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SUBJECT: DRAFT TECHNICAL GUIDANCE MANUAL
COMMENTS CONCERNS and REQUESTED REVISIONS

Dear Arne,

Thank you for the opportunity to input on the DRAFT TGM. It is an informative document but needs additional flexibility in the design function. We hope you can see and encourage this by adjusting or allowing greater design discretion. The CONTROL MEASURE standards should have "suggested" targets but not mandated absolutes. The inclusion of absolutes may additionally render many sites unable to meet the goals of the permit.

We have gone through the version (generally dated May 5 or May 6) of the Standards and offer the following questions and suggestions:

- Page 1-8, Effective Date. Item 5, An Approved or Deemed complete application of a TENTATIVE MAP should be under the old permit and exempt from the 2010 TGM provision if the revisions to the map "substantially conform" to the original map design **no matter who suggests or initiates the change**... The owner/applicant should be provided the same rights as the permitting agency or other public agency.
- Page 2-10/2-11 The methods for determining the SQDV versus the Volume based Treatment Control(VBTC) methods and the introduction of the design storm volumes followed by the restriction of the design storm methods (I believe is only applicable to the VOLUME Based CONTROL methods) is confusing. I think you are saying any method is available for the SQVD but the VBTC can only be determined from a restricted set of options as the project site gets larger. Why? This may be important to the manual but needs clarification and reasoning to avoid confusion.
- Page 3-2: First paragraph after bulleted section: "Infiltration based BMPs should not be designed for sites mapped within Ventura County Soil Numbers 1 through 3"
 - What if a percolation test is performed and the infiltration rate is found to be greater than the required 0.5 in/hr (for a site within these Soils Numbers)? The Applicant should have the opportunity

to present additional percolation information especially if the soils do have a measured rate at or near 0.5 in/hr.

- Page 3-17: (Table 3-4) “Site Suitability Considerations” for infiltration trenches the Soil Number section lists Soil Numbers 1 through 3 as not suitable for infiltration. We should have an option stating “Unless a percolation test shows infiltration rate is greater than the required 0.5 in/hr”
- Page 6-2 Eliminate third paragraph of Maintenance Responsibility,
- Page 6-11 through Page 6-13 including Table 6-1
 - Remove mention of the access road requirements and simply state the basin shall demonstrate maintenance access appropriate to the size of the basin. Width and grade requirements are not needed in the standard.
 - Side slopes should be determined by the design professionals and agency, not a required standard.
 - Setbacks should also be determined by the design professionals and not set by the standards.
 - Vegetation. This should be by design not by the standard. The limitation of the willows and the riparian plants in our area of the world may be appropriate. Should be a site specific determination not a mandated exclusion.
- Page 6-21 and 6-22 INF-1 Infiltration Basin: Same comments as above (pgs 6-11 to 6-13). By design, not be required standard for setbacks and slope steepness.
- Page 6-22 INF-1 Infiltration Basin: Maintenance access section requires a 16' maintenance access road and driveway to be constructed. Access Roads should be based on size of basin (see above)
- Page 6-37 INF-3 Bioretention: Limitations section: Item No. 4 “Slope Stability” states that “infiltration BMPs must be sited at least 50' away from slopes steeper than 15%”. Should not be required as minimum, they should be as recommended by the soils engineer’s input.
- Page 6-38 INF-3 Bioretention: Table 6-6 “Bioretention Design Criteria” Why is maximum ponding depth 18”? How was this determined? Should ponding depth and fencing requirement be separate? The shallow limit of 18” will cause a much larger area to be needed and is not warranted. We believe the depth should not be limited except by the ability for a retention volume to soak into the ground within 72 hours of the rain event.
- Page 6-43 INF-3 Bioretention: Geometry section – Item No. 1, Why is there a maximum ponding depth of 18”, How was this determined? The

drawdown time of 12 hours should be changed to 72 hours. The goal is to have standards that work in VenCo and the infrequent nature of our rain events should trigger longer ponding times to allow the goals of the permit to be achieved. We need planting that can tolerate the ponding, not reductions of ways to provide the volumes of retention that are being required.

- Page 6-44 INF-3 Bioretention: Overflow section – Why is the overflow device set at 18" ponding depth? Why is the max ponding depth 18"? See comments above.
- Page 6-52 INF-4 Drywell: Limitation section: "infiltration BMPs must be sited at least 50' away from slopes steeper than 15%". 50' should not be mandated but be based on site consideration and recommendation of the Soils Engineer.
- Page 6-55 INF-4 Drywell: Setback section, Item No. 2 - "infiltration BMPs must be sited at least 50' away from slopes steeper than 15%". See above (should be per Soils Engineer).
- Page 6-60 INF-5 Permeable Pavement: Limitations Section - "infiltration BMPs must be sited at least 50' away from slopes steeper than 15%". See above (should be per Soils Engineer).
- Page 6-61 Table 6-11 Drawdown time should be 72 hours not 12. It may be the gravel in the structural upper 6" to 12" is the intent but if an installation is going to use a deep gravel blanket for retention volume there should not be a 12 hour drawdown; it should be 72 hours.
- Page 6-61 Table 6-11 Permeable Pavement Design Criteria . There are no products that provide a 40% surface open area that we found in our research on modular "porous type block", Grass Crete block was the largest surface area opening at 20% ...the target should be 15-20% not 40%.
- Page 6-63 INF-5 Permeable Pavement: Setback section, item No. 2 - "infiltration BMPs must be sited at least 50' away from slopes steeper than 15%". See above (should be per Soils Engineer).
- Page 6-69 INF-6 Proprietary Infiltration: Limitations section - "infiltration BMPs must be sited at least 50' away from slopes steeper than 15%". See above (should be per Soils Engineer).
- Page 6-71 INF-6 Proprietary Infiltration: Setbacks section, Item No. 2 - "infiltration BMPs must be sited at least 50' away from slopes steeper than 15%". See above (should be per Soils Engineer).

- Page 6-73 Cistern. The examples given do not describe the whole range of cistern options. A cistern can be a buried tank and can take surface runoff and put it into an underground tank, or open storage reservoir. The discussion on the standard speaks to only what I would describe as a “rain barrel” cistern. This language should be expanded. One of the systems that should be allowed in the new permit is an above ground storage reservoir filled by a series of rain events with the facility designed to beneficially reuse the water to a local irrigation system. There are limited criteria on the reuse requirements for the cistern idea. What if a system is proposed that stores a quantity of water for a period of time to use the water beneficially at a different time of the rain year? How would the storage requirement of the MS 4 permit be determined on this type of facility? I would say the reuse of the water occurs several months later than the storage when the reuse is more beneficial to the water year needs of our area. This type of facility needs specified sizing criteria to describe the quantity required to be stored in any one year, assuming there will be multiple events. I would suggest that a storage reservoir described might be required to provide the required storage volume for the design event three times in any one year before it can be bypassed.

- Page 6-86 VEG-1 Bioretention with Underdrain: Sizing Criteria section – Why a maximum ponding depth of 18”? What determined this maximum depth?
 - Page 6-96 VEG-2 Planter Box: Table 6-15 “Planter Box Design Criteria” – Why is there a maximum ponding depth of 12”? How was this maximum requirement obtained? Clarify if depth is to overflow, underdrain, or free surface pond. The depth should be limited by meeting the 72 hour draw down time and not a prescribed depth. The selection of this depth is arbitrary.

- Page 6-97 VEG-2 Planter Box – geometry and size section, Item 1 – same comment as above...The depth should only be set by the drawdown time.

- Page 6-107 VEG-3 Vegetated Swale: Table 6-16 “Vegetated Swale Filter Design Criteria” –
 - Maximum channel side slopes are set to 4:1 max (5:1 preferred) – Could be vertical if there wall or an asymmetrical section proposed. Should be determined by design not mandated. Targets should be suggested but not mandated. The goal should be contact time and within the geometry chosen.
 - Minimum residence time is shown as 7 minutes, but it is shown as 10 minutes on pages 6-110 and 6-112. Which one is correct?

- Add language to suggest the values in Table 6-16 are subject to site constraints and may be adjusted with the concurrence of reviewing agencies especially in redevelopment areas and on smaller (not Greenfield) projects
- Page 6-112 VEG-3 Vegetated Swale: Water Depth and Dry Weather Flow Drain Section, Item No. 1 - why is the depth of flow limited? Velocity will be better if depth is increased. Residence time of 7 minutes should be stated.
- Page 6-113 VEG-3 Vegetated Swale: Energy Dissipation Section, Item No. 3 – Limit velocity...Not depth.
- Page 6-117 VEG 3 Vegetated Swale: Vegetation section, Item No. 5 – Why is depth of flow limited? Velocity may be slower if depth is increased. The key is the residence time in the swale which is independent of the depth.
- Page 6-130 Figure 6-13 Extended Detention Basin – There is no need to limit side slope in standards.
- Page 6-133 Figure 6-16 Spillway – Why show side slopes as 3:1 if they could be 2:1? Leave to discretion of the designer.
- Page 6-134 VEG-5 Dry Extended Detention Basin: The Design Criteria section is referring to “sand filters” and not dry extended detention basin. Similarly Table 6-18 is labeled “Sand Filter Design Criteria”; it should be labeled “Extended Detention Basin Design Criteria”. Are the design criteria listed on this table correct?
- Page 6-135 VEG-5 Dry Extended Detention Basin: Sizing and Geometry Section Item No. 4 – maximum side slopes on interior and exterior slopes is set to 4:1 and 3:1 respectively, this should be a recommendation only “Unless stabilization has been approved by a licensed geotechnical engineer”
- Page 6-142 VEG-5 Dry Extended Detention Basin: Side Slope Section:
 - Item No. 1 statement regarding slopes requirements is a good statement that should be used everywhere “unless stabilization has been approved by a licensed civil engineer and the agency.”
 - Item No. 4 conflicts with items 2 and 3 of this same section.
- Page 6-143 VEG-5 Dry Extended Detention Basin: Maintenance Access Road Section – access road should be sized based on basin requirements. 16’ road may be excessive for smaller basins. See comments above (pages 6-13)

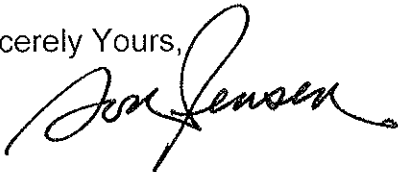
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- Page 6-151 VEG-6 Wet Detention Basin: Table 6-19 - maximum side slopes on interior and exterior slopes is set to 4:1 and 3:1, respectively. This should be a recommendation only "Unless stabilization has been approved by a licensed geotechnical engineer"
- Page 6-152 VEG-6 Wet Detention Basin: Sizing and Geometry Section, Items No. 7 and 9 – Why is there a depth limitation? I do not see any need to limit depth.
- Page 6-154 VEG-6 Wet Detention Basin: Buffer Zone Section – Why is this required? Should be a site specific determination not a mandate.
- Pages 6-163 through 6-172 the title at the top of these pages is shown as "VEG-8: Sand Filter", it should be "VEG-7: Constructed Wetland".
- Page 6-164 VEG-7 Constructed Wetland: Table 6-20 – access road requirement of 16' seems too excessive. Access road should be based on size of wetland.
- Page 6-170 VEG-7 Constructed Wetland: Maintenance Access section, item No. 3 – 16' wide access ramp seems too big. This should be based on the size of the wetland.
- Appendix G – all design criteria checklists should be revised to address the ponding limit question.
- For the Vegetated Swale Checklist – is the residence time 10 minutes or 7 minutes? This is shown as 7 minutes on Table 6-16, but as 10 minutes everywhere else.

We appreciate your consideration of these comments and hope that you can incorporate the suggested design flexibility, additional clarity, and additional definition to the Technical Guidance Manual.

Thank you for your efforts.

Sincerely Yours,



Donald M. Jensen, P.E.
CEO

