



Multi-Agency Post-Construction Standards Manual

1st Stakeholder Meeting
February 26, 2015



Introductions

■ Project Partners (Representatives)

- City of Lathrop (Dameon Flores)
- City of Lodi (Kathryn Garcia)
- City of Manteca (Bret Swain)
- City of Patterson (Sonia Delgado)
- City of Tracy (Stephanie Reyna-Hiestand)
- County of San Joaquin (Gerardo Dominguez)

■ Project Team

- Gorman Lau, Larry Walker Associates
- Sandy Mathews, Larry Walker Associates

■ Stakeholders

- You

Project Introduction

- Phase II Stormwater Permit
 - State Water Resources Control Board
Order No. 2013-0001-DWQ
“General Permit for Waste Discharge Requirements
for Storm Water Discharges from Small Municipal
Separate Storm Sewer Systems”
- Phase II Permit requires Partners regulate
development (Provision E.12)
 - Extension of similar requirements for larger
communities subject to Phase I Stormwater Permits

Meeting Objectives

- Provide background of requirements
 - Permit requirements
 - Applicable projects
 - Low Impact Development (LID)
 - Hydromodification
- Present Draft Conceptual Outline
- Describe process and schedule for project
- Solicit initial feedback from stakeholders

BACKGROUND OF REQUIREMENTS

Key Phase II Permit Requirements that will be Addressed by the Project

- Site Design Measures (Provision E.12.b)
 - Identifies practices that reduce runoff using site design; small projects
- Regulated Projects (Provision E.12.c.)
 - Identifies projects that will be subject to development standards, and when the requirements take effect
- Source Control Measures (Provision E.12.d)
 - Identifies practices that reduce pollutants in runoff
- LID Design Standards (Provision E.12.e)
 - Identifies numeric sizing criteria and design process

Key Phase II Permit Requirements that will be Addressed by the Project

- Treatment Control Measures (Provision E.12.e)
 - Key section of this provision that identifies bioretention as the preferred treatment measure
- Hydromodification Management (Provision E.12.f)
 - Identifies design standard for larger project to mitigate potential hydromodification
- Operation & Maintenance (O&M) (Provision E.12.h)
 - Specifies the need for a O&M plan for the ongoing maintenance of the treatment systems

Project Applicability

- New Development and Redevelopment Projects (public and private) that **create or replace** impervious area
 - Small Projects (2,500-5,000 ft² impervious area)
 - Regulated Projects ($\geq 5,000$ ft² impervious area)
 - Excludes:
 - Detached single-family homes not part of a larger development
 - Interior remodels
 - Routine maintenance or repair
 - Some Linear Underground/Overhead Utility Projects (LUPs)
 - Hydromodification Projects (≥ 1 acre impervious area, with a net increase in impervious area)

Effective Date of Requirements

- Develop post-construction standards within 2nd year of Phase II Permit (by 6/30/2015)
- Condition new- and re-development projects to apply the post-construction standards within the 2nd year of the Phase II Permit
- “Grandfathered Projects”
 - Discretionary permit projects that have been deemed **complete** before 6/30/2015
 - Public projects for which the governing body has approved design before 6/30/2015

Effective Date of Requirements

- Standards must be applied to discretionary permit projects that
 - have **not** been deemed **complete** for processing by 6/30/2015
 - **without** vesting tentative maps that have not requested and received an extension of previously granted approvals
- Standards must be applied public projects that for which design is approved after 6/30/2015

Phase II Permit Requirements

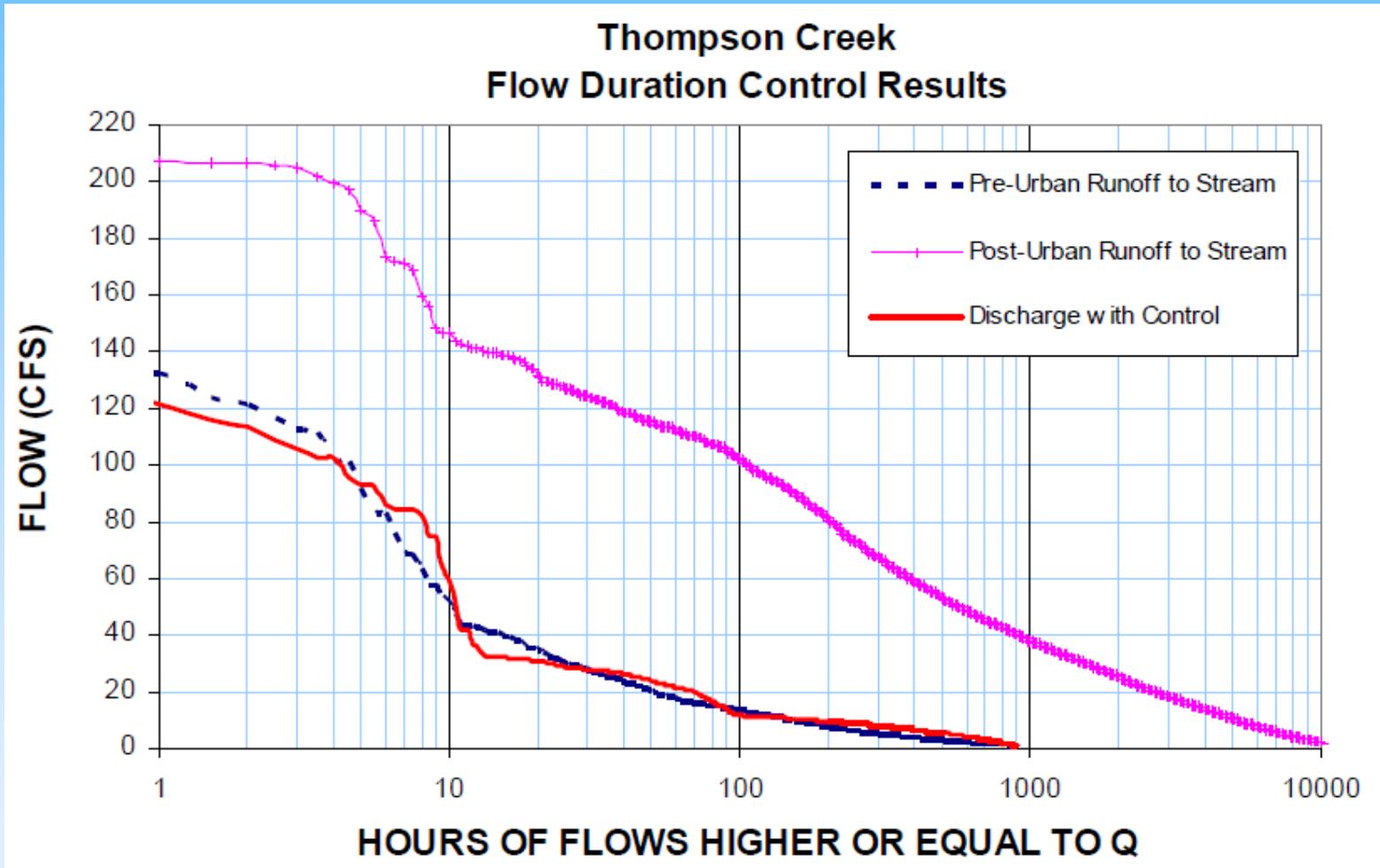
| Measures | Small Projects | Regulated Projects | Hydromodification Projects |
|---|----------------|--------------------|----------------------------|
| Site Design | X | X | X |
| Source Control | | X | X |
| Low Impact Development/Treatment | | X | X |
| Baseline Hydromodification | | X | X |
| Full Hydromodification* | | | X |
| Operations & Maintenance | | X | X |
| Full hydromodification is required by 6/30/2016 | | | |

Applicability for Redevelopment Projects

■ Redevelopment Projects

- Increase $\geq 50\%$ of impervious area of a previously existing development
 - Manage stormwater runoff from entire project (existing, new, replaced impervious area)
- Increase $< 50\%$ of impervious area of a previously existing development
 - Manage stormwater runoff from only new/replaced impervious area

Why is stormwater management important?



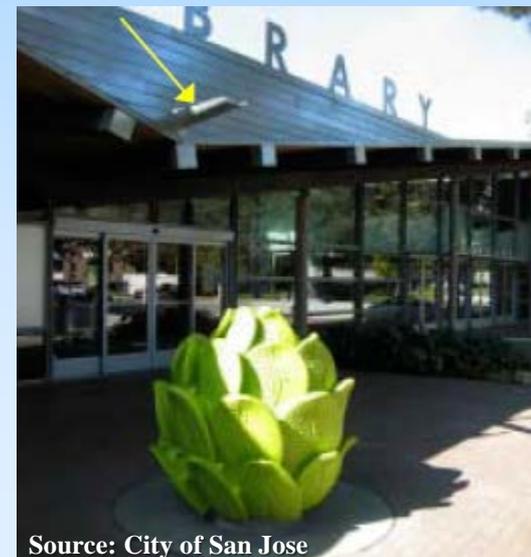
Source: Santa Clara Valley Urban Runoff Pollution Prevention Program

Source: Berntsen, 2008



What is LID?

- An alternative method of land development
- Seeks to mimic the natural hydrologic character of the site
- Retains stormwater where it falls by promoting infiltration, evapotranspiration, and harvest/use



Benefits of LID

- “Greener” form of development
- Contributes to groundwater recharge
- Improves water quality
- Reduces peak flow volume and velocity
- Increases aesthetics
- Increases marketability of lots and projects

What is Hydromodification?

- Development (increased impervious area and compacted soils) can increase runoff volumes and flow rates
- Increased runoff (higher velocity) can result in channel erosion/degradation in the receiving water
- Channel erosion can degrade water quality, riparian and in-stream habitat, and impact adjacent properties and infrastructure

DRAFT CONCEPTUAL OUTLINE

Assess Project Site

- Goal: Incorporate methods for capturing and treating stormwater runoff during project design
- Evaluate project site conditions
 - General characteristics – identify project area size
 - Soil/groundwater – identify potential areas for infiltration
 - Vegetation – preserve significant vegetation
 - Flow paths – identify Drainage Management Areas (DMAs)
 - Waterbodies – identify waterbodies and provide setbacks/buffers

Implement Site Design Measures

- Goal: Reduce stormwater runoff from project site
- Must be applied to all projects $>2,500$ ft²
- Use SMARTS Post-Construction Calculator
 - <http://smarts.waterboards.ca.gov>
 - Calculates stormwater runoff mitigated using site design measures at project site
 - Provides credit to reduce LID/treatment control measure sizing
- Site Design Measure fact sheets to be included in Manual

Example Site Design Measures

- Stream setbacks and buffers
- Soil quality improvement and maintenance
- Tree planting and preservation
- Rooftop and impervious area disconnection
- Porous pavement
- Green roofs
- Vegetated swales
- Rain barrels and/or cisterns



Source: MA Smart Growth Toolkit

Implement Source Control Measures

- Goal: Reduce potential mobilization of pollutants in stormwater runoff from activities and sources
- Must be applied for regulated projects
- Design project to minimize impacts from pollutant sources
- Source Control Measure fact sheets to be included in Manual

Stormwater Runoff Volume/Flow

- Volumetric criteria
 - 85th percentile, 24-hour storm runoff event (WEF)
 - Volume of annual runoff to achieve $\geq 80\%$ capture (CASQA)
- Flow-based criteria
 - Flow of stormwater runoff produced from an event ≥ 0.2 in/hr intensity
 - Flow from stormwater runoff equal to 2 times the 85th percentile hourly rainfall intensity
- These criteria do not address flood control requirements

Implement LID Control Measures

- Goal: Maximize infiltration, evapotranspiration, and bioretention of stormwater runoff and help meet baseline hydromodification requirements
- Must be used for remaining stormwater runoff from impervious DMA(s) to the extent technically feasible
- Reduces volume needed to be handled by other treatment control measures

Implement LID Control Measures

- Bioretention system is preferred treatment option
- Alternative facilities may be implemented if demonstrated to be at least as effective as a bioretention with specific design parameters



Alternative Design Demonstration Standards

- \geq amount of stormwater runoff infiltrated or evapotranspired
- \leq pollutant concentration in stormwater runoff that is discharged after biotreatment
- \geq protection against shock loading and spills
- \geq accessibility and ease of inspection and maintenance



Special Site Considerations

- Bioretention design parameters may be adjusted for the following situations:
 - Control measures within 10 ft of structures or other potential geotechnical hazards
 - High concentrations of pollutants in underlying soil or groundwater
 - Control measures in areas of high groundwater, highly infiltrative soils, or connection to the underdrain to surface/subsurface drain is technically infeasible
 - Control measures in high-risk areas (e.g., fueling stations, heavy industry)

Exception to Bioretention

- Use other biotreatment or media filters
 - Projects creating/replacing ≤ 1 ac of impervious area, located in designated pedestrian-oriented commercial district, and at least 85% of project site is covered by permanent structures
 - Facilities receiving runoff solely from existing (pre-project) impervious areas
 - Historic sites, structures, or landscapes that cannot alter configuration

Implement Hydromodification Management

- Applies to Regulated Projects that create/replace ≥ 1 ac of impervious surface
 - Post-project runoff cannot exceed pre-project flow rate for a 2-year, 24-hour storm
- Not applicable for projects that do not increase impervious surface area over the pre-project condition

Develop O&M Plan

- Protect against failure of control measure(s)
- Provide for long-term maintenance of control measure(s) – Maintenance Plan
 - Develop maintenance and cleaning schedule
 - Identify responsible parties for O&M
 - Identify equipment and resource needs
- Implement Maintenance Agreement
 - Legally-binding
 - Assessment
 - Annual self-certification

Project Plan Submittals

- Manual may include checklists and/or worksheets
- Partners' submittal and review processes will be included as appendices in the Manual

PROJECT SCHEDULE AND NEXT STEPS

Project Schedule

| Task | Target Date |
|--------------------------------------|--------------------|
| 1 st Stakeholder Meetings | February 26, 2015 |
| Comments on Draft Conceptual Outline | March 10, 2015 |
| Draft Manual to Stakeholders | Mid-April 2015 |
| 2 nd Stakeholder Meetings | April 23, 2015 |
| Comments on Draft Manual due | Early May 2015 |
| Revised Draft Manual to Stakeholders | Late May 2015 |
| Comments on Revised Draft Manual due | Early June 2015 |
| Final Manual | June 30, 2015 |

Your input is important

- Your comments will help identify potential challenges and alternatives
- There will be a formal response to comments for the Draft and Revised Draft Manuals
- Identifying elements you like and do not like will help the Partners create a Manual that meets the needs of the stakeholders and the Phase II Permit requirements

Stakeholder input is a key to a successful project

- Send written comments and feedback specific to the Draft Conceptual Outline to Gorman Lau by email (MultiAgencyManual@LWA.com)
- Comments on Draft Conceptual Outline due March 10, 2015
- 2nd Stakeholder Meetings to be held April 23, 2015 to present and discuss Draft Manual
 - Stockton (AM)
 - Tracy (PM)

Future Communications

- Information about future stakeholder meetings and draft Manuals will be sent by email
 - Please make sure we have your current email address

Where to get more information

- 2013 Phase II Permit

- www.waterboards.ca.gov/water_issues/programs/stormwater/phase_ii_municipal.shtml

- Partners' websites

Questions/Comments/Feedback

- Grandfathering language
- Drainage Management Areas
- Site Design Measures
- Treatment Control Measures