Pajaro Valley
Water Resources Management

Open House & Community Meeting
Civic Plaza Community Room
275 Main Street, Fourth Floor, Watsonville

July 10, 2017
Presentation Overview

- State of the Basin

- Sustainable Groundwater Management Act

- Basin Management Activities
  - Summary of Existing Facilities
  - Conservation of Water Supplies
  - Optimization of Existing Water Supplies
  - Development of New Water Supplies
Pajaro Valley Water Management Agency

- Formed by the CA State Legislature in 1984 – “Agency Act”

- PV Water Mission: water resource management to provide and ensure sufficient water supply in the Pajaro Valley.

- Multi-jurisdictional: City of Watsonville, parts of Santa Cruz, Monterey and San Benito Counties

PV Water Directors
Four Elected & Three Appointed
- Rosemarie Imazio, Chair
- Dave Cavanaugh
- Javier Zamora

PVWMA Electoral Divisions

Explanation
- Cities & Towns
- Streets
- Division A
- Division B
- Division C
- Division D

Don Bussey
Division B
Amy Newell
Division C
Dwight Lynn
Division A
Bob Culbertson
Division D
Community Involvement is Critical

• Community input has been and remains important to the PV Water Board and to staff
• PV Water Board sets policy following public input
• Ongoing Agency outreach efforts include:
  – Community meetings
  – Newsletters, Annual Reports, FAQs, Website...
  – Additional targeted outreach
Sustainable Groundwater Management Act
SGMA Provides Incentive to Make this Program a Success

• The Sustainable Groundwater Management Act (September 2014) requires that critically overdrafted groundwater basins, such as the Pajaro Valley, be brought into balance by 2040.

• If not, the State will intervene and may impose pumping restrictions.

Applicability
- 515 Groundwater Basins (Applies)
- 127 High and Medium Priority Basins (Required)

- 96% of average annual GW supply
- 88% of 2010 population overlying the GW basin area
Pajaro Valley Water & SGMA Progress

- Groundwater Sustainability Agency, Fall 2015
- Basin Boundary Modification, Spring 2016
- BMP Implementation to achieve sustainability
State of the Basin
Agro-Economy
- >28,000 Irrig Acres
- 2013 Crop Value ~ $900,000,000

Source: BMP Update

Pajaro Valley Land Use Summer 2015

Explanation

San Andreas Fault Trace
Pajaro River
Waterbody
PVWMA Boundary

Land Use Classifications
- Native Vegetation / Riparian
- Turf (Urban)
- Fallow
- Vegetable Row Crops
- Strawberries
- Caneberries
- Vines
- Orchards
- Other

Urban (Turf) 17%
Irrigated agriculture 37%
Native Vegetation / Riparian 43%
Non-irrigated agriculture 3%

Sources: Esri, DeLorme, HERE, USGS, FAO, NPS, NRCS, Geosolutions, GDEP, GEMPAK, NGA, NWS, NRC, ODNR, Ordnance Survey, Esri Japan, METI, Esri Canada, and the GIS User Community
Valley-wide Water Use
- Agriculture ~ 85 %
- M & I ~ 13 %
- Rural Residential ~ 2 %

Water Sources
- 98 % Groundwater
  - ~850 Ag Wells
  - ~1,200 RR Wells
- 1 % Surface Water
- 1 % Recycled Water
Seawater Intrusion within the Pajaro Valley

Explanation

- Cities & Towns
- PVWMA Boundary
- Extent of SWI as of 1951*
- Extent of SWI as of 1966*
- Extent of SWI as of 1998*
- Extent of SWI as of 2011*

*Chloride contours are set to concentrations of 100 mg/L
Existing Water Supply Facilities to Reduce Overdraft & Seawater Intrusion

• **Harkins Slough Facility**
  – Managed Aquifer Recharge & Recovery
  – Stream flow diversion
  – 8,000 AF recharged since 2002

• **Recycled Water Facility**
  – 4,000 AFY irrigation season capacity
  – Drought tolerant supply
  – Reduces discharge of secondary effluent to marine sanctuary

• **Coastal Distribution System**
  – Over 21 miles of water conveyance pipeline

• **Blend Supplies**
Harkins Slough Managed Aquifer Recharge & Recovery
Recycled Water Facility
Coastal Distribution System Water Deliveries

Delivered Water (AF)

33,800 AF thru 2016 = 11 Billion Gallons
Increasing groundwater elevations to prevent seawater intrusion

Springfield Terrace Well

Monterey County Water Deliveries Begin in 2009

Mean Sea Level
Pajaro Valley Hydrologic Model

- A hydrologic flow model to guide water management decisions
- Designed to reproduce all natural & human components of the hydrologic system, and related climatic factors
- Management & planning tool
- Offset in water budget: **12,100 AFY**
Pajaro Valley Water Solutions
Planning Future Projects & Programs

- 21 Member Stakeholder Committee
  - Investigated all practical options at the time
- 44 Potential Solutions Discussed
  - 7 Projects & Programs recommended
- Multi-year process
  - > 1,500 person hours and 23 meetings
Basin Management Plan Update contains three primary components to achieve 12,100 AFY

- Development of New Water Supplies: 4,100 AFY
- Conservation of Existing Water Supplies: 5,000 AFY
- Optimization of Existing Water Supplies: 3,000 AFY
Pajaro Valley Water Solutions
BMP Water Conservation Program
**BMP Water Conservation Program**

<table>
<thead>
<tr>
<th>Agricultural Water Conservation Program</th>
<th>Home &amp; Garden Water Conservation Program</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Conservation outreach and education</td>
<td>• Rebate program</td>
</tr>
<tr>
<td>• Partner collaboration and coordination</td>
<td>– Graywater: Laundry to landscape rebate</td>
</tr>
<tr>
<td>• Irrigation efficiency technical and financial assistance</td>
<td>– Rainwater catchment rebate</td>
</tr>
<tr>
<td>• Evaluation of progress toward the water conservation goal</td>
<td>• Educational activities</td>
</tr>
<tr>
<td>• Agricultural Water Conservation Toolkit</td>
<td>– In-school programs</td>
</tr>
<tr>
<td></td>
<td>– Recycled Water Facility Tours</td>
</tr>
<tr>
<td></td>
<td>• Home and Garden Water Conservation Toolkit</td>
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</tbody>
</table>
Water Use and Precipitation Trends
Pajaro Valley 2000 - 2016

Calendar Year

Acre-Feet

Rainfall (Inches)

Supplemental Irrigation Water (Ag)
Household Water
Pumped Agricultural Water
Rainfall
Conservation Pilot Programs

• Recharge Net Metering
  – Provides financial incentive to landowners to capture and recharge surface water runoff (> 100 AF)
  – Will improve aquifer conditions (quantity & quality)
  – Diversifies groundwater recharge opportunities
  – 5-year pilot program
  – Collaborative effort between the PV Water, UC Santa Cruz, Resource Conservation District of Santa Cruz, & Landowners

• Fallow Land Incentive Program
  – Provides a financial incentive ($1,000 per acre up to 200 acres / $200,000) to growers who fallow agricultural land in 2017 to conserve water
  – 1-year pilot program
Pajaro Valley Water Solutions
Optimization of Existing Water Supplies
Increased Recycled Water Storage & Pump Station Improvements

• Grant Funded Project
  – $6 Million project largely funded by State and Federal Grants
  – Produce and deliver additional ~750 AFY

Existing 0.5 MG Tank

March 2017
New 1.5 MG Tank Under Construction
Pajaro Valley Water Solutions
Development of New Water Supplies
College Lake Project

• 2014 BMP Update proposed yield of 2,100 to 2,400 AFY.

• Board and project team reviewing how project may affect surrounding properties and growers.
College Lake Estimated Water Supply

<table>
<thead>
<tr>
<th>Date Lake Drained By</th>
<th>Estimated yield if lake must be drained by date (afy)</th>
<th>Estimated yield if lake must be drained by date (%)</th>
<th>Available Planting Season</th>
</tr>
</thead>
<tbody>
<tr>
<td>30-Apr</td>
<td>260</td>
<td>11%</td>
<td>4 months</td>
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<tr>
<td>31-May</td>
<td>610</td>
<td>25%</td>
<td>3 months</td>
</tr>
<tr>
<td>30-Jun</td>
<td>1150</td>
<td>48%</td>
<td>2 months</td>
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<tr>
<td>31-Jul</td>
<td>1700</td>
<td>71%</td>
<td>1 month</td>
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<tr>
<td>31-Aug</td>
<td>2150</td>
<td>90%</td>
<td>0 months</td>
</tr>
<tr>
<td>30-Sep</td>
<td>2400</td>
<td>100%</td>
<td>0 months</td>
</tr>
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CEQA provides numerous public involvement opportunities, and public input will be encouraged throughout the process.
Summary, part 1

• The Pajaro Valley Groundwater Basin is in a state of long-term groundwater overdraft, which has caused seawater to intrude into our freshwater aquifers.

• The Agency’s water supply facilities are working to reduce the magnitude overdraft and seawater intrusion, but new water supplies in combination with water conservation are necessary to solve these problems.

• The Basin Management Plan Update was developed through a stakeholder process, and it identifies a suite of projects and programs that are projected to balance the basin and stop seawater intrusion.
Summary, part 2

• SGMA requires that critically overdrafted groundwater basins achieve sustainability by 2040. Implementation of the BMP will achieve sustainability.

• The proposed College Lake project was recommended by stakeholders and has the potential to provide the greatest amount of new water supply for the Valley.

• PV Water has a successful record of winning competitive grants to help fund the implementation of water supply projects, reducing the financial impact on rate payers.

• We are in the beginning phases to develop the proposed projects. No final decisions will be made by the Board of Directors until after the EIR is certified, and the CEQA process provides numerous opportunities for public input.

We want to hear from you.
Thank You…

By phone: 831-722-9292
By email: lockwood@pvwater.org
Or visit our website: pvwater.org