Marx Environmental Consulting

Evaluating Proprietary BMPs: Is it Time for a State, Regional or National Program?

Scientific and Technical Advisory Committee Workshop
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Fairfax, VA

Washington State's TAPE Program – History and Lessons Learned

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Technology Assessment Protocol - Ecology* (TAPE)

1. Background
2. History
3. Lessons Learned, etc.

* Washington State Department of Ecology
http://www.ecy.wa.gov/programs/wq/stormwater/newtech/index.html

My Background

- 1 yr – supervised WSC TAPE program manager
- 3 yrs – WSC TAPE program manager (revamp/relaunch of TAPE)
- 10+ yrs – conducted stormwater monitoring studies (TAPE, others)

TAPE Background

Phase I Municipal Stormwater Permit	***Western WA Phase II Municipal Stormwater Permit***	***Eastern WA Phase II Municipal Stormwater Permit***
S5 - Stormwater Management Program (SWMP)		
Controlling Runoff from New Development, Redevelopment, and Construction Sites		Post-Construction Stormwater Management for New Development and Redevelopment
Stormwater Management Manual for Western WA		Stormwater Management Manual for Eastern WA
Emerging Technologies – Technology Assessment Protocol – Ecology (TAPE)		

TAPE Background – performance goals (requirements)

Performance Goal	Influent Range	Criteria
Basic Treatment	20-100 mg/L **TSS**	Effluent goal ≤ 20 mg/L TSS
	100-200 mg/L TSS	≥ 80% TSS removal
	> 200 mg/L TSS	> 80% TSS removal
Enhanced (Dissolved Metals) Treatment	**Dissolved copper** 0.005 - 0.02 mg/L	Must meet basic treatment goal *and* better than basic treatment currently defined as > 30% dissolved copper *and* > 60% dissolved zinc removal
	Dissolved zinc 0.02 - 0.3 mg/L	
Phosphorus Treatment	**Total phosphorus** (TP) 0.1 to 0.5 mg/L	Must meet basic treatment goal and exhibit ≥ 50% TP removal
Oil Control	**Total petroleum hydrocarbon (TPH)**	• Daily average effluent TPH concentration < 10 mg/L • Maximum effluent TPH concentration of 15 mg/L for a discrete (grab) sample

History of the TAPE program

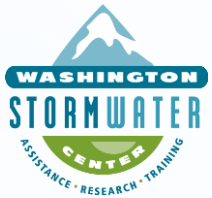
1999 - American Public Works Association, Washington Chapter, Surface Water Managers Committee

2002 – Program adopted by Ecology. First guidance manual.

2004 & 2008 – Revisions to the guidance document/process

May 2008 – TAPE program closed due to budget and staffing constraints

January 2011 – TAPE re-opens; revised guidance document



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Current status of TAPE program

5	Technologies fully approved since TAPE re-opened in January 2011
15	Total number of technologies approved under TAPE program*
~12	Technologies currently active in stages of the TAPE program • Initial application • QAPPs being developed (& site identification) • QAPPs being reviewed • Monitoring underway • Final technical reports being reviewed

** Not including CTAPE technologies for construction runoff treatment*

Running the program

Emerging Technology Coordinator – Wash. Stormwater Center/ UW Tacoma Center for Urban Waters	80-100% FTE
Department of Ecology – Stormwater Engineer	~10-20% FTE (not specifically funded by Ecology)
Board of External Reviewer (BER)	QAPP and final report reviews ($500 per review + $500 per year)
Stakeholder Advisory Group (SAG)	Volunteers (*cities, counties, port, transportation*)

Funding the program

Emerging Technology Coordinator – Wash. Stormwater Center/ UW Tacoma Center for Urban Waters	State grants
	Fees
Department of Ecology – Stormwater Engineer	"N/A"
Board of External Reviewer (BER)	Fees
Stakeholder Advisory Group (SAG)	N/A

TAPE Fees

Application	$2000		
QAPP submittal/review	$4000		
TER (final report) submittal/review	$6000		
	$12,000	$3000 -$4000	BER reviews & annual
		$8000 -$9000*	TAPE program (WSC/UWT)

** Covers gaps in grant funding*

Lesson learned...

wisdom...

suggestions...

Longevity of the program

May 2008 – January 2011
TAPE program closed due to budget and staffing constraints

Stormwater
Equipment Manufacturers Association®

Consistent internal policies

- Program –vs- people
- Precedent setting
- Document policies for fairness/equity
  - Rationale behind decisions
  - “Grand-fathering”
  - Clarifications

- **FOIA / Public docs request**

- **Confidential / redacted information**

“In order for such records or information to be considered confidential, the proponent must certify that the records or information is unique to the design and construction of the technology, or release to the public or to a competitor would adversely affect the competitive position of the proponent”

Alternate configurations

Revision (certification, verification, etc.)
-vs-
Re-testing / re-application

- Low-head models
- Altered hydraulic inlet or bypass
- Different/tweaked treatment media
- Specific mechanism –vs- entire system
- Size/scale

Time – still too long?

- Writing and approval of QAPP and final report .... ("RTFM!")
- Locating a suitable monitoring site
- Field sampling
- Reviews

Treatment BMP maintenance

Recent updates to nearly all GULD's

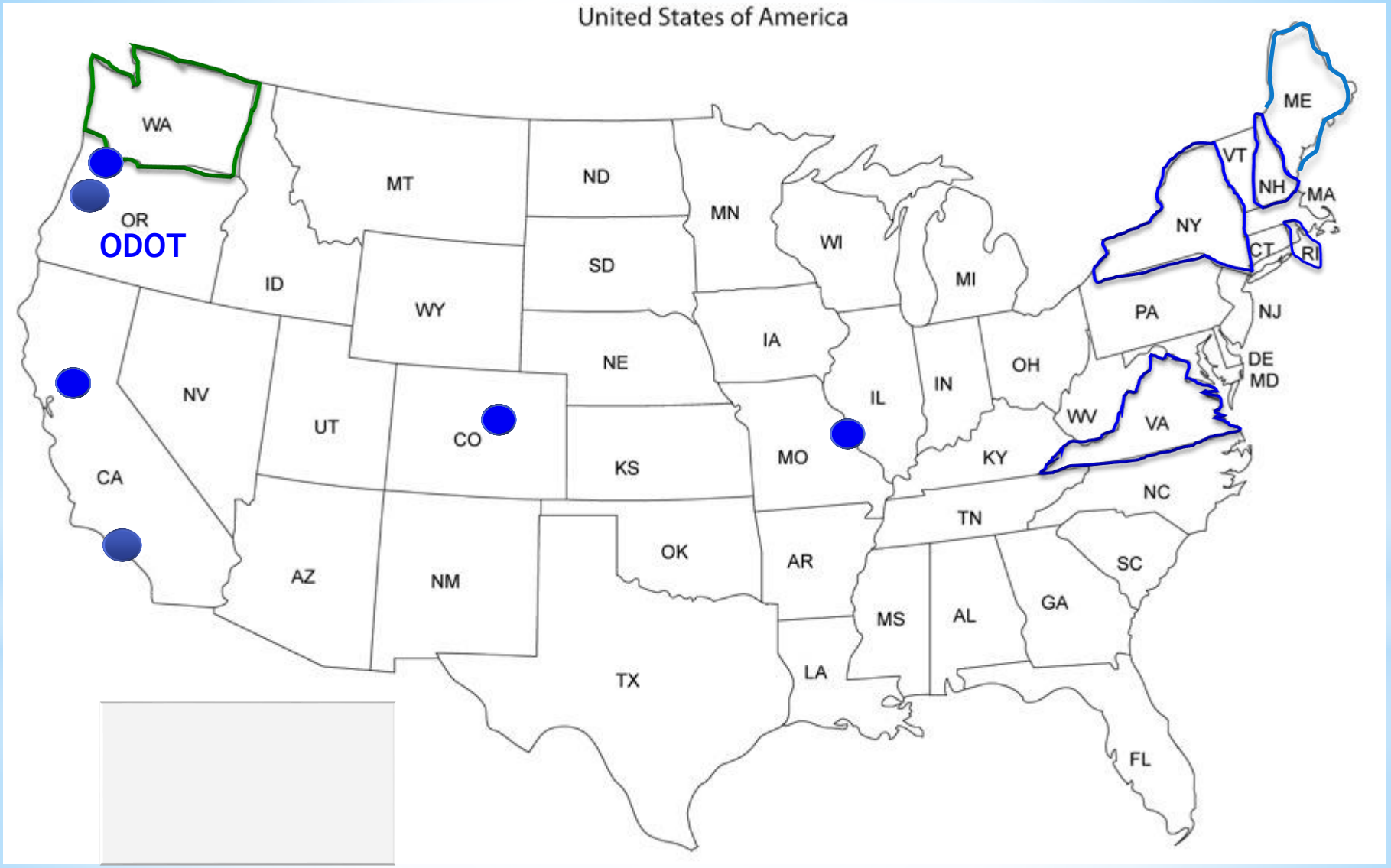
"…Ecology does not endorse or recommend a "one size fits all" maintenance cycle for a particular model/size of manufactured filter treatment device."

Updated policy regarding inspection for maintenance

- **ODOT facility/program**

Reciprocity and collaborations

- TAPE: No official reciprocity process
- TAPE “unofficial” reciprocity
- Recent collaborations
  - ODOT Maintainability site/program
  - University of New Hampshire
- TAPE used outside of Washington State



Jurisdictions outside of WA state -
use TAPE, reciprocity, or connection

TAPE outside of WA

- Sacramento, California: The City of Sacramento will consider TAPE GULD certifications for Basic Treatment.
- Santa Monica, CA: The City of Santa Monica will accept TAPE, TARP and NJCAT.
- Maine will accept TAPE approvals.
- Denver, Colorado: will accept TAPE or TARP approvals.
- St. Louis, Missouri: The Metropolitan Sewer District (MSD) allows certification through TAPE or from the New Jersey DEP.
- New Hampshire: TAPE and TARP listed in regulations
- Portland, Oregon (Bureau of Environmental Services): The City of Portland recently revised its standards for reviewing and accepting manufactured stormwater treatment technologies. Portland requires a GULD certification through TAPE as a submission requirement, but retains approval authority through their review and acceptance process. More information is available at www.portlandoregon.gov/bes/swmm.
- Eugene, Oregon: Allows devices that have received a General Use Level Designation for Basic Treatment or Pre Treatment through the TAPE program.
- New York State Department of Environmental Conservation will accept TAPE, TARP and NJCAT approvals as well as those accepted through the USEPA Environmental Technology Verification Program and the State of Maryland Proprietary Practice acceptance program.
- Oregon Department of Transportation
- Rhode Island: bacteria, nitrogen, and phosphorus treatment; will accept TAPE or TARP approvals as well as testing done using their own protocol.

http://www.wastormwatercenter.org/tape-outside-washington/

"A handful of programs such as Washington State's TAPE and New Jersey's NJCAT, have been active and robust in testing and evaluating various stormwater products and practices. It is no surprise that other states have adopted elements of these programs or similar programmatic structures."

From: *Investigation into the Feasibility of a National Testing and Evaluation Program for Stormwater Products and Practices. Water Environment Federation. February 6, 2014. STEPP Workgroup - Steering Committee.*

The “Who” of TAPE

Carla Milesi
Emerging Stormwater Technologies Coordinator

Doug Howie, P.E.
Stormwater Engineer – Water Quality Program

Stakeholder Advisory Group

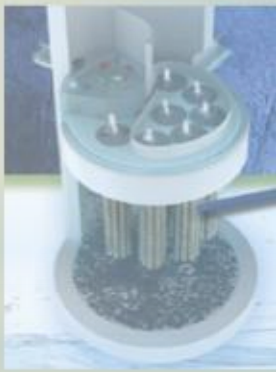
Board of External Reviewers









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