



EBMUD's Wet Weather Program, NPDES Permit and TSO



March 6, 2007

EBMUD Wastewater Service Area



- Serves 9 cities and communities with a population of approximately 650,000
 - Alameda
 - Albany
 - Berkeley
 - Emeryville
 - Oakland
 - Piedmont
 - Stege Sanitary District (El Cerrito, Kensington & part of Richmond)

- EBMUD collects and treats wastewater
 - 2900 miles of sewers (community owned)
 - 30 miles of interceptors
 - 14 pump stations
 - Main Wastewater Treatment Plant

Wet Weather Flow

- 💧 Pipes and manholes overflow
- 💧 Flow in pipes increases.
- 💧 Water enters sewer system through improper connections (Inflow)
- 💧 Water enters faulty joints and defects in communities' pipes and private laterals (Infiltration)
- 💧 Ground gets saturated
- 💧 It rains.

Inception of East Bay Wet Weather Program

- Beginning in 1976, stakeholders recognized need to get raw sewage off the streets

- Considerations included:
 - protection of human health
 - protection of the bay
 - technical feasibility
 - financial impact to rate payers
 - regulatory issues

Program Planning

- Time Frame: 1975 thru 1987
- Overall Cost: \$18 million (Local Funds and State Grants)
- Planning Reports:
 - The Control of Wet Weather Overflows and Bypasses (1975)
 - Wet Weather Facilities Plan (1980)
 - East Bay I/I Study – Manual for Cost-Effectiveness Analysis (1981)
 - Local Effect Monitoring (LEM) Study (1982)
 - Sewer System Evaluation Study (SSES) (1986)
 - Wet Weather Facilities Plan Update (1985)
 - EIR for I/I Correction Program (1986)
 - EIR for District's Wet Weather Program (1986)
 - LEM Program Update (1986)
 - Predesign Report (1986)
 - Final Cost Effectiveness Analysis Update for I/I Correction Program (1987)
 - Project Report for MWWTP and Interceptors (1987)

Approach

- EPA, SWRCB and RWQCB were actively involved, including program approval from inception through design to the present
 - Page 4 - 24 of current Basin Plan
 - District and Community NPDES permits
 - June 1986 letter from EPA – Key Document
 - EIR processes
- Used hydraulic modeling of entire system to assess alternatives
- Alternatives included storage, treatment/discharge, and provision for overflows from storage and interceptors when storms exceeded design storm

Key Findings from Planning Work

- Recommended two programs:
 - Wet Weather Flow Storage and Treatment - responsibility of EBMUD
 - Infiltration/Inflow Control -responsibility of collection agencies

Wet Weather Program Elements

💧 EBMUD Program

- Spent \$325 million on Wet Weather Program
- Constructed 3 wet weather facilities, 2 wet weather interceptors, and system storage and pumping facilities
- Treatment facilities designed to address major public health concern
- Projects completed in 1998

💧 Communities' Program

- Spent \$335 million on I/I Correction Program
- Rehabilitating collection systems
 - Approximately 80% of projects completed
- Constructing relief sewers
 - Approximately 88% of projects completed

OAKPORT PEAK WET WEATHER TREATMENT FACILITY

IN SERVICE SINCE 1990



Design Flow: 158 MGD
 Storage: 3 MG
 Treatment:
 Sedimentation,
 Chlorination,
 Dechlorination



PT. ISABEL PEAK WET WEATHER TREATMENT FACILITY

IN SERVICE SINCE
1993



Design Flow: 100 MGD
Storage: 3 MG
Treatment: Screening,
Sedimentation, Chlorination,
Dechlorination

*SAN ANTONIO
CREEK PEAK
WET WEATHER
TREATMENT
FACILITY*

*IN SERVICE SINCE
1996*



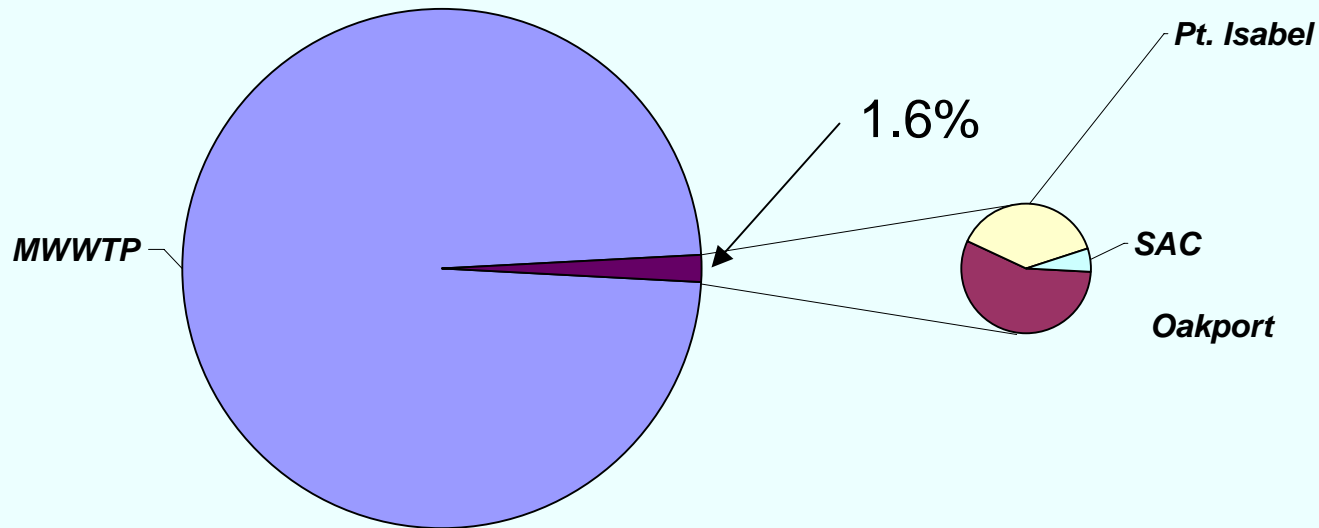
Design Flow: 51 MGD
Treatment: Screening,
Chlorination, Dechlorination

EBMUD Wet Weather Program Results

	Before	After
Treatment Capacity	290 MGD	724 MGD*
Storage	0	18 MG
Untreated overflow events per year	Approx. 10	0.20

* 415 MGD at MWWTP and 309 MGD at wet weather facilities

Total Volume of Discharge from MWWTP vs. from Wet Weather Treatment Facilities for Period 1998-2005



25% of the money that EBMUD collects for wastewater services is spent on these infrequently operated facilities.

Current Permit Renewal Process

- July 2002: Applied for renewal
- Fall 2003: Notified by RWQCB that development of new permit started
- January 2004: Started meeting with stakeholders to develop permit
 - EPA
 - RWQCB
 - Communities
- August 2004: Draft permit and TSO issued for public comment
- January through September 2005: Negotiations with RWQCB and NGOs in response to comments by NGOs and EPA Region 9 on draft permit and TSO

2005 Permit and TSO

- 💧 Permit and TSO issued September 2005
- 💧 TSO mandates six studies to identify the conditions and requirements that will be put in next permit
- 💧 \$3.3 million in contracts have been executed to provide needed technical and cost information

TSO Study Investigations

- 1) Treatment alternatives for the wet weather facilities
- 2) Storage and transport alternatives
- 3) Inflow and infiltration program enhancements
- 4) One-system permit model
- 5) Applicability of provisions in the SIP and CTR for addressing pollutants of concern
- 6) Offset projects for reducing discharges of pollutants of concern

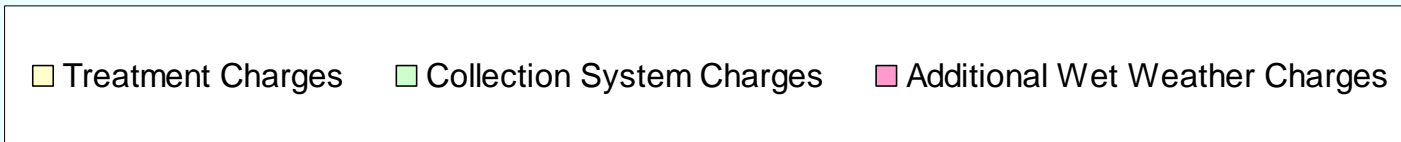
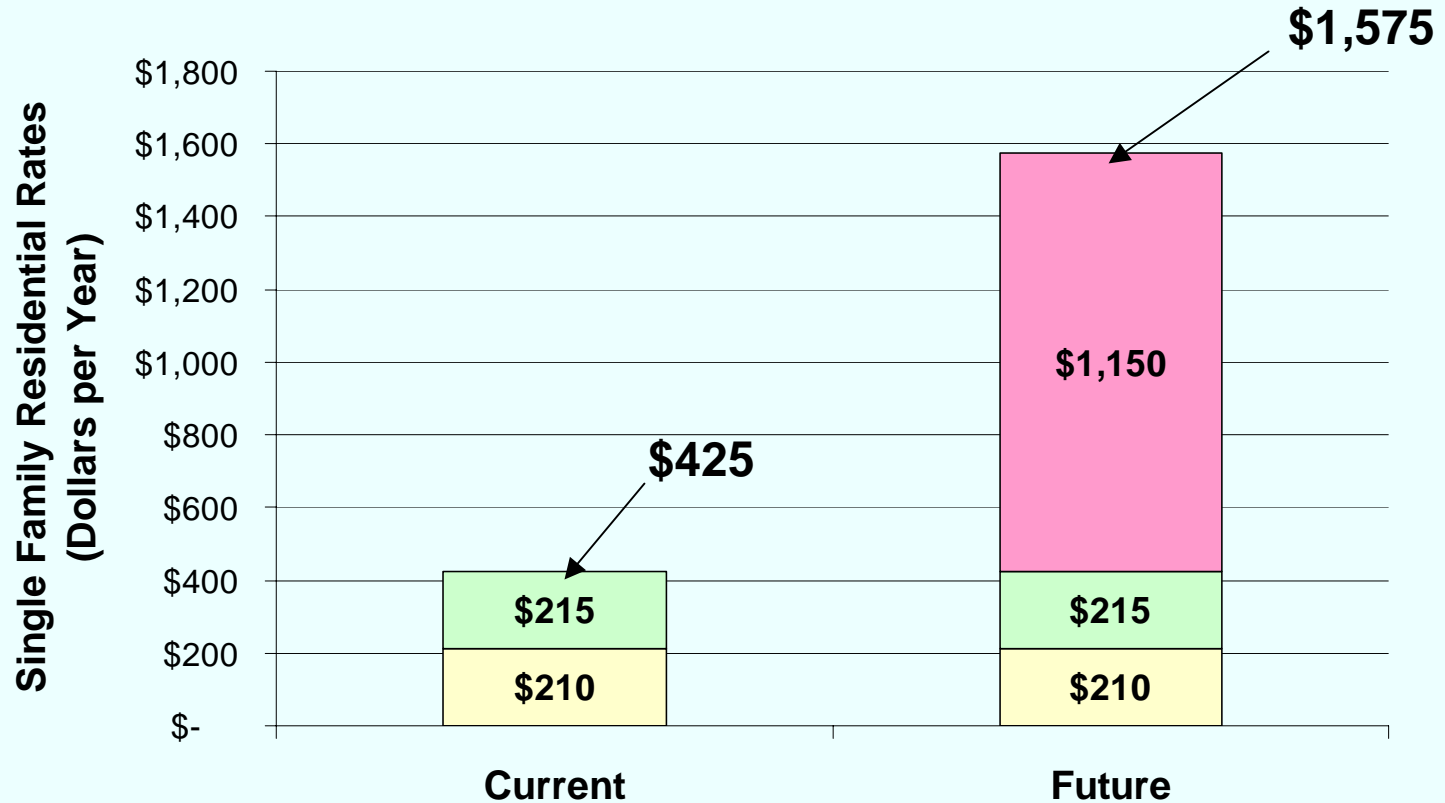
Challenges

- ◆ How to apply secondary standards
- ◆ Technical feasibility of possible alternatives
- ◆ Addressing the problem – reducing peak flows
- ◆ Regional/satellite structure
- ◆ Understanding and managing financial impact

Financial Effects of Draft Order

- The existing facilities – which have not yet been fully paid for – would have to be dramatically modified or even removed
- The cost for EBMUD to define and apply secondary treatment standards at the wet weather facilities is estimated at \$1.9 billion.
- Additional costs are expected if other elements of the draft order are adopted.
- ***The effect on East Bay customers' wastewater rates would be dramatic.***

Impact on Customer Rates



Summary and Conclusions

- The permit and TSO are the latest steps in addressing a difficult problem
 - 3 decades of analysis, planning and implementation
 - Hundreds of millions of dollars
 - Historical process supported by EPA, SWRCB, RWQCB, EBMUD and the communities
 - Plan has been working - Dramatic reductions in the frequency and impacts of discharges
- All TSO elements are in full swing
 - Blue ribbon panel: EPA, RWQCB, EBMUD, NGOs, communities, League of Women Voters, business sector and scientific community
 - TSO process will result in identifying the most cost-effective long term plan
 - The TSO studies lay the groundwork for the next permit round

Summary and Conclusions (cont'd)

- SWRCB has discretion to allow the process to go forward
- SWRCB should exercise that discretion
- RWQCB could open the permit to correct factual errors