

Offsite Alternative Compliance for Priority Development Projects

Opportunities for Coordination with the IRWM Program

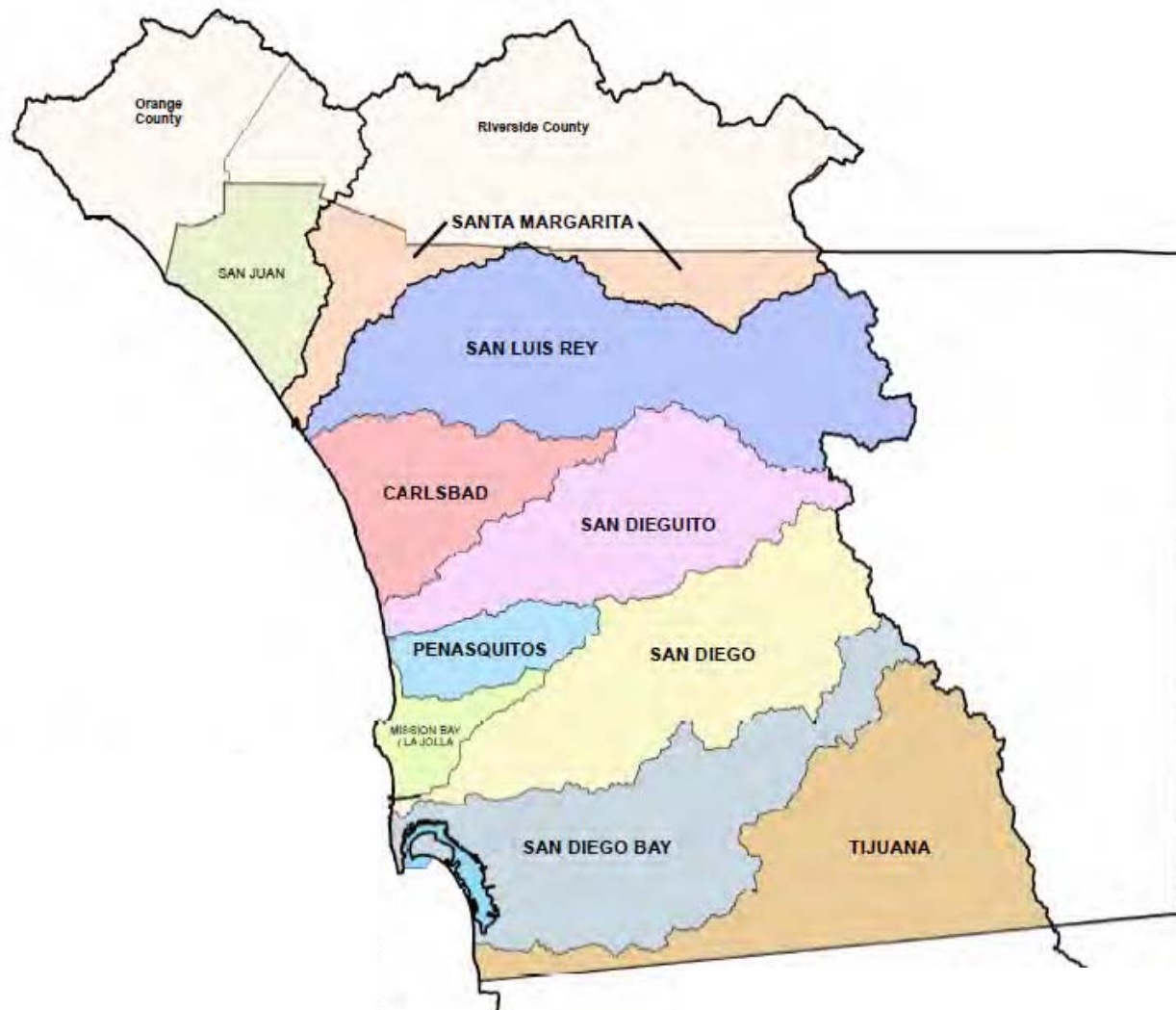


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City of San Diego,
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Water Division



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Watershed Protection Program

Regional MS4 Permit Area



MS4 Permit Goals

- Allow Copermitttees to focus their resources and efforts on **achieving goals** and **desired outcomes** towards the **improvement of water quality** rather than completing specific prescribed actions
- Incorporate strategies that encourage innovative and creative solutions
 - ▣ Flexible land development requirements (Alternative Compliance Program)

PDP and ACP

- Priority Development Project: Exceeds square footage threshold of impervious surface and/or supports specific uses (requires numerically-sized structural BMPs)
- Alternative Compliance Project: Project implemented *in lieu of* implementing structural BMPs on PDPs

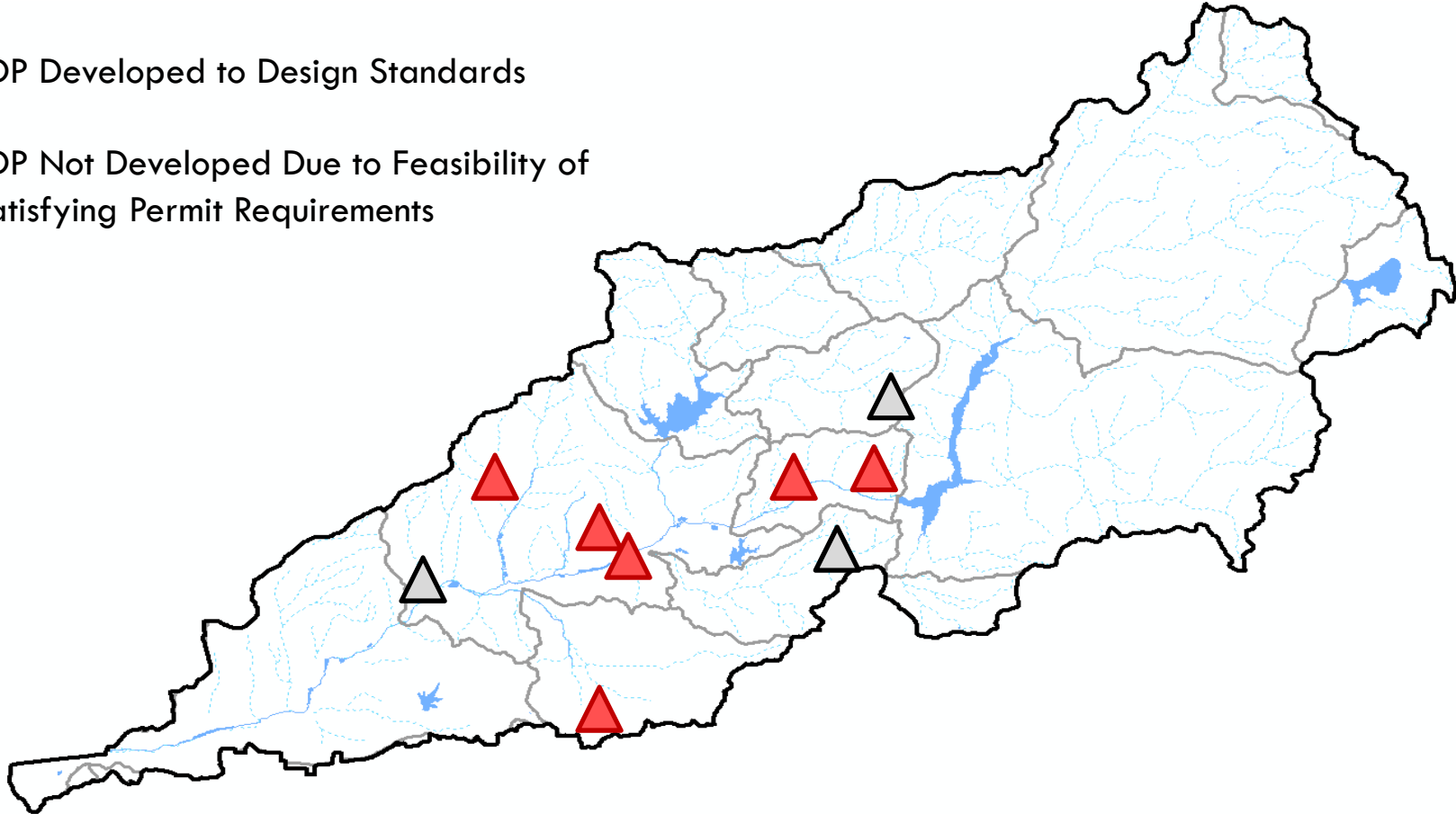
PDP Requirements (Onsite)

- **Pollutant Control:** Retain onsite 85th percentile runoff (infiltrate, evaporate, evapotranspirate, harvest and use)
 - ▣ Biofiltration if infeasible to retain runoff

- **Hydromodification Flow Control:** BMPs for flow control where there is potential for erosion of creek bed and bank ($0.1 Q_2 - Q_{10}$)

Watershed **without** Offsite Alternative Compliance

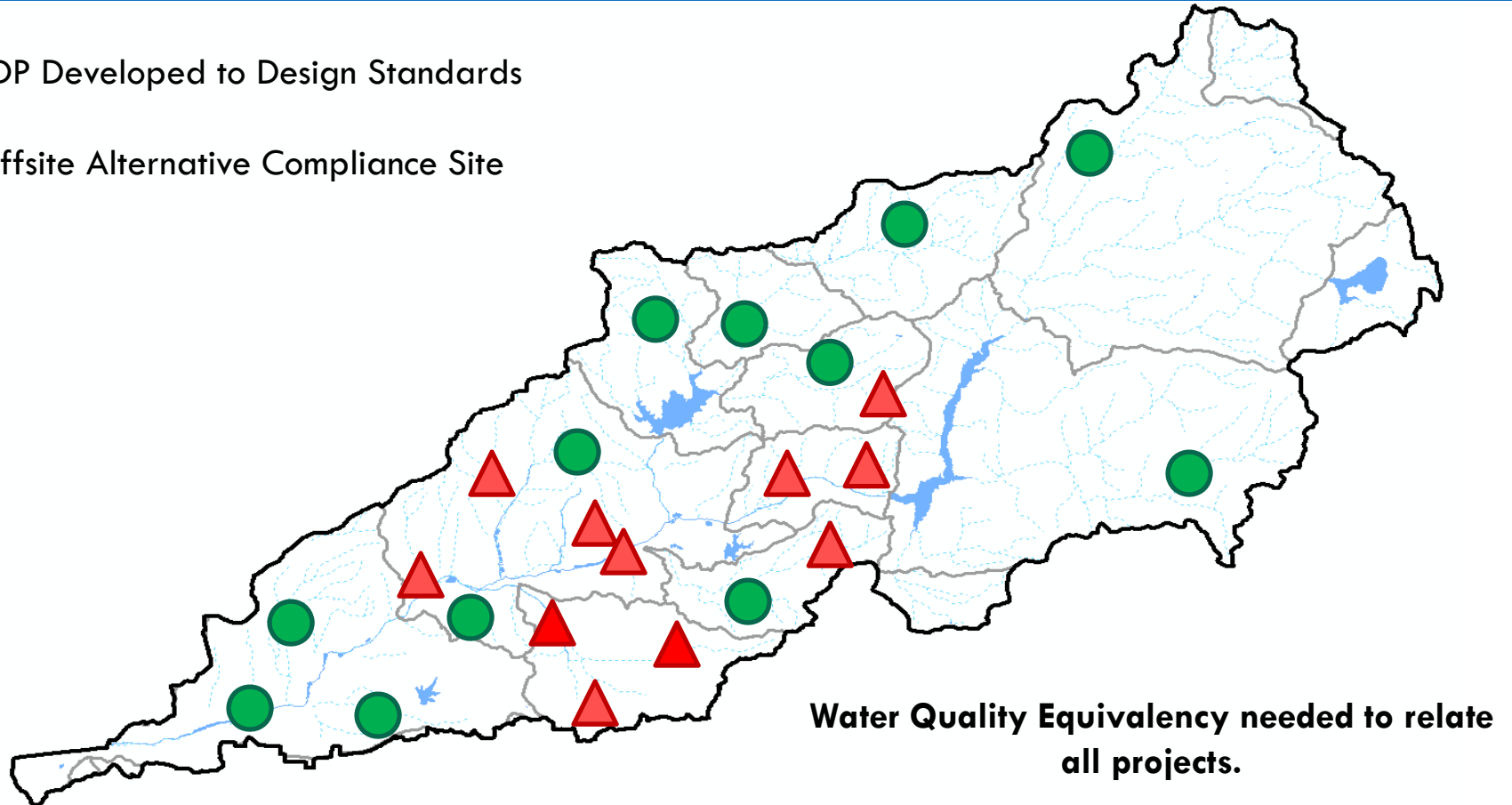
- ▲ PDP Developed to Design Standards
- △ PDP Not Developed Due to Feasibility of Satisfying Permit Requirements



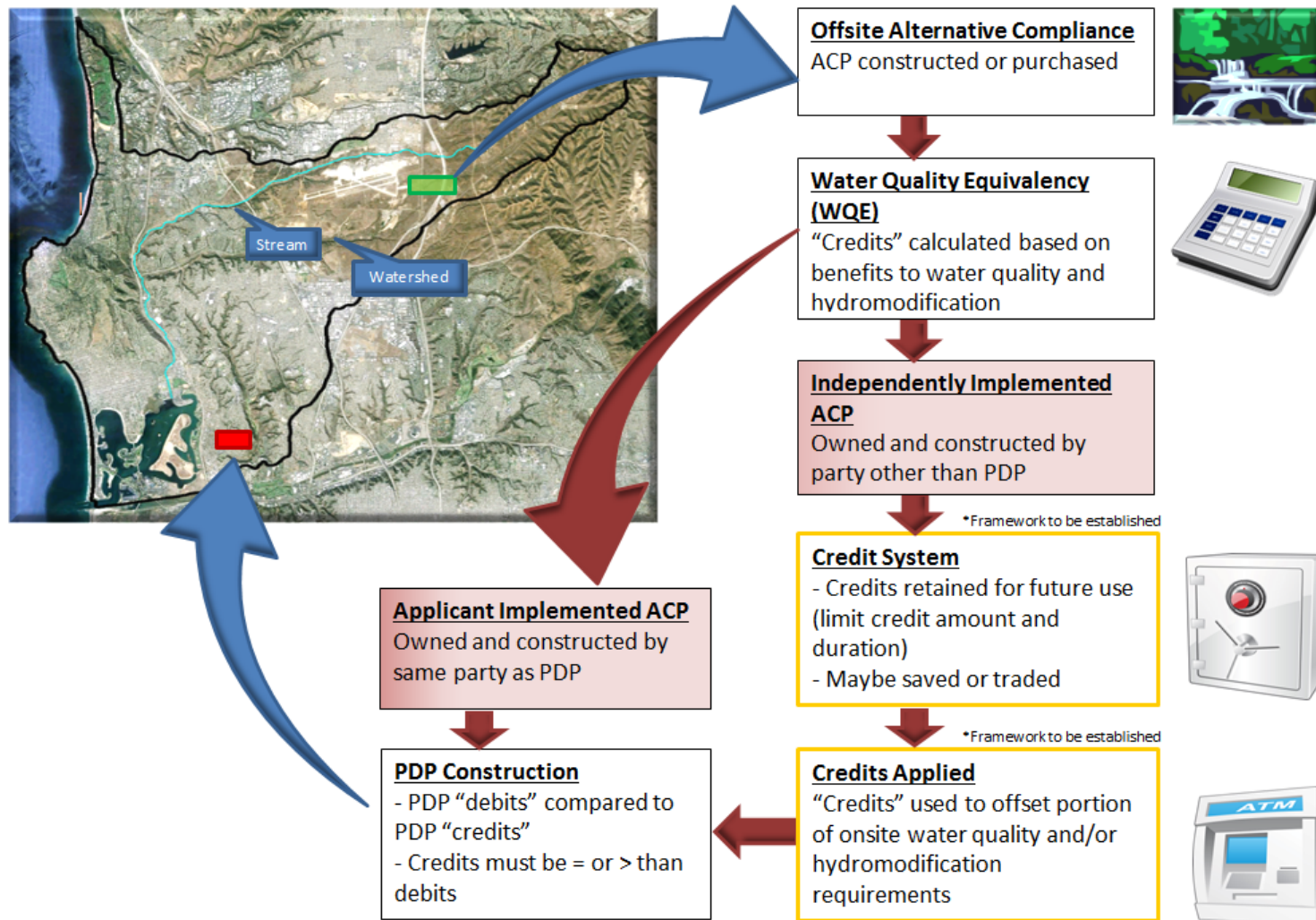
Watershed with Offsite Alternative Compliance

▲ PDP Developed to Design Standards

● Offsite Alternative Compliance Site



Overview of Offsite Alternative Compliance Program (ACP)

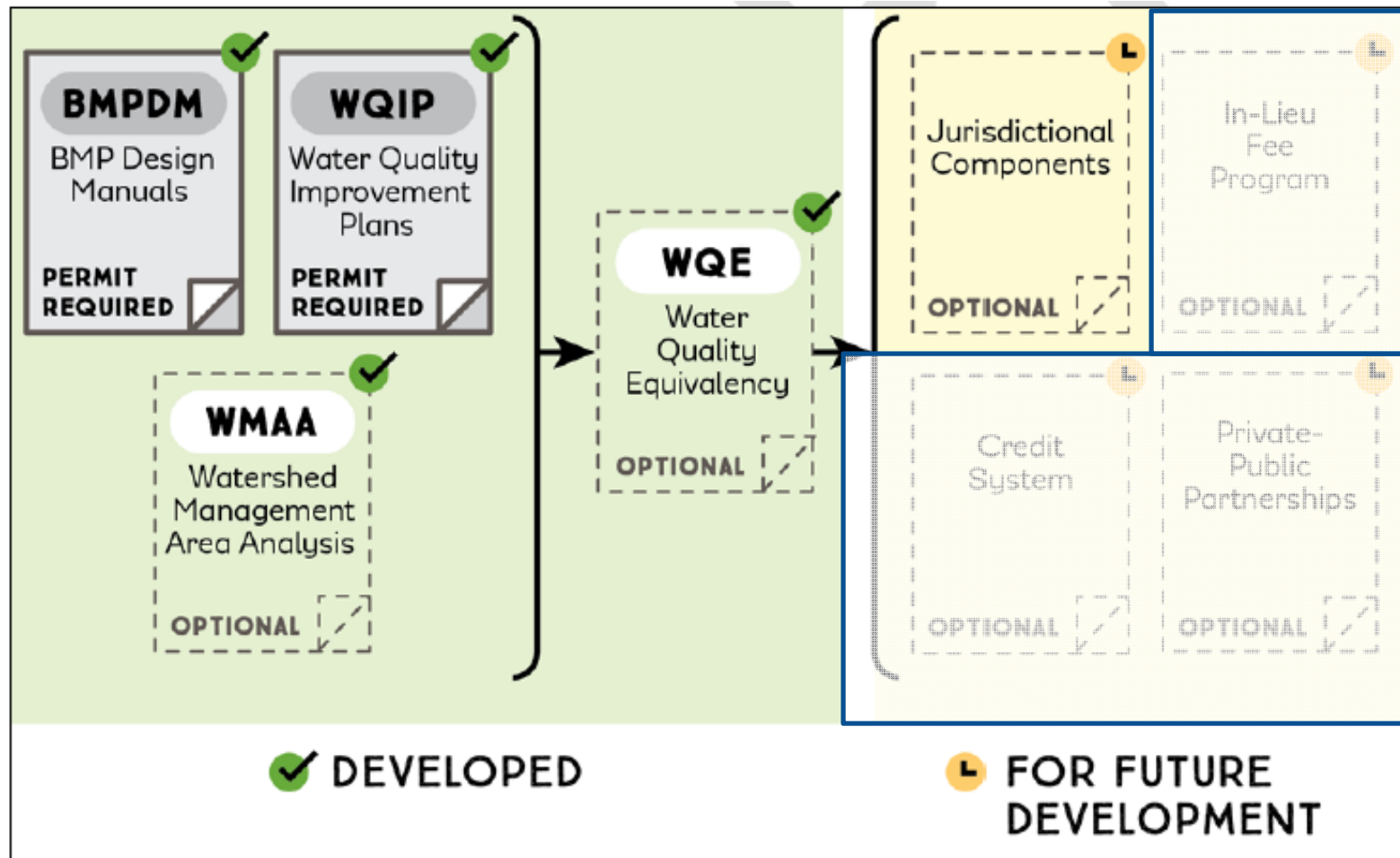


Benefits of Offsite Alternative Compliance



- ❑ Provides a compliance pathway for PDPs
- ❑ Addresses discharges from existing development
- ❑ Promotes regional solutions (not just site-specific)
- ❑ Allows cost-effective and market-driven solutions
- ❑ Encourages innovation
- ❑ Requires greater overall water quality benefits

Overall Program Implementation Process



WATER QUALITY EQUIVALENCY

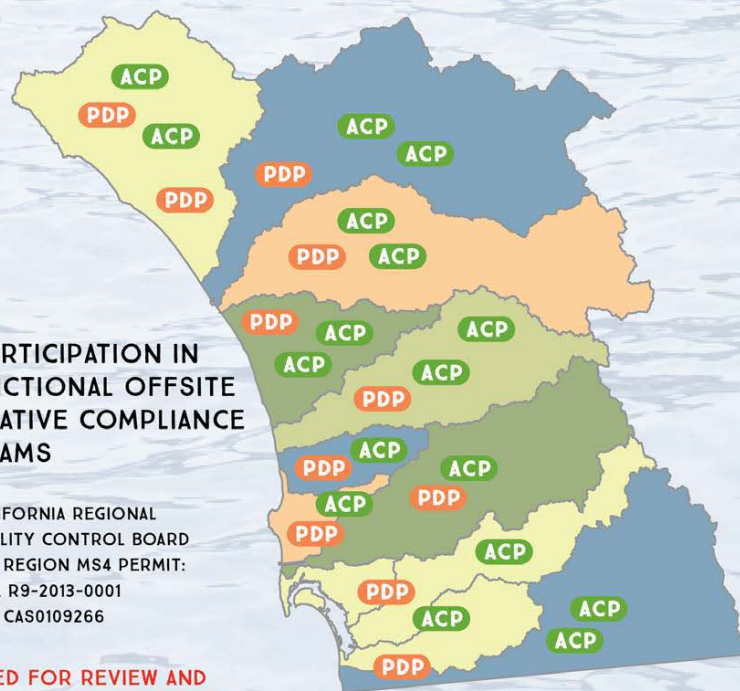
GUIDANCE DOCUMENT

REGION 9

FOR PARTICIPATION IN
JURISDICTIONAL OFFSITE
ALTERNATIVE COMPLIANCE
PROGRAMS

UNDER CALIFORNIA REGIONAL
WATER QUALITY CONTROL BOARD
SAN DIEGO REGION MS4 PERMIT:
ORDER NO. R9-2013-0001
NPDES NO. CAS0109266

SUBMITTED FOR REVIEW AND
ACCEPTANCE BY THE REGIONAL
WATER QUALITY CONTROL BOARD



SEPTEMBER 2015

WQE Development

- **Over 1 Year of Development**
 - ▣ 12 Technical Advisory Committee meetings
 - ▣ Several opportunities for Stakeholder/Public input

- **Input from**
 - ▣ Academics
 - ▣ Regional Copermittees
 - ▣ Building Industry, and
 - ▣ Consultant/Engineering Community
 - ▣ Regional Water Quality Control Board staff

WQE Key Concepts

- Different metrics (currencies) used for pollutant control and hydromodification flow control
- Establishes regional and technical basis for calculating water quality benefits
- Ensures mitigation of impacts caused by not implementing structural BMPs fully onsite
- Ensures a **greater overall water quality benefit** to the watershed

Alternative Compliance Project Categories



- **Structural BMPs:**

- Retrofit BMP
- Regional BMP
- Water Supply BMP

- **Natural System Management Practices:**

- Land Restoration
- Land Preservation
- Stream Rehabilitation

What it doesn't do....

A horizontal bar consisting of a small light blue square followed by a long dark blue rectangle.

- ❑ Establish Jurisdictional Program Implementation Components
- ❑ Create a Credit System
- ❑ Develop an In-Lieu Fee Program

Critical Organizational Principals of WQE



- Separation of project implementation into:
 - ▣ Applicant-implemented projects; and
 - ▣ Independent Implemented projects
- Separation of credits into:
 - ▣ Pollutant Reduction
 - ▣ Hydromodification

ACP Project Implementation Pathways

Potential Pathways for Project Approval and Construction

Applicant Implemented ACPs

Applicant purchases or constructs Alternative Compliance Project (ACP)

Independent ACPs

A party other than the applicant owns or constructs the ACP






- Credit System

Applicant purchases ACP credits in-lieu of fully complying on-site

- In-Lieu Fee Structure

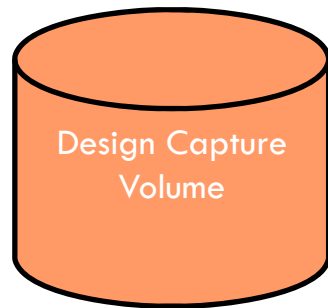
Applicant funds or partially funds ACP in-lieu of fully complying on-site (no purchase or exchange of credits)

Status of Water Quality Equivalency Guidelines

 ACP Category		 Stormwater Pollutant Control Benefits				 Hydromod Flow Control Benefits
		Pollutant Reduction			Volume Reduction	
		Retention	Biofiltration	Flow-Thru		
 BMP	Retrofit	Available	Available	Limited Availability	Available	Available
	Regional	Available	Available	Limited Availability	Available	Available
	Water Supply	Available	Available	Limited Availability	Available	Available
 NSMP	Land Restoration	Not Available	Not Available	Not Available	Available	Available
	Land Preservation	Not Available	Not Available	Not Available	Limited Availability	Available
	Stream Rehabilitation	Not Available	Not Available	Not Available	Limited Availability	Available

Stormwater Pollutant Control: Metric

Priority Development Project (PDP)

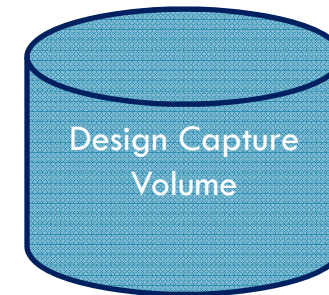


Subtract Volume
Retained/Biofiltered



*Must be Flow-Thru
Treated

Alternative Compliance Project (ACP)

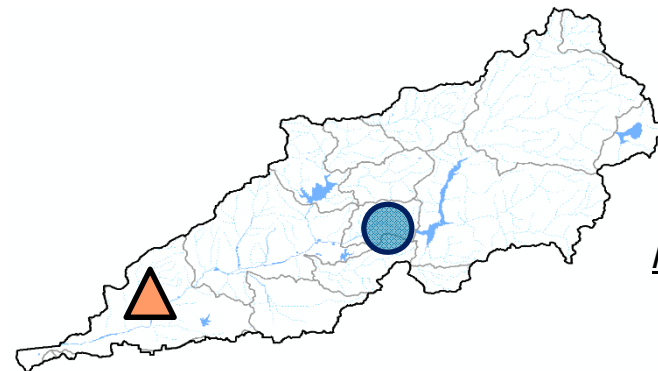
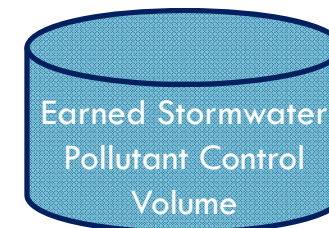


Modify to account for variations in:

Pollutant Supply

Pollutant Removal

Change in Impacted Conditions



← **Greater Overall Water
Quality Benefit** →

Stormwater Pollutant Control: Formula

$$V_E = L (\Delta V + V_2 B_2 - V_1 B_1)$$

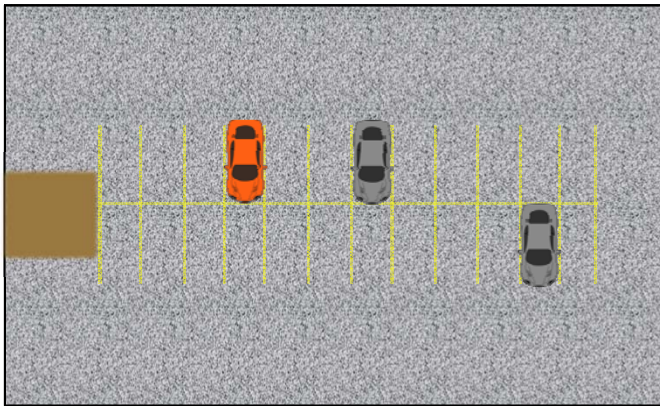
Variables	Consideration
V_E : Earned Stormwater Pollutant Control Volume of ACP	Calculated Water Quality Credit
L : Land Use Factor	Pollutant Supply
V_2 : Mitigated Condition Design Capture Volume at ACP	Pollutant Removal
B_2 : Mitigated Condition BMP Efficacy Factor	Pollutant Removal
V_1 : Impacted Condition Design Capture Volume at ACP	Change in Impacted Conditions
B_1 : Impacted Condition BMP Efficacy Factor	Change in Impacted Conditions
ΔV : Change in Design Capture Volume ($V_1 - V_2$) at ACP	Change in Impacted Conditions

Stormwater Pollutant Control:

Retrofit Example

The owner of an office development (PDP) does not fully satisfy their pollutant control obligations onsite and elects to retrofit a nearby parking lot (ACP) to offset their impacts.

Impacted Condition ACP Site

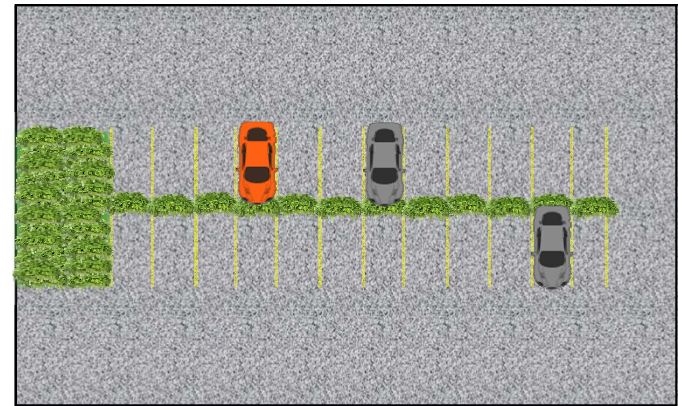


L: 1.00 (*same ACP/PDP Land Uses*)

V₁: 1,800 ft³

B₁: 0.00 (*no BMP in place*)

Mitigation Condition ACP Site



V₂: 1,500 ft³

ΔV: 300 ft³ (*1,800-1,500*)

B₂: 1.00 (*PDP standard is met*)

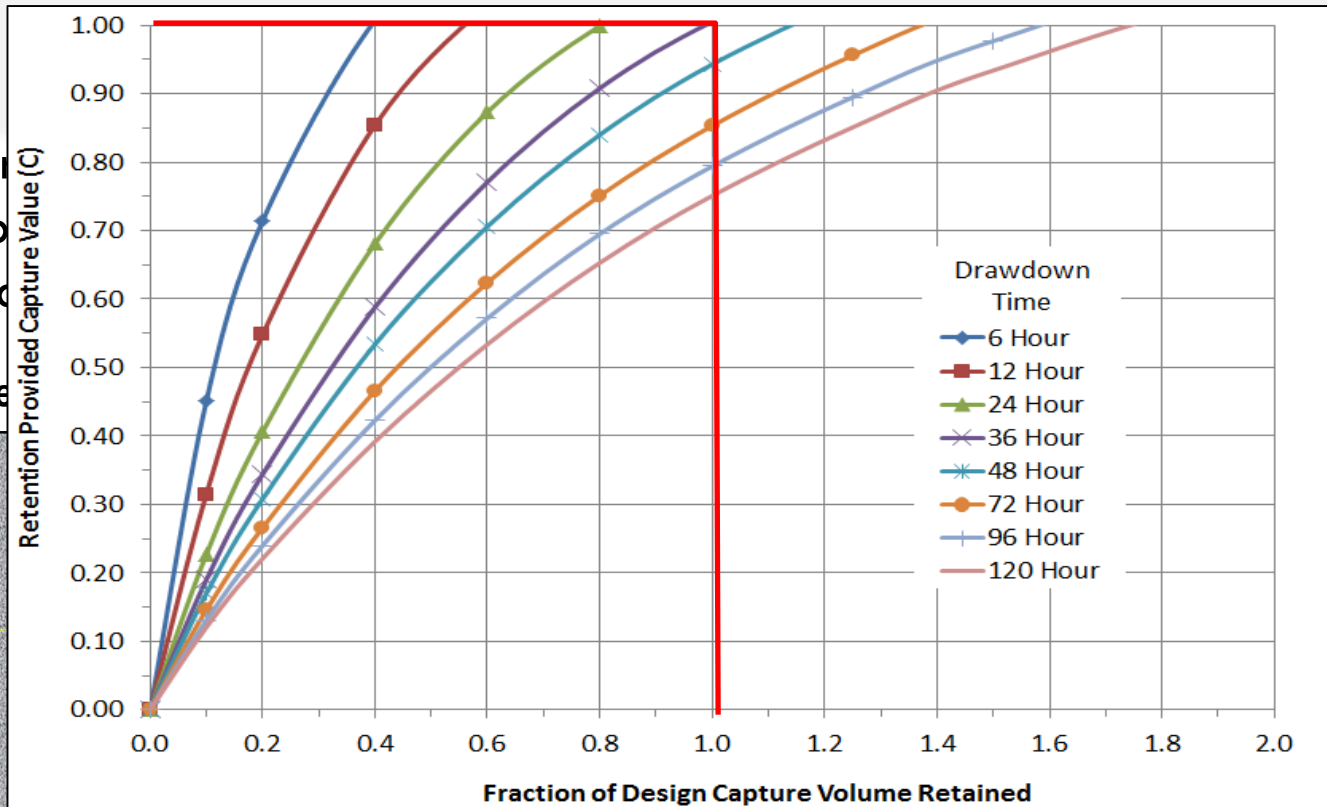
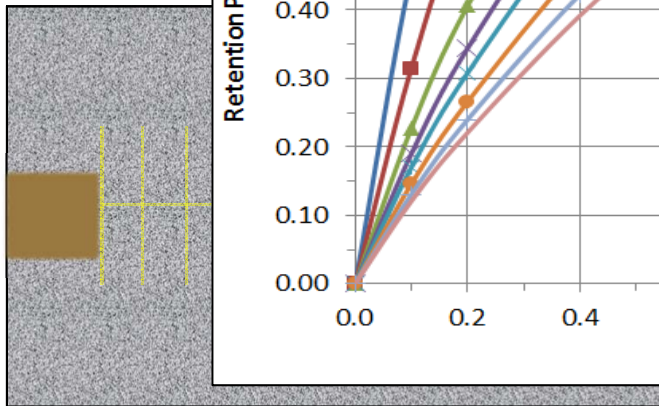
$$V_E = 1.00 (300 + 1,500 \times 1.00 - 1,800 \times 0.00)$$

$$V_E = 1,800 \text{ ft}^3$$

Stormwater Pollutant Control:

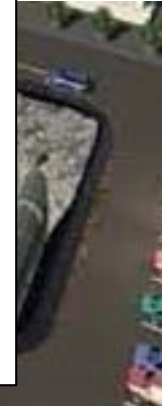
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Impacted



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in a

ACP Site



L: 1.00 (sa
V₁: 1,800 f
B₁: 0.00 (n

BMP Efficacy Factor for the cistern is a function of the provided capture and the rate of drawdown of the captured volume

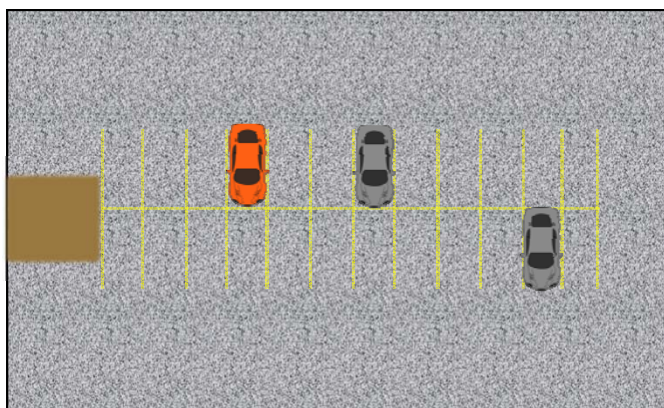
$$V_E = 1,800 \text{ ft}^3$$

(0)
s met)

Stormwater Pollutant Control: Land Restoration Example

The owner of an office development (PDP) does not fully satisfy their pollutant control obligations onsite and elects to restore a nearby parking lot back to predevelopment conditions (ACP) to offset their impacts.

Impacted Condition ACP Site

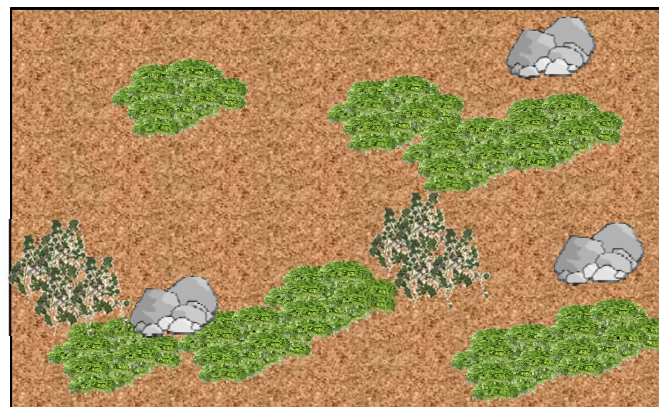


L: 1.00 (*same ACP/PDP Land Uses*)

V₁: 1,800 ft³

B₁: 0.00 (*no BMP in place*)

Mitigation Condition ACP Site



V₂: 200 ft³

ΔV: 1,600 ft³ (1,800-200)

B₂: 0.00

$$V_E = 1.00 (1,600 + 200 \times 0.00 - 1,800 \times 0.00)$$

$$V_E = 1,600 \text{ ft}^3$$

Hydromodification Flow Control: Currency



 ACP Directly Connected Impervious Area

ACP Hydromod Design

Design facilities per criteria in the BMPDM (chapter 6).

ACP Hydromod Credit

Identify the directly connected impervious area tributary to the proposed HMP facility.

- Does not include semi-pervious surface
- Does not include areas that flow over significant pervious areas (see left).

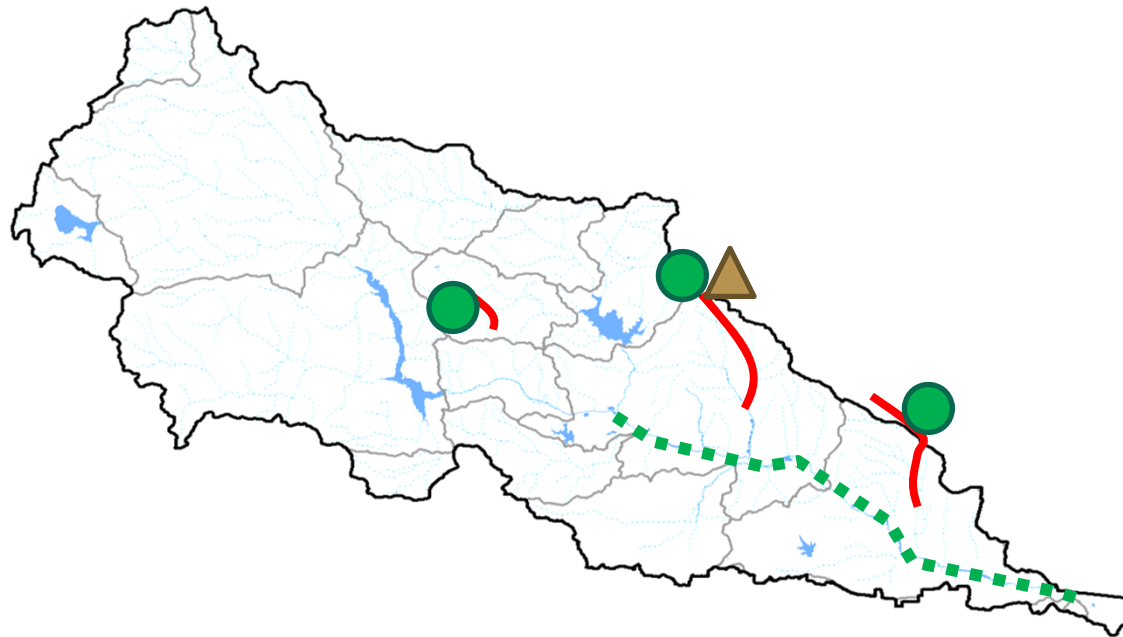
Hydromodification Flow Control: Location Requirements

Location Requirements:

PDPs not adding impervious surface have more ACP location flexibility:

- ACP must be in same watershed
- ACP must benefit a reach that is susceptible to hydromodification

- ▲ PDP Not Adding Impervious Surface
- HMP Susceptible Stream
- - - HMP Exempt Stream
- ACP

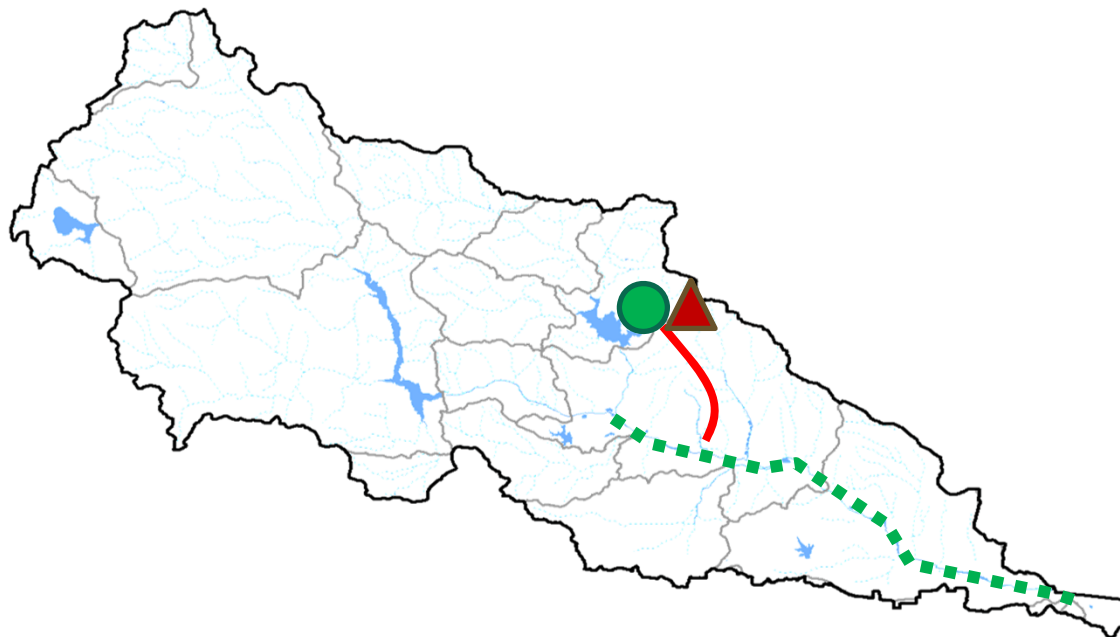
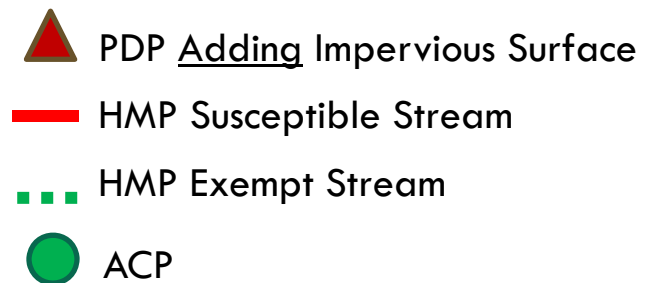


Hydromodification Flow Control: Location Requirements

Location Requirements:

PDPs adding impervious surface have less ACP location flexibility:

- ACP must mitigate at/before the point of compliance



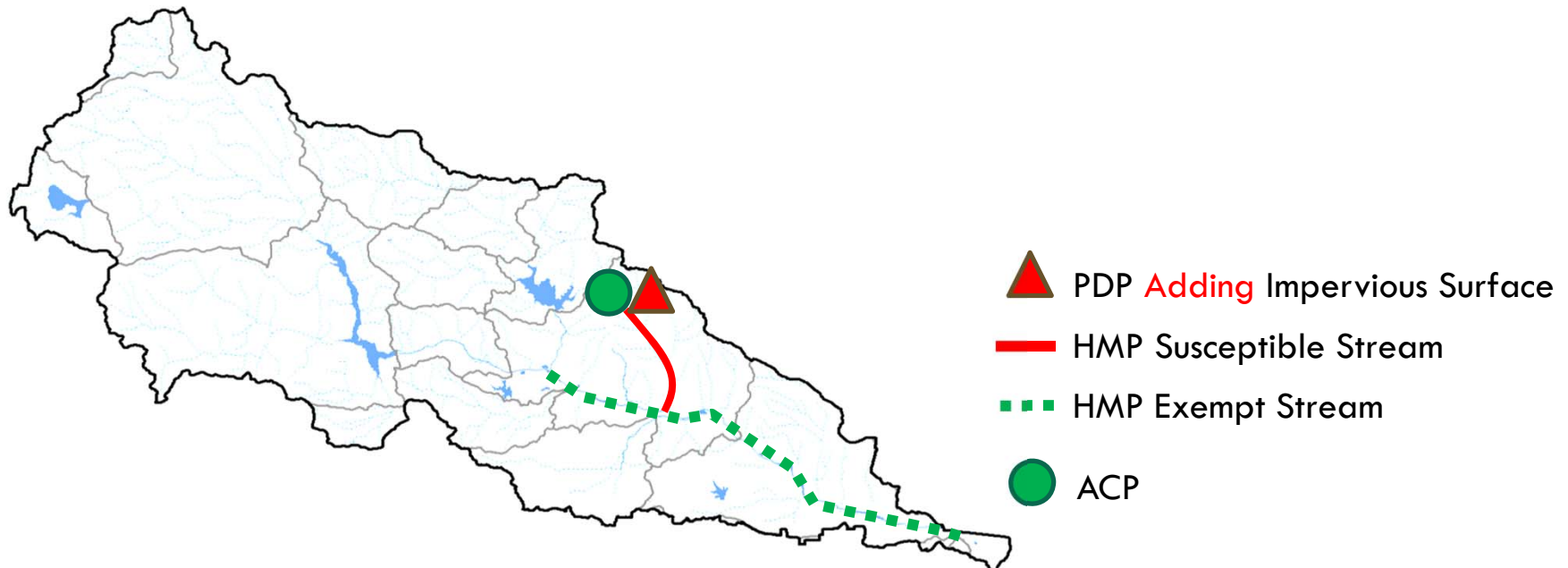
Hydromodification Flow Control: Location Requirements

If PDP Does Not Add Impervious Surface:

- ACP must be in same watershed
- ACP must benefit a reach that is susceptible to hydromodification

If PDP Adds Impervious Surface:

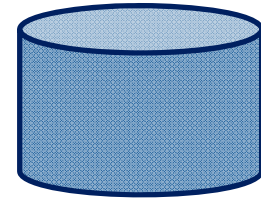
- ACP must mitigate at/before the PDP point of compliance.



Water Quality Equivalency Currencies: Summary

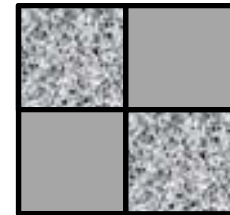
- **Pollutant Control**

- ▣ Pollutant-Weighted Volume



- **Hydromodification Flow Control**

- ▣ Directly Connected Impervious Surface



Phased Implementation

- Phase 1: Applicant (Developer) implemented projects

Available: February 16, 2016

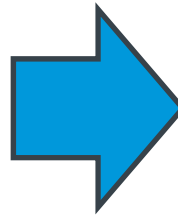
- Phase 2: Independently implemented projects
 - ▣ In-Lieu Fee
 - ▣ Credit System

Draft Timeline: July 2018

Program Development Process

Regional Elements

- Watershed Management Area Analysis (Feb 2016)
- Water Quality Equivalency (WQE; Dec 2015)
- Additional WQE (Future tasks)
 - Onsite Alternative Compliance
 - Flow-thru Treatment Efficiency
 - Stream Rehabilitation
 - Partial Hydromodification



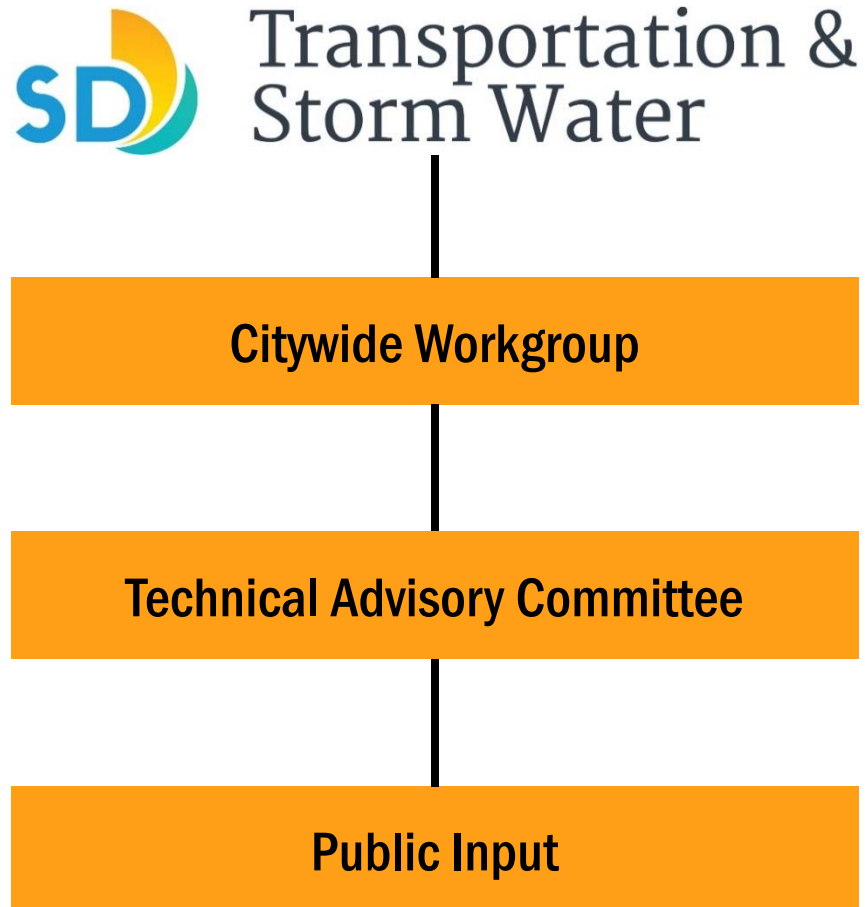
City Specific

- Phase 1: Applicant (Developer) Implemented Projects
- In-Lieu Fee Program*
- Credit System*

* To be developed through this TAC effort

Note: Comments related to Water Quality Improvement Plans and Storm Water Standards will not be discussed in this TAC

Program Development Process



Draft Program Development Timeline



Technical Advisory Committee

- Technical Advisory Committee (TAC) is formed to assist the City staff in developing the Phase 2 Offsite Storm Water Alternative Compliance Program
- This TAC will assist the City staff to acquire technical expertise, facilitate discussions regarding compliance options and to provide recommendations related to development of compliance programs.

RWQCB

Resource Agency

SD Copermittees

Environmental (2)

Development (2)

Engineering / Storm
Water

Credit System

Economic

At-Large (4)

TAC Membership

CATEGORY	REPRESENTATIVE	ALTERNATES
Regional Water Quality Control Board	Christina Arias	Wayne Chiu, Eric Becker
Resource Agency	Jeremy Bauer	Rose Galer
San Diego Copermittees	Sheri McPherson	Charles Mohrlock
Environmental	Rob Hutsel	Shannon Quigley Raymond
Environmental	Jim Peugh	
Development	Dave Hammar	Ray Martin
Development	Mike McSweeney	Wayne Rosenbaum
Engineering / Storm Water	Brendan Hastie	Jayne Janda-Timba
Credit System	Michelle Mattson	Lanika Cervantes
Economic	Jacob Hensel	
At-Large	Bob Leiter	Keith Pazzoli
At-Large	David Pohl	Luis Parra
At-Large	Ed Othmer	Jack Monger
At-Large	Tory Walker	Jim Whalen

Committee efforts and discussion to address:

- ❑ How the program will guarantee that offsite compliance projects and programs will be maintained in perpetuity.
- ❑ How alternative compliance program implementation will achieve Permit compliance.
- ❑ How alternative compliance projects will attain resource agency permits within approved timelines.
- ❑ How environmental or wetland mitigation ratios may be affected by offsite alternative compliance project implementation.



Committee efforts and discussion to address:

- Potential environmental resource benefits for watersheds under various offsite alternative compliance program scenarios.
- How an in-lieu fee program may be developed including methods for determining appropriate fee levels and payment mechanisms.
- How credit systems may be structured and how credits will be tracked, banked, and traded.



TAC Meeting Schedule

- 2-year program development process
- Bi-monthly TAC meetings, more meetings to be added if needed
- At least two (2) public workshops will be held to obtain input from additional stakeholders and the public at large



In-Lieu Fee

- Allows direct payments by project applicants to provide funding for City-led offsite projects
- Fee would cover activities including design, construction and maintenance of offsite projects

In-Lieu Fee Work Plan
For Technical Advisory Committee Review Only
Subject to Change: March 30, 2016

In-Lieu Fee Work Plan

An in-lieu fee system provides a mechanism for priority development project (PDP) applicants to fund or partially fund an offsite project that serves a storm water mitigation function. The in-lieu fee can be collected prior to implementation of the offsite project. To meet the requirements in the MS4 Permit the offsite project must be implemented no later than 4 years after the certificate of occupancy is granted for the first PDP that contributed funds to the offsite project, unless additional time is granted by the RWQCB Executive Officer.

For the City to evaluate the potential economic and financial benefits, and efficacy of such an in-lieu fee mitigation program, one critical question to answer is whether the fees generated would be sufficient for the delivery of the candidate project, including activities such as designing, building, operating, and maintaining the offsite project. The following seven tasks will be performed to investigate and develop an in-lieu fee program for the City:

- Task 2.1: Review existing fee programs and conduct interviews;
- Task 2.2: In-lieu fee program options;
- Task 2.3: Develop cost templates;
- Task 2.4: Project impact fee study;
- Task 2.5: Financial accounting mechanisms;
- Task 2.6: Project submittal, review, approval and tracking; and
- Task 2.7: In-lieu fee program: TAC meetings.

2.1. Review Existing Fee Programs and Conduct Interviews

The consultant team will review existing City fee programs as well as agency storm water in-lieu fee programs nationally and prepare a summary of how these fees are being administered, what specific triggers and activities are covered by the fees and how existing programs compare/differ from the in-lieu fee program that is being developed by the City.

- The existing City fee programs that will be reviewed include:
 - Facilities Benefit Assessments (provides 100% of funds for public facilities which service a designated area of benefit and are identified in the Public Facilities Financing Plan);
 - Development Impact Fees (collected to mitigate the impact of new development within urbanized communities which are near buildout);
 - Regional Transportation Congestion Improvement Program Fees (collected to ensure that new development directly invests in the region's transportation system to offset the negative impact of growth on congestion and mobility);
 - Housing Impact Fees (collected in part to meet the affordable housing needs in the City); and
 - Street Damage Fee (collected to recover current and future degradation of streets due to excavation).
- The existing storm water in-lieu fee programs/documents that will be reviewed include:

Credit System

- A credit system would allow credits generated through projects led by the City or private entities to be exchanged (traded, sold or banked)
- The MS4 Permit requires review and acceptance of the credit system by the San Diego RWQCB Executive Officer prior to implementation

Credit System Work Plan
For Technical Advisory Committee Review Only
Subject to Change: May 12, 2016

Credit System Work Plan

A credit system would provide a mechanism for priority development projects (PDPs) to participate in offsite storm water alternative compliance by trading water quality and hydromodification credits. Through this system, a project applicant would calculate generated water quality credits of an offsite project using the San Diego RWQCB approved water quality equivalency (WQE) guidance document¹. Once the amount of a credit is established and confirmed, its owner could apply it toward meeting water quality requirements at another project site located within the same watershed. Projects having excess credits may also be allowed to bank the credits and then sell or trade them to another entity. Future program development steps will include establishing a method to translate WQE calculations into credits as well as a method to track credits and then trade them. The MS4 Permit requires review and acceptance of the credit system by the San Diego RWQCB Executive Officer prior to implementation.

There are two primary categories of offsite projects for which credits may be generated:

- **Structural BMPs:** Structural BMPs are a subset of BMPs which physically detain, retain, filter, remove, or prevent the release of pollutants in storm water runoff to surface waters from development projects in perpetuity, after construction of the project is completed. These include the following project categories: retrofit BMPs; regional BMPs; and water supply BMPs.
- **Natural System Management Practices (NSMPs):** NSMPs are practices that are implemented to restore and/or preserve predevelopment watershed functions in lieu of providing direct management of stormwater pollutant control and hydromodification flow control. NSMPs may include structural or engineered elements as part of the system, but non-engineered elements also provide some level of pollutant control and/or hydromodification management benefits. NSMPs include the following project categories: land restoration; land preservation; and stream rehabilitation. The Compensatory Mitigation program allows NSMPs in the form of restoration, enhancement, establishment, and in certain circumstances preservation to offset the impacts of unavoidable impacts to waters of the US. Compensation is based entirely on the type and area of wetland provided and does not allow for water quality mitigation other than in evaluating appropriateness of selected mitigation sites to provide long term/low maintenance aquatic resource functions (i.e. healthy vegetation/habitat).

The following six tasks will be performed to investigate and develop a credit system for the City's Programs:

- Task 2.1: Review existing credit programs and conduct interviews;
- Task 2.2: Identify and define crediting program core market elements;
- Task 2.3: Develop credit program process requirements;

¹ Available for download on project clean water website (www.projectcleanwater.org) at <http://www.projectcleanwater.org/images/stories/Docs/WQE/Final%20Water%20Quality%20Equivalency%20Guidance%20for%20Region%209%20-%20December%202015.pdf>

Benefits of Offsite Alternative Compliance

- Provides a compliance pathway for PDPs
- Improves discharges from existing development
- Promotes regional solutions (not just site-specific)
- Allows cost-effective and market-driven solutions
- Encourages innovation

Opportunities for Improvement...



...are everywhere!





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WQE Guidance Document can be found at:

www.waterboards.ca.gov/sandiego

www.projectcleanwater.org