City of Austin
Water Reclamation Initiative

Water Reclamation in Austin
Grow Green Landscape Professional Training

January 23, 2013
Overview

• Introduction
• System History
• System Future
• Bulk Water Fill Stations
• Connection Requirements
• Mandatory Connections
What is Reclaimed Water?

• Highly treated wastewater effluent
• Quality – akin to river water
• Demand management tool
• Major uses
  • Irrigation
  • Cooling
  • Manufacturing
  • Toilet flushing
Why Reclaimed Water?
## Typical Rates

<table>
<thead>
<tr>
<th>Rate Class</th>
<th>Off-Peak Rate (per kgal)</th>
<th>Summer Rate (per kgal)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single Family</td>
<td>$1.17 to $12.19</td>
<td></td>
</tr>
<tr>
<td>Multifamily</td>
<td>$3.93</td>
<td>$4.32</td>
</tr>
<tr>
<td>Commercial</td>
<td>$4.69</td>
<td>$5.15</td>
</tr>
<tr>
<td>Reclaimed</td>
<td>$1.50</td>
<td>$1.50</td>
</tr>
</tbody>
</table>
Subsidization

According to a 2008 AWWA study, only 25% of reclaimed water systems cover their operating costs.

<table>
<thead>
<tr>
<th>Utility</th>
<th>Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amarillo</td>
<td>$0.15</td>
</tr>
<tr>
<td>Austin</td>
<td>$1.50</td>
</tr>
<tr>
<td>Bourne</td>
<td>$4.50</td>
</tr>
<tr>
<td>El Paso</td>
<td>$1.28</td>
</tr>
<tr>
<td>Fort Worth</td>
<td>$2.69 / $4.61</td>
</tr>
<tr>
<td>Kerrville</td>
<td>$0.75</td>
</tr>
<tr>
<td>McAllen</td>
<td>$0.20</td>
</tr>
<tr>
<td>San Antonio</td>
<td>$1.18</td>
</tr>
<tr>
<td>San Marcos</td>
<td>$1.31</td>
</tr>
<tr>
<td>Seguin</td>
<td>$1.70</td>
</tr>
</tbody>
</table>
Benchmarks

- Israel – reclams 70% of wastewater
- Spain – reclams 12% of wastewater
- US – reclams 5-6%, eventually 30-40%
- San Antonio – reclams 4% of wastewater
- Austin – reclams 4% of wastewater
<table>
<thead>
<tr>
<th>Location</th>
<th>1st customer:</th>
<th>No cross-connections</th>
<th>Capacity:</th>
<th>Driver:</th>
<th>Rate:</th>
<th>Cost:</th>
<th>Time frame:</th>
<th>Length:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Austin</td>
<td>1974</td>
<td></td>
<td>25,596 af/yr</td>
<td>deferred plant construction</td>
<td>$1.50/kgal</td>
<td>$180 million</td>
<td>25 yrs</td>
<td>43.5 → 162 miles</td>
</tr>
<tr>
<td>San Antonio</td>
<td>1999</td>
<td>1 cross-connection</td>
<td>35,000 af/yr</td>
<td>limited raw water supply</td>
<td>$1.18/kgal</td>
<td>$125 million</td>
<td>5 yrs</td>
<td>75 → 110 miles</td>
</tr>
</tbody>
</table>
The Current System

Miles of trans. main – 47.2
Customers – 44
Annual use – 1.5 billion gallons

How much water is that?

2,230 olympic-sized swimming pools
30 million car washes
0.9 billion toilet flushes
Reclaimed Water Customers

**Existing (44)**
- Clay/Kizer Golf Course
- Sand Hill Energy Center
- Hornsby Bend
- First Tee
- Morris Williams GC
- Onion Creek GC
- Lost Creek GC
- Balcones CC
- Frost Bank
- Home Depot (Mueller)

**Planned (310)**
- University of Texas
- Saint Paul’s Church
- Hancock Golf Course
- Bartholomew Park
- Mueller Parks
- East Avenue
- Capital Complex
- Downtown
- Guerrero Park
- ACC Riverside
Plans and Opportunities

Miles of trans. main – 162
Annual use – 8.34 billion gallons

How much water is that?

12,350 olympic-sized swimming pools
167 million car washes
5.21 billion toilet flushes
Active Construction

- BAE Systems Main – 5,600’
- Montopolis Main – 15,300’
- Guerrero Park 1&2 – 3,500’
- Morris Williams ARV & PSV
- Walnut Tank
Under Design

- Montopolis Tank and Pump Station
- Capitol Complex / AISD – 9,000’
- Smith Road Extension – 13,500’
- Rte 973 Relocations
- Seaholm Mains
Bulk Water Station

- For water hauling trucks
  - Road construction
  - Dust control
  - Irrigation?
- Two under construction
- Two active
- Locations
Marking and Identification
Connection Considerations

• Backflow prevention
  – CIS / Initial Test
  – Annual test
  – RPZ on potable service lines
  – RPZ on hose bibs
  – Double check valve on fire lines
  – Single check valve on the reclaimed service line
Connection Considerations (cont.)

- Drinking fountains
- Purple sprinkler heads
- Purple valve boxes
- Purple pipe
- Signs
- 10’ Separation
- Sleeves
- Consultant Study
Mandatory Connections

- Commercial Properties
  - New
  - Renovations that increase water use
- 250’ from existing main
- Health and Safety Exemption
- Excessive Cost Exemption
- Schedule
  - Adopted August 2012
  - Implemented after Auxiliary Water Study