Vaikko Allen, CPSWQ, LEED-AP
Director of Stormwater Regulatory Management
Contech Engineered Solutions LLC
vallen@conteches.com
Phone: (310) 850-1736
www.ContechES.com

August 15, 2013

RE: Draft Ventura Hydromodification Plan Comments

Please accept the following comments on the draft Ventura County Hydromodification plan. Relevant page numbers and text is noted in black font and comments are immediately below in blue font:

P. 179
Opening paragraph

Comment: 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.

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.

P. 182
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.

Comment: 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 detention system untreated?

Vaikko Allen, CPSWQ, LEED-AP
Director of Stormwater Regulatory Management
Contech Engineered Solutions LLC
vallen@conteches.com
Phone: (310) 850-1736
www.ContechES.com

This section would benefit from a more complete description of the difference between a "flow-through" system vs. a "back-up" system.

Page 182
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.

Page 182
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.

Page 184
Pretreatment section

Comment: 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 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.