

### Santa Clara Valley Water District

### Bay Area WateReuse Chapter Meeting August 18, 2017 Northwest County Recycled Water Strategic Plan



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## **Presentation Overview**

# A. Introduction

- **B.** Existing Recycled Water Use in Palo Alto
- C. Recycled Water Strategic Plan



### **Participants**

#### Palo Alto Regional Water Quality Control Plant

- Mountain View
- Palo Alto
- Los Altos
- Stanford
- East Palo Alto
- Los Altos Hills

#### Santa Clara Valley Water District

- Primary water resource agency for Santa Clara County
  - Water Supply
  - Flood Protection
  - Watershed Protection



VOODARD

# **Existing Recycled Water Use**

What are we working with here?

### Palo Alto Recycled Water Delivery and Expansion



ity of MOUNTAIN VIEW



Santa Clara Valley Water District

# **Recycled Water Strategic Plan**

What are we going to do here?

### Northwest County Recycled and Purified Water Efforts



Joint Recycled Water Committee (City of Palo Alto/SCVWD) Meeting – September 19, 2017



## Strategic Plan Key Issues

- How much NPR can/should be implemented?
  - East Palo Alto
  - Menlo Park
  - Stanford
  - Los Altos Hills
  - Los Altos
- How much IPR/DPR can/should be implemented?
- What are the impacts on RWQCP process/discharge?
- What are the costs vs. benefits?



Conduct comprehensive assessment of options and define water recycling that makes sense:

- Economically
- Environmentally
- Socially



## **Strategic Plan contains a variety of activities**

- Task 2 Phase III Expansion Project
- Task 3 Northwest County Indirect Potable Reuse Study
- Task 4 Recycled Water Strategic
  Plan

- Task 5 Funding Identification
- Task 6 Regulatory Support & Regional Coordination
- Task 7 Public Outreach



# **Phase III Expansion Project**



# **Proposed Phase III Distribution System to Stanford Research Park**





### **Alma Street crossing plan view**













## **Approach to Answering Question of Phase III Expansion Feasibility**

Feasibility Threshold	Net Benefits	Regional Economy	Î
	Onsite Retrofits		
Rol = Net Benefits/ Cost of Service	Recycled Water Storage	Environmental Enhancement	
	Recycled Water Delivery	NPDES Compliance/ Pollutant Trading	
	Concentrate Management	Water Supply	
	Advanced Water Purification	Reliability	

### - Cost-Effectiveness?

- Determine total cost of service
- Estimate recycled water revenue and external funding potential
  - Compare net costs with total value of benefits



# Northwest County Indirect Potable Reuse Study



## Goals of Groundwater Use Assessment and Indirect Potable Reuse Feasibility Study

- Develop refined understanding of the groundwater subbasin characteristics beneath Palo Alto and surrounding areas
- Evaluate the feasibility of Indirect Potable Reuse
  - Uses purified recycled water as a groundwater management strategy
  - Blended into an aquifer or reservoir that can eventually be used as drinking water – via groundwater recharge ponds or injection wells
- Establish a baseline and model potential impacts to groundwater under future use scenarios



## **Hydrogeologic Study Area**

- Part of the larger Santa Clara Valley Basin
  - NW to Redwood City
  - SE to Mountain View
  - North to San Francisco Bay
  - Encompasses San Francisquito Cone
- Modeling needs to account for groundwater movement across city and county boundaries and changes in Bay levels



### **Water Balance**

### Inflows

- Rain infiltration
- Irrigation return flow
- Creeks/lake percolation
- Subsurface
  - Bedrock uplands
  - Adjacent groundwater
  - Bay
- Sewer and water pipe leaks





### **Water Balance**

### Outflows

- Pumping
  - Water supply
  - Remedial
  - Dewatering
- Creek baseflow
- Sewers
- Subsurface
  - Adjacent groundwater
  - Bay and Niles Cone Basin
- Riparian evapotranspiration





### **Groundwater Quality**

Active Environmental Release Sites (GeoTracker) Plumes and Plume and Plume Depths (RWQCB and SCVWD, 2003)

- Rely on District and San Mateo Plain groundwater quality databases
- Review environmental sites near City wells
- Assess water quality in Shallow and Deep Aquifers





# Multiple IPR Strategies are being considered

- Injection wells
- Seawater intrusion prevention
- Spreading basins with environmental benefits





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