Alternative Compliance
The Commission had a presentation on Alternative Compliance 18 months ago

Presented the rationale and conceptual model

Listed the necessary research to overcome the rate limiting steps towards alternative compliance
Goal for Today

• A little bit of review to get us on the same page, then an update on what’s happened over the last year and a half

• How well is SCCWRP filling in the necessary research?

• How is Alternative Compliance progressing overall?
Alternative Compliance in Simple Terms

• Alternative Compliance embodies “Watershed Management”

• Goal is to install Best Management Practices (BMPs) on site
  - Stormwater can’t always be controlled on site

• Alternatives to control within the watershed are encouraged
  - Can combine into Regional BMP systems to control volume and water quality
  - Multiple uses are encouraged
Alternative Compliance Conceptual Model

**Stormwater Runoff**
- Onsite BMP
- Onsite BMP
- Onsite BMP
- No Capacity for Onsite BMPs

**Receiving Water Quality And Flow**

**Offsite BMPs**

**Beneficial Uses**
Alternative Compliance: Which One?

- There are two kinds of Alternative Compliance being used in Southern California

- Alternative Compliance for *Receiving Water Objectives*

- Alternative Compliance for *Land Development Standards*
Alternative Compliance for Receiving Water

- Use watershed-wide planning to demonstrate compliance

- Model-based, with a priority given to publicly owned structural BMPs and non-structural controls

- Uses *Reasonable Assurance Analysis* to provide confidence
  - LA RWQCB specifies model parameters, milestone monitoring, and adaptive strategies
Example Alternative Compliance Prioritization in Dominguez Channel Enhanced Watershed Management Plan

Typically aims to control 85th percentile 24-hour storm
Alternative Compliance for Land Development

• Trades on-site BMPs for explicit off-site BMPS for compliance
  - Specific to Planned Development Projects (PDPs)

• Empirically based, with mandate for structural BMPs and natural resource restoration
  - one-for-one, or many-for-regional BMP offsets

• Pre-defined “BMP currency” provides confidence for trading
Example Alternative Compliance For Land Development

In the San Diego Water Equivalency Document

Aims to control 85th percentile 24-hour storm for capture BMPs or 150% of design storm for flow through controls
The Two Approaches Share Similar Technical Challenges

- Stormwater inputs
- BMP performance
- Assuring BMPs will improve receiving water quality and achieve beneficial uses
  - Mantra for multiple uses
Alternative Compliance Conceptual Model

Rate Limiting Steps:

Source Quality & Volume

BMP performance
Model performance

Physical habitat
Environmental flows
Restoration effectiveness

Stormwater Runoff

Onsite BMP

Onsite BMP

Onsite BMP

Offsite BMPs

No Capacity for Onsite BMPs

Receiving Water Quality And Flow

Beneficial Uses

Multi-use attainment
BMP Performance Evaluation

• Currently, most BMP performance information comes from the International BMP Data Base
  - Most BMP data from California are > 12 years old

• Our goal was to compile as much data as possible on California specific BMP performance

• Updated BMP performance data can be used for:
  - Improved BMP designs
  - Reducing uncertainty in Reasonable Assurance
  - More accurate performance for water quality equivalency trading
### Inventory of BMP Data from Across California

<table>
<thead>
<tr>
<th>Type of BMP</th>
<th>Background Info</th>
<th>Design Specs</th>
<th>Flow Data</th>
<th>Water Quality Data</th>
<th>Number of Storm Events</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vegetated Swale</td>
<td>45</td>
<td>22</td>
<td>24</td>
<td>27</td>
<td>380</td>
</tr>
<tr>
<td>Media Filter</td>
<td>65</td>
<td>19</td>
<td>16</td>
<td>28</td>
<td>366</td>
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<tr>
<td>Dry Pond</td>
<td>7</td>
<td>6</td>
<td>8</td>
<td>6</td>
<td>99</td>
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<tr>
<td>Wet Pond</td>
<td>48</td>
<td>3</td>
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<td>5</td>
<td>125</td>
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<tr>
<td>Constructed Wetland</td>
<td>5</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>657</td>
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<tr>
<td>Permeable Pavement</td>
<td>22</td>
<td>6</td>
<td>0</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Bioretention System with Underdrain</td>
<td>23</td>
<td>12</td>
<td>3</td>
<td>13</td>
<td>71</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>214</strong></td>
<td><strong>69</strong></td>
<td><strong>57</strong></td>
<td><strong>81</strong></td>
<td><strong>1,700</strong></td>
</tr>
</tbody>
</table>
Vegetated Swale BMPs: Average Effectiveness Statewide

- Copper
- Lead
- Zinc
- Nitrate

Percent Removal
Vegetated Swale BMPs:
Average Effectiveness Statewide (+ SD)
Vegetated Swale BMP: Individual Effectiveness

Copper Removal (%)

BMP Name

Web app
The Two Approaches Share Similar Technical Challenges

- Stormwater inputs
- BMP performance
- Assuring BMPs will improve receiving water quality and achieve beneficial uses
  - Mantra for multiple uses
Non-Technical Implementation

Alternative Compliance for Receiving Water

• **Good news:** Most watershed units have Management Plans adopted by the RWQCBs

• **Bad News:** Implementation progress has been slow

Alternative Compliance for Land Development

• **Good news:** Water quality equivalency framework started

• **Bad news:** Not many land developers or municipalities are using it