Thurston County Water Utility Purveyor Technical Group Meeting

June 13, 2014

AGENDA

8:15 - 8:30 Sign-in, Get Snacks and Get Seated
8:30 - 8:45 Welcome and Introductions
8:45 - 9:30 Dave Christensen, Program Development and Operations Support Section, Department of Ecology - Water Resources Program Rural Water Supply Strategy
10:15 - 10:30 Break
10:30 – 11:00 John Weidenfeller Water System Security
11:00 - 11:30 John Kounts, Washington Water Utilities Council (WWUC) Legislative Chair Update on Legislative and Legal Issues
11:30 – 12:00 Roundtable Discussion – Everyone in Attendance

Location - Washington Public Utility Districts Association (WPUDA) Building, 212 Union Avenue SE, Suite 201, Olympia, Washington 98501. We recommend you bring change for parking meters.

Note: Agendas and Presentation Materials will be posted on the Thurston PUD Web Site, www.thurstonpud.org in the Water Purveyor Group Tab at the top of the web page, If anyone has items that you would like posted on the website that are applicable to all the water utilities, send them to John Weidenfeller, jweidenfeller@thurstonpud.org, (360) 357-8783

Please provide your e-mail address information to jweidenfeller@thurstonpud.org if you are not on the e-mail list so we can send you announcements, updates and materials for the meetings.

2014 Meeting Schedule – Next Meeting: Friday, October 10, 2014, 8:30 - 12:30
Background

For more than a decade Ecology’s instream flow protection program has struggled to develop a water management framework that establishes future water supply for new consumptive uses and protects instream flows. The Supreme Court ruling in Swinomish v. Ecology in late 2013 increased that challenge.

Ecology has been evaluating how it can meet its competing water resource management mandates and comply with the restrictions identified by the court. A key piece of the decision includes a finding that Ecology erred in using the Overriding Consideration of Public Interest (OCPI) to justify creating reserves of water for use by people with private domestic wells.

Ecology now faces a greater challenge protecting instream flows and senior water rights holders while not precluding all rural development.

Ecology is engaging with stakeholders and Tribal governments and evaluating options they have identified, including those available under current statutory authorities and those that would require statutory change. As options are more fully detailed, Ecology staff will evaluate legal, political, and economic issues, as well as, the key challenges in implementing these options.

Stakeholders have provided input to Ecology about potential approaches to instream flow rule making. Options would apply only to water rights administered by the state.

Ecology’s Goals

Develop a water management framework that protects instream resources and allows reliable water supplies to be allocated for new rural domestic uses. The approach must be implementable to be effective. As such, it should employ management strategies that are proportionate to the scale of potential impacts.
Rural water supply – Stakeholder ideas for options under current authorities:

A. **Continue to establish reserves in new and amended instream flow rules**
   - Use OCPI to justify reserves in different manner than Skagit rule.
   - Could allocate water for future need and instream values simultaneously according to a maximum net benefits analysis without using OCPI.
   - Could rely on cisterns to be used during times of low flows.

B. **Use existing authorities to broaden mitigation options (RCW 90.44.055)**
   - Could use conservation to make more water available.
   - No clear authority for out-of-kind mitigation options.
   - Rely on mitigation banking authorities; currently mitigation banks under scrutiny.

C. **Rely on local governments through better integration of land use planning**
   - Working through Associations of Counties to update guidance.
   - Clear challenges ahead resolving unclear roles and responsibilities in the wake of the Kittitas decision.

Stakeholder ideas for options that would require changing statutory authorities:

A. **Broaden mitigation options**
   - Provide additional flexibility for out-of-kind mitigation.
   - “Pay upfront” – all new users pay into a fund that could be used to offset their impacts to either stream flow or to senior users.
   - Disconnect mitigation from individual home scale.
   - Could consider full range of hydrologic impacts of development (stormwater, land cover changes, etc).

B. **New or modified “OCPI”**
   - Provide Ecology with clear authority for allowing de minimis uses when stream flows are not being met.
   - Ecology could modify established instream flows or allow exceptions for continued new appropriation for permit exempt.
   - Could also address potential small impacts associated with permitting decisions.
   - Public interest could be established by watershed planning groups, consultation with Tribes/Fish Managers, or some other mechanism.
   - Exceptions could be broad (such as legislative clarification that domestic permit-exempt wells are not subject to instream flow rules) to narrow (such as exceptions are allowed only where in-kind mitigation is not available).

C. **Create statutory priority for domestic water use over other out-of-stream uses**
   - Twelve of 17 western states have a domestic priority in statute or constitution.
   - Would have to be evaluated carefully because of separation of power issues.
   - Could apply to in-house use only, or also include outdoor lawn/garden use.
   - Could be limited to single domestic only (not group domestic like the current statutory exemption).
Dealing With Security

Today's Security Discussion

Terrorists

Thieves

Vandals

Customers

Goals

1. Understand the threat.

2. Protection ideas (defense).

3. Actions and Decisions to consider (offense).

4. Improve resilience.
Culture of Water Systems

- Victims of Our Own Success!
- Cost
  - Water Rates
  - Staffing
- Apathy
  - "Been here since 1925 without a problem."
  - "Terrorists don't care about our little system!"

Water is LIFE!

- Most Important Person in the Community?
- Critical Infrastructure/Essential Public Facilities.
- The Public Water Sector Needs to Promote It's Importance.

Inform Leadership About Vulnerabilities and Capabilities

- Water Utilities are less prepared than many realize (again, victims of our own success).
- Large scale events are different than local events.
- Need to develop regional plans and response capabilities.
Vulnerabilities

- Physical Security
- Target for metal thefts, tagging
- Terrorism and Nuclear/Bio/Chemical Contamination Risks
- Loss of control of your system
- CyberSecurity
- Customer Issues

Contaminant Detection

- Contaminant Warning Systems
- Employ protocols for detection
  - Monitor free and total chlorine residual, pressure change, abnormalities, sampling, temperature change, dissolved oxygen, and conductivity
- Local and state labs (compliance samples)
- Call US EPA Region 10 Emergency Response Unit

Tampering is a Federal Offense!

- Critical infrastructure protection since 9/11
- US Code Title 42, Section 300i-1 "Tampering with public water systems"
  - Definition
  - Tampering: 20-year prison, $1 million
  - Attempt or threat: 10-year prison, $100,000
Terrorism

- Objective of terrorism?
- Best way to accomplish terrorism?
- Terrorists rely upon your laziness, apathy, and disbelief.

Exploiting Vulnerabilities

- Terrorists can impact a community water system (beyond contamination) by disrupting:
  - Power
  - Fuel
  - Communications
  - Disease

Electricity

POWER OUTAGE
Is it Tagging, or is it Terrorism?

What Would You Do if You Found This?

Is it a Tweaker, or Terrorist?

- Involve law enforcement.
- Be prepared for law enforcement to underplay this event. Educate law enforcement that tampering with water/wastewater facilities is a Federal Offense.
- Insist law enforcement file a report to the Washington State Fusion Center. (1-877-843-8522, email: intake@wsfc.wa.gov).
Decision Protocols

- Do you issue an order to: “Boil water,” or “Do not use?”
- Can you prove access to the drinking water was denied?
- Did the perpetrator go to unusual lengths to gain access?
- Remember the scene becomes a crime scene, which you will likely lose control. How can you protect public health and preserve the crime scene?

Well & Reservoir Incidents

- City of Orting.
- City of Kent.
- City of Bonney Lake.
- Lakewood Water District.
  
  King 5 News

Lakewood Water District

- Attempted tank access on May 16, 2013.

  King 5 News

- This could be you. What will you do?
Break

Access Control

• Identification (personnel and equipment).
• Clear lines of visibility (vegetation, darkness).
• Neighborhood watch.
• Signage.

Key Control

• Who enters your facilities? (pest control, landscaping contractor, wireless contractors, meter readers, etc.).
• How do they access the secured site?
• What background checks have been done?
• CyberLock system.
Perimeter Defense

- Fencing (8' heavy gauge, barbed wire).
- Locks (all possible entry points).
- Perimeter intrusion detection.
- Vegetation control, and lighting.
- Alarm sensors (hatches, vents, doors) and signals.
- Video cameras and Digital Video Recorders.
  - Unmonitored.
  - Live monitored.

Shut-off Devices & Signals
Nuclear, Biological, & Chemical Contaminants

- Dilution is NOT necessarily the solution.
- Radiological material can contaminate drinking water.
- Bacteria, viruses, spores, cysts, parasites, etc. can be weaponized and dispersed in water.
- Chemical nerve agents (sarin, soman, tabun) easily mix in water. Many other chemical toxins exist.

Chlorine Gas Cylinders

Fire Hydrant Tampering
Cyber Security

Attacks on SCADA

- Lose control of system.
  (Queensland, Australia wastewater utility: 46 attacks over 2 months. Released raw sewage killing marine life and turning waters black).
- Could over- or under-dose chemical injection.
- Could disable alarms.
  (Allowing intrusion and potential water contamination).

Preventing Cyber Attacks

- Limit access to networks.
- Update software on a regular basis.
- Require strong passwords.
- Install Virtual Private Networks (VPN).
- Install and maintain anti-virus software.
- Employ intrusion detection systems and firewalls.
Training & Exercise Planning

- ICS/NIMS Training (ICS 100, 200, NIMS 700, 800). Provides a coordinated response, standardization, and interoperability.
- Required to receive federal funding.
- When an incident occurs at your utility, will you know how to work with the Incident Commander and staff?

Customer Issues

- Enforcement techniques vary with circumstances (public vs. private, etc.).
- Courts side with utility for failure to pay water bill.
- Publish clear policy with regard to service interruption and notices.
- Be consistent and treat all according to your policy.
- Be clear about “Tamper Policy.”

Meter Tampering
### AMR Advantage

![Image of AMR Advantage]

### Tamper Tags

![Image of Tamper Tags]

### Fee Schedule

<table>
<thead>
<tr>
<th>Miscellaneous Charges</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water Termination</td>
<td>$12.00</td>
</tr>
<tr>
<td>Water Reconnection</td>
<td>$18.00</td>
</tr>
<tr>
<td>Bulk Water (Over 1000 Gal. per month)</td>
<td>$50.00</td>
</tr>
<tr>
<td>Service Application Fee (paid for every service each month)</td>
<td>$10.00</td>
</tr>
<tr>
<td>Deposit for Water Service</td>
<td>$75.00</td>
</tr>
</tbody>
</table>

*Charges to Senators and Property Managers when they request the homeowner to order service.*

<table>
<thead>
<tr>
<th>Miscellaneous Charges</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Decrease Meter Size (from 1&quot; to 3/4&quot;)</td>
<td>$196.00</td>
</tr>
<tr>
<td>Termination and Installation of Water Aerator</td>
<td>$425.00</td>
</tr>
<tr>
<td>Install Water Sprinkler System</td>
<td>$1,600.00</td>
</tr>
<tr>
<td>Install Outside Meter (to be used on repeat site inspections)</td>
<td>$90.00</td>
</tr>
</tbody>
</table>

Charging meter sensor

Cost = 20%

Tamper Fee (cost of damage to Water Company property) = Cost = 20%

Theft of water

Volume in cubic feet multiplied by 0.25

*Note 7: Tampering with Water Company property is a Federal Offense.*
Messages on Utility Bills

Usage Charges
Water - The amount of water used is shown on a meter. Water is charged based on the amount used.
Gas - The amount of gas used is shown on a meter. Gas is charged based on the amount used.
Electricity - The amount of electricity used is shown on a meter. Electricity is charged based on the amount used.

Overage Charges
These charges are based on the amount of water, gas, and electricity used. Overages may result in additional charges.

Late Payment Charges
These charges are based on the date the bill is paid. Late payments may result in additional charges.

Non-compliant Customers

Tweaker Damage
Ground/Neutral Cables
Cut Grounds &
Well Service Line Neutral

Develop Relationships.

Conclusion

- "Failing to Plan is Planning to Fail."
- Change the Culture.
- Develop Relationships and Take Actions That Mitigate Vulnerabilities.
- Prevent Becoming a Victim of Our Own Success!
Questions?

Marc Marcantonio
marcm@mtmwater.com
(253)862-7248