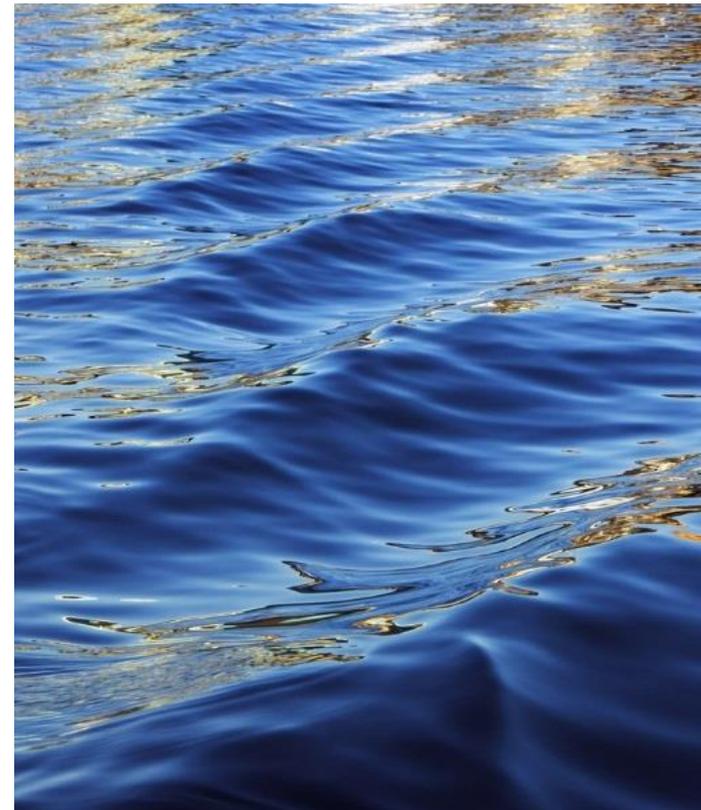
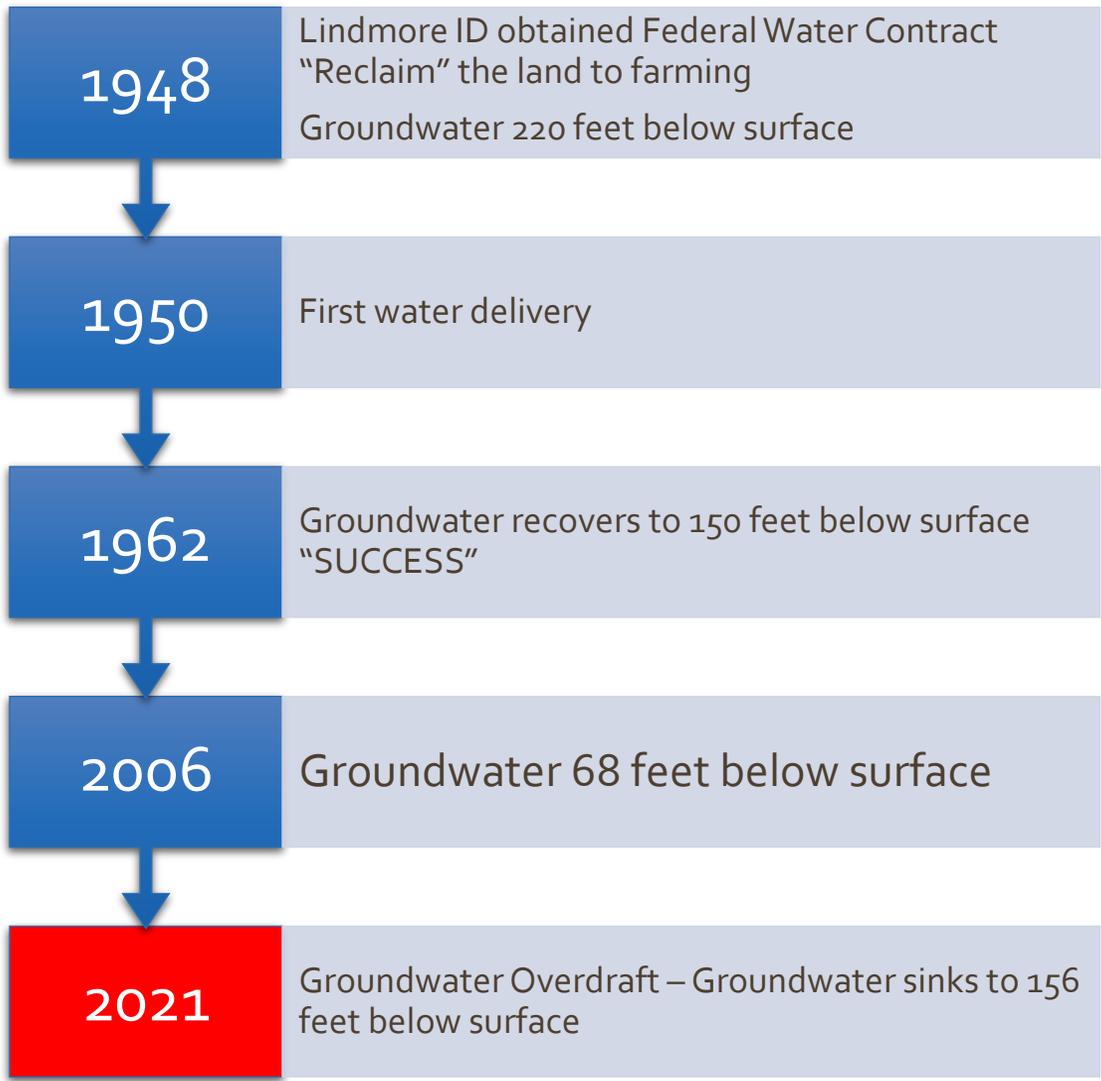




# Lindmore Irrigation District

Growers Meeting – February 15, 2022

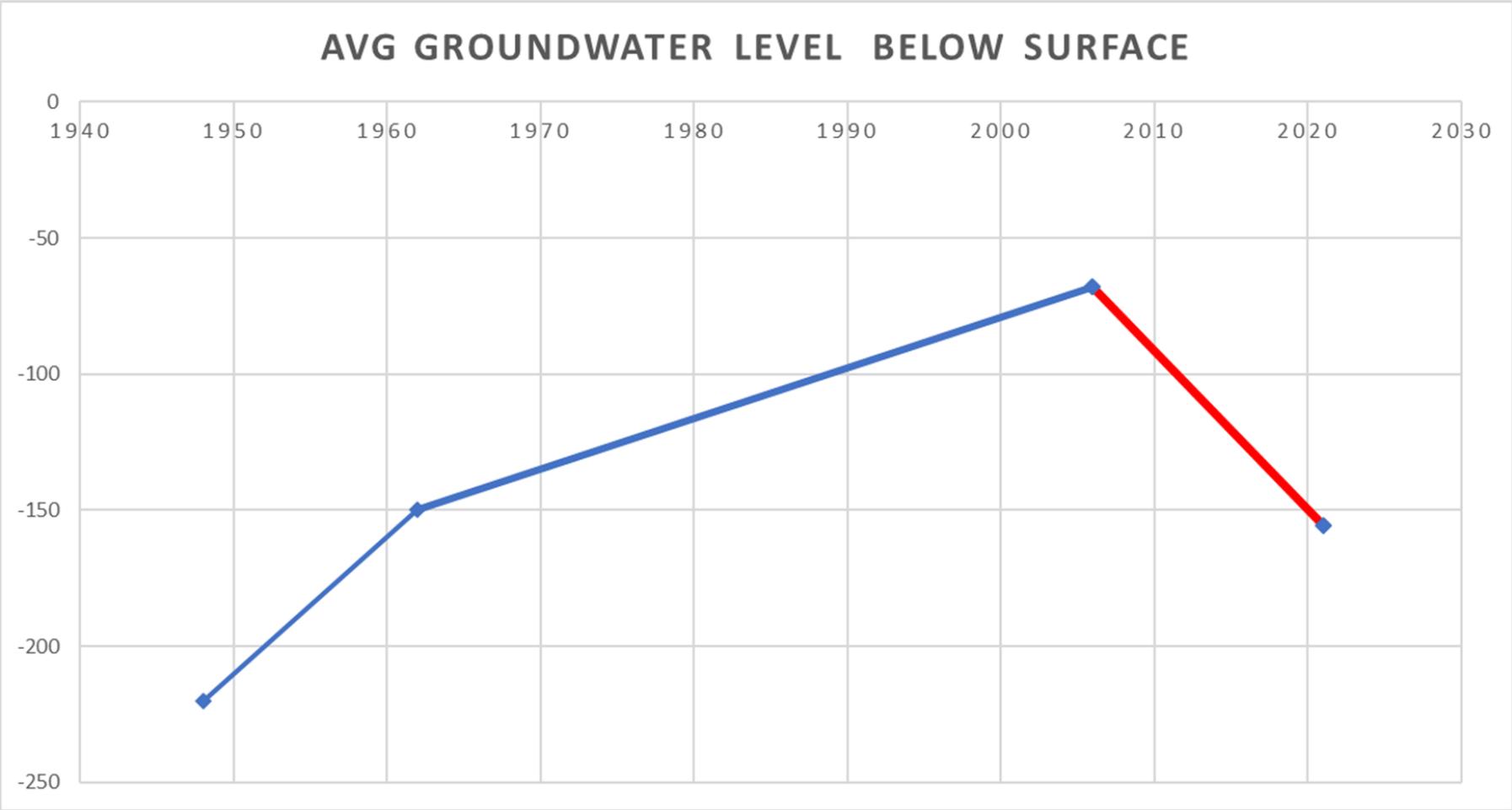




# Lindmore ID Water Supply History

22, 500 Acres of Lindmore ID Land to be Farmed  
60,000 AF Per Year - Total Water Demand  
CVP Contract – 33,000 AF Class 1 / 22,000 AF Class 2

# Groundwater Recovery and Depletion 1948 - 2021



# Lindmore Operations and Groundwater Sustainability

- Why are the ground water levels going down if we are getting surface supply?
  - Estimated farmed acres in CVP study was 22,500 actual is 23,560 acres
  - Estimated ET for this 23,560 acres is 62,500 annually (2,500 AF more than CVP Study)
  - Estimated Historical Native GW Inflow 24,500 TAF annually
- To meet total demand and be sustainable, LID landowners surface supplies of an average 38,000 AF (based on basin setting)
- Problem 1 (80% of total problem) – SURFACE SUPPLY DROUGHT since 2007:
  - Prior to 2007 annual average deliveries were 41,000 AF/year
  - From 2007-2021 the average annual irrigation water demand (measured by ET) was 62,500 AF/year
  - From 2007-2021 the average annual delivery of surface supply was 28,000 AF/year
  - From 2007-2021 the average annual groundwater inflow was 20,000 AF (estimated)
  - Average annual calculated overdraft was 14,500 AF per year
- Problem 2 (20% of total problem) – DROUGHT FOR EVERYONE ELSE
  - Our western boundary is substantially farmed on groundwater only. Less rain means more pumping. Their only source of water is what is under them.

# What is causing the drop in groundwater?

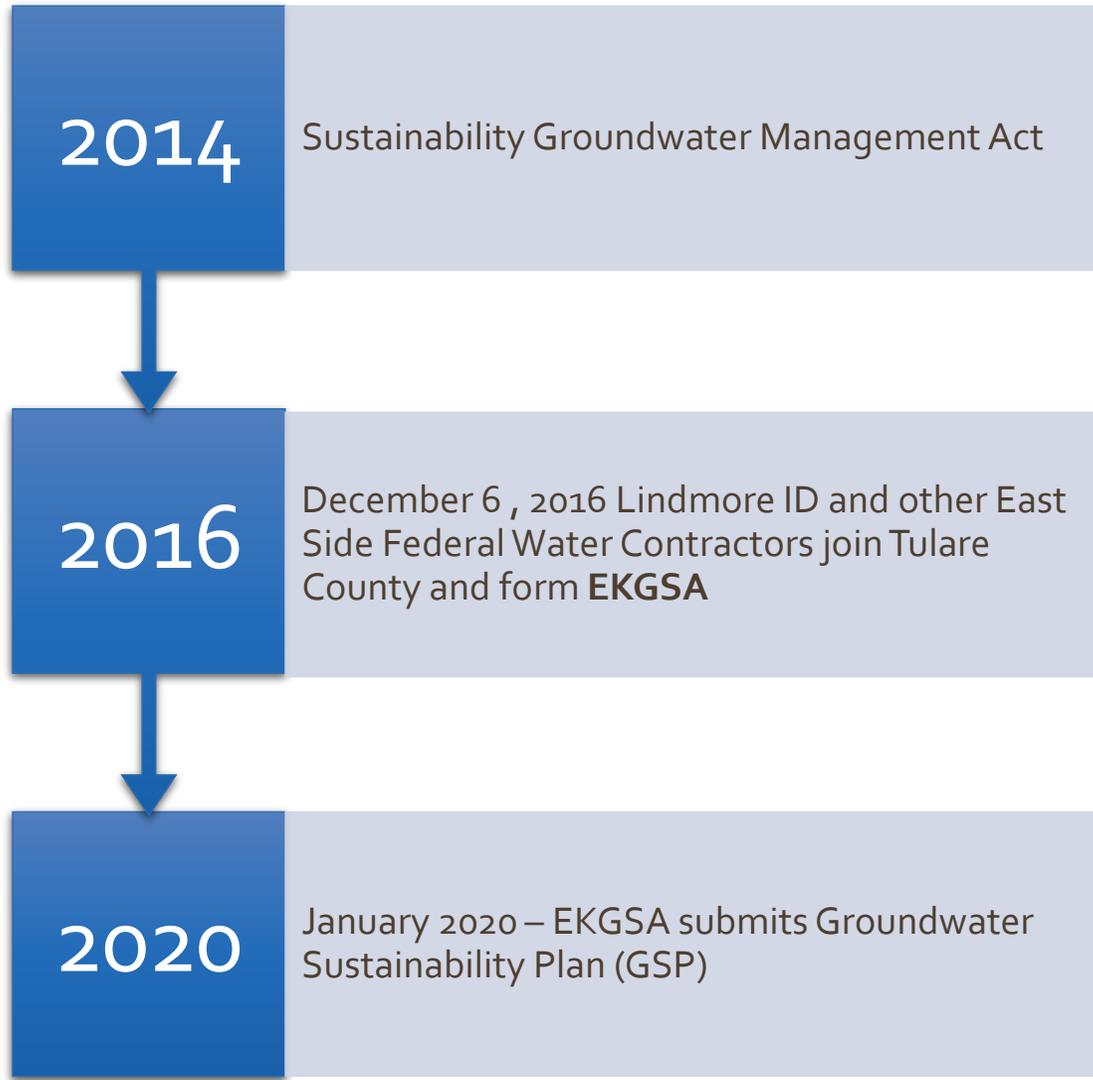
- Federal CVP supplies based on 22,500 farmed acres
- Federal CVP supplies based on 60,000 AF of demand
- Groundwater Inflow Based on 24,500 AF

	CVP Study	Actual	Variance
Acreage	22,500	23,560	1060
AF Demand	60,000	62,500	2500

## Return to Balance

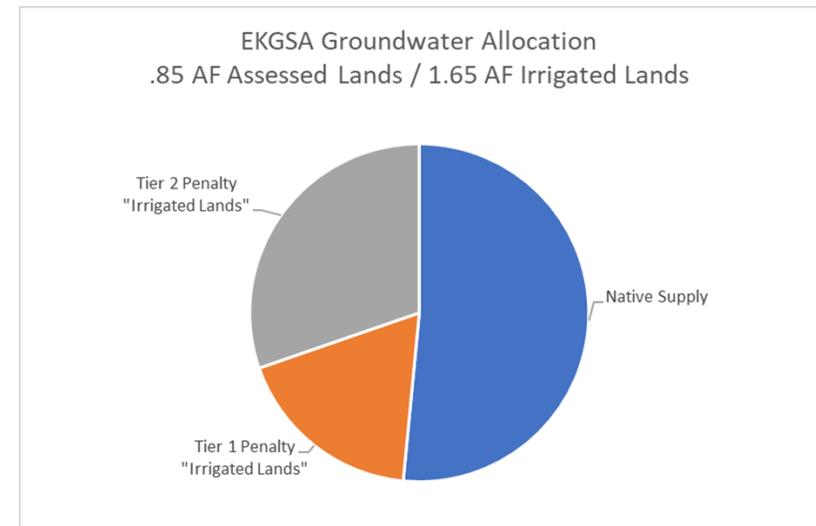
- Estimated Native GW Inflow 24,500 AF Annually
- Lindmore Surface Supply Requirement **38,000 AF**

Years	GW	Surface	Demand	Overdraft
Prior - 2007	21,500	41,000	62,500	0
2007 - 2021	20,000	28,000	62,500	14,500
Balance	24,500	38,000	62,500	0



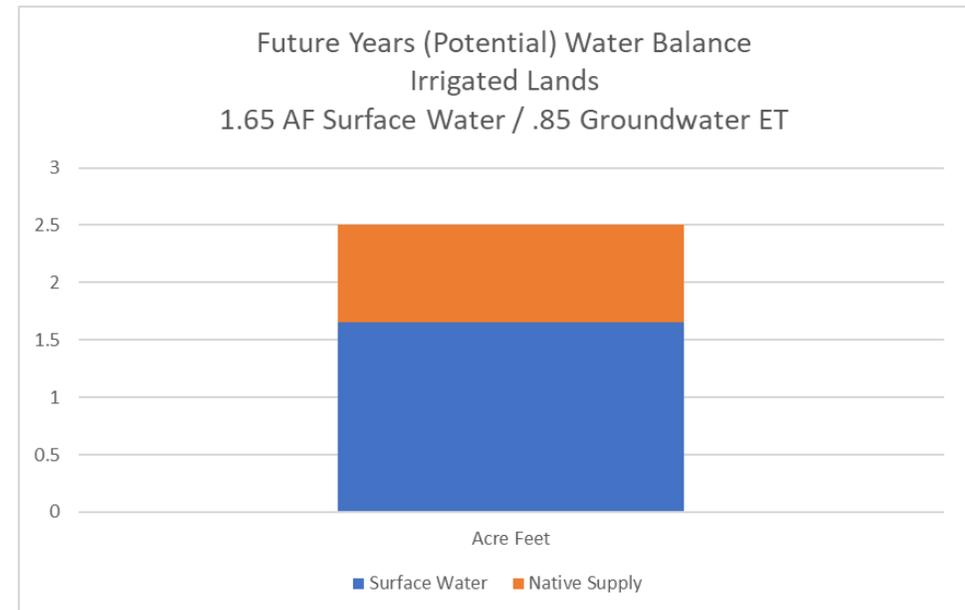
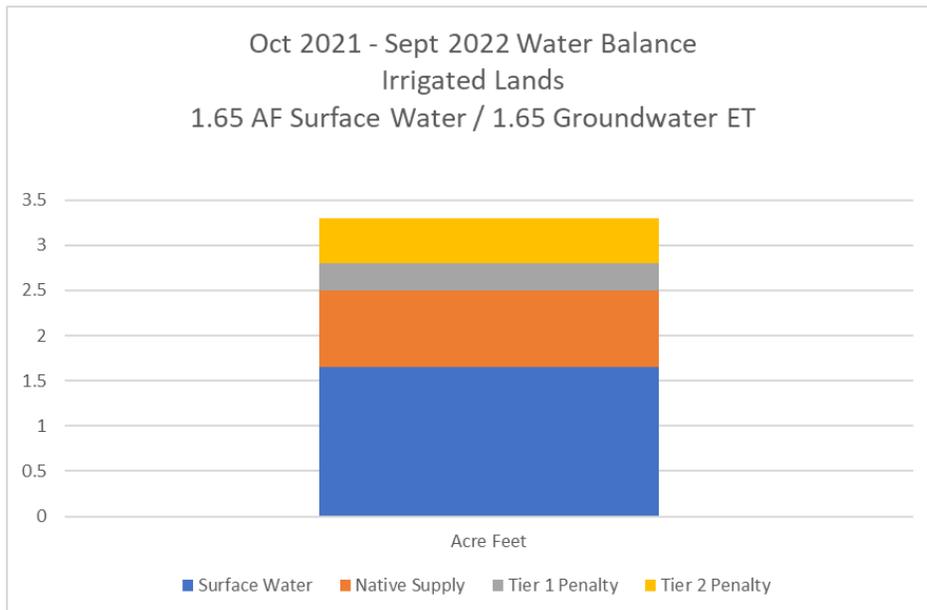
## SGMA, EKGSA, GSP and Allocations

- Lindmore ID Landowners
  - 2007 – 2021 – 217,000 AF basin overdraft
  - 2017-2021 Overdraft estimated @ 35,000 AF
- EKGSA establishes groundwater allocations on the 92,500 AF of Native groundwater inflow to limit extraction “equitably”.



# Lindmore ID landowner water balance

- On average estimated surface supplies need to be above 38,000 AF annually
  - If LID can accomplish >38,000 AF estimated surface water allocation to APN parcel acres will be about 1.60 AF
  - EKGSA allocation is .85 AF per APN parcel (always greater than farmed acreage)
  - A parcel acre is the APN's actual parcel size. Irrigated acres typically less.
- ET is also known as “consumptive use”. It is only the water that is evaporated or transpired from the irrigated land.
  - Applied water is all the water that is delivered on a parcel (all sources)
  - ET should always be less than Applied.
  - An irrigator that has an efficiency of 95% will be better off than a lower efficiency irrigator



# What is an LID Landowner Paying For?

## Operations, Maintenance, Administration

Dollars in Millions

	Assessments	Water Rates	Power Plant	Other	Total
Revenue	2.5	3.0	1.0	0.6	7.1
	OM&A	Water Supply	Proj/Res		
Costs	1.9	4.5	0.7		7.1

# What is an LID Landowner Paying For?

## Projects

Total estimated additional water supply to the District landowners of about 4,500 AF annually, at a cost of about \$75 AF

Year	Project	Cost	Benefit	Water Supply Benefit
2010	Canal Automation	500,000		
2015-2025	JB Replacement	750,000		
2017	Hirabayashi Recharge Facility	700,000		275 AF Per Year
2018	Pumping Plant Upgrade	245,000	20,000 Yearly Energy Saving	
2021	Ave. 208 Recharge Facility	7,800,000		1,675 AF Per Year \$155 AF 30-year capital cost
2021	Refinance / Debt Acquisition	0	\$8,000,000 in capital	
2023 (est)	Mariposa Basin / Lewis Creek Recharge	750,000		2,750 AF Per Year \$50 AF 30-year capital cost

# The District Operates for All Landowners Paying an Assessment

## Tulare Irrigation District deals:

- In 2012 LID stopped selling water out of the Kaweah Subbasin.
- In 2013 LID developed an agreement with TID to take a substantial portion of their 2013 CVP allocation in exchange for LID returning twice as much in a future wet year. We also took 1,500 AF of URF in 2021.
- This TID relationship has netted LID about 8,000 AF of dry year water since 2012. LID has returned the entire amount owed by January 31, 2022. This was also done while still delivering full District demand in 2012, 2013, 2016-2021. In fact, LID nearly maxed out its contract allocation in 2017 (45,000 AF) and 2019 (51,000 AF) as well as paying back TID. The additional supplies were paid back from Class 2 supplies to TID as well as exchanging RWA/URF 2/1 with a neighboring district (LSID) in 2019.
- **What about the additional USBR Allocations in 2021?**
  - LID finished paying back TID 2,500 AF and parked another 2,400 AF in TID to be paid back at 50% (1200 AF next year)
- **Why didn't the District just let landowners put that water in their private recharge basins?**
  - Five of the District's six lines were down for repair, three of which were main line repairs (reminder: its 71 years old and needs to be fixed).
  - LID was fully running the remaining line (5<sup>th</sup> Avenue – which now will have to go down for two mainline leaks before it can take water during irrigation season) for recharge into Hirabayashi Recharge Facility.
- **The quickest way to groundwater recharge is by not taking water out of the ground. Groundwater recharge takes about 40-50 years to become usable in the ground. While reduced pumping is immediate. In other words, ground water levels recover sooner with more surface water delivered for irrigation in lieu of pumping groundwater for irrigation.**

# Plan Going Forward

- LID recharge facilities are gearing up to take additional wet year supply.
- Some years LID will still need additional recharge capacity. LID will work with the EKGSA to put water in other areas of the subbasin (down Cottonwood, Yokohl, Rancho de Kaweah, others).
- Dry Wells are being studied by the EKGSA to ascertain benefits during wet years. These wells will be about 75 feet deep and will take about 25-150 GPM on approximately 20 square feet of space. This process is NOT injection (these wells leave about 80-100 feet of space between groundwater supply and the entry point). As a comparison, a spreading basin in LID will take about 50-225 GPM spread on 1 acre of land (and mostly on the lower end of that range).
- Dry Wells, when approved, can be operated from existing district turnouts and that additional wet year delivery will raise the head gate values of water delivered to LID lands. This project is estimated to cost \$2,000,000 and will add another 25 CFS of capacity and spread the infiltration across the District.
- As a reminder, LID operates for all landowner's benefit. We have offered, and will continue to offer, recharge water when District supplies exceed District demand and when our system is not off for maintenance. This will be done on a notice basis and won't be specific to individual landowners. It will be available to all who desire to participate.