Innovative Water Transfers Workshop

Fostering Local Solutions for Water Sharing

Mark Pifher, Director, Aurora Water
Western Governors’ Association
Thursday, October 27, 2011
The Curtis Hotel, Denver, CO
Otero County IGA’s — 1994, 2001, 2005

- PILT Payments to County for impacts for dried up lands
- Aurora provides for Otero County’s participation in PSOP
- Maintenance of drainage ways on Aurora lands in Otero County
• Created Foundation for Rocky Ford Schools

• Aurora provides $1.5 million to the Foundation

• Aurora participates in an inter-community Advisory Committee
Aurora’s Continued Farming Program

- Install highly efficient irrigation systems
- Change cropping patterns
- Alternate Source of Water
- 900 acres enrolled

Find Alternative Production Method
Rocky Ford Ditch Drip Irrigation

- Farmer Installs Drip Systems
- Aurora Reimburses Costs up to $1,400/Acre
- For Minimum of Next 10 Years
  - Aurora Pays $50/Acre/Year
  - Aurora Provides 0.5 Ac-ft/Ac of Aug Water
  - Fields Remain in Irrigated Ag
Aurora leased water in 2004 – 2005

37% of Total Ditch

124 Individual Contracts

8,200 Acres

Process took 18 months to implement using Substitute Water Supply Plan
Benefits to the Shareholder

• Guaranteed Income
• Drought Concerns Set Aside
• Water Remains Agriculturally Owned
• New $$ into the Economy
• Farm Management Tool
• Infrastructure Improvements
Operational Benefits to High Line Canal Company

- Augmentation Flume Provides Additional Flexibility
- Canal Maintenance Partnership With Aurora
- Three New Canal Check Structures Improve Delivery
- Operations Shortened Delivery Cycle
## Payments Directly to High Line Company & Shareholders

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
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<tbody>
<tr>
<td>Payment to Farmers</td>
<td>$10,722,668</td>
</tr>
<tr>
<td>Structures</td>
<td>$143,597</td>
</tr>
<tr>
<td>Payments to Company</td>
<td>$38,254</td>
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<tr>
<td><strong>TOTAL</strong></td>
<td><strong>Over</strong></td>
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<tr>
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<td><strong>$10.9 million</strong></td>
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Benefits to the City

- Can be brought on line quicker than a transfer
- Great drought response
- Strong public acceptance
2008 Highline Company Agreement

- 10 year renewable agreement with Company
- No commitment or obligation on Shareholders to lease
- Initial $50,000 payment to Company
- $15,000 annual payments during non-lease years
- $25,000 annual payments in years Aurora leases
- Aurora responsible for necessary engineering to facilitate future leases
- Delivery of Shareholders' water is protected
- Aurora has first right to use Company facilities paid for by Aurora during years it has a lease with Shareholders
- Does not prevent Shareholder leases to others
Lake County Agreements

• Hayden Ranch Agreement provides Lake County with purchase option for up to 10% of the Hayden Water rights – 1998

• Hallenback (Derry Ranch) Agreement provides provisions for Box Creek Reservoir Project - 2001
  – Preliminary Analysis up to 56,000 ac-ft of storage
  – Lake County to receive use of 20% of the operational space
  – Lake County to receive 1% of the construction cost for recreational amenities
  – Provides for a 20% minimum pool

• Revegetation Agreement for Hayden and Spurlin Shaw - 2003
“Considerations for Agriculture to Urban Water Transfers”

By:

Arkansas Basin Roundtable Water Transfer Guidelines Committee (September, 2008)
A. Size of Transfer Relative to Affected Areas

**Questions - No Particular Order**

**QA-1.** What are the affected areas?

**QA-2.** What percentage of the affected areas' water supply does this transfer represent?

**QA-3.** Will there be sufficient remaining water for viable agricultural operations/economy in the affected areas?

**QA-4.** Will there be sufficient remaining water for other non-agricultural economic undertakings in the affected areas?

**QA-5.** Will there be sufficient remaining water for anticipated growth, drought, or emergencies in the affected areas?

**Potential Mitigation Examples - No Particular Order**

**MA-3.1** Infrastructure investments, e.g. rehabilitation, efficiency measures, etc.

**MA-3.2** Compensate for loss via other mitigation, e.g. financial payment, job relocation to community, assistance with economic development efforts, provision of alternate water supply, etc.

**MA-3.3** Assist in transition to alternate crops or irrigation methods requiring less water.

**MA-3.4** Leaseback Arrangements

**MA-4.1** Modify transfer timing

**MA-4.2** Develop alternate transfer mechanisms, i.e. leaseback arrangements

**MA-4.3** Assist in planning/assessment efforts for local governments/communities to determine alternative visions, i.e. provide land use planning expertise

**MA-4.4** Infrastructure Investments

**MA-5.1** Develop alternate transfer

**MA-5.2** Modify quantity of water transferred

**MA-5.3** Locate alternate water supply

**MA-5.4** Assist with water conservation

**MA-5.5** Infrastructure Investments
## H. Water Quality Impacts

### Questions

| QH-1. | What are the affected areas? |
|-------------------|

| QH-2. | Are there any potential negative water quality impacts including any which may be difficult to predict, including those associated with ground water? |
|-------------------|

| QH-3. | Are there any potential positive water quality impacts? |
|-------------------|

### Potential Mitigation Examples -

| MG-2.1 | Locate alternate water supply |
|-------------------|

| MG-2.2 | Investment in treatment technology/infrastructure |
|-------------------|

| MG-2.3 | Assist in non-point control program |
|-------------------|

| MG-2.4 | Assist in data/gathering analysis |
|-------------------|

| MG-2.5 | Promote water quality trading program |
|-------------------|

| MG-2.6 | Re-time transfers if possible |
|-------------------|

| MG-2.7 | Selectively identify lands to be fallowed |
|-------------------|

| MG-2.8 | Invest in habitat restoration or enhancement including riparian zone rehabilitation |
|-------------------|

| MG-2.9 | Monitor and remediate as necessary under retained jurisdiction provision |
|-------------------|
Aurora’s New Water Supply Project

- 34 miles of 60-inch pipeline
- 3 pumping stations
- North Campus (bank filtration and aquifer recharge and recovery)
- 50-mgd water purification facility
The “Water Infrastructure and Supply Efficiency” Partnership

- Denver Water
- Aurora Water
- South Metro Water Supply Authority
WISE Partnership

South Metro
Aurora
Denver
Binney Water Purification Facility
Foothills WTP
Metro WWTP
ECCV
Western Pipeline
PWP Pipeline
PWP Wells
Rueter-Hess Reservoir
Aurora Reservoir
PWP Wells
Conduit 27
Rampart Pipeline
Highlands
South Metro
Planned WTP
Hypothetical Wet, Normal and Dry Year Operations

**Wet Year**

**Normal Year**

**Dry Year / DW use of**

- **SMWSA Use**
- **DW Use**
- **AW Use**
- **Modeled System Capacity**
Water Supply

First Phase:

- AW: Needs met in all years
- DW: After 2020: 15,000 ac-ft/yr (emergency supply)
- SMWSA: 10,000 ac-ft/yr (on average)*

* 5,000 ac-ft/yr (2013-2020); 100,000 ac-ft/10 years (2020 and beyond)

Long-Term Potential:

- SMWSA: Can increase to 60,000 ac-ft/yr (on average)
Key Terms of WISE Delivery Agreement

- Permanent agreement
- Necessary infrastructure identified
- Rates determined based upon cost-of-service calculation
- Annual meeting of partners to determine yearly deliveries
- Water delivered to master meter
- SMWSA distributes water to its member agencies
- Supply reusable by SMWSA
Questions?