Alternative Compliance
Background

- Stormwater regulation has evolved over the last 25 years
- Maximum Extent Practicable
- Non-stormwater prohibitions
- Receiving water limitations
- Total Maximum Daily Loads
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The Current Evolution

- 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

Offsite BMPs

Receiving Water Quality And Flow

Beneficial Uses
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:
- Stormwater Runoff
- No Capacity for Onsite BMPs

Source Quality & Volume
- Onsite BMP

BMP performance
- Onsite BMP
- Onsite BMP

Model performance
- Offsite BMPs

Physical habitat
- Receiving Water Quality And Flow
- Environmental flows
- Restoration effectiveness

Beneficial Uses

Multi-use attainment
The driving force behind all source-based frameworks is knowing what washes off different land surfaces
- Volume and concentrations

Nearly all land use concentrations are derived from studies during 1998-2003
- Expectation that these land use coefficients have changed over the last 15 years

Research Needs: Updated land use coefficients for BMP specifications, credit frameworks and model calibration
BMP Performance

• Currently, almost all BMP performance information comes from the International BMP database

• Not all of these BMP studies are in California
  - Newer BMP types not included
  - Almost no information on pollutant removal from restoration projects

• Research Needs: Updated, So Cal specific performance specifications
  - Include new technology and maintenance requirements
California-Only Effluent Concentrations From the International BMP Database Compared to Proposition 84 Funded BMP Monitoring Results

![Box plot comparing TSS (mg/L) for different BMP systems.](image-url)
Achieving Beneficial Uses

• Linking watershed improvements to improved beneficial uses is the ultimate aim

• No examples of a demonstration project that follows model predictions to receiving water improvements
  - Nobody is really sure if it is going to work

• Research needs: Develop predictive tools and case studies
  - Information feedback loops to assess success and stoke adaptive management
Effect of Stream Flow on Aquatic Life Uses

California Stream Condition Index (CSCI)
Non-Technical Issues Might Be Larger Than Technical Issues

• Who pays?
  - Upfront and ongoing maintenance

• Who is responsible?
  - Non-MS4 portions of a watershed
  - BMPs installed on private properties

• Timing and implementation schedule?
  - Function of affordability

• Credits and Mitigation banking
  - Accumulated pollutants