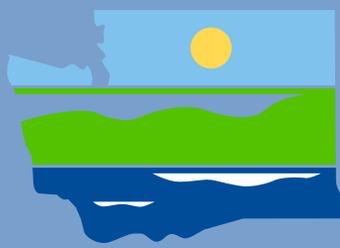


DEPARTMENT OF
ECOLOGY
State of Washington

**Phase I & WWA Phase II
Municipal Stormwater Permits
Workshop**

Washington State Department
of Ecology

**October /
November 2012**



Presentation Outline

Introduction to Permits

2012-2013 Permits

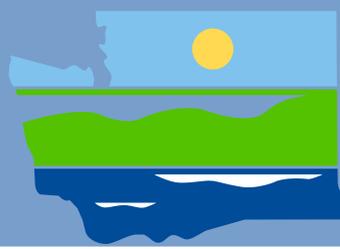
2013-2018 Permits

Newly Permitted Areas

Permit Revisions

Construction/Post-Construction & LID

Monitoring and Assessment



Helpful WebPages

Response to Comments

- <http://www.ecy.wa.gov/programs/wq/stormwater/municipal/2012comments.html>

Workshop Handouts

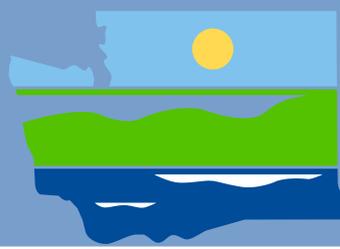
- <http://www.ecy.wa.gov/programs/wq/stormwater/municipal/index.html>

Municipal Stormwater Website

- <http://www.ecy.wa.gov/programs/wq/stormwater/municipal/index.html>

2012 Stormwater Management Manual for Western Washington (SWMMWW)

- <http://www.ecy.wa.gov/programs/wq/stormwater/manual.html>

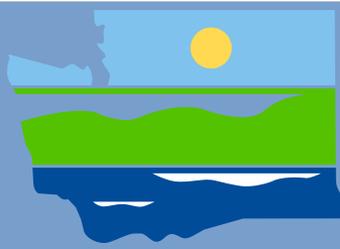


LID Training and Assistance Plan

2013 training – LID Maintenance, SWMMWW

Legislature funding LID training - \$1 M for 5 years

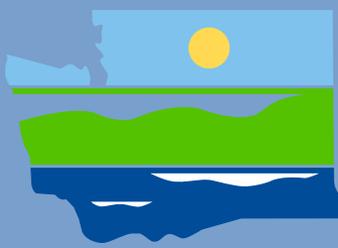
- Ecology working with: AWC, WSAC, BIAW, AWB & WA Stormwater Center developing training plan.
- Local govts – engineering review and maintenance
- Building industry – design and construction
- General public, homeowner associations, landscapers, realtors.



DEPARTMENT OF
ECOLOGY
State of Washington

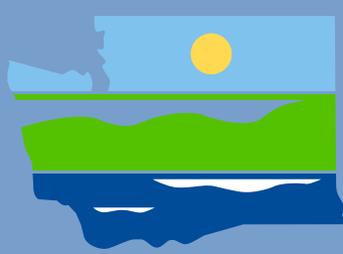


Municipal Stormwater Permits Implement Clean Water Act NPDES Program & EPA Stormwater Rules



The Municipal Stormwater Permits regulate discharges from municipal separate storm sewer systems (MS4's):

- Publicly owned or operated conveyance structure
- Collects and conveys stormwater
- Not part of sewage treatment plant or combined sewer.
- In urban areas with population >1000; or brought in by Ecology review.



**2012
Legislation
(RCW
90.48.260)**



Require no
earlier than
**December 31,
2016** (or GMA
update
deadline):

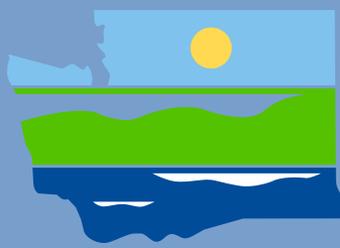
Reissue
updated
Phase II
permits

Reissue
current Phase
II permits.
(2007)

- **1-acre threshold (WWA)**
- **Codes for Low impact development**
- **Increased inspections**
 - **Catch basins**
 - **Illicit discharge**

- **Effective:**
 - **EWA 2014 – 2019**
 - **WWA 2013 – 2018**

- **Effective:**
 - **EWA 2012 – 2014**
 - **WWA 2012 – 2013**



Presentation Outline

Introduction to Permits

2012-2013 Permits

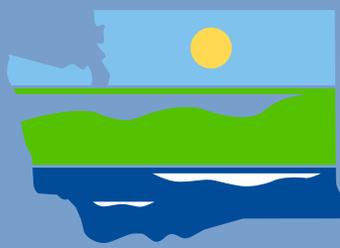
2013-2018 Permits

Newly Permitted Areas

Permit Revisions

Construction/Post-construction & LID

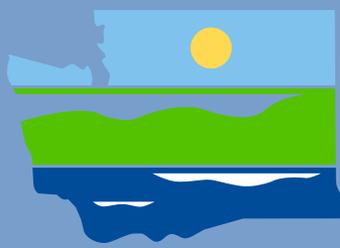
Monitoring and Assessment



Phase II 2012-2013 Permit

Legislative
intent not to
reduce
requirements
but to retain at
current levels

- **No new requirements**
- **Level of effort commensurate with 5th year of 2007 permits**
- **Clarifies requirements in table at beginning of the permit**



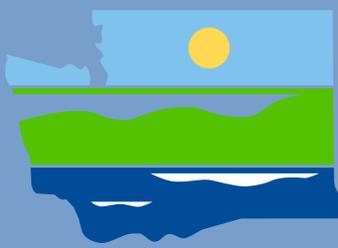
Phase I 2012-2013 Permit

Level of effort commensurate with 5th year of 2007 permits

Clarifies Requirements by making minor edits within the body of the permit

Clarifies S5.C.9.b.ii.(3) Annual Inspections for Private Facilities

Clarifies S8 Monitoring Program Endpoints



Phase I 2012-2013 Permit – S8 Monitoring

S8.D – Discharge Monitoring

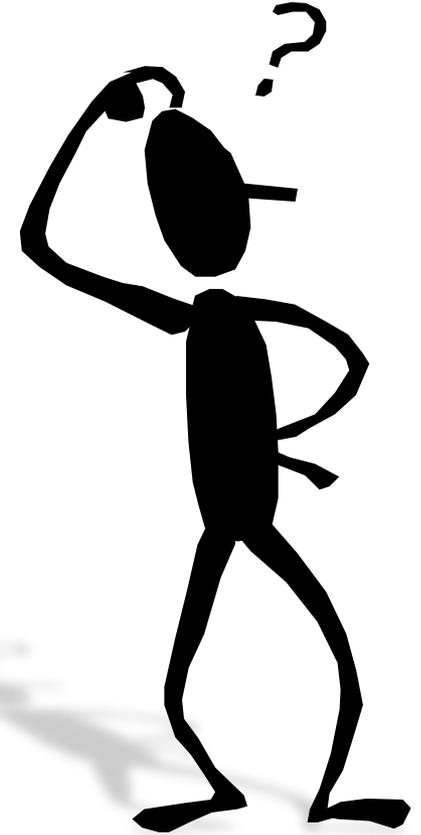
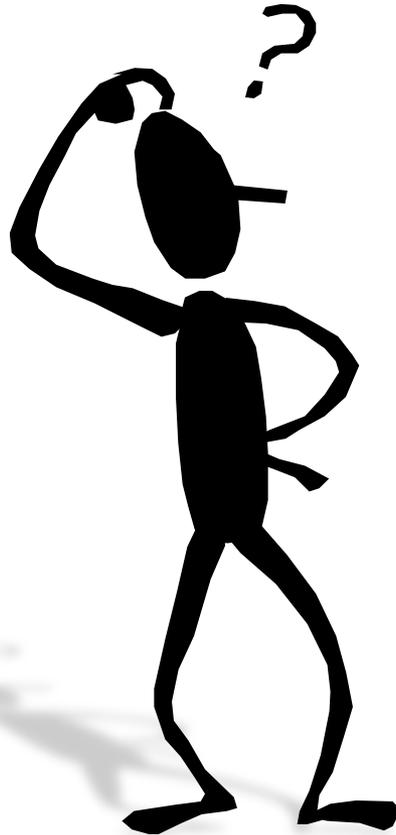
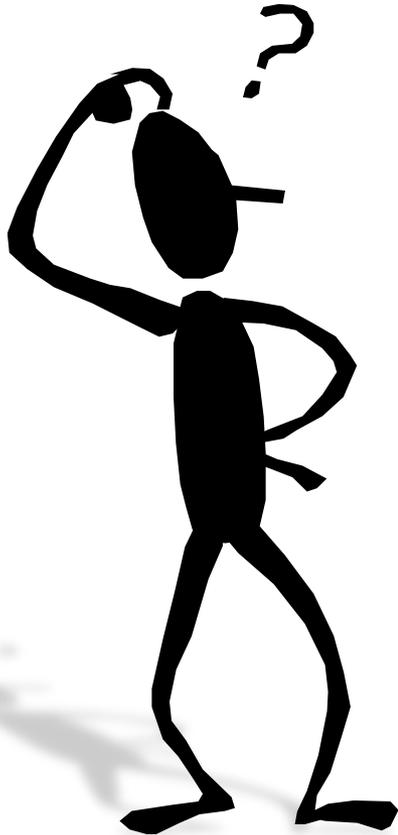
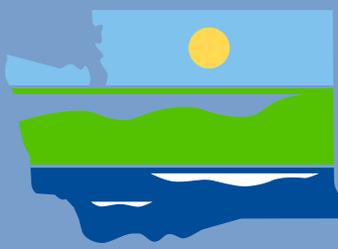
- Complete three years of discharge monitoring started under the 2007 permit
- Enter monitoring data into Ecology's EIM database

S8.E – Targeted Effectiveness Monitoring

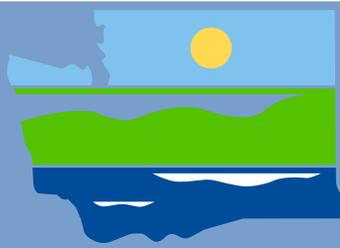
- **Meet QAPP objectives for program effectiveness studies**

S8.F – BMP Evaluation Monitoring

- Meet statistical goals or collect 35 samples
- Enter data into the International Stormwater BMP Database



Questions?



Presentation Outline

Introduction to Permits

2012-2013 Permits

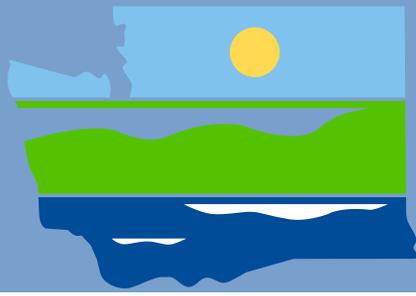
2013-2018 Permits

Newly Permitted Areas

Permit Revisions

LID and Appendix 1

Monitoring and Assessment



Newly Permitted Areas

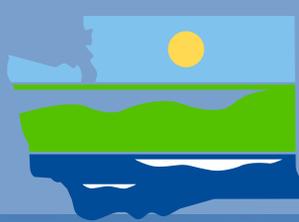
New Permittees - Cities:

- Snoqualmie
- Lynden

Expanded coverage - County UGAs

- Whatcom County for the unincorporated Birch Bay UGA
- Yakima County for the unincorporated Sunnyside UGA (2014).

**Coverage for
WWA New
Permittees &
expanded
areas begins
August 1,
2013**

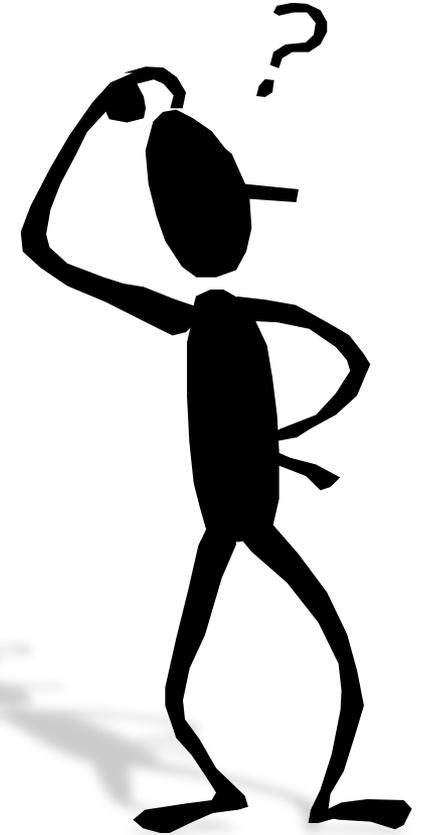
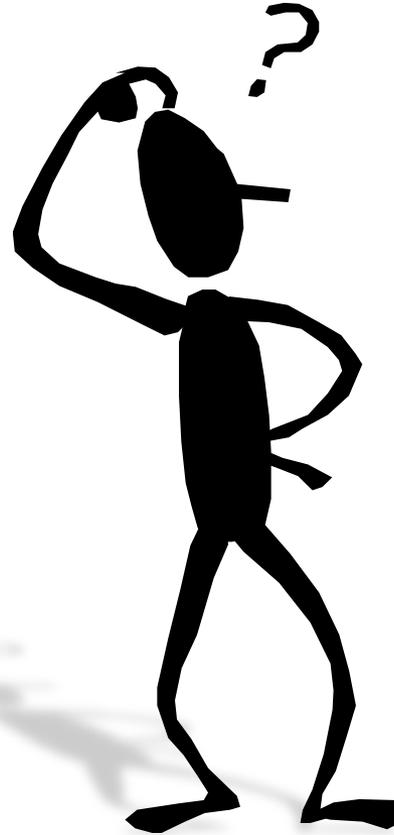
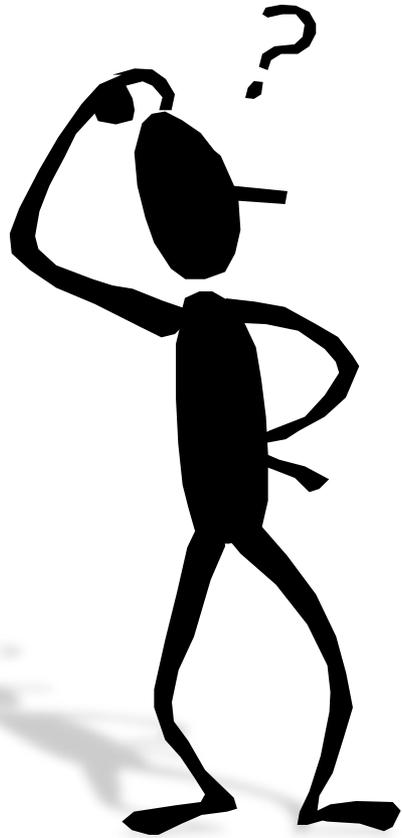
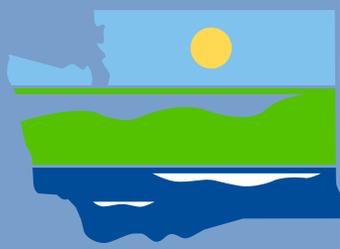


New Permittee Requirements

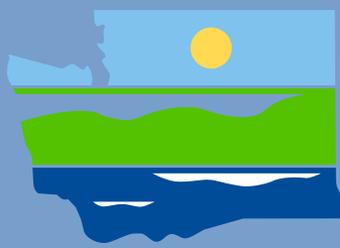
New Permittees follow requirements as modified by footnotes

Implementation phased in over 5 years

No monitoring requirements under S8.B , C or D during first permit term



Questions?



Presentation Outline

Introduction to Permits

2012-2013 Permits

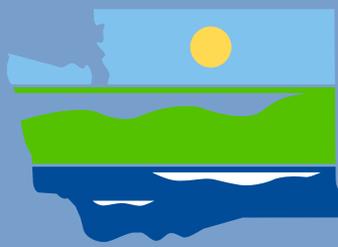
2013-2018 Permits

Newly Permitted Areas

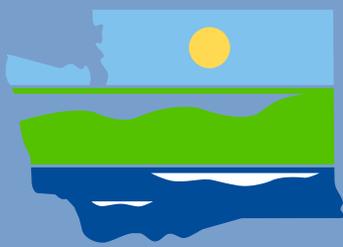
Permit Revisions

Construction/Post-construction & LID

Monitoring and Assessment



**Phase I &
Phase II
Permit
Changes**



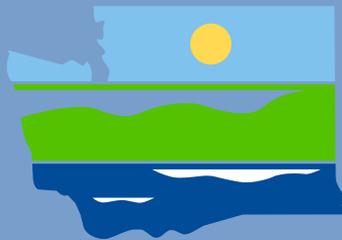
Phase I & Phase II Changes

SWMP Plan
looks forward

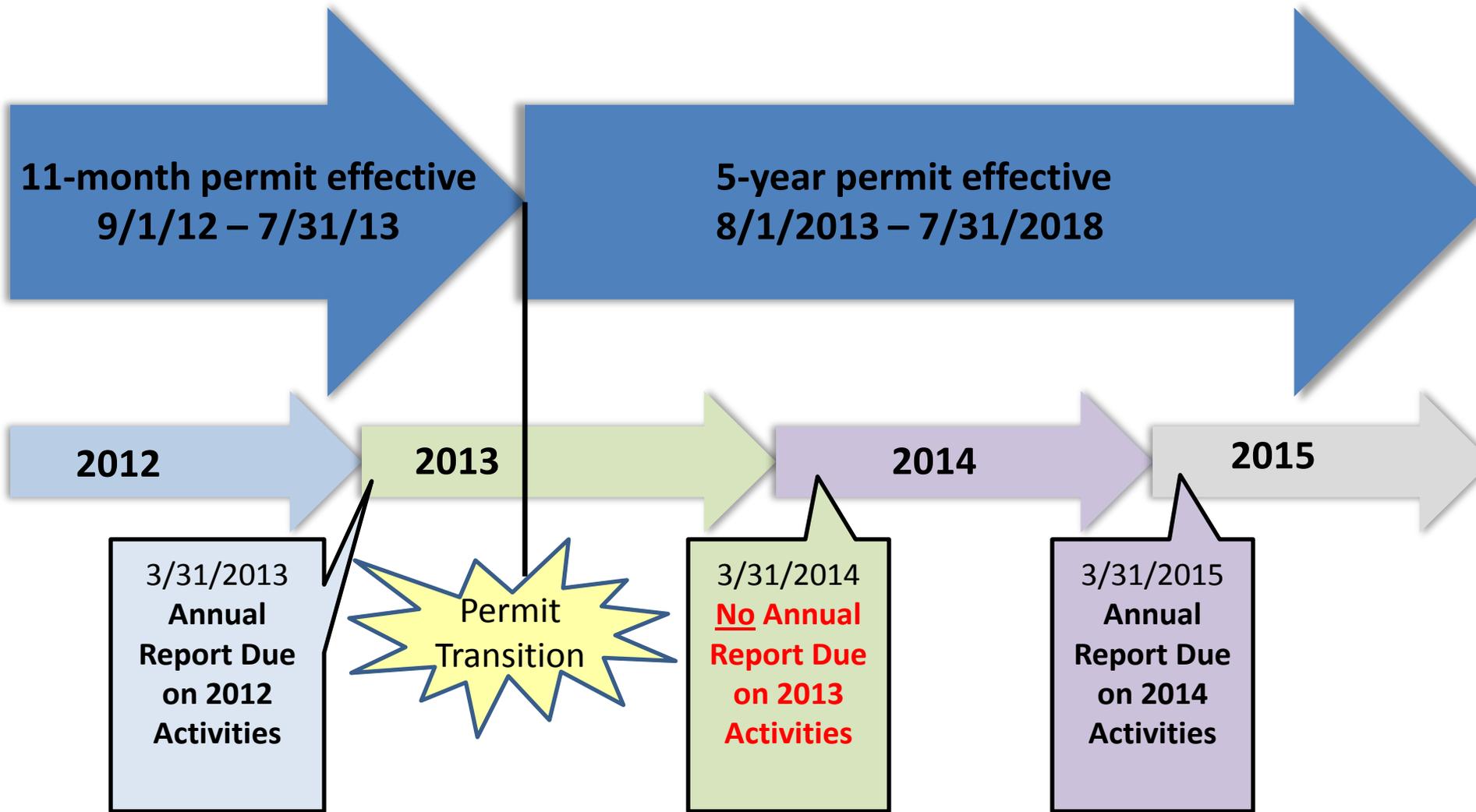
Coordination

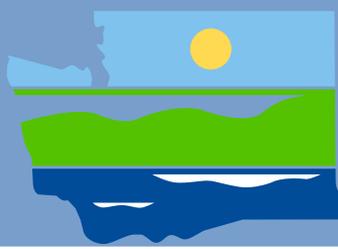
- Requires internal coordination
- Describe in first year report (both permits)

Online annual
reporting



Annual Reporting Timelines





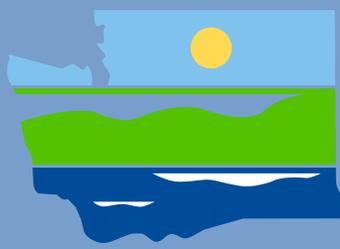
Public Education

Reorganized to separate public awareness from behavior change

Changes identify new audiences and subject areas

Use measures of one audience and one topic area to improve program.

Involve or partner with others to involve public in stewardship activities



Illicit Discharge Detection & Elimination

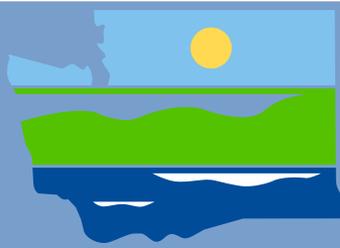
Phase II Mapping – maintain maps

Phase II Implement compliance strategy

- **Includes education and technical assistance**
- **Ordinance may need to include source control BMPs and private maintenance.**



Phase II – Review & update ordinance as needed by Feb 2018

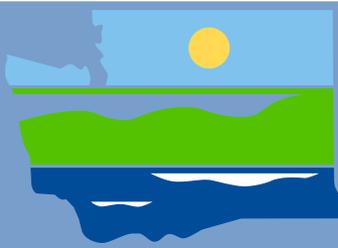


IDDE: Field Screening



Field screening allows more flexibility

Document methods in annual report



IDDE: Field Screening

Phase II

Complete 40% by
Dec. 31, 2017

Aberdeen: Complete
40% by June 30, 2018

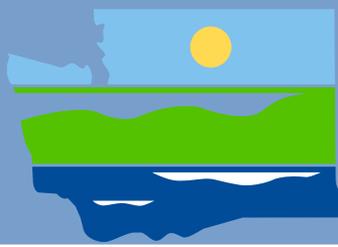
And
average
12% per
year
thereafter

Phase I

Cities: Complete within
incorporated area by July
31, 2018

Counties: Complete within
urban/higher density rural
sub-basins by July 31, 2018

Complete
on
average
12% each
calendar
year



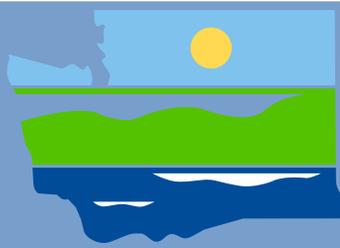
Municipal Operations & Maintenance (O&M)

**Update maintenance standards
(SWMMWW 2012)**

**Focuses inspections & maintenance on
Stormwater Treatment and Flow Control
BMPs/Facilities**

**Phase II: By August 1, 2017 (Aberdeen:
June 30, 2018) inspect all catch basins, and
every two years thereafter, or implement
catch basin inspection alternatives**





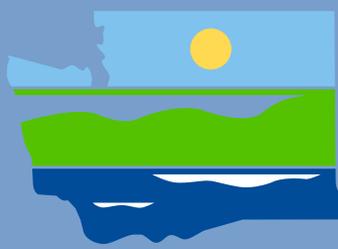
Catch Basin Inspection Alternatives

**Modify inspection schedule
based on maintenance records**

**Complete inspections on a circuit
basis**

**Clean all pipes, ditches, catch basins
& inlets within a circuit once during
permit term**

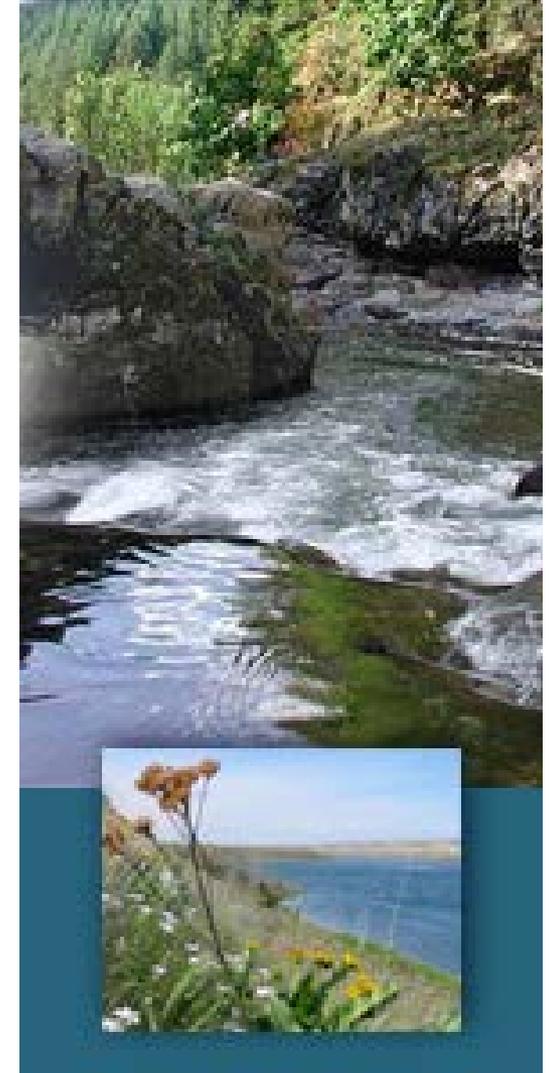


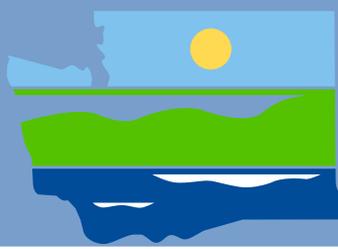


TMDLs: Water Clean Up Plans S7 and Appendix 2

Appendix 2 includes MS4 actions
from TMDLs approved since 2007

Previous (2007) TMDLs have
updated actions





Secondary Permittees

Timelines for New
Secondary Permittees are
in footnotes

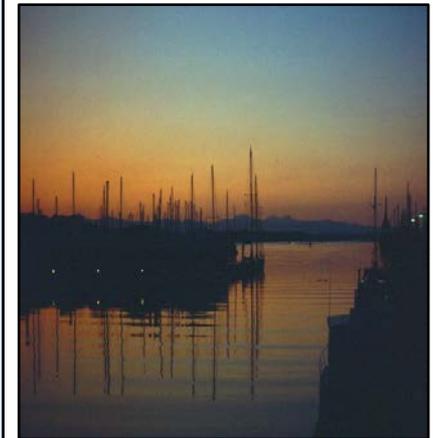
Clarifies requirements for
leased lands

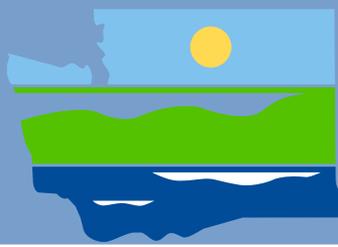
- **Obligations for property under functional control of Secondary Permittee**



Ports of Seattle and
Tacoma

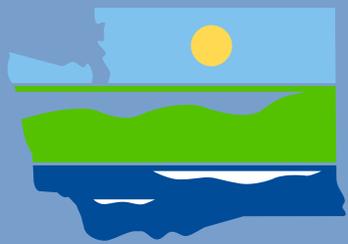
- **Mapping down to 12" outfalls & 8" connections**
- **Annual field screening at 20% of system**





Phase I Only

**2013-2018 Permit
Cycle**

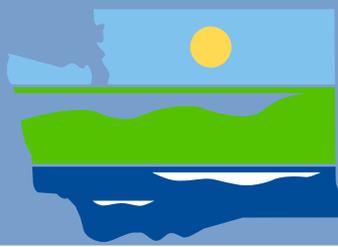


New Mapping (S5.C.2.b) by December 31, 2017

Counties finish mapping
the remaining half of their
urban/higher density rural
sub-basins

Map Connections to
tributary conveyances
equal to 8"

Map Connections between
stormwater treatment and
flow control
BMPs/facilities and
tributary conveyances



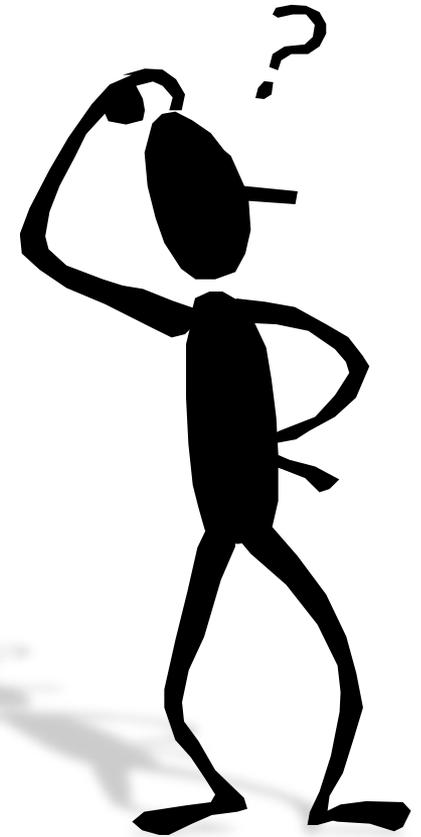
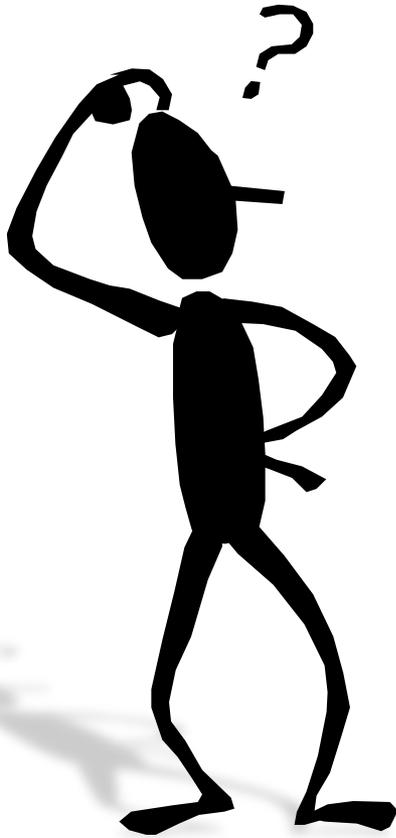
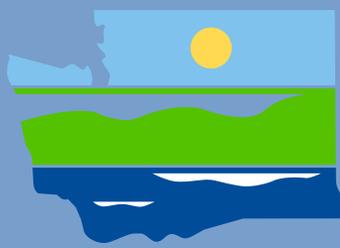
Phase I

Source Control (S5.C.7):

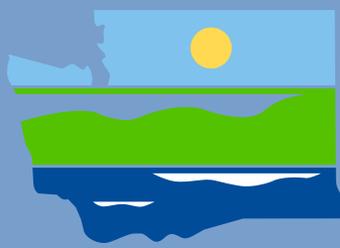
Flexibility in
generating list
of sites (instead
of businesses)

Structural Control (S5.C.6):

- Improves reporting & calculating project benefits
- Retained and added project types



Questions?



Presentation Outline

Introduction to Permits

2012-2013 Permits

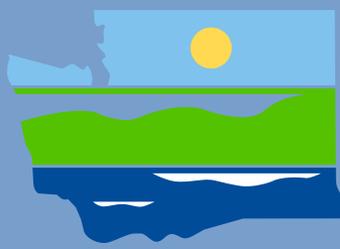
2013-2018 Permits

Newly Permitted Areas

Permit Revisions

Construction/Post-construction & LID

Monitoring and Assessment

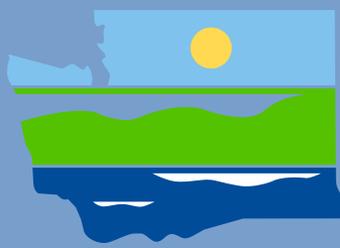


Runoff Controls for New & Redevelopment



Specifies a deadline for effective dates of updated codes; and applicability to projects

- Applications received after the deadline must meet the new requirements.
- Complete applications received prior to the deadline but not starting construction within 5 years must meet new requirements.

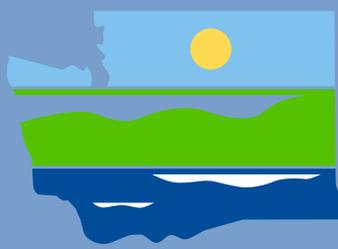


Site and Subdivision: Non-LID Revisions of Appendix 1

Phase II – Removed
the erosivity waiver

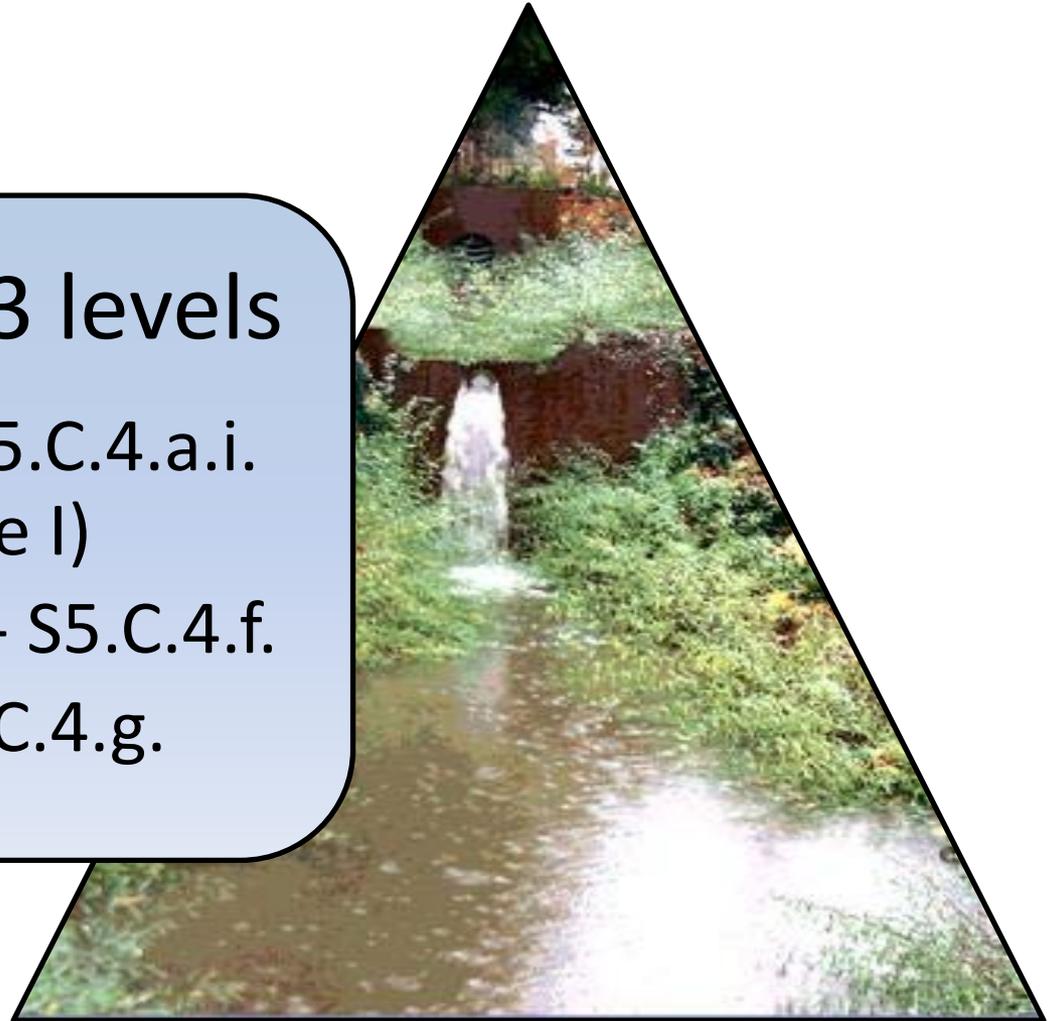
Revisions to wetland
guidance

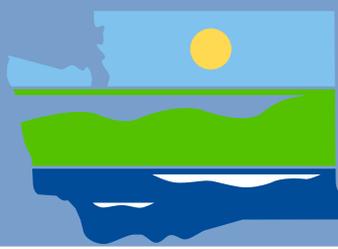
- Match pre-project water
- $\pm 20\%$ Daily; $\pm 15\%$
Monthly inputs



LID addressed on 3 levels

- Site & subdivision - S5.C.4.a.i. & ii. (S5.C.5.a in Phase I)
- Development Codes - S5.C.4.f.
- Watershed Scale - S5C.4.g.



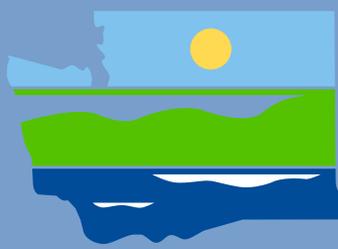


Other Related Permit Conditions

Plan review, Initial inspections, enforcement - S5.C.4.b

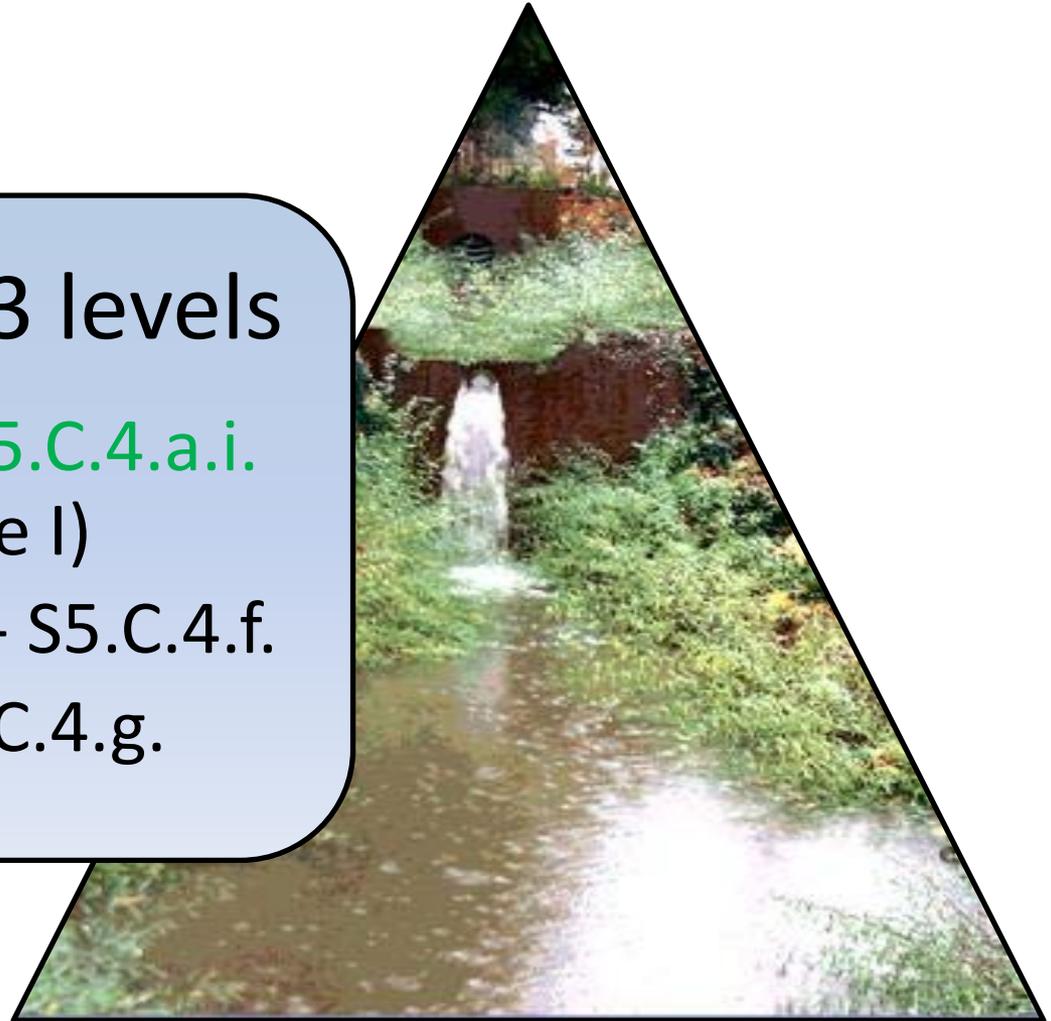
Long-term maintenance inspections – S5.C.4.c

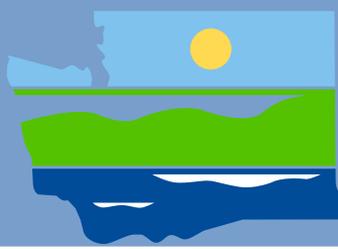
Staff training – S5.C.4.e.



LID addressed on 3 levels

- Site & subdivision - S5.C.4.a.i. & ii. (S5.C.5.a in Phase I)
- Development Codes - S5.C.4.f.
- Watershed Scale - S5C.4.g.





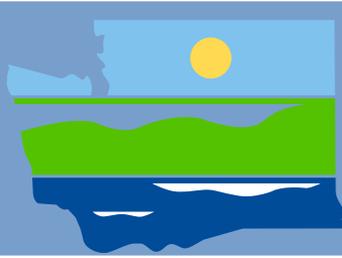
Site & Subdivision: Appendix 1 – LID revisions

Added definitions of LID related terms: Thresholds – “hard” replaces “impervious”

MR#2 Additional Element - Protect LID BMPs

Revises MR #5 for LID

- LID Performance Standard
- BMP Lists #1 and #2 (modified from draft permit)
- **Infeasibility Criteria now in manual (see handout)**
- **Limited applicability in flow control exempt areas**



Projects subject only to MR #1 - #5
2,000 sq ft \geq hard surfaces < 5,000 sq ft

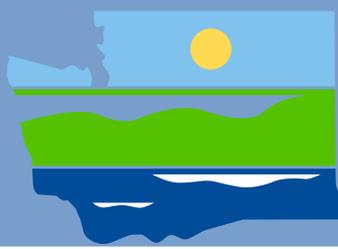
Use List #1

Or

Meet LID
Performance
Standard



- **Cannot use Rain Gardens**
- **Can use Bioretention**
- **Demonstrate compliance w/approved models & methods**



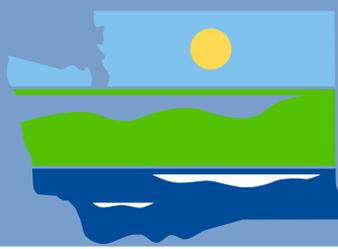
List #1

Lawn and
landscaped areas:

- **Soil Quality and Depth (T5.13)**

Roofs: Consider in
order listed; use
first feasible

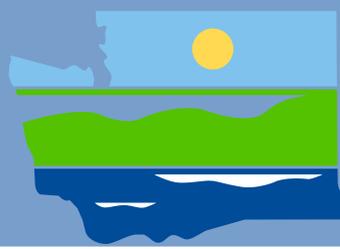
- **Full Dispersion or Full Infiltration (T5.30 or T5.10A)**
- **Rain Gardens or Bioretention (T5.14A or B)**
 - **$\geq 5\%$ of drainage area**
- **Downspout Dispersion Systems (T5.10B)**
- **Perforated Stub-out Connections (T5.10C)**



List #1 (continued)

Other Hard Surfaces (driveways, patios, walks, parking lot) consider in order listed; use first feasible

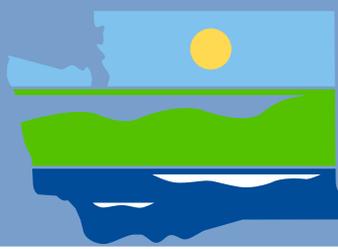
- Full Dispersion (T5.30)
- Permeable pavement, **or** Rain Gardens, **or Bioretention**
 - (T5.15, T5.14A, T5.14B)
 - **RG or Bioretention area \geq 5% of drainage area**
- Sheet Flow Dispersion, or Concentrated Flow Dispersion (T5.12 or T5.11)



LID Performance Standard

Match post-development discharge durations to pre-developed durations from 8% of the 2-year flow to 50% of the 2-year flow

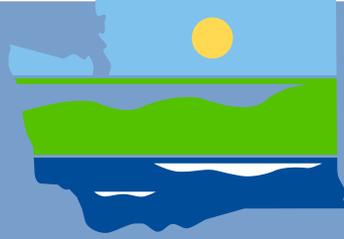
- **Pre-development generally a forested land cover**



LID Performance Standard vs Flow Control Standard

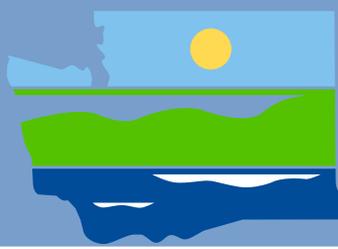
**LID Performance Standard
addresses the lower, more
frequent stormwater flows
(8% of 2-year through 50%
of the 2-year)**

**Flow Control Standard
addresses the higher, less
frequent stormwater flows
(50% of the 2-year through
the full 50-year)**



Projects Triggering MR #1 - #9

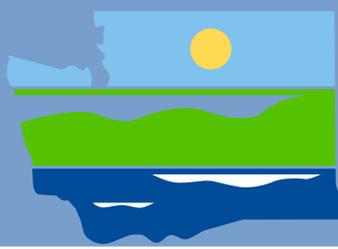
Project Type & Location	Requirement
Development (new or redevelopment) on any parcel inside the UGA, or development outside the UGA on a parcel less than 5 acres	LID Performance Standard and BMP T5.13 OR List #2 (applicant option)
Development (new or redevelopment) outside the UGA on a parcel of 5 acres or larger	LID Performance Standard and BMP T5.13



List #2

Same as List
#1 with two
changes:

- **Rain Gardens not an option**
- **Other Hard Surfaces:**
 - **Permeable Pavement is 2nd priority**
 - **Bioretention is 3rd priority**
- **Vegetated roof consideration deleted**



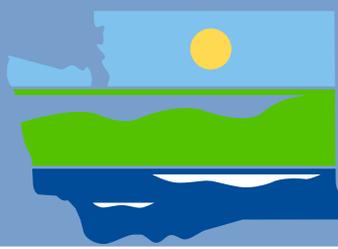
Initial Inspection & Maintenance of Permanent Stormwater BMPs/Facilities

Inspection to verify proper installation of all permanent stormwater facilities – includes LID BMPs/facilities .

S5.C.4.b.iv

Verification of maintenance plan & responsible party for “stormwater treatment and flow control BMPs/facilities.” (See definition) S5.C.4.c

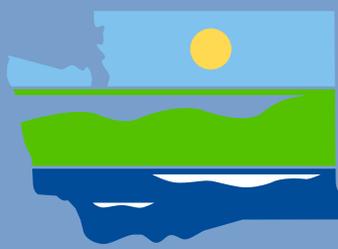
Inspect “stormwater treatment and flow control facilities” & catch basins in residential developments every 6 months until 90% of lots constructed (or until construction has stopped and the site is stabilized). S5.C.4.c.iv



Long-term Inspection & Maintenance of “Stormwater Treatment and Flow Control BMPs/Facilities”

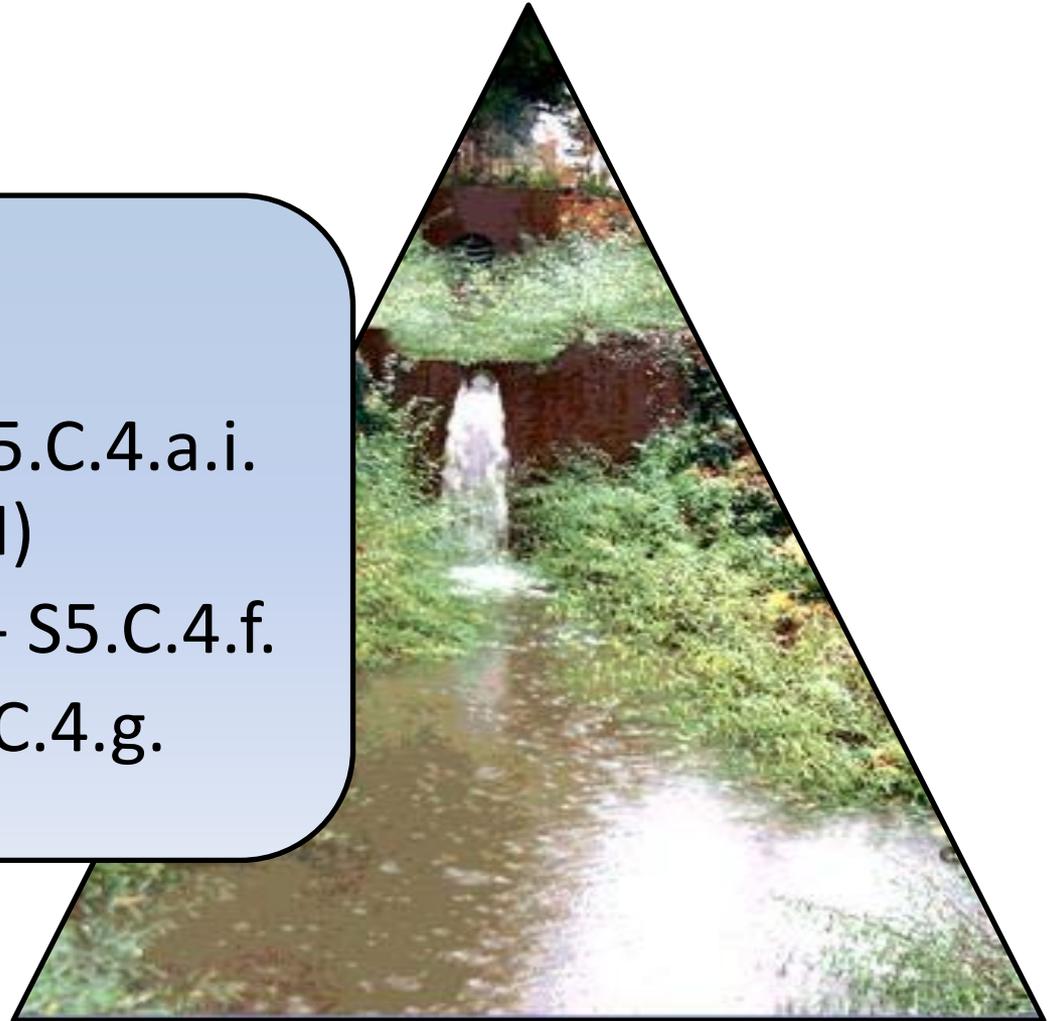
**Phase I - annual inspections & maintenance
compliance S5.C.9.b.ii.**

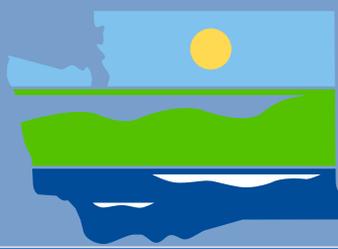
**Phase II – annual inspections and maintenance
compliance applies only to those built under 2007,
2012, and 2013 NPDES permit provisions S5.C.4.c.iii**



3 levels

- Site & subdivision - S5.C.4.a.i. & ii. (S5.C.5 in Phase I)
- Development Codes - S5.C.4.f.
- Watershed Scale - S5C.4.g.





Manual References for Phase I - S5.C.5.a.ii and Phase II - S5.C.4.a.ii (see handout)

(a) Site planning
requirements
(Vol. I, Ch. 3)

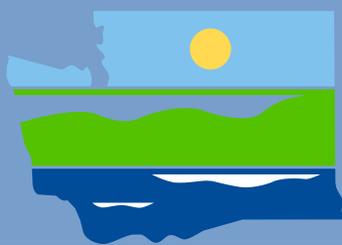
(b) BMP selection
criteria
(Vol. II - V)

(c) BMP design
criteria
(Vol. II - V)

(d) BMP
infeasibility
criteria
(Vol. III & V)

(e) LID competing
needs criteria
(Vol. V)

(f) BMP
limitations
(Vol. II - V)



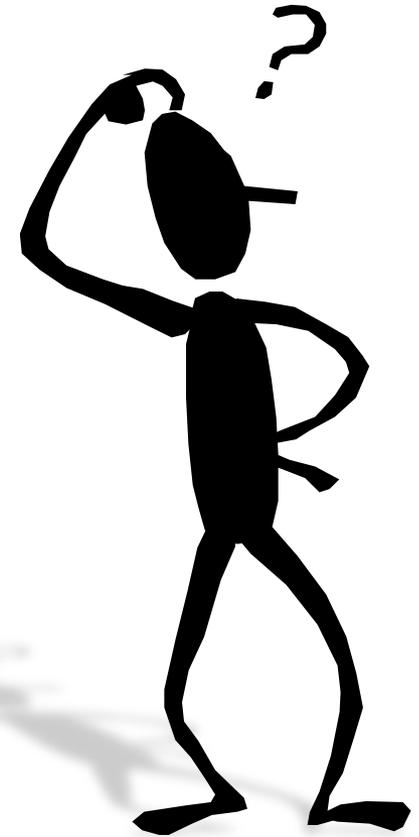
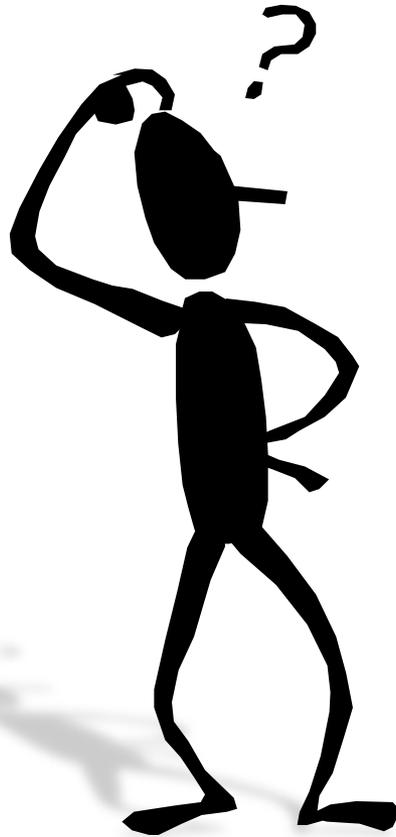
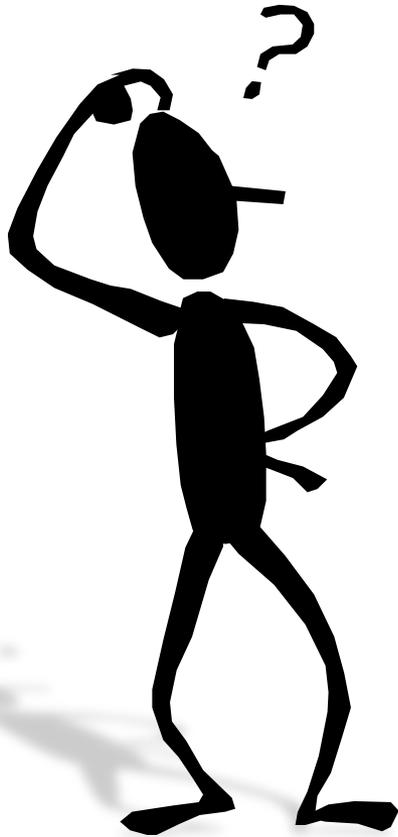
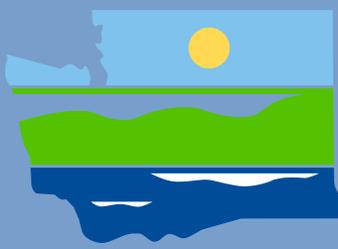
Stormwater Management Manual for Western Washington

Most Significant Edits:

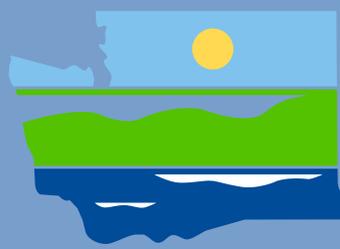
- **LID (Vol. V: Chapters 5 & 7)**
- **Revised guidance for designing infiltration facilities (Vol. III, Ch. 3)**
- **New & revised source control, construction & treatment BMPs**
- **WWHM update and modeling guidance**



**Related LID Technical Guidance Manual
update available Nov. 2012**

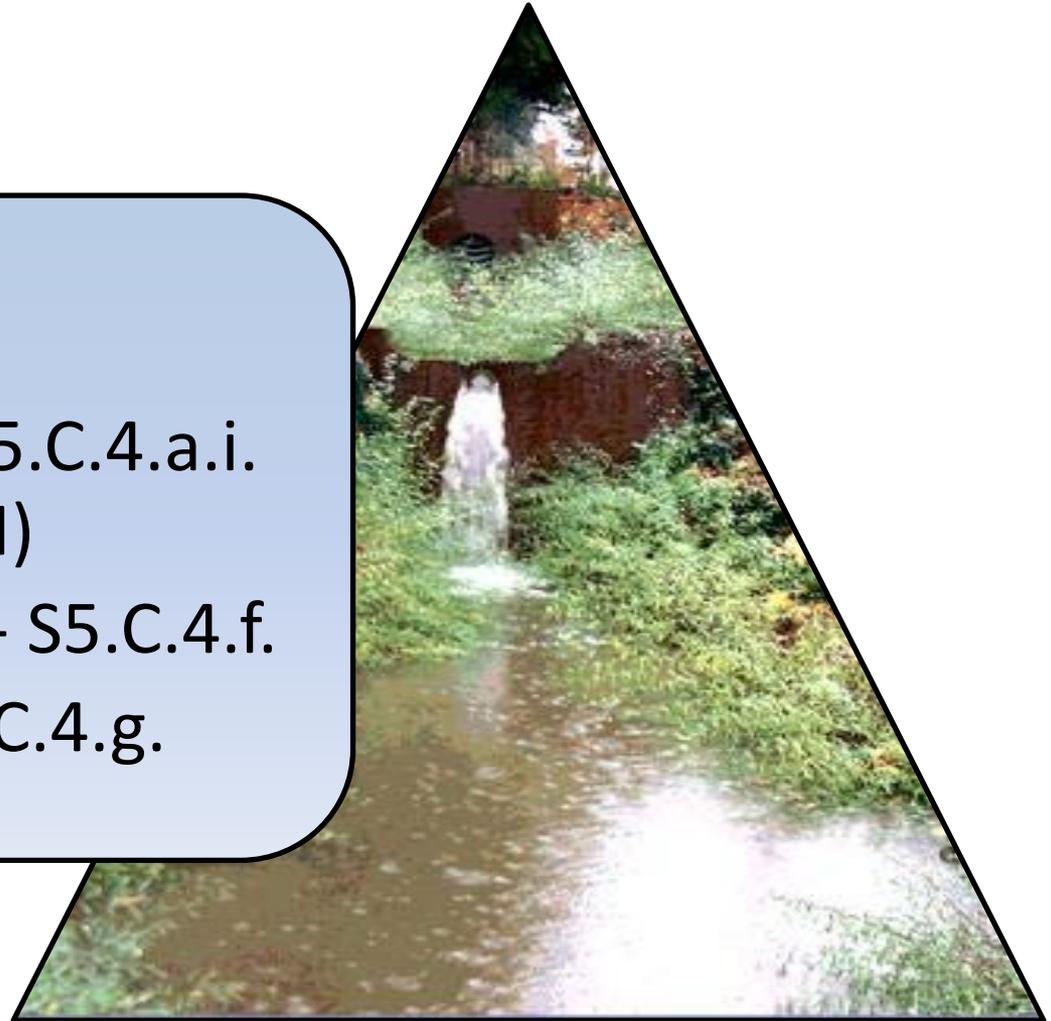


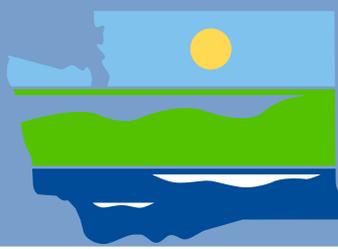
Questions?



3 levels

- Site & subdivision - S5.C.4.a.i. & ii. (S5.C.5 in Phase I)
- **Development Codes** - S5.C.4.f.
- Watershed Scale - S5C.4.g.



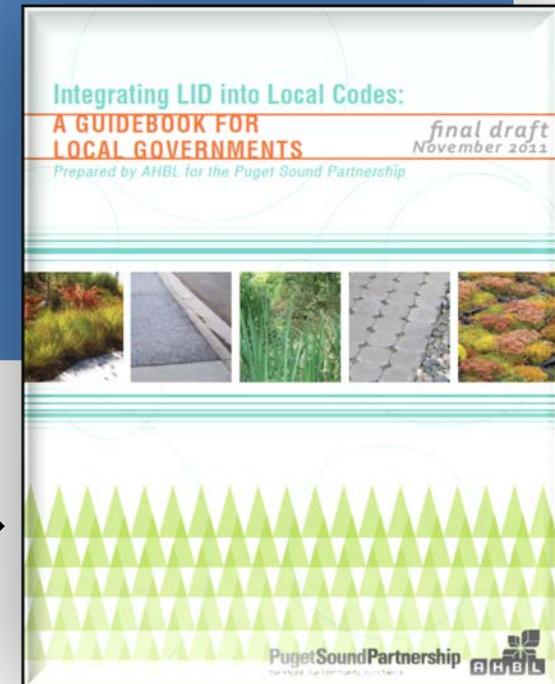


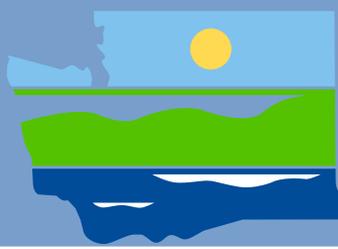
LID – Local Development Codes

Make LID the preferred and commonly used approach for site development

- Minimize impervious surface
- Minimize native vegetation loss

PSP Integrating LID into Local Codes Guidebook





LID- Timelines

**Adopt new
site &
subdivision
stormwater
codes**

**Phase I:
June 30,
2015**

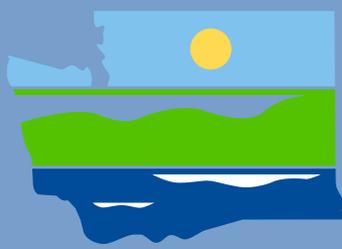
**Phase II:
December
31, 2016***

**Review and
revise
development-
related codes,
rules & standards**

**Phase I:
June 30,
2015**

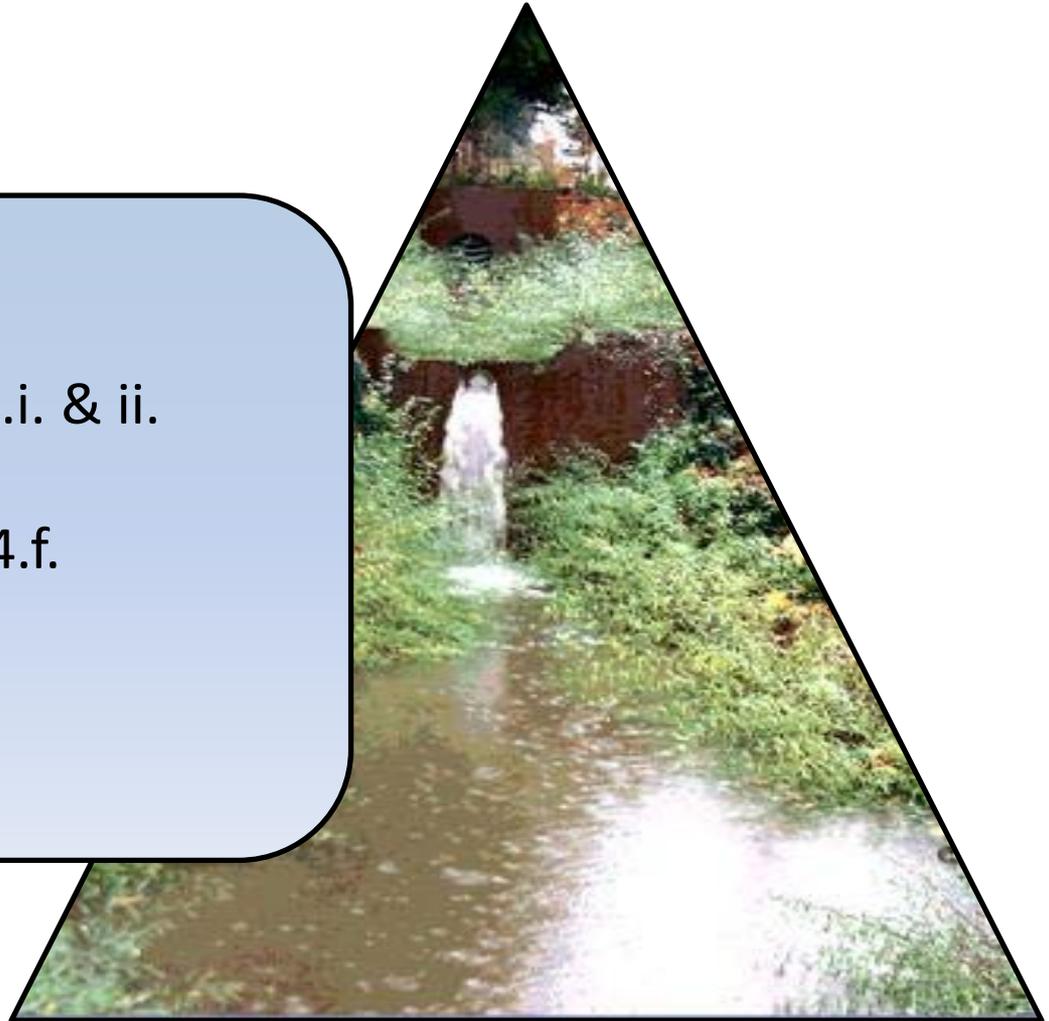
**Phase II:
December
31, 2016***

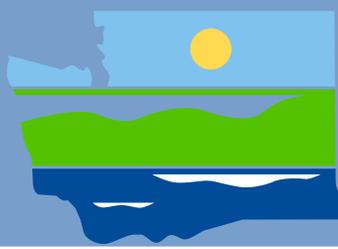
*** Or GMA update deadline, whichever is later**



3 levels

- Site & subdivision - S5.C.4.a.i. & ii.
(S5.C.5.a.i. & ii in Phase I)
- Development Codes - S5.C.4.f.
(S5.C.5.b. in Phase I)
- **Watershed Scale** - S5C.4.g.
(S5.C.5.c. in Phase I)

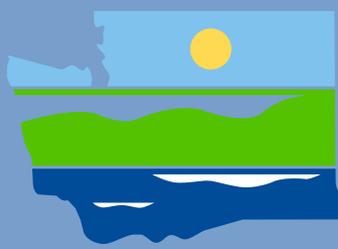




LID – Watershed Scale Planning

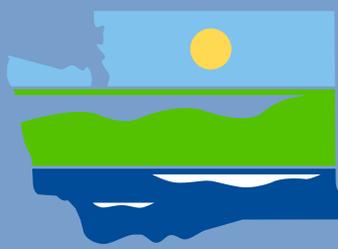
Phase I County selects a watershed and leads a planning process

- Select watershed by **Oct. 31, 2013**
- Submit scope of work by **April 1, 2014**
- Submit final plan by **Oct. 1, 2016**



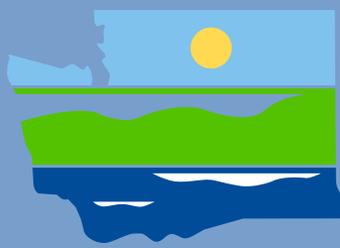
Proposed watersheds

- Streams impacted by development & retain anadromous fish
- Targeted to accept significant growth
- ≥ 10 sq. mi.
- MS4 service area
- **Watersheds proposed in Phase I permit**

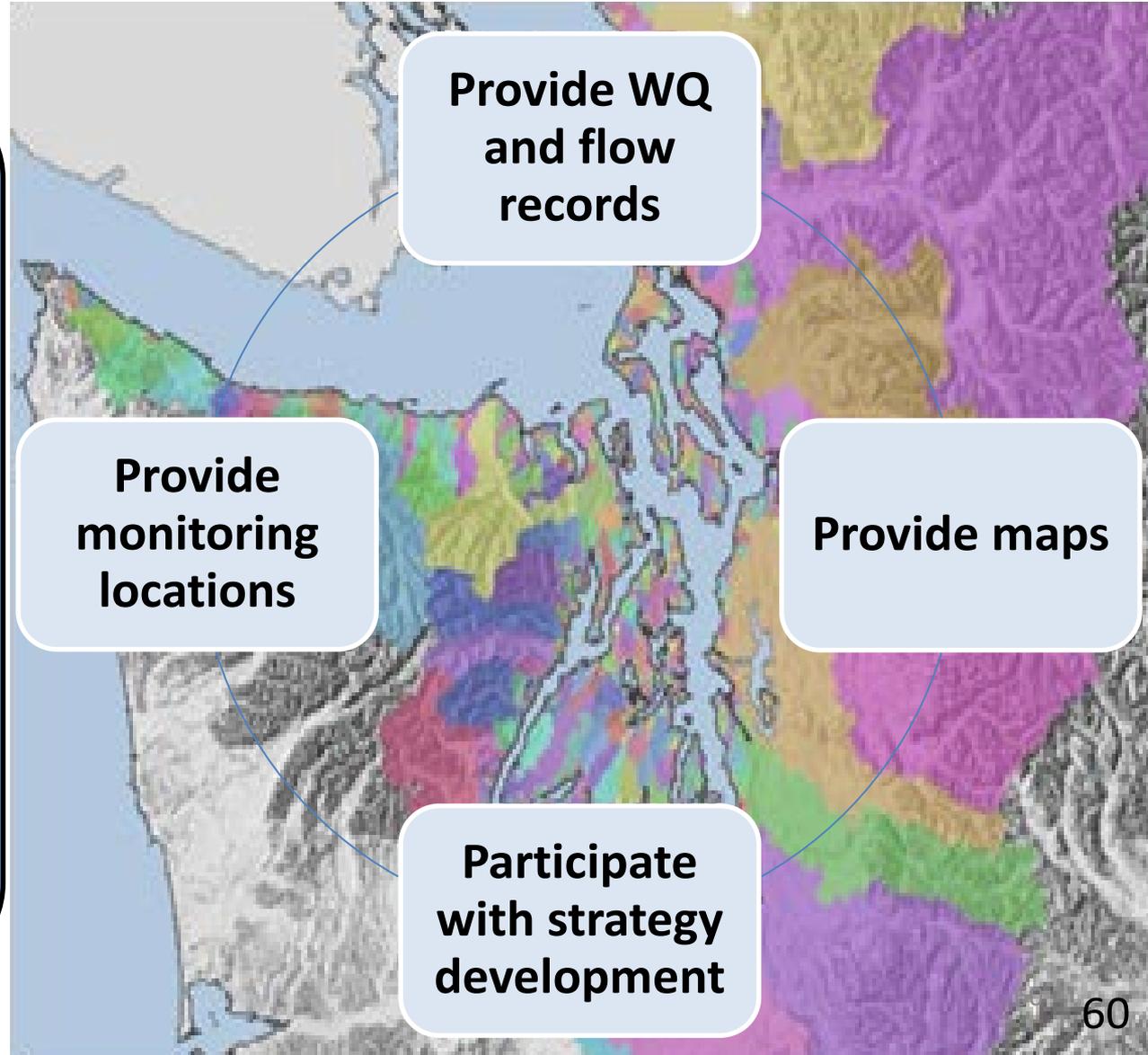


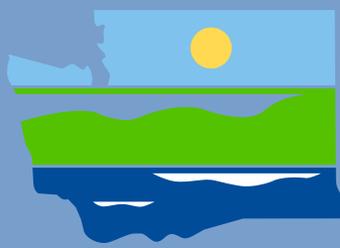
Planning Process

- Baseline assessment
- **Mapping**
- **Continuous Runoff Model Calibration**
- Predict future hydrologic, biologic, and WQ conditions
- Evaluate strategies to meet WQ Standards
- Implementation Plan & Schedule
- **Public review and comment**



Phase II
Watershed
Planning
Responsibilities
(S5.C.4.g)





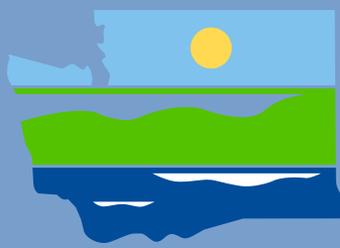
LID Guidance

West. Wash.
Stormwater
Manual

LID Technical
Guidance
Manual
(WSU/PSP)

Integrating
LID into Local
Codes (PSP)

Rain Garden
Handbook
(2007, 2013
editions)

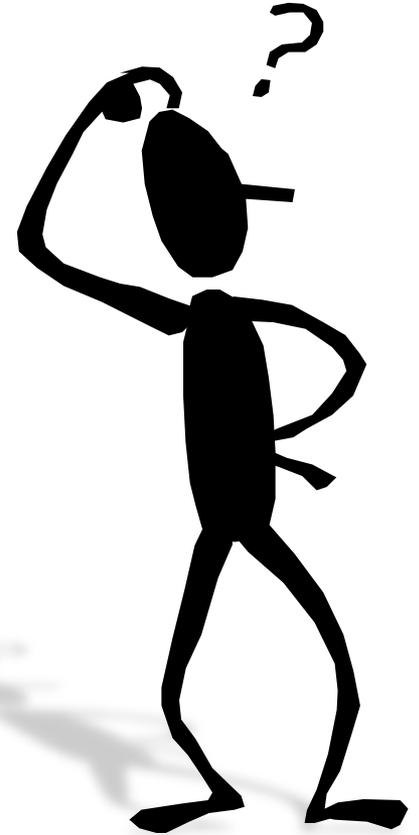
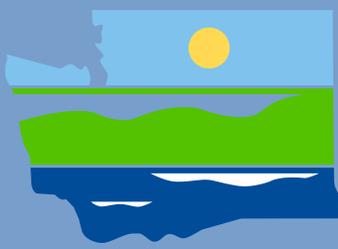


LID Training

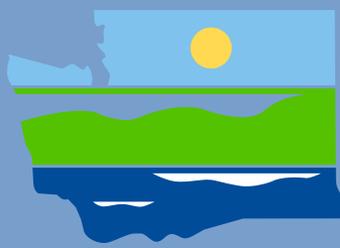
LID training for local governments, building industry, and others – 5-year plan.

2013 Workshops:

- **2012 SWMMWW**
- **Updated WWHM**
- **LID O&M standards and guidance**



Questions?



Presentation Outline

Introduction to Permits

2012-2013 Permits

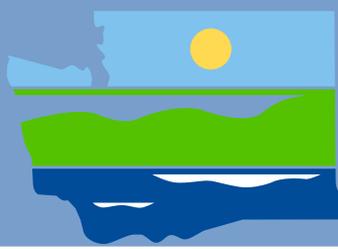
2013-2018 Permits

Newly Permitted Areas

Permit Revisions

Construction/Post-construction & LID

Monitoring and Assessment

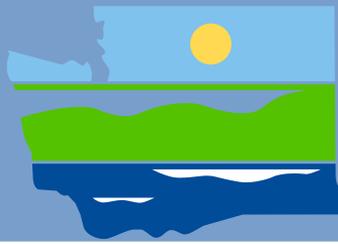


S8 Monitoring and Assessment



**Changes
from
draft
permit**

- **Not required to enter into an agreement**
- **No opt-out for Source ID info repository**



S8 Timeline

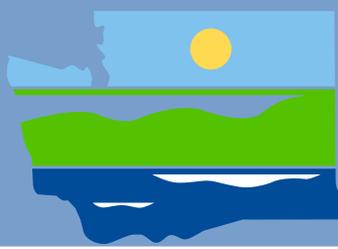
**Permit becomes
effective August 1,
2013**

**QAPPs available prior
to this date**

**Permittees notify
Ecology of decision
to opt in or out by
December 1, 2013**

**RSMP begins
after August
15, 2014**

RSMP = Regional Stormwater
Monitoring Program



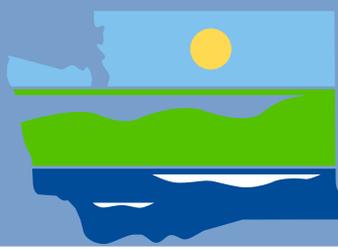
S8.B Status and Trends Monitoring

Puget Sound RSMP pay-in option

- 100 small streams in Puget lowlands and 40 nearshore sites adjacent to UGAs
- Probabilistic sampling design

Water and sediment
quality

Information about biota
in receiving waters



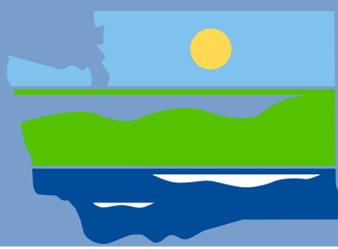
S8.B Status and Trends Monitoring

Puget Sound opt-out monitoring

- QAPP-defined small stream and nearshore sites in each jurisdiction
- Numbers of sites based on population
- Same sampling, same timing and frequency

Water and sediment
quality

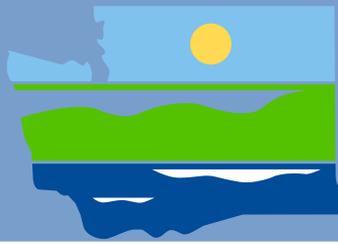
Information about biota
in receiving waters



S8.C Effectiveness Studies

Pay-in
RSMP
studies

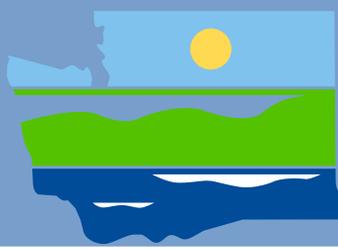
- Initial list of studies was included in draft permit
- Findings of literature review will be used to finalize the RSMP list
- Studies begin in fall 2014



S8.C Effectiveness Studies

Opt-out
monitoring

- **Outfall monitoring**
- **Phase I only: pay half and do a study**
- **Clark County only: paired studies option**

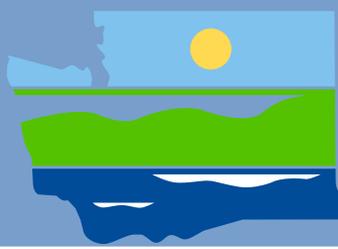


S8.D Source Identification and Diagnostic Monitoring



SIDIR

- **No opt-out**
- **Pay in to create the repository**
- **Initial analysis of data contributed for annual reporting on S5**

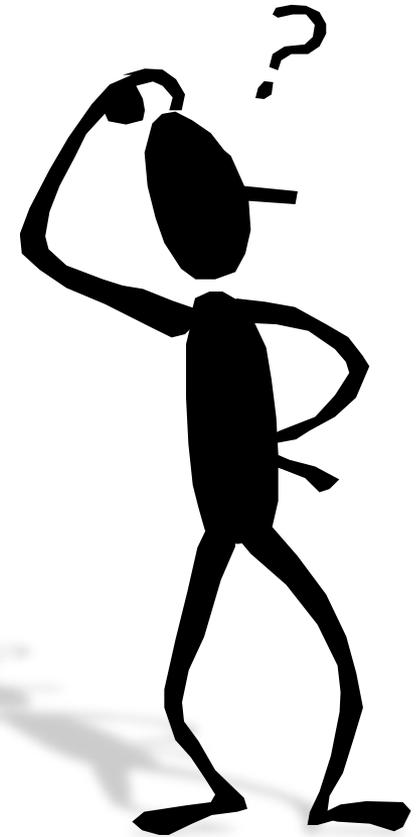
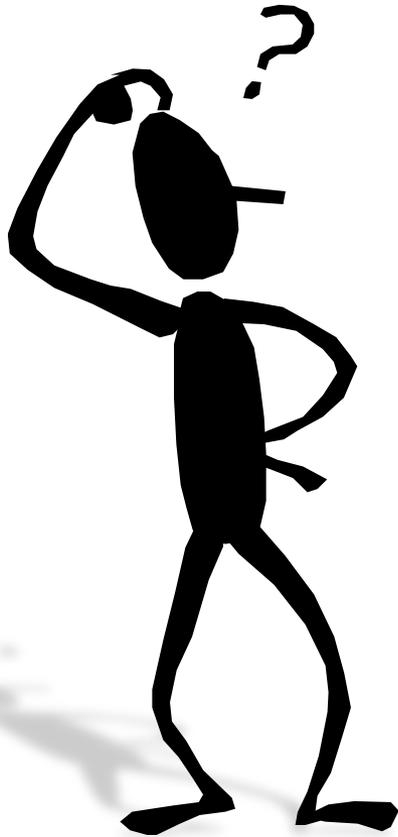
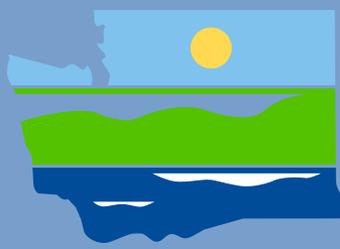


Information for Permittees

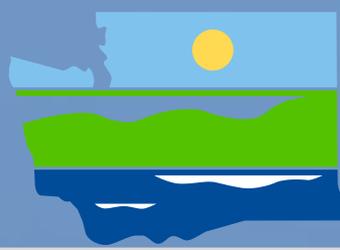
Ecology is currently developing a website with more detailed information about S8

- Current draft QAPPs and updates
- Current lists of effectiveness studies
- Links to stakeholder recommendations





Questions?



Thank you!

www.ecy.wa.gov/programs/wq/stormwater/index.html

Phase I – Carrie Graul

- carrie.graul@ecy.wa.gov

Phase II - Harriet Beale

- harriet.beale@ecy.wa.gov