

These PowerPoint documents have been made available by DEQ Office of Training Services for study purposes only. Exam questions will not be derived from the PowerPoints. PowerPoint documents will not be allowed into the exam.



Module 4

VSMP Regulations – An Overview

The VSMP Regulations
can be viewed at:

[http://www.deq.virginia.gov/
Programs/Water/Laws
RegulationsGuidance.aspx](http://www.deq.virginia.gov/Programs/Water/LawsRegulationsGuidance.aspx)

Click on 9VAC25-870 Virginia
Stormwater Management Program
(VSMP) Regulations



Overview





Definitions (9VAC25-870-10)

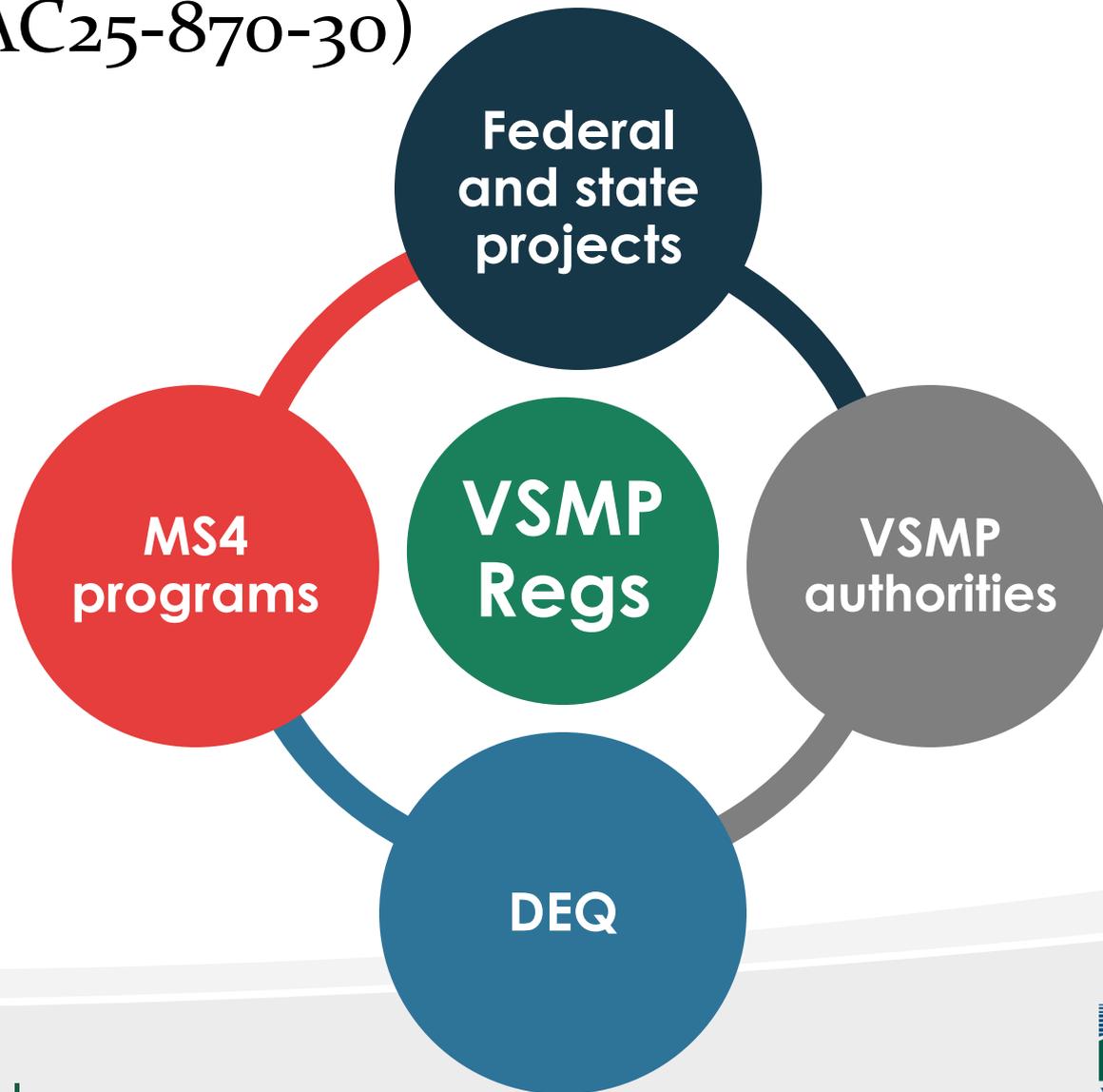




Purposes (9VAC25-870-20)

- Framework for VSMP:
 - Administration
 - Implementation
 - Enforcement
- Outline procedures and requirements for permits

Applicability (9VAC25-870-30)

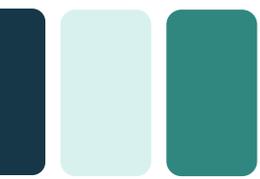




Applicability (9VAC25-870-30)

Land-Disturbing Activities (LDA)

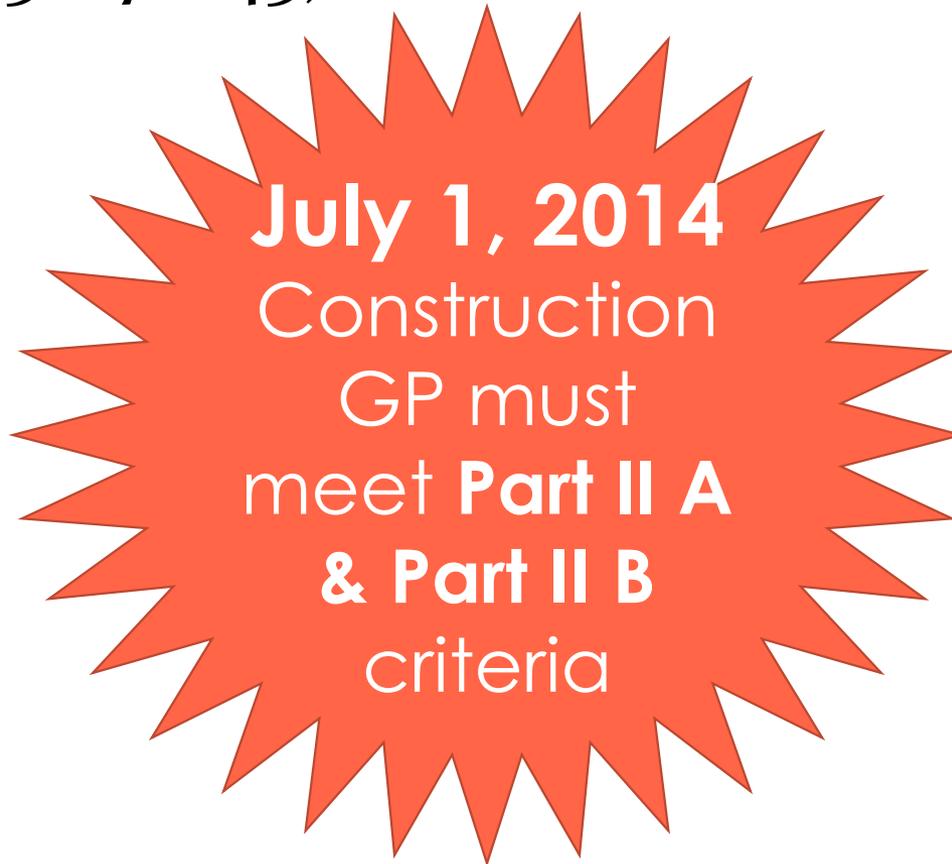
≥ 1 acre	≥ 2,500 sq. ft. in Chesapeake Bay Preservation Areas	More stringent area as required by local ordinance
-----------------	---	---



Part II - Administrative and Technical Criteria for Land-Disturbing Activities

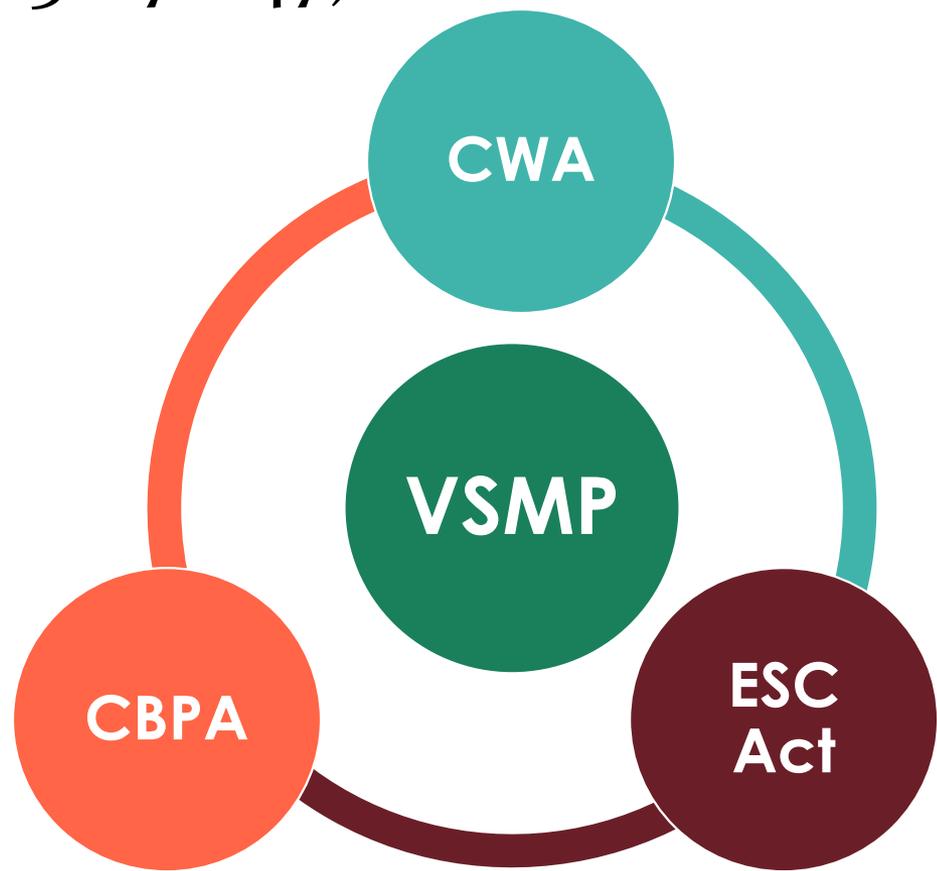
Implementation Date

(9VAC25-870-45)

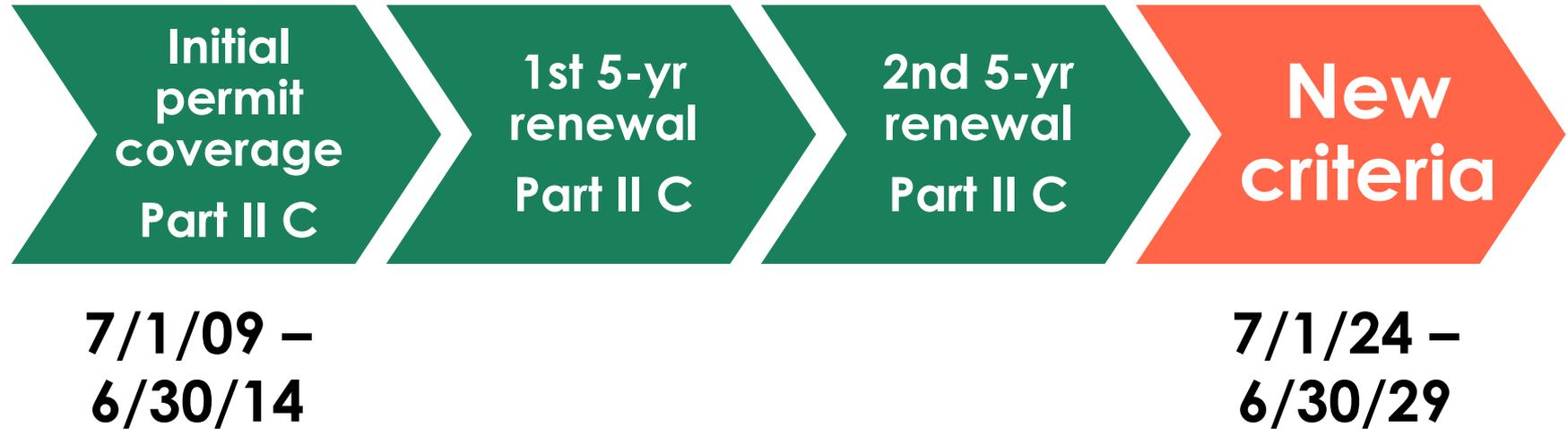


July 1, 2014
Construction
GP must
meet **Part II A**
& **Part II B**
criteria

Other Laws and Regulations (9VAC25-870-47)



PG 5 Time Limits of Approved Design
Criteria (9VAC25-870-47B)



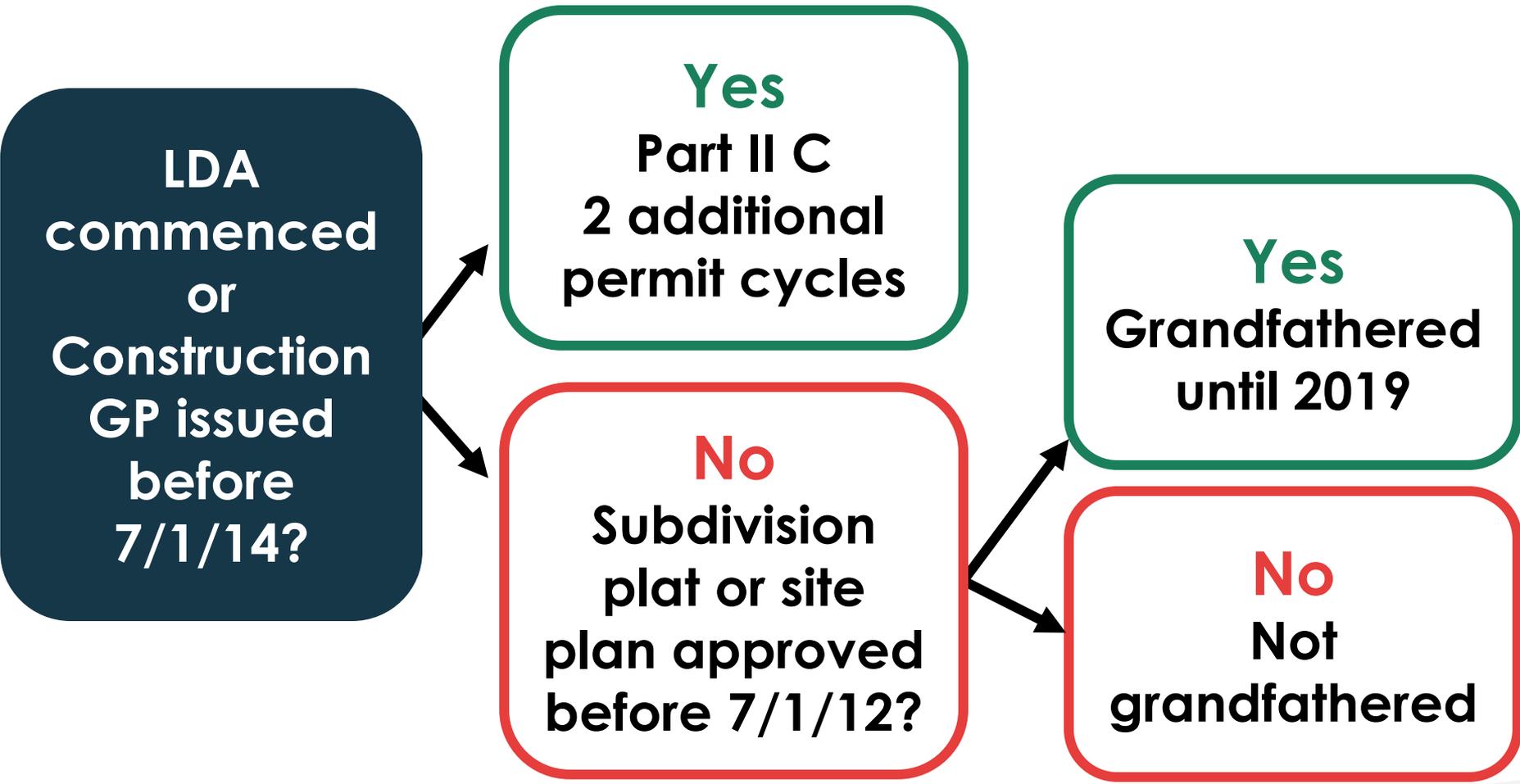


Grandfathering (9VAC25-870-48)

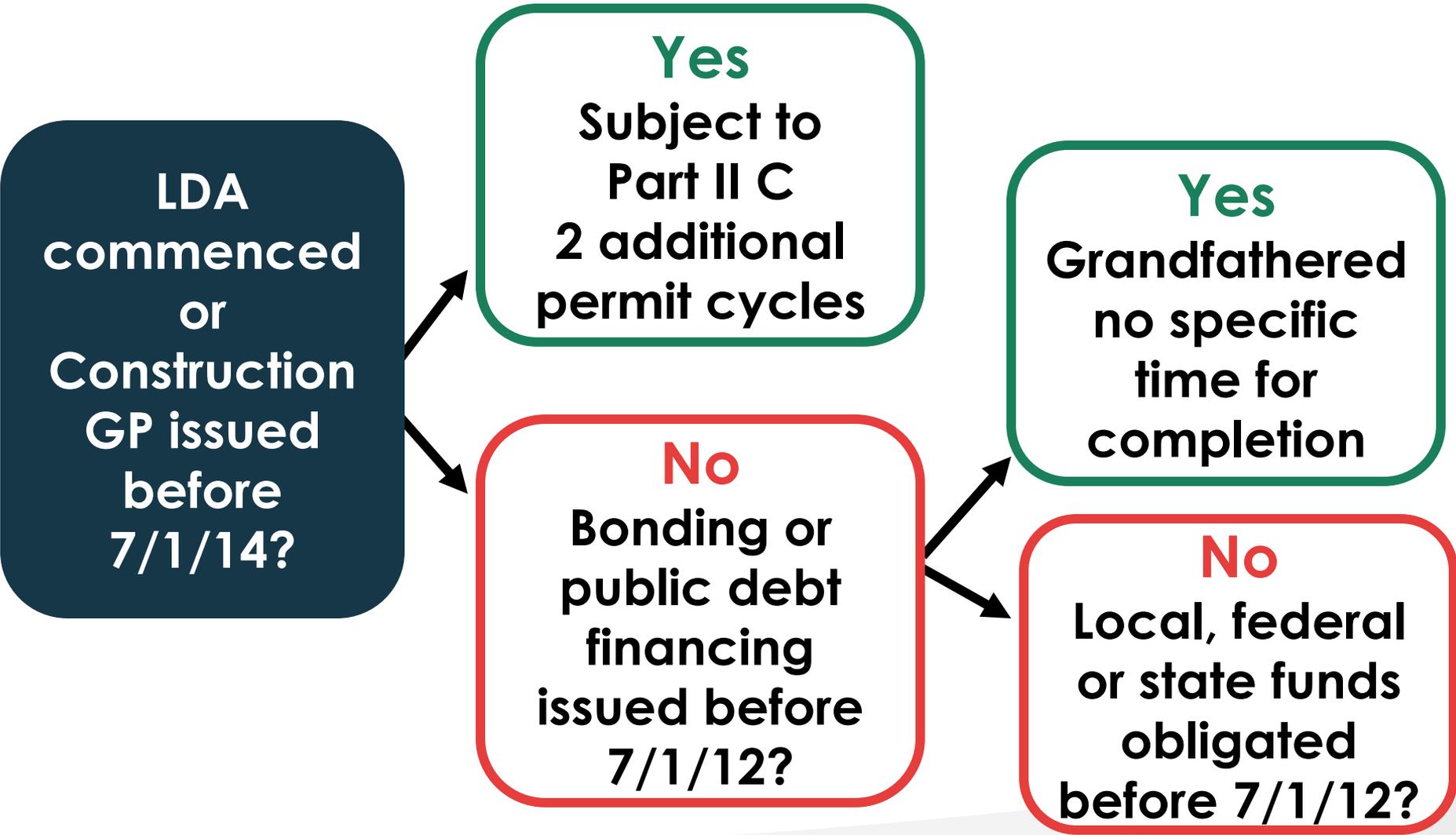
- Proffered or conditional zoning plan;
- Zoning with a plan of development;
- Preliminary or final subdivision plat;
- Preliminary or final site plan; or
- Document determined equivalent by locality

- ✓ Approved by locality before July 1, 2012
- ✓ Provides a layout
- ✓ Will comply with Part II C
- ✓ No modification that increases P, volume or rate of runoff
- ✓ No state permit issued before July 1, 2014
- ✓ LDA did not start before July 1, 2014

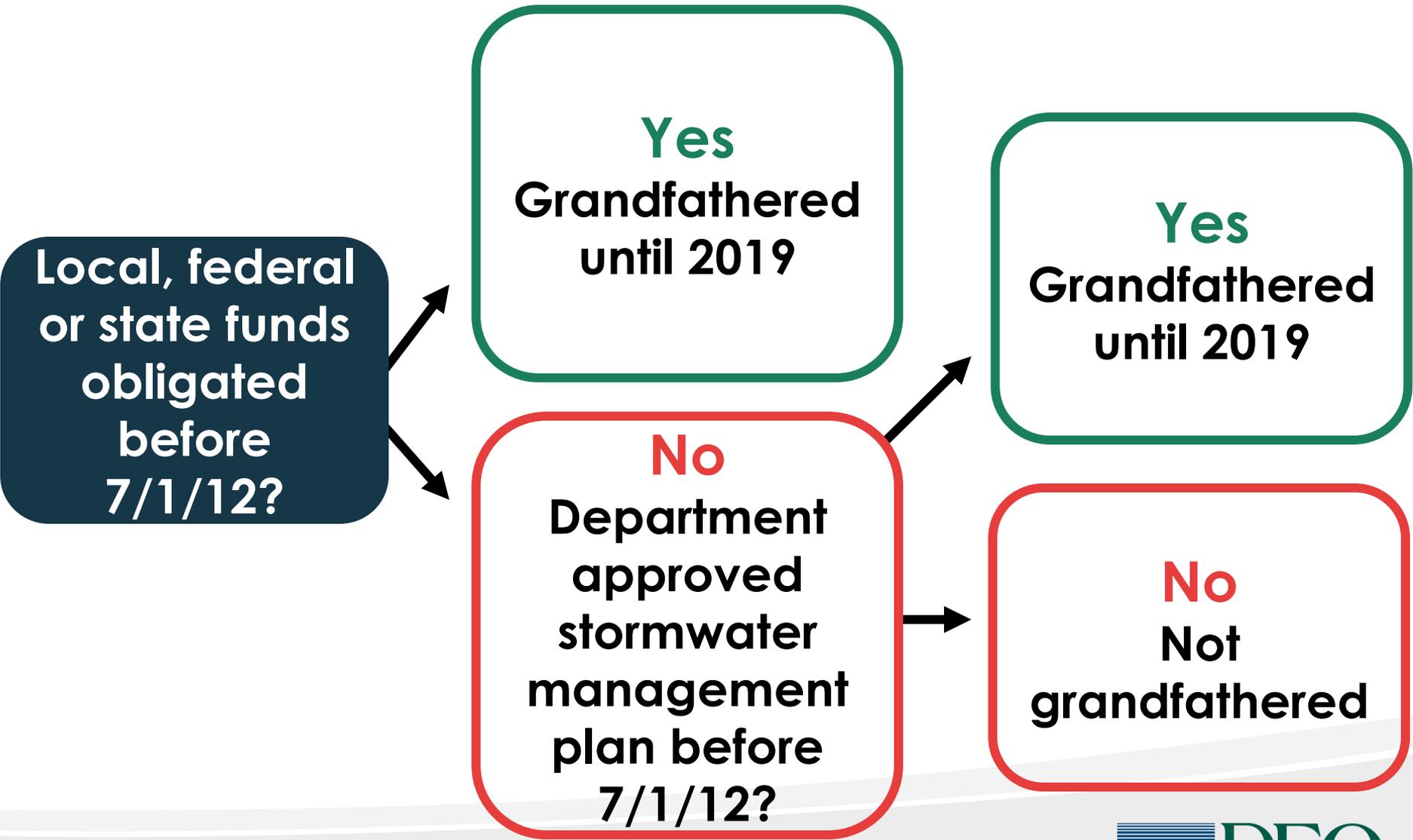
Private LDA



Local, State, Federal LDA



Local, State, Federal LDA



PG 8 Chesapeake Bay Preservation Act

LDA (9VAC25-870-51)

- Results in a land disturbance greater than or equal to 2,500 sq. ft. and less than 1-acre in areas subject to the CBPA
 - Does not require coverage under the Construction GP
 - Must:
 - Meet Part II administrative and technical criteria



Knowledge Check



- Are local governments able to impose more stringent technical criteria or requirements than are included in the Regulations?

Yes



Knowledge Check



- A land-disturbing activity of two acres received a Construction GP on March 30, 2013. What technical criteria must be met and for how many permit cycles?

Technical criteria in place at the time of initial state permit coverage for two additional five-year permit cycles



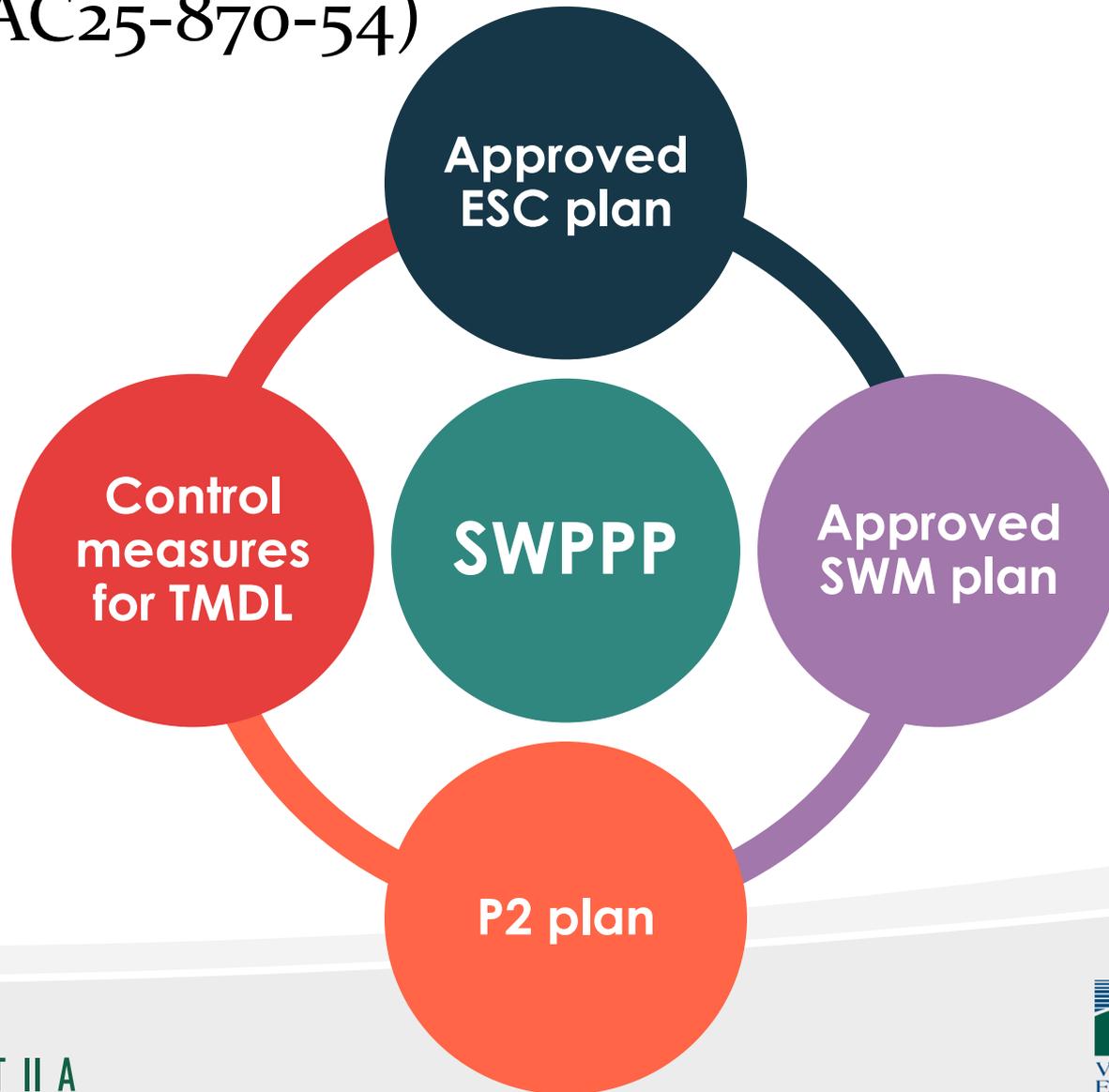
Part II A: General Administrative Criteria for Regulated Land- Disturbing Activities



Applicability (9VAC25-870-53)



PG 10 SWPPP Requirements
(9VAC25-870-54)



PG 10 9 Performance Requirements of the SWPPP (9VAC25-870-54)

Stormwater volume and velocity

Stormwater discharges

Soil exposure

Steep slopes

Sediment discharges

Natural buffers and vegetated areas

Soil compaction and topsoil

Stabilization

Outlet structures

PG II SWPPP Requirements

(9VAC25-870-54)

- Amendments
 - Change that has significant effect on the discharge of pollutants to state waters and not previously included in SWPPP
- Location
 - Onsite or notice of location posted near main entrance



Stormwater Management Plans (9VAC25-870-55)





Stormwater Management Plans (9VAC25-870-55)

Stormwater discharges

Contact information

Narrative

Stormwater management facilities description and info

Hydrologic and hydraulic computations

Documentation and calculations

Maps

Off-site requirements

Fee and form



Stormwater Management Plans

(9VAC25-870-55)

- End of construction:
 - Construction record drawing for permanent stormwater management facilities (“as-built”) must be submitted to the VSMP authority **with seal and signature of a Virginia registered professional**



Stormwater Management Facility

- Stormwater runoff control measure
 - Quality
 - Quantity
 - Period of release
 - Velocity of flow



Best Management Practices (BMPs)

- Management practices to prevent or reduce the pollution of surface waters and groundwater systems
 - Schedule of activities
 - Prohibitions of practices
 - Maintenance procedures
 - Structural and nonstructural practices



Pollution Prevention Plans (P2Plan) (9VAC25-870-56)

Minimize:



PG 14 Pollution Prevention Plans (P2Plan) (9VAC25-870-56)

Prohibit discharges from:





Requesting an Exception (9VAC25-870-57)



No

**Economic
hardship**

**Obtaining state
permit**

PG 15 Responsibility for Long-term
Maintenance of Permanent Stormwater
Management Facilities(9VAC25-870-58)

- Prepared and submitted to VSMP authority ***before*** the stormwater management plan can be approved





Applying for State Permit Coverage (9VAC25-870-59)

Operator

Signature





Knowledge Check



- What are the four components of a SWPPP?

Approved erosion and sediment control plan

Approved stormwater management plan

Pollution prevention plan

Additional control measures to meet TMDL



Knowledge Check



- Which plan within the SWPPP describes the pollution prevention measures that will take place during construction activities to protect waterways?

Pollution prevention plan (P2 Plan)



Part II B: Technical Criteria for Regulated LDAs

PG 18 Technical Criteria for Regulated Land-Disturbing Activities





Applicability (9VAC25-870-62)

- State agencies
- VSMP authorities

PG 19 Water Quality Design Criteria (9VAC25-870-63)

- Why do we treat stormwater runoff?



Water Quality Design Criteria (9VAC25-870-63)

Phosphorous



New development



Re-development

PG 19 Water Quality Design Criteria
(9VAC25-870-63)

New development

Phosphorous (P) cannot
exceed **0.41 lbs./acre/year**

Development on prior developed land: LDA **DOES NOT** increase impervious cover

LDA \geq 1 acre

P must be reduced
at least **20%** below
pre-development
P load

LDA $<$ 1 acre

P must be reduced
at least **10%** below
pre-development
P load

Development on prior developed land: LDA **DOES** increase impervious cover

LDA \geq 1 acre

P load on increased impervious area cannot exceed **0.41 lbs./acre/yr.**

P load on remainder of site must be reduced at least **20%** below pre-development P load

LDA < 1 acre

P load on increased impervious area cannot exceed **0.41 lbs./acre/yr.**

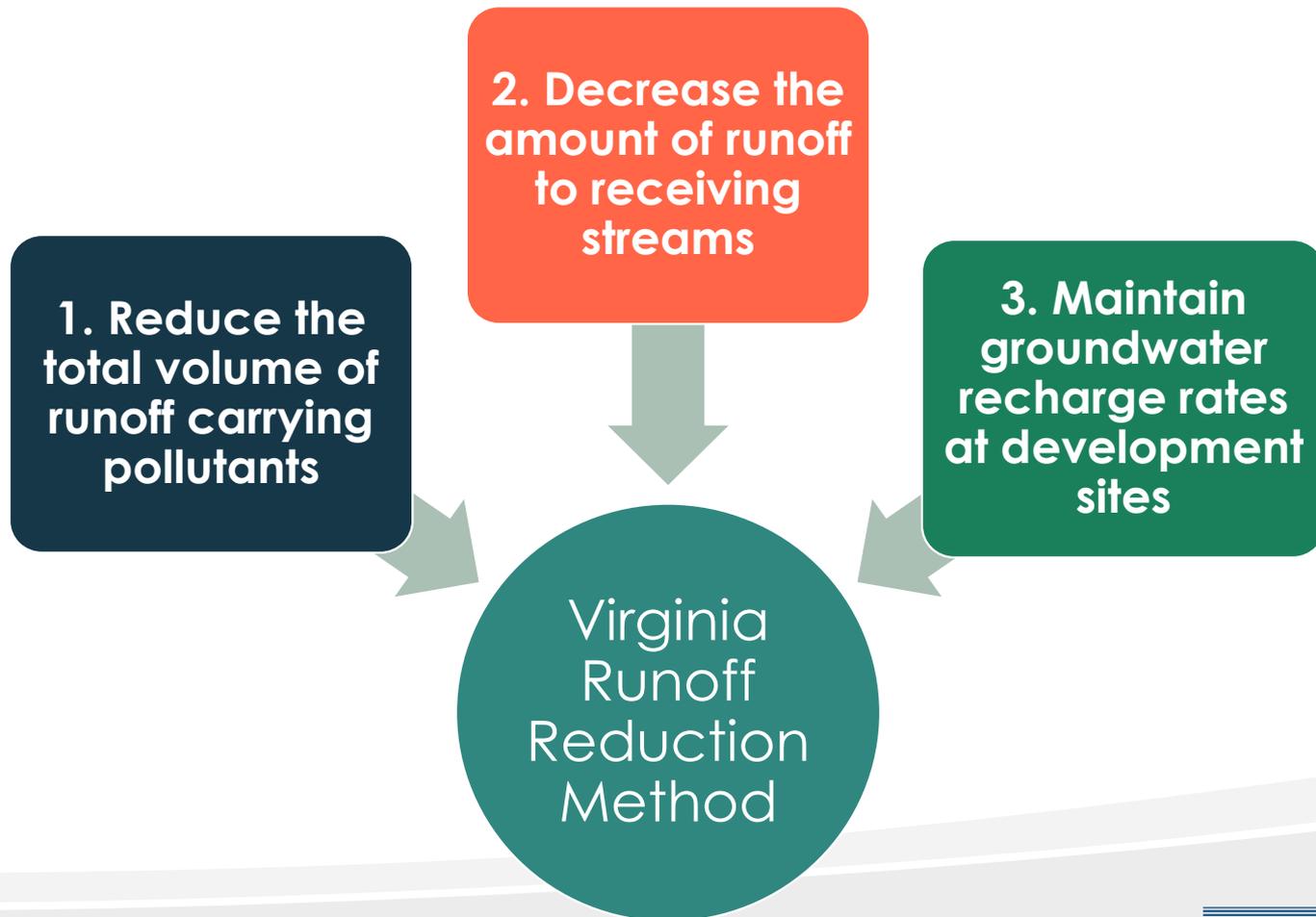
P load on remainder of site must be reduced at least **10%** below pre-development P load



Water Quality Design Criteria (9VAC25-870-63)

- Linear development on prior developed land
 - P load must be reduced **20%** below the pre-development P load
- Locality can establish more stringent P standards

PG 20 **Water Quality Compliance**
(9VAC25-870-65)



PG 20 Water Quality Compliance
(9VAC25-870-65)

15 approved BMPs

VSMP authority can limit use

Water quality design criteria can be applied to each drainage area on site

Unless site drains to > 1 HUC, then pollutant load reduction is applied in each HUC unless comprehensive stormwater management plan is used



Water Quantity (9VAC25-870-66)

- Why do we care about water quantity?





Channel Protection

Stormwater conveyance system:

Combination of drainage components used to convey stormwater discharge

PG 21 Channel Protection



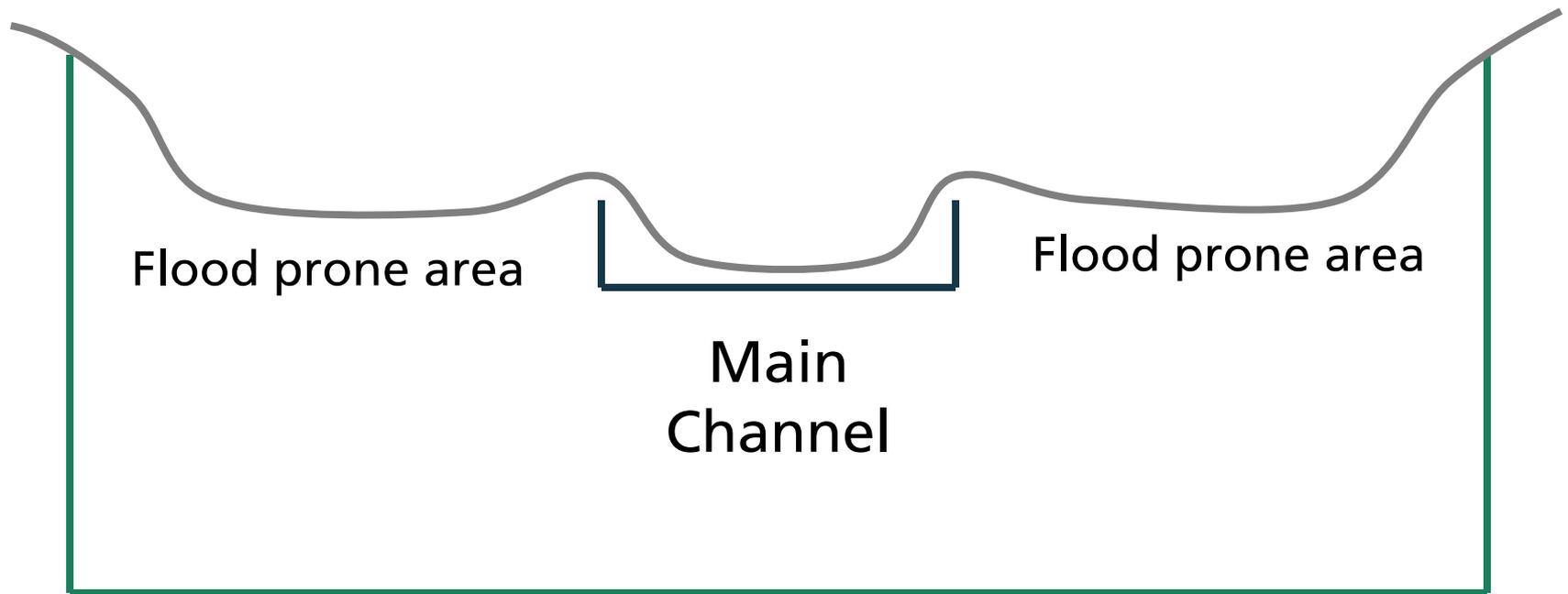
Manmade conveyance system

Pipe
Ditch
Vegetated swale
Other stormwater conveyance
system constructed by man

PG 21 Channel Protection



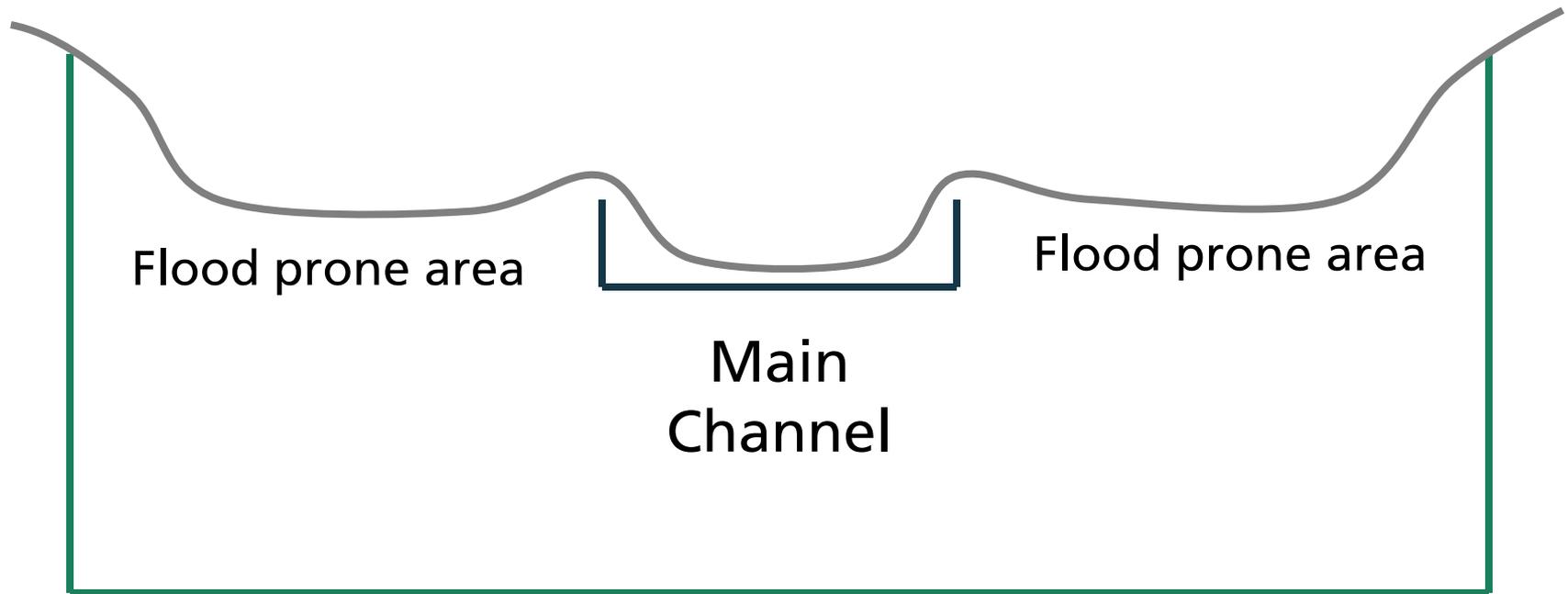
Natural conveyance system



PG 21 Channel Protection

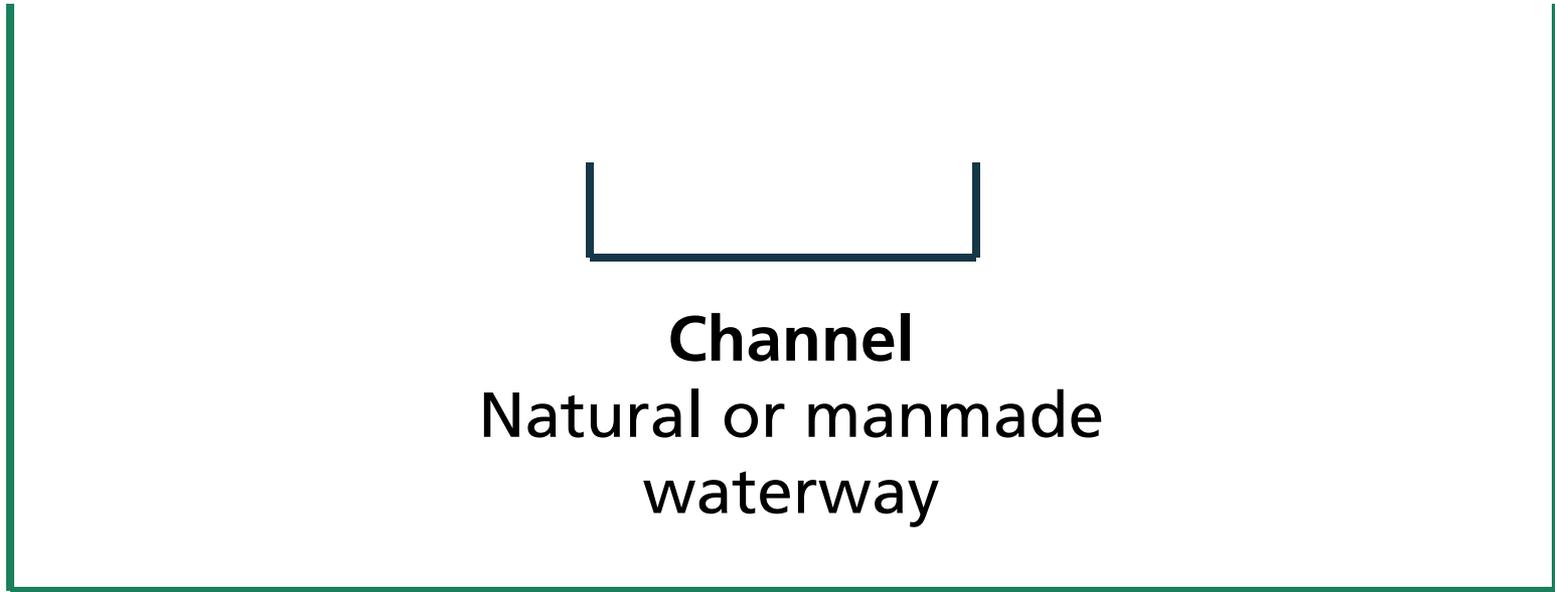


Restored conveyance system



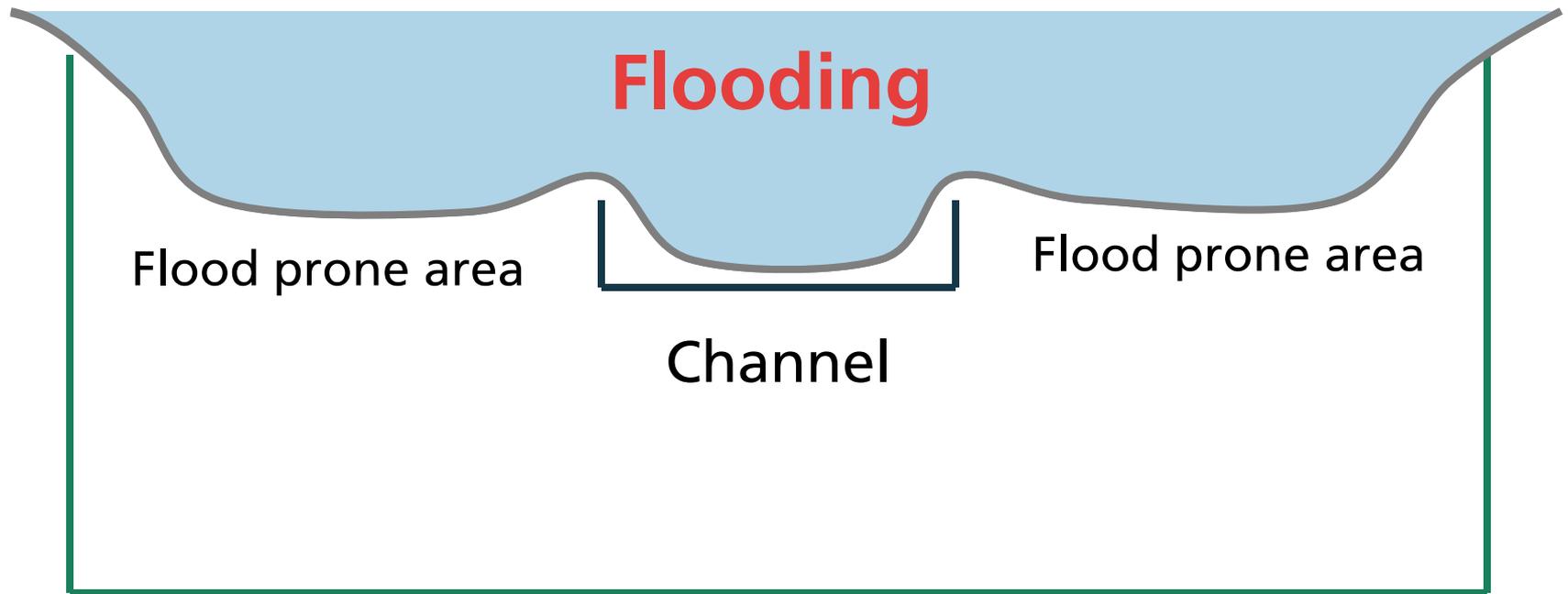


Channel Protection





Channel Protection

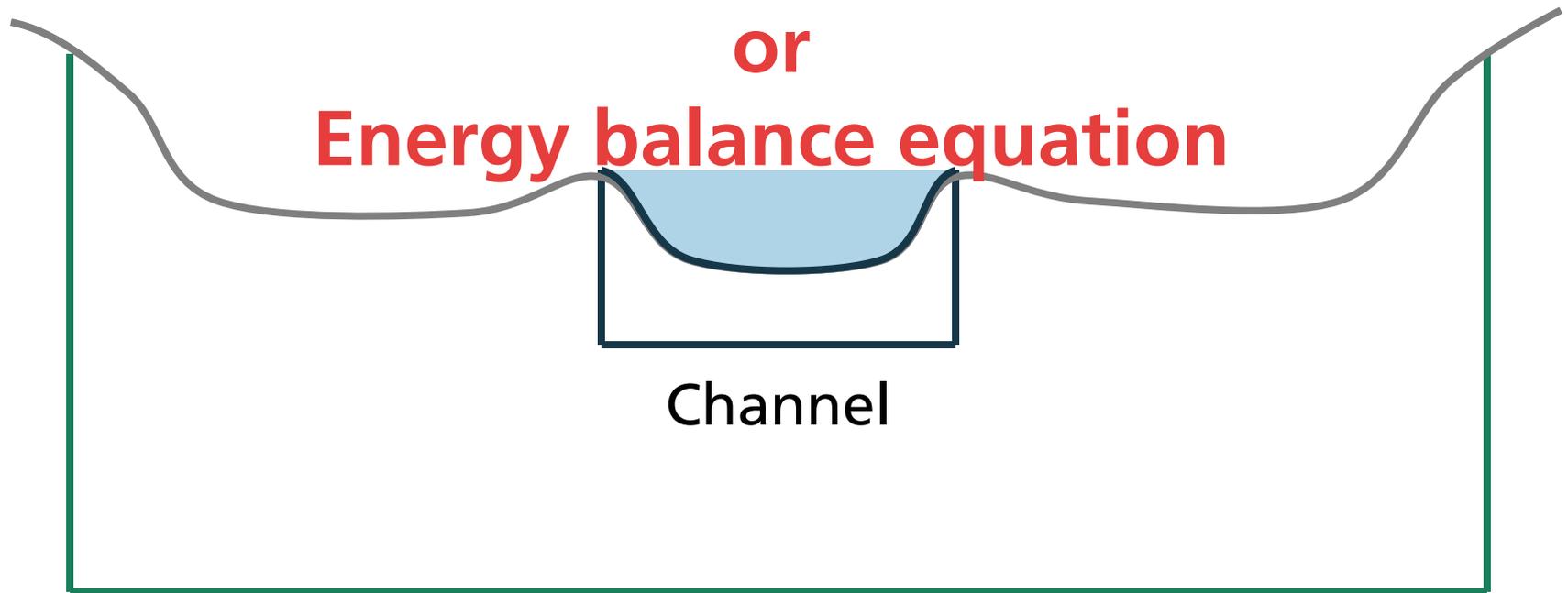


PG 22 Channel Protection



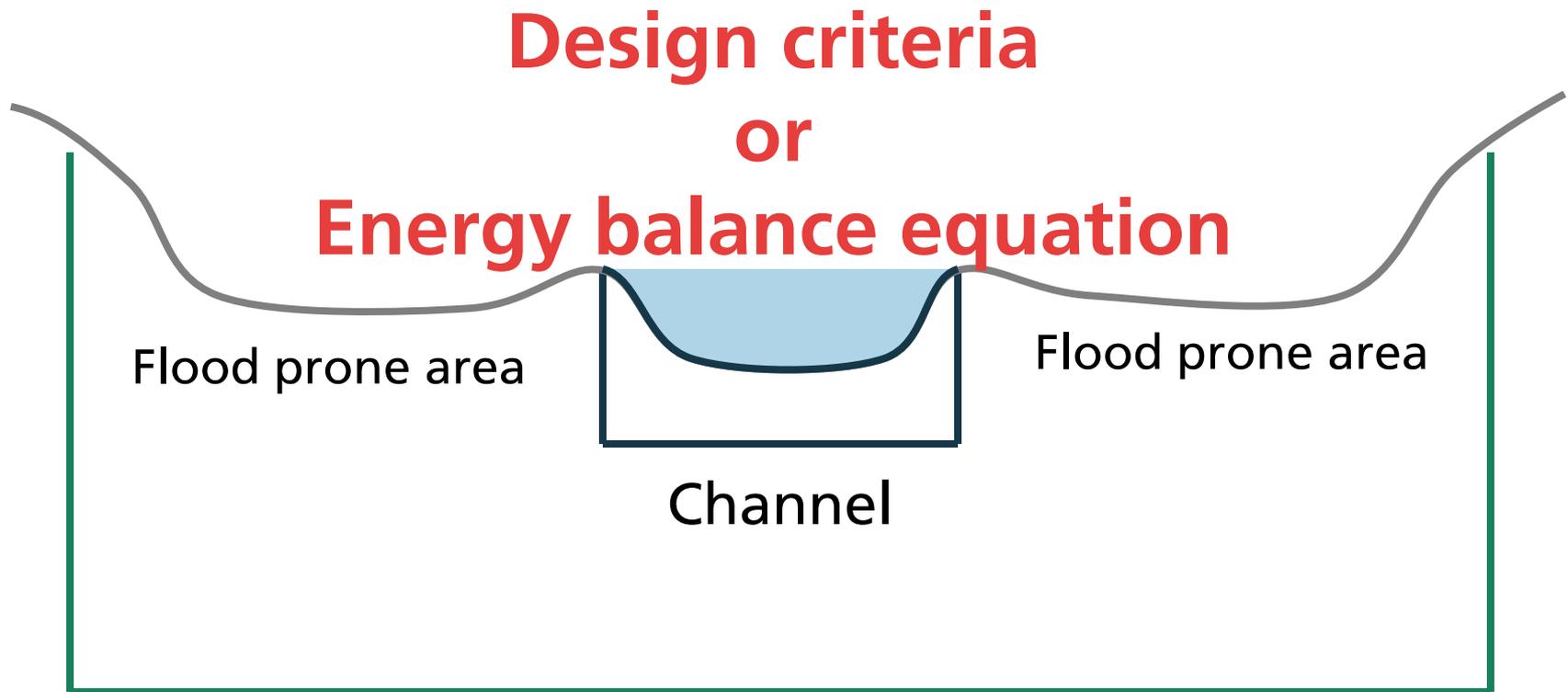
Manmade Conveyance System

**2-year 24-hour storm
or
Energy balance equation**



PG 22 Channel Protection

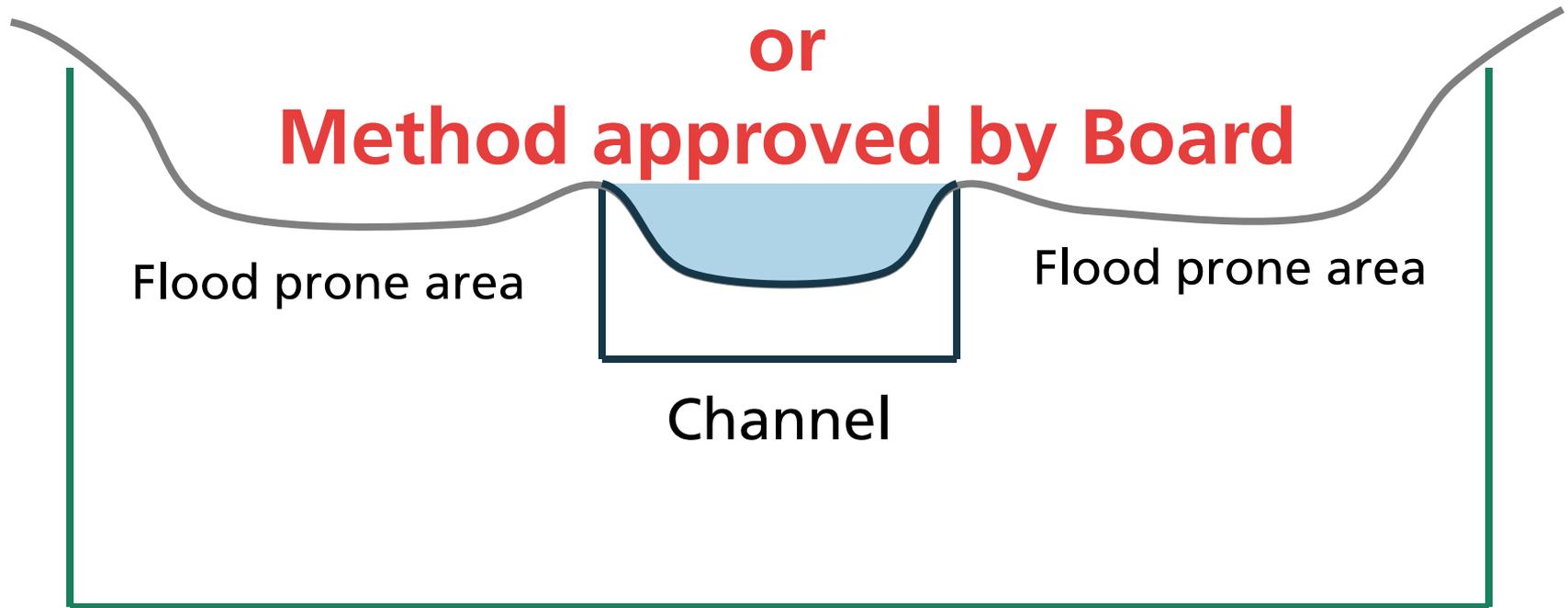
Restored Conveyance System





Water Quantity – Channel Protection Natural Conveyance System

**Energy balance equation
or
Method approved by Board**



PG 23 Channel Protection

Energy Balance Equation

1-year 24-hour storm

- Post-development peak flow rate cannot be greater than the pre-development
- Post-development peak flow rate cannot be required to be better than a site in forested condition

(as adjusted for volume)



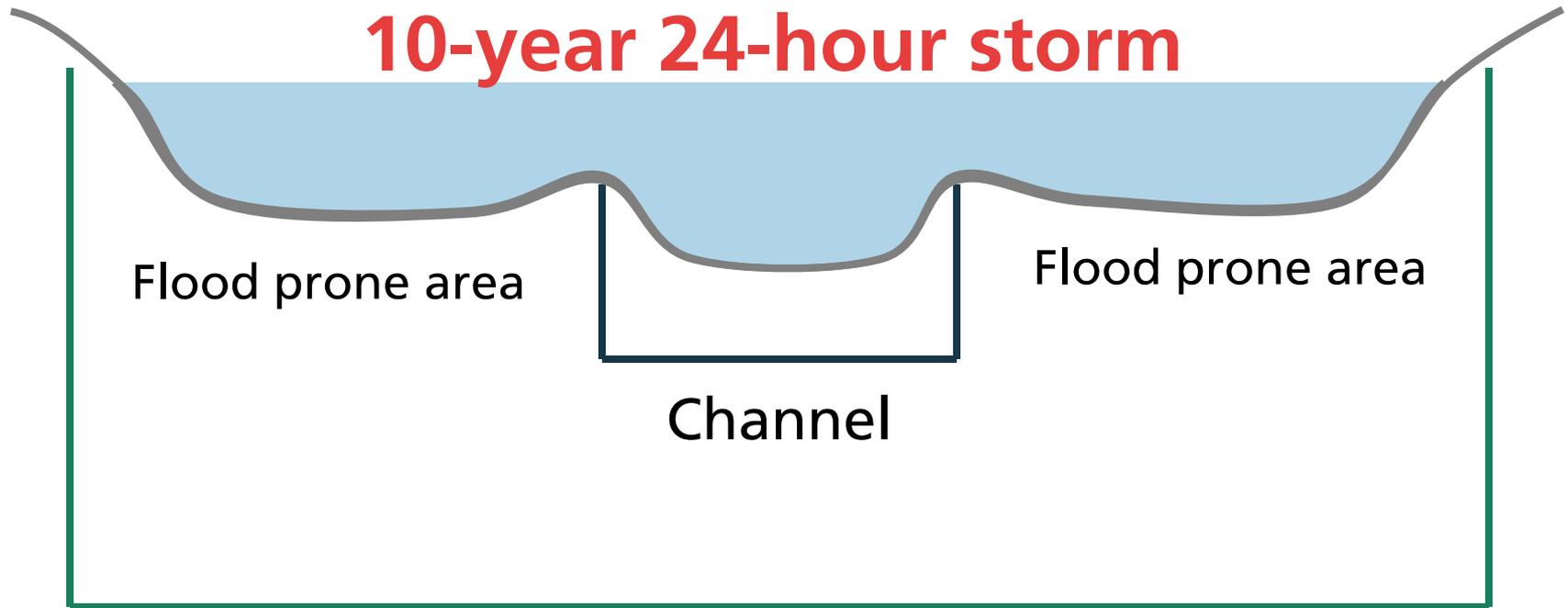
Water Quantity – Flood Protection

- Goal
 - Prevent flood damage to the conveyance system and drainage infrastructure
 - Reduce minor flooding caused by over-bank floods
 - Protect downstream structures, culverts, and bridges from increased over-bank flooding



Water Quantity – Flood Protection

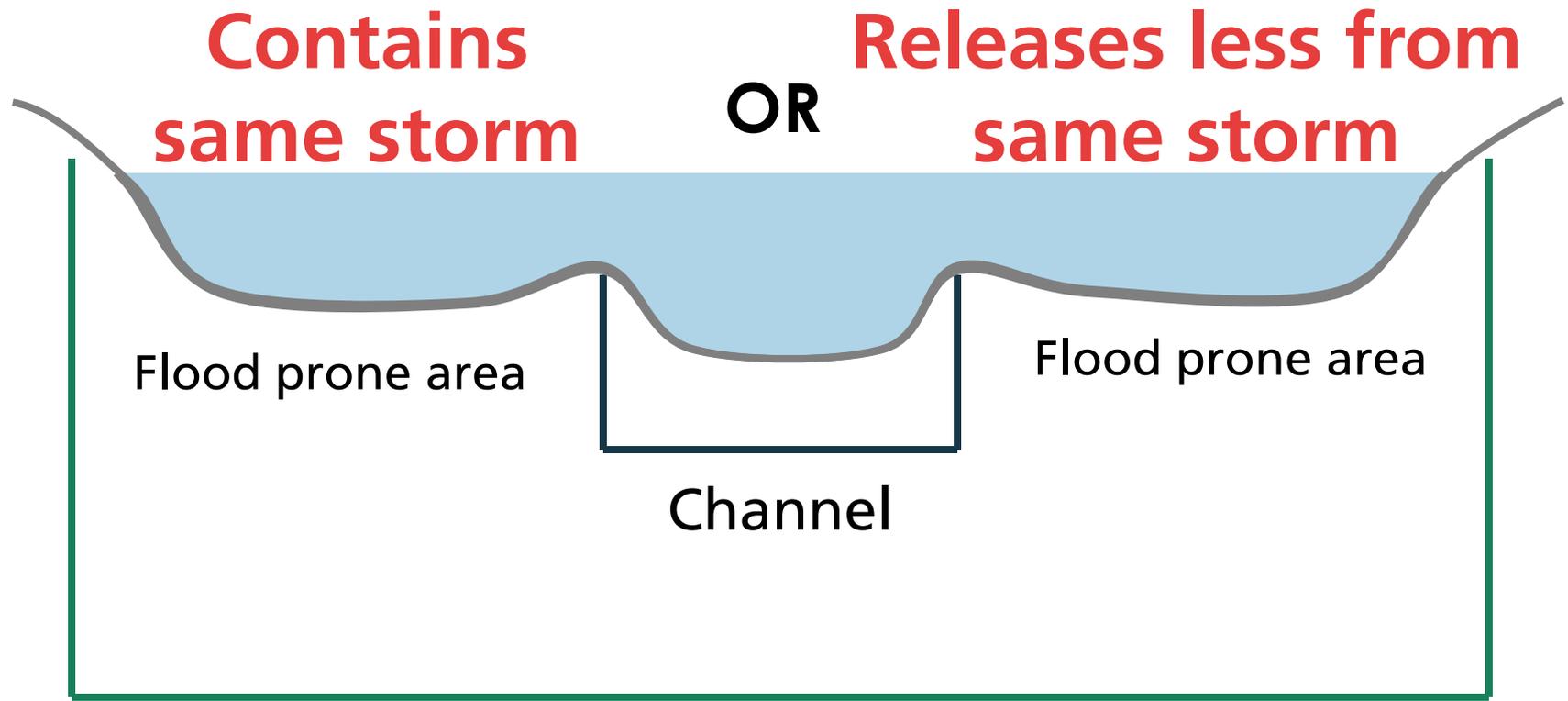
**Still contains
10-year 24-hour storm**



Stormwater conveyance system
**Does not experience localized flooding during
the 10-year 24-hour storm**



Water Quantity – Flood Protection



Stormwater conveyance system
Does experience localized flooding during the
10-year 24-hour storm



Water Quantity – Flood protection

- ↑ volumes of sheet flow must be identified and evaluated
- ↑ volumes of sheet flow must be diverted to stormwater management facility or conveyance system





Water Quantity – Flood protection

- Computing pre-development runoff
 - All pervious lands assumed to be in good hydrologic condition
- Pre-development and post-development runoff characteristics and site hydrology
 - Verified by site inspections, topographic surveys, soil mapping or studies, calculations consistent with good engineering practices, guidance in Stormwater Handbook and BMP Clearinghouse



Offsite Compliance Options (9VAC25-870-69)

Can be used under any of the following conditions:

< 5-acres
land
disturbed

Post-
construction
P control
requirement
is
< 10 lbs/year

75% required
P reductions
achieved
onsite



Offsite Compliance Options

(9VAC25-870-69)

- If at least 75% of the required P reductions are not achieved onsite, operator must demonstrate to satisfaction of VSMP authority:
 - Alternative site designs considered
 - On-site BMPs considered to maximum extent practicable
 - Appropriate on-site BMPs will be implemented
 - Full compliance with post-development nonpoint nutrient runoff compliance requirements cannot practicably be met on-site

PG 27 Design Storms and Hydrologic Methods (9VAC25-870-72)

- 1, 2 and 10-year 24 hour design storms
- Existing site conditions and ultimate developed conditions
- Standard hydrologic methods
- Rational method to calculate peak discharge for drainage areas of ≤ 200 acres
- Modified Rational Method to evaluate volumetric flows for drainage areas of ≤ 200 acres

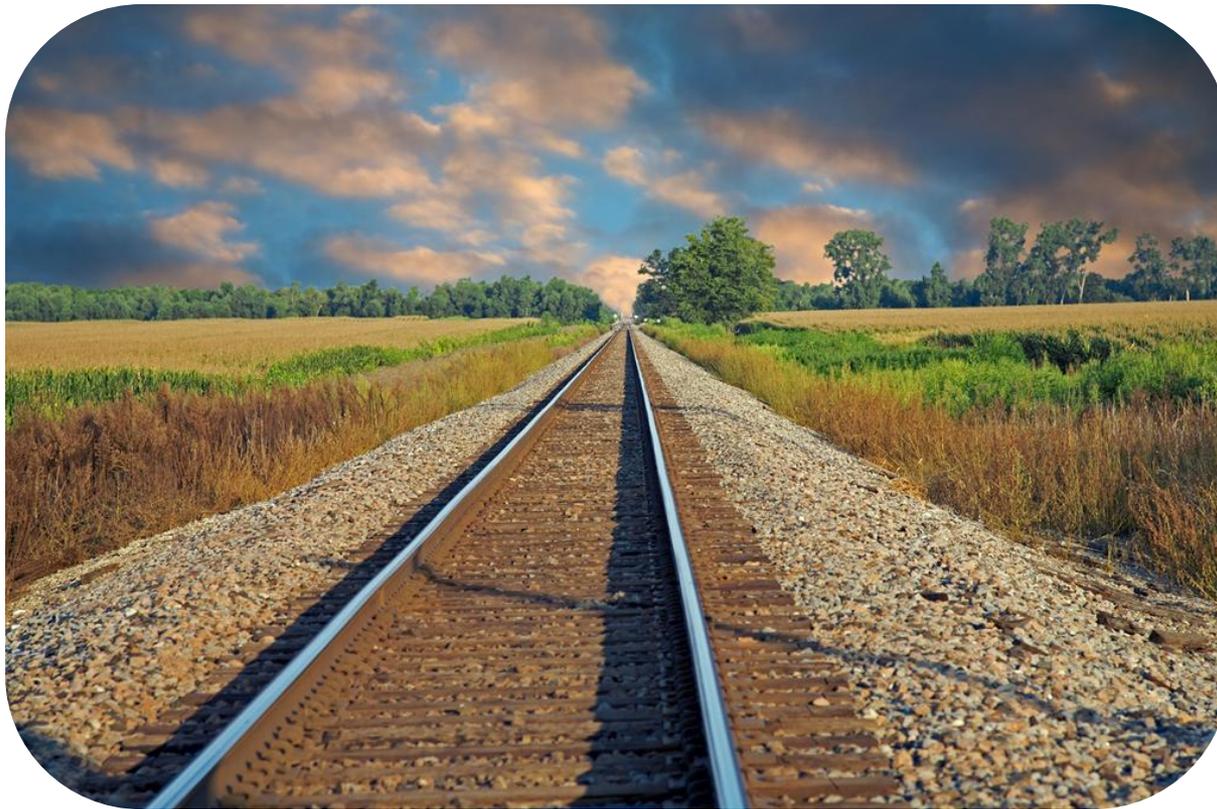


Stormwater Harvesting (9VAC25-870-74)



Encouraged!

PG 28g Linear Development Projects
(9VAC25-870-76)

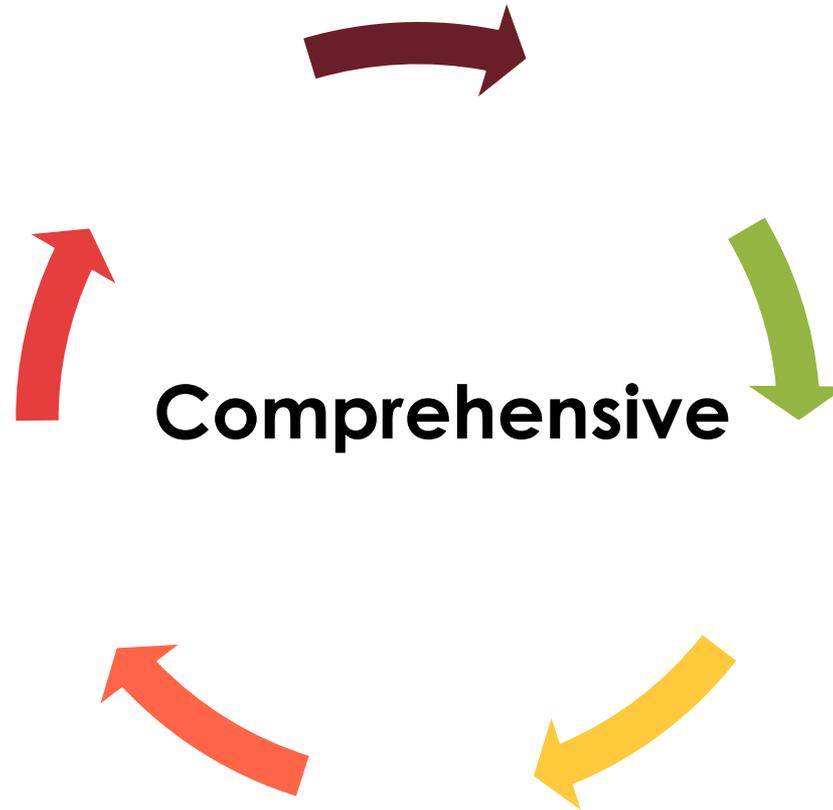


PG 29 Stormwater Management
Impoundment Structures or
Facilities(9VAC25-870-85)

Engineered
for structural
integrity for
the 100-year
storm event



PG 29 Comprehensive Stormwater Management Plans(9VAC25-870-92)





Knowledge Check



- What nutrient is measured to control the quality of stormwater discharge from a site after construction?

Phosphorous



Part II C: Technical Criteria for Regulated Land-Disturbing Activities:

Grandfathered Projects and Projects
Subject to the Provisions of
9VAC25-870-47B



Applicability (9VAC25-870-94)

- Grandfathered projects and projects subject to the provisions of 9VAC25-870-47B



Water Quality (9VAC25-870-96)

- Performance based criteria
 - 4 development situations
 - Post-development pollutant runoff load vs. pre-development load
- Technology based criteria
 - BMPs



Stream Channel Erosion

(9VAC25-870-97)

- MS 19
- Option for enhanced criteria or more stringent requirements
 - Conveyance system must provide 24-hour extended detention

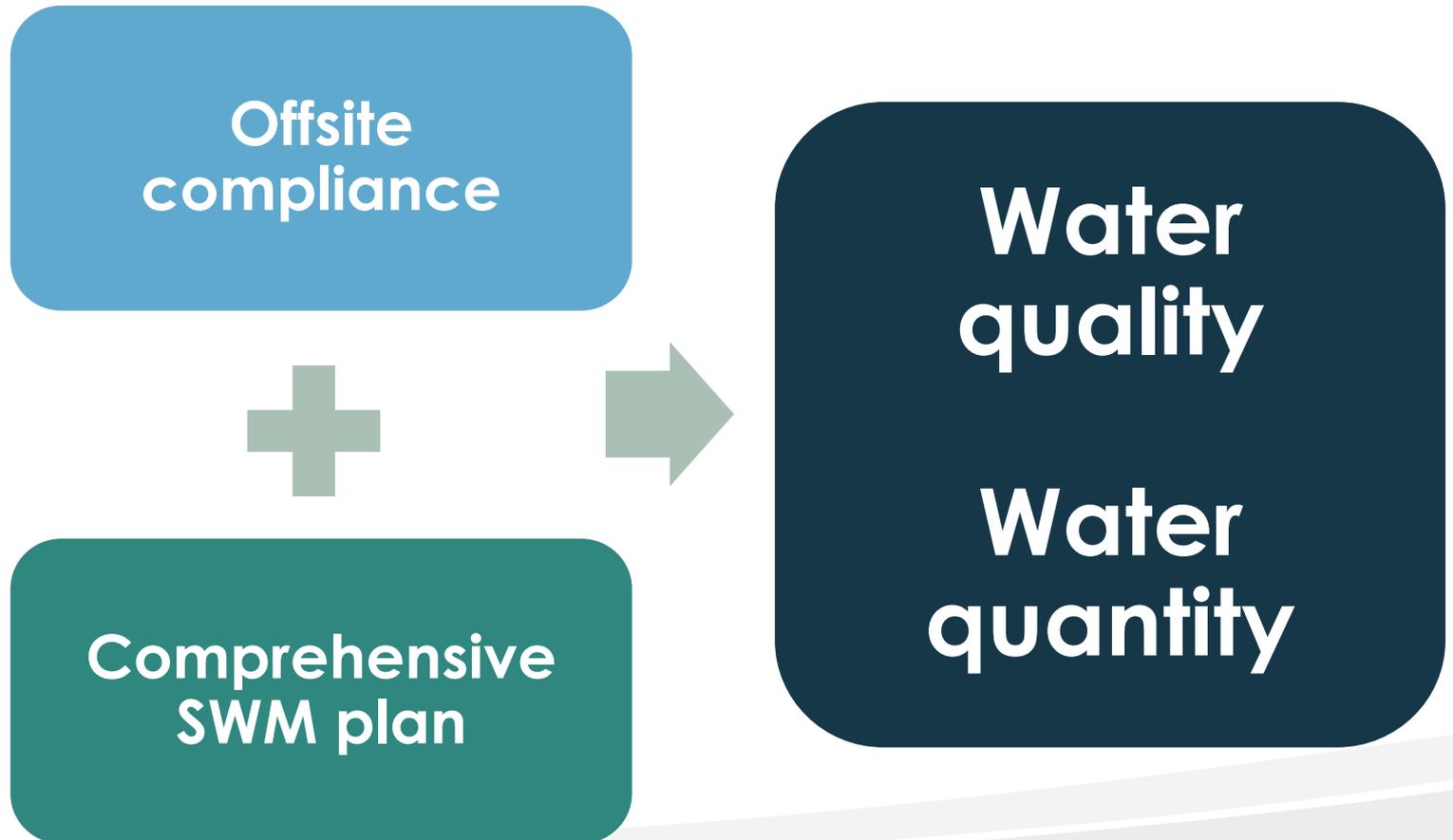


Flooding (9VAC25-870-98)

- 10-year post-development peak rate of runoff from the development site cannot exceed the 10-year pre-developed peak
- Localities may, by ordinance, adopt alternate design criteria



Regional (Watershed-Wide) Stormwater Management Plans (9VAC25-870-99)



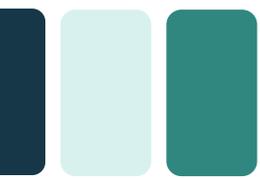


Knowledge Check



- When utilizing technology based criteria, is the appropriate BMP selected based on the pre-development or post-development condition?

Post-development



Part III: General Provision Applicable to VSMPs and VSMP Authorities



Applicability (9VAC25-870-100)

- Board's procedures for the authorization of a VSMP
- Board's procedures for the administration of a VSMP by a locality's VSMP authority or by other VSMP authorities
- Board and Department oversight of a VSMP

PG 38 VSMP Authority Requirements for Chesapeake Bay Preservation Act LDAs (9VAC25-870-103)

Program requirements
(104)

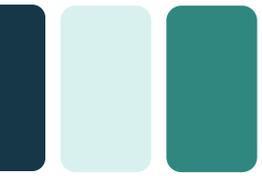
Plan review
(108)

Long-term stormwater management agreements

Adopt ordinances to incorporate these requirements

Exception conditions
(122)

Reporting and recordkeeping
(126)



Part III A: Programs Operated by a VSMP Authority

PG 39 Criteria for Programs Operated by a VSMP Authority (9VAC25-870-104)

- Require compliance with Part II administrative and technical criteria
- In review of state projects within localities, Department will consider local VSMP authority's more stringent ordinances or comprehensive stormwater management plan
- Localities cannot regulate or require prior approval for a state or federal project

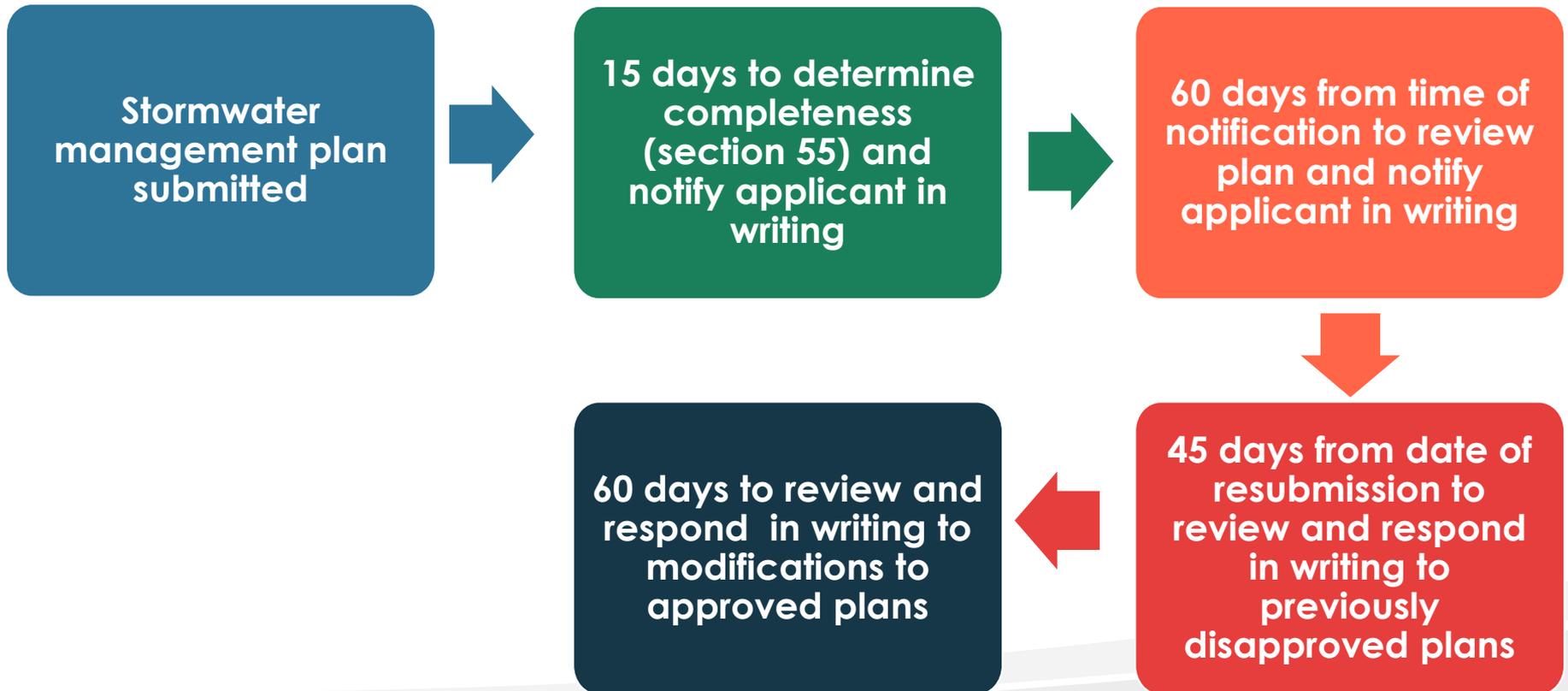
PG 39 Additional Requirements for VSMP

Authorities(9VAC25-870-106)

- Adopt ordinances that are at least as stringent as the provisions of the Construction GP

PG 40 Stormwater Management Plan

Review (9VAC25-870-108)





Long-Term Maintenance of Permanent Stormwater Management Facilities (9VAC25-870-112)

- VSMP Authority must require:
 - Submitted for review and approval before approval of stormwater management plan
 - Stated to run with the land
 - Provide access to the property for maintenance and regulatory inspections



Long-Term Maintenance

- Provide for inspections and maintenance and submission of reports to VSMP authority
- Enforceable by all government parties



Inspections (9VAC25-870-114)

- During construction, VSMP authority must **periodically** inspect the LDA for:
 - Compliance with approved ESC plan and stormwater management plan
 - Updating and implementing a P2 plan
 - Implementing any additional control measures necessary to address a TMDL



Inspections (9VAC25-870-114)

- VSMP authority must establish a **post-construction** inspection program:
 - Be approved by Board
 - Ensure each facility is inspected at least once every 5 years
 - Be document by records



Inspections (9VAC25-870-114)

- Post-construction inspection reports
 - Licensed
 - Professional engineer
 - Architect
 - Landscape architect
 - Land surveyor
 - Person under the direction and oversight of those listed above
 - Person with an Inspector Certificate of Competence



Enforcement (9VAC25-870-116)

- Informal and formal administrative procedures may include:
 - Verbal warnings and inspection reports
 - Notices of corrective action
 - Consent orders including civil charges
 - Notices to comply
 - Public notice and comment periods for proposed settlements and consent special orders



Enforcement (9VAC25-870-116)

- Civil and criminal judicial enforcement procedures may include:
 - Criminal penalties
 - Injunctions



Enforcement (9VAC25-870-116)

- A locality's VSMP authority must develop policies and procedures that outline the enforcement actions



Enforcement (9VAC25-870-116)

- The locality's VSMP authority has the discretion to impose a maximum penalty of **\$32,500** per violation per day





Enforcement (9VAC25-870-116)

- Violations can include:
 - No state permit registration
 - No SWPPP, incomplete SWPPP, or SWPPP not available for review
 - No approved ESC plan
 - Failure to install, improperly install or maintain BMPs or ESCs
 - Operational deficiencies
 - Failure to conduct required inspections
 - Incomplete, improper, or missed inspections



Enforcement (9VAC25-870-116)





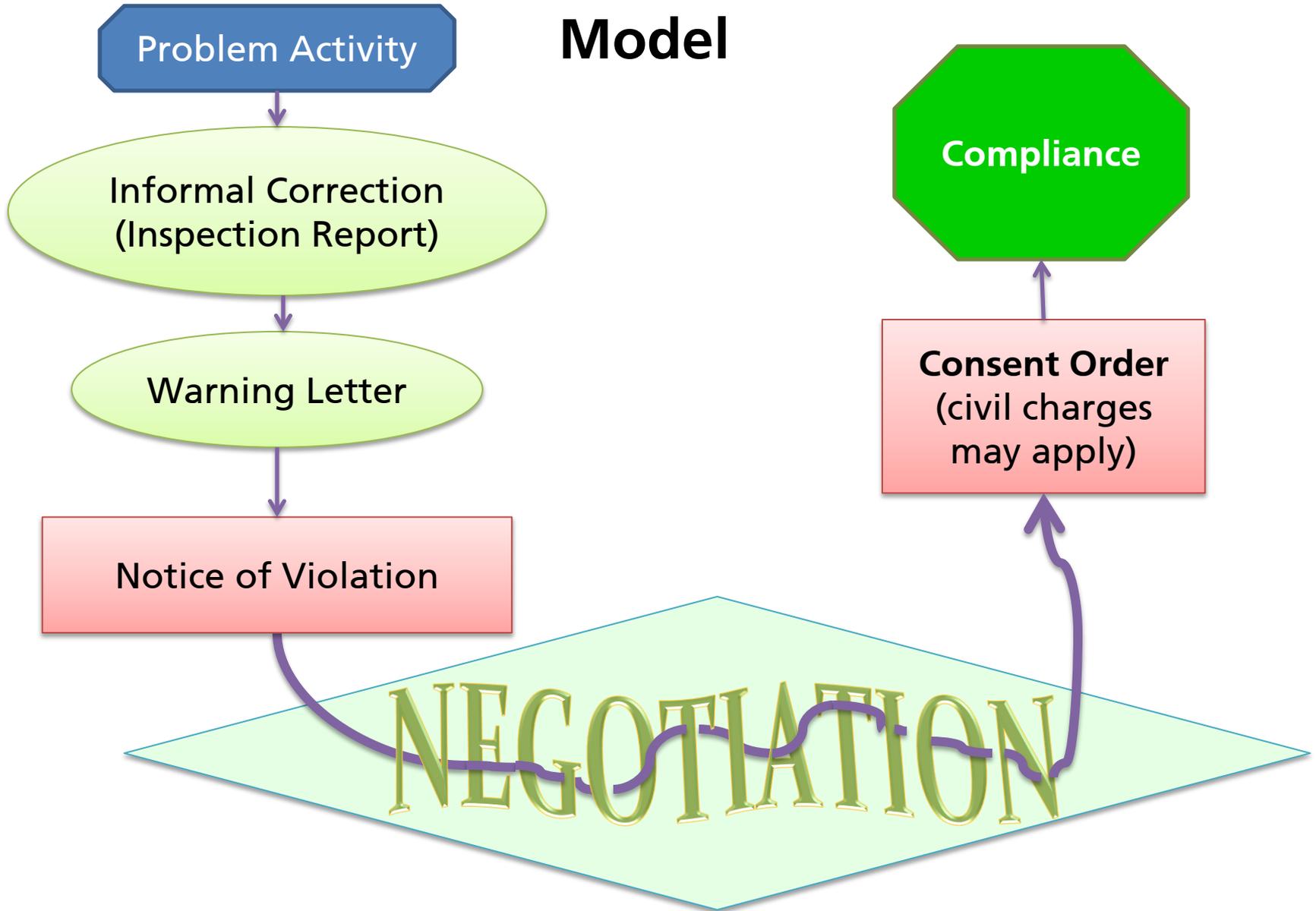
Enforcement (9VAC25-870-116)



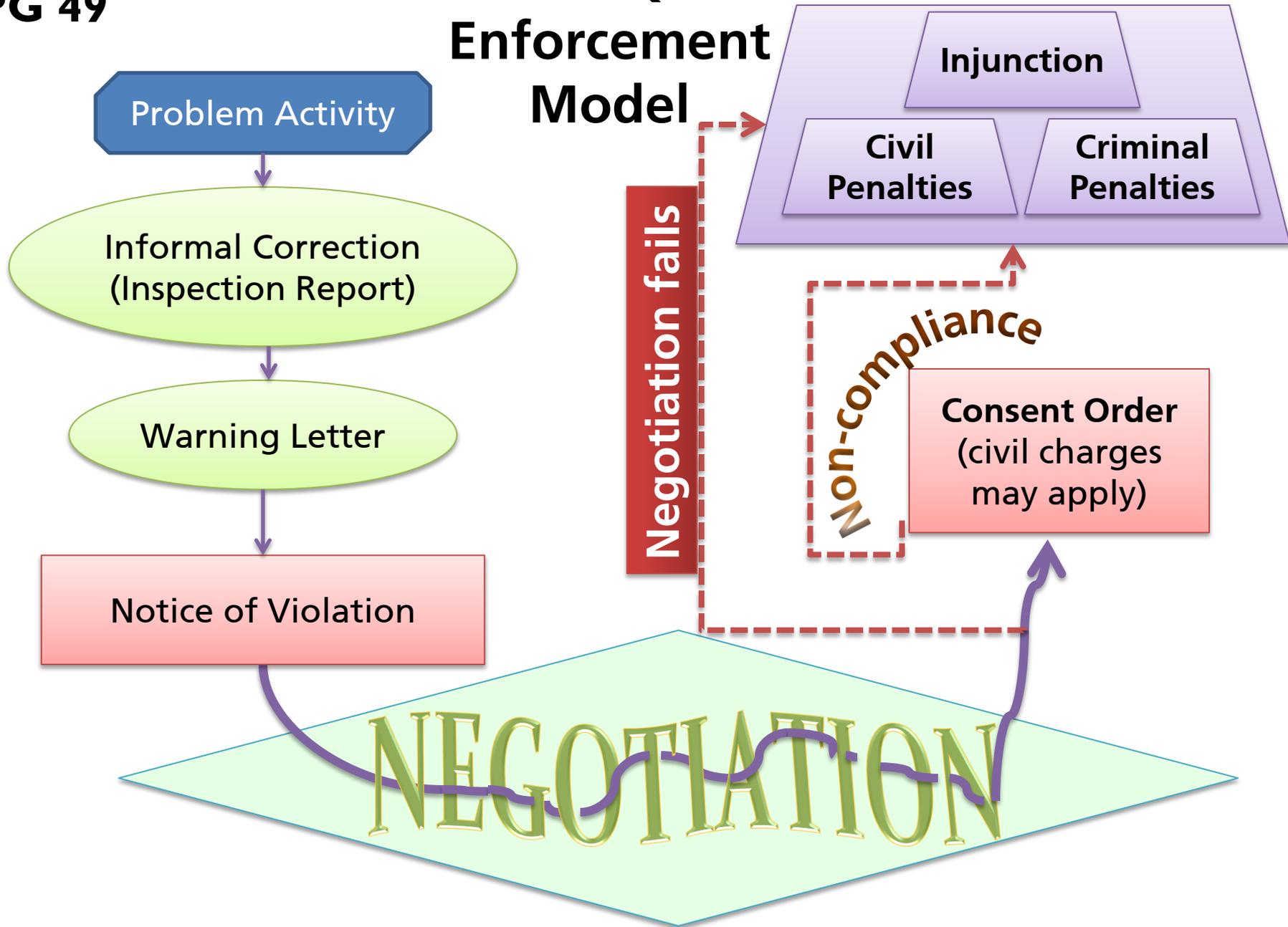
**Locality
treasury
where
violation
occurred**

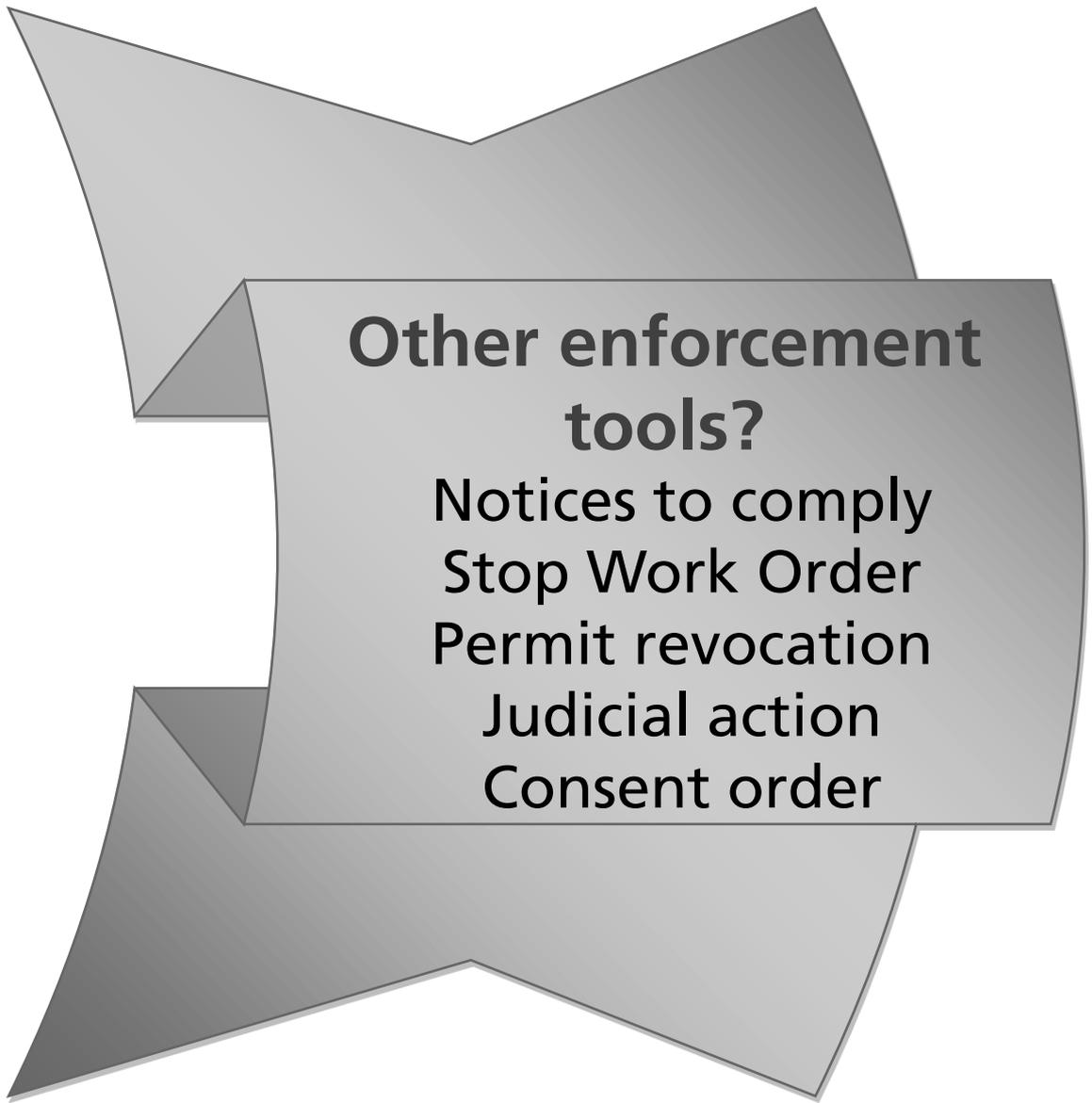
**Civil penalty recovered
by locality's VSMP
authority**

DEQ Enforcement Model



DEQ Enforcement Model





**Other enforcement
tools?**

Notices to comply
Stop Work Order
Permit revocation
Judicial action
Consent order



Hearings (9VAC25-870-118)

- Right to a hearing:
 - Permit applicant, permittee, or person aggrieved by any action of the VSMP authority taken without formal hearing, or by inaction has the right to a hearing



Exceptions (9VAC25-870-122)

- Exceptions to Part II B or II C may be granted provided:
 - Minimum necessary to afford relief
 - Intent of Act and Regulations preserved
 - No special privileges given
 - Conditions or circumstances for request are not self-imposed or self-created





Exceptions (9VAC25-870-122)



- Exceptions **cannot** be granted for:
 - Economic hardship alone
 - Requirement for state permits
 - BMPs not found on the Clearinghouse
 - Except for where allowed in Part II C
 - Phosphorous exceptions
 - Unless offsite options have been considered and found not available

Reports and Record Keeping
(9VAC25-870-126)

Fiscal year reporting

of permanent stormwater management facilities completed

of enforcement actions

of exceptions granted

Reports and Record Keeping (9VAC25-870-126)

3 yrs

Project records

Registration statements

5 yrs

Stormwater management facility inspection records

Until facility is removed

Construction record drawings



Knowledge Check

- How long does the VSMP authority have to determine the completeness of a stormwater management plan?

15 days

- If a plan is determined complete, and notification has been given within 15 days of submission, how long does the authority have to review the plan?

60 days from the time of notification



Part III B – DEQ Procedures for Review of VSMPs

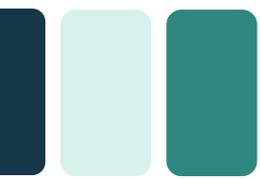
VSMP Review (9VAC25-870-144)





VSMP Review (9VAC25-870-144)

- If DEQ finds deficiencies:
 - DEQ provides results and compliance recommendations in form of corrective action plan and schedule within 120 days of the completion of review



Part III C – State Water Control Board Authorization Procedures for VSMPs



VSMP Administrative Requirements (9VAC25-870-148)





Knowledge Check



- How often does the Department review each VSMP?

At least once every 5 years



Part IV – Technical Criteria and State Permit Application Requirements for State Projects



Technical Criteria and Requirements for State Projects (9VAC25-870-160)

- Must comply with technical criteria in Part II
- To largest extent practicable locality's VSMP authority's technical requirements
 - State agency's responsibility to demonstrate requirements are not practicable

Technical Criteria and Requirements for State Projects (9VAC25-870-160)

Location and design

Site plan

Hydrologic and hydraulic computations

Calculations

Maintenance and inspections

Who's responsible for maintenance

Sealed and signed

PG 54 Requirements for State Stormwater Management Annual Standards and Specifications (9VAC25-870-170)

- Submitted to Department annually
- Must be consistent with Act and Regulations, Construction GP, and ESC Law and Regulations
- Each project must obtain coverage under the state general permit before starting LDAs



Annual Standards and Specifications (9VAC25-870-170)

- Technical criteria
- Preparation of stormwater management and ESC plans for each project
- Long-term responsibility and maintenance of stormwater management control devices
- ESC and VSMP administration, plan design, review and approval, and construction inspection and enforcement



Annual Standards and Specifications (9VAC25-870-170)

- Personnel and contractors obtain proper certifications or qualifications
- Project tracking and notification system to the Department of all LDAs
- Document on-site changes as they occur

PG 55 Administrative Procedures: Stormwater
Management Permit Applications
(9VAC25-870-180)

**30 days to
issue or
deny state
permit**

PG 56 Administrative Procedures:



Maintenance (9VAC25-870-200)

- Responsibility for operation and maintenance stays with the state agency until there is a new owner
 - If land is sold, legally binding arrangements are made to pass on the basic responsibility to new owner

PG 56 Administrative Procedures:
Inspections (9VAC25-870-200)

Inspections

Responsible State Agency

Minimum: Annually and after any storm which causes facility's spillway to be exceeded

Department

Randomly during construction



Knowledge Check



- What technical criteria do state projects have to comply with?

Technical criteria in Part II



Reporting on Stormwater Management (9VAC25-870-210)

- State agencies report annually to Department:
 - Number and types of stormwater management facilities installed
 - Drainage area or watershed size served
 - Receiving stream or hydrologic unit
 - Summary of monitoring data
 - Useful data for determining effectiveness of the programs and BMP technologies

**Congratulations, you've
reached the end of
Module 4**

Questions?