SAN DIEGO COPERMITTEES
LID Sizing Calculator Workshop
San Diego HMP Overview

Presented by Eric Mosolgo, PE
Brown and Caldwell
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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
EXECUTIVE SUMMARY AND SECTIONS 1 - 3

- Section 1 - Introduction
- Section 2 - Co-permittee 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

![Rainfall Data Graph]

Section 4.2 – Rainfall Data

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

![Peak Flow Frequency Graph]

![Flow Duration Statistics Graph]
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

**Graph:**
- **x-axis:** Recurrence Interval (years)
- **y-axis:** Peak Flow (cfs)
- **Legend:**
  - Original Site
  - Two-Project Site
  - Mitigated Post-Project Site

**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

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

- 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

SECTION 9 AND 10 – CONCLUSIONS AND LIMITATIONS
Questions and Contact Information

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