

Status of San Diego's Local Hydromodification Management Plan (HMP) Planning

APWA Hydrologic Simulation Program Fortran (HSPF) Training
for the Local Engineering Community and Municipal Employees
Balboa Park Club, San Diego

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Outline of Presentation

- Municipal Permit
 - Hydromodification Management Plan (HMP) Requirements
 - Regional HMP Implementation Timeline
- Development of San Diego Regional HMP
 - Copermittee Land Development Workgroup
 - Contract with Brown and Caldwell and subs
 - Regional Technical Advisory Committee
 - SCCWRP Regional Hydromodification Management Study
- Requirements for Compliance
 - Interim Criteria
 - Exemptions
 - Proposed Final Criteria
 - Continuous Simulation Modeling; i.e., why you are here today
- Conclusion

Municipal Permit*: Hydromodification Management Plan Requirements

Copermittees must develop plan requiring Priority Development Projects to implement hydrologic control measures so that post project runoff flow rates and durations do not exceed pre-project flow rates and durations where they would result in an increased potential for erosion of channel beds and banks, sediment pollution generation, or other impacts to beneficial uses and stream habitat.

*Order No. R9-2007-0001

Municipal Permit: Regional HMP Implementation Timeline

- **January 24, 2007:** Regional Board (RB) adopted permit
- **March 24, 2008:** Copermittees implement Interim Hydromodification Criteria (8 week extension due to 2007 wildfires)
- **January 21, 2009:** Copermittees submit Draft HMP to RB; updated draft submitted May 1, awaiting RB staff comment
- **Upon receipt of Regional Board comments:** Copermittees have 6 months to finalize HMP and submit for RB approval
- **Within 6 months of Regional Board approval of HMP:** Copermittees must implement (i.e. incorporate into local SUSMPs) for all PDPs
- **July 8, 2010:** Earliest possible date for implementation of Final Hydromod requirements (If RB comments received today and 1 day final RB adoption process)

Development of San Diego Regional HMP

- Copermittee Land Development Workgroup
- Contract with Brown and Caldwell team for plan development
 - Philip Williams and Associates – geomorphic assessment, flow threshold and sediment transport modeling
 - Dan Cloak Engineering – development of Model SUSMP, LID approach to mitigating hydromodification impacts
- Technical Advisory Committee
 - development community
 - consulting engineering community
 - technical resource agencies
 - academia
 - environmental organizations
- SCCWRP Regional Hydromodification Management Study

SCCWRP* Regional Hydromodification Management Study

- Originally funded by a Prop 50 grant
- Spans SoCal between Ventura and San Diego Counties
- Tasks for San Diego Copermittee effort
 - Analysis and categorization of streams from geomorphic context
 - Screening tools to identify channel susceptibility to hydromodification impacts (i.e., which streams are at the greatest risk of effects of hydromodification?)
 - Protocols for evaluation of hydromodification impacts downstream of PDPs: quantification of domain of assessment
 - Analysis of cumulative watershed impacts

*Southern California Coastal Water Research Project

Requirements for Compliance: Interim HMP Criteria

- San Diego Requirements in effect since March 2008
- For PDPs that disturb ≥ 50 acres
- Permit specifies, “continuous simulation of the entire rainfall record...” so that post-project runoff flow rates and durations shall not exceed pre-project runoff flow rates and durations
- Post-project flow and duration matching to pre-project $0.2Q_5$ to Q_{10}

Requirements for Compliance: Exemptions

- As defined in Municipal Permit
 - Project discharges into channel that is concrete-lined or significantly hardened (rip-rap, sackrete, etc) downstream to outfall in bay or ocean;
 - Project discharges into underground storm drains discharging directly to bay or ocean;
 - Watershed areas below project’s discharge points are highly impervious (e.g.>70%); or
 - Applicant conducts sediment transport analysis across range of geomorphically-significant flows that demonstrates “minimal potential” for erosion or impacts to beneficial uses.

Requirements for Compliance: Proposed Final Criteria

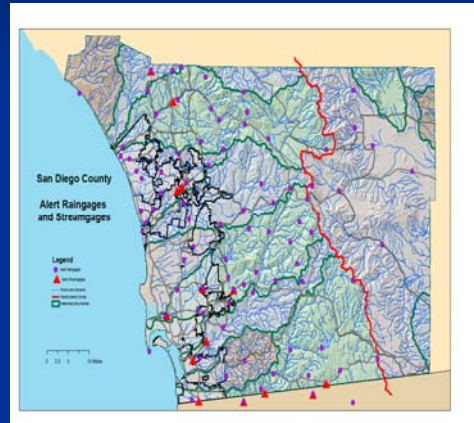
- Applicable to all Priority Development Projects
- Post-project flow and duration matching to pre-project $0.1Q_2$ to Q_{10}
- Lower flow threshold nomograph for a range of channel conditions (under development)
- Minimum flow rate as an alternate lower flow threshold (under development)

Requirements for Compliance: Continuous Simulation Modeling

- Acceptable Software
 - Free for download
 - HSPF
 - HEC-HMS
 - Gotta pay: SDHM (with some caveats)
- Sizing Tool (under development):
 - Appropriate for small, non-complex projects
 - For sizing of facilities without applicant needing to set up continuous simulation model (tool has model incorporated)

Rainfall Data

- Available for download on Project Clean Water webpage:
http://www.projectcleanwater.org/html/wg_susmp.html
- See Rainfall Station Selection Criteria Memo:
http://www.projectcleanwater.org/pdf/susmp/hydromod_rainfall_station_selection_criteria_1-22-09.pdf
- Use partial duration statistical analysis (peak annual series doesn't perform well in semi-arid climate)



Conclusion

- Start considering hydromodification management in the earliest planning stages of development, not after lot lines drawn
- You will not get an exemption because continuous simulation modeling is difficult or producing an HM plan is expensive
- Check Project Clean Water website for updates:
www.projectcleanwater.org

Thank You and Good Luck!