Estimating State-wide Stormwater Capture Potential

Commission Meeting 03/06/2020
State Water Board Challenge

- Recycled Water Policy (Resolution 2013-003) asks SWRCB staff to quantify how much stormwater is being captured and/or could be captured for water supply

- Multiple state-wide initiatives require or promote stormwater capture and (re)use without coordinated accounting

- Exception(s): regional actions, e.g., Measure W
The Problem

1. Never before attempted
2. Regional/jurisdictional infrastructure variation
3. Consistency is key
SCCWRP’s Approach

- Identify how stormwater physically is captured with 7 forms of existing infrastructure
- Outline technical calculations to measure or estimate capture potential
- Compare, contrast & discuss added value amongst methods
## The 7 Methods for Estimating Capture Potential

<table>
<thead>
<tr>
<th>Method</th>
<th>Discussion Topics</th>
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</thead>
<tbody>
<tr>
<td>BMP Hydrologic (Flow) Monitoring</td>
<td>• “Ease” of extrapolating to state-wide estimate (aka scale)</td>
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<tr>
<td>BMP Design Information from Plan Submittals</td>
<td>• Accuracy/uncertainty</td>
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<tr>
<td>Watershed Models</td>
<td>• Data availability</td>
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<tr>
<td>Large-Scale Impoundments</td>
<td>• Potential for added value</td>
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<tr>
<td>Measured Changes in Groundwater Levels</td>
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<td>Measured Changes in POTW Inflow</td>
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<td>Diversions</td>
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Example: Site-Scale Direct Measurement vs Indirect Estimate

Bioretention planters at Stevens Institute of Technology, Hoboken, NJ
BMP Hydrologic Monitoring

Inflow monitoring box
- Pressure transducer
- Weir

Media moisture content

Outflow monitoring chamber
- Pressure transducer
- Weir

Connection to storm sewer (final discharge)

Roof inflow via downspout

Internal water level

Outflow via underdrain

Overflow/Bypass

Connection to storm sewer (final discharge)
Green = design data (engineer’s drawings)

Gold = water-storage parameters (lab-measured or estimated from literature)
Example: Site-Scale Measurement/Estimate vs Watershed Modeling
### Challenges of generating a state-wide estimate of stormwater capture potential

<table>
<thead>
<tr>
<th>Rank</th>
<th>“Easiest” to get to State-wide estimate</th>
<th>Relative Accuracy</th>
<th>Data Availability</th>
<th>Added Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Best</td>
<td><img src="image" alt="BMP hydrologic monitoring" /></td>
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<td>Better</td>
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<td>Good</td>
<td><img src="image" alt="Watershed modeling" /></td>
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- BMP hydrologic monitoring
- BMP information from plan submittals
- Watershed modeling
Next steps

- Pilot project?
- Water Board Staff required to report back this year on progress for the Recycled Water Policy
- Implementation is a priority project for STORMS 2020-2024