Salinas Valley Basin Groundwater Sustainability Agency
Seawater Intrusion Group (SWIG)

MONTEREY COUNTY WATER RECYCLING PROJECTS PAST, PRESENT, AND FUTURE

September 28, 2020

Monterey County Water Resources Agency

Monterey One Water
Providing Cooperative Water Solutions

Monterey Wastewater Reclamation Study for Agriculture 1976-1987

MC Environmental Health, Planning, Public Works,& MCWRA, CCC, Ag, Grower-Shipper, CA Artichoke and Vegetable Growers, Univ. of CA, M1W, RWQCB, DWR, DFA, EPA, CA Dept. of Health Services, MBAG, etc.

Past – When Were the Projects Built?

1989

- Regional Treatment Plant (RTP): primary and secondary treatment of wastewater discharged to the ocean outfall

1998

- Salinas Valley Reclamation Plant (SVRP): tertiary treatment of wastewater for agricultural irrigation use
- Supplemental Wells: wells to meet irrigation demand when plant is not operating (back up plan)
- Castroville Seawater Intrusion Project (CSIP) distribution pipeline in Zone 2B to deliver the recycled water and well water for irrigation

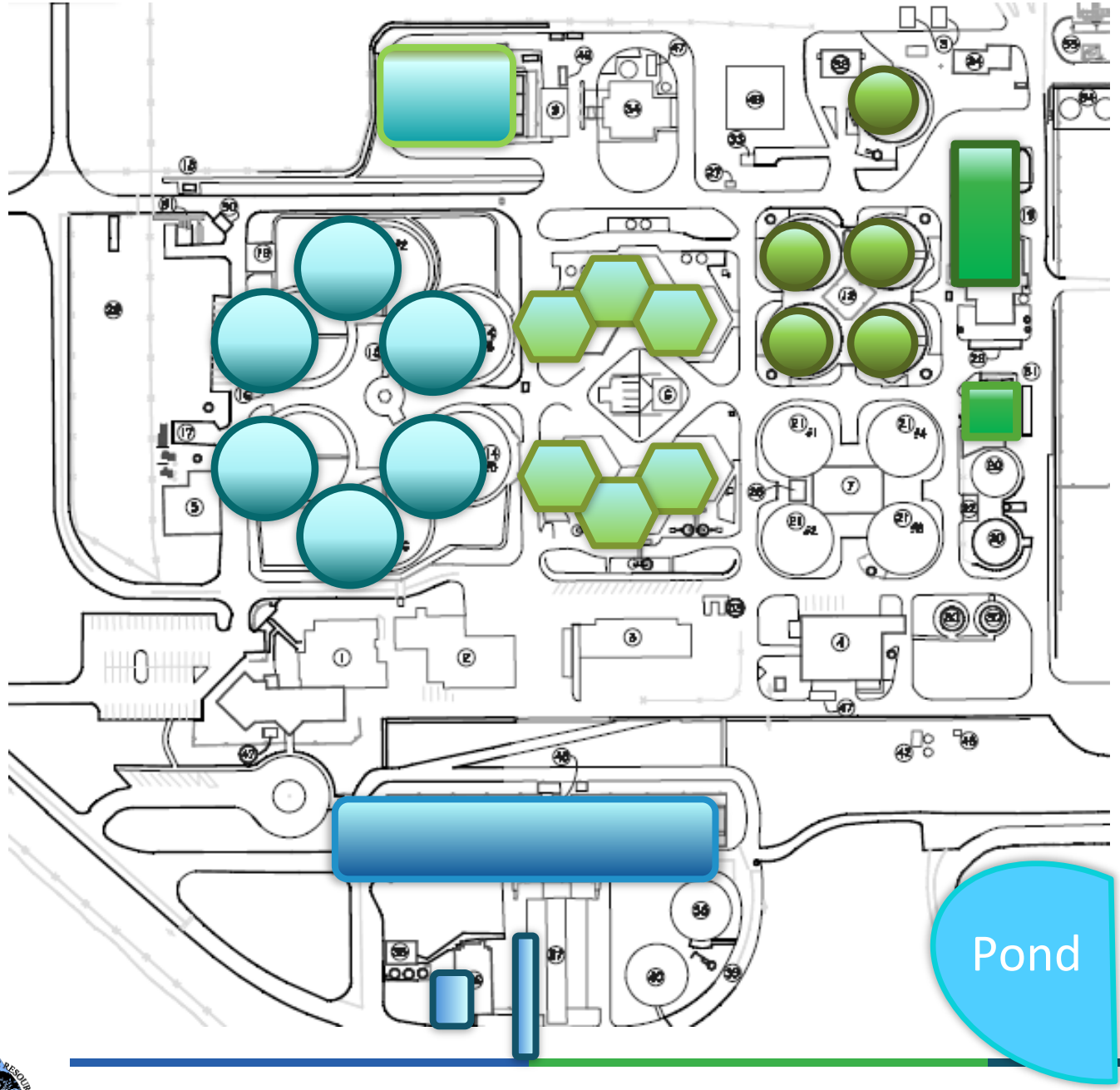
2010

- Salinas River Diversion Facility (SRDF): seasonal diversion of river water to supplement recycled water

2019

- Rec Ditch and Blanco Drain diversion facilities to augment wastewater

Projects



Headworks

Grit Removal

Primary Clarifiers

Trickling Filters

Aeriation Basins

Secondary Clarifiers

Flocculation Basins

Filtration Basins

Chlorine Contact Basins

Projects

Projects


East Chlorine Contact Basin
West Chlorine Contact Basin
STOP
STOP

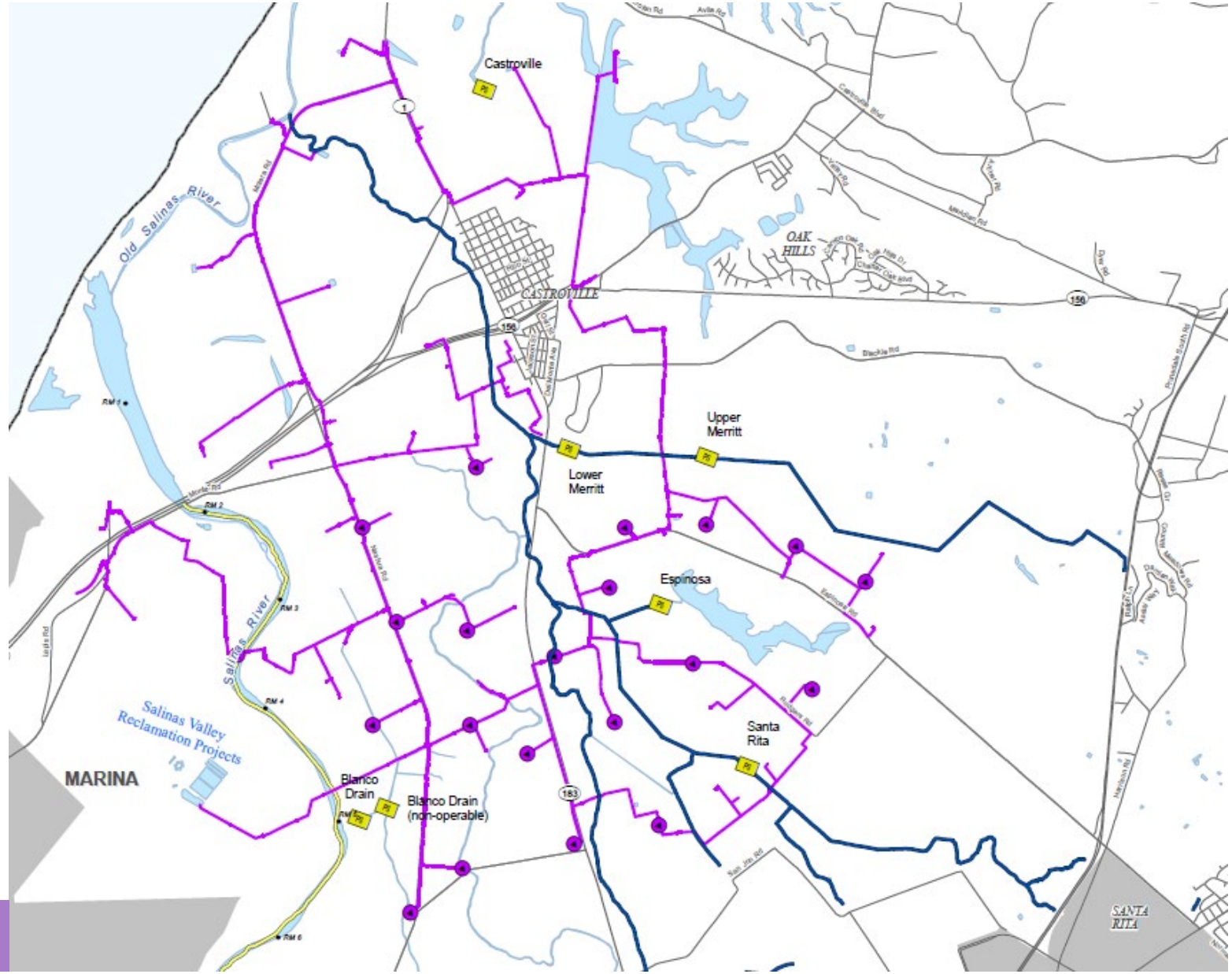
Projects

DISTRIBUTION SYSTEM

Castroville Seawater Intrusion Project (CSIP)

- 48 miles of pipeline
- 21 supplemental wells
- 222 parcels
- 112 turnouts
- 9 monitoring stations
- 3 booster pumps stations
- $37M Capital
- $1.7M Annual O&M (excludes loan payment)

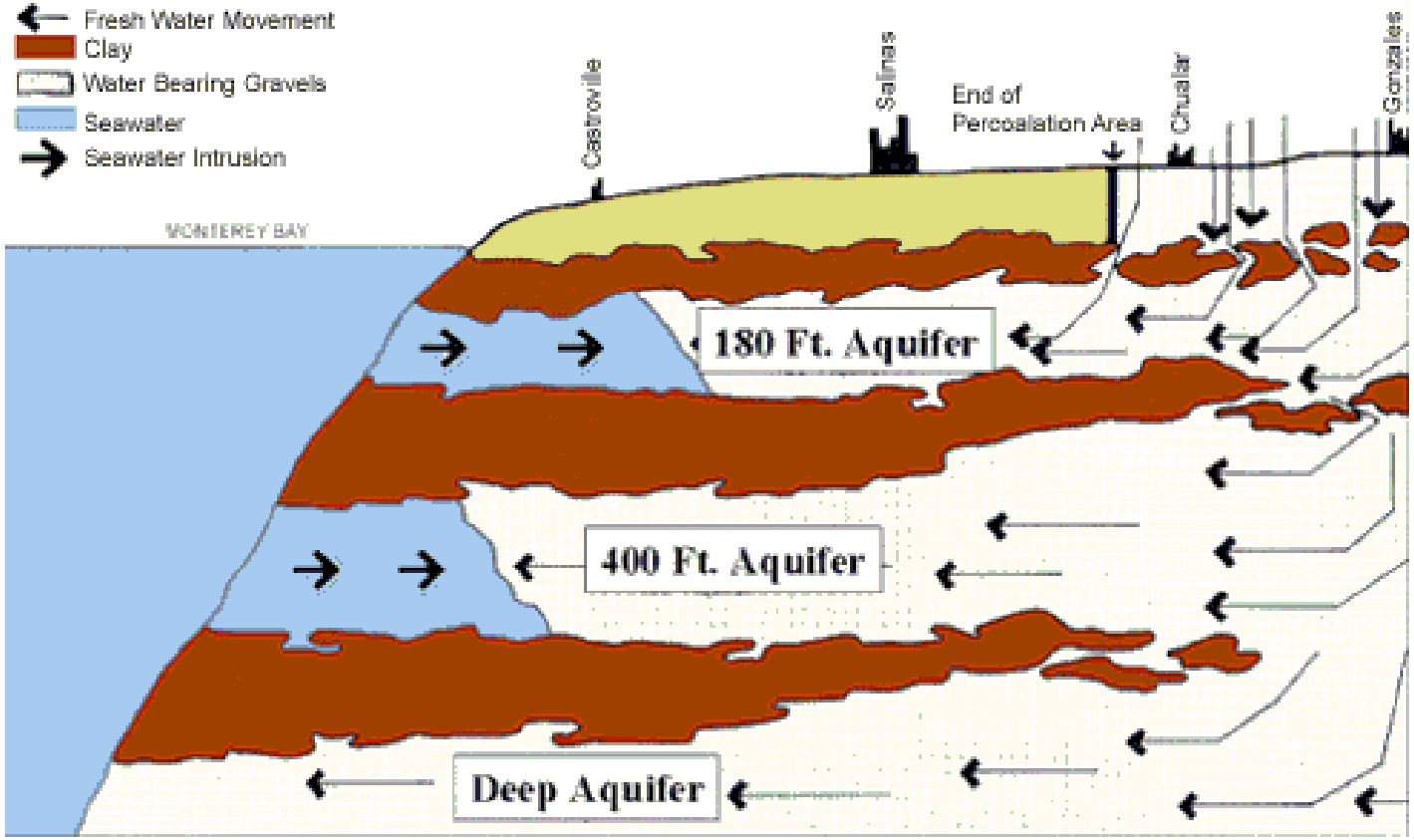
12,080 acres



Past – Why Were the Projects Built?

- CSIP and the SVRP became operational in 1998 to address seawater intrusion occurring near the coast of the Salinas River Valley.

- Purpose of CSIP & SVRP was to reduce the rate of seawater intrusion into the Pressure 400 (P400) Aquifer by 50%.



Past – Who Paid For it?

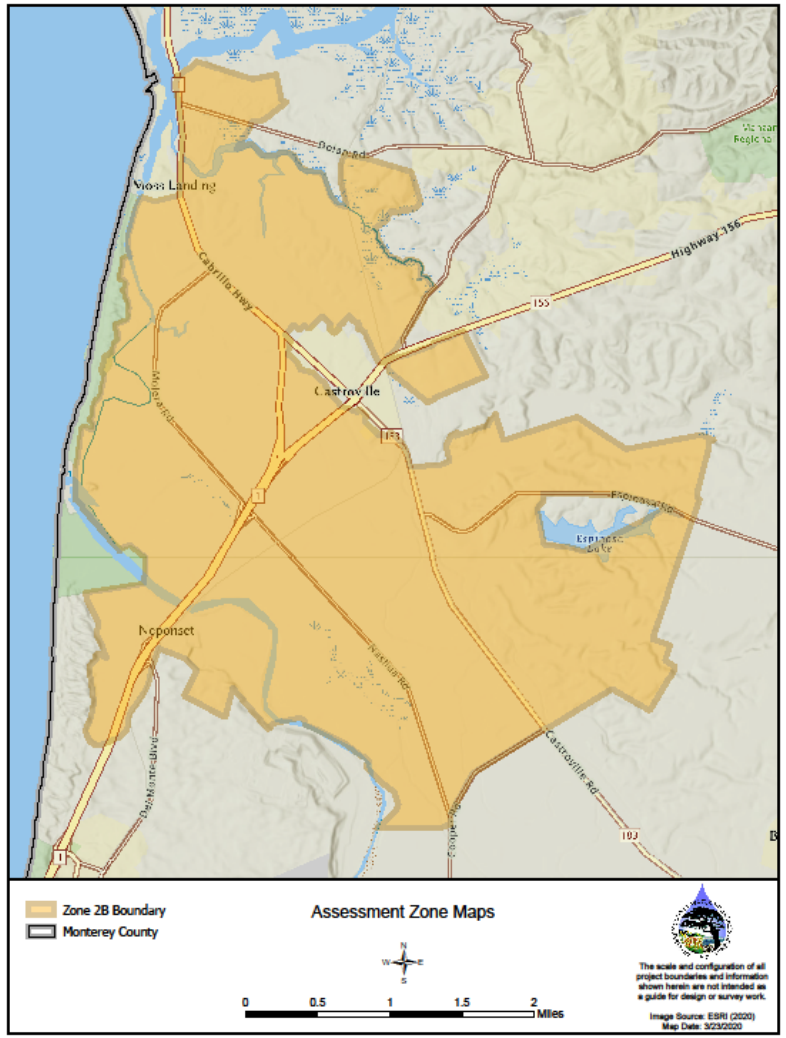
Annual Assessments

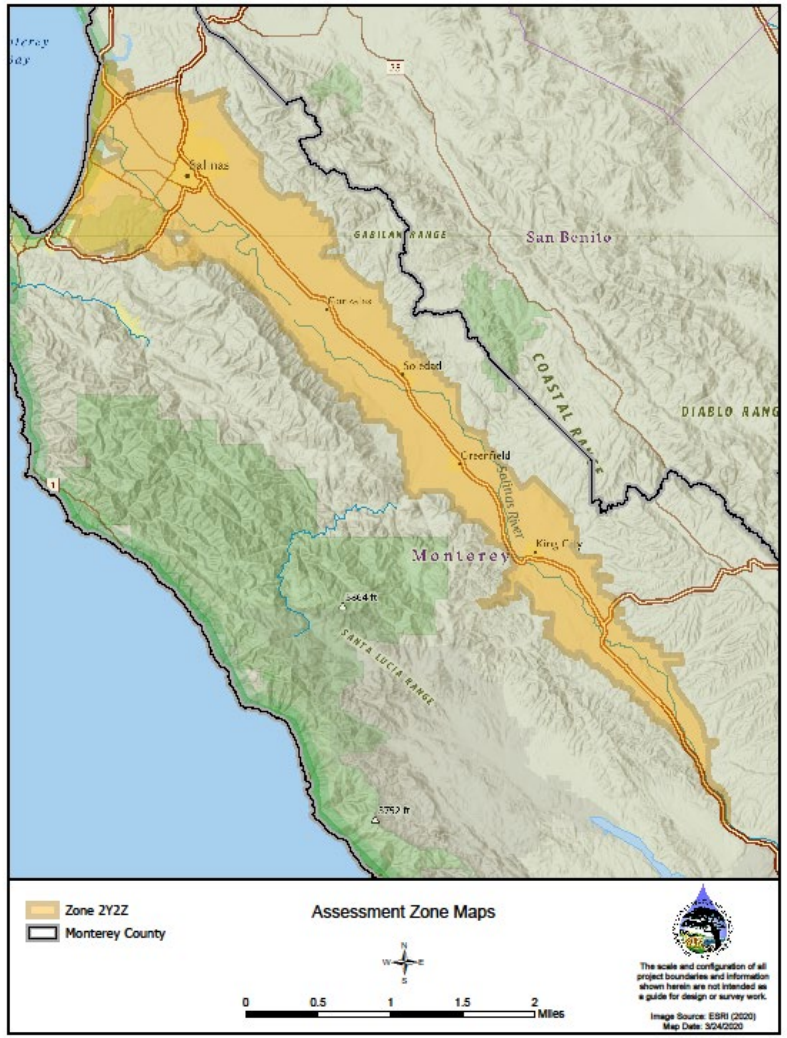
- CSIP: Debt Service and O&M
  - MCWRA Assessment Zones 2B and 2Y - $4.1M/annually
- SVRP: Debt Service and O&M
  - MCWRA Assessment Zones 2B and 2Z - $4.2M/annually
- SRDF: Debt Service Only
  - a portion of MCWRA Assessment Zone 2C –$1M/annually

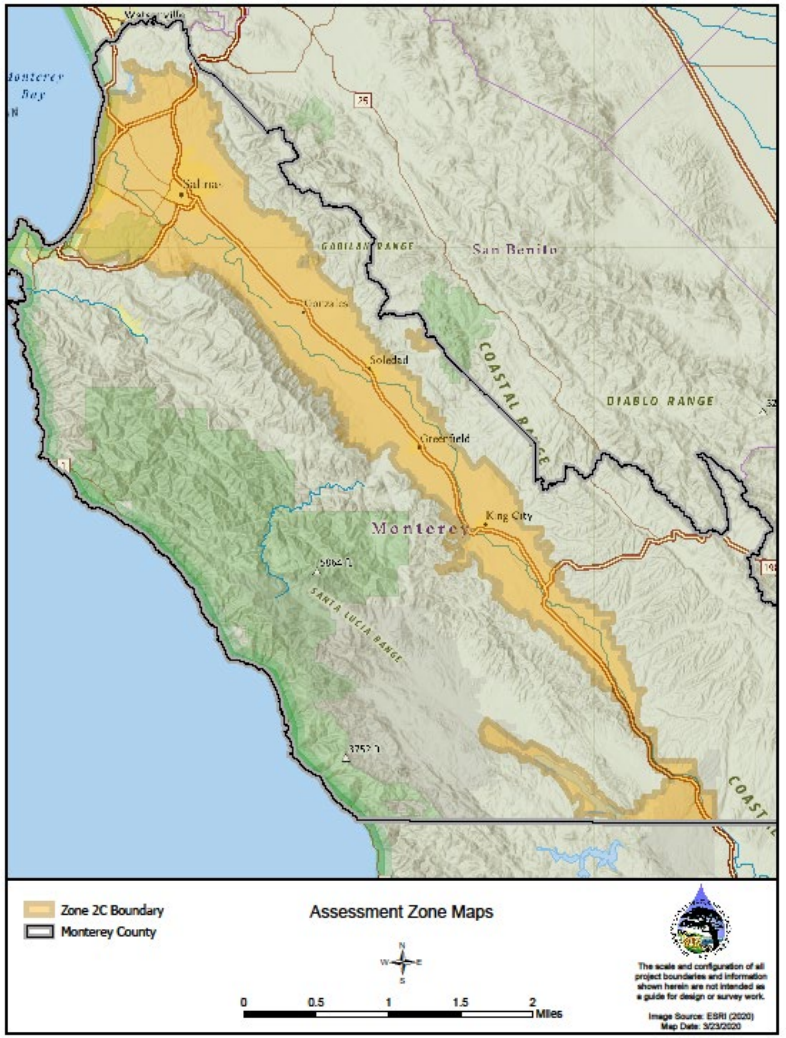
Operational Costs

- Water Delivery fees paid by users (Zone 2B) based on actual water use - $1.8M/annually

Past – Who Paid For it?







Past – What could have been done better ?

- Implement a Robust Water Order Program from the start
  - Electronic system to track availability
  - Scheduling and approvals based on availability
  - Monitoring & enforcement of water use
- Reduce impacts from Value engineering
  - Pipe size reduced
  - Valves and meters downsized
  - Pond size
- Eliminate single points of failure
  - e.g. chlorine scrubber, backup power limited
- Allow for winter operations
  - When demand is below 5 MGD

Present – MCWRA and M1W Roles

Long-term Agreement between MCWRA and M1W (12/31/2045)

- Estimated Cost, Financing, and Construction of the New Source Water Facilities
- Ownership, Operation and Maintenance of CSIP, SRVP, SRDF & New Source Water
- Allocations and Delivery of Recycled Water
- Payments, Accounting System, Reports, Indemnification, Insurance
- Repair & Modification of Facilities
- Other

Present – MCWRA and M1W Roles

	Ownership	O&M
CSIP	MCWRA	MCWRA/M1W
SVRP	M1W	M1W
SRDF	MCWRA	M1W
Rec Ditch	M1W	M1W
Blanco Drain	M1W	M1W
RTP	M1W	M1W

	Wastewater in 2001 boundary	Wastewater out 2001 boundary	Supp. wells	SRDF	New Sources	Other sources
M1W	650 AF in summer and any unused	½- Flow			100% then 4320 AFY if MCWRA in	Separate agreements
MCWRA		½-Flow	100%	100%	Remaining available water if buy in	
MCWD	All inflow, limited to 300 AF in summer					

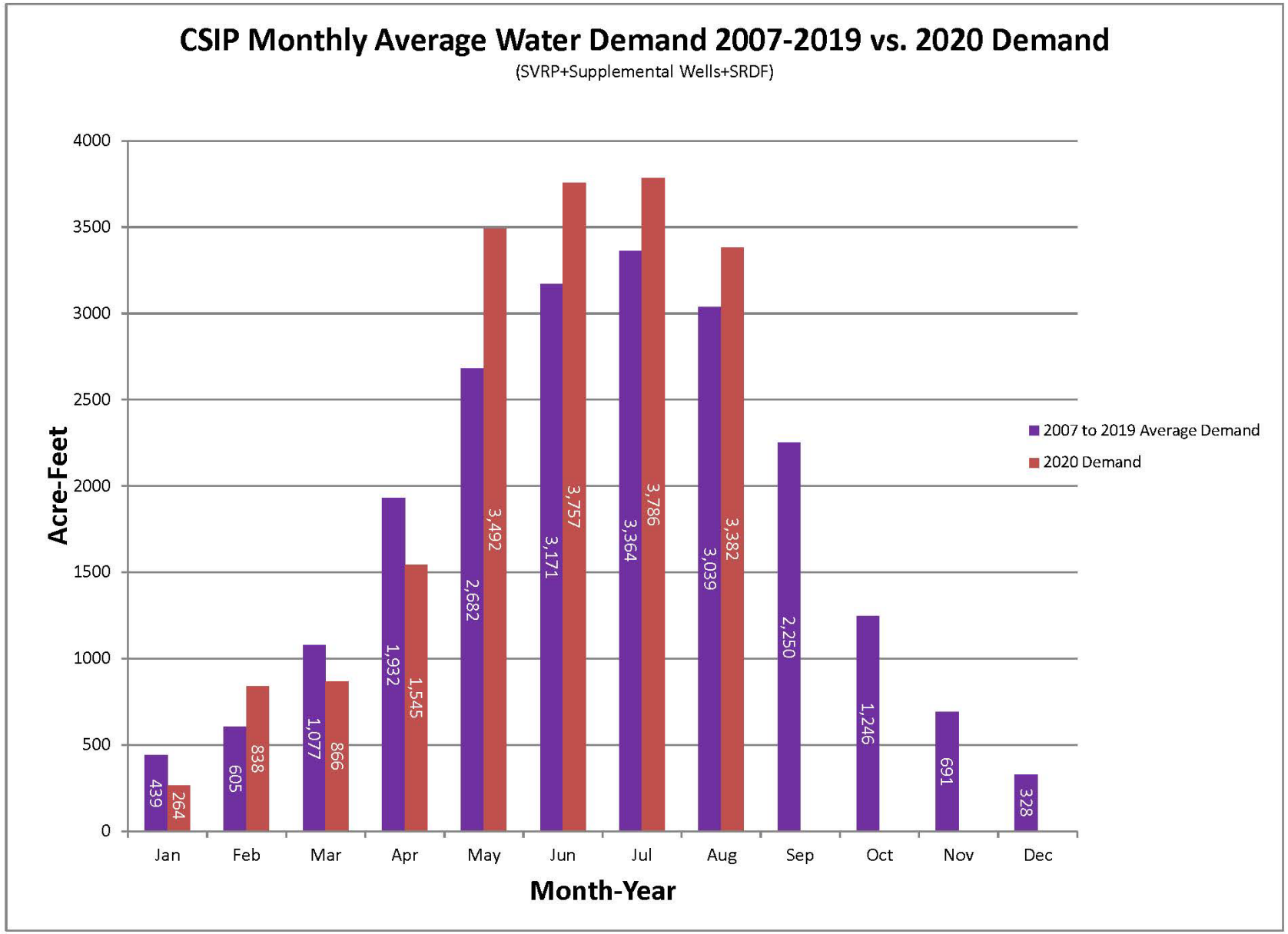
Present – Physical System

- 22 years old and some components nearing end of life
- What needs to be fixed (some examples)
  - Replace aging infrastructure e.g. valves, concrete
  - Upsize identified valves and meters that are restricting flows
  - Restriction of flow off the hill requires well use
  - Flow control valves at each site (grower owned and maintained)
  - Redundant equipment to reduce plant downtime
- How does it get paid for – water users within Zone 2B pay for operations and maintenance

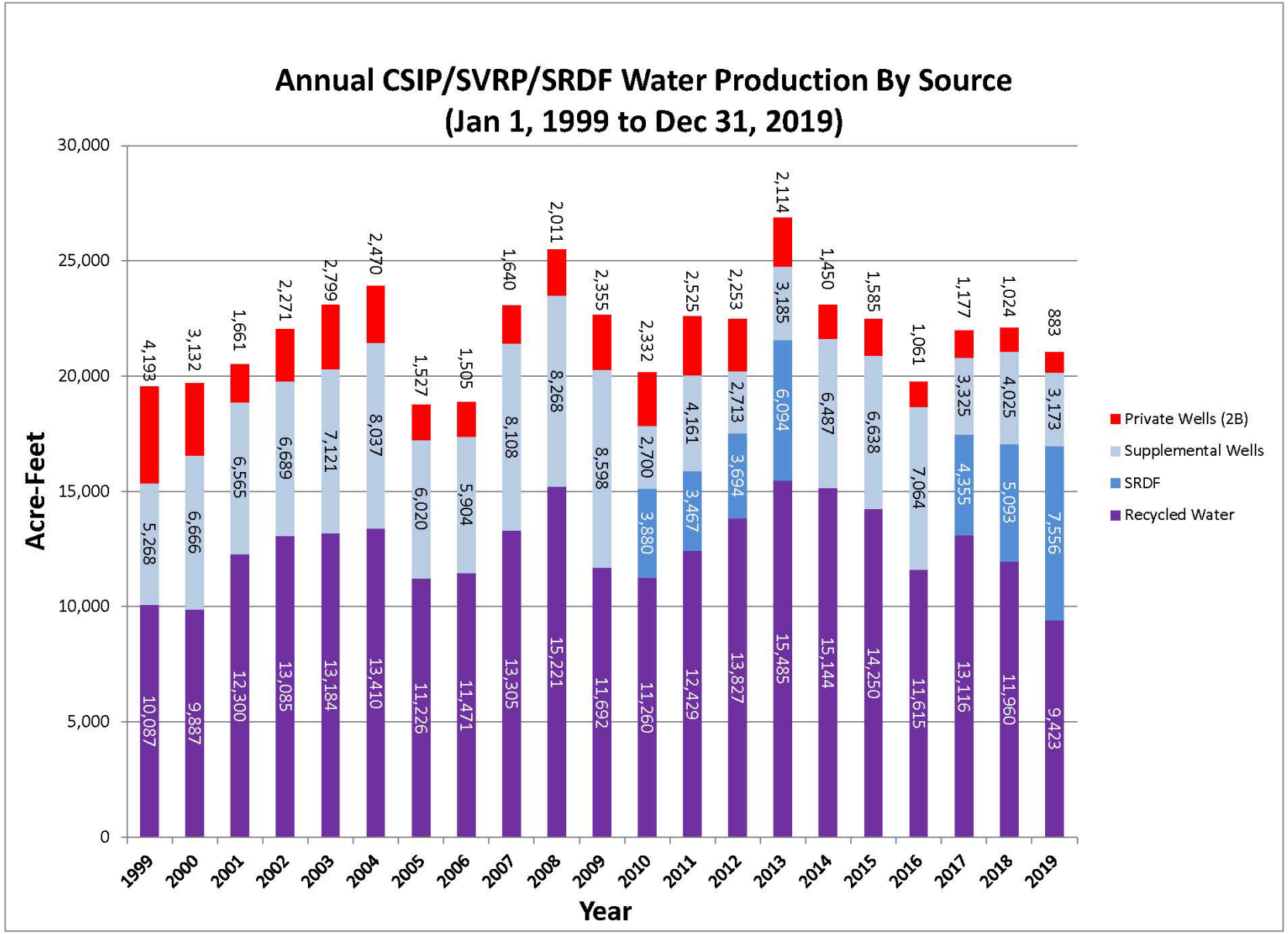
Present - Operations

- What's working and what isn't
  - System is meeting current grower demand
  - Revenues have not kept up with all necessary expenditures
  - Plant inflow did not increase as anticipated, it has decreased
- What needs to get fixed
  - Reduce peak demands to help deliver more water in total e.g. 24-hour irrigation
  - Exercise valves to maintain function
  - Address periodic system pressure issues
- DOES IT WORK
  - Yes, it is effective but outdated
  - There are significant seasonal and daily peaks that could be addressed

Present - Operations



Present - Operations



Present - Operations

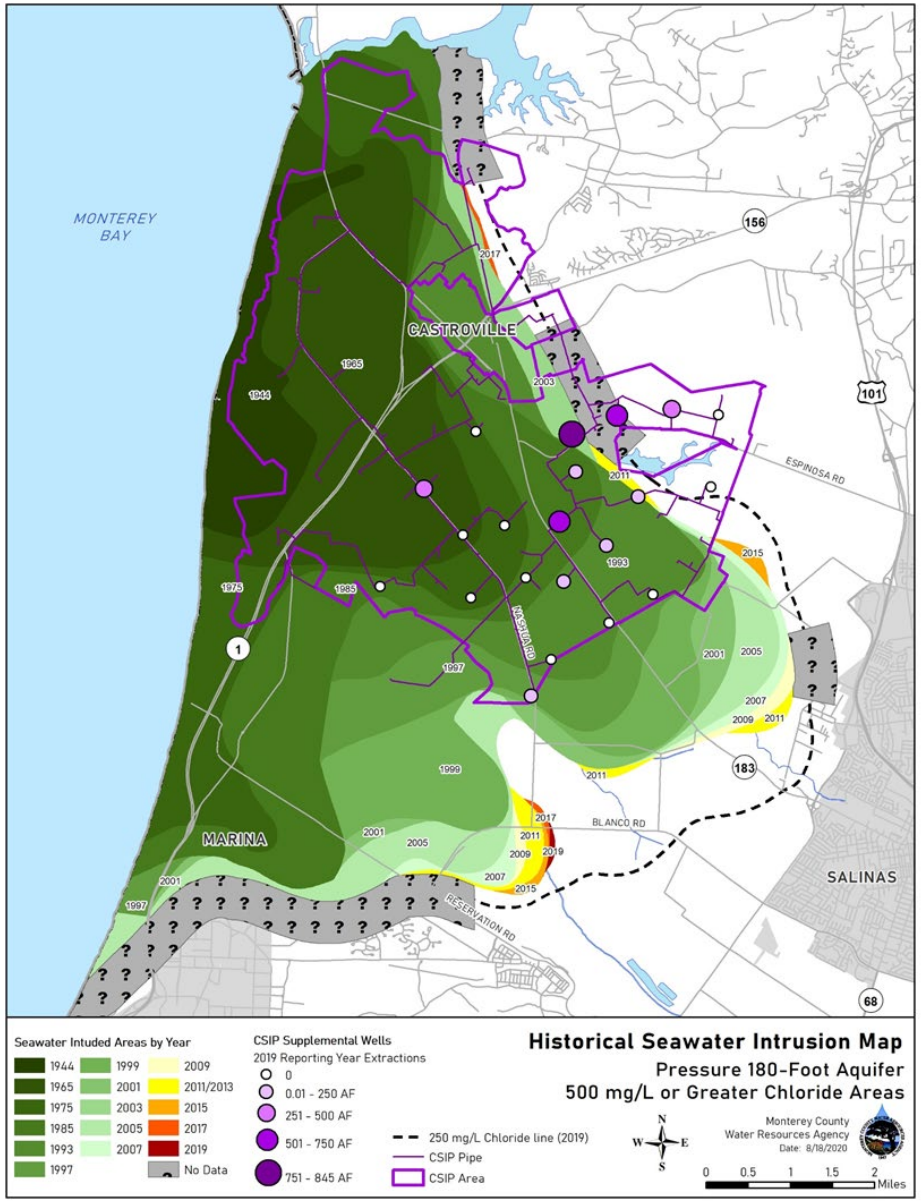
CSIP Supplemental Well Status (as of 08/26/2020)

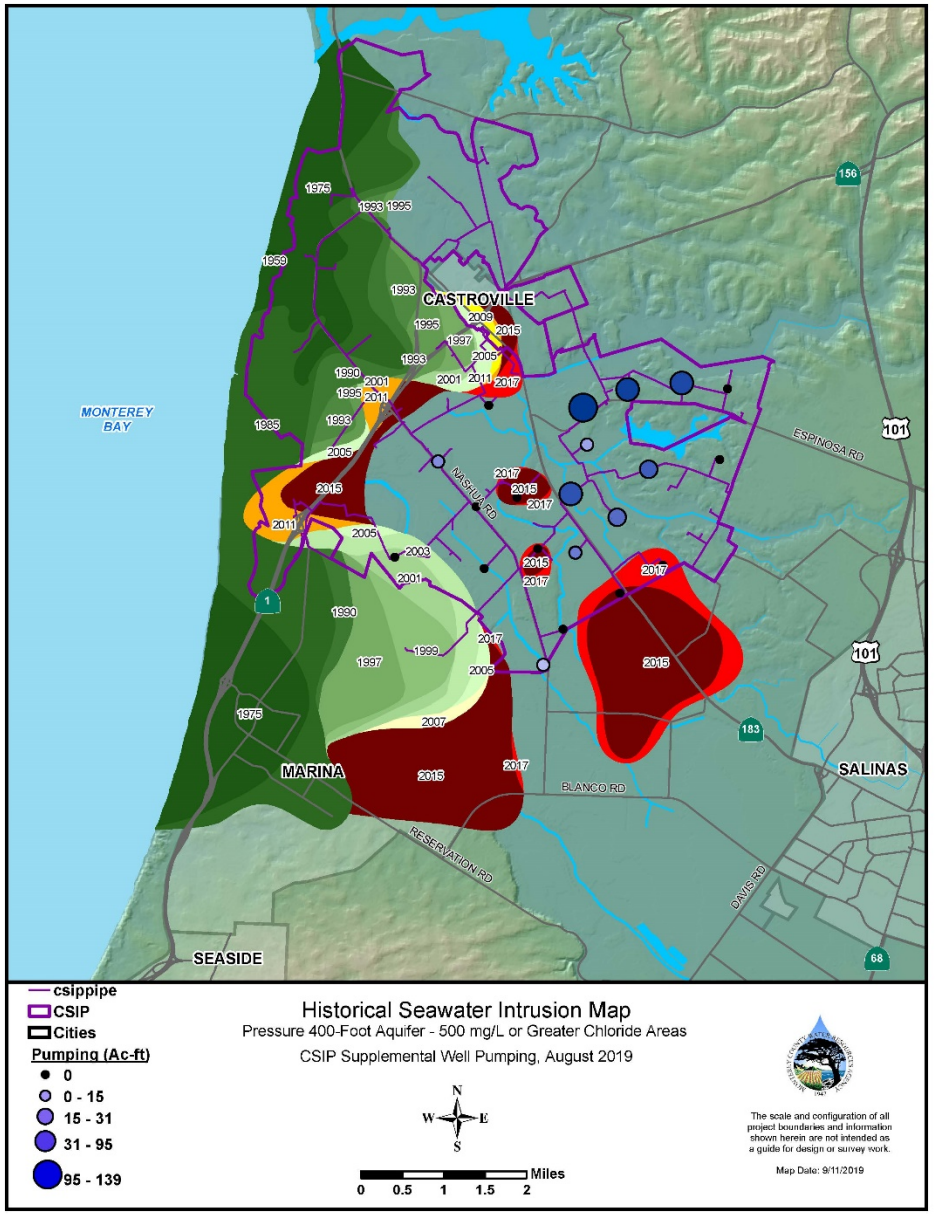
	Well No.	Available	Out	Well No.	Design GPM	Actual GPM	Actual ac*ft/day	Cl (mg/L)	Comments
1	02A2	√		02A2	2300	2200	9.7	106	
2	02C3	√		02C3	2000	1700	7.5	210	
3	03H1	√		03H1	4000	3800	16.8	229	
4	03R50	√		03R50	1700	1100	4.9	81	250 hp in for repair. Using spare 200hp (15C2)
5	10H	√		10H	3500	2900	12.8	106	
6	11B1	√		11B1	1700	1400	6.2	55	
7	11M3	√		11M3	1500	1400	6.2	48	
8	15A1	√		15A1	1600	1400	6.2	48	
9	22L	√		22L	2000	1900	0	251	Worn Pump, Rising Chlorides- Limited Pumping
10	NEW 2	√		NEW 2	4800	2300	10.2	119	
11	NEW 1		√	NEW 1	4800				Destroyed June 2012
12	New 4		√	New 4	4800				Destroyed July 25, 2017
13	14L3		√	14L3	2800				Destroyed July 26, 2017
14	NEW 5		√	NEW 5	4800				Destroyed October 16, 2019
15	15C2		√	15C2	2200			889	Destroyed November 7, 2019
16	22B1		√	22B1	3000			291	Destroyed November 8, 2019
17	10E2		√	10E2	2700				Destroyed August 21, 2020
18	01C1		√	01C1	2400			168	Low production (< 350 gpm); Cavitation & Sanding
19	01P50		√	01P50	2400				Out of service due to poor regional water quality.
20	14A1		√	14A1	2800				Out of service due to poor regional water quality.
21	NEW 3		√	NEW 3	4800				Out of service due to poor regional water quality.
Total:	21	10	11		62,600	20,100	80		

Legend

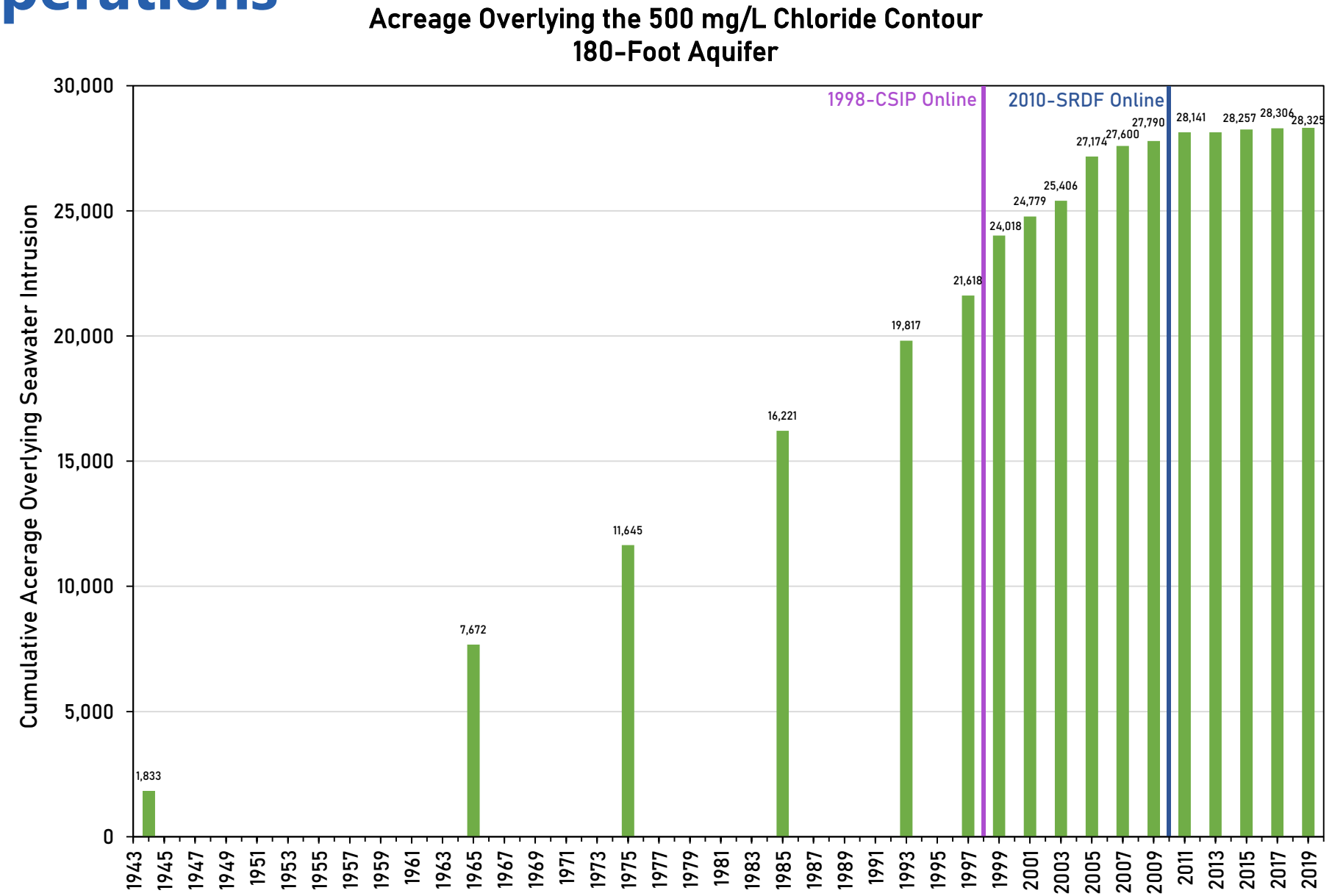
- Online/operation
- Offline/non-operation
- Destroyed
- Out of Service

Present - Operations

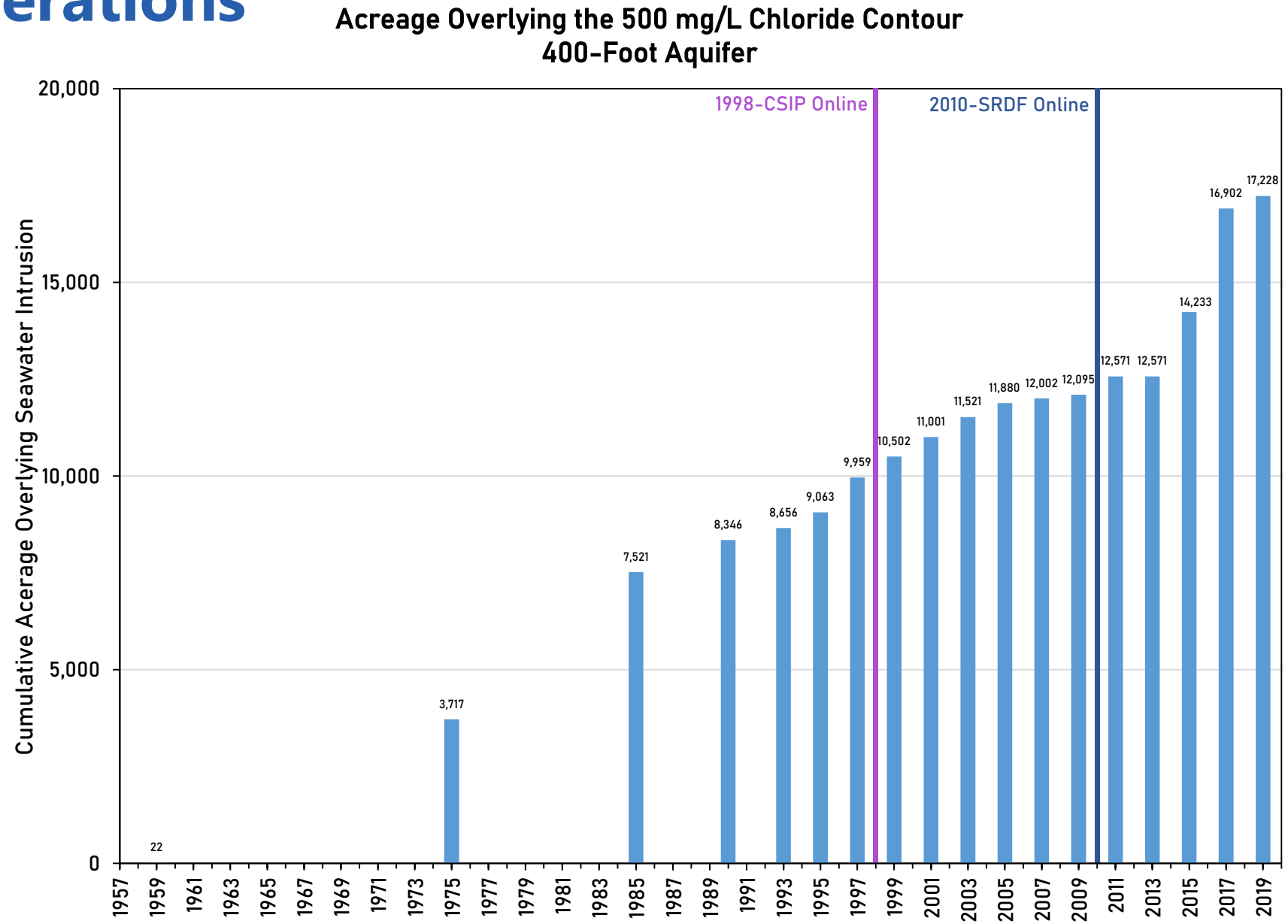




Present - Operations



Present - Operations



Future

- Can it be expanded?
  - Yes
- What would it take
  - Detailed system analysis
    - Comprehensive Master Plan, Facilities Study, condition assessment
  - Policy/Ordinances
    - Annexation Ordinance, Scheduling Policy
    - Design ordinance, annexation policy, stakeholder buy-in, loan modification, etc.
  - Stakeholder Buy in and Approve Funding
- How do we get more funding
  - Annexation fee
  - Proposition 218
  - State & Federal Grants
  - Increase delivery charges

Future

- What would optimizing it look like
  - Physically
    - Add redundancies to decrease plant shutdowns
    - Increase storage
  - Operationally.
    - Reduce discharges to ocean
- What needs to be change operationally
  - Automation
  - Remote monitoring
  - Maintain higher pond elevation
- How do we get more water
  - Expand to areas with good quality groundwater
  - Additional source waters to RTP
  - Purchase other water
  - Store water when there is excess
  - River diversions in the winter
  - Build project using other water rights

Future Improvements

- Options to improve groundwater quality
  - Reduce vertical migration of seawater intrusion through well destruction
  - Reduce groundwater pumping
- Options to reduce pumping:
  - Schedule water deliveries (reduce peak demands)
  - Optimize storage pond operations to reduce pressure issues
  - Increase storage out in the system
  - Increase use of recycled water in off-peak season in exchange for reduction in groundwater pumping (drought reserve)
  - Add new sources of water

QUESTIONS?