VENTURA COUNTY DRAFT HYDROMODIFICATION CONTROL PLAN (HCP) COMMENTS AND RESPONSE APPROACH

Craig Beam (7-29-13)			
Comment #	**HCP Section**	**Comment**	**Response Approach**
1	Section 3.2	It is important that the effective date is clearly described and easily understood.	• The effective date is clearly described in Section 3.2 of the HCP and is consistent with language provided in Section 1.5 of in the Ventura County Technical Guidance Manual for Stormwater Quality Control (TGM). The HCP will be incorporated into the TGM to reduce any confusion on how the two effective dates are applied.

Heal the Bay (8-14-13)			
Comment #	**HCP Section**	**Comment**	**Response Approach**
2	Section 3.1, 3.3, Figure 3-1	The Hydromodification Control Applicability Map ("Applicability Map") located within the Plan illustrates areas in the county applicable to the Hydromodification Management Standard ("HMS"). We are concerned that the current Plan will not adequately mitigate hydromodification occurring in the county, given its limited applicability. It is apparent upon reviewing the Applicability Map that the majority of lands subject to HMS are located within the Calleguas Creek Watershed; we believe that the plan needs to include areas currently exempt (most of the Ventura River and Santa Clara River Watersheds) in order to properly mitigate hydromodification occurring in the county. We understand this goes beyond the specific requirements specified in section 3.1 of the Plan, however, we urge the County to expand these applicability thresholds in order to reduce hydromodification impacts.	• The current HCP will adequately mitigate for new development and redevelopment projects in the County. There is no need for hydromodification controls where a project discharges to receiving waters that are not susceptible to hydromodification impacts, as described in Section 3.3. As the mapping for applicability was based on the assessment of hydromodification susceptibility, the HMS do not need to apply to the areas that are mapped as exempt in order to properly control hydromodification in those receiving waters. • The exemption criteria listed in Section 3.1 are from the Ventura County MS4 Permit. The Permittees do not agree that it is necessary to expand the applicability thresholds in order to reduce hydromodification impacts, as the applicability mapping is based on protecting stream channels that are susceptible to hydromodification impacts.
3	Ch. 7	We are concerned that the monitoring guidelines outlined in the Plan will not accurately evaluate hydromodification control BMP effectiveness. Existing development is not subject to hydromodification controls in the Plan. Therefore, it will be extremely difficult to assess "new" hydromodification occurring in channels where existing development already discharge runoff. The Plan notes that Ventura County currently collects annual or every other year countywide aerial photographs, which can be used to compare past	• Monitoring effectiveness of hydromodification controls is a new area of study for which standard practices are evolving over time. Given that such monitoring is in its infancy, the monitoring plan provided is an appropriate first step without requiring the Permittees to conduct an expensive science experiment. To improve the methods for assessing hydromodification impacts the Permittees will work with regional and statewide efforts to develop guidance and consistency. • Due to the difficulty in assessing "new" hydromodification impacts, in-

Heal the Bay (8-14-13)			
Comment #	**HCP Section**	**Comment**	**Response Approach**
		impacts with future impacts. Although annual photographs allow visual comparison of stream channels, they do not distinguish seasonal variation in flows impacting natural erosion and sedimentation. This natural noise occurring in channels is difficult to quantify, making visual effectiveness monitoring difficult. Additionally, the Plan does not outline a threshold for which hydromodification is measured. These concerns create an accountability problem for projects subject to HMS, which can result in surface water impairments for receiving waters. We suggest a more robust effectiveness monitoring plan be examined and believe that third party consultation should be included to better assess hydromodification control BMP effectiveness.	stream photographic monitoring and physical channel surveys are suggested for larger projects that have potential for observable impacts. • The monitoring plan attempts to address the natural noise occurring in channels by including at least one reference channel per watershed and including at least one observation of channel form prior to project implementation. The idea is that if erosion occurs in both a reference and developed reach, then the erosion may be attributed to natural noise. If erosion occurs in the developed reach, but not the reference reach, then that could be attributable to hydromodification. • The issues of (1) setting thresholds for geomorphic effect that trigger management actions, and (2) identifying how a threshold can account for natural variability, goes beyond the scope of a single county hydromodification control plan. These issues are more appropriately addressed through a cooperative effort such as the Southern California Stormwater Monitoring Coalition (SMC) or some level of the SCCWRP Commission's Technical Advisory Group (CTAG) discussion.

NextGen Engineering (8-15-13)			
Comment #	**HCP Section**	**Comment**	**Response Approach**
4	General Comment	Hydromodification control is a technical term that could more understandably be called "channel stability control" or "channel erosion control". I suggest you use the more understandable terms for those developers, engineers, planners, and public servants who will have to use or meet this requirement for their projects. The project champion may hire an expert, but all involved should understand the basic scope of the regulation.	• The term "hydromodification" is commonly used across the state and is explained in Section 1. • Terminology in the Draft HCP was taken directly from the MS4 permit language. • These terms and concepts will become more familiar to developers, engineers, planners, and public servants when the standards come into effect and training on the HCP requirements has occurred (planning for November 2013).
5	General Comment	The specific niche that this Permit calls "Hydromodification Control" really fits within a spectrum of controlling storm flows from a site. The water quality BMPs from the Stormwater Permit, designed for Q2, do have an effect of reducing flows off site, and thereby reducing Hydromodification. At the other end of the spectrum, flows of the 10-year runoff event are included in County and City flood detention requirements, where the Q10 thru Q100 must be controlled such that flows do not increase after development for that full range of flood	• Comment noted. • The water quality design event is the 85th percentile event, not the 2-year return flow. • It is acceptable to combine LID, hydromodification control, and flood control into one facility, but each control standard must be met. Analysis demonstrating that LID facilities and/or flood control facilities are sized to provide provide hydromodification control would meet the Hydromodification Management Standard.

NextGen Engineering (8-15-13)			
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		frequencies. As a Practioner on a site design, I start with the water quality BMPs and then design the Q10-Q100 detention requirement. I do not think that there will be many additional Hydromodification requirements once I meet those two bookends of Water Quality and Detention, making this new Hydromodification test most likely redundant. I am open to others experience here, but I see limited benefit from doing this sophisticated analysis.	
6	General Comment	I suggest an early section in this report to guide the practioner and site developer to these other related runoff regulations and to recommend an integrated approach to site design.	• The HCP will be appended to the Technical Guidance Manual, which includes this type of guidance in Section 2 of the TGM. • Chapter 5 of the HCP addresses other related runoff regulations and an integrated approach to site design. See comment # 18.
7	General Comment	Also I suggest the County staff who routinely review flood detention requirements to consider how much this additional Hydromodification requirement will impact channel stability. Another source of information may be locations that already have implemented Hydromodification practices like San Diego County. If there is some level of confidence obtained about the detention requirements, then the HCP could easily be met by the combination of the Water Quality BMPs and the Flood Detention Requirements. There needs to be some consolidation of these runoff related requirements, there is too much overlap and unjustified costs associated with Hydromodification without considering how existing regulations already deal with most, if not all, of the Hydromodification concerns.	• County staff has considered how much the hydromodification control criteria will impact channel stability, as they have been integral in identifying susceptible channels for the susceptibility and applicability maps. • Similar to the San Diego County Hydromodification Control Plan, applicable projects in Ventura County are expected to meet LID, hydromodification control, and flood control requirements. • See Comment #5 above.
8	General Comment	The option of considering regional facilities to address Hydromodification controls is a wonderful route for watershed planners and should be considered by each of the Ventura County watershed councils. Individual projects can only account from small changes in watershed channel behavior, where stabilizing a channel may need more urgent and larger scale response.	• Comment noted.
9	General Comment	This is definitely a well-researched and professionally edited report that will meet the letter of the law. However it does not recognize or discuss the related runoff regulations, and does not appear to be edited for "understandability" to the likely users of developers, planners, and engineers. Is it intended only for geomorphologists? The report is very technically focused and I suggest some effort be made on the final draft to edit for the more general range of technical people who will be users of the manual. A worked thru example would	• Related stormwater management regulations are described in Sections 1.2 and 5.1.1 in the HCP and Section 2 in the TGM. See Comment #6 and #18. • The document was written to be clear and understandable by developers, planners, and engineers. Additional technical training planned for November will help stakeholders learn more about hydromodification control and its implementation. • A worked through example will be provided as part of technical training planned for November.

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		also enhance the understandability by the likely audience.	
10	Section 1.3	This seems to be written with an attitude. Why not "Hydromodification Control within Flood Control"? It appears the writer only thinks of flood control as the 100-year event. Flood control and flood detention requirements cover the bigger storm events from the 10-year to the 100-year. Floodplain analysis goes beyond to include the 100-year and the 500-year events. Certainly, Hydromodification is a subset of Flood Control, not a new competitor.	• No attitude was intended. The purpose of the HCP is to address the MS4 Permit requirements, which distinguish between hydromodification control and flood control. • The title of Section 1.3 will be changed to "Hydromodification Control and Flood Control". • Mention of the 100-year event will be replaced with a range between the 10-year and 100-year events.
11	Section 1.3	The reference to the claims that "In fact, geomorphic research has found that for most steam channels the most important range of flows from the perspective of affecting channel form are the relatively frequent… to end of paragraph. This is a misguided perturbation statement. In Arid zones in practice the Q5 to the Q10 are the channel forming events, what I understand as geomorphically-significant. To claim the 10% of Q2 as a channel forming event needs much better documentation than is shown, it is not believable for an arid or semi-arid zone hydrology.	• Reference to "fact" will be removed from this sentence. • It is important to note is that the rare (e.g., 5-year and 10-year) storm events consist of a range of flowrates, most of which are below the peak flowrate. Thus, the mention of rare "events" that are crucial to flood control will be replaced with rare "flowrates" to be more accurate. • The HCP does not claim the 10% Q2 to be a channel forming event. Instead it is the default low flow threshold, which represents the flow at which bed sediments begin to move in the channel. See Appendix E for further discussion on the low flow threshold.
12	Section 3.2	HCP Effective Date – put this up in front of the report. Details may stay in this section, but an exec summary or FAQ should include this.	• From an organizational perspective, the description of HCP Effective Date makes sense where it is. • A Fact Sheet or FAQ will be provided as part of the anticipated November training.
13	Section 3.3	Applicability maps – these are helpful in screening projects. The outflow of Simi Valley and Moorpark are into a channel that has a Q100 of 24,000 cfs, just under the threshold of 25,000 cfs. This threshold should be reviewed – maybe as the Negligible Risk option.	• Comment noted. • The Q100 25,000 cfs threshold is provided in the MS4 Permit. • An assessment of negligible risk for a particular channel reach can be done as a separate study from this HCP.
14	Section 3.4	The Negligible Risk – this could be analyzed by the Cities and the County to determine where there is negligible risk to screen projects.	• Comment noted. • Yes, or an evaluation of negligible risk could be done by a group of project proponents, with the approval of the permitting authority.
15	Section 4.1	Goodness-of-fit criteria. Why are we starting at 10% of Q2? Q2? Or Q5 would be reasonable for geomorphically- significant flows. See comments about Appendix E below.	• 10% of Q2 is considered a conservative low flow threshold that can be used as default. The report is necessarily conservative because it is general in nature, covering the entire County area. • An alternative low flow threshold can be justified by a critical low flow threshold analysis for a particular stream of interest per Section 6.1 of the HCP.

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16	Section 4.2.2	Method 2 - Regional Control. This gives a most reasonable approach to really protecting channels, rather that controlling projects one by one, and has a potential to reduce existing property development impacts on channel stabilization.	• Comment noted.
17	Chapter 5	How about Channel Stabilization BMPs?	• Channel stabilization BMPs (i.e., In-Stream BMPs) are described is Section 5.3.2.
18	Section 5.1.1	2nd paragraph – this is a wonderful paragraph acknowledging the impacts of the WQ BMPs. Now just add a reference to the flood detention requirements and this would cover the spectrum of what a designer will need to consider.	• Reference to flood detention requirements will be added in this section.
19	Section 6	This section is well written for geomorphologists and could only be improved by adding an example worked all the way through.	• An example will be provided as part of additional training anticipated for November.
20	Section 7	This section at least tries to deal with a practical approach to monitoring. Small property sized Hydromodification BMPs will inevitably run into maintenance funding issues. That is why Flood Control functions of the County government and regional projects have the better possibility of long-term maintenance.	• Comment noted.
21	Appendix E	There is a theme in this appendix of seeking the conservative thresholds. The assumption of water moving sediments is overly conservative by using sandy material. Page E-3 admits the channels in Ventura County have gravel and cobbles. At least this appendix should consider gravels and cobbles. This becomes a significant and problematic pattern in this report – of overly conservative assumptions about geomorphology-significant flows and requiring all who use this manual to mitigate more than they really need.	• The report is necessarily conservative because it is general in nature, covering the entire County area. • An alternative low flow threshold can be justified by a critical low flow threshold analysis for a particular stream of interest per Section 6.1 of the HCP.

Contech (8-15-13)			
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22	Appendix F: HCP-1, opening paragraph or General Notes	Please clarify in this section, or in General Note 1 that plastic crate type systems may not be used for detention purposes. These systems are extremely difficult to maintain as they typically include cross members and other supports that make the use of jetting equipment challenging and prevent entry and direct inspection. Crate type systems also rely on flexible impermeable liners when used in detention applications, which can be difficult to seal completely around pipe connections. These liners are also far less durable than concrete, metal, or HDPE detention systems.	• See edited Fact Sheet HCP-1
23	Appendix F: HCP-1, opening paragraph	Plastic chambers are also available for use in detention applications. While they have some of the same challenges regarding liner reliability and inspection and maintenance access, most designs have a minimum clear internal opening dimension of at least 30 inches. Please specify in this section whether the use of plastic chambers with clear internal opening dimensions of at least 30 inches is allowed. Preferably, these systems would be allowed where footprint and depth limitations require a high voids system with a shallow profile. Neither plastic chambers nor crate type systems would meet bottom slope requirements and would be challenged to meet the 36" minimum pipe diameter requirement.	• See edited Fact Sheet HCP-1
24	Appendix F: HCP-1, General Note 1	Tanks shall be designed as flow-through systems with manholes in line to promote sediment removal and facilitate maintenance. Exception: Tanks may be designed as back-up systems if preceded by water quality facilities since little sediment should reach the inlet/control structure and low head losses can be expected because of the proximity of the inlet/control structure to the tank. Please specify what degree of pretreatment is required by a water quality facility in this section. Is this intended to mean LID or treatment control BMPs allowed by the Ventura NPDES Permit? This is the preferred interpretation, but specificity is required so that underperforming facilities are not allowed. It is also likely that under some scenarios the hydromodification design storm will exceed the water quality design storm. In such cases the water quality facilities may be undersized compared to the detention facilities. Is it intended that the water quality facility will provide adequate treatment and that a portion of the hydromodification design volume can enter the	• See edited Fact Sheet HCP-1 • Yes, it is intended that a water quality facility could serve as pretreatment and volumes/flows beyond the SQDV or SQDF could flow untreated to the hydromodification control facility.

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		detention system untreated?	
25	Appendix F: HCP-1, General Notes	This section would benefit from a more complete description of the difference between a "flow-through" system vs. a "back-up" system.	• See edited Fact Sheet HCP-1
26	Appendix F: HCP-1, Table 1	Table 1: Underground Detention Design Criteria Ventilation pipes "Shall be installed in all four corners of vaults to allow for ventilation prior to entry for maintenance." Comment: Please clarify that where access openings are provided at a corner, no ventilation pipe is required.	• See edited Fact Sheet HCP-1
27	Appendix F: HCP-1, General Note 4	General Note 4. Use of galvanized materials should be avoided. Where other metals, such as aluminum, stainless steel, or plastics are available, they shall be used. If these materials are not available, asphalt coated galvanized materials may then be used. Comment: Please add reference to Aluminized Steel (AASHTO M274), aluminum (AASHTO M197), polymer coated steel (AASHTO M245), steel-reinforced polyethylene (ASTM F2562), or HDPE (AASHTO M294) pipe as acceptable materials.	• See edited Fact Sheet HCP-1
28	Appendix F: HCP-1, Pre treatment	Screening of water entering the detention system with a 5 mm or finer screen is important to protect orifices from trash and debris. Please add a requirement that pretreatment including trash and debris screening be provided for all systems. More robust pretreatment will also substantially decrease the maintenance burden on the detention system. Please add a provision for eliminating the bottom slope requirement for concrete detention systems when a pretreatment system is used that meets the following performance standard: **"Performance**. Storm water treatment system shall be capable of removing at least 80% of the long-term influent Total Suspended Solids (TSS) load as demonstrated in full-scale field-testing following the multi-state endorsed Technology Acceptance and Reciprocity Partnership (TARP) Tier II Protocol or Washington State's Technology Acceptance Protocol – Ecology (TAPE). To gain approval as a storm water treatment system, independent proof of 80% TSS removal	• See edited Fact Sheet HCP-1 • Instead of citing the Western Washington BMP performance standards, the revised Fact Sheet states that a biofiltration or filtration pretreatment device sized for the hydromodification design volume may be used to eliminate the required vault bottom slope.

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		performance must be submitted in the form of a verification letter from a TARP participating state or a General Use Level Designation for Basic Treatment by the Washington State Department of Ecology to be included with a letter from a professional engineer licensed in the state of Texas stating that the design of the proposed treatment system is similar to the design of the tested system." Please consider requiring this level of pretreatment for all detention systems.	