County of San Luis Obispo
Post-Construction Stormwater Guidebook
Preliminary Draft Comments Responses

Line Number	Section Heading	Comment Received	County Response
N/A	N/A	I suggest referencing "Resolution No. R3-2013-0032"	This change has been incorporated into the acronyms and abbreviations.
N/A	N/A	The PCRs use "stormwater control measure" and structural SCMs	The County recognizes there are various accepted abbreviations for this acronym. For consistency, the acronym has been changed to reflect Structural Stormwater Control Measure and structural SCMs.
184	N/A	Heading is needed, or move under "1. Introduction" heading	Introductory text has been moved underneath chapter heading.
184	N/A	Delete. Are the PCRs protecting beneficial uses? Next sentence talks about preserving beneficial uses.	The PCRs are structured and intended to protect and preserve the beneficial uses of waterways in accordance with the regional basin plan.
252	1.b. Purpose of this Guidebook	Should this be "possible"?	Text change has been incorporated.
255	1.b. Purpose of this Guidebook	Just a thought, the use of gray may be confusing for those who work on gray water systems per plumbing code, which essentially are "green" since they divert wastewater from treatment processes.	There is considerable overlap and variability in usage of the terms 'gray' and 'green' in development and water resources management. The County provides additional detail in this section to fully explain how the terms are used in the context of the Post-Construction Guidebook and LID implementation.
N/A	1.b. Purpose of this Guidebook	I like the intent of this visual, the text should be 0.10 minimum for legibility. Technically underground chambers are considered infiltration basins, so I disagree having them be separate. Infiltration basins are considered LID according to the PCRs, so rating underground chamber non-green is not a complete interpretation of the resolution, in my opinion. Plus, the housing laws are pushing developers to use underground chambers to provide high density housing developments, so it's a hard line to push. I think a more appropriate would be visual would be pipes or paved channels which do not allow any infiltration.	Text size is increased in the graphic. The County does not consider subsurface infiltration chambers as LID features as they do not prompt site design modification or include any surface features that would reduce post-construction stormwater runoff volume or improve runoff water quality, which are key objectives of LID. The Central Coast Water Board also considers underground chambers inconsistent with LID practices.
277-278	1.b. Purpose of this Guidebook	Is there a section that could referenced for this?	A reference has been added for the 2022 Construction Stormwater General Permit Order No 2022-0057-DWQ. There are several sections within the permit that address post-construction stormwater requirements.
N/A	1.b. Purpose of this Guidebook	I am a little confused about the insertion of the Construction General Permit and SWPPP requirements here. What about projects that do not exceed 1.0 AC? They still need Erosion and Sedimentation Control Plans, possibly add to "required submittals" under the Local Drainage and Flood Control Req't.	This Guidebook table intends to summarize the potentially applicable requirements for post-construction stormwater management. It is not intended to include additional requirements related to grading plans and erosion and sediment control plans.
284	1.b. Purpose of this Guidebook	I don't think this log should be in "Introduction" possibly behind the Table of Contents? Add who approved the update (i.e., Director of Public Works and name.)	Revisions and amendments log has been moved to section following Table of Contents.
308-310	2.a. Geographic Areas	There are projects within the city of SLO that have successfully reclassified the WMZs of the project based on site factors Are you saying we would have to go directly to the waterboard for this? Why wouldn't the County provide this? This adds an extra layer of bureaucracy. Should the design team then reach out to the waterboard?	In the cases referenced the City of SLO requested concurrence from the Central Coast Water Board to reclassify WMZs. WMZs are determined based upon specific watershed processes and landscape assessments. The County does not have authority to modify WMZs already designated by the Central Coast Water Board. The necessity of reclassifying a WMZ and the available supporting data would need to be discussed with both County and Water Board staff.
318-319	2.b. Previously vested projects	The PCRs are specific to "first discretionary approval of project design" being completed prior to March 6. Showing stormwater drainage is not sufficient in itself. The standard is that the project is designed. Updating to attain the PCRS would lead to significant financial burden for re-designing the project. If structures, public improvements, sanitary, electrical and water supply are all designed, then the project is considered to have met "project design." If the project only includes lot layouts, it is insufficient.	The text has been modified to include reference to first discretionary approval and clarify that the drainage, flood control and stormwater conveyance infrastructure must be included on the approved design. The utilities design sheet includes public improvements as well as all other utility designs.
328-329	2.b. Previously vested projects	Interesting, I need more on this. Can you add specific language from General permit and section reference?	There is no language within the 2022 Construction Stormwater General Permit Order providing provisions for previous vesting. It is not included or referenced as 'prior vesting' within the permit.
348-349	2.c. Project triggers and exemptions	Does this mean that if repair of an existing road to reestablish line and grade is part of the COAs for a development project, the road portion is now regulated?	In the scenario described, the work activity would be classified as 'Practices to maintain the original line and grade, hydraulic capacity, and overall footprint of the road or parking lot'. This activity is not regulated, this portion of the road would not be regulated. The Unregulated Project Criteria detailed in Table 3, Chapter 2, details unregulated repairs.
349-350	2.c. Project triggers and exemptions	This seems like a problem for the County. Developers are going to push back on repairing adjacent infrastructure. Also seems like the BMPs to treat and retain this water will be located within the county right of way. Would the county maintain them?	Repairs to the pavement surface and existing infrastructure are not regulated elements of a project. Repaired surfaces would not be counted towards the impervious surface thresholds used to determine applicable performance requirements.
351	2.c. Project triggers and exemptions	Have the County planners review this…SB 9 is different than the ADU State (& Local) Guidance. SB 9 specifically regulates lot splits that can be done in certain urban zones (as determined by census (by the State)) with ministerial approval. The units which are then built on the lots will still be subject to building permits. Maybe send link to planning webpage on this one? ADUs can be built without a lot split as a second unit if the parcel qualifies. Then it is simply through building permit and no planning processing is required. These are two different things. In the City of Atascadero, in relation to filling out Stormwater Control Plan Forms, if the primary residence, ADU and accessory structures come in for building permit all at the same time they are to be considered together in calculating net impervious area. If the ADU comes in after the primary residence is finaled then it is treated as a separate project. Is that how the county does it? Narrative on that would be helpful.	Language has been revised to clarify California government code requirements and remove reference to SB 9 lot splits.
357-358	2.c. Project triggers and exemptions	This is acceptable as long as there is only one being constructed. If more than one is being constructed, or it is a duplex for example then multifamily triggers apply.	The County evaluates California housing codes and also considers land use zoning when evaluating permit applications to determine whether single family or multi-family project requirements are applicable.
390-392	2.d. Site Determination	Same as before, what if the Public improvements are existing? Like repairing alligator cracking or reestablishing the gutter line in front of a project? Can those be viewed as repair since that is often how municipalities maintain their infrastructure? What about saw cutting and repaving to upsize a sewer main in front of a project? This may not be as big of an issue for the County of SLO, but will have ramifications within Cities located in the County since they often look to your guidelines for how they should approach this.	These examples align with the Unregulated Project Criteria detailed in Table 3 of Chapter 2. These portions of the project would be deemed unregulated and repaired/maintained areas would not count towards impervious surface thresholds.

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391	2.d. Site Determination	This may be okay. Considering it is not physically associated and connected via drainage to the rest of the project. What is an example of this scenario?	An example of this may include driveway widening or turn pocket construction on an access road not contiguous or hydrologically connected with the drainage for the rest of the project. This scenario is not common.
404-405	2.e. Impervious surfaces, surface types	Does a compacted base count as pervious or impervious surface? Do gravel parking lots and gravel roads count as pervious or impervious?	This comment is addressed in a later section responding to comments on this topic within Chapter 6.
410-412	2.e. Impervious surfaces, surface types	Hmm. So repair of alligator-cracked roads counts as impervious replacement. Is the county going to include this on their own road maintenance?	In the scenario described, the work activity would be classified as 'Practices to maintain the original line and grade, hydraulic capacity, and overall footprint of the road or parking lot'. This example aligns with the Unregulated Project Criteria detailed in Table 3 of Chapter 2.
441-442	2.e. Impervious surfaces, surface types	These are not designed to infiltrate unless they are constructed with appropriate gap width, bedding, and storage volume below. Otherwise, They are designed for aesthetics. Please remove unit pavers on sand, and crushed aggregate from this list. Please qualify the turf block with the above statement.	Unit pavers on sand have been reclassified as an impervious surface in the Guidebook and they are not included as an example of a pervious surface. Chapter 2 is an introduction to surface types and additional detail on surface types and imperviousness is included in Chapter 6.
442-443	2.e. Impervious surfaces, surface types	These plus PICP are the only surfaces, and some artificial turfs that are designed to infiltrate. The surfaces are stabilized. If sloped, the gravel storage areas below are baffled to create internal ponding. The surface material is maintained and designed in a manner to ensure long-term and permanent infiltration for the life of the SCM. (sufficient gaps, and starting infiltration rates. Bricks and turfblock are not designed to infiltrate unless they a properly specified with sufficient cross section and gap etc. like PICP. https://files.nc.gov/ncdeq/Energy%20Mineral%20and%20Land%20Resources/Stormwater/BMP%20Manual/C-5%20%20Permeable%20Pavement%2004-06-17.pdf	This statement is consistent with the general description of pervious pavements in the 2017 Santa Barbara County Stormwater Technical Guide. Chapter 2 is an introduction to surface types and additional detail on surface types is included in Chapter 6.
443	2.e. Impervious surfaces, surface types	This is an impervious surface, not designed to infiltrate. Please remove from this section.	The text has been updated to reflect open graded gravel, not compacted gravel.
N/A	2.f. Performance Requirements Summarized	Great flow chart! SFR gets treated the same as multi-family if more than one house is built (e.g. part of common plan).	The flow chart updated to reference 'one single family residence' where it is applicable in this example.
N/A	2.f. Performance Requirements Summarized	"one single family home" the PCRs refer to one single new house.	The flow chart has been updated to indicate the pathway for one single family residence or ADU. The County makes distinction during zoning between construction of a single family dwelling, a multi-family dwelling, and parcel map or tract map where multiple dwellings are being constructed. The post-construction requirements are applied appropriately in each scenario.
N/A	2.f. Performance Requirements Summarized	The PCRs refer to "one single new house". Change to "projects other than one single family home not part of common plan"	This table summarizes information and is consistent with the 2017 Santa Barbara Stormwater Technical Guide. Updates to the first row indicate the applicability of 'one single family dwelling.' The County evaluates parcel maps and tract maps individually and considers the totality of development in determining the applicable performance requirements.
N/A	2.f. Performance Requirements Summarized	If the project triggers PR#3, Section B.4.d.v. there is a specific requirement to maximize to extent feasible, the use of site design, RRMs, and SRAs before using Structural SCMs. This could be more than the percentages shown in this table. Maybe change the language to "Maximize to the extent feasible, with no less than 10%..."	"Maximize to the extent feasible" is variably interpreted depending upon the designer and project conditions. The intent of Table 6 is to set a base level of incorporating PR #1 to the project design, and indicates thresholds considered to be the minimum volume. There is additional guidance on this topic in sections of the Guidebook specific to PR#3 and PR#4 and the Opportunities and Constraints Checklist.
N/A	2.f. Performance Requirements Summarized	Are you requiring calculations for these?	The County requires the location where PR#1 is implemented, with a plan sheet and detail specified for how the project will achieve PR#1. Section 3.b of the Stormwater Control Plan Template includes a note for providing this information.
N/A	2.f. Performance Requirements Summarized	This seems like there could be issues with denser projects. For instance, geotechnical engineers do not like infiltration when there is a constructed building pad. If we are in tier II, then we aren't required to retain and we should be able to filter through a treatment planter without going through additional steps. In a downtown situation, there are lots of reasons not to retain, and the permit does not require this.	The LID and biofiltration preference language is derived directly from the PCRs resolution.
505	2.f. Performance Requirements Summarized	Please include reference to Section B.4.d.v such that designers are aware they must maximize site design and RRMs prior to using structural controls. If this results in no additional runoff, then no structural SCM is needed.	The County has included an updated Opportunities and Constraints Checklist for projects PR#3 and above to demonstrate that site design measures are appropriately implemented.
N/A	2.f. Performance Requirements Summarized	The proposed Building #1 should be included in the replaced impervious surface.	Graphics have been updated to reflect that Building #1 is not being replaced or modified in this example. Only a portion of the existing building is being demolished and restored to landscaped area.
610-612	2.f. Performance Requirements Summarized	Please clarify the language; seems to be confusing if this example is required to meet PR#1 and PR#2 or simply PR#1.	Text has been updated to clarify Performance Requirement applicability.
Not provided	4.a. Opportunities and Constraints Analysis	Does this mean only Groups A and B are allowed to infiltrate?	No. The intent is to encourage placement of LID and SCMs in areas of the project site where soils have greater capacity to infiltrate. The text has been modified to remove references to specific soil types.
Not provided	4.a. Opportunities and Constraints Analysis	How is this going to be determined?	Groundwater elevations are to be based on available historic data from the site and whether groundwater is encountered in site soil borings.
Not provided	4.a. Opportunities and Constraints Analysis	What happens when the whole site is D?	The specific reference to hydrologic soil groups has been removed. The intent is to encourage placement of LID and SCMs in areas of the project site where soils have greater capacity to infiltrate.
715	4.b. Soil Classification	Based upon what, soil type? From borings or maps?	Identification of hydrologic soil groups is based on either borings or maps depending on data availablility. Identification based upon site borings is preferred.
720	4.b. Soil Classification	infiltration may not be appropriate if applicable and test method may not be appropriate based upon soil type.	The Post Construction Guidebook stipulates that it is ultimately at the discretion of the project geotechnical professional to select and apply testing methods that are most suitable to address design suitability concerns based on site-specific factors.

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726	4.b. Soil Classification	Sidewall is important in some systems. This will be overly conservative on some well designed systems.	Sidewall considerations are addressed in later comments in Chapter 4 and Chapter 5.
729	4.b. Soil Classification	While yes, there is variation, the majority of our county is D. We all know this. It would be nice to have guidance on what the County and waterboard would like to see when infiltration is low.	The Water Board's position is that the soil classification alone does not change the design intent. Projects may pursue technical infeasibility to modify requirements.
731	4.b. Soil Classification	This will be overly conservative on some well designed systems. Why is this the only (mandated) method?	If the sidewall is a significant component of the SCM design then that can be applied through the calculations. Table 9 allows for percolation testing results for drywell design.
736	4.b. Soil Classification	Recommended? So optional?	Correct. The County will not mandate wet season testing.
736	4.b. Soil Classification	What does this mean? How is it defined? This is generally not practical. Are projects going to be held a year to provide testing during the winter and what part of the winter?	Wet season evaluation is recommended but not required. The County will not require delays in project design in order to conduct wet season testing.
739	4.b. Soil Classification	What is this standard? Who will determine?	The project geotechnical professional should use their best engineering judgement.
739	4.b. Soil Classification	Geotechnical representative is not the designer inmost cases. Therefore not only not possible, but not appropriate.. While the geotechnical engineer provides bearing capacity, they do not review the structural engineers calculations and determine if they are suitable.	Text has been updated to remove reference to design suitability.
740	4.b. Soil Classification	No amount of testing will assure anything. Again a conflict between testing and design.	Text has been modified to remove reference to design and reflect long term performance.
742	4.b. Soil Classification	Who determines?	Testing recommendations for project phases are described in the following section of the Guidebook.
744-749	4.b. Soil Classification	Why? Why can't you use the lateral progression of water into the soil? If it works for the dirtiest water we generate (septic) why wouldn't this work for stormwater?	Designers can account for lateral infiltration through the stormwater calculations if warranted by a specific SCM Type. Leach trenches have specific geometry that promotes lateral progression that is not utilized in several SCM types.
759	4.b. Soil Classification	This will likely remove all pretesting and move all testing to after the design is complete. If not, there will almost certainly be multiple rounds of testing. This seems contrary to the desire for well designed sites.	Pre-testing is not required for low-risk SCMs like bioretention. Large underground systems may require multiple rounds of testing if initial tests are not conducted at the elevation of installation.
761	4.b. Soil Classification	SI this suggesting not testing during design and post construction testing? How will this site be assessed to geta permit? This does not seem practical.	This statement is to note that additional testing may become necessary, but is not necessarily required.
761-762	4.b. Soil Classification	This will push development to combine BMPs rather than distribute them around the site.	Text has been revised to reduce the required number of borings and to exclude some types of SCMs.
764	4.b. Soil Classification	Can there be some flexibility for project sites with uniform soils conditions and a large number of SCMs?	Infiltration testing is not required for bioretention or biofiltration SCMs which are generally the most numerous and distributed SCMs on a site.
764-765	4.b. Soil Classification	Why don't bioretention areas have the same requirements?	There are approved, standardized infiltration rates for these features based on HSG soil types provided in Table 9. If using these rates, separate infiltration testing is not required.
770	4.b. Soil Classification	What is the tolerance?	Testing should be performed in the footprint of the proposed SCM.
773	4.b. Soil Classification	So two sets of tests?	Text has been revised to clarify which elevation is being targeted for infiltration testing.
773-774	4.b. Soil Classification	Suggest to allow some flexibility for projects with uniform soils conditions and multiple SCMs. It is common for SCMs locations to be adjusted as the design is refined from conceptual level to construction documents.	Infiltration testing is not required for bioretention or biofiltration SCMs which are generally the most numerous and distributed SCMs on a site.
779	4.b. Soil Classification	So three sets of tests? IF ring infiltration testing, after excavating to '??, do the tests even apply any more. How much disturbance to the site will be required?	The requirement for testing if a confining layer is found has been removed.
N/A	4.b. Soil Classification	Can the county reference the approach endorsed by the Central Coast Water Board? The San Diego County Factor of Safety methods (Section VII.4.3) allow a minimum of 2, and a maximum of 9, based on site conditions and other factors. Underground chambers may require FS higher than 3. Here is a link to the document: https://www.sandiegocounty.gov/content/dam/sdc/dpw/WATERSHED_PROTECTION_PROGRAM/watershedpdf/Dev_Sup/BMPDM_AppD_Sep2020.pdf "For all high concerns, assign a factor value of 3, for medium concerns, assign a factor value of 2, and for low concerns assign a factor value of 1. Multiply each of the factors by the corresponding weight to get a product. Sum the products within each factor category to obtain a safety factor for each. Multiply the two safety factors together to get the final combined safety factor. If the combined safety factor is less than 2, then 2 shall be used as the safety factor."	The Factors of Safety included in the Post-Construction guidebook are based on clear objective metrics specific to site soils analysis and testing. While rigorous, the San Diego approach would result in conflicting interpretations of the appropriate Factor of Safety. San Diego County also varies the required retention volume based on NRCS Soil Types (A,B,C,D), which is not allowable or applicable in the Central Coast PCRs.
789	4.b. Soil Classification	Factor of safety is related to required tests methods, but specifically stated here that rates diminish over tie which has nothing to do with the test method!	Factors of Safety are based on SCM types, for which infiltration rates may diminish over time. The factor of safety is not solely related to required test methods.
789	4.b. Soil Classification	Further, this is different than most any other civil engineering design where the factor of safety is related to design. Now the factor of safety is strictly related to a test. Why is this now different than the rest of the profession?	Factors of Safety are based on SCM types, for which infiltration rates may diminish over time. The factor of safety is not solely related to required test methods.
800	4.b. Soil Classification	Isn't this the purpose of the maintenance agreement? If there are strict requirements on maintenance why also the factors of safety?	The proposed factors of safety do not apply a factor of safety to bioretention facilities which have the most intensive maintenance requirements and robust design for infiltration capacity. There are highly variable maintenance specifications for different types of SCMs and the Factors of Safety ensure continued functionality under an array of maintenance scenarios.
810	4.c. Depth to Groundwater	Suggest reducing to 3 feet of separation as noted on Page 13 or Attachment 1 in Resolution R3-2013-0032. The larger vertical separation requirement from groundwater could be used as a basis for requesting technical infeasibility due to groundwater and increasing the overall number of project requesting compliance using Attachment E. On past projects, Water Board staff have indicated that 1 foot of vertical separation could be allowed for LID basins.	The County recognizes that groundwater elevations can be variable seasonally and due to long-term weather patterns. The larger vertical separation is to account for the limited site testing and evaluation that are required and used to inform the site design. The County has encountered multiple projects where seasonal groundwater elevation fluctuations have impacted basin capacity.

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809-811	4.c. Depth to Groundwater	This may be overly restrictive making even bioretention areas infeasible. Please detail why the County needs to be this restrictive. In many cases a minimum of 2- 4 feet is sufficient to ensure soil medias are not impacted by standing water, saturated and infiltration remains as designed. Additionally, a surface soil with 10-15 feet of soil above the groundwater table may very well infiltrate all of the 95th percentile storm under natural conditions. Thus, excessively restricting a site may lead to hydromodification and water quality impacts if the watershed processes are not matched. (e.g. volume infiltrated from design storm). Maybe the County can limit certain types of SCMs (underground or direct infiltration) or require additional review/analysis (e.g. groundwater mounding analysis) in cases where groundwater is within 10 feet of the bottom of an SCM.	The groundwater separation requirement for bioretention has been modified to 5'.The recommended separation is to account for variability of groundwater elevations due to seasonality or longer-term variability in weather and precipitation patterns. The County does not intend to require a separate groundwater mounding analysis ahead of approving site designs as this could result in lengthy delays during project development.
805	4.d. Geotechnical Constraints	The soil at the site of the site as a whole. If as a whole, how large of an area is being discussed??	The intention is to evaluate overall site suitability.
807	4.d. Geotechnical Constraints	For every project?	Text has been clarified to add 'as applicable' based on the project.
808	4.d. Geotechnical Constraints	For every project? This paragraph would indicate both a geologic hazards report and phase1 or phase 2will be required for every project.	Soil contamination has been removed from this section and is addressed in the following section.
813	4.d. Geotechnical Constraints	Is there discussion of locating infiltration features adequately away from structure footings? I think this tends to be more of an issue than geotechnical which are considered.	Yes, setbacks from structure footings are included in a later chapter in Table 15.
824	4.d. Geotechnical Constraints	Recommendations and requirements are not the same! Typically geotechnical reports do not include requirements. Those are determined by the design engineer.	Revised text to note that these are recommendations and not requirements.
825	4.d. Geotechnical Constraints	How far?	Setbacks are detailed in Table 15.
902	4.g. Special Considerations	Some of the constraints don't necessarily lead to technical infeasibility on their own. It may take multiple constraints to qualify for technical infeasibility. The infeasibility is primarily related to whether an SCM is constructible. SCMs in slow infiltration areas are still constructible, but infiltrate slower.	The County evaluates technical infeasibility findings on a case-by-case basis and uses best professional judgment in determining when a finding of technical infeasibility is warranted.
946	4.g. Special Considerations	This is not an option in the PCRs. It is not possible to retain more from one DMA to offset another unless the site includes a reduction in retention due to re-development.	The requirements for alternative compliance in a technical infeasibility scenario specify that the mitigation must be located in the same watershed and be as effective as implementing the PCRs onsite. In the alternative offered by the County, the mitigation must be not only in the same watershed, but located within the same project site and treating a DMA with similar characteristics. By expanding the treatment and retention capacity of SCMs on the project site this strategy meets the objectives of the PCRs.
950-952	4.g. Special Considerations	Suggest some flexibility. Addition of "unless approved by County"	Guidebook text has been modified.
Not provided	4.g. Special Considerations	Define. Is this just below grade? Covered?	Removed reference to subgrade. This table was sourced directly from Resolution R3-2013-0032.
Not provided	4.g. Special Considerations	What does this mean?	This table was sourced directly from Resolution R3-2013-0032 and was not revised by the County.
Not provided	4.g. Special Considerations	Does this mean no infiltration is allowed if bedrock wis within feet of grade?	This table does not disallow infiltration, it summarizes constraining conditions and is sourced directly from Resolution R3-2013-0032.
1031	4.k. Minimizing the Size of SCMs	Section B,4,d,v actually requires these be maximized before resorting to structural SCMs. Is it worth citing that section here and using the word "must"?	The County is not citing specific sections of the PCRs Resolution within the guidebook. The County has included an updated Opportunities and Constraints Checklist for projects PR#3 and above to demonstrate that site design measures are appropriately implemented.
1041	4.k. Minimizing the Size of SCMs	Raingardens could be part of the list.	There are many measures that could be included, and a variety of naming conventions for different types of features. The list is meant to provide examples and is not an exhaustive list.
1057	5. Structural Control Measures	A bioretention planter or swale is LID measure and a SCM, so not sure how you augment, remove this.	The County considers bioretention planters and vegetated swales to be structural SCMs. SCMs are designed features used to augment the site's overall LID design strategies which should reduce the amount of post-construction runoff volume.
1076	5.a. Drainage Management Area Delineation	RB3 website has guidance for how to "design" SRAs.	This guidance document has been summarized and incorporated directly into the Post-Construction Guidebook to preclude external reference to the Water Board website.
1102	5.a. Drainage Management Area Delineation	You could mention the waterboards "Decentralized Stormwater Management Guidance" although I see many of the metrics included in the table below.	This guidance document has been summarized and incorporated directly into the Post-Construction Guidebook to preclude external reference to the RB3 website.
N/A	5.b. Structural Control Measure Types	They could get infiltration credit if they build baffles into the drainrock. May be too confusing to convey that message here though.	The County has revised and updated the specifications associated with bioswale SCMs in the final draft Guidebook.
N/A	5.b. Structural Control Measure Types	The county should be identifying/tracking the types of infiltration features separately. It is beneficial to know which are chambers and which or basins for example. Each may have different maintenance requirements for example.	The County is identifying and tracking these features separately within the data management system.
N/A	5.b. Structural Control Measure Types	We often see detention underground in chambers. It is critical to identify those and verify they are not claiming retention volume above the lowest outlet invert.	The County verifies this element during the plan review process.
1165-1167	5.c. Prioritization of Low Impact Development	We believe this is above and beyond what is required in the PCRS. If runoff is directed toa vegetated surface, it should count towards PR1 compliance, whether or not it is also used for PR2 and PR3.	Text has been updated to clarify that runoff directed to vegetated areas meets the requirements of PR1.
1169	5.c. Prioritization of Low Impact Development	I am not sure self-treating areas really qualify as LID. In many cases we see for example parking medians sated as self treating. They are simply a vegetated median. This is typical of historic development methods, not LID. They could be considered runoff reduction if they do in fact meet the "no Runoff standard" with proper vegetation and are recessed to ensure no runoff.	Self-treating areas are well described and documented as accepted LID measures in the 2017 Santa Barbara County Stormwater Technical Guide. San Luis Obispo County is following the description and precedence established by the Stormwater Technical Guide.
N/A	5.c. Prioritization of Low Impact Development	If it is WMZ1 for example the design storm is 95th percentile storm. Is the 1.2 multiplier equivalent to meeting the 95th percentile storm?	The table has been updated to reflect that the design storm may be the 85th or 95th percentile event.
1227	5.d. Structural Control Measure Selection	Ponds for flood control can be much deeper, however the draw down time is quick. Why make this an issue?	Ponding depth has been updated to allow a maximum of 12" consistent with CASQA guidance.
1227-1228	5.d. Structural Control Measure Selection	What is the reason for limiting this to 6-inches? Deeper is advantageous for many water balance reasons. Climate change = higher peaks. It is easier to grade and ensure sufficient ponding vs. trying to fine grade to 6 inches. I think no less than 6 inches and no more than 12, consistent with other manuals would be sufficient.	Ponding depth has been updated to allow a maximum of 12" consistent with CASQA guidance.

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1245-1248	5.d. Structural Control Measure Selection	I do this calculation all the time. Guess what? The volume in the bio-retention is negligible compared to the volume required for flood control, however, the COST to construct the bio-retention, is not. If the bio-retention can be installed within a larger landscaped area, maybe it's not so expensive, but typically the bioretention is squeezed into parking lots or other areas that require structural curbs around to support the loads around them.	This design approach is offered as a suggestion for consideration.
N/A	5.d. Structural Control Measure Selection	These setbacks are great, and will help designers better locate their SCMs. However, many of these seem rather overly limiting, potentially precluding the use of SCMs altogether. For example, why would a BRC need 100 ft separation from a wastewater system? And does that include the pipes? Maybe there should be a percent slope limit to the "descending slopes" setback.	The table of setbacks has been updated and setbacks have been reduced and modified as practical. The wastewater system setback is intended to protect leach systems associated with onsite wastewater treatment systems, not sewer laterals or pipelines.
Not provided	5.d. Structural Control Measure Selection	Is this all SCM? No bioswales within 10 feet of buildings? Great, but not current design.	The proposed setbacks differ based upon SCM type. The County acknowledges that these setbacks may differ from current design practices. These standards are set forth in response to constructability conflicts experienced by previously permitted projects.
Not provided	5.d. Structural Control Measure Selection	What is above average? What sources are used? How close to the sites?	This guidance has been clarified.
Not provided	5.d. Structural Control Measure Selection	What is a descending slope? 1%, 5%?	Descending slope thresholds have been defined as 10% or steeper.
1261	5.d. Structural Control Measure Selection	Suggest adding the word "minimum" prior to 10%	Text has been updated to reflect minimum 10%.
1300	5.e. Bioretention and Biofiltration	Suggest clarification of the types of wood mulch allowed. Many mulches float and clog storm drain inlets.	Clarified non-floatable wood mulch or pea gravel.
1329	5.e. Bioretention and Biofiltration	The way the description below reads sounds like a vegetated swale. Most folks interpret "bioswale" as a sloped bioretention area or biofilter. A Bioswale for meeting water quality is more than a vegetated swale. Generally includes BSM with gravel and underdrain if necessary. Additionally, to qualify for WQ treatment, the bioswale needs more thought than the items listed in table 16. 10 feet sounds really short unless the DMA is very small. SB City for example, requires minimum of 100 ft and requires 10 minutes contact time.	The County has revised the specifications associated with vegetated swale and vegetated filter strop SCMs in the final draft Guidebook. The updated specifications are consistent with CASQA and Caltrans standards.
1338	5.e. Bioretention and Biofiltration	Is no minimum meaning it can be 1:1 or greater than 4:1, something like 10:1?	Correct. Slopes between 4:1 and 10:1 would be accepted.
1343-1345	5.f. Proprietary units and specialized materials	Due to the differing maintenance requirements for proprietary stormwater management devices, should there be some discussion about the level or frequency of maintenance that would be acceptable to the County assuming that the not all of the devices will be privately maintained?	Maintenance of proprietary devices should follow manufacturer reccomendations. See Chapter 9 for additional information about devices accepted in the public right of way.
1382	5.f. Proprietary units and specialized materials	The applicant must also show they have maximized LID and site design measures prior to using these.	The County has included an updated Opportunities and Constraints Checklist for projects PR#3 and above to demonstrate that site design measures are appropriately implemented.
1400	5.g. Underground Infiltration Systems and Dry Wells	This is not appropriate. The geotechnical engineer is not the designer. The choice of testing may not longer be the geotechnical engineers base upon this document. How is it the geotechnical engineer's responsibility to make this statement? Further, their report is likely is used prior to design. How could this statement be made prior to design.	Clarified that this statement may be submitted as a certification letter once the planset has been developed.
1407	5.g. Underground Infiltration Systems and Dry Wells	Section B,4,d,v requires LID and site design be maximized prior to using SCMs. This could be greater than 30% of the site's volume.	The County is specifying 30% of the site's volume as a minimum, and acknowledges that more than 30% of the volume may be addressed via LID.
1407-1408	5.g. Underground Infiltration Systems and Dry Wells	Are there other options available if 30% of the post construction runoff can't be managed through at-grade LID strategies? For example, a high density residential infill project may not be able to meet this criteria.	The County would consider variances on a case-by-case basis.
1441	5.g. Underground Infiltration Systems and Dry Wells	Maybe clarify that these setbacks are only necessary if the influent to the chamber is not treated by a biofilter? Biofilter captures enough of pollutants such that minimal setback is needed. Eg. Just enough to prevent mounding.	The County is requiring pre-treatment on all underground infiltration systems via TAPE GULD certified devices or full compliance with PR#2 requirements using biofiltration. The 10' setback is applied to all underground systems regardless of pretreatment for pollutant removal due to inherent variability in groundwater elevations.
1444	5.g. Underground Infiltration Systems and Dry Wells	Suggest using "vertical separation" instead of "setback" for clarification. Please see previous comment regarding groundwater separation.	Updated text to reflect vertical separation.
1470	5.g. Underground Infiltration Systems and Dry Wells	For example biofilter? But not a Flogard or Vortech, right?	These systems are evaluated on a case-by-case basis for appropriate pre-treatment infrastructure. The County will also require that pre-treatment devices for underground infiltration systems meet TAPE GULD certification.
1472	5.g. Underground Infiltration Systems and Dry Wells	What kind of liner? How deep?	The type and depth of liner is at the discretion of the design engineer based upon site conditions.
1504	5.h. Pervious Pavement Systems	There are some recent studies that show clogging is much more rapid as the ratio increases. Suggesting a maximium. I think they fell in the range of 4:1 or 7:1. It may be worth placing a maximum such that the surface infiltration rates are not rapidly compromised by the materials leaving the impervious surface. Dr. Ryan Winston at Ohio State University has produced some of these studies.	Construction cost constraints typically exclude run on ranges beyond 4:1. The County has not observed an instance significantly in excess of 4:1 and does not intend to state a maximum.
1507-1508	5.h. Pervious Pavement Systems	It is our opinion that this conflicts with the PCRs which allow for retention as a method of compliance with PR2.	In some instances additional treatment may be required to preserve the water quality.
1532	5.i. Sedimentation of Infiltration and Filtration Systems	I agree completely. However, this document says the factor of safety is based upon a test method and not the design.	Factors of Safety are based on SCM types, for which infiltration rates may diminish over time. The factor of safety is not solely related to required test methods.
N/A	6.a. Tributary DMA Calculations and Tabulations	The subtraction of "discharging to infiltration areas" sounds incorrect. This suggests they subtract the DMAs that drain to SCMs. They can only subtract SRA and STA. The SCM itself should also be included to ensure they account for direct rainfall at 100%.	Updated graphic and text to reflect self-treating and self-retaining areas.
1630	6.a. Tributary DMA Calculations and Tabulations	Do you need to clarify this is not the RTA?	Text has been updated to indicate that it should be calculated for each DMA.
1635-1636	6.a. Tributary DMA Calculations and Tabulations	Not necessarily. All impervious area that is directly connected to the SCM should be calculated as such. Otherwise, the composite method drastically reduces the runoff volume.	Text has been revised to remove reference to the composite method. The method is not applicable universally.

Line Number	Section Heading	Comment Received	County Response
1640	6.a. Tributary DMA Calculations and Tabulations	Clarify that the above is the simple method.	Text has been updated and revised for clarity.
1640	6.a. Tributary DMA Calculations and Tabulations	The rational method is only used for peak flows.	Text has been revised for clarity, reference to the rational method has been removed.
1654-1656	6.b. Impervious and Pervious Surfaces	Or you can sum up the runoff from each portion of the DMA. For example, all directly connected impervious area (DCIA) should be considered separately as a volume entering the SCM.	Text has been revised to indicate that DMAs can be delineated by surface types.
1662	6.b. Impervious and Pervious Surfaces	The below changes are based on interpretation of the definition of impervious. Specifically, that "Common impervious surfaces include, but are not limited to, roof tops, walkways, patios, driveways, parking lots or storage areas, concrete or asphalt paving, oiled, macadam or other surfaces which similarly impede the natural infiltration of stormwater." Driveways/parking lots are considered impervious. This is justified by the following precedents: " Gravel is considered impervious because it is typically compacted by design or by use. U.S. EPA has defined as impervious surfaces "…areas such as gravel roads…that will be compacted through design or use to reduce their impermeability."148 It further has defined impervious surfaces as "[a]ny surface that prevents or significantly impedes the infiltration of water into the underlying soil. This can include but is not limited to: roads, driveways, parking areas and other areas created using non porous material; buildings, rooftops, structures, artificial turf and compacted gravel or soil."149 The Ohio EPA includes gravel roads in its required calculations for impervious surfaces.150 Municipalities including Asheville and Durham, North Carolina, and Avon, Ohio, consider gravel driveways impervious for the purpose of calculating those cities' stormwater utility fees, because compaction results in increased runoff from those surfaces.151" 146 SFEI, Wu, J., Trowbridge, P., Yee, D., McKee, L., and Gilbreath, A., 2018. 147 Regional Monitoring Program Small Tributaries Loading Strategy: SFEI, McKee et al., 2006. 148 U.S. EPA, July 2016. Summary of State Post Construction Stormwater Standards, p.13. 149 Ibid., p.19 150 Ohio EPA, Oct. 2018. Post-Construction Storm Water Questions and Answers, p.1. "What surfaces should be considered impervious? (…) rooftops, paved or gravel roads…." and Ohio EPA, Oct. 2019. Guidance on Post-Construction Storm Water Controls for Solar Panel Arrays, p.1, "Paved or gravel roads…must also include post-construction storm water management." 151 https://www.ashevillenc.gov/department/public-works/stormwater-services-utility/stormwater-fees/ https://www.durhamnc.gov/864/Impervious-Surface. Durham specifically references compacted gravel. https://www.cityofavon.com/DocumentCenter/View/4298/Exhibit-A---Ordinance-No-105-17-Chapter-1056- FINAL?bidId=. "Impervious surfaces include…compacted gravel surface[s]" (p.2)	The County is incorporating adopted guidance specific to other areas of California and contained within Resolution R3-2013-0032 and supporting Attachments in determining which surfaces should apply towards impervious surface thresholds. The County acknowledges that while different jurisdictions may vary in their interpretation of surface types, it would be inappropriate for the County to adopt the standards set forth by a permit from a different region, another State, or academic research.
N/A	6.b. Impervious and Pervious Surfaces	Move to impervious; Use C = 0.89	The County is incorporating adopted guidance specific to other areas of California and contained within Resolution R3-2013-0032 and supporting Attachments in determining which surfaces should apply towards impervious surface thresholds.
N/A	6.b. Impervious and Pervious Surfaces	Only these two surfaces should be allowed. And an engineered cross section should be supplied, showing elements of the permeable pavement. These must also be separated from the composite "C" or the values will skew the "C" value.	The table indicates that these surface types must be designed with sufficient depth to treat the design storm. The PCRs do not require that each surface type be broken out for calculation of retention volume.
N/A	6.b. Impervious and Pervious Surfaces	Move to impervious; Use C = 0.89 unless used as landscaping or part of the permeable pavement system.	The County is incorporating adopted guidance specific to other areas of California and contained within Resolution R3-2013-0032 and supporting Attachments in determining which surfaces should apply towards impervious surface thresholds.
N/A	6.b. Impervious and Pervious Surfaces	Move to impervious; Use C = 0.89.	Bricks or solid pavers over sand base have been reclassified as an impervious surface in Table 19.
1668	6.c. Infiltration and Percolation Rates	Porchet method may be appropriate. However, may not be based upon geometry of the system. Specifying one specific method does not seem appropriate.	The designer has the ability to determine how the infiltration rate is applied for these calculations (please review prior comment responses.)
1668	6.c. Infiltration and Percolation Rates	648-653. there is once again a conflict between factor of safety based upon design and that based upon testing. See past comments	Factors of Safety are based on SCM types, for which infiltration rates may diminish over time. The factor of safety is not solely related to required test methods.
1697	6.d. SCM Sizing Calculations	Could the county elaborate more on the calculations for flow-based, and give examples.	The Santa Barbara Unit Calculator provides an example of this calculation method.
1740	6.g. Underground Infiltration Systems	Insert: Chamber? Is this section specifically speaking to chambers? Note that all bioswale, bioretention, french drains, etc are underground infiltration systems, they all send the water underground. Even pavers with a large rock layer in a parking lot that infiltrates would be an underground infiltration system. I am still not understanding why chamber systems are being treated differently then other infiltration features, does not make sense.	Underground infiltration systems and dry wells are specifically regulated under the EPA's Class V injection well program. Federal criteria specify which systems must be included in this program and do not include bioswales, bioretention features, pervious parking or french drains. The County is following guidance received from EPA Region 9 in setting standards for underground infiltration systems and dry wells.
1926-1928	7.d. Operation and Maintenance Agreement	Suggest adding link to Public Works Encroachment Permit Application	This Guidebook does not include any active hyperlinks embedded in the main document due to frequent updates and changes to State and County webpages. A hyperlink and description has been added in Appendix A.
1980	8.c. Materials Specifications and field slips	Please be more specific, delivery/load tickets, material certifications, testing results??	Text has been revised to include additional information.
2066-2067	10.b. Roles and Responsibilities for Operations and Maintenance on Private Property	Underground infiltrators should be inspected during the rainy season too. This will show if they become clogged and ineffective.	The County does not specify the means and methods and frequency of inspection for specific SCM types, only that the minimum inspection frequency is annually. The design engineer has discretion to add additional inspections if deemed necessary.