Delaware River Basin Commission

WMAC UPDATE
Water Accountability

Committee Chair: Bob Molzahn
Subcommittee Chair: Mary Ellen Noble

COMMISSION MEETING PRESENTATION
July 18, 2007
Water Management Advisory Committee Update: Water Accountability

Background:

- WMAC and subcommittee has been reviewing water accountability and water loss methods
- March ’05: Presented approach to Commissioners
- September ’06: Summarized findings for Commissioners in a position statement
- July ’07: Draft resolution for consideration (not voting at this time)
Overview:

- An estimated **150 million gallons per day** is physically lost from public water supply distribution systems in the Basin.
- Basin Plan Objective 1.3.C promotes efficient use of water.
- Current approach (Res. 87-6) of measuring and monitoring “unaccounted for water (UFW)” inadequate.
- WMAC considered new AWWA / IWA method with expert assistance from George Kunkel (PWD).
WATER ACCOUNTABILITY:
Problems with Current Approach

- Water Companies have different methods for determining UFW
- Current definitions are not specific
- Data are not comparable hindering decision-making
- 15% target is not a technically defensible target
WATER ACCOUNTABILITY:
Key Changes

- **Terminology** - Remove references to “unaccounted for water”
- **Standardization** - Water purveyors would follow a well-defined water audit structure (AWWA software available and accompanying guidance document)
- **Performance indicators** - Provides meaningful performance indicators to identify systems with the greatest real losses
- **Phased implementation** - Initial voluntary period, followed by required reporting format
Terminology & Standardization:

- Use AWWA Water Audit Approach
- AWWA hosts free Water Audit Software – available for download to perform audits
- AWWA Guidance manual (in press) to assist auditors
### AWWA Water Audit Structure:

<table>
<thead>
<tr>
<th>System Input Volume (corrected for known errors)</th>
<th>Authorized Consumption</th>
<th>Billed Authorized Consumption</th>
<th>Billed Metered Consumption (including water exported)</th>
<th>Revenue Water</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water Losses</td>
<td>Apparent Losses</td>
<td>Unbilled Authorized Consumption</td>
<td>Unbilled Metered Consumption</td>
<td>Billed Unmetered Consumption</td>
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<tr>
<td></td>
<td>Real Losses</td>
<td></td>
<td>Unauthorized Consumption</td>
<td>Customer Metering Inaccuracies</td>
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<td></td>
<td></td>
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<td>Data Handling Errors</td>
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<td></td>
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<td>Leakage on Transmission and Distribution Mains</td>
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<td>Leakage and Overflows at Utility's Storage Tanks</td>
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<td>Leakage on Service Connections up to point of Customer metering</td>
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</tbody>
</table>
WATER ACCOUNTABILITY:
Key Changes

Performance Indicators:

- Use of 15% UFW no longer best practice
- Software outputs meaningful indicators:
  - gpd / mile mains
  - gpd / connection
  - ILI (infrastructure leakage index)
- Metrics for DRBC standards need to be defined

Please see software example screen
AWWA methodology is new in regulatory context, therefore:

- Effective Date – 2011: New method is voluntary
- 2012 calendar yr onwards: New method is required format
- State agencies to require reporting consistent with AWWA methodology
- Actual metrics to be added beyond 2012 after data are collected and evaluated
WATER ACCOUNTABILITY:
Summary

- Water Accountability approach provides a more rational audit structure compared to existing approaches
- Some systems already utilize this approach – piloted successfully in AWWA study (incl. DRB water purveyors)
- Initial audits likely to identify data gaps and reporting challenges – hence phased approach
- New audit approach provides more meaningful indicators for both regulatory agencies and water purveyors:
  - targeting real losses
  - identifying financial costs of losses