Basin Management Plan
Program Management Services

Outreach Services
Pre-Proposal Meeting
March 28, 2017
Presentation Overview

- Welcome & Introductions
- Background Information
- Program-Level Objectives
- Project-Level Objectives
- Outreach Services
- Q & A
Welcome & Introductions
Background
PV Water & BMP Development
Who Are We?

- Formed by the CA State Legislature in 1984

- PV Water Mission: to prevent further increase in, and to reduce long-term overdraft and provide and ensure sufficient water supply in the Pajaro Valley.

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

Pajaro River Watershed ~1300 mi²

PVWMA Boundary ~120 mi²
PVWMA Directors
Four Elected
Three Appointed
- Rosemarie Imazio, Chair
- Dave Cavanaugh
- Javier Zamora

PVWMA Electoral Divisions

PVWMA

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

Dwight Lynn
Division A

Don Bussey
Division B

Amy Newell
Division C

VACANT
Division D
**Agro-Economy**
- >28,000 Irrig Acres
- 2013 Crop Value ~ $900,000,000

**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

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
Hanson, et al, 2014
Water Use and Precipitation Trends
Pajaro Valley 2000 - 2016

Calendar Year

- 2000
- 2001
- 2002
- 2003
- 2004
- 2005
- 2006
- 2007
- 2008
- 2009
- 2010
- 2011
- 2012
- 2013
- 2014
- 2015
- 2016

Acre-Feet

- Supplemental Irrigation Water (Ag)
- Household Water
- Pumped Agricultural Water
- Rainfall

Legend:
Number of wells with measured water levels in 2011 and 2015 = 131
Number of wells with water levels that declined from 2011 to 2015 = 127
Median change in water level from 2011 to 2015 = -5.6 feet
Existing Groundwater Condition: Nitrate – NO₃
Existing Groundwater Condition: Total Dissolved Solids

LEGEND
Average TDS Concentration (mg/L)
- 230 - 450
- 451 - 1,000
- 1,001 - 1,800
- >1,800 - 24,785
Existing Water Supply Facilities to Stop 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

33,800 AF thru 2016 = 11 Billion Gallons
Monterey County Water Deliveries Begin in 2009
Pajaro Valley Water Solutions
Basin Management Plan Update
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**
Basin Management Plan Update

- 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:
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
Basin Management Plan Development of New Water Supplies – 4,100 AFY of the 12,100 AFY Solution

Notes:
* Project is under construction. The value shown is based on consultant and contractor agreements. Funding comes from four grants valued at $6,872,886: Title XVI, Prop. 1, Prop. 50, Prop. 84 and a low-interest financial agreement with the State Water Resource Control Board through the State Revolving Fund valued at $1,217,440 that also provide funding for the recent pipeline projects (K1 & Blend Well Improvements Project).
Basin Management Plan Development of New Water Supplies – 4,100 AFY of the 12,100 AFY Solution

<table>
<thead>
<tr>
<th>Description</th>
<th>Yield, AFY</th>
<th>Capital Cost 2016 Dollars</th>
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<tbody>
<tr>
<td>S-2 Watsonville Slough with Recharge Basins</td>
<td>1,200</td>
<td>$11,200,000</td>
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<tr>
<td>S-3 College Lake with Inland Pipeline to CDS</td>
<td>2,400</td>
<td>$28,500,000</td>
</tr>
<tr>
<td>S-1 Murphy Crossing with Recharge Basins*</td>
<td>500</td>
<td>$8,100,000</td>
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Notes:
* Proposed to be included in Phase 2
Community Role in BMP Implementation

- Stakeholder 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 efforts
- Future Rate Setting Process
Where We Are Today

- Current Program is to advance the implementation of three highest priority BMP projects:
  - Harkins Slough Recharge Facilities Upgrades
  - College Lake Diversion with Inland Pipeline to CDS
  - Watsonville Slough Diversion with Recharge Basins
Program-Level
Objectives & Deliverables
Program-Level Objectives and Deliverables

- Public and stakeholder outreach
- Grant funding applications
- Program controls
- Rate setting
Recap: Project-Level Objectives and Deliverables

- Water rights applications for two projects
- Three preliminary design documents
- CEQA documents for three projects
- Property acquisition legal documents prepared but not executed
Funding Overview

- Lead: Lidia Gutierrez, Gutierrez Consultants
- Rate Setting
  - Current rates set through June 2020.
  - New rates need to be considered to fund final design and construction.
  - Rate setting process will take minimum of 18-24 months; process should begin by Jan. 2018.
Project-Level
Objectives & Deliverables
Recap: Project-Level Objectives and Deliverables

- Water rights applications for two projects
- Three preliminary design documents
- CEQA documents for three projects
- Property acquisition legal documents prepared but not executed
BMP Implementation
Three Projects
College Lake with Inland Pipeline to CDS Project
Inundation Estimates for Existing and Proposed Project Dam Elevations

Water elevation in 3/18/2008 aerial photo was 61.1 ft at outflow station. All elevations are NAVD88. Contour elevations based on LIDAR from Santa Cruz County, and corrected with cbc survey data, aerial observations and field inferences. Acreages shown are for a continuous lakebody and exclude isolated ponding in the riparian woodland on the Casserty Creek delta and channel tail waters north of Paulsen Rd.
College Lake Issues and Workflow

Issues and workflow anticipated for:

**COLLEGE LAKE DIVERSION WITH INLAND PIPELINE TO CDS**

An early conversation with the land owners of College Lake property will determine if College Lake can be a year-round water supply project, requiring a potential change of current agricultural practices.

**Project Development Phase:** The overlapping project challenges for the College Lake with inland Pipeline to CDS will require early implementation of hydrologic modeling, ecological studies, water rights application, property rights outreach and confirmation of engineering details. Using a step-wise and iterative process, the team will:

**STEP 1:** Leverage the College Lake Multi-Objective Report, which identifies two general multi-objective project schemes that would support the Agency’s supply interests.

**STEP 2:** Update and use the existing hydrologic model by cbec eco engineering with recent Agency-collected data to quantify seasonal lake operations over varying hydrologic years and management effects on biological and water resources.

**STEP 3:** Identify proposed storage curve and seasonal water surface elevations and wetted surface area.

**STEP 4:** Identify weir structure and diversion design issues, including review of State Division of Safety of Dams (DSOD) requirements.

**STEP 5:** Analyze potential beneficial effects to steelhead foraging habitat, wetland habitat, and California Red-Legged Frog population dynamics associated with increased storage.

**STEP 6:** Review diversion rates relative to drawdown and downstream minimum flow requirements.

**STEP 7:** Determine the Agency’s ultimate responsibilities for operation, maintenance, as well as management issues such as meeting State dam jurisdiction requirements. The outcome could also impact additional coordination requirements with stakeholders, property rights, outreach needs, and funding opportunities.
Harkins Slough Recharge Facilities Upgrades Project

Legend

<table>
<thead>
<tr>
<th>Color</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yellow</td>
<td>Existing Forcemain</td>
</tr>
<tr>
<td>Red</td>
<td>CDS Alignment</td>
</tr>
<tr>
<td>Green</td>
<td>New Filter Waste Backwash Pipe</td>
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</table>
Harkins Slough Issues and Workflow

Issues and workflow anticipated for:

HARKINS SLOUGH RECHARGE FACILITIES UPGRADES

A key issue in moving the Harkins Slough Recharge Facilities Upgrades forward will be reconciling the current operating permit with the Endangered Species Act pertaining to the California Red-Legged Frog.

Project Development Phase. The overlapping project drivers for the Harkins Slough Project will require review of other projects in the area and their potential influence on District actions. Using a step-wise, iterative process, the team will:

STEP 1: Develop an understanding of the scope and status of projects in the Harkins and Watsonville Sloughs confluence area by NRCS, COE, Watsonville Wetlands Watch, and others.

STEP 2: Confirm long-term viability of Harkins Slough Recharge Upgrade Project based upon potential effects of proposed projects.

STEP 3: Review relative to Watsonville Slough Project to determine whether water supply/ diversion goals can be met with one or a combination of projects.

STEP 4: Review and resolve environmental permitting issues related to existing operational impacts to the California Red-Legged Frog, as well as review future operations.

STEP 5: Conduct hydrologic modelling of existing and future diversion operations.

STEP 6: Determine whether revision to existing water rights permit for Harkins Slough will be required.

STEP 7: Refine the sizes and locations of recharge basins.

STEP 8: Outreach to regulatory agency to gain concurrence.

STEP 9: Address design issues for proposed facilities.
Watsonville Slough Diversion with Recharge Basins Project

Legend

- Existing Pipeline
- New Pipeline
- CDS Alignment
- Yellow: Potential Location for Watsonville Slough Diversion

North Dunes Recharge Basin (25 Acres)

Monitoring Well #7 Recharge Basin (3-5 Acres)

Potential Location for Watsonville Slough Diversion

Harkins Slough Diversion

Harkins Slough Recharge Basin

Southeast Recharge Basin (14 Acres)
Watsonville Slough Issues and Workflow

Issues and workflow anticipated for:

WATSONVILLE SLOUGH DIVERSION WITH RECHARGE BASINS

The critical path for the Watsonville Slough with Recharge Basins requires confirmation of the project configuration, facilities, and yield before a water rights application can be submitted.

**Project Development Phase.** The overlapping project drivers for the Watsonville Slough Project will require review of other projects in the area and their potential influence on District actions. Using a step-wise, iterative process, the team will:

**STEP 1:** Develop an understanding of the scope and status of projects in the Harkins and Watsonville Sloughs confluence area by NRCS, COE, Watsonville Wetlands Watch, and others.

**STEP 2:** Confirm long-term viability of Watsonville Slough Diversion Project based upon potential effects of proposed projects; specifically, whether the point of diversion needs to be moved further upstream to avoid conflict with the NRCS Knox Property Project.

**STEP 3:** Review relative to Harkins Slough Project to determine whether water supply/diversion goals can be met with one or a combination of projects.

**STEP 4:** Review and resolve environmental permitting issues, including impacts to the California Red-Legged Frog, related to existing and future operations.

**STEP 5:** Conduct hydrologic modeling of existing and future diversion operations.

**STEP 6:** Define operations plan to support water rights application and CEQA/permitting processes.

**STEP 7:** Define the sites and locations of recharge basins.

**STEP 8:** Outreach to regulatory agency to gain concurrence.

**STEP 9:** Address facility design related issues, including new diversion design.

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Potential new recharge basin sites adjacent to the Harkins Slough recharge basin will not require significant additional piping, and may be able to share recovery wells.

Interactions with the Harkins Slough recharge basin are not likely to be a concern for potential new basin sites further to the north.

The point of diversion may need to be moved north of the railroad tracks to allow diversion upstream of the NRCS project and minimize water quality concerns. Potential environmental impacts in these areas will be evaluated.

Due to uncertainties related to the point of diversion and other project components, further consideration will be required to determine whether to begin the Watsonville Slough water rights process in 2018 as envisioned in the BAP Implementation strategy.

Sensitive biological resources, including the California Red-Legged Frog, are present in this slough system. Expert herpetologist Gary Kittleton will evaluate potential effects on California Red-Legged Frog and contribute to the project design and operations plan development to ensure impacts to protected frogs and their habitats are minimized.

Hydraulic and hydrologic modeling of existing conditions have been conducted for the slough systems but needs to include the final design of the proposed NRCS wetlands. The slough model will be used to help define the project yields and water levels, in order to evaluate the impact of the NRCS project on the Watsonville Slough with Recharge Basins project.
Water Rights Overview

• Lead: Alan Lilly, BK&S Law

• Coordination Requirements
  – Engineering project descriptions (flows, yields)
  – Environmental project descriptions (for CEQA)
  – Property acquisition definition (purchase, easements)

• State Application Schedule
  – College Lake
    • Draft prepared in Aug/Sept 2017
    • Final to State WRCB in Sept/Oct 2017
  – Watsonville Slough
    • Draft prepared in Feb 2018
    • Final to State WRCB in Mar 2018
Engineering and Environmental Overview

Project

Hydro

Ecology

Water Rights

- Anticipate
- Investigate
- Mitigate

Project Level CEQA

Adaptative Management Plan

Permitting

Implementation

- EIR: College Lake
- MNDs: Sloughs Projects

- USACE
- USFWS
- CDFW
- RWQCB
- Water Rights
College Lake: Weir/diversion impacts to steelhead, waterfowl habitat, ag land
Harkins Slough: Diversion structure impacts to CRLFrog
Watsonville Slough: Diversion structure impacts to CRLFrog
Major Environmental Deliverables

• Environmental Lead: ESA

• Instream Flow Analysis

• Project Definition Tasks
  – Hydrologic Analyses for Operations Plan

• College Lake EIR
  – Draft Adaptive Management Plan
  – Cumulative Impact Assessment: Pajaro Lagoon
  – Final Adaptive Management Plan
  – Permitting Package:
    • USACOE, USFWS, CDFG, RWQCB

• Harkins Slough/Watsonville Slough CEQA/Permitting
# Engineering, CEQA and Permitting Schedule

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<th></th>
<th>2017</th>
<th>2018</th>
<th>2019</th>
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<td><strong>College Lake</strong></td>
<td>3/1 - 9/1</td>
<td>9/1 - 9/20</td>
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<td>6/1 - 8/28</td>
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<tr>
<td><strong>Harkins Slough</strong></td>
<td>3/1 - 9/1</td>
<td>9/1 - 1/23</td>
<td>2/6 - 10/18</td>
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<tr>
<td><strong>Watsonville Slough</strong></td>
<td>3/1 - 9/1</td>
<td>9/1 - 2/26</td>
<td>6/1 - 4/17</td>
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* To be determined: whether to combine

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**Legend**
- Project Development/Hydro Study
- CEQA
- Permitting
Property Rights Overview

• Property Rights Lead: Carpenter Robbins

• 2017:
  – Define area and type of acquisition
  – Identify parcels within each project area
  – Initiate contact with property owners
  – Identify characteristics & value of each parcel

• 2018:
  – Contact & negotiate with property owners
  – Prepare legal documents for acquisition

• 2018:
  – Acquire parcels with correct documentation
Property Rights Potential Issues

- Current use:
  - From ag land to water supply only project
  - Potential lease agreements
  - Potential flood easements
  - Relocation cost
- Appraisal – Fair Market Value vs. expectations
- Reluctant sellers – at any price
College Lake Parcels
Outreach Services Overview

• Budget and Schedule:
  – May 2017 through June 2019 (26 months)
  – Anticipated budget $200,000 (before Optional Svcs)

• Coordination Requirements:
  – Coordinate key messaging needs for PV Water
  – As-needed support for Program goals, key disciplines
  – Environmental: meeting facilitation, project boards, outreach materials
  – Property Acquisition: contacting property owners, reviewing negotiation strategy by Property Rights consultant
Outreach Services Overview (con’t)

• Scope of Services:
  – Develop outreach strategy:
    • Identify key stakeholders
    • Determine target audiences
    • Develop key messages for target audiences
    • Develop plan and schedule for outreach
  – Develop outreach and communication tools:
    • Key messaging
    • Execute direct engagement plans
    • Review project-related messages, public document review (high-level)
    • Outreach meetings
Anticipated Outreach Program Schedule

- **May 2017**: Award Outreach Contract
- **Sep 2017**: College Lake Water Rights App
- **Jan 2018**: Start Rate Setting
- **Jun 2018**: Slough MNDs
- **Jun 2018**: Programme Contract Ends
- **Sep 2018**: CL EIR

**Support CEQA**
**Support Rate Setting**
**Support Environmental Permitting**
**Support Property Acquisition**
Consultant Selection Process

• SOQ:
  – 20 pages max
  – Demonstrated water-related project experience (3)
  – One project with engineering, environmental/permitting, and property acquisition
  – 3 project references in last 10 years
  – Spanish-English bilingual capability

• Interview:
  – 50%: Conceptual-level Program outreach approach
    • Schedule, materials, audiences
  – 30%: Scope and budget (bring hard copies)
  – 20%: Relevant experience
# Outreach RFQ Schedule

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<td>Interviews and Selection</td>
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<tr>
<td>Contract Negotiations and NTP</td>
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Questions