Study Session –

Wastewater Enterprise, Proposed Improvement Projects and Projected Funding Needs Update

February 24, 2015
Overview – Wastewater Collection System

- Customer Base
  - 16,276 SFR
  - 1,968 MFR
  - 1,364 COM/IND

- Pipelines: 185 miles
- Pump Stations: 13
Overview – Wastewater Treatment System

- Wastewater Plant
  - Built in 1953

- Average Dry Weather Flow
  - 7 million gallons

- Produces Disinfected Secondary Effluent

- Disposal Into Bay through Deep Water Outfall Pipeline
Richmond Municipal Sewer District Boundary
Council Recognizes Economic and Service Challenges

• Approved Funding through Adoption of Prior Sewer Rate Structures
• Worked with Staff to Evaluate Sustainable Wastewater Collection and Treatment Service Alternatives
• Directed Staff to Analyze Different Operation and Maintenance Options
• Support Staff Working Closely with Veolia to Manage Service Levels
2010 Sewer Fee Increase

- Staff Recommendation - 8% Increase for 5 Years
  - Would fund both Collection System and Treatment Plant Improvements
  - Council Approved 5% Increase for 3 Years
  - Directed Staff to Use Proceeds to Fund Baykeeper Mandated Improvements
  - Directed Staff to Evaluate Alternatives to Investment in Treatment Plant
  - Come back to Council with Future Funding Needs and Necessary Rate Structure
2010 Rate Structure Provided $40 Million of Capital Improvement Funds

As Directed by Council, CIP Focused on Meeting Baykeeper Requirements
Highlights of Capital Improvement Projects

Infiltration and Inflow Reduction Projects

• Pipeline Replacement, Lining and Upsizing
• Manhole Rehabilitation Projects
Highlights of Capital Improvement Projects

Influent Pump Station Upgrade

- Upgraded Influent Pumps
- Upgraded Variable Frequency Drives
- Upgraded Motor Control Centers
- Installed New Odor Control Facilities
Highlights of Capital Improvement Projects

New Wet Weather Storage Facility
- Will Allow the City to Discontinue Use of Engineered Overflow Structures
- Wet Weather Pump Station
- 5-Million Gallon Tank
Wet Weather Storage Facility
Highlights of Capital Improvement Projects – Treatment Plant

Address Immediate Health and Safety Issues at the Treatment Plant

- Chlorine Storage Tank Replacement
- Administration Building Roof
Highlights of Capital Improvement Projects – Treatment Plant

Digester Facility Rehabilitation Project
  • Mechanical Building and Equipment
  • Digester Tank and Cover Rehabilitation
Council Directed Staff to Evaluate Service Delivery Alternatives

- Divert Flow to West County Wastewater District for Treatment
- Divert Flow to EBMUD For Treatment
## Initial Service Delivery Alternatives Analysis

<table>
<thead>
<tr>
<th>WCWD Facility Required Significant Expansion</th>
<th>$197-$226 Million</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rehabilitate City’s Plant</td>
<td>$158 Million</td>
</tr>
<tr>
<td>EBMUD Initially Appeared the Potential Lowest Cost Alternative</td>
<td>$121 Million</td>
</tr>
<tr>
<td></td>
<td>City and EBMUD Worked to Evaluate this Alternative Further</td>
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</tbody>
</table>
Further EBMUD Treatment Alternative Analysis

• Concluded Inadequate Wet Weather Capacity
• Under Regulatory Mandate to Decommission Point Isabel Treatment Facility
• Would Require Construction of Dedicated Pipeline from Richmond to EBMUD’s Oakland Treatment Plant
• Determined to be Cost Prohibitive

The City and EBMUD Continue to Explore Alternatives Including Possible Annexation of the Richmond Municipal Sewer District as a New EBMUD Service Area
KEY CONSIDERATIONS
FOR CONTINUED DISCUSSIONS
BETWEEN EBMUD AND THE CITY OF RICHMOND
REGARDING THE TREATMENT OF FLOWS FROM THE
RICHMOND MUNICIPAL SEWER DISTRICT
(as of April 15, 2014)

East Bay Municipal Utility District (EBMUD) and City of Richmond (City) staff have discussed an increased role for EBMUD in providing wastewater conveyance and treatment services to Richmond Municipal Sewer District customers. Several options are under preliminary review, including annexation of the Richmond Municipal Sewer District by EBMUD.

EBMUD has identified key considerations that will inform future discussions with the City. These considerations represent conditions that would provide EBMUD with a necessary measure of assurance regarding potential project feasibility.

KEY CONSIDERATIONS

1. Those served by the Richmond Municipal Sewer District fund and finance all necessary capital improvements to the Water Pollution Control Plant (WPCP).

2. Repayment of existing debts associated with the WPCP remains the responsibility of those served by the Richmond Municipal Sewer District.

3. Wastewater treatment fees collected from those served by the Richmond Municipal Sewer District are set and maintained at a level sufficient to cover the full cost of ongoing operations, maintenance, and improvements to the WPCP and the proportional costs of using any EBMUD facilities.

4. Annexation does not detrimentally impact EBMUD’s existing bond rating.

5. The City retains responsibility for the collection system.

6. The parties negotiate a maximum allowable wet weather flow rate into the WPCP as a condition of annexation.

7. EBMUD is protected from regulatory liabilities associated with any existing WPCP deficiencies or with the City’s operation and maintenance of its collection system.

8. Annexation does not significantly impact the satellite agencies currently served by the District.

9. EBMUD reaches an acceptable agreement with the West County Wastewater District for joint operation of the shared outfall.

10. The City provides full access to its financial records, as they relate to the WPCP and associated issues.
On-Going Capital Improvement Needs – Collection System

Infiltration and Inflow Reduction Projects

- Continue Replacement and Rehabilitation of Sewer Pipes
  - To Prevent Sewer Overflows from Manholes
  - Meet Baykeeper SSO Requirements
- Measure U Paving Program Accelerates Pavement Repair
  - Replacement of Failing Sewer Pipelines Prevents Premature Pavement Failure
  - Often, Failing Underground Pipelines and Laterals are Cause of Pavement Failure

Estimated Cost: $34.7 Million
On-Going Capital Improvement Needs – Keller Beach

Estimated Cost: $5.7 Million
On-Going Capital Improvement Project Needs – Electrical Upgrades

Estimated Cost: $11.1 Million
On-Going Capital Improvement Project Needs – Aeration Basins

Estimated Cost: $6.6 Million
On-Going Capital Improvement Project Needs – Grit System

Estimated Cost: $7.1 Million
On-Going Capital Improvement Project Needs – Secondary Clarifiers

Estimated Cost: $5.6 Million
Additional CIP Needs

Gravity Belt Thickener – For Thickening Waste Activated Sludge Prior to Digestion  $2.3 Million

Leachate/Sludge Pipeline – Condition Assessment and Rehabilitation of Pipeline  $1.25 Million

Biosolids Dewatering – City Must Stop Sending Biosolids to WCWD for Drying  $18.5 Million

Biosolids Drying to 90% – Reduces Hauling and Disposal Costs  $11.2 Million

Sodium Bisulfite Storage Tank – Tank Facility is Unsafe and Requires Replacement  $125 K
Total Sewer Infrastructure Rehabilitation Needs

$104.2 Million
Current Wastewater Rate

In 2010 Council Approved a Rate Increase of 5% Per Year for 3 Years – Increase went into effect FY2011/12 and Ended FY2013/14.

<table>
<thead>
<tr>
<th>Fiscal Year</th>
<th>Prior FY 10/11</th>
<th>2010 Approved Rates FY 11/12</th>
<th>FY 12/13</th>
<th>FY 13/14 - NOW</th>
</tr>
</thead>
<tbody>
<tr>
<td>Annual Charge $</td>
<td>$546.59</td>
<td>$573.92</td>
<td>$602.62</td>
<td>$632.75</td>
</tr>
<tr>
<td>Annual Increase $</td>
<td>$40.49</td>
<td>$27.33</td>
<td>$28.70</td>
<td>$30.13</td>
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<tr>
<td>Monthly Breakdown $</td>
<td>$45.55</td>
<td>$47.83</td>
<td>$50.22</td>
<td>$52.73</td>
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<tr>
<td>Increase Per Month $</td>
<td>$2.28</td>
<td>$2.39</td>
<td>$2.51</td>
<td></td>
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</tbody>
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Average Increase (Annual) $28.72
Average Increase (Monthly) $2.39

Rebate Available for low income residents
The City’s Rates Remain Reasonable Compared to Others

Bay Area Monthly Sewer Rates
(Fiscal Year 2012-13)

Source: State Water Resources Control Board
Ensuring Accountability of Funding

• Very Well Managed Wastewater Enterprise as Evidenced by:
  – Strong Enterprise Cash Reserves
  – Excellent Credit Rating AA-
  – Projects are identified by Master Plan.
  – Appropriate Use of 2010 Prior Bond Funds

• Managed Expenses to Avoid the Need for a Rate Increase in FY2014/15 to Meet Debt Service Coverage.
Summary

With the Support of the City Council, Staff Accomplished Many Improvements Since 2010

- Wet Weather Storage
- Manhole Rehabilitation
- 2011 Pipeline Replacement
- 2011 Sanitary Sewer Lining
- 23rd Street Sewer Upsize
- Costa Avenue Sewer Replacement
- Sunset Point Generator
- Upper Clinton Sewer Replacement Project
- San Pablo Avenue Sanitary Sewer Rehabilitation
- Pennsylvania Avenue Emergency Repairs

Estimated Total CIP Expenditure: $50 Million
Summary - Wastewater Treatment Plant Upgrades

• Staff Worked Closely with EBMUD and West County Wastewater to Evaluate Potential Alternatives
• Evaluation Concluded that Plant Rehabilitation is Most Cost Effective Alternative
• Plant Improvements are Necessary Regardless of Long-Term Service Delivery Alternative
• EBMUD Willing to Discuss Annexation Concept Further with Conditions
• Plant Upgrades Required for EBMUD to Consider Annexation
• Reliable and Compliant Operation is MANDATORY
### Summary – Proposed CIP for Next Five Years

<table>
<thead>
<tr>
<th>Collection System Improvements:</th>
<th>Projected Cost:</th>
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<tbody>
<tr>
<td>Capacity Improvement (Baykeeper)</td>
<td></td>
</tr>
<tr>
<td>13th &amp; Dunn</td>
<td>$7,400,000</td>
</tr>
<tr>
<td>Cutting &amp; Hoffman</td>
<td>$7,600,000</td>
</tr>
<tr>
<td>Carlson</td>
<td>$1,140,000</td>
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<tr>
<td>1st, Macdonald, Virginia</td>
<td>$7,700,000</td>
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#### Critical Reliability Projects
- Keller Beach Interceptor: $5,700,000

#### Planning Studies
- Pump Station Master Plan: $200,000
- Force Main Assessments: $200,000

#### Infiltration Inflow Reduction Projects
- Measure U Coordination: $10,500,000

| Collection System Subtotal: | $40,440,000 |

### Treatment Facility Improvements:

<table>
<thead>
<tr>
<th>Project Description</th>
<th>Projected Cost:</th>
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</thead>
<tbody>
<tr>
<td>Electrical upgrades</td>
<td>$11,100,000</td>
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<tr>
<td>Convert aeration basins to fine bubble aeration</td>
<td>$6,600,000</td>
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<tr>
<td>Vortex grit removal system (4)</td>
<td>$7,100,000</td>
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<tr>
<td>Secondary Clarifier Improvements</td>
<td>$5,600,000</td>
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<tr>
<td>Gravity Belt Thickener for WAS Thickening</td>
<td>$2,300,000</td>
</tr>
<tr>
<td>Leachate/sludge pipeline condition assessment and rehabilitation</td>
<td>$1,250,000</td>
</tr>
<tr>
<td>Sodium Bisulfite Storage Tanks Replacement</td>
<td>$125,000</td>
</tr>
<tr>
<td>Biosolids dewatering</td>
<td>$18,500,000</td>
</tr>
<tr>
<td>Digester gas-fueled biosolids drying to 90% solids</td>
<td>$11,200,000</td>
</tr>
</tbody>
</table>

| Treatment Plant Subtotal: | $63,775,000 |

### Wastewater Enterprise CIP Total Expenditures: $104,215,000
Next Steps

• Refine Necessary Rate Structure
• Provide Public Outreach Meetings to Inform Community
• Present Proposed Rate Structure To Council in May or June 2015 at the Latest
• New Rate Structure Effective FY2015/16
The City’s Commitment
Customer Service

- Provide a Reliable Operating System to Ratepayers
- An Upgraded and Well Maintained System Equals Fewer Sewer Spills and Less Impacts from the Treatment Plant
- Eliminate Violations and Fines
Questions:

February 24, 2015