

# SAN DIEGO COPERMITTEES LID Sizing Calculator Workshop *San Diego HMP Overview*

Presented by Eric Mosolgo, PE  
Brown and Caldwell  
May 28, 2009  
San Diego, California

## Introductions

- Sara Agahi – County of San Diego
- Nancy Gardiner – Brown and Caldwell
- Dan Cloak – Dan Cloak Consulting
- Tony Dubin – Brown and Caldwell
- Eric Mosolgo – Brown and Caldwell

*REVIEW OF MAY 1, 2009  
DRAFT HMP SUBMITTAL  
TO RWQCB*



EXECUTIVE SUMMARY AND  
SECTIONS 1 - 3

- Section 1 - Introduction
- Section 2 – Copermittee Process
- Section 3 – Technical Advisory Committee (TAC)
- Refer to Appendix A for TAC members





## SECTION 4 – LITERATURE REVIEW

- Flow control Approach
- Rainfall Data
- Rainfall Loss / Infiltration Data
- Rainfall Loss / Evaporation Data



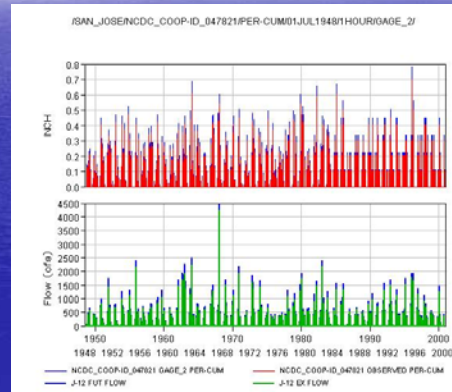
### Section 4.1 – Flow Control Approach

- Review of Santa Clara HMP
- Review of Contra Costa HMP
- Selection of consultant team for San Diego HMP
- Interim HMP flow control criteria



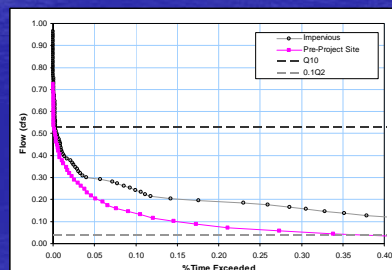
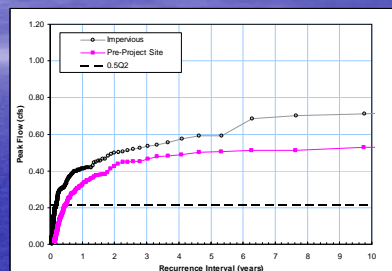
## Section 4.2 – Rainfall Data

- Continuous simulation of local rainfall
- Sizing to a design storm is not sufficient
- Rainfall record preparation
- Partial duration calculator



## Section 4.2 – Rainfall Data

- Peak Flow Frequency Analysis
- Flow Duration Statistics
- Refer to Appendices B and E for Additional Information



## Section 4.3 – Rainfall Loss / Infiltration Data

- HSPF study reviews for Southern California
- San Diego RWQCB TMDL studies
- SCCWRP studies
- Ventura County watershed studies
- Refer to Appendix C for additional information

## Section 4.4 – Rainfall Loss / Evaporation Data

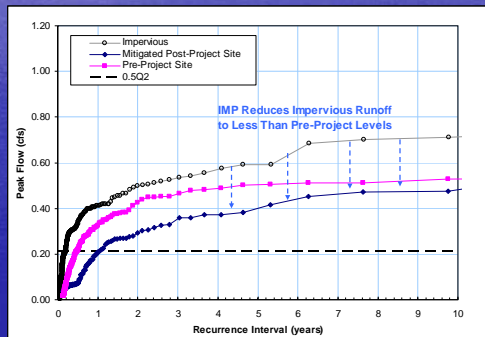
- Evapotranspiration station review
- Evaporation data from City of San Diego reservoirs
- Historical evaporation data from Lake Heneshaw and Lake Cuyamaca
- Refer to Appendix D for additional information





## SECTION 5 – METHODOLOGY AND TECHNICAL APPROACH

- Flow Control Limits
- Categorization of Streams
- Cumulative Watershed Impacts



### Section 5.1 – Flow Control Limits

- Final criteria for rates and durations
- Lower flow threshold determination
- Minimum flow threshold
- Pending TAC approval
- Refer to Appendix G for additional information



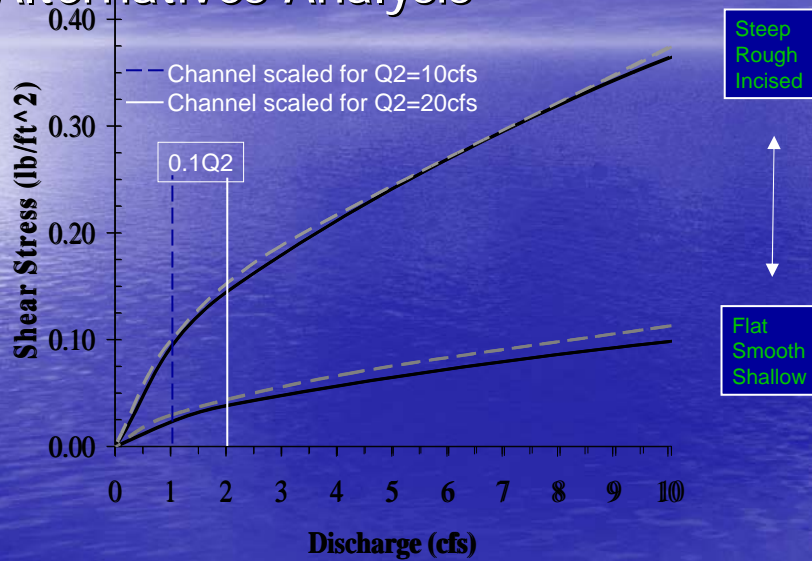
## Section 5.1 – Summary of Preliminary Flow Threshold Analysis

- Synthetic modeling approach
  - Hydrologic analysis
  - Sediment transport modeling
  - Third party review
  - Sensitivity analysis
  - Refer to Appendix F for additional information
- *PWA ANALYSIS SHOWED LOWER FLOW LIMIT CONVERGING TO  $0.1Q_2$*

## Section 5.1 – Lower Flow Threshold Alternatives Analysis

- Identification of alternate lower flow thresholds for erosion-resistant channels
- Identification of a minimum flow rate as an alternate lower flow threshold
- Alternate lower flow threshold based on watershed position

## Section 5.1 – Lower Flow Threshold Alternatives Analysis



## Section 5.2 – Analysis and Categorization of Streams

- Work being prepared by SCCWRP
- Development of rapid assessment channel screening tools to identify channel susceptibility
- Receiving streams to be classified as having a High, Medium or Low susceptibility ratings



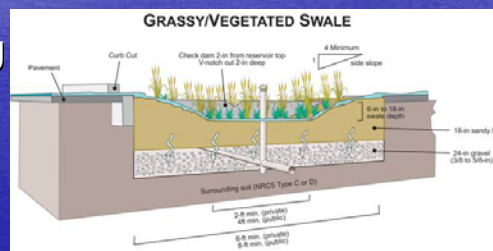
## Section 5.3 – Cumulative Watershed Impacts

- Work being prepared by SCCWRP
- Quantification of the domain of assessment downstream of project
- Related to watershed position concept referred to in lower flow threshold alternatives analysis



## SECTION 6 – REQUIREMENTS / STANDARDS FOR PROJECTS

- No increase in impervious cover
- LID/HMP sizing using sizing calculator
- Continuous flow duration control modeling
- Geomorphic analysis
- Pending TAC approval



# Contra Costa Clean Water Program – IMP Sizing Tool

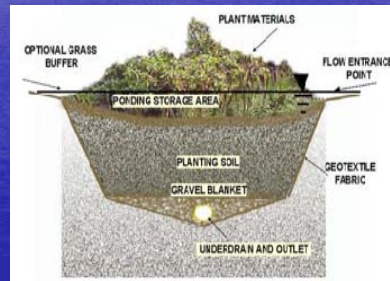
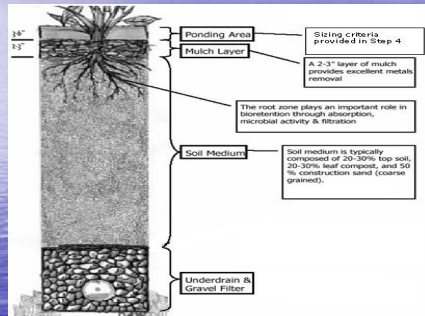
- Continuous hydrology, flow duration analysis
- User-friendly
- Pre-determined sizing factors

The screenshot shows the 'Integrated Management Practice Calculator' window. It includes a 'Project Information' section with fields for Project Name (Storage Manor Estates), Location, APN, Total Area (88500 sq ft), and Mean Annual Precip (20 in). There are radio buttons for 'Design Goal' (Treatment Plus Flow Control, selected) and 'Treatment Only'. Below this is a tabbed interface with 'Integrated Management Practices (IMPs)' selected. The IMP1 section shows Soil Group (C), Type (Flow-through Planter), and input fields for Minimum Area (605), Planned Area (605), and Max Underdrain Flow (0.014000). A 3D diagram of a planter is shown to the right. At the bottom, a summary table shows: Total Area (Calculated) 10000 sq ft, Drainage Management Areas 0 sq ft, Integrated Management Practices 0 sq ft, and Total 10000 sq ft. A warning message states: 'WARNING: Total area of DMAs and IMPs does not equal the total project area.'

## SECTION 6 - Exceptions

- Discharge to hardened conveyance systems
- Projects in highly urbanized watersheds downstream to stable waterway
- Geomorphic analysis to prove channel stability considering flow increase and sediment reductions

## SECTION 7 – SELECTION AND IMPLEMENTATION OF BMPs



## SECTION 7 – DECISION MATRIX

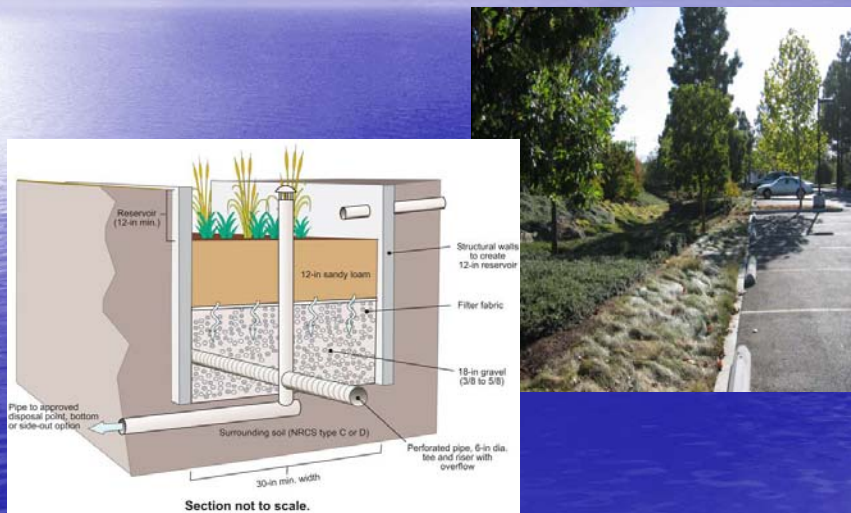
- Used to determine HMP criteria applicability
- Used to determine appropriate lower flow threshold
- Used to determine appropriate method of analysis
- Used to determine recommended mitigation options
- Pending TAC approval



# SECTION 8 – MONITORING AND BMP EVALUATION



# SECTIONS 9 AND 10 – CONCLUSIONS AND LIMITATIONS



## Questions and Contact Information

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