Reclaimed Water Master Plan
City of Tampa, Florida

May 2009
Agenda

- Master Plan Goals
- Recommendations
- Benefits to the City
Program Goals

- Use all reclaimed water within City of Tampa boundary
- Maximize potable water offsets
- Develop fiscally responsible plan
- City in control of its resource
- Develop a prioritized plan
- Nitrogen removal from Bay
  - Total Maximum Daily Loads (TMDL)
There is Not Enough Supply for All Potential City Customers

2030 Supply vs. Demand

- Reliable Supply
- Existing Demand

Supplemental Demand - MGD

Jan  Feb  Mar  Apr  May  Jun  Jul  Aug  Sep  Oct  Nov  Dec
There is Not Enough Supply for All Potential City Customers

2030 Supply vs. Demand

- Reliable Supply
- South Projects
- Existing Demand

Supply or Demand - MGD

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
There is Not Enough Supply for All Potential City Customers

2030 Supply vs. Demand

- Reliable Supply
- North Projects
- South Projects
- Existing Demand

CDM
There is Not Enough Supply for All Potential City Customers

2030 Supply vs. Demand

- Reliable Supply
- Service to All Remaining Areas within City
- Not Enough Water
- North Projects
- South Projects
- Existing Demand

Supply or Demand - MGD

Jan  Feb  Mar  Apr  May  Jun  Jul  Aug  Sep  Oct  Nov  Dec
Other Tampa Demand Has Highest Cost

2030 Supply vs. Demand

Unit Cost in $ per 1,000 gallons of potable water offset

- Reliable Supply
- Portions of Remaining City Projects
- North Projects
- South Projects
- Existing Demand

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec

Costs:
- $15.65 for Reliable Supply
- $5.26 for Portions of Remaining City Projects
- $2.19 for South Projects
## Estimate of Capital Costs for City Projects

<table>
<thead>
<tr>
<th></th>
<th>Total Project Cost</th>
<th>Total SWFWMD Share</th>
<th>Total Tampa Share</th>
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</thead>
<tbody>
<tr>
<td><strong>South Tampa Projects</strong></td>
<td>$86,945,000</td>
<td>$43,115,000</td>
<td>$43,830,000</td>
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<tr>
<td><strong>North Tampa Projects</strong></td>
<td>$169,254,000</td>
<td>$84,626,000</td>
<td>$84,628,000</td>
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<td><strong>Other Tampa Projects</strong></td>
<td>$1,171,900,000</td>
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<td>$1,171,900,000</td>
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<tr>
<td><strong>Pump Station @ HFCAWTP</strong></td>
<td>$32,060,000</td>
<td>$16,030,000</td>
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<tr>
<td><strong>Totals</strong></td>
<td>$1,460,159,000</td>
<td>$143,771,000</td>
<td>$1,316,388,000</td>
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</table>
North Tampa Wastewater Treatment Plant is Too Costly and Will Not Produce Enough Reclaimed Water

2030 Supply vs. Demand

Unit Cost in $ per 1,000 gallons of potable water offset

North WWTP = $34,000,000

$12.10

$2.19

CDM

GREELEY AND HANSEN
Potential Compatible Tampa Bay Water Project Maximizes Reuse

2030 Supply vs. Demand

- Reliable Supply
- Partner with TBW
- North Projects
- South Projects
- Existing Demand

Unit Cost in $ per 1,000 gallons of potable water offset

$3.26 / 1000 gallons (Combined)
$4.77
$1.96

Supply or Demand - MGD

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec

CDM

Greeley and Hansen
Residential Expansion

Existing STAR Area

Bayshore Transmission Main
Proposed Tampa Bay Water Project

North Projects

South Projects

North Transmission Main
# Recommended Reclaimed Water Master Plan – Capital Projects

<table>
<thead>
<tr>
<th>Project Type</th>
<th>Total Project Cost</th>
<th>Potential Tampa Bay Water Share</th>
<th>Potential SWFWMD Share</th>
<th>Potential Tampa Share</th>
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</thead>
<tbody>
<tr>
<td><strong>South Tampa Projects</strong></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Additional STAR Connections</td>
<td>$714,000</td>
<td>$0</td>
<td>$0</td>
<td>$714,000</td>
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<tr>
<td>Large User Expansion, Downtown, &amp; Cooling Towers</td>
<td>$33,920,000</td>
<td>$0</td>
<td>$16,960,000</td>
<td>$16,960,000</td>
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<tr>
<td>Bayshore/Residential Expansion</td>
<td>$52,311,000</td>
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<td>$26,155,000</td>
<td>$26,156,000</td>
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<tr>
<td><strong>Subtotal South Tampa Projects</strong></td>
<td><strong>$86,945,000</strong></td>
<td><strong>$0</strong></td>
<td><strong>$43,115,000</strong></td>
<td><strong>$43,830,000</strong></td>
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<tr>
<td><strong>North Tampa Projects</strong></td>
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<td></td>
<td></td>
<td></td>
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<tr>
<td>Residential Expansion in North Tampa</td>
<td>$158,139,000</td>
<td>$0</td>
<td>$79,070,000</td>
<td>$79,069,000</td>
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<tr>
<td>To Tampa Bay Water Project</td>
<td>$64,126,000</td>
<td>$64,126,000</td>
<td>$0</td>
<td>$0</td>
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<tr>
<td><strong>Subtotal North Tampa Projects</strong></td>
<td><strong>$222,265,000</strong></td>
<td><strong>$64,126,000</strong></td>
<td><strong>$79,070,000</strong></td>
<td><strong>$79,069,000</strong></td>
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<tr>
<td>Pumping and Storage @ HFCAWTP</td>
<td>$32,060,000</td>
<td>$15,919,000</td>
<td>$8,070,000</td>
<td>$8,071,000</td>
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<tr>
<td><strong>Totals</strong></td>
<td><strong>$341,270,000</strong></td>
<td><strong>$80,045,000</strong></td>
<td><strong>$130,255,000</strong></td>
<td><strong>$130,970,000</strong></td>
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</tbody>
</table>
# Project Phasing Maximizes Offsets, Dollars, and Coordination

## Calendar Year

| Year | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 |
|------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|    |
| **South Projects** | | | | | | | | | | | | | | | | | | | | | |
| Additional STAR Connections | | | | | | | | | | | | | | | | | | | | | |
| Large Users Construction | | | | | | | | | | | | | | | | | | | | | **Design and Construction**
| Bayshore/Residential Expansion | | | | | | | | | | | | | | | | | | | | | **Design and Construction**
| **North Projects** | | | | | | | | | | | | | | | | | | | | | |
| Residential Expansion | | | | | | | | | | | | | | | | | | | | | **Design and Construction**
| To Tampa Bay Water Project | | | | | | | | | | | | | | | | | | | | | **Design and Construction**
| Pumping and Storage @ HFCAWTP | | | | | | | | | | | | | | | | | | | | | **Design and Construction**

## Projected Cash Flow, $ millions

![Bar Chart](chart.png)
Recommended Implementation

1. Develop new reclaimed water rates & fees (Rate Study)
2. Negotiate funding agreement
3. Require STAR connections
4. Obtain bond funding for South projects (which includes large users)
5. Design and construct South projects
6. Coordinate with regional projects and plan for North projects
7. Design and construct North projects
Funding Strategies

- Reclaimed Water Rates & Fees
- SWFWMD and other agency co-funding
- State Revolving Funds (Federal Stimulus Package)
- Water & Wastewater Revenue Bonds
- Water & Wastewater Rates
- Bay Enhancement Fees (TMDLs) (Wastewater and Stormwater)
Recommend Changes to Rate Structure

- **Retail Use Rate**
  - Less than potable rate
  - Increase as potable rate increases

- **Distribution System Capital Costs**
  - Readiness to serve charge (monthly)
  - To recoup 4”, 6”, & 8” mains + service connection costs
  - All in applicable service area pay

- **Large Users (negotiated case-by-case)**
  - Contribute to capital cost
  - User rates negotiated
Recommend Changes to Policies and Procedures

- Mandatory connections for irrigation (current and expansion areas)
- Amend tree and landscape code
- Dual pipe installation where appropriate
- Implement cooling tower conversion program
Recommendations for STAR Area

- No potable water irrigation after 12-01-09
- Apply recommended rate structure
- Remove Sewer Max in reclaimed water areas after 12-01-09
- Consider other connection incentives
Recommended Reclaimed Water Master Plan Supports City’s Green Initiative

- Conserves drinking water
- Reduces nutrient load to Hillsborough Bay
- Protects landscape investments
- Makes Tampa more drought resistant
Projects Maximize Drinking Water Offsets

Projected drinking water demand

Drinking water demand with reclaimed water use

Annual Average Drinking Water Demand - MGD

- 2010: 88.4
- 2015: 87.7
- 2020: 87.1
- 2025: 89.3
- 2030: 93.9

Total: 110.8 MGD

82 MGD