Trash Baseline Loading & Reduction Tracking Methods
The San Francisco Bay Area Experience

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Adapted

Presentation to Trash Policy PAG
Geoff Brosseau
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Presentation Outline

1. Overview of Regulatory Requirements
2. Trash Generation Rate Development
3. Trash Load Reduction Tracking Method
Municipal Regional Stormwater Permit

- **76 Permittees (Cities, Counties and Flood Control Districts)**

- **Significant Trash Reduction Requirements:**
  - **Planning**
    - Baseline Trash Load from MS4s
    - Method to track trash load reductions
  - **Implementation**
    - Attain a 40% trash load reduction by July 1, 2014
    - Install and maintain full capture devices to treat area equivalent to 30% of retail/wholesale land use
    - Annually cleanup and assess creek/shoreline trash hot spots
  - **Assessment**
    - Tracking of loads reduced via established methodology
Definition of “Trash”

- All improperly discarded waste material, including, but not limited to, convenience food, beverage, and other product packages or containers constructed of steel, aluminum, glass, paper, or plastic thrown or deposited on the lands and waters of the state.

- Excludes leaves, sediment and other natural debris
Trash Baseline Loads
Documented Trash Loading Rates

<table>
<thead>
<tr>
<th>Land Use</th>
<th>LA River (LA County)</th>
<th>Ballona Creek (LA County)</th>
<th>Cape Town (SA)</th>
<th>Auckland (NZ)</th>
<th>Coburg (AUS)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Industrial</td>
<td>10</td>
<td>5</td>
<td>1</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Commercial</td>
<td>20</td>
<td>20</td>
<td>3</td>
<td>3</td>
<td>5</td>
</tr>
<tr>
<td>LD Res</td>
<td>20</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>HD Res</td>
<td>10</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Parks</td>
<td>5</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>
MS4 Trash Loading Conceptual Model

Trash Generated
- Land Use
- Economic Profile
- Population Density
- Other Factors

Trash Intercepted
- Street Sweeping Effectiveness
- Manual Pickup Effectiveness
- Rainfall
- Antecedent Dry Weather Days

MS4 Trash Load
Regional Trash Baseline Generation Rate Study

- **Goal** – Develop trash generation rates that can be used by all Bay Area Permittees to develop Permittee-specific baseline trash loads.

- **150-160 Monitoring Sites**

- **2-3 Wet Season and 1 Dry Season Sampling Event**
  - 1 wet and 1 dry completed

- **Debris Characterization**
  - Volume and Weight
  - Item Counts
    - Plastic Grocery Bags
    - Polystyrene Products
    - CRV Bottles
## Monitoring Site Distribution Goals

<table>
<thead>
<tr>
<th>Land Use Category</th>
<th>Median Annual Household Income</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Low (&lt;$50,000)</td>
<td>Moderate ($50,000 to $100,000)</td>
</tr>
<tr>
<td>High Density Residential</td>
<td>6%</td>
<td>6%</td>
</tr>
<tr>
<td>Low Density Residential</td>
<td>4%</td>
<td>4%</td>
</tr>
<tr>
<td>Commercial and Public Services</td>
<td>3%</td>
<td>3%</td>
</tr>
<tr>
<td>Retail and Wholesale</td>
<td>13%</td>
<td>13%</td>
</tr>
<tr>
<td>Light and Other Industrial</td>
<td>7%</td>
<td></td>
</tr>
<tr>
<td>Heavy Industrial</td>
<td>7%</td>
<td></td>
</tr>
<tr>
<td>Urban Parks</td>
<td>4%</td>
<td></td>
</tr>
<tr>
<td>Primary Schools</td>
<td>4%</td>
<td></td>
</tr>
</tbody>
</table>
Trash Load Reduction Tracking Method
Trash Load Reduction Tracking Method

- **How to track MS4 load reductions applicable to each enhanced and new trash control measures?**

- **BASMAA Regional Project**
  - Tracking = Accounting System

- **Two Types of Tracking Methods:**
  - Load Reduction Quantification Formulas
  - Load Reduction Credits

- **Stakeholder Process**
  - BASMAA Trash Committee
  - Participation by City/County, NGO, Regulatory staff
Quantification or Credit?

- Preference is to quantify
- Quantification constrained by available data and practicality
- Magnitude of credit largely based on demonstrated success and best professional judgment
- Quantifications and credits can provide incentives for implementation
## Selected Control Measures

<table>
<thead>
<tr>
<th>Quantifications</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>• On-land Trash Cleanups (Volunteer and Municipal)</td>
<td>• Polystyrene Foam Food Service Ware Ban</td>
</tr>
<tr>
<td>• Enhanced Street Sweeping</td>
<td>• Single-use Carryout Bag Ordinance</td>
</tr>
<tr>
<td>• Partial-Capture Treatment Devices</td>
<td>• Public Education and Outreach Programs</td>
</tr>
<tr>
<td>• Full-Capture Treatment Devices</td>
<td>• Trash Reduction from Vehicles with Unsecured Loads</td>
</tr>
<tr>
<td>• Enhanced Stormwater Conveyance System Maintenance</td>
<td>• Enhanced anti-littering and illegal dumping enforcement activities</td>
</tr>
<tr>
<td>• Creek/Channel/Shoreline Cleanups (Volunteer and/or Municipal)</td>
<td>• Improved Trash Bin/Container Management (Municipally or Privately-Controlled)</td>
</tr>
</tbody>
</table>
Project Schedules

- **Trash Generation Rate Development**
  - Initial Rates - February 1, 2012 (Initial Report)
  - Revised Rates – September 15, 2012 (Final Report)

- **Load Reduction Tracking Method**
  - Initial Draft Technical Report – Comments Received
  - Revised Draft Report – October 2011
  - Final Report – November 2011
Questions...

It is hard walkin' on this stuff.

Yep, son, we have met the enemy and he is us.