Facility Operations Update

Board of Directors Meeting

February 16, 2022

Jesus “Chuy” Martinez
Water System Operations Supervisor

Shinehah Bigham
Water System Operator

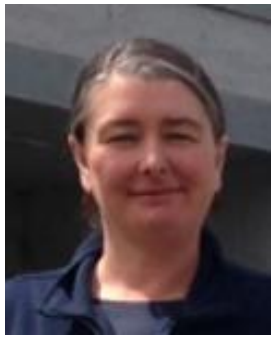
Pajaro Valley
Water Management Agency

Overview

- Operations Team
- Status of Operations and Water Deliveries
  - Facilities Improvements Update
  - Operations in Review 2021
  - Projections for 2022
- Questions & Comments

Operations Team

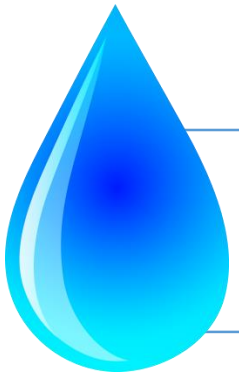
- Jesus “Chuy” Martinez, Water System Operation Supervisor
- Shinehah Bigham, Water System Operator
- Leonard Villanueva, Meter Program Coordinator
- David Parra, Operations & Maintenance Technician
- Jaime Marquez, Field Technician
- Juan Cadenas, Maintenance Technician



Welcome to our new team members!

Jaime Marquez, Field Technician

Juan Cadenas, Maintenance Technician

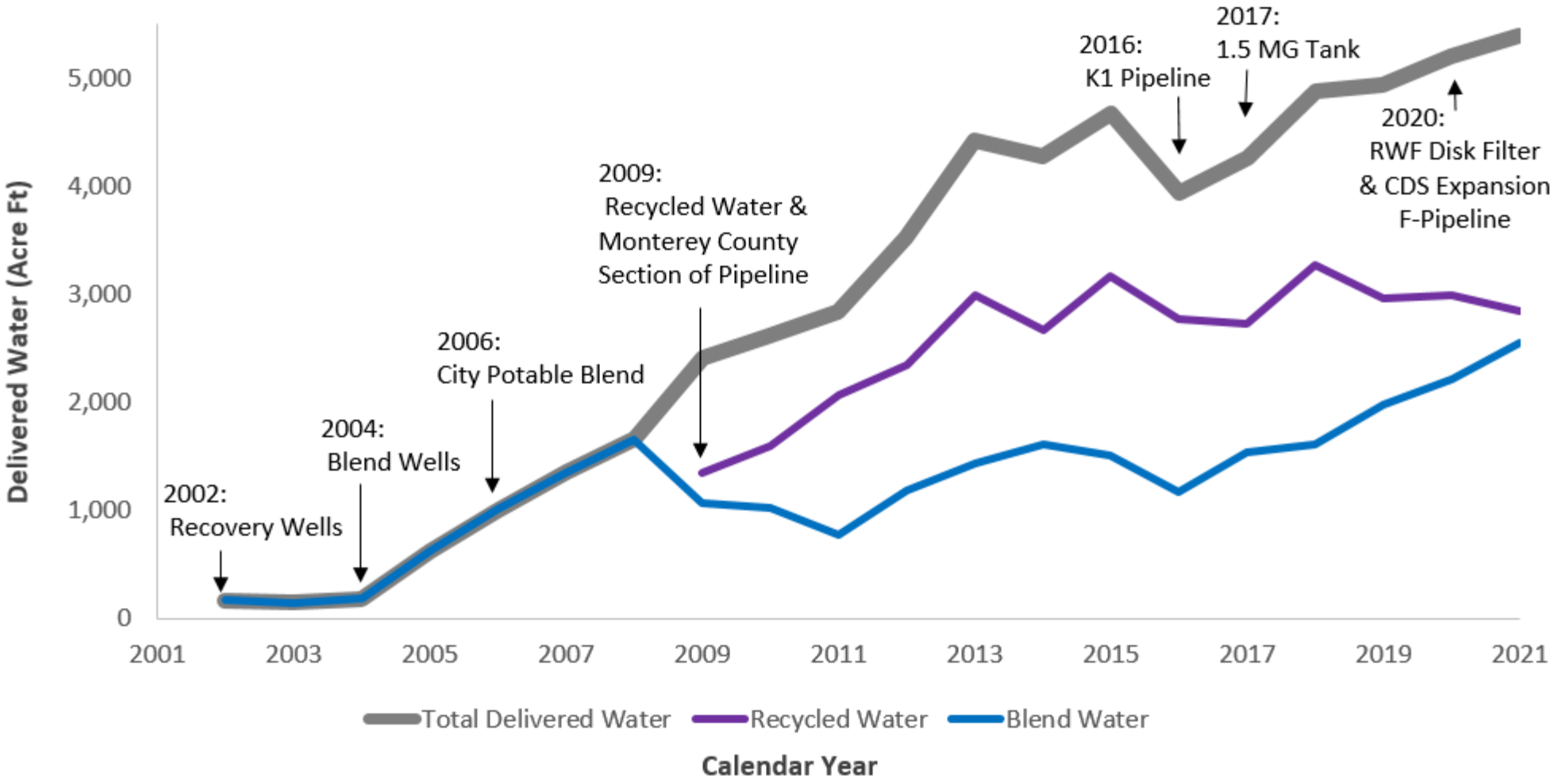


Facility Improvements

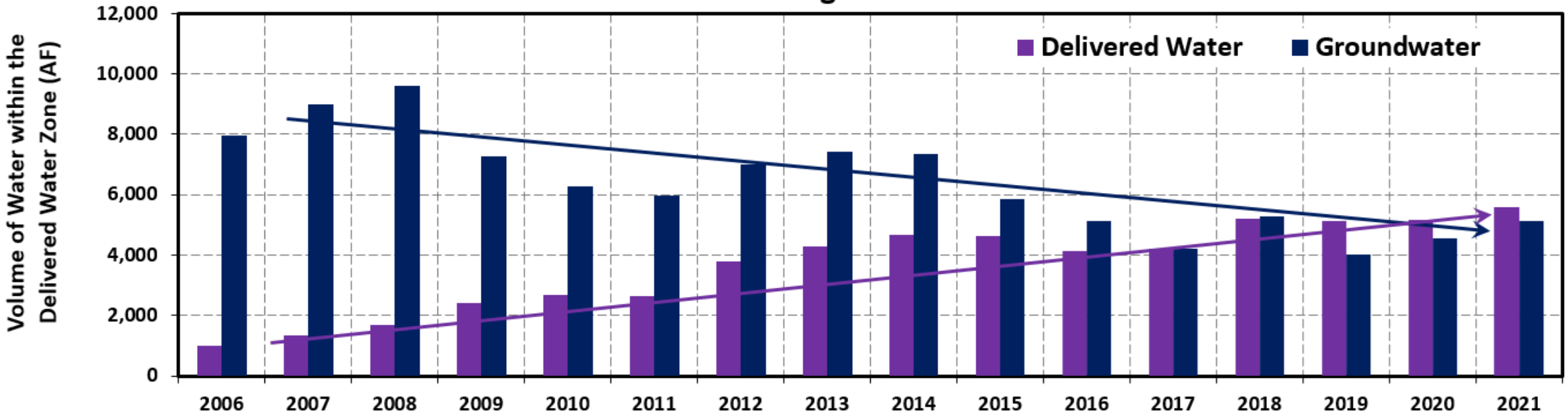
Existing Water Supply Facilities to Reduce Overdraft & Seawater Intrusion

- **Harkins Slough Facility**
  - Managed Aquifer Recharge & Recovery
  - Stream flow diversion
  - Over 10,000 AF recharged since 2002
- **Recycled Water Facility**
  - 4,000 AFY irrigation season capacity since 2009
  - Drought tolerant supply
  - Reduces discharge of secondary effluent to marine sanctuary
- **Coastal Distribution System**
  - More than 22 miles of water conveyance pipeline
- **Blend Supplies**

Coastal Distribution System Water Deliveries



Delivered Water and Groundwater Usage Trends within Delivered Water Service Area



	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Delivered Water (AF)	990	1,337	1,665	2,406	2,681	2,630	3,788	4,275	4,685	4,638	4,139	4,203	5,213	5,138	5,174	
Groundwater (AF)	7,976	8,974	9,614	7,278	6,293	5,971	6,984	7,407	7,360	5,857	5,117	4,210	5,275	4,013	4,534	
Total DWZ Water Use (AF)	8,966	10,311	11,279	9,684	8,974	8,601	10,772	11,682	12,044	10,495	9,256	8,413	10,488	9,151	9,708	
Delivered Water % of Total	11%	13%	15%	25%	30%	31%	35%	37%	39%	44%	45%	50%	50%	56%	53%	

(Production of Recycled Water Began in 2009)

Harkins Slough Managed Aquifer Recharge & Recovery

2020:

Favorable Conditions Led to a Record Season

- >10” Rain in Dec. 2019
- 1,280 Acre Feet pumped to Recharge Basin

2021:

Drought Conditions

- Low amount of rain could not flush slough salinity levels out
- 2.4 Acre Feet pumped to Recharge Basin

2022:

Favorable Conditions Made for a Successful January

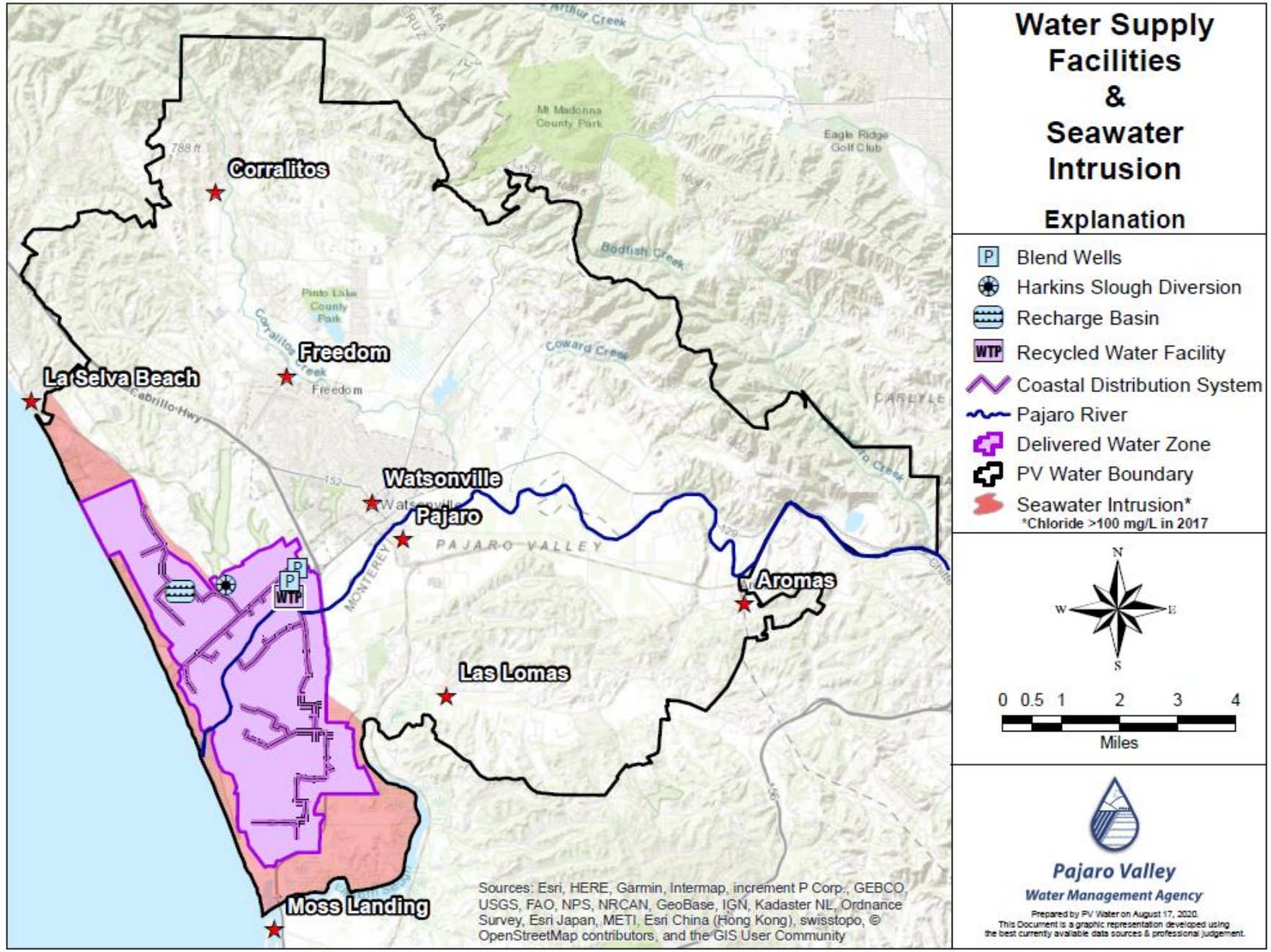
- Rain in Dec. 2021 improved water quality
- 223 Acre Feet pumped to Recharge Basin YTD

Recycled Water Facility Optimization

- Grant Funded Projects
  - DWR, SWRCB, BoR
  - ~$10 million in total
- Phase 1: Storage (1.5 MG Tank) and Pump Station Improvements (~2015)
- Phase 2: Disk Filter Upgrade (~2020)
- 2022: Reliability & Condition Assessment Study

Coastal Distribution System F-Pipeline Expansion Project

- DWR Proposition 84 Grant Funded Project: $3.73 million
- Constructed completely during COVID-19 pandemic
- Pipeline: 9,900 lineal feet of pipe ranging in diameter from 10 to 30 inches
- Turnouts: 6 turnouts to reach as much as 700 irrigated acres



Water Supply Facilities & Seawater Intrusion

Explanation

- P — Blend Wells
- Harkins Slough Diversion
- Recharge Basin
- WTP — Recycled Water Facility
- Coastal Distribution System
- Pajaro River
- Delivered Water Zone
- PV Water Boundary
- Seawater Intrusion*

*Chloride >100 mg/L in 2017

N
W
E
S

0 0.5 1 2 3 4

Miles

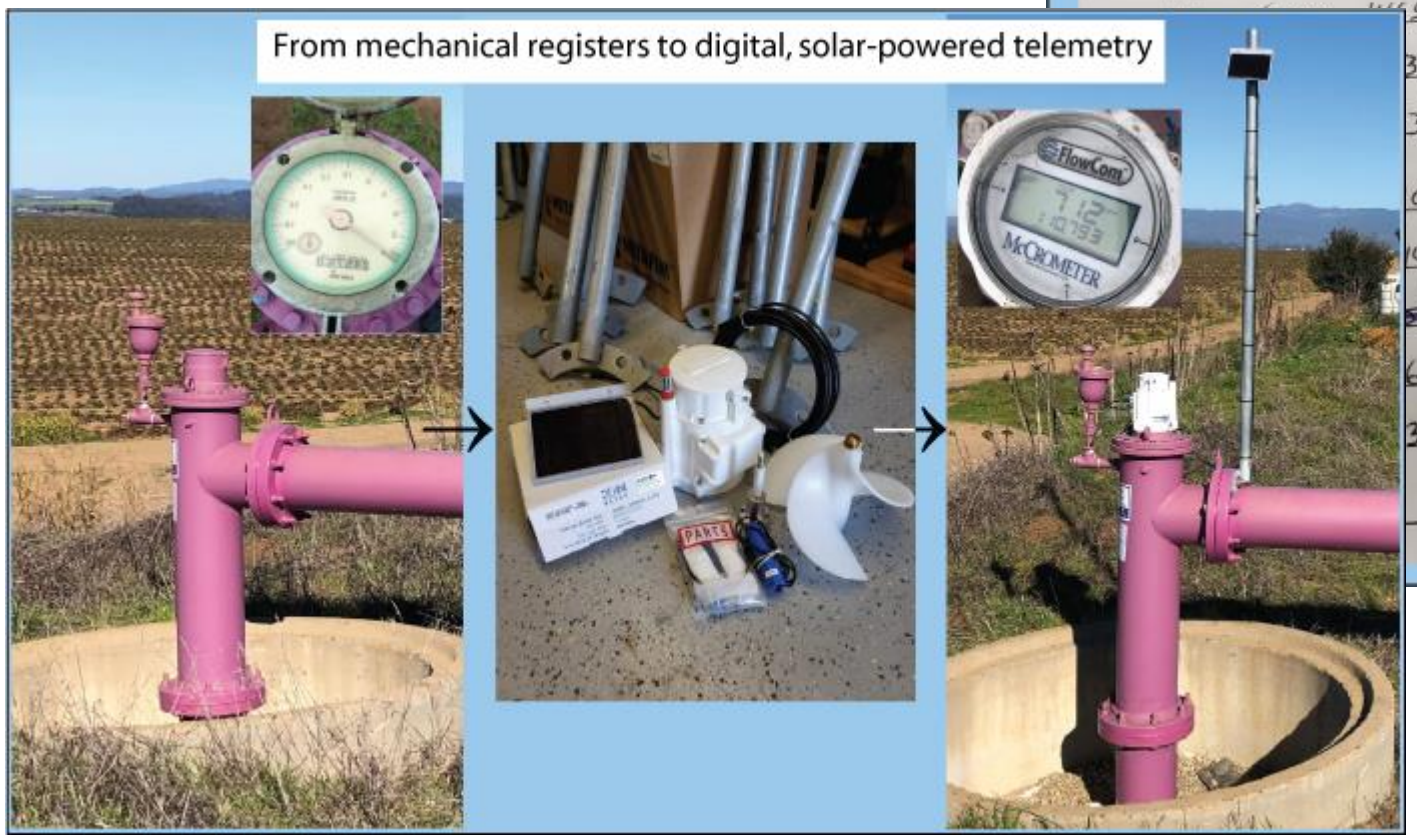
Pajaro Valley
Water Management Agency

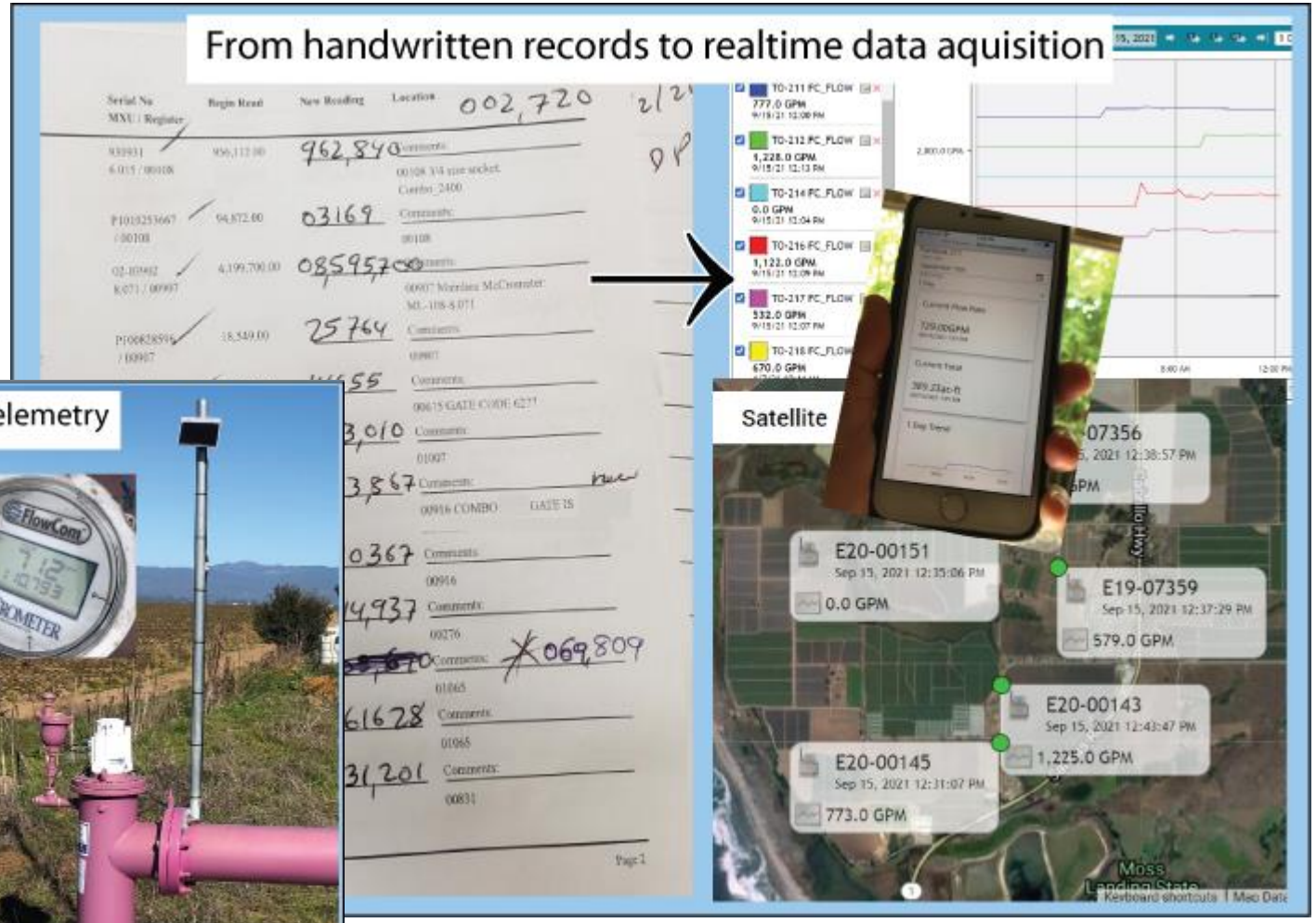
Prepared by PV Water on August 17, 2020.
This Document is a graphic representation developed using the best currently available data sources & professional judgement.

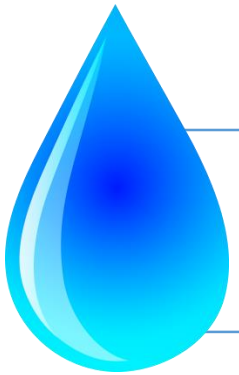
CDS Maintenance

Telemetry Program

- USBR WaterSmart grant funded projects







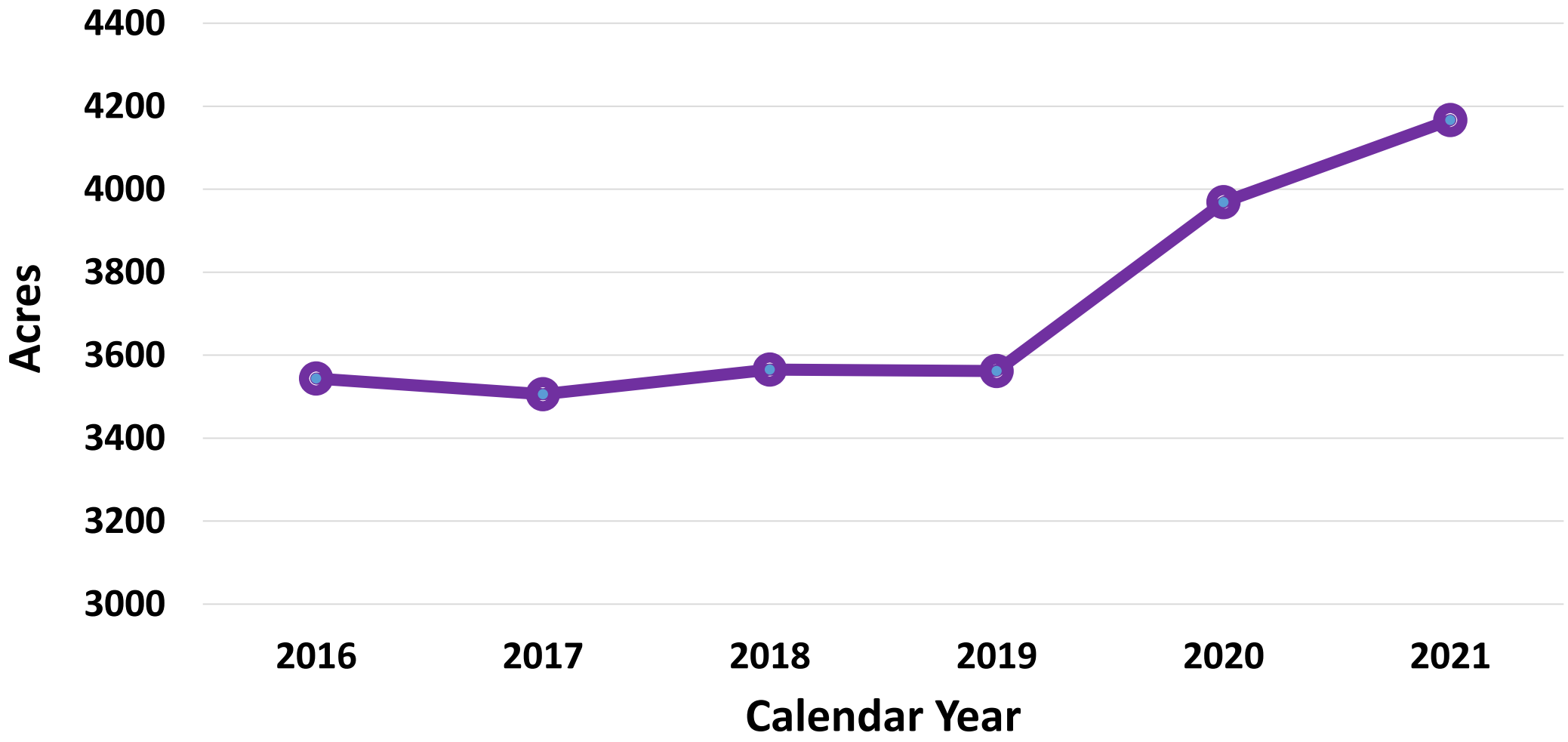
2021 Year in Review

2021: Year in Review

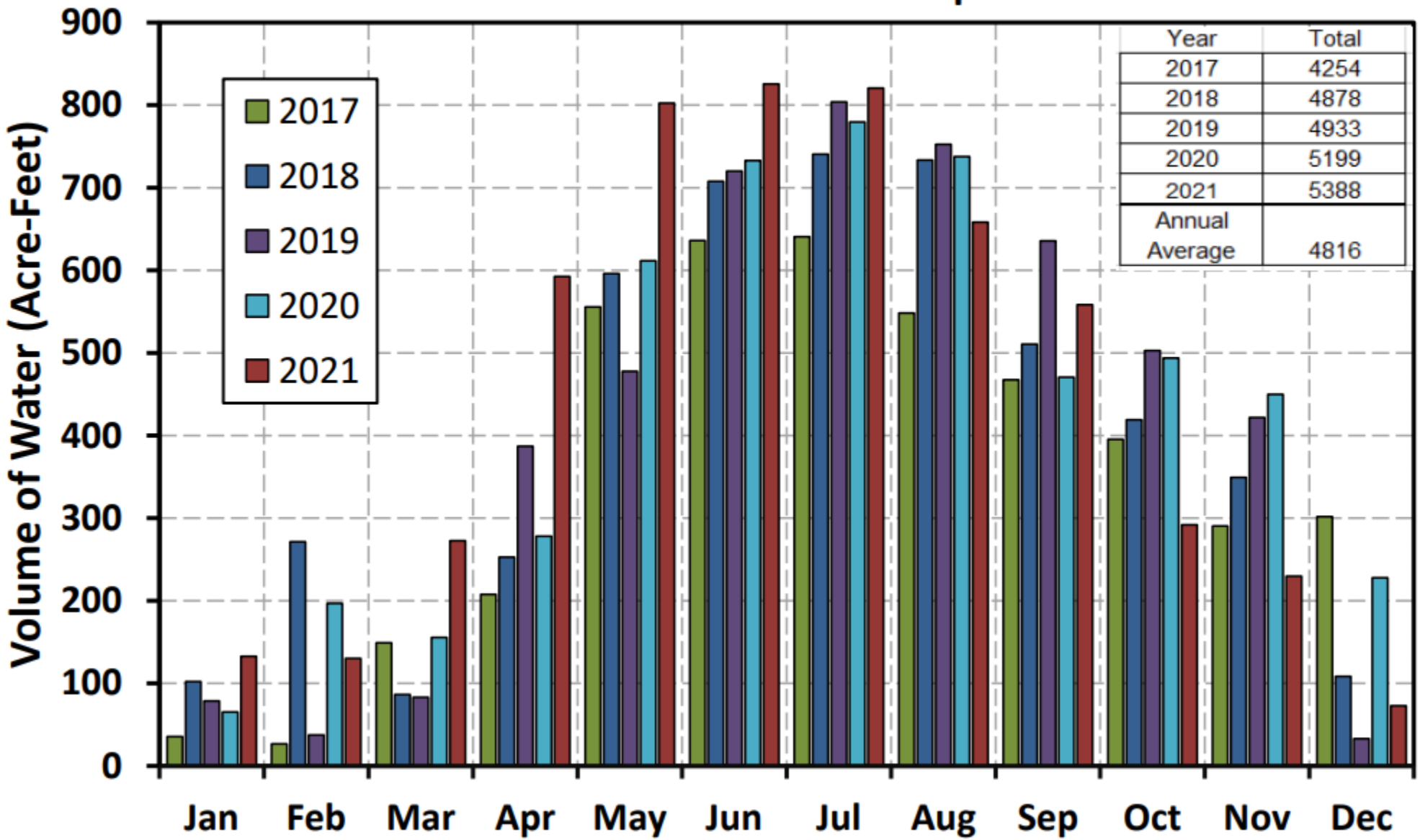
- Extreme Drought Conditions
- Total Irrigated Acreage Served: **4,167**
  - Represents an increase of ***198 irrigated acres*** compared to 2020
  - An increase of 5% over the prior year
- Peak Season Demand vs Supply in June & July, 2021
  - Average Demand = 33 AFD
  - Average Supply Available = 27 AFD*

  **System maxed out!*

Irrigated Acreage Served



Five-Year Production Comparison



Year	Total
2017	4254
2018	4878
2019	4933
2020	5199
2021	5388
Annual Average	4816

Production Monthly Summary 2021*

All totals are in Acre Feet

	January	February	March	April	May	June	July	August	September	October	November	December	Individual Totals
Harkins Slough Project:													
Effluent FW to Basin	0.000	0.000	2.430	0.000	0.000								**2.4**
Coastal Distribution System (CDS):													
Recovery Wells Sub Total	8.507	8.688	14.583	35.079	37.136	33.809	31.649	25.153	20.052	10.754	22.667	1.659	**249.73**
Blend Wells													
SW #1	0.000	0.000	0.000	29.609	90.795	114.808	100.285	36.680	17.658	5.312	0.000	0.000	**395.15**
SW #2	0.000	2.409	16.043	124.582	193.784	230.320	237.875	220.759	135.613	36.868	8.949	1.495	**1208.70**
Blend Wells Subtotal	0.000	2.409	16.043	154.191	284.579	345.128	338.160	257.439	153.271	42.180	8.949	1.495	**1603.84**
RWF Blend (See Breakdown Below)	124.175	119.113	242.049	403.329	480.653	446.744	450.899	375.605	385.056	239.037	198.137	69.734	**3534.53**
CDS Total	132.68	130.21	272.67	592.60	802.37	825.68	820.71	658.20	558.38	291.97	229.75	72.89	**5388.11**

Approximate Recycled Water Blend Breakdown:

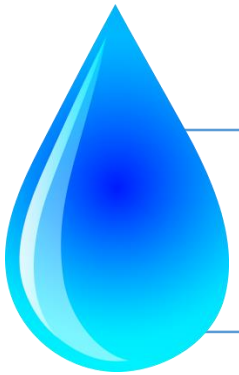
Estimated Recycled Water	108.473	114.629	210.384	308.871	377.220	343.723	348.326	277.577	298.757	200.024	184.883	60.594	2833.46
RWF No_1 (potable)	15.702	4.484	31.665	94.458	103.433	103.021	102.573	98.028	86.299	39.013	13.254	9.140	701.07

* Recycled Water Blend Breakdown is Approximate because there is always some water in the tank that may be recycled water or RWF No-1 Water, "Est Recycled Water" is the RWF Blend total, (which is measured by the RWF Distribution meter after the tanks,) MINUS the RWF No_1 total, which is measure before the No_1 water goes into the tanks to blend.

Well 860 (Harvest Dr.)	0.000	0.000	0.000	0.000	27.042	31.357	18.601	0.000	0.000	0.000	0.000	0.000	77.00

2021 Production Percentages:			
Recovery Wells	**Supplemental Wells**	**Recycled Water**	**Potable Water**
5%	**30%**	**53%**	**13%**

*Preliminary, Subject to Revision



Looking ahead to 2022

Anticipated System Flows - 2022

Water Source	Flow Rate	Acre-Feet per Day
Recycled Water	3,100 GPM	15
City Potable Blend (9 hours @ 2000 gpm)	2,000 GPM	3.2
Blend Wells Average of 12 hours / day	2,000 GPM	4.4
Recovery Wells 16 hours / day average	350 GPM	1
Total Capacity	**7,450 gpm**	**23.7 ac-ft/day**

Flows subject to change.

Water Orders in 2022

- Water Orders will be filled such that all customers that request water will receive water in a given week
- When demand exceeds supply, water deliveries will be scaled by irrigated acreage served
- Water Users Handbook and Rules & Regulations for Recycled Water Use still in effect
- Methods discussed in depth by PV Water's Projects & Facility Operations Committee, which meets the last Wednesday of most months (except Nov. & Dec.) – next meeting is February 23, 2022

Looking Ahead

- Growers Meeting
- Irrigator Trainings
- Ongoing Maintenance
- Future Delivered Water Supplies:
  - College Lake Integrated Resources Management Project
  - Watsonville Slough System Managed Aquifer Recharge & Recovery Projects

Thank you!

Questions / Comments?