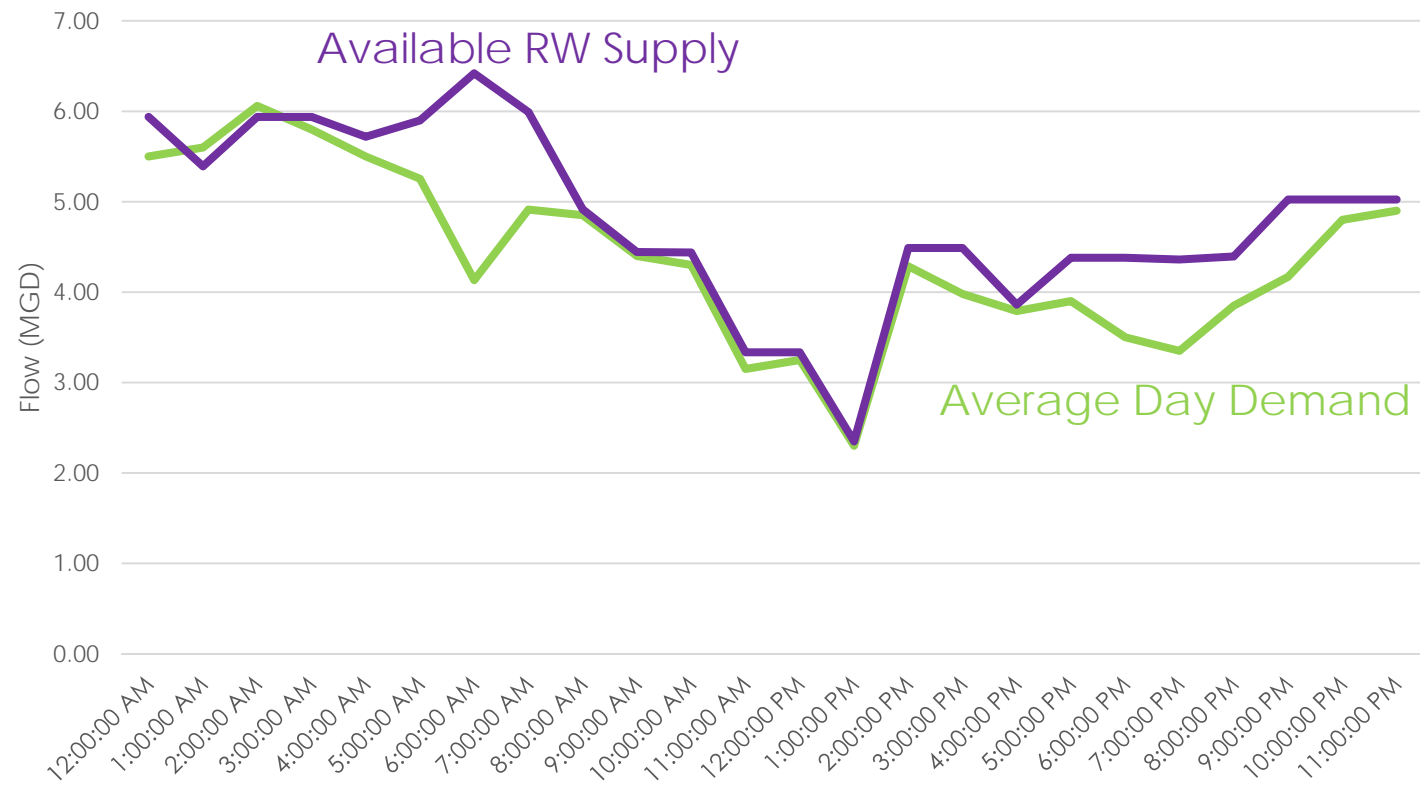
## Largest Schools – 48 Hour Demand



6/11/18 was a Monday

# Results

## Summer Diurnal Demand



# Lessons Learned

- ▶ Recycled Water is a Finite Commodity
- ▶ Develop relationships with your customers, they are eager to help out.
- ▶ Storage Needed in the Valley
- ▶ AMR Data can help customers optimize their usage
- ▶ Demand Management
- ▶ Consultant is conducting a Recycled Water System Optimization Study
- ▶ Avoid letting all your pumps and backup pumps fail



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