

True Source Control – CASQA's Source Control Initiative

Scott Taylor, P. E.

Sr. Vice President, RBF Consulting

Chair, CASQA

Geoff Brosseau

Executive Director, CASQA

The Problem

- Storm water dischargers must ultimately achieve receiving water quality standards, but there are compliance problems
- The true scope of the problem is unknown:
 - Nearly 23 million organic and inorganic substances
 - About 7 million of these substances are commercially available¹
- Current system is not an efficient approach

Change Required

- We are investing significant resources in the urbanizing fringe, but this area is not the problem
- The emphasis on treatment control or LID is not the answer for the built environment:
 - Plumbing is wrong, grading is wrong
 - Costs are too high
 - Effectiveness is modest
 - And, pace of redevelopment is slow:

Consider...

- About 110 million acres currently 'developed' in the US (5.5% of land area)
- Redevelopment proceeds at a relatively slow pace....
 - ABAG estimates 22,274 acres redeveloped from 1985 to 1995
 - This represents 0.5% of land area in the 8 counties sampled over the 10 year period.
 - Residential areas rarely redevelop

Meanwhile, Regulatory Pressure is Increasing....

- In 1998, there were about 21,749 waterbodies listed as impaired nationally.
- In 2008, the number rose to 43,446 waterbodies nationally.
- Leading Causes (US EPA):
 1. Pathogens
 2. Mercury
 3. Metals
 4. Nutrients
 5. Sediment
 6. PCBs

Also Consider:

- That many pollutants persist in the environment
- Many are very soluble
- Take years for problems to manifest
- Take years for us to recognize a problem
- About 4% of the land in the US is home to 75% of the population
 - Yet, problems occur far outside of urban areas

Need for Change

- The current regulatory system is reactive and based on proxies to provide for water quality:
 - BMPs
 - Numeric sizing
 - Action levels for individual constituents
- The system is not working
 - TMDLs taking more program resources
 - Litigation taking more program resources
 - Governments being asked to pay for programs with no clear pathway to the 'goal'

True Source Control

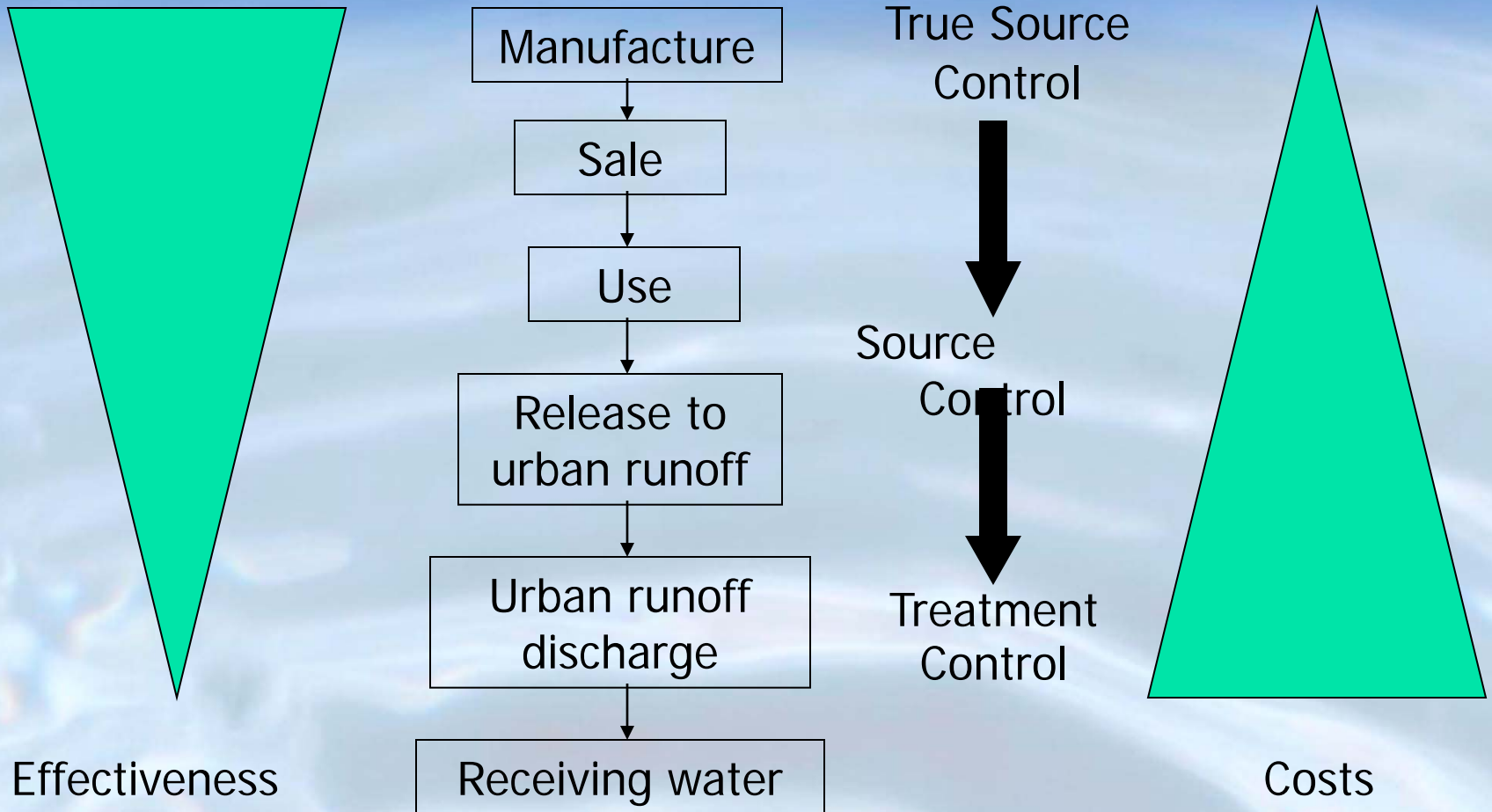
Source Control = keeping potential pollutants out of stormwater

- Operational
 - More common
 - Focused on physically keeping potential pollutants out of contact with rainfall and stormwater runoff through covering, berming, or cleaning
- True (or Original)
 - Focuses on the original source of a potential pollutant or on runoff by eliminating or significantly reducing the existence of the potential pollutant or runoff thereby negating the need to physically prevent contact between the two

True Source Control

- ↓ Potential Pollutants
 - Reduce the number potential pollutants – Green chemistry (DTSC), Design with nature
 - If you make it, you take care of it (Cradle-to-cradle) – Product stewardship (CPSC), Extended Producer Responsibility (EPR) (CIWMB)
- ↓ Runoff
 - *Start at the Source* / Low Impact Development (LID)

True Source Control (↓Potential Pollutants) Product-based Pollutants: Conceptual Relationships



Why Focus on Brake Pads?

- Because brake pads are the single largest source for copper in highly urbanized watersheds in California

Traditional Water Quality Treatment Cannot Solve Copper Problem

- Clean Water Act typically requires municipalities to solve problems—BUT
 - Treatment is technically and economically infeasible
 - Regulation of brake pads by municipalities is an option, but impractical, leading to a potential patchwork regulatory environment for manufacturers

Brake Pad Partnership / SB 346

- 1993 – Copper in brakes first identified as significant source
- 1996 – Brake Pad Partnership forms
- 1996 – 2009 - R&D, Shared fact-finding, Consensus-based decision
- 2008 – Decision triggered → Reformulate brake pads to be low copper
- 2009 – Legislation introduced – SB 346
- 2010 - ????????

Costs / Benefits

- Chollas Creek watershed – San Diego
 - Without brake pad copper reduction = \$1.4 B
 - With = \$10s M
- Los Angeles River watershed – Los Angeles
 - Without brake pad copper reduction = \$15 B
 - With = \$10s M
- Reasonable opportunity to achieve TMDL Waste Load Allocations

Lessons Learned – True Source Control

- Cost / effectiveness
- Public versus private cost / benefits
- Control point with most power
 - Wastewater – POTW (treatment)
 - Stormwater – True source of pollutant
- Investment-based approach
- Slower development time; often needs time to pay off
- Often requires:
 - Partnerships
 - New learning – Issues, Parties, Regulations
- Leverage - Can have effect >>> control action

CASQA's Source Control Initiative

- Provide a 'home' for True Source Control
- Forum for communication / advocacy
- Mechanism for coordinated action
 - Partnerships / Coalitions
 - Funding
 - Activities
 - Education
 - Research
 - Management (Practice, Regulation / Legislation)

Thank you



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