

**CDM**

**Update on North Bay Water Reuse  
Authority Efforts**

**Presentation to the North Bay Watershed  
Association**

**September 8, 2006**

# Agenda

- ◆ Project Background
- ◆ Project Members
- ◆ Project Process
- ◆ Local Projects
- ◆ Project Alternatives
- ◆ Conclusions
- ◆ Next steps

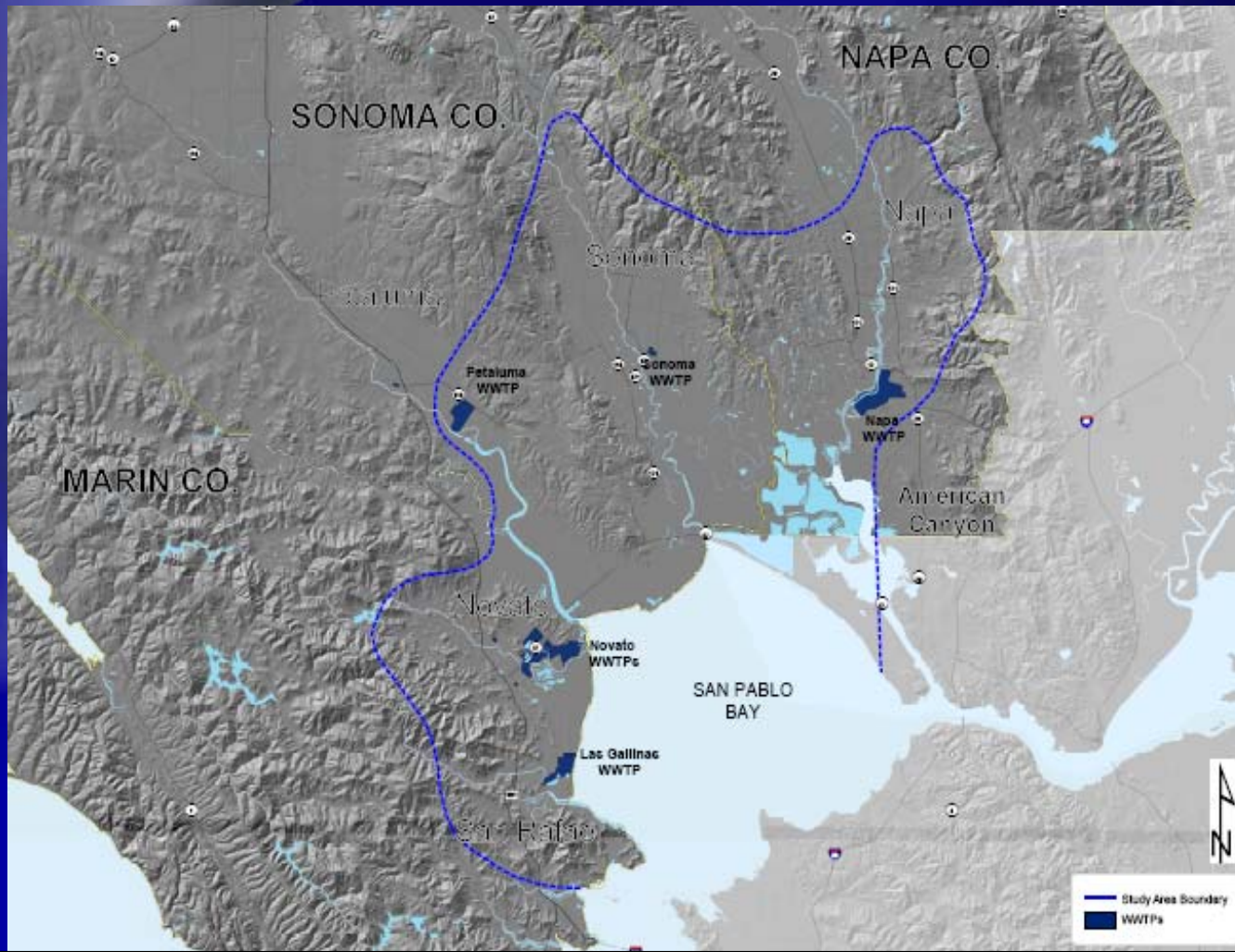
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## **What is the proposed project?**

- ◆ **Initiated by SCWA to meet the growing need for an integrated and regional approach to water management in the North Bay**
  - ◆ **Provide recycled water to agricultural users in southern Sonoma, Napa, and Marin Counties**
  - ◆ **Reduce discharges into the San Francisco & San Pablo Bays**
  - ◆ **Includes treatment, supply & distribution pipelines, & multiple storage facilities**
  - ◆ **Utilizes funding opportunities provided through Bureau of Reclamation's Title XVI program**

# Project Area



## **What is Title XVI?**

- ◆ **The Bureau of Reclamation's Title XVI Program is also known as the Reclamation Wastewater and Groundwater Study and Facilities Act of 1992**
- ◆ **The purpose of Title XVI is to:**
  - ◆ **“Investigate and identify opportunities for reclamation and reuse of municipal, industrial, domestic, and agricultural wastewater, and naturally impaired ground and surface waters, for the design and construction of demonstration and permanent facilities to reclaim and reuse wastewater...”**

## So what does that mean?

- ◆ Provides for Federal participation, through cost sharing, of specific water reuse projects (up to certain amounts specified in the Act)
- ◆ In contrast to many Reclamation projects, Title XVI Projects are constructed, owned, operated, and maintained by a non-Federal sponsor

## Are there use limitations?

- ◆ Project water can be used for a variety of purposes, including:
  - ◆ Environmental restoration
  - ◆ Agricultural
  - ◆ Municipal
  - ◆ Domestic
  - ◆ Industrial and power generation
  - ◆ Municipal
  - ◆ Recreation

## What else?

- ◆ **Construction funds can only be provided for projects authorized by Congress that have met the following requirements:**
  - ◆ **Submittal of a completed feasibility study report**
  - ◆ **The project sponsor is financially capable of funding its share of the project costs**
  - ◆ **A cost-sharing agreement with the project sponsor is approved**

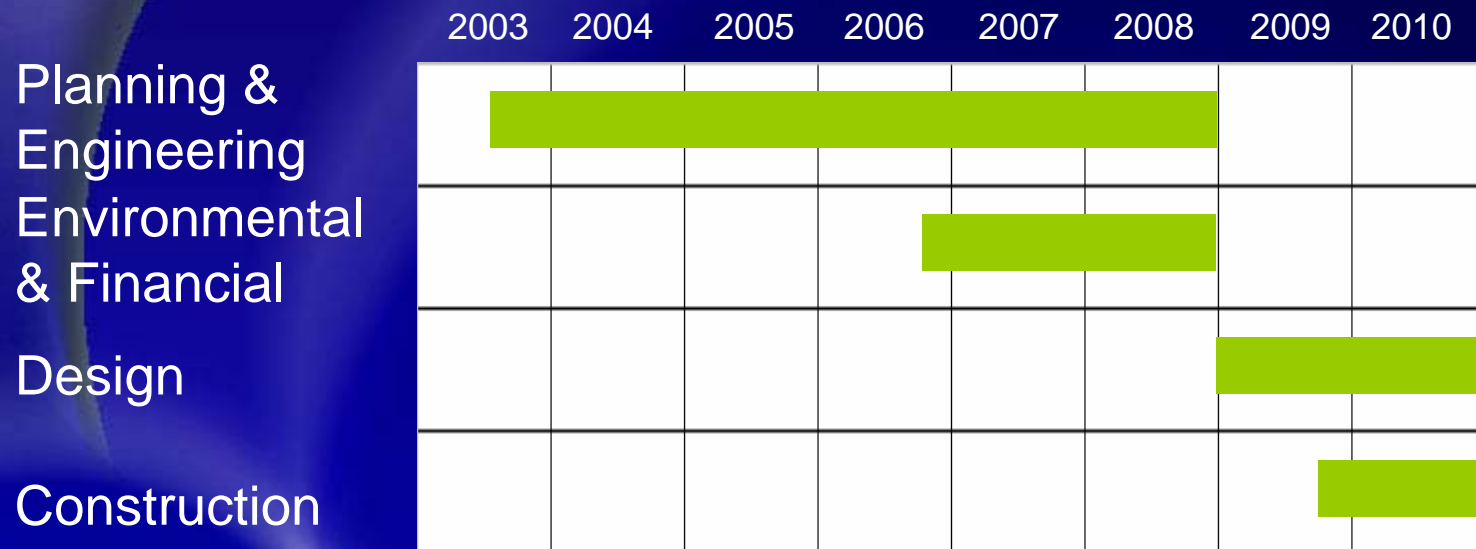
## What else?

- ◆ **The completed feasibility study report is required to address the following:**
  - ◆ **Problems and needs**
  - ◆ **Water reuse opportunities**
  - ◆ **Description of alternatives**
  - ◆ **Economic analysis**
  - ◆ **Environmental analysis**
  - ◆ **Legal and institutional requirements**
  - ◆ **Financial capability to implement the project**

# Project Endpoint

- ◆ **Title XVI Feasibility Study**
  - ◆ Engineering evaluation
  - ◆ Environmental evaluation
  - ◆ Financial evaluation
- ◆ **Phase I includes initial part of Engineering evaluation**
- ◆ **Phase II includes remainder of Engineering evaluation**
- ◆ **Phase III includes the Environmental and Financial evaluations**

# Project Schedule



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## Who are the Project Members?

- ◆ Bureau of Reclamation
- ◆ North Bay Water Reuse Authority (MOU formed August 2005)
  - ◆ Napa Sanitation District
  - ◆ Sonoma Valley County Sanitation District
  - ◆ Sonoma County Water Agency
  - ◆ Las Gallinas Valley Sanitary District
  - ◆ Novato Sanitary District

## Who else is involved?

- ◆ **Contributing Stakeholders**
  - ◆ City of Petaluma
  - ◆ North Marin Water District
  - ◆ Marin Municipal Water District
  - ◆ City of American Canyon
  - ◆ Napa County
  - ◆ Carneros Quality Alliance
  - ◆ North Bay farmers & farming groups

## Who else is involved?

- ◆ **Consultants**
  - ◆ **Technical**
    - CDM
  - ◆ **Program Development**
    - Ginger Bryant
    - Marc Holmes (TBI)

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# Project Process

- ◆ **Technical Process**
  - ◆ Identify Project goals
  - ◆ Identify Project members
  - ◆ Identify local projects
  - ◆ Compile supply and demand data
  - ◆ Develop conceptual alternatives
  - ◆ Develop system components
  - ◆ Develop costs
  - ◆ Summarizing engineering work to date for environmental and financial evaluation

# Project Process

- ◆ **Program Development**
  - ◆ **Identify Project members**
  - ◆ **Pursuing additional Federal and State funding opportunities**
  - ◆ **Perform public outreach**
    - **Growers associations**
    - **Agricultural districts**
    - **Other potential recycled water users**

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# Local Projects

Existing Projects	Agency Proposed Projects	New Potential Reuse Areas
SVCS D Reuse Area	Peacock Gap Golf Course	Petaluma South
MMWD Reuse Area	NMWD Urban Recycled Water Project	Southern Sonoma Valley
Stone Tree Golf Course Reuse Area	Sonoma Valley Recycled Water Project	Sears Point
	Carneros East	Central Sonoma Valley
	MST Area	
	Napa Salt Marsh Restoration	

# Local Project Locations



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# Project Alternatives

- ◆ **Alternative Development**
  - ◆ **The Feasibility Study Process requires development of three project alternatives and a No Action Alternative for comparison purposes**
  - ◆ **The three selected project alternatives:**
    - **All have goals of maximizing recycled water in the region**
    - **Allow flexibility with regard to future implementation and available funding**

## Project Alternatives

- ◆ **The three selected project alternatives were technically evaluated in several ways**
  - ◆ **Reviewed pipeline alignments in agency proposed and new potential reuse areas**
    - Aerial photography review
    - Ground inspection
  - ◆ **Reviewed geotechnical considerations**
    - River and railroad crossings
    - Seismic fault crossings
    - High groundwater
    - Soft soils, hard soils, & shallow bedrock

# Project Alternatives

- ◆ **Performed hydraulic modeling**
  - Obtained WWTP historic daily flow data
  - Obtained typical monthly recycled water use data for agricultural and urban users
  - Assumed minimum future delivery of recycled water at 60 psi
  - Modeled static flow conditions for peak summer and winter flows
  - Sized pipelines, storage facilities, and pump stations
- ◆ **Developed probable capital costs**
  - Construction cost curves from local agencies
  - Recent bidding results from local projects

# Alternative 1

- ◆ Prioritizes the importance of recycled water projects local to each WWTP



## **Alternative 1**

- ◆ **Benefits**

- ◆ Serves more recycled water than the sum of existing and member agency-proposed Projects
- ◆ Maximizes use of existing and easily developed storage (3,900 AF)
- ◆ Allows for greater matching funds opportunities compared to No Action Alternative

- ◆ **Drawbacks**

- ◆ Supplies from LGVSD/Novato not used in high demand areas of Sonoma/Napa
- ◆ Delivers 21,700 AFY recycled water

## Alternative 2

- ◆ Creates larger subregional systems
- ◆ Connects more than two wastewater treatment facilities



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## **Alternative 2**

- ◆ **Benefits**

- ◆ **Allows for more recycled water use than Alt 1**
- ◆ **Allows SVCSD and Napa WWTP to reach zero-discharge conditions**
- ◆ **Allows for greater matching funds opportunities compared to No Action Alternative**

- ◆ **Drawbacks**

- ◆ **Requires large new storage location to be identified (13,900 AF)**
- ◆ **Delivers 28,700 AFY recycled water**

## Alternative 3

- ◆ Creates regional system which maximizes reuse within the region



## **Alternative 3**

- ◆ **Benefits**
  - ◆ **Allows for maximum volume of recycled water use**
  - ◆ **Allows for greater matching funds opportunities compared to No Action Alternative**
- ◆ **Drawbacks**
  - ◆ **Requires large new storage location to be identified (19,700 AF)**
- ◆ **Delivers 30,200 AFY recycled water**

## **No Action Alternative**

- ◆ **Assumes no Project**
- ◆ **Assumes no significant change in Bay TMDLs in next 15 years**
- ◆ **Reflects current status and plans for regional water needs and expansion**
- ◆ **Assumes the potential need to develop additional potable water supplies continues to be a regional challenge**
  - **Regional water planning documents to date appear to have only been for urban areas- they neither address farmers nor maintaining the important agricultural interest in the area**

## **No Action Alternative**

- ◆ **Potential Projects**
  - ◆ **Sonoma and Marin Co**
    - Increased diversions from Russian River
      - increased transmission system capacity
    - Desalination Projects

## **No Action Alternative**

- ◆ **Potential Projects**
  - ◆ **Napa County**
    - Increase capacity of the North Bay Aqueduct
    - Additional proposed water storage and delivery projects in Northern California

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## **In Conclusion...**

- ◆ **Extensive amount of analysis and decision making performed so far by NBWRA members**
- ◆ **Leveraging federal money to perform 2x the amount of work**
- ◆ **Technically, Alternative 1 appears to be most attractive, because:**
  - ◆ **Alternatives 2 and 3 require significant, and yet unidentified, location(s) for surface or aquifer storage**
  - ◆ **Lowest capital cost per AF**
    - **Note that other Alts may become more attractive once the \$\$\$ benefits to WWTPs and/or environmental benefits are considered**

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## Where is the Project heading next?

- ◆ Finalizing Draft Phase 2 engineering Feasibility Study Report
- ◆ Performing Environmental and Financial elements
- ◆ Forming joint powers authority (JPA)
- ◆ Pursuing additional Federal and State funding
- ◆ Examining phasing of Project Alternatives
- ◆ Investigate additional No Action Alternative project offsets
- ◆ Continuing outreach to user groups

## How can YOU help?

- ◆ **Becoming a member of North Bay Water Reuse Authority**
- ◆ **Participate in monthly meetings**
- ◆ **Identify local projects for incorporation and receipt of funding**
- ◆ **Identify additional projects for No Action Alternative**
  
- ◆ **For more information, contact Bill Long of Novato SD**

**Any Questions?**

**CDM**