**Response to Comments on July 21, 2023, Tentative Order**

**Amendment of Municipal Regional Stormwater NPDES Permit (MRP) Provision C.3**

Comments on the Tentative Order were received from the following parties:

* State Senator Scott Wiener and State Assemblymembers Buffy Wicks and Timothy Grayson;
* The Alameda Countywide Clean Water Program (ACCWP);
* The Contra Costa Clean Water Program (CCCWP);
* The San Mateo Countywide Water Pollution Prevention Program (SMCWPPP);
* The Santa Clara Valley Urban Runoff Pollution Prevention Program (SCVURPPP);
* A joint letter from California YIMBY, Housing Action Coalition, Building Industry of Bay Area, and Bay Area Council (BAC); and
* Contech.

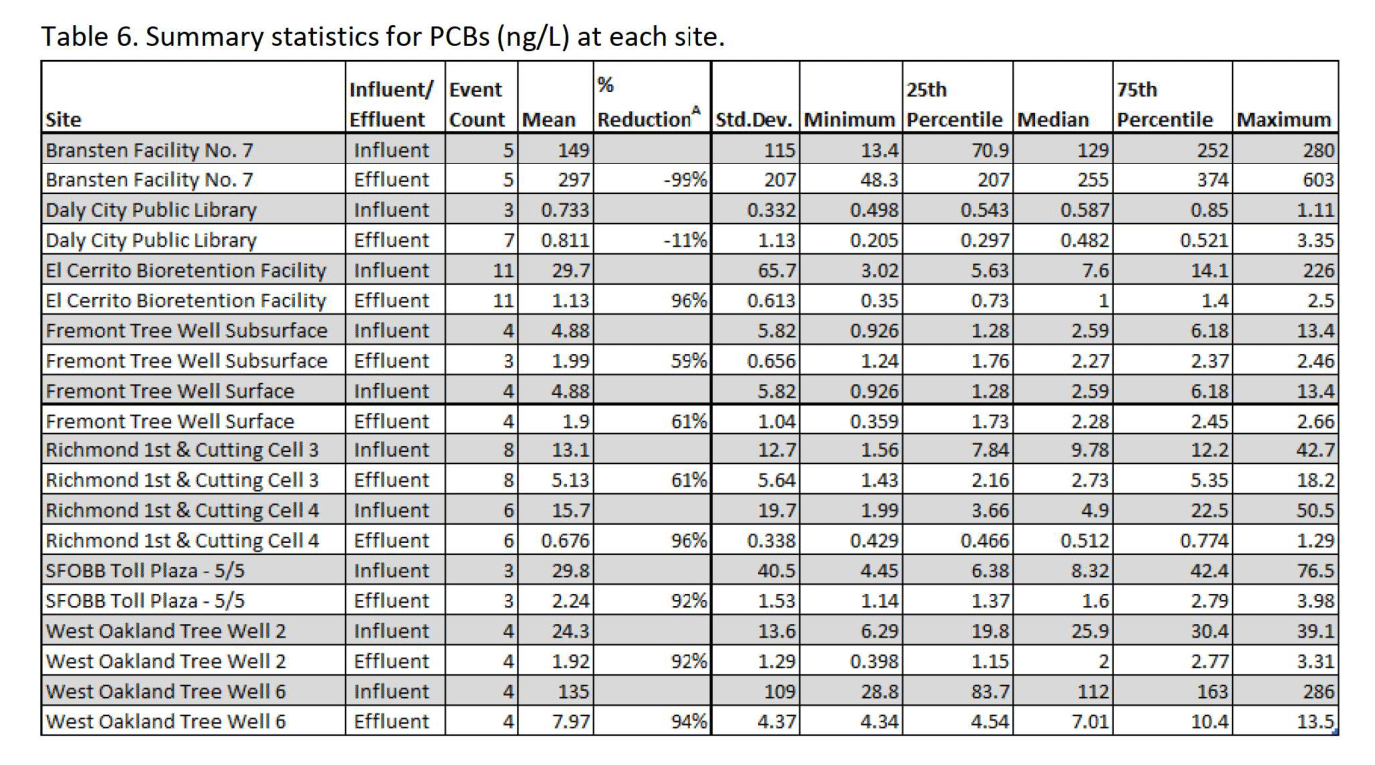
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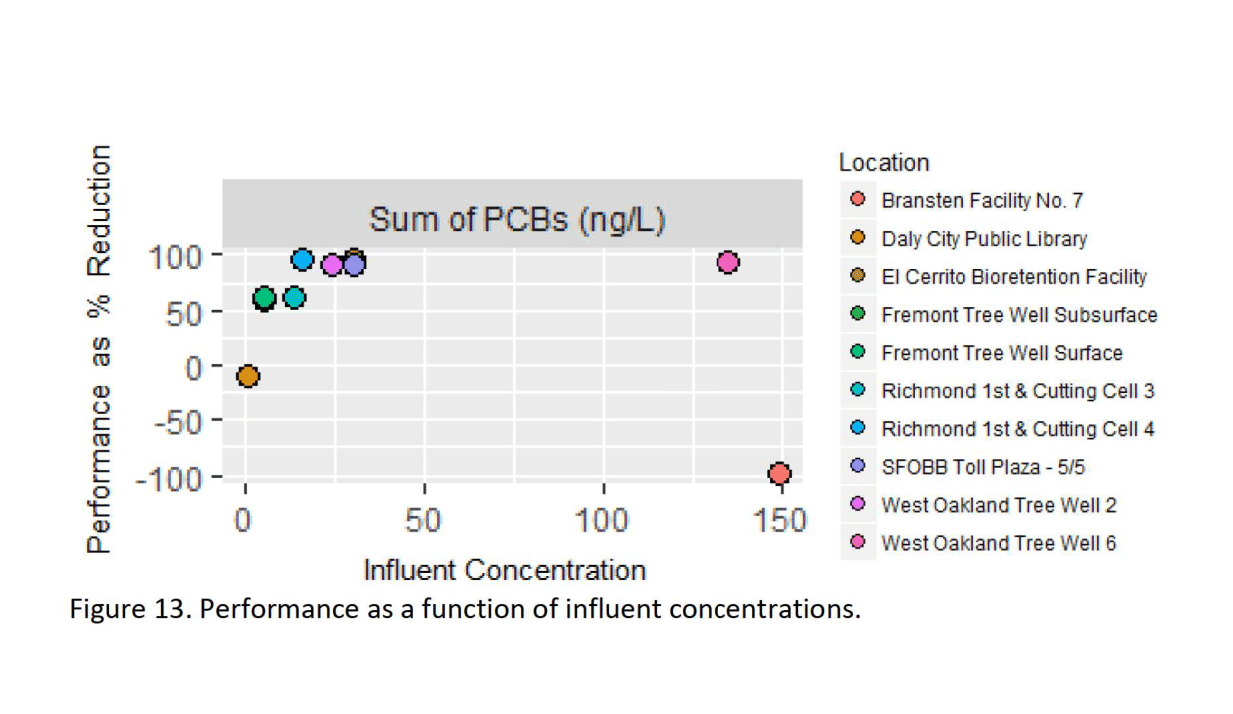
The Response to Comments table is organized into three columns:

* *Comment Identifier*: <Commenting party>\_<Provision>\_<Comment number>. Individual comments in each letter are identified by a Comment Identifier, comprised of the commenter’s name, the permit provision being commented on, and a number designating the particular individual comment.
* *Comment*: This has the text of the comment from the annotated comment letters. In some cases a name has been clarified for legibility or brevity (e.g., “SFBRWQCB” replaced with “Water Board,” or “Municipal Regional Stormwater NPDES Permit” shortened to “Permit”).
* *Response*: Water Board response to comment and proposed revision, where a revision is proposed.

| **Comment Identifier** | **Comment** | **Response** |
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| CCCWP\_general\_1 | The Contra Costa Clean Water Program (CCCWP) and Permittees are writing to comment on the Tentative Order amending the San Francisco Bay Region Municipal Regional Stormwater National Pollutant Discharge Elimination System (NPDES) Permit (Tentative Order Amendment). CCCWP appreciates the opportunity to provide comments on the Tentative Order Amendment. | Comment noted. |
| CCCWP\_general\_2 | CCCWP further appreciates the Water Board convening workgroups to address key unresolved comments received during the May 2022 MRP 3.0 Adoption Hearing and considering comments that resulted from the Alternative Treatment, Special Projects Category C, and Road Reconstruction in Disadvantaged Communities (DACs) Workgroups. In addition to participating in these workgroups, on 7 April 2023, CCCWP submitted a comment letter on the MRP 3.0 Administrative Draft of the proposed Tentative Order Amendment language. However, many comments and recommendations stemming from the workgroups and documented in the CCCWP April comment letter have yet to be considered or accommodated in the updated language. For this reason, many of the CCCWP comments remain similar to those previously submitted, with additional emphasis on implications of the proposed amended language on Permittees and receiving water quality. | Comment noted. All comments submitted regarding the administrative draft, and all comments made by workgroup members during workgroup meetings, were considered in the development of the Tentative Oder. Though all comments were considered, not all comments were accommodated or incorporated, for the many reasons articulated in responses to individual comments, below.  See below for responses to individual comments. |
| CCCWP\_general\_3 | CCCWP’s comments and recommendations on the Tentative Order Amendment language are summarized below, organized by permit provision. | Comment noted. |
| ACCWP\_general\_1 | Thank you for the opportunity to provide written comments on the Tentative Order amending MRP 3. The comments included in this letter and its attachment are provided on behalf of the 17 member agencies of the Alameda Countywide Clean Water Program (ACCWP).  ACCWP members actively engaged in the meetings and workgroups convened by the Water Board related to alternative treatment systems and Category C Special Projects, as well as the Road Reconstruction in Disadvantaged Communities workgroup.  Our comments are focused on the proposed amendment addressing alternative low impact development (LID) treatment systems. As you are aware, during the MRP adoption hearing the regulated community requested amendments to allow for alternative and innovative approaches to the LID approach prescribed in the MRP. ACCWP sees potential value in allowing alternative approaches especially with the inclusion of road reconstruction as a regulated project category. | Comment noted.  See responses to individual comments below. |
| SCVURPPP\_general\_1 | Thank you for the opportunity to submit comments on the Tentative Order of the proposed amendment to MRP 3.0 Provision C.3. These comments are submitted by the Santa Clara Valley Urban Runoff Pollution Prevention Program (SCVURPPP or Santa Clara Program) on behalf of its 15 local government member agencies. | Comment noted. |
| SMCWPPP\_general\_1 | Thank you for the opportunity to submit comments on the Tentative Order of the proposed amendment to MRP 3.0 Provision C.3. These comments are submitted by the San Mateo Countywide Water Pollution Prevention Program (SMCWPPP or Countywide Program) on behalf of its 22 local government member agencies. | Comment noted. |
| SCVURPPP\_general\_2 | The Amendment TO contains changes to the following C.3 subprovisions:  C.3.c.i.(2)(c)(iii) Alternative Treatment Systems; and  C.3.e.ii.(5) Special Projects Category C – Affordable Housing;  There were no specific changes proposed in the Amendment TO language related to the issue of road reconstruction in DACs.  Our comments on and requested revisions to each of the two subprovisions above, in addition to comments on the lack of changes related to road reconstruction in DACs, are presented below. | Comment noted.  See response to individual comments, below. |
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| ACCWP\_C.3.c.i.(2)(c)(iii)\_0 | We appreciate the commitment of you and your staff to convene and participate in these workgroups, but we are disappointed with the outcome of the alternative treatment systems workgroup. As noted in our comments on the April 2023 Administrative Draft, the proposed language for alternative treatment systems is overly narrow and places a significant burden on municipalities. This has not been remedied in the Tentative Order. In fact, the additional detail in the Tentative Order regarding the determination of technical infeasibility will further restrict the use of alternative treatment systems. These burdens include:  Permittees are required to resubmit HM Maps. This is a minor administrative burden, but unnecessary because Permittees have already submitted these maps.  Permittees are required to collectively develop and submit for Executive Officer approval, a Regional Guidance Document on the demonstration of technical infeasibility and demonstration of commensurate benefit no later than September 30, 2025. This requirement places a significant burden on all Permittees even though the alternative treatment systems will only benefit a limited number of Permittees.  Permittees are required to submit for each project proposing to use alternative treatment systems a demonstration of technical infeasibility and demonstration commensurate benefit for Executive Officer approval. This requirement puts the Permittee in the position of being the intermediary between the developers proposing alternative treatment systems and Water Board staff and the Executive Officer on the technical merits of the individual systems.  It is unlikely that the alternative treatment systems provision would be used by ACCWP Permittees given its limited applicability, the costs and burden of developing a regionwide report, and the need for project-by-project Executive Officer approval. | Comment noted.  See responses to individual comments below. |
| CCCWP\_C.3.c.i.(2)(c)(iii)\_1 | The Tentative Order Amendment adds Provision C.3.c.i.(2)(iii) to the Permit to allow for the implementation of Alternative Treatment Systems upon a demonstration of the technical infeasibility of Low Impact Development (LID) treatment systems and a demonstration of commensurate benefit, among other requirements. A demonstration of technical infeasibility and commensurate benefits must be submitted to the Water Board and approved by the Executive Officer (EO) for each Regulated Project where an Alternative Treatment System is proposed. Permittees may decide to collectively submit a Regional Guidance Document to facilitate compliance with the requirements for demonstrations of technical infeasibility and commensurate benefit. The EO must approve the Regional Guidance Document before it can be used. The new Provision language indicates that the EO may decide to remove the project-by-project EO approval requirement and allow Permittees to approve the technical infeasibility and commensurate benefit documentation on a project-by-project basis when the Regional Guidance Document is approved. However, it does not ensure this outcome, even with the EO approval of the Regional Guidance documentation. | It is correct that under the Tentative Order, the Executive Officer may allow Permittees to review project-specific technical infeasibility and commensurate benefit demonstrations and that would be based on an approved Regional Guidance Document. The document should include a reasonably detailed approach and guidance sufficient to ensure that its implementation will ensure compliance with the provision without project-specific Water Board oversight. The Tentative Order states, “[i]f the Executive Officer determines that the Regional Guidance Document is sufficiently detailed to enable Permittee review of Demonstrations of Technical Infeasibility and Commensurate Benefits for Regulated Projects on a consistent, objective, and rigorous basis, the Executive Officer may, in the approval of the Regional Guidance Document, allow Permittee approval of the Demonstration of Technical Infeasibility and of the Demonstration of Commensurate Benefit for Regulated Projects in lieu of the requirement for Executive Officer approval of both demonstrations, contingent on Permittees implementing the approved Regional Guidance Document for those Regulated Projects.”  The amendment creates a mechanism under which alternative treatment systems may be allowed. Specifically, the amendment would allow alternative treatment systems following Permittee submittal of an acceptable Regional Guidance Document and Executive Officer review and acceptance of that document. The Executive Officer may determine that the Regional Guidance Document is acceptable and that it is sufficiently detailed to enable the Permittees’ demonstrations of infeasibility and commensurate benefit on a consistent, objective, and rigorous basis such that the Permittees can review and approve the demonstrations in lieu of the Executive Officer. If the Regional Guidance Document is otherwise acceptable, but fails to meet the standard for Permittee approval of the demonstrations of infeasibility and commensurate benefit, then the Executive Officer may determine that alternative treatment systems can be allowed, but via Executive Officer review of individual projects. The Water Board’s goal is to work with Permittees to develop a Regional Guidance Document that is sufficient to allow Permittees to do the reviews. Should Permittees submit a Regional Guidance Document and implement this alternative treatment systems approach, the Water Board expects to review the approach and how it is working as part of the Permit’s next reissuance and adjust based on lessons learned.  The Provision C.3 Special Projects subprovision currently requires a similar demonstration of infeasibility for projects implementing alternative treatment systems. The Water Board considered including in the Tentative Order detailed guidance regarding the analyses sufficient to avoid the optional Regional Guidance Document submittal. That guidance would have been based on infeasibility analysis work that Permittees have done under the Special Projects subprovision. However, the Water Board determined that common guidance for that infeasibility determination is not currently available and there is a range of implementation approaches among Permittees. Additionally, the Water Board reviewed a cross-section of Permittees’ Special Projects infeasibility determinations completed during MRP 2, inspected constructed Special Projects, and, in some cases, during MRP 2 coordinated with Permittees and project proponents to revise Special Project designs ahead of construction, during the projects’ planning stage, when it appeared a Permittee’s infeasibility determination was incorrect and LID controls should have been incorporated into a project. For example, the Water Board reviewed a determination by one Permittee that LID controls were infeasible for a 23-acre redevelopment housing project that required a separate approval from the Water Board (a Clean Water Act Section 401 Water Quality Certification) and found that the Permittee’s determination that LID controls were infeasible was incorrect. The project proponent revised the now-built project during design to include LID controls for the entirety of the project, demonstrating they were feasible. In other cases, projects were built that should have included LID treatment controls, but instead were allowed to implement less effective alternative controls. Overall, there was a range of infeasibility review quality, ranging from robust reviews consistent with Permit language to reviews that appeared cursory, and in some cases included a brief conclusory paragraph stating that LID controls were infeasible for a particular project, but lacking supporting discussion or analysis.  The Tentative Order includes the Regional Guidance Document approach because there is currently no standard guidance or practice for demonstrating infeasibility and commensurate benefit. It will allow Permittees and the Water Board to coordinate to ensure that guidance is clear, consistent with Permit requirements to use LID as the implementation standard—but allow alternative treatment when LID is infeasible—and allows the review process to be efficiently integrated into Permittee project planning and review processes.  See also responses to CCCWP\_C.3.c.i.(2)(c)(iii)\_7 and CCCWP\_C.3.c.i.(2)(c)(iii)\_8. |
| CCCWP\_C.3.c.i.(2)(c)(iii)\_2  ACCWP\_C.3.c.i.(2)(c)(iii)\_1  ACCWP\_C.3.c.i.(2)(c)(iii)\_2 | The proposed amendment (C.3.c.i.(2)(c)(iii)(a)) limits the applicability of alternative treatment systems to areas currently exempt from the MRP’s Hydromodification Management (HM) requirements. This requirement limits the ability to use alternative treatment systems to the areas of Alameda and Contra Costa counties that surround the Bay, even though applicants proposing to use the systems must demonstrate that they are equivalent to LID. As proposed, significant areas of Alameda County will not be able to use alternative treatment systems.  Projects subject to the HM requirements (that is, projects that create more than one acre of impervious area in non-HM exempt areas) are already required to meet flow duration control thus alleviating concern that non-LID treatment would result in higher flows to urban creeks. Projects in non-HM exempt areas that are not subject to the HM requirements because they create less than one acre of impervious area, should be required to demonstrate commensurate flow control to LID through an equivalency analysis and this is specified in the proposed amendment.  Remove the limitation on the use of alternative treatment systems to HM-exempt areas. Alternative treatment systems, especially for road reconstruction projects, are needed throughout our members’ jurisdictions.  The proposed amendment (C.3.c.i.(2)(c)(iii)(a)) requires Permittees to resubmit the applicable portions of their HM maps. Permittees have developed, submitted, and now maintain their HM maps online. The proposed amendment does not change the HM applicability criteria, so there is no reason for the maps to be resubmitted. HM area limitation should be removed. However, if it remains, remove the requirement to resubmit the HM maps. | The Tentative Order would allow alternative treatment systems in two geographic areas identified in Provision C.3.c.i.(2)(c)(iii)(a). However, we disagree that the alternative treatment systems are “equivalent to LID.” Rather, under the proposed language, they would provide a similar, but likely somewhat lesser, water quality benefit justified by LID controls being infeasible in those instances. As explained in the Tentative Order’s Fact Sheet, “…there are differences between the alternative treatment systems and the Permit’s LID approach. Alternative treatment system media is typically contained within an impervious or largely impervious vault and is designed to have substantially higher flow rates of water through the media. As compared to bioretention cells, typically the most-used water quality control within the LID framework, alternative treatment systems have limited to negligible flow control[[1]](#footnote-2) benefits due to limited storage within the device and minimal time and space for water to be detained, which reduces infiltration and evapotranspiration. Because runoff is relatively quickly discharged through an alternative treatment system to the MS4 or receiving water, pollutant load losses are less than what is achieved with LID controls in which runoff and its associated pollutant load infiltrates into the surrounding soil, is retained within the control, or evapotranspires. An additional result is reduced effectiveness of hydromodification management. To provide comparable benefit, alternative treatment systems must be supplemented with systems that provide flow control benefits at least equivalent to those provided by LID systems.  Further, the comment indicates that the Permit’s flow control requirements are limited to the Permit’s hydromodification management section and the management of projects that create an acre or more of impervious surface (“Projects subject to the HM requirements are already required to meet flow duration control thus alleviating concern that non-LID treatment would result in higher flows to urban creeks.”). That is not correct, because the Permit’s requirements on hydromodification management include the benefits provided by low impact development treatment controls. Please see also response to combined comment:  SCVURPPP\_C.3.c.i.(2)(c)(iii)\_5  SMCWPPP\_C.3.c.i.(2)(c)(iii)\_5  and:  Contech\_C.3.c.i.(2)(c)(iii)\_2.  The commenter further states that alternative treatment systems should be allowed in geographic areas beyond the two areas specified in Provision C.3.c.i.(2)(c)(iii)(a), asserting that it is currently feasible to determine additional flow control benefits sufficient to achieve equivalence between LID treatment controls and alternative treatment systems. We disagree, as discussed in the Tentative Order Fact Sheet:  “LID systems provide hydromodification management and associated water quality benefits via measures that include retention (e.g., via infiltration, evapotranspiration, and retention in an LID control’s media) and detention. Determining a comparable benefit between LID systems and alternative treatment systems is complicated because alternative treatment systems typically have negligible retention and may have reduced detention. In addition, while the flow control benefits of LID systems have been documented, the range of those benefits—including from infiltration into less infiltrative soils and horizontal infiltration—is not yet well quantified from monitoring data and field studies. Studies have, however, found greater benefit than would be expected from textbook infiltration values. Currently, approaches to quantify the flow control benefits are primarily hydrologic models that are imprecise and can be biased by the use of potentially non-conservative or inaccurate assumptions.  “To address the potential consequences of the lack of quantification and that imprecision, the Permit limits the application of non-LID systems to two geographic areas in which LID systems have relatively less flow control benefit: to areas where there is likely to be relatively less difference in flow control between LID systems and alternative treatment systems. If, in the future, the flow control benefits of LID systems are sufficiently studied and quantified in monitoring and field studies, such that their hydrologic benefits can be more reliably translated into flow control requirements including retention and detention, the Water Board may consider incorporating the results of those studies into a future Permit. This would be done by specifying the required flow control benefits, including retention, that must be provided by flow control systems that are paired with media filters for alternative treatment systems. This could allow consideration of implementing those paired systems in a broader set of geographic areas. Work being done to advance the understanding of the flow control benefits of LID systems includes Provision C.8.d Low Impact Development Monitoring as well as studies elsewhere in the U.S.”  The Hydromodification (HM) Applicability Maps must be resubmitted because many of them have not been evaluated in over a decade, and the Water Board’s recent evaluation of one of the countywide stormwater program’s HM Applicability Maps found errors that would have resulted in misidentification of areas where projects may implement alternative treatment systems; for example, the map misidentified natural channels as hardened channels. These types of errors may also be present in other countywide stormwater programs’ maps. This requirement to resubmit the applicable portions of the HM Applicability Maps prompts the countywide stormwater programs to confirm the areas identified in C.3.c.i.(2)(c)(iii)(a) are appropriately identified on their HM Applicability Maps. This should require a limited effort to review and confirm those areas that have already been identified and included on current maps. |
| CCCWP\_C.3.c.i.(2)(c)(iii)\_3 | As currently outlined, the proposed requirements for Alternative Treatment Systems will prevent the planning, design, and implementation of such systems. As detailed in Comments #2-5, the proposed amendment language limits geographic applicability, inordinately expands the analysis of onsite and offsite infeasibility, and requires such a potentially long and expensive process for approval that it functionally prohibits use of using these tools to provide water quality benefits. CCCWP is concerned that these regulations could have the unintended consequence of limiting opportunities for innovative treatment options in Regulated Projects and Regional Projects. There is also the potential for the regulations to interfere with local planning and development processes that have been successful using these treatment controls. | Regarding the proposed requirement to resubmit HM Applicability Maps, and to limit implementation of Alternative Treatment Systems to those areas, see response to the combined comment:  CCCWP\_C.3.c.i.(2)(c)(iii)\_2  ACCWP\_C.3.c.i.(2)(c)(iii)\_1  ACCWP\_C.3.c.i.(2)(c)(iii)\_2  Regarding regional projects, see the response to CCCWP\_C.3.j.ii.(3)(c)\_1  We disagree that the proposed amendment language “inordinately expands the analysis of onsite and offsite infeasibility.” Regarding on-site feasibility, Permittees are currently completing on-site infeasibility analyses for C.3 “Special Projects,” and have been completing such analyses since December 2011 under MRP 1 Provision C.3.e.ii and MRP 2 Provision C.3.e.ii. As such, they have substantial experience completing on-site infeasibility analyses. The proposed change may increase the number of analyses being completed, but Permittees can apply their existing experience to the analyses that would be completed under the proposed subprovision. Regarding off-site infeasibility, a simple approach could be for a Permittee and Countywide stormwater program to maintain a list of alternative compliance projects (including, if one exists, an established pollutant trading program) that Permittees or project proponents could consult.  We agree that the scope and scale of the evaluation of offsite LID opportunities in the Tentative Order should be revised to remove the requirement to evaluate opportunities in all MRP Permittee counties. See the response to ACCWP\_C.3.c.i.(2)(c)(iii)\_6.  Each step of the process required for implementation of alternative treatment systems as outlined in the Tentative Order is justified in the Tentative Order’s Fact Sheet; it does not prohibit the use of these tools. Rather, it supports implementation of these tools while ensuring commensurate water quality outcomes.  We disagree that the changes proposed in the Tentative Order would limit opportunities for implementation of alternative treatment systems. Because these systems are not currently allowed, the Tentative Order would expand opportunities for implementation. As stated above in this response, the rationale for limiting the implementation of alternative treatment systems to certain locations and requiring certain demonstrations for their implementation is justified in the Tentative Order’s Fact Sheet, as well as in responses to other comments in this document.  We disagree that the new optional flexibility to include Alternative Treatment Systems will interfere with local planning and development processes that have been successfully using these treatment controls; Alternative Treatment Systems, as proposed, have not previously been in the Permit. They have previously been allowed for Special Projects, but pursuant to different criteria, for different projects in different locations. See response to comment CCCWP\_C.3.c.i.(2)(c)(iii)\_1 regarding that implementation.  **Proposed Revision:** Regarding evaluating opportunities of offsite LID, see the proposed revision for ACCWP\_C.3.c.i.(2)(c)(iii)\_6 |
| CCCWP\_C.3.c.i.(2)(c)(iii)\_4 | The proposed changes for Alternative Treatment Systems approval will also make it slower and more difficult to develop affordable and/or high-density projects in space and location-constrained areas, including several currently proposed high-density housing projects. This contradicts State goals to ease the housing crisis and prevent urban sprawl. | The proposed inclusion of Alternative Treatment Systems in Provision C.3.c.i.(2)(c)(iii) would provide additional flexibility for all projects in the geographic areas where alternative treatment would be allowed. That would include affordable and/or high-density projects. This is in addition to the substantial flexibility already provided by the MRP’s alternative compliance subprovision, which in Contra Costa County can include use of the County’s recently developed countywide pollutant trading program. By providing additional flexibility, the permit amendment will give more options to project proponents, making it easier to develop projects.  As such, the proposed Alternative Treatment Systems language helps to support State goals to ease the housing crisis and prevent urban sprawl. See also response to BAC\_C.3.e.ii.(5)\_3 |
| CCCWP\_C.3.c.i.(2)(c)(iii)\_5 | Amended language should facilitate use of Alternative Treatment Systems in all areas where water quality benefits cannot be reasonably achieved through LID measures. Examples include regional projects in highly constrained areas where few to no other opportunities exist, and regional or housing projects that do not fall within the qualifying areas under Countywide Hydromodification Applicability Maps.  Language should also be amended to facilitate use in highly constrained areas such as road reconstruction projects. Our members’ jurisdictions require these systems, particularly for road reconstruction projects with limited right-of-way, aimed at addressing failing road infrastructure.  See additional related Comments #2-5. | Regarding the proposed requirement to resubmit HM Applicability Maps, and to limit implementation of Alternative Treatment Systems to those areas, see response to combined comment:  CCCWP\_C.3.c.i.(2)(c)(iii)\_2  ACCWP\_C.3.c.i.(2)(c)(iii)\_1  ACCWP\_C.3.c.i.(2)(c)(iii)\_2  Regarding regional projects, see response to CCCWP\_C.3.j.ii.(3)(c)\_1.  Regarding the comment that the Tentative Order should be revised to allow alternative treatment systems on projects in all geographic areas, the Permit already allows them for affordable housing projects, and the Tentative Order would expand that by including housing projects that include only a nominal amount of affordability, pursuant to the revised criteria specified in Provision C.3.e.ii.(5). Regarding implementation of alternative treatment systems on market rate housing projects that do not include any affordability, see the response to Wiener\_C.3.e.ii.(5)\_2. |
| CCCWP\_C.3.c.i.(2)(c)(iii)\_6 | Sufficient rationale has not been provided in Workgroup discussions or the Fact Sheet by the Water Board for the assumption that Alternative Treatment Systems paired with adequately designed flow control systems will cause erosion or stream degradation. In addition, the amended language for Alternative Comment Letter: MRP 3.0 Tentative Order Amendment Treatment Systems already requires a demonstration of commensurate benefits including flow control, which addresses hydrologic equivalency concerns.  Eliminate the geographical restriction which limits Alternative Treatment Systems to a subset of HM-exempt areas. The amended permit language already requires a demonstration of commensurate benefits which include flow control; this should address hydrologic equivalency concerns. | Regarding the proposed requirement to resubmit HM Applicability Maps, and to limit implementation of Alternative Treatment Systems to those areas, see the response to combined comment:  CCCWP\_C.3.c.i.(2)(c)(iii)\_2  ACCWP\_C.3.c.i.(2)(c)(iii)\_1  ACCWP\_C.3.c.i.(2)(c)(iii)\_2.  Regarding the comment that Alternative Treatment Systems will be hydrologically equivalent (e.g., will not cause erosion and stream degradation and related water quality impacts) as required to be implemented under the Tentative Order, see the response to combined comment above and see also the response to combined comment:  SCVURPPP\_C.3.c.i.(2)(c)(iii)\_5  SMCWPPP\_C.3.c.i.(2)(c)(iii)\_5. |
| CCCWP\_C.3.c.i.(2)(c)(iii)\_7 | The Tentative Order specifies that EO approval may still be required on a project-by-project basis even after the EO approves a Regional Guidance Document. Requiring EO approval on a project-by-project basis will override local authority, and delay projects leading to potentially prohibitive cost and schedule implications for project applicants and Permittees. This process is a disincentive to producing a Regional Guidance document. Once the EO approves standardized guidance for equivalency demonstration, project-by-project approvals for technical infeasibility and commensurate benefits should be left to Permittees and documented in Annual Reports. As currently written, this stipulation places the Permittees as the intermediaries between developers proposing Alternative Treatment Systems and the technical evaluation of these systems by the Water Board’s staff and EO. The Water Board should commit to streamlining this process and eliminating Water Board staff and EO approval if a Regional Guidance Document is approved. This is not without precedent. The recently adopted 2021 MS4 Permit for Los Angeles and Ventura Counties places on the onus on Permittees to determine technical infeasibility when proposing to use an alternative compliance project (Order No. R4-2021-0105, Part VIII.F.4.b.ii).  Permittees should be allowed to continue to approve Technical Infeasibility and Commensurate Benefits documentation on a project-by-project basis without project proponents needing to seek Water Board approval. | See the responses to:  CCCWP\_C.3.c.i.(2)(c)(iii)\_1 and  CCCWP\_C.3.c.i.(2)(c)(iii)\_8.  The Tentative Order is written to facilitate efficient review of projects whose water quality controls are proposed to diverge from the Permit’s LID standard. The goal is for the Regional Guidance Document to be sufficiently detailed to allow Permittee, not Executive Officer, review of demonstrations of infeasibility and commensurate benefit, but even in the absence of that level of detail, the Regional Guidance Document is intended to facilitate project review by setting a clear and predictable review path for such projects. Until the Regional Guidance Document is sufficiently detailed to enable Permittee review of the demonstrations of infeasibility and commensurate benefit on a consistent, objective, and rigorous basis, Executive Officer review and approval is necessary. It does not “override local authority.” Rather, that review is within the Water Board’s bailiwick and complements local authority. It would be a step like the ones that project proponents take for projects with various kinds of potential environmental impacts. In this case, it would be to ensure equivalent water quality outcomes. This is similar to other instances where projects must obtain authorizations from utilities and other municipal, state and federal agencies, such as authorizations from: PG&E or water agencies for potential impacts to utility lines; from flood management agencies for discharges to creeks and flood control channels; the Water Board for discharges of fill to creeks, wetlands, and the Bay; the state Department of Fish and Wildlife for potential impacts to creeks, wetlands, the Bay, and state-listed special species; the Bay Conservation and Development Commission for discharges to the Bay; the U.S. Fish and Wildlife Service or National Marine Fisheries Service for impacts to federally-listed special status species; the U.S. Coast Guard for potential impacts to navigation; the U.S. Army Corps of Engineers for discharges to federal waters, including discharges that could affect navigation; and the State Historic Preservation Office for potential impacts to cultural resources.  **Proposed Revision:** See proposed revision for CCCWP\_C.3.c.i.(2)(c)(iii)\_1, above. |
| CCCWP\_C.3.c.i.(2)(c)(iii)\_8 | The Tentative Order Amendment indicates that a Regional Guidance Document for the Executive Officer’s approval may be collectively submitted to facilitate compliance with the requirements for demonstrations of technical infeasibility and commensurate benefit before allowing Alternative Treatment System usage. As the Tentative Order Amendment is currently written, there is very little incentive to collaborate on a Regional Guidance Document as system usage will be limited due to restrictions on eligible geographical areas, making benefits uncertain. While Permittees are not obligated to provide this regional guidance document, developers might press for its creation, even if it is not applicable to many Permittees. Additionally, the Tentative Order Amendment suggests that EO approval may still be required on a project-by-project basis, lessening the need and reducing the incentive for a Permittee-created Regional Guidance Document as the Water Board’s review and approval process still adequately maintains control.  Remove language suggesting creation of a collective Regional Guidance Document for Alternative Treatment System implementation. Instead, allow for creation of a Guidance Document by individual Permittees, per county or regionally. This offers the potential for exemption from project-by-project approval for jurisdictions with an approved Guidance Document, but does not require jurisdictions with little to no potential for Alternative Treatment Systems to participate. | We disagree that there is a disincentive to collaborate, as the Tentative Order would allow Alternative Treatment System flexibility for a substantial number of Permittees, including substantial areas currently undergoing development or redevelopment. The Tentative Order’s limitation of implementation of alternative treatment systems to certain geographical areas makes clear the flexibility it would allow. As such, its benefits are not uncertain. We agree that Permittees are not obligated to provide it. In its absence, there is insufficient information to allow determinations of infeasibility and commensurate benefit. The geographic limits mean that not all Permittees may choose to collaborate on a document; however, it would apply to projects in Bay-adjacent Permittees, including some of the Permit’s largest Permittees, and including San Jose, Milpitas, Fremont, Oakland, Berkeley, and Bay-adjacent municipalities in San Mateo County. More-inland Permittees could choose to participate, recognizing that the document may provide information for additional flexibility in a future permit reissuance. These decisions and flexibility are left to the Permittees. In general, this flexibility applies to a substantial number of Permittees and the burden of preparing a one-time report is necessary to meet Permit requirements to allow Alternative Treatment Systems.  The Tentative Order makes clear that the Regional Guidance Document is optional because it is not required to be submitted unless Permittees wish to implement Alternative Treatment Systems. Additionally, the Tentative Order does not require all Permittees to participate in the document’s preparation, nor does it specify how such a document’s preparation has to be funded. As with other documents, a portion of Permittees, or one Permittee, could take the lead in its preparation and funding. Having a single guidance document reduces costs and simplifies implementation—including by developers who can look to a single Bay Area approach, and will also facilitate Water Board review of the Regional Guidance Document and of individual project proposals.  The comment that developers might press for the Regional Guidance Document’s creation recognizes that there is interest in additional tools to meet clean water requirements. See also responses to:  CCCWP\_C.3.c.i.(2)(c)(iii)\_1 and CCCWP\_C.3.c.i.(2)(c)(iii)\_7. |
| CCCWP\_C.3.c.i.(2)(c)(iii)\_9 | In assessing on-site infeasibility, Permittees or Applicants need to prove the absence of both potential and existing onsite landscaping areas where LID won’t be applicable. Landscaping opportunities are broadly defined, and thereby are subjective, encompassing various areas such as roofs, terraces, and sidewalks.  In addition, the Tentative Order Amendment specifies that a project proposal must demonstrate that there are no opportunities to implement an equivalent amount of LID offsite in an extensive list of areas including opportunities identified in the GI Plans of other Permittees in all five MRP Counties. A comprehensive set of factors beyond technical limitations must be considered when demonstrating offsite infeasibility concerning lands not owned by the project proponent. Factors such as local hydrology, infrastructure limitations, or economic constraints render an offsite LID project as infeasible as technical barriers do. As currently written, this requirement significantly burdens all Permittees even though the alternative treatment systems will only benefit a limited number of Permittees.  Permittees across the Bay Area are actively working to develop regional alternative compliance systems. When these systems are developed, this language would force use of the regional compliance systems and functionally prohibit use of alternative treatment systems. If this is the intent of the language, it should be made transparent and clear.  In the absence of regional compliance systems that a project proponent could participate in, it is also unclear how a project proponent would conclusively determine in a timely and efficient manner that there were no opportunities for offsite compliance in the numerous jurisdictions subject to the MRP and demonstrate this check was completed. For example, does each Permittee have to exhaust the list before reaching the next larger jurisdictional boundary? Furthermore, it may carry unintended inequality of local community benefits by shifting the mitigation benefits elsewhere.  It is also infeasible to require Permittees and project proponents to consider alternative treatment at the “early stages of the project’s planning.” At those early stages, it should be expected that the project proponent is attempting to implement required LID BMPs rather than relying on alternative compliance.  The timing of an alternative treatment system’s incorporation into a project should not matter so long as it is properly designed and supported. A justifiable Alternative Treatment System should not be rejected simply because it was not considered at an early stage of the project entitlement process.  To enhance practicability, remove the inclusion of potential landscaping opportunities from the proposed language for onsite infeasibility analysis. Revise the language to require an evaluation of landscaping opportunities for LID applicability first, while allowing the consideration of technical feasibility for Alternate Treatment Systems if these areas are not suitable for LID.  Revise the proposed language to allow consideration of additional factors contributing to offsite infeasibility and eliminate the requirement to prove the absence of all offsite LID possibilities across the county or region. | Regarding the comment about assessments of technical infeasibility of implementing LID, see the responses to:  CCCWP\_C.3.c.i.(2)(c)(iii)\_1 and  ACCWP\_C.3.c.i.(2)(c)(iii)\_4.  The commenter is correct that the Tentative Order would require Permittees to assess the technical feasibility of incorporating LID into all potential and actual onsite landscaping opportunities for those projects seeking to use Alternative Treatment Systems.[[2]](#footnote-3) This is intended to clarify and facilitate project reviews, and to expand upon the understanding that LID controls are generally feasible when incorporated into a project—including constrained, high-density projects—starting with the project’s initial design, as opposed to trying to fit LID treatment controls into an otherwise already-designed project. We agree with the commenter that as long as that approach is taken, the exact timing of an alternative treatment system’s design is not crucial. This is consistent with the Permit’s existing and historic expectation for the implementation of LID, and it is consistent with LID’s successful implementation since its conception in the 1990s, including Bay Area Permittees’ work on *Start at the Source*, through LID’s national implementation today. As U.S. EPA notes, LID techniques are flexible and can be applied to nearly any site, including both infill/redevelopment sites and new development sites.[[3]](#footnote-4)  Landscaping opportunities are defined explicitly in Tentative Order footnote d. Landscaping opportunities may be “…broadly defined and encompass various areas such as roofs, terraces, and sidewalks,” but, broad as they are, they are also clear, and the MRP’s existing Provision C.3 requirement that they be considered for implementation of LID is consistent with regional, state, and national practice.  We agree that the Tentative Order’s expectation that Permittees consider off-site LID implementation options across the MRP Permittees jurisdictions (i.e., across all or portions of five counties) is overly broad, in part, because there is not currently an efficient mechanism to identify such options on a regionwide basis. Also, while the Water Board has indicated its desire to be flexible in supporting off-site alternative compliance options, going beyond a municipal and county scale has the potential to result in the unintended adverse consequence of concentrating impacts in one location while maximizing benefits in another location unreasonably distant from the first. As such, we have modified that subprovision to remove the expectation to review LID alternative compliance availability amongst all MRP Permittee jurisdictions. See response to comment:  ACCWP\_C.3.c.i.(2)(c)(iii)\_6.  The MRP’s expectation that implementation of offsite LID is considered before onsite non-LID systems are considered is consistent with all other NPDES municipal stormwater permits in California. Non-LID may be considered only if offsite LID is demonstrated to be technically infeasible, given the differences in water quality benefit identified in the Tentative Order’s Fact Sheet and elsewhere in this Response to Comments. For example, see the response to combined comment:  CCCWP\_C.3.c.i.(2)(c)(iii)\_2  ACCWP\_C.3.c.i.(2)(c)(iii)\_1  ACCWP\_C.3.c.i.(2)(c)(iii)\_2  Regarding the comment that an ambiguous “…comprehensive set of factors beyond technical limitations must be considered when demonstrating offsite infeasibility concerning lands not owned by the project proponent,” this requirement is commensurate with the potential water quality differences associated with implementation of non-LID in lieu of LID, and both recognizes and addresses the range of factors that can go into project design, including a project’s water quality controls. The comment does not identify factors that are challenging to consider.  The Tentative Order is clear that projects are required to consider implementation of offsite LID in the Permittee’s jurisdiction and in the county before they are able to consider implementation of non-LID onsite. That takes into account the potential disparities in water quality benefit provided by LID vs. by non-LID systems, which are identified in the Tentative Order’s Fact Sheet and in this Response to Comments. Additionally, a countywide alternative compliance program, when available, will include mechanisms to ensure effective design, construction, and operation and maintenance of controls, including funding for that work. As such, it is reasonable to expect projects to use such programs when they are available, and it allows substantial predictability for project proponents, although they are not limited to those programs; they may also consider the other alternative compliance options allowed under the Permit.  Regarding the comment that it is “…unclear how a project proponent would conclusively determine in a timely and efficient manner that there were no opportunities for offsite compliance in the numerous jurisdictions subject to the MRP and demonstrate this check was completed,” we agree that expecting Permittees to look across the five Permit counties is an overly broad expectation, and have modified the Tentative Order to remove this expectations, as noted above.  Regarding alternative LID-based compliance within a Permittee’s jurisdiction or county, see response to comment  CCCWP\_C.3.c.i.(2)(c)(iii)\_3.  Regarding the comment that implementation of offsite LID “…may carry unintended inequality of local community benefits by shifting the mitigation benefits elsewhere,” the MRP is clear that the total water quality benefit provided must be equivalent to or greater than that which would be provided by onsite LID implemented by the project. As discussed during the Permit’s reissuance, the limited implementation of the Permit’s off-site alternative compliance options has led the Water Board to be flexible regarding location. In general, we expect that Permittee goals, including a desire to retain water quality benefits within their jurisdictions, will limit geographic inequality of implementation. However, should there be a disparity, the Water Board will consider adjustments to the Permit during a future reissuance.  Regarding the comment that it is “…infeasible to require Permittees and project proponents to consider alternative treatment at the ‘early stages of the project’s planning”: At those early stages, we expect that the project proponent will focus on incorporating LID controls into its project. It is reasonable that they would subsequently consider alternative compliance, and the Tentative Order allows that. We note that in the Water Board’s review of Special Project on-site alternative treatment systems completed under MRP 2, the Water Board found that a common rationale reported by Permittee staff and discussed by project proponents in the field for why LID was not included was that a project was designed from the beginning to include non-LID, not because LID was technically or economically infeasible, but because the project proponent preferred to include non-LID. The result was that revising a project design to incorporate LID late in the planning and design process. For these reasons, the Tentative Order requires that the Demonstration of Technical Infeasibility include a description of how LID was considered by both the project proponent and by the Permittee from the early stages of the project’s planning and entitlement processes. To avoid confusion, we will add guidance to the Tentative Order Fact Sheet that the description should include: 1) when in the planning and entitlement process LID was considered, 2) the scope and results of that consideration, including all alternatives that were considered and why they were not implemented, and 3) the identification, conclusions, and recommendations of the Permittee’s responsible engineer and of the project proponent’s responsible engineer.  Regarding existing expectations for assessments of feasibility of incorporating LID, see the response to ACCWP\_C.3.c.i.(2)(c)(iii)\_4.  We disagree with the request to “revise the proposed language to allow consideration of additional factors contributing to offsite infeasibility.” The factors listed in the Tentative Order that are considered for implementation of offsite LID are justified in the Tentative Order’s Fact Sheet. However, it does not preclude Permittees from adding additional considerations with sufficient justification.  **Proposed Revision:** Add the following guidance for Provision C.3.c.i.(2)(c)(iii)c.2. to the Tentative Order Fact Sheet:  “Provision C.3.c.i.(2)(c)(iii).c.2 requires Permittees to show – in the Demonstration of Technical Infeasibility – how LID was considered by both the project proponent and by the Permittee from the early stages of the project's planning and entitlement processes and how that resulted in the project’s final design. For example, Permittees could submit the following information: 1) when in the planning and entitlement process LID was considered, 2) the scope and results of that consideration, including the alternatives that were considered and why they were not implemented, and 3) the identification, conclusions, and recommendations of the Permittee’s responsible engineer and of the project proponent’s responsible engineer.” |
| ACCWP\_C.3.c.i.(2)(c)(iii)\_3 | The proposed amendment (C.3.c.i.(2)(c)(iii)(a)) requires alternative treatment systems to have active General Use Level Designation (GULD) certification. We support the requirement that alternative treatment systems have GULD certification from the Washington State Department of Ecology’s Technology Assessment Protocol – Ecology (TAPE) Program.  Maintain the GULD certification for alternative treatment systems. | Comment noted. |
| ACCWP\_C.3.c.i.(2)(c)(iii)\_4 | The Tentative Order provides new details on the requirements to demonstrate technical infeasibility for onsite and offsite LID treatment including examples of “potentially acceptable” and “likely not acceptable” reasons for using alternative treatment systems that will further limit opportunities to use alternative treatment systems. | Comment noted.  Permittees already conduct similar – if not nearly identical – feasibility evaluations via their implementation of Special Projects. Additional details around feasibility analysis have been included in the Tentative Order, in part because of shortcomings identified in the Water Board’s reviews of Permittee analyses of infeasibility and Special Projects constructed during MRP 2, so that it is clear what kinds of information should be considered. The added details are consistent with and do not represent a significant deviation from the MRP’s current approach regarding implementation of alternative treatment systems for Special Projects. See also the response to CCCWP\_C.3.c.i.(2)(c)(iii)\_9.  We disagree that the added details will “further limit opportunities to use alternative treatment systems.” Rather, they should facilitate efficient review of such proposals because they will make clearer the expectations of the information that should be provided.  See also the response to CCCWP\_C.3.c.i.(2)(c)(iii)\_3. |
| ACCWP\_C.3.c.i.(2)(c)(iii)\_5 | For onsite infeasibility evaluations, Permittees/Applicants must demonstrate that there are “no potential or actual onsite landscaping opportunities in or on which LID will not be implemented.” Landscaping opportunities are defined to include: “roofs, terraces, patios, courtyards, plazas, quadrangles, athletics areas, outdoor pool areas, playgrounds, parks, bike-separation strips, and adjacent public sidewalks, roads, and rights of way (ROWs).”  Inclusion of “potential” landscaping opportunities is subjective and would open the design process to question as to what could have been a landscaping and therefore LID opportunity.  As written all landscaping opportunities must have LID before infeasibility would be considered acceptable. All landscape areas of a project may not be suitable for LID or LID may not be technically feasible.  The list of onsite landscaping opportunities includes areas that are off the project site.  Remove potential landscaping opportunities from the proposed language, revise the language to require that landscaping opportunities be evaluated for LID implementation, but do not preclude technical feasibility if these areas are not suitable for LID, and remove the offsite areas from the onsite infeasibility paragraph as these are addressed in the offsite infeasibility paragraph of the provision. Suggested amendments to the language are provided below.  Provision C.3.c.i.(2)(c)(iii)(c)(1) [paragraph 2]  For onsite technical infeasibility, a demonstration that the Regulated Project evaluated all onsite landscaping opportunitiesd for their potential for LID implementation and is implementing LID where suitable, feasible, and not in conflict with other municipal requirements. ~~will implement LID in or on all potential or actual onsite landscaping opportunities and that there are no potential or actual onsite landscaping opportunities~~~~d~~ ~~in or on which LID will not be implemented.~~  dOnsite Landscaping opportunities include, but are not limited to: roofs, terraces, patios, courtyards, plazas, quadrangles, athletics areas, outdoor pool areas, playgrounds, parks, bike-separation strips within the Regulated Project.~~, and adjacent public sidewalks, roads, and rights of way (ROWs).~~ | The language in the Tentative Order reflects existing expectations that clean water controls should be considered from the start of a project’s design process. For this and regarding evaluation of landscaping opportunities, and regarding demonstration of technical infeasibility of offsite LID, see response to CCCWP\_C.3.c.i.(2)(c)(iii)\_9  We disagree with the proposed edits. The language as written is clear and sufficiently flexible to accommodate the range of projects that may seek to use it, while setting forth the Permit’s goal of ensuring that project proponents consider those project areas where LID controls are typically implemented and explain why LID could not be implemented before shifting to a non-LID system. The language does not preclude justifications such as the one noted by the commenter, although it would be important to explain, for example, what the conflicting municipal requirement(s) was(were). Additionally, we note that some MRP Permittees are, appropriately, working with project proponents to incorporate treatment controls into adjacent municipal ROW, which is often reconstructed as part of a project. As such, it is reasonable to include this as part of the consideration for LID control implementation. |
| ACCWP\_C.3.c.i.(2)(c)(iii)\_6 | For offsite infeasibility evaluations: Permittees/Applicants must demonstrate that there are no LID opportunities adjacent to the project, nearby (joint treatment), within the county, or within in the Region.  With this expansive requirement, very few Permittees/Applicants would be able to demonstrate that there is no LID opportunity anywhere in the five counties (79 jurisdictions) covered by the MRP and it would require extensive research to make a such a demonstration.  If any permittee or county sets up an alternative compliance program or an in-lieu fee program, all development projects would be obligated to consider and if there are no other LID-based options, would be required to purchase credits in this program, should such credits be available. This would result in the local commensurate benefits derived from alternative treatment systems being shifted from the community where the development is occurring to other communities where the LID facilities will be constructed.  Demonstration of offsite infeasibility as applied to lands not owned by the project proponent needs to consider a broader range of factors than just technical infeasibility. Such projects are likely to involve detailed negotiated agreements with either the local agency or private landowner where the offsite LID project is proposed to be constructed. Factors including liability, long-term O&M, lifecycle replacement costs, land use restrictions, and other design regulations and requirements are just as likely to make an offsite project infeasible as technical infeasibility. Additionally, public agencies may be planning a retrofit project for a ROW to meet the C.3.j numeric retrofit requirements. Implementing a regulated off site LID project in the ROW would preclude a municipality from using it to meet the retrofit requirements.  Remove the requirement to demonstrate that there are no LID offsite opportunities anywhere in the county or Region. Modify the proposed language to allow consideration of other factors for offsite infeasibility. Suggested amendments to the language are provided below.  Provision C.3.c.i.(2)(c)(iii)(c)(1) [paragraph 3]  For offsite ~~technical~~ infeasibilitye,  demonstration that there are no opportunities to implement~~e~~f an equivalent amount of LID in the adjacent or nearby public right of way (ROW) for the Regulated Project; in the adjacent or nearby public ROW as part of a district larger-scale project that treats runoff from both the Regulated Project and from other nearby projects and/or portions of the public ROW; elsewhere in the Permittee’s jurisdiction (including opportunities identified in the Permittee’s GI Plan)~~;~~. Project proponents may propose offsite LID elsewhere in the county (including opportunities identified in the GI Plans of other Permittees in the county)~~; or elsewhere in another county subject to the MRP (including opportunities identified in the GI Plans of other Permittees in all five MRP Counties)~~. Offsite infeasibility does not need a demonstration of no LID opportunities elsewhere in the county.  eOffsite infeasibility may consider other factors such as, legal, economic, and safety factors, as well as and municipal plans for ROW improvements and retrofits.  Additionally, we recommend adding language to the fact sheet and Order to limit technical infeasibility factors to Provision C.3.c.i.(2)(c)(iii) Alternative Treatment Systems and removing the “not acceptable” and” likely not acceptable” technical infeasibility examples from the Fact Sheet. | We agree that it is overly burdensome to require Permittees to evaluate opportunities for off-site implementation of LID in other MRP counties, given the associated potential environmental justice and water quality consequences of not implementing stormwater treatment in the project’s watershed, and given the level of effort currently associated with that evaluation. We have accordingly revised Provision C.3.c.i.(2)(c)(iii)c.1 of the Tentative Order.  Regarding a countywide or sub-countywide alternative compliance program, and other analyses of off-site alternative compliance see response to comment:  CCCWP\_C.3.c.i.(2)(c)(iii)\_9.  **Proposed Revision:** Provision C.3.c.i.(2)(c)(iii).c.1 of the Tentative Order is revised as follows:  “For offsite technical infeasibility, demonstration that there are no opportunities to implement an equivalent amount of LID in the adjacent or nearby public right of way (ROW) for the Regulated Project; ~~in the adjacent or nearby public ROW as part of a district-scale project that treats runoff from both the Regulated Project and from other nearby projects and/or portions of the public ROW;~~ elsewhere in the Permittee’s jurisdiction (including opportunities identified in the Permittee’s GI Plan); and elsewhere in the same county (including opportunities identified in the GI Plans of other Permittees in the county).~~; or elsewhere in another county subject to the MRP (including opportunities identified in the GI Plans of other Permittees in all five MRP Counties).~~  Section C.3.c.i.(2)(c)(iii) of the Tentative Order’s Fact Sheet is revised by the following addition:  “Provision C.3.c.i.(2)(c)(iii).c.1 requires Permittees to submit a Demonstration of Technical Infeasibility to evaluate opportunities for implementation of offsite LID. If a Permittee’s municipal code precludes implementation of offsite LID elsewhere within its jurisdiction, or outside of its jurisdiction, or both, then that Permittee is encouraged to review its municipal code and consider changes to allow or more-flexibly allow implementation of offsite LID of the given kind(s).”  See the proposed revision for CCCWP\_C.3.c.i.(2)(c)(iii)\_9. |
| ACCWP\_C.3.c.i.(2)(c)(iii)\_7 | The proposed amendment (C.3.c.i.(2)(c)(iii)(e)) requires that Permittees collectively submit a regional guidance document for Executive Officer approval prior to allowing the implementation of the alternative treatment system provisions. Given the limitations on the areas where the alternative treatment systems can be used, it will be hard to justify the development of this guidance as a project of regional benefit when many Permittees will not benefit from the amendment as proposed. Although Permittees do not have to submit this regional guidance document, developers that would benefit from alternative treatment systems will pressure Permittees to develop the guidance since alternative treatment systems would be prohibited if Permittees do not submit this guidance.  As an alternative to the Regional Guidance Document proposed in the Tentative Order, we would support a provision requiring a guidance document to demonstrate LID equivalency, as was proposed by the San Mateo Countywide Water Pollution Prevention Program during the workgroup meetings provided that alternative treatment systems could be used throughout our jurisdictions, not just in the HM exempt areas. Under this proposal, Permittees would develop and submit an LID Equivalency guidance document for Executive Officer approval. Following approval of the guidance, projects seeking to use alternative treatment systems would need to demonstrate LID equivalency. This approach would allow the use of the alternative treatment systems in all areas of the MRP, would remove the need to demonstrate technical infeasibility, and Executive Officer approval of every project could be eliminated because the systems would be demonstrated to be equivalent to LID.  Replace the requirement for the Technical Infeasibility and Commensurate Benefit Regional Guidance document with a requirement to develop an LID Equivalency guidance document and revise the language of the provision to focus on LID equivalency and allow the use of LID equivalent alternatives is all areas, not just the HM exempt areas.  If the provision is not modified, as recommended above, eliminate the requirement to develop a collective Technical Infeasibility and Commensurate Benefit Regional Guidance document as a condition for the use of the alternative treatment system provisions. The proposed amendment requires Executive Officer approval of each project that proposes alternative treatment systems. We additionally recommend that the Water Board develop a streamlined process for these approvals with clear timelines for Water Board review of submittals. | Regarding the Regional Guidance Document, see the response to CCCWP\_C.3.c.i.(2)(c)(iii)\_1 and CCCWP\_C.3.c.i.(2)(c)(iii)\_8.  Regarding the comment that “as an alternative to the Regional Guidance Document proposed in the Tentative Order, we would support a provision requiring a guidance document to demonstrate LID equivalency, as was proposed by the San Mateo Countywide Water Pollution Prevention Program during the workgroup meetings provided that alternative treatment systems could be used throughout our jurisdictions, not just in the HM exempt areas,” it is necessary for the Regional Guidance Document to additionally include guidance for the Demonstration of Technical Infeasibility, not only for the Demonstration of Commensurate Benefit, because both are required for projects implementing Alternative Treatment Systems. As explained in the Tentative Order’s Fact Sheet, the Regional Guidance Document will “…facilitate Permittee and project compliance with the Demonstration of Technical Infeasibility and the Demonstration of Commensurate Benefit.” See also the response to CCCWP\_C.3.c.i.(2)(c)(iii)\_8.  Regarding the comment that, “[u]nder this proposal, Permittees would develop and submit an LID Equivalency guidance document for Executive Officer approval. Following approval of the guidance, projects seeking to use alternative treatment systems would need to demonstrate LID equivalency. This approach would allow the use of the alternative treatment systems in all areas of the MRP, would remove the need to demonstrate technical infeasibility, and Executive Officer approval of every project could be eliminated because the systems would be demonstrated to be equivalent to LID,” The justification for the Demonstration of Technical Infeasibility – in particular, explanation for why it is necessary to also demonstrate technical infeasibility, not only demonstrate commensurate benefit – is provided in the Tentative Order’s Fact Sheet, in response to comment CCCWP\_C.3.c.i.(2)(c)(iii)\_9, and also in response to combined comment SCVURPPP\_C.3.c.i.(2)(c)(iii)\_5  SMCWPPP\_C.3.c.i.(2)(c)(iii)\_5.  Regarding the comment that alternative treatment systems should be allowed in geographic areas beyond the two areas specified in Provision C.3.c.i.(2)(c)(iii)(a) of the Tentative Order, regarding the assertion that it is currently feasible to determine additional flow control benefits sufficient to achieve equivalence between LID treatment controls and alternative treatment systems, regarding resubmission of HM Applicability Maps, and regarding the limitation for implementation of Alternative Treatment Systems in those areas, see the response to combined comment:  CCCWP\_C.3.c.i.(2)(c)(iii)\_2  ACCWP\_C.3.c.i.(2)(c)(iii)\_1  ACCWP\_C.3.c.i.(2)(c)(iii)\_2.  Regarding the recommendation “…that the Water Board develop a streamlined process for these approvals with clear timelines for Water Board review of submittals,” we agree on the goal and expect that a Regional Guidance Document would include a process, consistent with the State’s Permit Streamlining Act, regarding streamlined review of submittals.  **Proposed Revision:** See the proposed revisions for  CCCWP\_C.3.c.i.(2)(c)(iii)\_8  CCCWP\_C.3.c.i.(2)(c)(iii)\_2  ACCWP\_C.3.c.i.(2)(c)(iii)\_1,  and  ACCWP\_C.3.c.i.(2)(c)(iii)\_2. |
| SCVURPPP\_C.3.c.i.(2)(c)(iii)\_1  SMCWPPP\_C.3.c.i.(2)(c)(iii)\_1 | This proposed approach was presented by Water Board staff in an Alternative Treatment Systems Workgroup meeting on February 22, 2023, and further developed for the Tentative Order. Work Group participants expressed significant concerns during the meeting, but those concerns were not addressed in the proposed language, and an adequate response was not provided to the Work Group. | Comment noted. In response to submitted comments, we have proposed modifications as described herein. See responses to individual comments in this section.  The core elements of the proposed approach were presented repeatedly in workgroup meetings before and after the workgroup’s meeting of February 22, 2023. A framework of the proposal was presented at the workgroup’s fifth meeting earlier that month on February 2, 2023. Other aspects of the proposal were discussed in prior workgroup meetings, for example, in the workgroup’s fourth meeting held on December 30, 2022. After the workgroup’s meeting on February 22, 2023, the proposed approach – as detailed in the administrative draft that the Water Board made available for a 30-day informal courtesy review period, and which all Permittees (with the exception of the Solano Permittees) commented on – was discussed again in the workgroup’s seventh meeting on April 21, 2023. The Water Board also met with Permittee representatives in other meetings where these topics were raised and discussed, such as meetings of the Bay Area Municipal Stormwater Collaborative Steering Committee. |
| SCVURPPP\_C.3.c.i.(2)(c)(iii)\_2  SMCWPPP\_C.3.c.i.(2)(c)(iii)\_2 | The alternative treatment system option proposed in this subprovision is not implementable in its current form and does not provide realistic options for the treatment measure flexibility requested by Water Board members on May 11, 2022. The level of effort required to demonstrate technical infeasibility, onsite and offsite (including locations in other jurisdictions and other counties), and commensurate benefits, followed by the need to submit the analyses for every project to Water Board staff for review and EO approval, is untenable and would likely not be considered for any development or retrofit project. In addition, limiting the use of alternative treatment systems to HM-exempt areas prevents the use of this option in many Permittees’ jurisdictions. As currently worded, SCVURPPP Co-permittees do not see sufficient value in committing time and resources to development of a Regional Guidance Document to facilitate this flawed and overburdening approach. | In response to this and other comments, we have proposed modifications as described herein, including substantially reducing the scope of the off-site alternative compliance analysis, clarifying that the on-site analysis is similar to analyses currently being completed by Permittees for Provision C.3 Special Projects, and adding guidance to clarify the approach to and scope of those analyses. Additionally, we have emphasized that Permittees have an opportunity in the preparation of the Regional Guidance Document to set forth an efficient and transparent process that works together with existing municipal project review processes, particularly by including detail sufficient to allow the Permittees, rather than the Water Board Executive Officer, to complete the reviews.  Regarding the Regional Guidance Document, see the responses to CCCWP\_C.3.c.i.(2)(c)(iii)\_1 and CCCWP\_C.3.c.i.(2)(c)(iii)\_8.  Regarding the concern that limiting Alternative Treatment Systems to hydromodification management exempt areas will substantially reduce the implementation of such systems, see the response to combined comment:  CCCWP\_C.3.c.i.(2)(c)(iii)\_2  ACCWP\_C.3.c.i.(2)(c)(iii)\_1  ACCWP\_C.3.c.i.(2)(c)(iii)\_2  **Proposed Revision:** See proposed revisions for CCCWP\_C.3.c.i.(2)(c)(iii)\_8 and CCCWP\_C.3.c.i.(2)(c)(iii)\_3. |
| SCVURPPP\_C.3.c.i.(2)(c)(iii)\_3  SMCWPPP\_C.3.c.i.(2)(c)(iii)\_3 | Other sections of this proposed provision also have significant overreach in terms of demonstrating technical infeasibility: the “potential or actual landscaping opportunities” evaluation and the demonstration of offsite infeasibility. Project proponents often try to meet multiple development conditions, such as requirements for “active” landscaped areas (e.g., small parks and play areas) and ADA accessibility requirements. Requiring every potential landscaping opportunity to be available for LID will likely conflict with these other requirements, and LID may be infeasible in those areas. Regarding offsite infeasibility, it is unreasonable to expect a project proponent or Permittee to demonstrate that there are no offsite opportunities in another jurisdiction or county (basically, prove a negative) unless the Permittee is already participating in a regional compliance program of some type that is already up and running and has available compliance credits to sell. | Regarding evaluating landscaping opportunities for incorporation of LID, see response to CCCWP\_C.3.c.i.(2)(c)(iii)\_9.  Regarding demonstration of technical infeasibility of implementing offsite LID outside of a Permittee’s jurisdiction, see response to ACCWP\_C.3.c.i.(2)(c)(iii)\_6.  **Proposed Revision:** See proposed revisions for CCCWP\_C.3.c.i.(2)(c)(iii)\_9 and ACCWP\_C.3.c.i.(2)(c)(iii)\_6. |
| SCVURPPP\_C.3.c.i.(2)(c)(iii)\_4  SMCWPPP\_C.3.c.i.(2)(c)(iii)\_4 | One type of project that might justify the level of analysis and review required for an alternative treatment system is a regional stormwater capture project; however, the current language limits the option in this subprovision to Regulated Projects. Regional projects that provide multiple benefits, such as climate resilience, flood controls, capture and use, and significant pollutant load reduction (e.g., mercury, PCBs, and trash), should be eligible for the alternative treatment option where there are constraints that limit the treatment of captured stormwater using LID measures. | Under MRP 3, Regional Projects may provide alternative compliance, as long as they are consistent with MRP requirements regarding sizing and LID treatment. In addition, the Water Board has coordinated with MRP Permittees and other parties, including Caltrans, where appropriate, to support funding for regional projects that provide some benefits (e.g., removal of trash, PCBs, and mercury) although they may not be compliant with MRP requirements for LID treatment and sizing. We are committed to continue that coordination and support. Additionally regarding regional projects, including the development of additional information that could support their broader inclusion as an alternative compliance option, see the response to CCCWP\_C.3.j.ii.(3)(c)\_1.  **Proposed Revision:** See proposed revision for CCCWP\_C.3.j.ii.(3)(c)\_1. |
| SCVURPPP\_C.3.c.i.(2)(c)(iii)\_5  SMCWPPP\_C.3.c.i.(2)(c)(iii)\_5 | We understand that LID treatment measures provide not only improvement in water quality, but additional benefits of flow control and urban greening, and we support the current emphasis on LID treatment in Provision C.3.c. In the February 22 Work Group meeting, SMCWPPP presented a proposed methodology by which a suite of control measures, including high flow rate media filtration with additional storage for flow control and an urban greening component, could demonstrate equivalence with LID treatment. As part of that methodology, a guidance document would be developed to show how LID equivalence would be demonstrated, submitted to the Water Board for Executive Officer approval, and then implemented as projects are implemented.  If such alternative treatment systems were deemed to be equivalent to LID treatment per the methodology and criteria in the guidance document, there would be no reason to: a) restrict the use of the systems to certain geographic areas; b) require a technical infeasibility analysis for LID; and c) require EO approval on a project-by-project basis. SCVURPPP supports this more practical approach and requests that Water Board staff make the necessary changes to the subprovision to allow it. | We agree with the comment that flow control benefits, including infiltration and other kinds of retention and detention, are a component of the water quality benefits provided by LID treatment measures. They are intrinsic to the Permit’s LID approach, rather than an ancillary benefit separate from and in addition to reductions in pollutant concentrations and loads through a treatment measure’s media. As such, flow control, including infiltration, is a required component of the overall water quality benefit that must be provided by stormwater treatment measures for Regulated Projects (and other projects). See also the responses to Contech\_C.3.c.i.(2)(c)(iii)\_2, Contech\_C.3.c.i.(2)(c)(iii)\_19, and to combined comment:  CCCWP\_C.3.c.i.(2)(c)(iii)\_2  ACCWP\_C.3.c.i.(2)(c)(iii)\_1  ACCWP\_C.3.c.i.(2)(c)(iii)\_2.  The broader approach to implementation of alternative treatment systems suggested in this comment is not yet supported by available information and analysis on the performance of LID treatment controls, including their performance in native soils with relatively lower infiltration rates, such as the Bay Area’s many areas of clay-rich soils. The Water Board is committed to further considering this issue, and recognizes that the Permittee’s LID Monitoring during MRP 3 may generate information to help support that consideration. Such an approach would necessarily require incorporation of a flow control standard, including a retention/infiltration component, something which the Permittees have broadly expressed they are reluctant to pursue.  For more on this, see the response to Contech\_C.3.c.i.(2)(c)(iii)\_3.  Regarding the basis for the permit’s current LID approach, see the response to Contech\_C.3.c.i.(2)(c)(iii)\_2.  Regarding the proposed requirement to resubmit HM Applicability Maps, and the limitation of Alternative Treatment Systems to those areas, see the response to combined comment:  CCCWP\_C.3.c.i.(2)(c)(iii)\_2  ACCWP\_C.3.c.i.(2)(c)(iii)\_1  ACCWP\_C.3.c.i.(2)(c)(iii)\_2.  The Demonstration of Technical Infeasibility is retained in the Tentative Order for the following reasons: in part because, as noted in the Fact Sheet, “LID measures are likely to be more resilient to failure over time than alternative treatment systems,” which “…supports the Permit’s continued prioritization of LID systems to provide water quality benefits,” and therefore non-LID is allowed when LID is determined to be technically infeasible; in part because, as explained in the Fact Sheet, “…compared to bioretention cells, typically the most used water quality control within the LID framework, alternative treatment systems have limited to negligible flow control benefits due to limited storage within the device and minimal time and space for water to be detained prior to infiltration,” meaning, even if the alternative treatment system has an “open bottom,” there is likely to be significantly less infiltration and overall flow control benefit than a conventional bioretention cell with much greater storage capacity, and therefore the alternative treatment system must be combined with a separate system providing flow control benefit, such as Silva cells (or equivalent). However, “…approaches to quantify the flow control benefits [of LID] are primarily hydrologic models that are imprecise and can be biased by the use of potentially non-conservative or inaccurate assumptions,” and, as a result, project proponents may readily underestimate the flow control provided by LID and overestimate the flow control provided by non-LID as part of their analysis. Therefore the Tentative Order appropriately requires submittal of a Demonstration of Technical Infeasibility, until such time as “…the flow control benefits of LID systems are sufficiently studied and quantified in monitoring and field studies, such that their hydrologic benefits can be more reliably translated into flow control requirements including onsite retention and detention, [at which point] the Water Board may consider incorporating the results of those studies into a future Permit. This would be done by specifying the required flow control benefits, including retention, that must be provided by flow control systems that are paired with media filters for alternative treatment systems. This could allow consideration of implementing those paired systems in a broader set of geographic areas. Work being done to advance the understanding of the flow control benefits of LID systems includes Provision C.8.d Low Impact Development Monitoring as well as studies elsewhere in the U.S.”  Additionally, as the Fact Sheet explains, “the level of documentation submitted for each demonstration should reflect the significance and complexity of the proposed project. The Water Board does not anticipate the same level of evaluation will be necessary for each demonstration for all projects, since there is likely a correlation between the scope of the evaluation, demonstrated equivalency, and the potential extent of adverse impacts.” In other words, less documentation will be necessary, and approval will be expedited for projects for which the Permittees’ submittals clearly demonstrate technical infeasibility and commensurate benefit.  Regarding the basis of the Demonstration of Technical Infeasibility, also see the response to CCCWP\_C.3.c.i.(2)(c)(iii)\_9.  Regarding the comment about EO approval of individual projects, see the response to CCCWP\_C.3.c.i.(2)(c)(iii)\_1.  The comment cites a February 20, 2023, SMCWPPP memo. In Section 3.1.3 (Hydrologic Equivalency) of the memo, regarding Option 1, although we agree that lined bioretention cells have less flow control benefit compared to unlined bioretention cells, we disagree that lined bioretention cells have negligible flow control benefit. However, as explained in Provision C.3.c.i.(2)(c)(iii)d.2 of the Tentative Order, “In places where infiltration is not allowed because of permanent high groundwater (i.e., less than 10 feet below the surface) or documented existing significant soil and groundwater contamination, flow control benefits may be compared to those from lined bioretention cells.” For more explanation of this, see the response to Contech\_C.3.c.i.(2)(c)(iii)\_10.  In Section 3.1.3 of the memo, regarding Option 2, we agree that one way to provide additional flow control benefit is by including additional detention capacity, however, retention should be implemented to the maximum extent practicable instead of detention, where not precluded by one of the conditions identified in MRP Provision C.3.d.iii.(2).  In Section 3.2 of the memo, regarding the request to eliminate the limitation of implementation of non-LID to onsite, see the response to comment CCCWP\_C.3.c.i.(2)(c)(iii)\_9.  In Section 4 of the memo, regarding the request to remove the requirement for Executive Officer approval of individual projects, see the response to CCCWP\_C.3.c.i.(2)(c)(iii)\_1.  All other points made in Sections 3.2 and 4 of the memo – remove geographic limitations, remove the Demonstration of Technical Infeasibility – are addressed above in this comment.  **Proposed Revision:** See proposed revision for CCCWP\_C.3.c.i.(2)(c)(iii)\_2  ACCWP\_C.3.c.i.(2)(c)(iii)\_1  ACCWP\_C.3.c.i.(2)(c)(iii)\_2  and CCCWP\_C.3.c.i.(2)(c)(iii)\_9. |
| SCVURPPP\_C.3.c.i.(2)(c)(iii)\_6  SMCWPPP\_C.3.c.i.(2)(c)(iii)\_6 | Allow Permittees to develop a Regional Alternative Treatment Systems Guidance Document that provides clear quantitative methods and tools to demonstrate the equivalency of an alternative treatment system to MRP Provision C.3.c compliant facilities (not demonstrate technical infeasibility), for approval by the Water Board Executive Officer. | See responses to comments:  CCCWP\_C.3.c.i.(2)(c)(iii)\_1, CCCWP\_C.3.c.i.(2)(c)(iii)\_7, and CCCWP\_C.3.c.i.(2)(c)(iii)\_8.  **Proposed Revision:** See proposed revisions for CCCWP\_C.3.c.i.(2)(c)(iii)\_1, CCCWP\_C.3.c.i.(2)(c)(iii)\_7, and CCCWP\_C.3.c.i.(2)(c)(iii)\_8. |
| SCVURPPP\_C.3.c.i.(2)(c)(iii)\_7  SMCWPPP\_C.3.c.i.(2)(c)(iii)\_7 | Eliminate the requirement for Executive Officer approval of projects in which LID-equivalent alternative treatment systems are proposed for use, consistent with an Executive Officer-accepted Regional Alternative Treatment Systems Guidance Document. | See response to CCCWP\_C.3.c.i.(2)(c)(iii)\_1.  **Proposed Revision:** See proposed revision for CCCWP\_C.3.c.i.(2)(c)(iii)\_1. |
| SCVURPPP\_C.3.c.i.(2)(c)(iii)\_8  SMCWPPP\_C.3.c.i.(2)(c)(iii)\_8 | Remove other restrictions where equivalency is demonstrated, including:  Geographic limitations for where the equivalency approach may be applied;  Demonstration of technical infeasibility of LID, on-site and off-site; and  Limitation to Regulated Projects only (e.g., allow applicability to regional projects). | Regarding the proposed requirement to resubmit HM Applicability Maps, and to limit implementation of Alternative Treatment Systems to those areas, see the responses to combined comment:  CCCWP\_C.3.c.i.(2)(c)(iii)\_2  ACCWP\_C.3.c.i.(2)(c)(iii)\_1  ACCWP\_C.3.c.i.(2)(c)(iii)\_2  Regarding demonstration of technical infeasibility of implementing offsite LID outside of a Permittee’s jurisdiction, see response to ACCWP\_C.3.c.i.(2)(c)(iii)\_6.  Regarding removing the Demonstration of Technical Infeasibility altogether, see the responses to CCCWP\_C.3.c.i.(2)(c)(iii)\_9 and to SCVURPPP\_C.3.c.i.(2)(c)(iii)\_5  SMCWPPP\_C.3.c.i.(2)(c)(iii)\_5.  Regarding regional projects, see response to CCCWP\_C.3.j.ii.(3)(c)\_1  **Proposed Revision:** See proposed revisions for CCCWP\_C.3.c.i.(2)(c)(iii)\_2  ACCWP\_C.3.c.i.(2)(c)(iii)\_1  ACCWP\_C.3.c.i.(2)(c)(iii)\_2 and ACCWP\_C.3.c.i.(2)(c)(iii)\_6 and CCCWP\_C.3.j.ii.(3)(c)\_1. |
| SCVURPPP\_C.3.c.i.(2)(c)(iii)\_9  SMCWPPP\_C.3.c.i.(2)(c)(iii)\_9 | If demonstration of onsite technical infeasibility is not removed, make the following edits to Provision C.3.c.i.(2)(c)(iii)(c)(1) [paragraph 2], i.e., the “landscape opportunities” paragraph, and footnote:  For onsite technical infeasibility, a demonstration that the Regulated Project evaluated all onsite landscaping opportunitiesd for their potential for LID implementation and is implementing LID where suitable, feasible, and not in conflict with other municipal requirements. ~~will implement LID in or on all potential or actual onsite landscaping opportunities and that there are no potential or actual onsite landscaping opportunities in or on which LID will not be implemented.~~  dOnsite Landscaping opportunities include, but are not limited to: roofs, terraces, patios, courtyards, plazas, quadrangles, athletics areas, outdoor pool areas, playgrounds, parks, and bike-separation strips within the Regulated Project.~~, and adjacent public sidewalks, roads, and rights of way (ROWs).~~ | See the responses to comments:  ACCWP\_C.3.c.i.(2)(c)(iii)\_5 and CCCWP\_C.3.c.i.(2)(c)(iii)\_9.  **Proposed Revision:** See proposed revisions for ACCWP\_C.3.c.i.(2)©(iii)\_5 and CCCWP\_C.3.c.i.(2)©(iii)\_9. |
| SCVURPPP\_C.3.c.i.(2)(c)(iii)\_10  SMCWPPP\_C.3.c.i.(2)(c)(iii)\_10 | If demonstration of offsite technical infeasibility is not removed, modify Provision C.3.c.i.(2)©(iii)©(1) [paragraph 3] (i.e., the “offsite infeasibility” paragraph) to remove the requirement to demonstrate that there are no LID offsite opportunities anywhere in the county or Region, and to allow consideration of other factors for offsite infeasibility:  *For offsite ~~technical~~ infeasibility, demonstration that there are no opportunities to implement an equivalent amount of LID in the adjacent or nearby public right of way (ROW) for the Regulated Project; in the adjacent or nearby public ROW as part of a district-scale project that treats runoff from both the Regulated Project and from other nearby projects and/or portions of the public ROW; or elsewhere in the Permittee’s jurisdiction (including opportunities identified in the Permittee’s GI Plan).~~; elsewhere in the county (including opportunities identified in the GI Plans of other Permittees in the county); or elsewhere in another county subject to the MRP (including opportunities identified in the GI Plans of other Permittees in all five MRP Counties).~~ Offsite infeasibility may consider other factors such as legal and economic factors and municipal plans for ROW retrofits.* | Regarding demonstration of technical infeasibility of implementing offsite LID outside of a Permittee’s jurisdiction, see the response to ACCWP\_C.3.c.i.(2)(c)(iii)\_6.  **Proposed Revision:** See proposed revision for ACCWP\_C.3.c.i.(2)(c)(iii)\_6. |
| SCVURPPP\_C.3.c.i.(2)(c)(iii)\_11  SMCWPPP\_C.3.c.i.(2)(c)(iii)\_11 | The “Examples of Technical Infeasibility” on Tentative Order Fact Sheet pages A-9 and A-10 should be removed. These broad statements represent Water Board staff’s opinion of various hypothetical scenarios, are not based on project-specific technical data, and do not belong in a Fact Sheet. Furthermore, the statements represent a lack of understanding of the challenges that Permittees face as they try to balance implementation of the new C.3.e requirements with other municipal needs. | We disagree. The referenced examples are taken from the Water Board’s project-specific reviews of built projects, which included project inspections documented in written inspection reports. They have been included in the Fact Sheet as guidance to help clarify the information and analyses expected as part of the Demonstrations of Technical Infeasibility and Commensurate Benefit to facilitate Executive Officer approval—or, in the alternative, to facilitate Permittee review of those demonstrations based on an accepted Regional Guidance Document. While we encourage Permittees and others to consider the information, they are not required to.  See also response to:  CCCWP\_C.3.c.i.(2)(c)(iii)\_9. |
| SCVURPPP\_C.3.c.i.(2)(c)(iii)\_12  SMCWPPP\_C.3.c.i.(2)(c)(iii)\_12 | Finally, a minor edit is requested to Provision C.3.c.i.(2)(c)(iii)(c)(1) [paragraph 1], which provides a list of potential types and configurations of LID. The list includes “suspended pavement systems with structural soils (e.g., Silva cells)”. SCVURPPP supports the use of suspended pavement systems with vegetation (typically trees) and biotreatment soil media as a type of biotreatment system. To be consistent with Provision C.3.c., the words “structural soil” should be changed to “biotreatment soil.” | We agree and have made the requested edit.  We agree that it is neither necessary nor acceptable to fill Silva Cells (or equivalent underground retention systems) with structural soil if they are functioning as part of a LID stormwater treatment system; they must be filled with the latest approved biotreatment soil media, as is required for bioretention systems. As explained by DeepRoot, the Silva Cell manufacturer, in an August 11, 2023, email, DeepRoot’s load capacity modeling (which assumes no fill) supports the use of Silva Cells beneath on-street parking, parking lanes, sidewalks, etc., or in any other location that does not receive frequent vehicle traffic such as the travel lanes of a street or road because of cyclical loading fatigue. All of this to say, in the locations in which Silva Cells (or equivalent underground retention systems) are typically used, biotreatment soil media can and should be used instead of structural soil.  **Proposed Revision:** In the first paragraph of Provision C.3.c.i.(2)(c)(iii)c.1. of the Tentative Order, change “structural soils” to “approved biotreatment soil media.” |
| Contech\_C.3.c.i.(2)(c)(iii)\_1 | Thank you for the opportunity to comment on the Tentative Order proposing Alternative Treatment Systems amendment language for MRP 3. I participated in the Alternative Treatment Systems Work Group (Work Group), but I am disappointed to report that easily adopted changes that focus on protecting water quality and streamline the approval of effective treatment have not yet been proposed for implementation. | Comment noted.  See responses to individual comments. |
| Contech\_C.3.c.i.(2)(c)(iii)\_2 | The current draft Tentative Order creates a complex process for approving implementation of innovative bioretention on a case-by-case basis based on their policy goal of prioritizing infiltration over improved water quality treatment, in a region where Section 303(d) listings, including many for naturally occurring and legacy pollutants, provide clear evidence of the need for water quality treatment. We ask the Board to consider adopting instead a much simpler alternative that satisfies the direction originally given by Water Board members at the May 2022 MRP 3 adoption hearing. Board leadership is keenly needed at this juncture to fulfill its prior directive, and to encourage treatment innovation, provide flexibility, and reduce costs for land development projects (particularly infill and housing projects), while safeguarding water quality. To that end, we propose that the Board should simply add the text shown below in underline type to the end of Section C.3.c.i.(2)(c)(ii):  (iii)Innovative bioretention or biofiltration systems not meeting the BASMAA specifications above, or an approved revision to those specifications, must be vegetated, must achieve General Use Level Designation for Basic Treatment, Phosphorus Treatment and Enhanced (dissolved metals) Treatment from the Washington State Department of Ecology TAPE program, must be sized to treat the amount of runoff identified in Provision C.3.d without exceeding the TAPE approved hydraulic loading rate, and must be designed to provide incidental infiltration where site conditions allow infiltration.  This provision would allow the use of innovative bioretention or biofiltration systems, which provide a greater reduction in the discharge of pollutants from stormwater than conventional bioretention systems, without further approval by staff.  For the reasons set forth in this comment letter, I respectfully request that the Water Board modify the Tentative Order with this proposed revision before it is adopted. | This comment restates a proposal previously considered by the Water Board during its adoption of MRP 3. The Tentative Order incorporates aspects of the commenter’s proposal, notably use of Washington State’s robust TAPE certification program. However, we disagree that the permit language proposed in the comment would provide a water quality benefit equivalent to or greater than that provided by conventional bioretention systems. The language proposed in the comment would allow non-LID stormwater treatment systems that provide negligible flow control–including detention and retention, which LID stormwater treatment systems provide via processes including infiltration, evapotranspiration, and storage. Revising the Permit expectation to require systems to provide only “incidental infiltration” is likely to result in a substantial reduction in the water quality improvement provided by LID systems’ flow control benefits. In the absence of information sufficient to characterize and address the adverse impacts of that change, which information is not currently available, the proposed language would result in a reduced level of water quality as compared to the Permit’s current requirements, which would be inconsistent with federal and state antidegradation policies and may also violate federal and state anti-backsliding requirements. Regarding antidegradation, the Tentative Order’s Fact Sheet explains: “Federal and state anti-degradation policies at 40 CFR section 131.12 (federal antidegradation policy) and State Water Board Resolution No. 68-16 (state anti-degradation policy) require that high quality waters be maintained unless degradation is justified based on specific findings. The federal antidegradation policy also requires existing instream uses and the level of water quality necessary to protect those uses be maintained and protected. Here, the baseline water quality against which any potential degradation resulting from this Order is measured is the level authorized in the Permit. The modifications in this Order do not authorize any lowering water quality as compared to the Permit such that no antidegradation analysis is required. The Administrative Procedures Update, Antidegradation Policy Implementation for NPDES Permitting, 90-004 (APU 90-004), provides that no antidegradation analysis is required where the regional water board has no expectation that water quality will be reduced by the permitting action. That is the case here. This Order’s modification to allow alternative treatment systems will not result in lower water quality because their use is limited to situations where LID measures are infeasible and backstopped by a requirement to demonstrate commensurate benefit to LID measures. In addition, their use is limited geographically to stormwater discharges that drain into continuously hardened channels or that drain directly into San Francisco Bay, the Pacific Ocean, or other tidal waters, and includes flow controls commensurate with those provided by LID systems, so that stormwater flows will not cause downstream erosion and mobilize sediments and pollutants. The non-LID component of the alternative treatment system also must be TAPE-certified, which ensures a minimum level of performance that is comparable to the Permit’s LID performance in terms of pollutant concentration reductions. Collectively, these requirements prevent lowering of water quality.”  As explained in the Tentative Order’s Fact Sheet, “…alternative treatment systems must be combined with flow controls so that their water quality benefits—improvements to runoff quality and hydrologic benefits that benefit downstream water quality—are consistent with those provided by the Permit’s LID standard. To ensure this is the case, the areas where alternative treatment systems are allowed are limited to areas where LID’s broader water quality benefits are relatively limited and the benefits provided by alternative treatment systems are relatively comparable to LID.”  The Tentative Order’s Fact Sheet goes on to explain, “Alternative treatment systems are similar to the Permit’s LID standard in that they contain media similar to the bioretention media allowed pursuant to Provision C.3.c.i.(2)(c)(ii) that has similar unit processes for pollutant removal, including filtration, adsorption, and degradation over time of certain pollutants. However, there are differences between the alternative treatment systems and the Permit’s LID approach. Alternative treatment system media is typically contained within an impervious or largely impervious vault and is designed to have substantially higher flow rates of water through the media. As compared to bioretention cells, typically the most used water quality control within the LID framework, alternative treatment systems have limited to negligible flow control benefits due to limited storage within the device and minimal time and space for water to be detained prior to infiltration. This reduces pollutant load losses associated with the control because runoff that would infiltrate into the soil, be retained within the control, or evapotranspire in LID systems is, in an alternative treatment system, instead discharged through the media and back into the MS4 or to a receiving water. An additional result is reduced effectiveness of hydromodification management. To provide comparable benefit, alternative treatment systems must be supplemented with systems that provide flow control benefits at least equivalent to those provided by LID systems.  “LID systems provide hydromodification management and associated water quality benefits via measures that include retention (e.g., via infiltration, evapotranspiration, and retention in an LID control’s media) and detention. Determining a comparable benefit between LID systems and alternative treatment systems is complicated because alternative treatment systems typically have negligible retention. In addition, while the flow control benefits of LID systems have been documented, the range of those benefits—including from infiltration into less infiltrative soils and horizontal infiltration—is not yet well quantified from monitoring data and field studies.[[4]](#footnote-5) Studies have, however, found greater benefit than would be expected from textbook infiltration values.[[5]](#footnote-6) Currently, approaches to quantify the flow control benefits are primarily hydrologic models that are imprecise and can be biased by the use of potentially non-conservative or inaccurate assumptions.  “To address the potential consequences of that imprecision, the Permit limits the application of non-LID systems to two geographic areas in which LID systems have relatively less flow control benefit; that is, to areas where there is likely to be relatively less difference in flow control between LID systems and alternative treatment systems. If, in the future, the flow control benefits of LID systems are sufficiently studied and quantified in monitoring and field studies, such that their hydrologic benefits can be more reliably translated into flow control requirements including onsite retention and detention, the Water Board may consider incorporating the results of those studies into a future Permit. This would be done by specifying the required flow control benefits, including retention, that must be provided by flow control systems that are paired with media filters for alternative treatment systems. This could allow consideration of implementing those paired systems in a broader set of geographic areas. Work being done to advance the understanding of the flow control benefits of LID systems includes Provision C.8.d Low Impact Development Monitoring as well as studies elsewhere in the U.S.  “The recognition that urban runoff water quality impacts are comprised of both pollutants directly in runoff and hydromodification that results in pollutant discharges and associated impacts is a significant issue and has informed the Permit’s design, which uses a three-part approach to address polluted runoff from new and redevelopment projects. The Permit requires: (1) design measures that provide source control of pollutants and reduce impervious surfaces and associated discharges of pollutants and hydromodification, which is the change in flows that can result in pollutant discharges; (2) controls that treat or remove pollutants and that also protect water quality by reducing hydromodification; and (3) specific hydromodification management controls for projects that create or replace an acre or more of impervious surface. Thus, hydromodification management is in two parts: the general benefit from LID systems, which applies to all Regulated Projects, and the controls required in Provision C.3.g, Hydromodification Management, which apply to Regulated Projects that create or replace an acre or more of impervious surface and increase the amount of impervious surface at the project site. This three-part approach was developed in part due to input into past permits from stakeholders, including U.S. EPA, the Natural Resources Defense Council (NRDC), and Baykeeper, who supported the Permit’s LID system approach and expressed concern that allowing alternative systems would result in less-effective water quality benefits with respect to direct pollutant reduction and flow control. NRDC and Baykeeper noted, for example:  …there is substantial history, precedent, and justification for requiring LID as the MEP control for the treatment of stormwater runoff from new and redevelopment projects; deviations from this standard must be carefully scrutinized to ensure the avoidance of unintended adverse impacts. These comments also emphasize the importance of flow control via discharge to vegetated areas, which is provided by LID systems.[[6]](#footnote-7)  “Both have noted that where there was a deviation from the LID systems approach, it should be based on the technical infeasibility of both on- and off-site LID systems.  “Similarly, U.S. EPA stated:  EPA is today emphasizing LID (also called “green infrastructure”) as a preferable approach to treating and reducing stormwater flow to MS4s[[7]](#footnote-8) and its inclusion in provisions of MS4 permits. EPA believes that LID is an approach to storm water management that is cost-effective, sustainable, and environmentally-sound. The effectiveness of landscape-based treatment for stormwater is generally superior to the “conventional” treatment addressed in section C.3.d of the proposed permit because landscape-based treatment can remove a broader range of pollutants in a more robust and redundant fashion, and can achieve multiple environmental and economic benefits in addition to reducing downstream water quality impacts, such as enhanced water supplies, cleaner air, reduced urban temperatures, increased energy efficiency and other community benefits such as aesthetics, recreation, and wildlife areas.[[8]](#footnote-9)  “Additionally, LID measures are likely to be more resilient to failure over time than alternative treatment systems. All urban runoff water quality treatment controls are subject to potential failure due to causes such as improper design, installation, or operation and maintenance. Because alternative treatment systems with high-flow-rate media expose media to higher amounts of flow per unit area and volume, and because some vault-based systems may not be visible without removing a maintenance cover, potential failures (e.g., clogging of media by trash or sediment, breakthrough of pollutants) may be more significant and less likely to be timely addressed. The Permit addresses this by requiring Permittees to ensure appropriate design, installation, and operation and maintenance of all systems. However, this also supports the Permit’s continued prioritization of LID systems to provide water quality benefits.  “To ensure alternative treatment systems are appropriately comparable to the Permit’s LID standard, the implementation of alternative treatment systems is contingent on Permittee submittal of two demonstrations to the Water Board: a Demonstration of Technical Infeasibility and a Demonstration of Commensurate Benefit. The requirements for these demonstrations are in Provisions C.3.c.i.(2)(c)(iii)c and C.3.c.i.(2)(c)(iii)d, respectively. Examples are included at the end of this section in Attachment A. Permittees must also re-submit the applicable portions of their Countywide Hydromodification Applicability Map to accurately identify the two geographic areas in which alternative treatment systems are allowed under the Permit.  “Because guidance for these demonstrations has not yet been prepared, Permittees may implement this Provision only upon Executive Officer acceptance of a Regional Guidance Document submitted collectively by the Permittees to the Water Board. This document will also facilitate Permittee and project compliance with the Demonstration of Technical Infeasibility and the Demonstration of Commensurate Benefit…”  Furthermore, as noted by Carla Milesi (University of Washington, Washington Stormwater Center) and Dough Howie (Washington State Department of Ecology),[[9]](#footnote-10),[[10]](#footnote-11) as the hydraulic loading rate of systems approved by Ecology’s Technology Assessment Protocol – Ecology (TAPE) program has steadily risen between 2008 and 2023, the maintenance frequency needed to ensure those systems’ effective function has proportionately increased. In 2008, the average hydraulic loading rate of approved systems was approximately 6 gallons per minute per square foot (gpm/sf) and the average maintenance frequency was just above 8 months. In 2023, the average hydraulic loading rate of approved systems has risen to just under 10 gmp/sf. However, the average maintenance frequency needed to ensure effective system function has lowered to just above 4 months. In other words, as hydraulic loading rates of media filters have not quite doubled, maintenance frequency has doubled. This is in large part because higher flow rates typically cause more frequent clogging and bypass, and greater need for maintenance and even media replacement. Because of this, TAPE is currently developing a maintenance and hydraulic assessment protocol for all existing and new certifications for media filters, which will provide better data on the maintenance needs of – and would be required for – all approved media filters, based on testing of hydraulic performance (i.e., is there bypass at/below the design flow?) and maintenance inspections (including analysis of grab samples for total suspended solids (TSS) and particle size distribution (PSD)), and the results of this testing would be added to the certifications of the tested media filters. It would include, in particular, flow testing to assess how much of a water year media filters can treat at the design flow rate without bypassing. This assessment is *not* currently required for media filters approved by TAPE; consequently, the specified maintenance schedule for approved media filters is what is provided by the manufacturer, which differ from that needed based on conditions in the field. That is to say, the reality of implementation of media filters may not align with the performance that is assumed based on their TAPE approvals, unless they receive maintenance of an adequate frequency and intensity/type, which may be above and beyond what is provided for those devices in the field, and may also differ from what is recommended by the manufacturer. For TAPE-approved media filters, Ecology is considering whether it may be necessary to 1) pair the media filters in-series with solids pretreatment to reduce clogging, bypass, and maintenance burden, 2) design larger media filters with greater capacity, and/or 3) install sensors to alert when the media filters are clogged and need maintenance.  Regarding the comment that proprietary media filters or “biofilters” are cheaper than conventional bioretention, see the response to Wiener\_C.3.e.ii.(5)\_5. |
| Contech\_C.3.c.i.(2)(c)(iii)\_3 | At the heart of the disconnect between Water Board staff and other Work Group participants is a disagreement about what it means to meet the directive in Clean Water Act section 402(p)(3)(iii) which requires that municipal stormwater permits “shall require controls to reduce the discharge of pollutants to the maximum extent practicable” or “MEP.” This is commonly understood to require implementation of the most effective control measures that are also technically feasible and not cost prohibitive. The proposed amendment uses design criteria for a certain class of existing conventional treatment systems to define control of stormwater to the maximum extent practicable in new development and significant redevelopment projects. The technical issue with this approach is that water quality data from the San Francisco Bay Region and elsewhere collected in field evaluation studies demonstrates that the water quality performance of the conventional bioretention systems required in this permit is highly variable and falls short of the performance of innovative biofiltration systems. | This comment restates information previously considered by the Water Board in its adoption of MRP 3. As explained in the Tentative Order’s Fact Sheet, “The modifications in the Order allow certain Regulated Projects to treat runoff using an alternative treatment system that has a commensurate benefit with LID treatment measures if LID treatment is infeasible and other requirements are met. This is consistent with the requirement in CWA section 402(p)(3)(B)(ii) to reduce the discharge of pollutants to the maximum extent practicable. Among other requirements, alternative treatment systems must be combined with flow controls so that their water quality benefits—improvements to runoff quality and hydrologic benefits that benefit downstream water quality—are consistent with those provided by the Permit’s LID standard. To ensure this is the case, the areas where alternative treatment systems are allowed are limited to areas where LID’s broader water quality benefits are relatively limited and the benefits provided by alternative treatment systems are relatively comparable to LID.  “The modifications provide additional flexibility to ensure that in the rare situation when it is infeasible for a project to fully implement LID, the Regulated Project may provide water quality benefits consistent with the LID standard by completing a combination of other measures.”  Regarding the following portion of the comment, “The proposed amendment uses design criteria for a certain class of existing conventional treatment systems to define control of stormwater to the maximum extent practicable in new development and significant redevelopment projects,” we note that the Permit’s approach is (and has been, in previous versions) to establish LID as the best management practice (BMP) for stormwater management of new development and redevelopment projects. To adopt a different approach would necessarily require incorporation of a flow control standard including a retention/infiltration component, something which the Permittees have broadly expressed they are reluctant to pursue. Not only that, but as the Tentative Order explains, at this time there is not enough information available to inform a flow control standard: “Currently, approaches to quantify the flow control benefits are primarily hydrologic models that are imprecise and can be biased by the use of potentially non-conservative or inaccurate assumptions…. If, in the future, the flow control benefits of LID systems are sufficiently studied and quantified in monitoring and field studies, such that their hydrologic benefits can be more reliably translated into flow control requirements including onsite retention and detention, the Water Board may consider incorporating the results of those studies into a future Permit. This would be done by specifying the required flow control benefits, including retention, that must be provided by flow control systems that are paired with media filters for alternative treatment systems. This could allow consideration of implementing those paired systems in a broader set of geographic areas. Work being done to advance the understanding of the flow control benefits of LID systems includes Provision C.8.d Low Impact Development Monitoring as well as studies elsewhere in the U.S.”  We disagree that: “…water quality data from the San Francisco Bay Region and elsewhere collected in field evaluation studies demonstrates that the water quality performance of the conventional bioretention systems required in this permit is highly variable and falls short of the performance of innovative biofiltration systems.” For example, as explained in Tentative Order Fact Sheet footnote 3, “Water Board review of 2018 SFEI study ‘Bay Area Green Infrastructure Water Quality Synthesis,’ May 2023. The Water Board analysis of the 2018 SFEI study indicates that it is not clear that media filters have significantly greater performance [with respect to concentration reduction] than LID systems, given the small sample size of media filters (2) compared to LID facilities (8) in the study, the range of influent concentrations for each monitored system, and the study’s self-identified limitations.” For more regarding this study and conclusions about the relative performance of LID compared to that of non-LID, see also the response to Contech\_C.3.c.i.(2)(c)(iii)\_13.  Flow control is also a significant portion of the water quality benefit provided by the Permit’s LID approach, which is not necessarily provided to any significant degree by alternative treatment systems unless paired in-series with separate systems designed specifically to provide flow control benefits.  As the Tentative Order’s Fact Sheet explains, “Alternative treatment systems are similar to the Permit’s LID standard in that they contain media similar to the bioretention media allowed pursuant to Provision C.3.c.i.(2)(c)(ii) that has similar unit processes for pollutant removal, including filtration, adsorption, and degradation over time of certain pollutants. However, there are differences between the alternative treatment systems and the Permit’s LID approach. Alternative treatment system media is typically contained within an impervious or largely impervious vault and is designed to have substantially higher flow rates of water through the media. As compared to bioretention cells, typically the most used water quality control within the LID framework, alternative treatment systems have limited to negligible flow control benefits due to limited storage within the device and minimal time and space for water to be detained prior to infiltration. This reduces pollutant load losses associated with the control because runoff that would infiltrate into the soil, be retained within the control, or evapotranspire in LID systems is, in an alternative treatment system, instead discharged through the media and back into the MS4 or to a receiving water. An additional result is reduced effectiveness of hydromodification management. To provide comparable benefit, alternative treatment systems must be supplemented with systems that provide flow control benefits at least equivalent to those provided by LID systems.  “LID systems provide hydromodification management and associated water quality benefits via measures that include retention (e.g., via infiltration, evapotranspiration, and retention in an LID control’s media) and detention. Determining a comparable benefit between LID systems and alternative treatment systems is complicated because alternative treatment systems typically have negligible retention. In addition, while the flow control benefits of LID systems have been documented, the range of those benefits—including from infiltration into less infiltrative soils and horizontal infiltration—is not yet well quantified from monitoring data and field studies.[[11]](#footnote-12) Studies have, however, found greater benefit than would be expected from textbook infiltration values.[[12]](#footnote-13) Currently, approaches to quantify the flow control benefits are primarily hydrologic models that are imprecise and can be biased by the use of potentially non-conservative or inaccurate assumptions.”  Regarding the comment that proprietary media filters or “biofilters” are cheaper than conventional bioretention, see the response to Wiener\_C.3.e.ii.(5)\_5. |
| Contech\_C.3.c.i.(2)(c)(iii)\_4 | Innovative biofiltration systems are widely available and are allowed in other California water board regions and in states such as Washington as an alternative to bioretention systems with underdrains. For example, in the San Diego, Santa Ana and Los Angeles Regions, Phase I stormwater permits mandate retention where feasible and allow bioretention with an underdrain similar to the MRP specification (which is referred to as biofiltration in these regions) and high rate biofiltration where retention is infeasible. In all these areas, high rate biofiltration systems can be used as an alternative to conventional compost-based biofiltration and both systems are part of a Low Impact Development (“LID”) suite of stormwater controls. No current permits in these regions include prescriptive bioretention design and media composition specifications like the ones found in in the current MRP 3 or anything like what is being proposed now in the Tentative Order. | This comment restates information previously considered by the Water Board in its adoption of MRP 3. The comment mischaracterizes what is allowed–and understates what is required–with respect to alternative treatment systems in other Regional Water Boards in California and in Washington State.  Water Board Region 4  The Region 4 (Los Angeles Region) Water Board’s Phase I municipal regional stormwater permit has an on-site retention requirement (the greater runoff from the 0.75-inch 24-hour event or the 85th percentile 24-hour event), in contrast with the MRP, which has no such requirement. This explicit on-site retention requirement makes it more straightforward to allow alternative treatment systems in the Los Angeles region because such systems can be designed to specifically provide the required amount of retention. In the San Francisco Bay Area region more work is needed to consider establishing numeric criteria for retention (and flow control more generally). For more information about this need, as explained in the Tentative Order’s Fact Sheet, see responses to comments Contech\_C.3.c.i.(2)(c)(iii)\_3 and SMCWPPP\_C.3.c.i.(2)(c)(iii)\_5. See also Master Response Identifier C.3-14 of the Response to Comments on the Tentative Order for MRP 3, which is incorporated herein. For example, “[a]t this time, it is premature to allow the novel bioretention systems and media desired by the commenters until their effectiveness and ability to be successfully implemented in a measurable way that is comparable to the Permit’s existing standard are better understood.”  Region 4’s Phase I municipal regional stormwater permit requires a demonstration that the project cannot reliably retain 100 percent of the stormwater quality design volume (SWQDV) on-site, even with the maximum application of green roofs and/or rainwater harvest and use, and that compliance with the applicable post-construction requirements would be technically infeasible by submitting a site-specific hydrologic and/or design analysis conducted and endorsed by a registered professional engineer, geologist, architect, and/or landscape architect. The permit explains that technical infeasibility may result from conditions including, in particular, demonstration that the infiltration rate of saturated in-situ soils is less than 0.3 inches per hour and it is not technically feasible to amend the in-situ soils to attain an infiltration rate necessary to achieve reliable performance of infiltration or bioretention BMPs in retaining the SWQDV on-site. If retention of the SWQDV is demonstrated to be technically infeasible, then it may be acceptable to implement onsite bioretention treating 1.5 times the design runoff; if onsite bioretention is demonstrated to be technically infeasible, then it may be acceptable to implement offsite groundwater replenishment and complete retrofit of existing onsite areas (which requires EO approval for offsite implementation in a different subwatershed); if offsite groundwater replenishment and retrofit of existing onsite areas is determined to be technically infeasible, *only then* may it be acceptable to implement onsite flow-through treatment (i.e., media filters) using a flow rate of 0.2 inches per hour, or from the 85th percentile hourly intensity, *however, this requires EO approval for each individual project*.  Water Board Region 8  In Region 8 (Santa Ana Regional Water Board), the Water Quality Management Plans (WQMPs) for 1) San Bernardino, 2) Orange, and 3) Riverside counties specify the post-construction BMPs for regulated projects.  1) San Bernardino County’s WQMP for the Mojave watershed requires retention and infiltration of the entire design control volume (DCV); only if that is proven to be technically infeasible may the project implement retention and infiltration for half of the DCV and implement bioretention for the other half of the DCV; only if that is proven to be technically infeasible may the project implement flow-based biotreatment BMPs, and only then for the portion of the DCV for which it is demonstrated it is technically infeasible to retain/infiltrate and/or treat with bioretention.  2) Orange County’s WQMP requires infiltration/harvesting-&-reuse/evapotranspiration of the full DCV; only if that is demonstrated to be technically infeasible may projects implement bioretention for the portion of the DCV that is not infiltrated/harvested-&-used/evapotranspired; Orange County’s Technical Guidance Document (TGD) explains that BMPs which are designed to achieve the maximum technically feasible amount of evapotranspiration and infiltration are considered biotreatment, whereas media filters which do not do so are not considered biotreatment BMPs. Criteria for design and minimum sizing criteria are provided in the appendices of the TGD.  3) Riverside County’s WQMP requires infiltration; only if infiltration is demonstrated to be technically infeasible may harvest and use be implemented; only if harvest and use is demonstrated to be technically infeasible may bioretention (which infiltrates and evapotranspires the entire DCV) be implemented; only if bioretention is demonstrated to be technically infeasible may biotreatment be implemented. *Minimum sizing requirements* for bioretention and biotreatment BMPs are specified in the LID BMP Design Handbook.  Water Board Region 9  The Region 9 San Diego Water Board’s Phase I regional municipal stormwater permit has the following hierarchy for BMPs: first, onsite retention and infiltration of the water quality design control volume (DCV) as specified in the permit (the volume of runoff produced by the 24-hour 85th percentile storm event) using LID BMPs; second, if onsite retention and infiltration of the DCV is demonstrated to be technically infeasible, then the project may implement onsite bioretention sized sufficiently large enough to provide retention and infiltration for the DCV (specific criteria regarding this sizing are provided in the permit); third, if onsite bioretention is demonstrated to be technically infeasible, then the project may implement onsite flow-through BMPs (e.g., vault-based media filters) in combination with offsite BMPs that provide retention and infiltration of the DCV.[[13]](#footnote-14) In other words, in the San Diego region, regardless of which BMP implementation option is chosen, the flow control component must be provided (this is separate from their regional permit’s additional explicit hydromodification requirement, as is also the case for the other permits referenced herein).  Washington State  The Western Washington Phase II permit and the Washington State Phase I permit have near identical post-construction stormwater treatment requirements, which include a significantly lower threshold for the implementation LID BMPs – 2,000 square feet of created/replaced impervious surface or 7,000 square feet of land disturbance – and the following flow control requirements for projects meeting those thresholds: post-construction discharges must match pre-development discharges for the range of pre-developed discharge rates from 50% of the 2-year peak flow up to the full 50-year peak flow, where the pre-developed condition shall be forested land cover,[[14]](#footnote-15) unless historic information verifies that the condition was prairie prior to settlement.  In summary, although these other permits allow implementation of alternative treatment systems in certain situations, alternative treatment systems are only allowed when LID is determined to be technically infeasible, the criteria (in particular, the flow control criteria) that alternative treatment systems must comply with are explicitly quantified in their permits, and those criteria are also significantly more stringent than the MRP’s current criteria. For more explanation regarding what would be required for an analogous form of these criteria to be developed and incorporated into the MRP, see the response to combined comment:  CCCWP\_C.3.c.i.(2)(c)(iii)\_2  ACCWP\_C.3.c.i.(2)(c)(iii)\_1  ACCWP\_C.3.c.i.(2)(c)(iii)\_2.  The flow control criteria in these and other Pacific Northwest municipal stormwater NPDES permits – including the Region 1 North Coast Water Board, the Region 3 Central Coast Water Board, and the Region 5 Central Valley Water Board, which we omit from this response for brevity – were discussed at-length in the Alternative Treatment Systems Workgroup.  Regarding the comment that “[n]o current permits in these regions include prescriptive bioretention design and media composition specifications like the ones found in in the current MRP 3 or anything like what is being proposed now in the Tentative Order,” as explained in Master Response Identifier C.3-14 of the Response to Comments for the MRP 3 Tentative Order, “…effective implementation of LID practices, including bioretention, involves successfully implementing a series of practices: developing appropriate control designs, including soil specifications, ensuring those designs are built and specifications can be achieved in the field, and that there is sufficient information for them to be appropriately inspected, operated, and maintained. Examples of challenges include ensuring suppliers can consistently deliver appropriate media to construction sites; the need to better understand control hydrologic performance to ensure that alternate approaches are reasonably comparable and reasonably as effective, and ensuring that municipal inspectors have the information needed to ensure controls’ effective function—information that may be limited, for example, if a proprietary media mix is used. Those are examples of reasons that the Permit specifies aspects of bioretention cell design and media performance. It is not clear that those issues have been worked out in the Bay Area for novel bioretention systems or media advocated by the commenters. In addition, as stated above, reliance on testing programs from other states for those systems and media has some limitations, since, for example, they do not consider the hydrologic performance that the Permittees must meet under the Permit, which includes unique drivers like reducing PCBs and mercury.” |
| Contech\_C.3.c.i.(2)(c)(iii)\_5 | Conventional biofiltration systems required by the MRP 3 are relatively large and do provide some flow control benefits that the smaller innovative systems do not provide. These benefits increase as native soil permeability increases. However, low permeability soils predominate in the San Francisco Bay region, with only 1% of land area regulated by the MRP classified as NRCS Class A soils with high permeability, an additional 11% classified as Class B soils with moderate permeability and the remaining 87% as low or very low permeability Class C and D soils. Thus, as a practical matter, in the region regulated by MRP 3 the flow control benefits of conventional biofiltration systems are rarely expected to compensate for their comparatively poor treatment performance. Based on my analysis of annual reports including all projects with post-construction BMPs approved under section C.3 of MRP 2 in fiscal year 2019-20, 94% of all regulated land area reportedly was treated by bioretention systems. All of these systems discharged stormwater runoff that was not infiltrated or lost to evapotranspiration into the downstream storm drain network or directly to receiving waters.  That discharged stormwater contains any pollutants that are not filtered out as stormwater percolates through the bioretention media. In addition, the discharged water may contain pollutants originating from the bioretention media itself. The bioretention soil media specification required by this permit requires at least 30% compost by volume. Compost is widely documented to increase, rather than reduce phosphorus in discharged water. In addition, nitrogen, dissolved copper, pesticides, herbicides and any other labile pollutants that are associated with the compost feed stock may be discharged. Small particles of compost, sand and other materials may also be lost over time, adding to the suspended solids load released downstream. | This comment restates information previously considered by the Water Board in its adoption of MRP 3. We agree that LID bioretention and biofiltration systems constructed under MRP 3 provide flow control benefits that are not provided by Alternative Treatment Systems, and that those benefits can be greater in relatively more infiltrative soils. However, the comment’s view that the water quality benefits provided by flow control are limited to reductions in runoff pollutant concentrations and loads across the bioretention media omits the substantial water quality benefits provided by flow control and described elsewhere herein. Additionally, the comment’s analysis likely substantially understates potential reductions in pollutant concentrations and loads in lower-permeability soils. As explained in the Tentative Order’s Fact Sheet, “…while the flow control benefits of LID systems have been documented, the range of those benefits—including from infiltration into less infiltrative soils and horizontal infiltration—is not yet well quantified from monitoring data and field studies.[[15]](#footnote-16) Studies have however, found greater benefit than would be expected from textbook infiltration values.[[16]](#footnote-17)”  As explained in Master Response Identifier C.3-14 of the Response to Comments document for the Tentative Order for MRP 3, “Low impact development runoff treatment practices, including bioretention, remove urban runoff pollutants through a variety of mechanisms, including mechanisms that prevent runoff from discharging directly downstream to a surface water, such as: infiltration of flows into the ground; evapotranspiration; and capture and reuse. These mechanisms can play a significant role in reducing pollutant loads in runoff (see, for example, bioretention performance studies at the International Stormwater BMP Database, www.bmpdatabase.org). Studies in the Bay Area and elsewhere have found that bioretention designs, even in clay soils expected to have fairly low infiltration rates, could infiltrate a significant portion of runoff (e.g., Contra Costa County Clean Water Program, September 15, 2013. IMP Monitoring Report). Ongoing improvements to bioretention designs, such as inverted elbows for underdrains, which maximize the time available for runoff to evapotranspire and infiltrate into the ground, are likely to continue to improve volume reduction performance.”  As further explained in Master Response Identifier C.3-14 of the Response to Comments document for the Tentative Order for MRP 3, “…[there are] research needs for [LID] control hydrologic performance in lower-permeability (e.g., clayey) soils, as some research has found relatively beneficial (e.g., infiltrative) performance [by LID] even in such soils; thus, additional information is needed to inform an understanding of comparable performance.[[17]](#footnote-18),[[18]](#footnote-19),[[19]](#footnote-20),[[20]](#footnote-21)”  Regarding the comment’s concern about the bioretention soil media specification, as explained in the MRP’s Fact Sheet, “Provision C.3.c.i.(2)(c)(ii) requires biotreatment systems to meet minimum performance specifications in order to be considered as LID treatment. This subprovision also requires biotreatment soil media to meet the current minimum specifications developed and included in MRP 1. However, this subprovision recognizes that the current soil media specifications may need to be modified because of variability in climate, rainfall, and compost composition among the different counties. Therefore, this subprovision allows for the Permittees to collectively (on an all-Permittee scale or countywide scale) develop and adopt revisions to the current soil media minimum specifications, subject to the Executive Officer’s approval.”  In fact, though implementation of the referenced provision is optional, during the current MRP term the Water Board anticipates encouraging and prompting the Permittees to investigate whether the current biotreatment soil media specification is adequate or otherwise should be improved (e.g., because of concerns about inadequate water holding capacity), and if so, to submit a revised biotreatment soil media specification for consideration by the EO. |
| Contech\_C.3.c.i.(2)(c)(iii)\_6 | Innovative biofiltration systems generally solve this problem by replacing the compost content with other organic materials that are more consistent in composition and more effective at removing pollutants of concern. The careful material sourcing and deliberate quality control required to ensure a consistent level of performance takes effort and adds cost to biofiltration media. A primary way of making these innovative systems commercially viable as an alternative to conventional bioretention is to increase the hydraulic capacity of the media. This results in a smaller system footprint which typically makes it easier to fit innovative systems into compact urban sites and cheaper to maintain over time.  Along with biofilter media quality control improvements, sourcing systems from a manufacturer that is involved in the design, procurement, construction, activation, and maintenance phases of a project resolves many issues that can impair conventional bioretention performance over the life of a project.  There are currently seven proprietary biofilter systems and one public domain system that have met the Washington State Department of Ecology TAPE program standards for Basic (sediment) Treatment, Phosphorus Treatment and Enhanced (dissolved metals) Treatment. | This comment restates information previously considered by the Water Board in its adoption of MRP 3.  As explained in the Tentative Order’s Fact Sheet, “LID measures are likely to be more resilient to failure over time than alternative treatment systems. All urban runoff water quality treatment controls are subject to potential failure due to causes such as improper design, installation, or operation and maintenance. Because alternative treatment systems with high-flow-rate media expose media to higher amounts of flow per unit area and volume, and because some vault-based systems may not be visible without removing a maintenance cover, potential failures (e.g., clogging of media by trash or sediment, breakthrough of pollutants) may be more significant and less likely to be timely addressed. The Permit addresses this by requiring Permittees to ensure appropriate design, installation, and operation and maintenance of all systems. However, this also supports the Permit’s continued prioritization of LID systems to provide water quality benefits.”  See also response to Contech\_C.3.c.i.(2)(c)(iii)\_5 regarding prompting the Permittees to reassess the efficacy of the current approved biotreatment soil media specification. |
| Contech\_C.3.c.i.(2)(c)(iii)\_7 | To bring the MRP 3 more in line with other contemporary Phase I stormwater permits elsewhere in California, to safeguard water quality and to give land development professionals tools they need, especially on infill, redevelopment and affordable housing projects, a diverse set of stakeholders submitted comments asking that the permit treatment specifications set forth in the MRP 3 should be expanded to include, rather than to preclude, innovative high rate biofiltration systems. Those stakeholders included the San Francisco Baykeeper, the Bay Area Building Industry Association, the Stormwater Equipment Manufacturers Association, Alameda County, Contech Engineered Solutions, several independent real estate developers, and more than 130 signatories of a petition that all asked that the permit be amended to allow the use of innovative biofiltration systems that meet certain water quality performance standards. | This comment references information previously considered by the Water Board in its adoption of MRP 3.  Contrary to the comment’s assertion that the Tentative Order precludes implementation of alternative treatment systems, the Tentative Order would allow implementation of alternative treatment systems, and in a way that protects water quality and avoids water quality degradation (and backsliding), as explained in the Tentative Order Fact Sheet: “The modifications in the Order allow certain Regulated Projects to treat runoff using an alternative treatment system that has a commensurate benefit with LID treatment measures if LID treatment is infeasible and other requirements are met. This is consistent with the requirement in CWA section 402(p)(3)(B)(ii) to reduce the discharge of pollutants to the maximum extent practicable. Among other requirements, alternative treatment systems must be combined with flow controls so that their water quality benefits—improvements to runoff quality and hydrologic benefits that benefit downstream water quality—are consistent with those provided by the Permit’s LID standard. To ensure this is the case, the areas where alternative treatment systems are allowed are limited to areas where LID’s broader water quality benefits are relatively limited and the benefits provided by alternative treatment systems are relatively comparable to LID.  “The modifications provide additional flexibility to ensure that in the rare situation when it is infeasible for a project to fully implement LID, the Regulated Project may provide water quality benefits consistent with the LID standard by completing a combination of other measures.  “Provision C.3.c.i.(2)(c)(iii) requires projects to establish the need to implement alternative treatment systems and ensures consistent water quality benefits by requiring the submittal of a Demonstration of Infeasibility and a Demonstration of Comparable Benefit, respectively. In addition, as a prerequisite to the implementation of this provision, Permittees are required to submit a Regional Guidance Document that guides preparation of the demonstrations and facilitates project compliance with the alternative treatment system requirements.”  See also the response to Contech\_C.3.c.i.(2)(c)(iii)\_2, regarding antidegradation and anti-backsliding.  All comments made at the adoption hearing for MRP 3 and during the Alternative Treatment Systems Workgroup were considered in the development of the Tentative Order, and led to the language in the Tentative Order. As explained in the Tentative Order’s Fact Sheet, “In August 2022, following the Permit’s reissuance in May 2022, the Water Board convened an Alternative Treatment Systems Workgroup, which met seven times through April 2023. Presentations and discussions in this workgroup produced new information which led to this Order’s addition of Provision C.3.c.i.(2)(c)(iii) related to alternative treatment systems. This new information, which we elaborate on below, included the following: (1) analysis of the equivalency of water quality benefits (including flow control) and urban greening benefits provided by LID systems and by alternative treatment systems; (2) identification of geographic areas in which flow control benefits are relatively less significant than in other geographic areas, thereby warranting in those areas allowance of alternative treatment systems in combination with systems providing flow control benefit; and (3) analogous requirements in other relevant MS4 NPDES permits, in particular the Washington State Department of Ecology’s (Ecology) series of MS4 NPDES permits and their use of Ecology’s Technology Assessment Protocol – Ecology (TAPE) program,[[21]](#footnote-22) which informed the Order’s use of the TAPE certification and, in part, the Order’s commensurate benefit approach. This new information resulted in a framework for where and how alternative treatment systems could be considered to provide commensurate water quality benefit as LID. The new information would have justified allowing alternative treatment systems in the manner allowed under this Order when the Permit was issued.  “New information showed that alternative treatment systems, in combination with flow controls, have the potential to provide a commensurate water quality benefit as compared to LID systems. For example, the recent analysis of the 2018 San Francisco Estuary Institute (SFEI) study,[[22]](#footnote-23) which looked at performance both by LID systems and by non-LID media filters, supports this.[[23]](#footnote-24) In addition, new information showed that the flow control benefits of LID systems are relatively less significant in certain geographic areas in the region, namely areas draining stormwater to channels that are hardened continuously from the point of discharge to San Francisco Bay or the Pacific Ocean or that drain stormwater directly into San Francisco Bay, the Pacific Ocean, or other tidal waters.[[24]](#footnote-25) Accordingly, the Permit amendment limits alternative treatment systems to these areas.  “New information on the analogous requirements in other relevant MS4 NPDES permits included the Western Washington Phase II MS4 Permit (and the Washington State Phase I MS4 Permit),[[25]](#footnote-26) which incorporates the TAPE program, under which Ecology reviews and certifies the performance (with respect to reductions in concentration) of alternative treatment systems. The Water Board received new information that the TAPE program ensures certified systems meet a minimum level of performance that is comparable to the Permit’s bioretention media performance in terms of pollutant concentration reductions at specified influent concentration ranges. New information on analogous requirements of other relevant MS4 NPDES permits includes the following: the North Coast Regional Water Quality Control Board’s Phase I MS4 Permit, which includes an onsite LID retention requirement and only allows onsite alternative treatment systems when onsite LID is determined to be technically infeasible and requires Executive Officer approval for implementation of offsite treatment measures; the Central Coast Regional Water Quality Control Board’s Phase I MS4 Permit, which includes an onsite LID retention requirement for nine out of ten watershed management zones; and the Los Angeles Regional Water Quality Control Board’s Phase I MS4 Permit, which includes an onsite LID retention requirement and only allows onsite alternative treatment systems when onsite LID is determined to be technically infeasible, subject to Executive Officer approval. Water Board staff also met with San Diego Regional Water Quality Control Board staff regarding their Phase I municipal regional stormwater permit,[[26]](#footnote-27) including that permit’s onsite retention requirement and its allowance of implementation of onsite non-LID only if the project provides offsite mitigation with equivalent retention.  “Finally, the Water Board considered other jurisdictions’ requirements for onsite retention of a certain quantity of stormwater since onsite retention prevents pollutants in the retained runoff from being discharged to receiving waters and mitigates its hydromodification effects. While some of this information was available at the time of Permit issuance, other information (e.g., Pennsylvania’s work to update its stormwater manual) was received after the issuance. All the information was newly contextualized with consideration of the role that alternative treatment systems could play:   1. Anacostia, Washington, D.C.: Retain onsite the first one inch of rainfall and provide water quality treatment for rainfall up to the two-year storm volume; offsite mitigation is allowed when onsite retention is infeasible, but only at a ratio of either 1:1.5 (for physical offsets) or 1:2 (for in-lieu fee payments);[[27]](#footnote-28) 2. Central Coast, California (Regional Water Board, Phase II): Limit effective impervious area (EIA) at development projects to no more than 5 percent of total project area (interim criteria); establish an EIA limitation between 3 and 10 percent in local stormwater management plans (permanent criteria);[[28]](#footnote-29) 3. Federal Buildings over 5,000 square feet (under U.S. EPA’s draft guidance for implementation of the Energy Independence and Security Act of 2007): Manage onsite (i.e., prevent the offsite discharge of) the 95th percentile storm through infiltration, harvesting, and/or evapotranspiration; 4. Pennsylvania: Capture at least the first two inches of rainfall from all impervious surfaces and retain onsite at least the first one inch of runoff (through reuse, evaporation, transpiration, and/or infiltration); at least 0.5 inch must be infiltrated;[[29]](#footnote-30) 5. Philadelphia, Pennsylvania: Infiltrate the first one inch of rainfall from all impervious surfaces; if onsite infiltration is infeasible, the same performance must be achieved offsite;[[30]](#footnote-31) and 6. West Virginia: Retain onsite the first one inch of rainfall from a 24-hour storm preceded by 48 hours of no measurable precipitation.[[31]](#footnote-32)” |
| Contech\_C.3.c.i.(2)(c)(iii)\_8 | During the May 2022 MRP 3 adoption hearing, Water Board members heard the broad stakeholder support for amendments to the MRP 3 to allow flexibility to implement innovative biofiltration systems and discussed whether changes were needed. For example, at time 5:59 in the transcript Board Member Strauss Hacker stated:  “Let’s pick a small category, like the bioretention. I know we want to be flexible and innovative. Um, I understand we’re going to keep what we’ve got. I don’t know how responsive we are being to the comments we received and how difficult it would be, um to take up, if at least three other regional boards have taken up an approach to this. I would like to be flexible and innovative for the next 5 years and I would rather do that than have a workgroup”  Other board members supported this suggestion. For example, Chair McGrath stated:  “Alexis, I agree with you on bioretention and I’m willing to try to make a change, or urge the staff to make a change in that today, uh and the reason for that is while a measure like that that doesn’t provide hydrologic benefits may do poorly in terms of competing for grants, if it gives us the water quality, a similar water quality benefit, um, I think we should allow it.”  Chair McGrath went on to ask Water Board staff to make changes prior to adoption, to which Water Board staff member Keith Lichten responded:  “we’re talking about a broader bioretention specification. So the reason I’m saying that is that there are some, uh, anyway, there’s some fairly nuanced issues around where this would apply to in the region, uh, to which projects, and I think that we need some time to work that out. So what I’m proposing to do is that we take a little time but a limited amount and we commit to come back before you rather than waiting for reissuance.”  After this exchange Water Board members discussed the idea of having a “consultative process with the parties who are interested” in focusing on “a couple of major topics” that would report back in a year.  Specifically, regarding bioretention, Board Member Strauss Hacker stated:  “I defer to the need to have a bit more conferring around bioretention. I just want us to do it a little bit more promptly and I want us to be as flexible as possible.”  Chair McGrath responded:  “I think there is a consensus of the board there, at least on bioretention and I appreciate it.”  Chair McGrath then offered a motion to adopt the staff recommendation with amendments along with a provision directing staff to return to the Water Board no later than August 2023 to review progress on three issues, including inclusion of low impact or alternative measures in projects. He further clarified that the “LID and alternatives” language in his provision was intended to include the bioretention issues that were under discussion.  This abbreviated recitation of the conversation between Water Board members and staff at the May 2022 MRP 3 adoption hearing is important because it establishes the scope and schedule for what became the Alternative Treatment Systems Work Group.  Unfortunately, rather than focusing on the work effort as envisioned by the Board at its May 2022 hearing, i.e., to investigate and determine appropriate standards to incorporate into the MRP 3 to allow for implementation of innovative biofiltration as allowed in other water board regions, the Work Group expanded the scope of work to include consideration of non-vegetated mechanical media filters, media filters in combination with structural soils, regional projects and other topics that diluted focus and delayed progress. As a result, the Work Group failed to consider a focused MRP 3 amendment that would attain the water quality treatment benefits of innovative biofiltration. Consequently, the Tentative Order amendment now proposed is much more complicated that it needs to be and doesn’t resolve fundamental legal and technical issues in MRP 3 that preclude the use of this important category of treatment BMPs. Further, the amendment as proposed has no clear timeline or pathway for implementation of innovative biofiltration. I urge you to reject the amendment reflected in the Tentative Order and instead to adopt the language proposed above. | The Alternative Treatment Systems Workgroup (co-led by the Water Board and by Permittee staff) engaged in a “consultative process with the parties who are interested” in focusing on “a couple of major topics.” It focused in particular on the Water Board’s direction at the Permit’s May 2022 adoption hearing to consider additional flexibility with respect to manufactured runoff treatment controls, which resulted in the additional flexibility proposed in the Tentative Order. That additional flexibility has been maximized relative to the information available to support it, and includes consideration of the information presented by the commenter. Consistent with the Water Board’s collaborative approach to stakeholder engagement, the workgroup considered a range of topics introduced by workgroup participants relative to alternative treatment systems. Those included topics that expanded upon input provided by stakeholders during the MRP reissuance, including for larger regional projects. Regarding the outcomes of the Alternative Treatment Systems Workgroup, see the response to Contech\_C.3.c.i.(2)(c)(iii)\_7.  “Innovative biofiltration” is included within the definition of alternative treatment systems that are allowed pursuant to Provision C.3.c.i.(2)(c)(iii) of the Tentative Order.  We disagree that “…the Work Group expanded the scope of work” in a way that “…diluted focus and delayed progress,” and that “[a]s a result, the Work Group failed to consider a focused MRP 3 amendment that would attain the water quality treatment benefits of innovative biofiltration. Consequently, the Tentative Order amendment now proposed is much more complicated that it needs to be and doesn’t resolve fundamental legal and technical issues in MRP 3 that preclude the use of this important category of treatment BMPs.”  To the contrary, the implementation of “innovative biofiltration” systems was a key workgroup focus. The commenter gave multiple presentations to the workgroup and was a respected and outspoken participant, and moreover, his comments during the workgroup were considered in and contributed to the Tentative Order’s development, including the recognition of Alternative Treatment Systems certified by Washington State’s TAPE program.  The Water Board recognizes that, while the Amendment includes substantial aspects of the commenter’s proposal, the proposal has not been incorporated wholly. That is because, as described elsewhere in this Response to Comments, there is not yet sufficient information to allow it without triggering consideration of potentially substantial alterations in significant portions of Provision C.3, and particularly Provision C.3.g, Hydromodification Management.  The water quality benefits provided by the Permit’s low impact development standard are comprised of both direct pollutant removal and hydromodification management. The Water Board recognizes, as outlined in the Permit Fact Sheet and in previous Permit fact sheets, that hydromodification management is necessary to address urban runoff impacts, and can be a more-significant driver than pollutant loads and concentrations with respect to addressing urban runoff impacts. To that end, the Permit incorporates it both quantitatively, in Provision C.3.g, which imposes explicit quantitative flow control requirements on a subset of Regulated Projects, and qualitatively, as part of the Permit’s low impact development approach incorporated by all Regulated Projects.  As noted elsewhere herein, the Water Board is open to considering additional information to quantitatively characterize the benefits and limitations of the Permit’s hydromodification management approach. That additional information could facilitate comparing the two kinds of approaches in order to consider whether and how alternative treatment systems could be more broadly incorporated into the Permit. The additional information needed includes, but is not necessarily limited to, information on the performance of both “traditional” low impact development measures and alternative treatment systems, and particularly on their performance with respect to hydromodification management. The Permittees are collecting information during the current Permit term that is expected to better characterize the performance of low impact development treatment controls, including their hydrologic performance. Of note, the commenter submitted, during the Permit reissuance, a proposed approach to model the hydrologic benefit of such systems so as to compare them with alternative treatment systems; the proposal dismissed the benefit from low impact development controls in areas of clay-rich or less-infiltrative soils. Most of the urbanized Bay Area is in areas of less-infiltrative soils. However, Bay Area and other data indicates low impact development controls provide substantial benefit with respect to hydromodification management, even in areas of less-infiltrative soils.  We do not agree that the hydromodification-based benefits of low impact development systems can be dismissed. Rather, they play a key water quality role that must be considered in modifications to Permit language. The Water Board discussed with the commenter opportunities for the manufactured device industry to support field work that would collect data to better characterize those benefits. However, the commenter indicated there was not substantial interest in providing that support in part because the outcomes of that field work, and the timing of its outcomes, were uncertain.[[32]](#footnote-33)  See also the responses to Contech\_C.3.c.i.(2)(c)(iii)\_7 and  Contech\_C.3.c.i.(2)(c)(iii)\_19.  The comment that “…the amendment as proposed has no clear timeline” is true; the Tentative Order does not prescribe a time limit for the submittal of the Regional Guidance Document. That has been done because the Water Board recognizes that MRP 3 includes expectations on the Permittees to complete a range of work, including substantial efforts to reduce trash and PCBs, make progress on green infrastructure planning and retrofit projects, implement trash and LID monitoring, control discharges associated with unsheltered homelessness, and begin more-detailed cost reporting. The additional work on alternative treatment systems necessarily must be incorporated into the Permit’s existing expectations. We considered, but the Permittees did not request, a deadline for submittal of the Regional Guidance Document.  Regarding this portion of the comment, “I urge you to reject the amendment reflected in the Tentative Order and instead to adopt the language proposed above,” see the response to Contech\_C.3.c.i.(2)(c)(iii)\_2. |
| Contech\_C.3.c.i.(2)(c)(iii)\_9 | Water Code Section 13360 has long prohibited the Water Board from specifying the form of treatment that permittees must implement to comply with water quality standards: “No waste discharge requirement or other order of a regional board or the state board or decree of a court issued under this division shall specify the design, location, type of construction, or particular manner in which compliance may be had with that requirement, order, or decree, and the person so ordered shall be permitted to comply with the order in any lawful manner.” Water Code. § 13360(a). See, Tahoe-Sierra Pres. Council v. State Water Res. Control Bd., 210 Cal. App. 3d 1421, 1438 (Ct. App. 1989), reh'g denied and opinion modified (June 28, 1989) (Holding that “[Water Code] Section 13360 says that the Water Board may not prescribe the manner in which compliance may be achieved with a discharge standard. That is to say, the Water Board may identify the disease and command that it be cured but not dictate the cure.” Also noting that: “Section 13360 is a shield against unwarranted interference with the ingenuity of the party subject to a waste discharge requirement.... It preserves the freedom of persons who are subject to a discharge standard to elect between available strategies to comply with that standard.”). See also, City of Rancho Cucamonga v. Reg'l Water Quality Control Bd., 135 Cal. App. 4th 1377, 1390 (2006), as odified (Feb. 27, 2006); Monterey Coastkeeper v. State Water Res. Control Bd., 28 Cal. App. 5th 342, 351, (2018) (“Neither a waste discharge requirement nor a waiver thereof is permitted to specify a particular manner of compliance with the discharge standard, with two exceptions not pertinent here.”) In the existing MRP 3 language, Section C.3.c.i.(2)(c)(ii) sets forth specific design criteria for bioretention systems including (1) a mandatory surface area sizing factor and (2) a requirement that the BASMAA bioretention soil media specifications that were approved by the Water Board in 2016 be followed. Even though the Permittees may collectively propose an alternative media specification, the sizing factor must remain in place. The practical impact of these narrow specifications is effectively to specify the conventional bioretention form of treatment as the only treatment that may be utilized under this section of the MRP 3. Because the existing language in this section of MRP 3 presumes the use of a specific type of technology (conventional bioretention) in the requirements it describes, the consequence is that it also effectively dictates the end result and precludes the use of innovative biofiltration. Thus, the current language does not merely set a pollutant treatment standard (which is permissible), but instead sets forth a prescriptive specification that effectively precludes the use of other alternatives – even if those alternatives provide better water quality control. The fact that the water quality performance and/or flow control benefits being provided by the required conventional bioretention design specifications are not described anywhere in the permit or the fact sheet reinforce this conclusion. This is statutorily prohibited under Water Code Section 13360.10 I recommend that the Water Board resolve this Water Code Section 13360 conflict by adding the following language from above containing a clear water quality-based performance specification to the end of MRP 3 Section C.3.c.i.(2)(c)(ii):  Innovative bioretention or biofiltration systems not meeting the BASMAA specifications above, or an approved revision to those specifications, must be vegetated, must achieve General Use Level Designation for Basic Treatment, Phosphorus Treatment and Enhanced (Dissolved Metals) Treatment from the Washington State Department of Ecology TAPE program, must be sized to treat the amount of runoff identified in Provision C.3.d without exceeding the TAPE approved hydraulic loading rate, and must be designed to provide incidental infiltration where site conditions allow infiltration.  This limited addition would add flexibility to the rigid language of Section C.3.c.i.(2)(c)(ii) and truly allow Permittees to “elect between available strategies to comply” beyond the technologies effectively mandated under the current MRP 3 language. Tahoe-Sierra Pres. Council at 1438. At the same time, the proposed addition includes the appropriate guiderails to ensure that such innovative biofiltration systems meet minimum water quality standards. The addition of the proposed language above will result in much needed flexibility to develop and use innovative systems while improving water quality outcomes. This would transform the current language that improperly dictates the specific conventional bioretention category of treatment BMPs by specifying design criteria that can only be satisfied by such systems (which is prohibited), into a technology-based treatment-standard that can be satisfied by multiple types of BMPs based upon their water quality performance (which is allowed). By comparison, the Tentative Order is insufficient because it does not rectify the existing conflict with Water Code Section 13360 in the MRP 3. Even with the amendments described in the Tentative Order, the MRP 3 would continue to go beyond merely setting a performance standard because the procedures set forth for “Alternative Treatment Systems” in the Tentative Order are unrealistic and unworkable. As explained in further detail below in this comment letter, the Tentative Order proposes an optional program that will not take effect until new mapping is completed and a Regional Guidance Document is developed by permittees and approved by the Water Board. Due to the limitations of the proposed program, the burden it creates for permittees to enact and administer and the uncertainty that eventual case-by-case approval of alternative systems will be obtained, it is unlikely to ever be implemented. While on paper this proposal contemplates a path for other technologies to be utilized, in practice it will make it extremely difficult to achieve. Accordingly, the proposed amendment in the Tentative Order would merely create the illusion of flexibility in the types of system designs that can be utilized to achieve compliance, rather than truly resolving the conflict with Water Code Section 13360 in the MRP 3. The Water Board can easily fix this conflict using the language I propose above. | It is correct that Water Code section 13360 prohibits the Water Board from specifying in its orders “the design, location, type of construction, or particular manner in which compliance may be had” with the orders (Water Code section 13360). It, however, does not preclude the Water Board from specifying the manner of compliance with waste discharge requirements in NPDES permits. As the State Water Resources Control Board reasoned in its precedential State Board Order No. WQ 8O-19 (Las Virges Municipal Water District) at pp 19-21:  “The Porter-Cologne Water Quality Control Act, Division 7 of the Water Code, provides that, *notwithstanding any other provision of the division*, the State and Regional Boards shall issue NPDES permits as required or authorized by the Clean Water Act, 33 U.S.C. §§1251 et seq., to ensure compliance with the Federal Act. Water Code §13377.  “Under the Clean Water Act, effluent limitations, effluent standards and prohibitions, and standards of performance promulgated by EPA are enforced through the issuance of NPDES permits. Prior to the adoption of such limitations, standards, and prohibitions, the Administrator of EPA is authorized by the Act to impose ‘such conditions as the Administrator determines are necessary’ to carry out the provisions of the Act. 33 U.S.C. § 1342 (a)(1); see *NRDC, Inc. v. Costle*, 568 F.2d 1369 (D.C. Cir. 1977). In addition, EPA regulations adopted under the Clean Water Act authorize conditions in NPDES permits setting ‘best management practices’ where numeric effluent limitations are infeasible or where reasonably necessary to achieve effluent limitations and standards or to carry out the purposes and intent of the Act. 40 C.F.R. § 122.62(k). ‘Best management practices’ are defined to include, for NPDES permits, ‘*treatment requirements, operating procedures, and practices to control...sludge or waste disposal*.... 40 C.F.R. § 122.3 (emphasis added).  “Consequently, since the Clean Water Act authorizes the imposition of conditions including best management practices, in NPDES permits where limitations and standards have not been promulgated, the Porter-Cologne Act gives the State and Regional Boards the same authority. To the extent that this authorization is inconsistent with the provisions of Water Code Section 13360, the authority of the State and Regional Boards to implement the provisions of the Clean Water Act under Water Code Section 13377 must prevail. See Water Code Section 13372.”  Water Code section 13372, which is in Chapter 5.5 of the Porter-Cologne Act (as compared to Water Code section 13360, which is contained in another chapter) states, “This chapter shall be construed to ensure consistency with the requirements for state programs implementing the Federal Water Pollution Control Act and acts amendatory thereof or supplementary thereto. . . . The provisions of this chapter shall prevail over other provisions of this division to the extent of any inconsistency.” Water Code section 13372.  The Clean Water Acts requires municipal stormwater permits to "require controls to reduce the discharge of pollutants to the maximum extent practicable, including management practices, control techniques and system, design and engineering methods and such other provisions as the Administrator or the State determines are appropriate for the control of such pollutants” (33 U.S.C. §1342(p)(3)(B)(iii)).  The biotreatment or bioretention requirements in the MRP are necessary to comply with 33 U.S.C. §1342(p)(3)(B)(iii) and carry out the provisions of the Clean Water Act. They are best management practices, which attain the Clean Water Act’s maximum extent practicable standard, and may be prescribed, as explained above.Water Code section 13360 cannot stand in the way of the Water Board’s implementation of the Clean Water Act.  The HM Applicability Maps do not necessarily need to be revised; they have all already been created, the applicable portions of those maps simply need to be reviewed and resubmitted for re-evaluation. For more on why this is required, see the response to combined comment:  CCCWP\_C.3.c.i.(2)(c)(iii)\_2  ACCWP\_C.3.c.i.(2)(c)(iii)\_1  ACCWP\_C.3.c.i.(2)(c)(iii)\_2  Regarding the Regional Guidance Document, see the response to CCCWP\_C.3.c.i.(2)(c)(iii)\_8,  Regarding the language proposed in the comment, see the response to CCCWP\_C.3.c.i.(2)(c)(iii)\_2.  We disagree that “…the procedures set forth for ’Alternative Treatment Systems’ in the Tentative Order are unrealistic and unworkable…. [and] due to the limitations of the proposed program, the burden it creates for permittees to enact and administer and the uncertainty that eventual case-by-case approval of alternative systems will be obtained, it is unlikely to ever be implemented. While on paper this proposal contemplates a path for other technologies to be utilized, in practice it will make it extremely difficult to achieve.” For explanation regarding why the Tentative Order includes the procedures that it does (in order to safeguard water quality and avoid antidegradation and anti-backsliding), see the responses to: Contech\_C.3.c.i.(2)(c)(iii)\_2, Contech\_C.3.c.i.(2)(c)(iii)\_3, and Contech\_C.3.c.i.(2)(c)(iii)\_7. |
| Contech\_C.3.c.i.(2)(c)(iii)\_10 | Clean Water Act Section 402(p)(3)(B)(iii) requires that municipal stormwater permits “shall require controls to reduce the discharge of pollutants to the maximum extent practicable, including management practices, control techniques and system, design and engineering methods, and such other provisions as the Administrator or the state determines appropriate for the control of such pollutants.”  The current permit and the proposed Alternative Treatment System amendment fails to reduce the discharge of pollutants to the MEP. It is widely documented that other BMPs, in particular those with approval for Basic, Phosphorus and Enhanced (dissolved metals) Treatment from the Washington State Department of Ecology provide superior concentration reduction for pollutants of concern in the San Francisco Bay region, including nutrients, sediment, PCBs and mercury. The amendment proposes that such systems only be permitted in limited geographic regions and only where they can be demonstrated to have equivalent water quality, flow control and “urban greening” benefits. These limitations and requirements ensure that there will be many land development projects regulated by MRP 3 where innovative systems will not be allowed even though they provide a greater pollutant load reduction and would also be technically feasible and cost effective. Adding the innovative bioretention language suggested in this comment letter would resolve this conflict.  As a result, the Alternative Treatment Systems Work Group could not identify how the proposed amendment would result in a reduction of pollutants of concern to the maximum extent practicable in the following project scenarios:  Land development projects in the Lake Merritt watershed.  Conventional bioretention is more likely to export phosphorus than to remove it, especially during the first few years of operation. Phosphorus is a limiting nutrient in Lake Merritt that can stimulate algae blooms and fish kills. The amendments would prohibit the use of alternative systems that remove nutrients if conventional compost-based bioretention is feasible anywhere in the region, including in the Lake Merritt watershed, reducing water quality benefits due to the inferiority of compost as a treatment media, and increasing the risk of nutrient related water quality concerns, such as future fish kills.  Land development projects where infiltration is infeasible.  Infiltration can be infeasible due to many factors like contaminated soils or groundwater, structural risks to building foundations, interference with utilities, contribution to seeps on adjacent property etc. Where these situations arise, it is common practice to design conventional bioretention systems within an impermeable liner. Without the benefit of runoff reduction via infiltration, conventional bioretention systems cannot and do not match the pollutant load reduction provided by high rate biofilters meeting TAPE performance standards. The amendments would prevent the use of high rate biofilters in this situation unless they are “in combination with systems providing flow control benefit” equal to or better than conventional systems. However, adding flow control features to high rate biofilter systems without infiltration capability will not increase their pollution removal effectiveness, but will add unnecessary cost and complexity to the project.  Land development projects not draining to hardened channels, directly to the bay or ocean or that are not tidally influenced.  The proposed amendment limits the application of alternative treatment systems to a subset of projects that are exempt from hydromodification requirements. On other projects, alternative treatment systems would not be allowed even if they would provide a greater water quality benefit, for example where infiltration is infeasible or negligible, where phosphorus is a limiting nutrient, or on retrofit projects where maximizing PCB and/or mercury removal is desired to achieve compliance with local TMDLs. Hydromodification requirements in Section C.3.d are nearly identical to requirements set in South Orange County and San Diego which both allow high rate biofiltration as an LID approach.  Land development projects where equivalent “urban greening” benefits are not provided.  Urban greening is not a defined term in the permit or the proposed amendment. Based on conversations in the Work Group it is assumed to encompass the range of non-water quality related benefits that vegetated areas provide, like heat island effect mitigation, habitat, recreation, aesthetic value etc. The proposed amendment could be interpreted to preclude the specification of a smaller more effective system if additional vegetation is not provided on site that is equivalent to what would have been provided by a conventional bioretention system. While urban greening benefits are important, they must be subservient in this permit to water quality benefits. The proposed amendment improperly makes provision of “urban greening” benefits equal to the requirement to reduce stormwater pollution.  Retrofit projects initiated by permittees to address PCBs, mercury or other pollutants.  Section C.3.j of MRP 3 requires permittees to implement Green Infrastructure Plans which include retrofit requirements to address PCBs, mercury, and other impairments. Permittees need flexibility to implement the most effective controls these pollutants which may not be conventional bioretention. For example, The Clean Watershed for a Clean Bay research project concluded that high rate biofiltration is more effective and cost effective for control of mercury and PCBs. Flexibility to use innovative biofiltration systems may be especially beneficial on retrofit projects with limited available land area, where the amount of runoff that can be treated per high flow biofilter area is much greater than for conventional bioretention. | We disagree that the Tentative Order conflicts with CWA §402(p)(3)(B)(iii). See the response to Contech\_C.3.c.i.(2)(c)(iii)\_3.  Regarding why the Tentative Order limits the application of alternative treatment systems to certain geographic areas, see the response to combined comment:  CCCWP\_C.3.c.i.(2)(c)(iii)\_2  ACCWP\_C.3.c.i.(2)(c)(iii)\_1  ACCWP\_C.3.c.i.(2)(c)(iii)\_2  Regarding the concern that the Tentative Order’s Alternative Treatment Systems approach may impede the implementation of such systems, see the response to CCCWP\_C.3.c.i.(2)(c)(iii)\_3.  Regarding the language proposed by the comment, see the response to Contech\_C.3.c.i.(2)(c)(iii)\_2.  Regarding the concern that for “land development projects where infiltration is infeasible” due to various factors, that LID would nevertheless be prioritized over non-LID, the Tentative Order explains the following caveat for the Demonstration of Commensurate Benefit in Provision C.3.c.i.(2)(c)(iii)d.2.: “In places where infiltration is not allowed because of permanent high groundwater (i.e., less than 10 feet below the surface) or documented existing significant soil and groundwater contamination, flow control benefits may be compared to those from lined bioretention cells.” That is, even when infiltration is not permissible, LID still provides flow control benefit in the form of detention; media filters do not on their own provide analogous detention because of their inability to store and slow flows, so they must be paired in-series with systems providing detention capacity.  Regarding the request that alternative treatment systems should also be allowed in “land development projects not draining to hardened channels, directly to the bay or ocean or that are not tidally influenced,” see the response to combined comment:  CCCWP\_C.3.c.i.(2)(c)(iii)\_2  ACCWP\_C.3.c.i.(2)(c)(iii)\_1  ACCWP\_C.3.c.i.(2)(c)(iii)\_2.  The assertion that “the proposed amendment improperly makes provision of ‘urban greening’ benefits equal to the requirement to reduce stormwater pollution,” is incorrect. The Tentative Order mentions urban greening in only two locations: in the preamble paragraph for “Examples of Commensurate Benefit” on page A-11 of the Tentative Order’s Fact Sheet and in the first paragraph of the New Information section on page A-2 of the Tentative Order’s Fact Sheet. The former instance is removed as it was included erroneously; the latter instance is retained as it describes one of the workgroup’s considerations.  Regarding the effectiveness of bioretention media to control specific pollutants of concern, including phosphorus, PCBs, and mercury, we note that a number of factors go into consideration of the bioretention media specification used by the Permittees, and we expect to consider modifications to the specification as part of the Permit's next reissuance. See response to comment Contech\_C.3.c.i.(2)(c)(iii)\_5.  Regarding the comment that proprietary media filters or “biofilters” are cheaper than conventional bioretention, see the response to Wiener\_C.3.e.ii.(5)\_5.  **Proposed Revision:** Revise the preamble paragraph for “Examples of Commensurate Benefit” on page A-11 of the Tentative Order’s Fact Sheet as follows:  “The following are examples of types of BMPs and projects that could be used to achieve commensurate flow control and urban greening benefit (i.e., an equivalent amount of flow controlthat benefit as would have been provided by the project if the project were to implement LID), which may aid Permittees’ preparation of the Demonstration of Commensurate Benefit required by Provision C.3.c.i.(2)(c)(iii).” |
| Contech\_C.3.c.i.(2)(c)(iii)\_11 | The current fact sheet and proposed fact sheet amendments in the Tentative Order exclude relevant information that has been provided through the public comment process and in workshop meetings in favor of outdated and selective references that are arranged to support the status quo. It would be arbitrary and capricious for the Water Board to adopt the Tentative Order based on this misleading evidentiary record. In reviewing the Water Board’s decision making, a court has the authority to “correct an agency's discretionary decision if that decision was made in an arbitrary or capricious manner.” Bull Field, LLC v. Merced Irrigation Dist., 85 Cal. App. 5th 442, 456 (2022). | It is unclear what “relevant information” the commenter is referring to and what references are “outdated and selective.” In any case, the Water Board record includes all information gathered in the Alternative Treatment Systems Workgroup, which information was reviewed, analyzed, and considered by the Water Board. Moreover, it is not the role of the Fact Sheet to summarize every piece of information submitted to the Water Board, which is also impracticable. See 40 C.F.R § 124.8 on the contents of a fact sheet. See also previous responses regarding individual comments about the Tentative Order. |
| Contech\_C.3.c.i.(2)(c)(iii)\_12 | The fact sheet and fact sheet amendments fail to include relevant performance information about conventional bioretention performance and known water quality issues related to compost-based bioretention media blends. The following relevant resources have been provided to the Water Board but are not referenced in the Tentative Order materials. Reviewing and incorporating findings from these references would provide a more objective assessment of the performance capabilities of bioretention systems and would illuminate many opportunities for design improvement. At a minimum, the fact sheet amendment should include these references and should summarize available information regarding comparative water quality performance of conventional bioretention and high rate biofiltration.  Water Research Foundation. International Stormwater BMP Database 2020 Summary Statistics. 2020. Available online at: https://www.waterrf.org/system/files/resource/2020-11/DRPT-4968\_0.pdf  The Mile High Flood District. 2020. Engineered Bioretention Media Literature Review. Prepared by Geosyntec Consultants, Inc. Available online at: https://mhfd.org/wp-content/uploads/2022/03/Bioretention\_Media\_Literature\_Review\_Final.pdf  WRA Environmental Consultants. 2016. Biotreatment Soil Media and Specification: Current Research on Trees and Water Quality Treatment, Literature Review, San Francisco Bay Area, California. Available online at: https://basmaa.org/wp-content/uploads/2021/05/Literature-Review-BSM-Specs-Current-Research-on-Trees-and-WQ-Treatment.pdf  Herrera. 2017. Bioretention Media Component Analysis to Improve Runoff Treatment. Prepared for Kitsap County, by Herrera Environmental Consultants, Inc., Seattle, Washington. Available online at: https://www.herrerainc.com/wp-content/uploads/2021/03/Bioretention-Media-Component-Analysis-Final-Report-7-7-17-4.pdf  Geosyntec Consultants. Filterra Equivalency Analysis and Design Criteria. 2015. Available online at: https://www.waterboards.ca.gov/losangeles/water\_issues/programs/stormwater/municipal/filterra/county\_Filterra\_Equivalency\_Analysis\_Report\_8-11-2015.pdf | Thank you for citing the listed studies, which references were not previously submitted to the Water Board for consideration. We reviewed and considered the International Stormwater BMP Database 2020 Summary Statistics as part of the MRP 3 reissuance. Beyond that, since the comment does not reference specific points from the studies, it is unclear what information the commenter may think is relevant and how it may bear on the Tentative Order and Fact Sheet. Overall, our review of the listed studies confirms our existing understanding that there are opportunities for improvement of various aspects of the currently-approved biotreatment soil media specification, including water holding capacity, potential nutrient leaching, quality control of sourced components, media depth, and treatment area.  We agree that this information is useful when revising the approved biotreatment soil media specification, which should include consideration of the information presented in the studies referenced by the comment. For more on this, see the response to Contech\_C.3.c.i.(2)(c)(iii)\_5.  See also the response to Contech\_C.3.c.i.(2)(c)(iii)\_11. |
| Contech\_C.3.c.i.(2)(c)(iii)\_13 | The Fact Sheet amendment mischaracterizes findings of the San Francisco Estuary Institute report on the effectiveness of green infrastructure systems in the San Francisco Bay Area. It states:  *“New information showed that alternative treatment systems, in combination with flow controls, have the potential to provide a commensurate water quality benefit as compared to LID systems. For example, the recent analysis of the 2018 San Francisco Estuary Institute (SFEI) study,12 which looked at performance both by LID systems and by non-LID media filters, supports this.”*  However, this statement does not capture the information provided in that report. The report shows that conventional bioretention performance is widely variable and on average much worse than for the smaller innovative biofiltration systems tested with regard to mercury and PCBs. Specifically, the SFEI report found:  PCB removals ranged from -99% to 96% for the 8 conventional bioretention sites with 2 sites increasing PCB concentrations from the inlet to the outlet. Average conventional bioretention removal for PCBs for all events was 44%. The two high rate biofilter systems reviewed had consistent PCB removal at 92% and 94% and an average removal rate of 93% for all storms.  Mercury removals ranged from -48% to 44% for the 8 conventional bioretention sites with average effluent concentrations higher than the influent for 6 of those 8 systems. Average conventional bioretention system mercury removal for all events was -7%, indicating that on average these systems are more likely to increase mercury concentrations than to reduce them. High rate biofilter mercury removal was consistent at two sites at 61% and 67% with an average removal of 64% overall.  The report is specifically focused on water quality performance of green infrastructure BMP. It included innovative high rate biofiltration systems as green infrastructure BMPs, which supports the adoption of a standard that permits use of innovative biofiltration. The report does not address non-LID media filters or hydrodynamic separators although these were also monitored for PCBs and mercury in the region. It also does not address volume reduction or flow control since flow data was unavailable or unreliable for most sites. Therefore, the fact sheet summary referenced above is misleading and should be updated to include the relevant summary performance information for mercury and PCBs. | We disagree.  Comments on the MRP 3 Tentative Order for and in the Alternative Treatment Systems Workgroup meetings held between August 2022 and April 2023 regarding amendment of Provision C.3.c.i.(2)(c)(iii) suggested that media filters could have equivalent or better performance than LID systems for the range of typical urban pollutants of concern to water quality. Comments were based in large part on data summarized in a 2018 San Francisco Estuary Institute (SFEI) study that looked at performance both by LID systems and by non-LID media filters.[[33]](#footnote-34) In addition, the Water Board reviewed hydromodification management maps.  The Water Board analyzed the 2018 SFEI study. We found that it is not clear that media filters have significantly greater performance (with respect to loading, not only concentration) than LID systems, given the small sample size of media filters (2) compared to LID facilities (8) in the study, the range of influent concentrations for each monitored system, and the study’s self-identified limitations (see below). In addition, the Permit’s water quality benefits are comprised of benefits provided by direct pollutant removal in LID facilities and reductions in pollutant discharge from the hydrologic benefits associated with LID facilities. The Permit’s approach depends on achieving a minimum level of hydrologic benefit that is implicit to LID facilities and Provision C.3.g also requires certain larger projects to implement explicit hydromodification management requirements.  It is not clear that performance observed in the SFEI study was significantly different between LID systems and media filters for suspended sediment concentration, total organic carbon, and PCBs; media filters may have performed better in the study for mercury (total) and lead (total). The study qualifies these results in several ways. For example, it says that one possible explanation for why certain bioretention cells performed better than others in the study, and why the media filters appeared to perform better than the other systems in the study for certain pollutants, was because they were more mature; in other words, the date of construction may be a key factor that in part explains the observed difference in performance. Another key factor was influent loading; the study acknowledges that systems with greater influent loading tended to have better performance as compared to systems with lesser influent loading, citing not only the data produced by the Study but also Kadlec and Knight, 1996.[[34]](#footnote-35) Additionally, and importantly, this analysis does not take into account load reduction on the basis of flow reduction (i.e., accounting for reduction in loads based on reduction in flow in addition to reduction in concentration), only reductions in concentration; if the study had taken into account load reduction through reductions in flow provided by LID systems (which are not provided by media filters even when they are designed with open bottoms, because they do not include the necessary storage and detention that is necessary for infiltration in most Bay Area soils), including for the greater range of larger storms that LID systems have the capacity to detain and treat compared to media filters, it is possible that LID system performance in the study would have more parity with, or even be significantly favored relative to, media filter performance in the study.  In addition, the study included the following self-proclaimed Limitations of Interpretation (p. 8), which reflect those noted by others:[[35]](#footnote-36) 1) “…there are many important differences between the sites in terms of design, construction, and maintenance. For example, soil depth, presence of an underdrain, depth of underdrain, soil compaction, media composition, vegetation species, density and health, irrigation practices, etc. can all impact the performance of a site so when multiple factors vary between sites, it is challenging to discern why one site performs better than another…”; 2) “Many of the sites monitored were done so within a year or two of construction. This may still be within the window of time that these bioretention systems are still settling and so it can be difficult to understand how performance may be different once the initial period of maturation is completed…”; 3) “The sampling completed was not a perfect representation of inlet and outlet concentrations. Sampling in these storms was intermittent, not always flow-weighted, and often did not capture the entire storm (e.g., sampling may have begun after substantial runoff had already occurred). The sampling is typically limited to <10 storms and does not represent the full range of storm types. Additionally, there is no perfect pairing between inlet and outlet samples. What flows in one storm may have residence time in the unit and flow out in a subsequent storm. You can get around this issue by sampling a large number of storms, but these projects were only pilot level…”; and 4) “When increased concentrations at the outlet are observed, causation is often unknown. It could be the result of too few storms sampled and that higher inlet concentrations were missed, or it could be that the pollutant is being sourced from the media. Ideally for Hg and Cu, pollutants in which we see mixed results, initial soil testing should be done to verify the concentrations at the beginning of an installation. Another reason could be that the initial part of the storm was not sampled well; the bulk of the pollutant mass (30-50%) for many pollutants is transported in the first 10-20% of the volume (Stenstrom and Kayhanian, 2005) so by missing samples in the initial onset of a storm, the influent concentrations may appear low. In contrast, it is relatively easy to capture the early portions of the effluent, and since effluent water quality is generally less variable, the sample result is more likely to have better representation of the effluent on the whole…”  Regarding the effect of influent concentration, as seen in Table 6 and Figure 13, below (p. 22, p. 24), percent reductions in concentration may be biased by influent concentration. Though at first glance the data may suggest that the media filter systems (West Oakland Tree Wells 6 & 7) experienced better PCB concentration reduction compared to the LID systems, performance is not significantly different (ignoring the Bransten Facility No. 7 outlier) upon reaching a certain threshold of influent concentration (~25 ng/L). Since neither of the two media filters in the study had influent concentrations in the lower range, media filter PCB performance at lower influent concentrations may be no better than LID system performance at lower influent concentrations, a point often made by Provision C.8.d LID Monitoring TAG member Eric Strecker: if you want your BMP to look good, then discharge high concentrations of pollutants into it. This is also explained by the International Stormwater BMP Database, for example, in its 2007 Percent Removal FAQ: “Percent removal is primarily a function of influent quality. In almost all cases, higher influent pollutant concentrations into functioning BMPs result in reporting of higher pollutant removals than those with cleaner influent.”[[36]](#footnote-37) For these reasons, these data are inconclusive with respect to differences in performance by LID systems and media filters for the observed systems at the range of influent concentrations that systems in the Bay Area may experience. Lastly, for higher influent concentrations, there are not enough data points to establish statistical significance. See Attachment 1 to this Response to Comments document.  Another relatively-straightforward example of this phenomenon in the study – increased performance with increased influent concentration, up to an asymptotic limit – is total copper, once again ignoring an outlier (Figure 21, p. 35; horizontal axis: influent concentration, vertical axis: performance as % reduction). See Attachment 2 to this Response to Comments document.  Regarding the benefit of flow reduction on mass loading, using a simple mass balance and taking the PCB data from the 2018 SFEI study for LID (~75%, after removing outliers) and for media filters (~95%), then the LID systems would require a flow reduction of about 80% in order to achieve the same performance in the study as the media filters (95%). If the disparity in concentration reduction between media filters is less than 20% (which it may be or likely is, given the limitations of this study, as discussed above), then the flow control needed by LID systems to “make up” the difference in performance would be proportionally less. Nevertheless, bioretention can provide significant flow reduction even in tight soils (which are found in many – but not all – parts of the Bay Area), which, as explained above, can make up for potential/actual disparities in concentration reduction, such that load reduction is at least commensurate.  Prior to further increasing flexibility, for the reasons stated above in this response, elsewhere in this response to comments document, and in the Tentative Order’s Fact Sheet, and in order to avoid unintended adverse outcomes, it is important for additional information on LID system effectiveness, and particularly hydrologic performance, to be developed. This includes the results of the Provision C.8.d-required monitoring of LID system effectiveness, which will monitor and evaluate water quality and flow control benefit provided by a number of LID systems in Permittee jurisdictions, work being done elsewhere in the U.S. and abroad, and to evaluate the water quality and flow control benefit provided by LID systems in Permittee jurisdictions as required by Provision C.3.c.i.(2)(c)(iii). |
| Contech\_C.3.c.i.(2)(c)(iii)\_14 | The Fact Sheet states:  *“The Water Board received new information that the TAPE program ensures certified systems meet a minimum level of performance that is comparable to the Permit’s bioretention media performance in terms of pollutant concentration reductions at specified influent concentration ranges.”*  This is fundamentally incorrect as established at the May 2022 MRP 3 adoption hearing. Conventional compost based bioretention systems as required in MRP 3 do not reliably meet the water quality criteria for any of the TAPE program performance goals. This recognition by Washington State Department of Ecology led to the development of a new “high performance” bioretention soil mix that minimizes compost content and does perform much better. The report summarizing the composition and performance of the high-performance media blend includes the following statement on the first page:  *“In 2013, Ecology published guidance based on findings from grant-funded studies that a best management practice (BMP) called bioretention used to treat stormwater runoff exports nitrogen, phosphorus, and some dissolved copper.”*  This is noteworthy because Washington State Department of Ecology and the Bay Area both developed nearly identical compost based bioretention media specifications concurrently more than a decade ago. It is precisely because the Washington State Department of Ecology stormwater permits set specific water quality performance targets instead of relying on a prescriptive BMP specification that there has been research and innovation in Washington that has led to better performing alternatives. It is also noteworthy and unfortunate that the high performance bioretention media specification developed in Washington would not currently be allowed by MRP 3. Adopting the provision recommended in this comment letter instead of the proposed Alternative Treatment System amendment in the Tentative Order would allow the high-performance media blend to be used immediately in the area regulated by MRP 3. | The cited Fact Sheet information has been included in part to recognize the new information considered by the Water Board justifying the Permit amendment. We disagree that the MRP Fact Sheet overstates the performance of LID. See the response to Contech\_C.3.c.i.(2)(c)(iii)\_21.  Regarding the adequacy and performance of the approved biotreatment soil media specification, and prompts for the Permittees to submit a revised specification, see the response to Contech\_C.3.c.i.(2)(c)(iii)\_5. |
| Contech\_C.3.c.i.(2)(c)(iii)\_15 | The proposed amendment language in the Tentative Order states that the permittees “may” implement an alternative treatment system approval program after revising hydromodification maps and completing a Regional Guidance Document. There is no required timeline for either of these steps. The permittees could wait until 2025 to submit these documents or may not submit them at all. This is very similar to the discretionary Work Group approach already in MRP 3 which the Water Board members specifically rejected during the May 2022 MRP 3 adoption hearing. Water Board members asked for a change to the permit to encourage innovation and to provide flexibility to accommodate enhanced water quality treatment controls.  The goal of the Water Board to allow for implementation of innovative biofiltration that will enhance water quality treatment will not be attained by mandating that the permittees must complete the mapping steps and the Regional Guidance Document described in the Tentative Order within a time certain. Instead, we urge the Board to adopt the MRP 3 amendment proposed in this comment instead of that proposed in the Tentative Order because the Tentative Order amendment is unworkable without major revisions. Specifically, to implement the direction of Water Board members at the adoption hearing and to ensure that the MRP 3 complies with applicable laws, recommend respectfully request adopting the amendment language set forth in this comment letter. | The Water Board did not direct staff to amend MRP 3 to allow for alternative treatment systems. The Board’s motion to approve MRP 3 included direction to staff to come back to the Board on the year’s progress related to the inclusion of LID or alternative treatment measures, among other topics—not to amend MRP 3. Moreover, individual Board members may not bind the Board; the statements of one or two Board members are not the statements of the Board as a whole.  The HM Applicability Maps do not necessarily need to be revised; they have all already been created, the applicable portions of those maps simply need to be reviewed by Permittees and resubmitted for re-evaluation. See the response to combined comment:  CCCWP\_C.3.c.i.(2)(c)(iii)\_2  ACCWP\_C.3.c.i.(2)(c)(iii)\_1  ACCWP\_C.3.c.i.(2)(c)(iii)\_2  Regarding the Regional Guidance Document, see the response to CCCWP\_C.3.c.i.(2)(c)(iii)\_8.  Regarding the lack of a deadline for the Regional Guidance Document’s submittal, see the response to Contech\_C.3.c.i.(2)(c)(iii)\_8.  Regarding the request to adopt the language suggested in the comment in lieu of the language included in the Tentative Order, see the response to Contech\_C.3.c.i.(2)(c)(iii)\_2. |
| Contech\_C.3.c.i.(2)(c)(iii)\_16 | The proposal in the Tentative Order would require Executive Officer approval of any alternative system use on a project-by-project basis. This constitutes an unnecessary burden on applicants and Water Board staff and creates hurdles to implementation of innovative biofiltration and the water quality benefits it would obtain in the form of time delays and uncertainty for project proponents and plan reviewers. Whatever criteria the Executive Officer would use to approve projects on a case-by-case basis should be incorporated into the Regional Guidance Document and permittees should be empowered to review and approve plans following those criteria. | Regarding the Regional Guidance Document, see the response to CCCWP\_C.3.c.i.(2)(c)(iii)\_8.  Regarding Executive Officer approval of individual projects, see the response to CCCWP\_C.3.c.i.(2)(c)(iii)\_1.  Regarding the comment that the language allowing Alternative Treatment Systems may impede the implementation of such systems, see the response to CCCWP\_C.3.c.i.(2)(c)(iii)\_3. |
| Contech\_C.3.c.i.(2)(c)(iii)\_17 | The Tentative Order would require a demonstration of technical infeasibility and a demonstration of water quality, flow control and “urban greening” equivalence. This approach does not make sense. In the context of an NPDES permit, demonstrating technical infeasibility is typically only required prior to excluding the most effective approach in favor of a less effective approach. Further, demonstrating equivalence is typically required to allow selection of an innovative approach with the same water quality effectiveness as an approved approach. There is no justification to require both here. A demonstration of water quality equivalence should be enough to justify the use of alternative systems. | The MRP recognizes LID as the most effective approach for treatment of urban stormwater; the Tentative Order would not change that. See the responses to Contech\_C.3.c.i.(2)(c)(iii)\_2, Contech\_C.3.c.i.(2)(c)(iii)\_3, Contech\_C.3.c.i.(2)(c)(iii)\_5, Contech\_C.3.c.i.(2)(c)(iii)\_6, and Contech\_C.3.c.i.(2)(c)(iii)\_7.  Regarding LID requirements in other NPDES municipal stormwater permits and how the MRP compares to those other permits, see also the response to Contech\_C.3.c.i.(2)(c)(iii)\_4.  Regarding the comment that the Demonstration of Technical Infeasibility is inappropriate and should be wholly removed, see the responses to CCCWP\_C.3.c.i.(2)(c)(iii)\_9 and to SCVURPPP\_C.3.c.i.(2)(c)(iii)\_5  SMCWPPP\_C.3.c.i.(2)(c)(iii)\_5.  The Tentative Order does not require urban greening as a component of the Demonstration of Commensurate Benefit. For more on this, and a proposed clarifying edit, see the response to Contech\_C.3.c.i.(2)(c)(iii)\_10. |
| Contech\_C.3.c.i.(2)(c)(iii)\_18 | The Fact Sheet states:  *“Finally, the Water Board considered other jurisdictions’ requirements for onsite retention of a certain quantity of stormwater since onsite retention prevents pollutants in the retained runoff from being discharged to receiving waters and mitigates its hydromodification effects.”*  This statement and the accompanying six references are inaccurate. For the reasons described above, the current MRP C.3 bioretention specifications are not consistent with those in 5 of the 6 other water board regional programs. They would meet Central Coast Phase II permit requirements. These references further reinforce the gap between the MRP 3 approach to post-construction stormwater management and more proactive runoff reduction requirements elsewhere. | We disagree. See the response to Contech\_C.3.c.i.(2)(c)(iii)\_4. |
| Contech\_C.3.c.i.(2)(c)(iii)\_19 | This permit is unique in defining high rate, biofiltration as “non-LID” alternative treatment. High rate biofiltration shares the same fundamental unit processes as C.3 bioretention, specifically interception of runoff via vegetation, physical filtration and sorption by organic media, bioremediation of captured pollutants by plants and microbes, evapotranspiration and, where feasible, infiltration. The only consistent difference is the size of the systems, with conventional systems being much larger with non-optimized media flowing at lower rates. In other Phase I permits in California, bioretention that retains the entire design storm is considered a “retention” BMP. Conventional bioretention that includes an underdrain and discharges all or a portion of the design storm is considered to be a form of biotreatment most commonly referred to as biofiltration. High rate biofilters and conventional biofilters should both be part of an LID suite of tools in the MRP 3 as they are in other water board regions.  High-rate media filters that do not include vegetation have much more limited or nonexistent evapotranspiration, bioremediation, interception and infiltration potential than biofilters. As a result, they are typically classified as “non-LID” treatment systems. The persistent miscategorization of high rate biofilters as non-LID media filters in the fact sheet does make it easier to position them as being in conflict with LID principles but is incorrect. The fact sheet distinguishes between bioretention and alternative treatment systems as follows:  *As compared to bioretention cells, typically the most used water quality control within the LID framework, alternative treatment systems have limited to negligible flow control benefits due to limited storage within the device and minimal time and space for water to be detained prior to infiltration.*  This distinction ignores the fundamental unit processes operating in each system type, which directly impact water quality outcomes, in favor of a focus on flow control benefits which have a secondary impact on water quality outcomes. The definition also would seem to exclude conventional bioretention systems designed to prevent infiltration where that would create geotechnical hazards. Following the logic in the fact sheet, without an infiltration component, these systems would be considered “alternative treatment systems”, yet in practice, they are still considered to be LID systems in the MRP 3. The Fact Sheet amendment also seems to contradict the first paragraph of MRP 3 Provision C.3.c, which lists “planter/tree boxes” as LID practices. | We disagree. The MRP is consistent with approaches in other NPDES stormwater permits. For more on this, and what other permits require relative to the MRP, see the response to Contech\_C.3.c.i.(2)(c)(iii)\_4.  Though media filters or “high-rate biofilters” share some unit processes with LID, they also have significant differences, which, if not accounted for, can degrade water quality in receiving waters and violate federal and state antidegradation and anti-backsliding policies (see the response to Contech\_C.3.c.i.(2)(c)(iii)\_2), even if they include some nominal amount of vegetation. Additionally, because of the high flow rates these media filters are designed to accommodate, the media can be prone to clogging and requires significantly more intensive and frequent maintenance that may not be sufficiently provided by the project proponent or permittee. For more on this, see the response to Contech\_C.3.c.i.(2)(c)(iii)\_2.  Flow control benefits are a substantial portion of the water quality benefits provided by LID controls. The Tentative Order proposes flexibility to implement Alternative Treatment Systems in those geographic areas where flow control benefits are substantially less, such that LID controls and Alternative Treatment Systems are relatively more comparable. Those areas are often those where, as the commenter notes, flow-through bioretention planter boxes may be implemented. As noted elsewhere herein, the Water Board is committed to working with the Permittees and other stakeholders to develop and evaluate additional information, which could be used to support additional flexibility as part of a future permit reissuance.  See also the responses to Contech\_C.3.c.i.(2)(c)(iii)\_2, Contech\_C.3.c.i.(2)(c)(iii)\_10, and Contech\_C.3.c.i.(2)(c)(iii)\_13.  See also the response to combined comment:  CCCWP\_C.3.c.i.(2)(c)(iii)\_2  ACCWP\_C.3.c.i.(2)(c)(iii)\_1  ACCWP\_C.3.c.i.(2)(c)(iii)\_2.  See also the response to SCVURPPP\_C.3.c.i.(2)(c)(iii)\_5  SMCWPPP\_C.3.c.i.(2)(c)(iii)\_5. |
| Contech\_C.3.c.i.(2)(c)(iii)\_20 | The Fact Sheet quotes San Francisco Baykeeper and others who in 2009 “supported the Permit’s LID system approach and expressed concern that allowing alternative systems would result in less-effective water quality benefits with respect to direct pollutant reduction and flow control”. It doesn’t mention that more recently in public comments on the MRP 3 tentative final order dated November 16, 2021, San Francisco Baykeeper advocated for “innovative bioretention systems” and pointed out documentation of conventional compost-based bioretention systems performance including observations of phosphorus, nitrogen, copper and mercury export from these systems. Their comment on the topic concludes with the following statement:  “We do not need to wait for MRP 4 to course correct. The Regional Board should revise Provision C.3.c.i.(2).(c).(ii) to allow for innovative bioretention systems in addition to traditional bioretention systems.”  This fact sheet should be revised to reflect San Francisco Baykeeper’s stated position on the inclusion of innovative biofiltration systems. | This comment references information previously considered by the Water Board in its adoption of MRP 3.  The adoption led to the formation of a work group to consider additional flexibility for Alternative Treatment Systems, as described in the Tentative Order Fact Sheet, leading to the Tentative Order that would allow use of those systems in locations where they are relatively more comparable to the Permit’s LID standard.  Regarding the biotreatment soil media specification, see also the response to comment Contech\_C.3.c.i.(2)(c)(iii)\_5 |
| Contech\_C.3.c.i.(2)(c)(iii)\_21 | The fact sheet amendment states: *In addition, while the flow control benefits of LID systems have been documented, the range of those benefits—including from infiltration into less infiltrative soils and horizontal infiltration—is not yet well quantified from monitoring data and field studies. Studies have, however, found greater benefit than would be expected from textbook infiltration values. Currently, approaches to quantify the flow control benefits are primarily hydrologic models that are imprecise and can be biased by the use of potentially non-conservative or inaccurate assumptions.*  Runoff reduction as a percentage of total annual volume has been modeled by permittees for conventional bioretention. The tentative fact sheet amendment states that such hydraulic modeling can be biased toward underestimating infiltrated runoff volume. This is primarily based on field experience with three bioretention cells monitored at the Pittsburg Fire Station by Contra Costa County which were designed to be much larger and with deeper gravel profiles than required be [sic] section C.3.c of MRP 3. The fact sheet amendments cite three other references as evidence that modeled runoff reduction values are likely to be underestimated. However, there are also many examples of bioretention performing worse than expected in terms of the proportion of runoff that is treated (capture efficiency) and infiltrated, including in research conducted in the Bay Area.  Hydraulic underperformance has a wide range of common causes, including:   * Compaction of native soils under the bioretention cell or compaction of the bioretention soil itself during construction * Migration of fines through the bioretention soil and the gravel layer to the interface with native soils * Lack of bioretention media quality control resulting in media that does not meet specifications * Fouling with sediment, concrete wash water or other materials during the construction phase of the project * Failure to regularly remove degraded mulch and accumulated organic materials on top of the media * Blockage of inlets or the media bed due to sediment, trash and debris accumulation, or due to excessive vegetative growth * Incorrect construction, especially incorrect elevations of inlets, bypass structures, and media depth * Short circuiting of the media bed due to preferential flow paths created by burrowing rodents or other animals   In addition to the Contra Costa Data referenced in the fact sheet amendment, flow data was collected during the Clean Watersheds for a Clean Bay program. Unfortunately, it is erratic and incomplete. Two bioretention sites (LAU3 and LAU4) showed an increase in runoff volumes between influent and effluent points for storms with available data. The Bransten Road #7 system showed no change between influent and effluent volumes and bypassed 21% of the total runoff volume even though all storm depths were far lower than the design storm depth. The El Cerrito Green Street system reduced treated flow volumes by 76%, however, 43% of all rain bypassed treatment even though storms were far smaller than design.  If we are to conclude anything from the available local data, it is the following:   * Bioretention system flow monitoring is exceedingly difficult and imprecise. Flow data is not available for most storms and what data is available rarely provides influent, effluent and bypass volumes that make sense in context with each other and the design of the systems. * Runoff that should be treated by bioretention systems in storms smaller than 0.75 inches in depth is frequently bypassing treatment.   Some factors, potentially including hydraulic modeling approaches, may underestimate actual flow control benefits. Other factors, especially related widespread challenges with proper construction and operation and maintenance may reduce actual flow control benefits. This lack of precision is important because the permit amendment requires that commensurate flow control benefits be demonstrated for alternative treatment systems. Any such modeling should consider and adjust for systemic factors that are likely to overestimate flow control performance as well as those that may underestimate it. | We disagree that the Tentative Order overstates the performance of LID treatment systems. See the response to Contech\_C.3.c.i.(2)(c)(iii)\_3.  We agree that the issues listed can affect the performance of LID stormwater treatment measures. This is why Permittee oversight of new development and redevelopment projects is important, during the planning, design, permitting, and construction phases, and also after construction for the life of a project. We do not agree that these potential complications invalidate the permit’s prioritization of LID stormwater treatment controls, in part because alternative treatment systems share many of these challenges, in some cases to a more significant degree resulting from their compact design; see also the response to Contech\_C.3.c.i.(2)(c)(iii)\_3.  We agree that it is challenging to extract conclusions regarding concentration reduction, flow moderation, and load reduction from studies with limited scope and scale, because of environmental variability and because of the variability of performance of specific installations (of which there may be many causes). The flow control benefit provided by LID stormwater treatment measures is not yet well quantified from monitoring data and field studies. This is in part why MRP 3 includes LID Monitoring in Provision C.8.d. As explained in the Tentative Order’s Fact Sheet, “work being done to advance the understanding of the flow control benefits of LID systems includes Provision C.8.d Low Impact Development Monitoring as well as studies elsewhere in the U.S.” That includes, but is not limited to, work done by the Villanova University Stormwater Partnership and in North Carolina, Washington State, and Ohio.  We agree that such analysis should seek to appropriately monitor and evaluate treatment control performance. Both the Water Board and a technical advisory group (TAG) convened specifically to provide oversight during the development of the countywide stormwater programs’ Final LID Monitoring Plans, will review the implementation of LID Monitoring during the permit term to ensure monitoring and reported results appropriately reflect control performance, as well as uncertainty around that performance, and need for additional information.  The Water Board is committed to continuing to recognize and evaluate information on performance to evaluate future changes to permit requirements that support improved water quality. |
| Contech\_C.3.c.i.(2)(c)(iii)\_22 | In conclusion, Contech, in addition to many other stakeholders who signed the petition submitted at the May 2022 adoption hearing, respectfully requests that the Water Board consider the arguments above and revise the Tentative Order to instead include the proposed language above to the end of MRP Provision C.3.c.i.(2)(c)(ii). The results of prohibiting innovative biofiltration are to drive up development costs, to drive down development density, and to fail to implement the most effective treatment controls that are feasible, cost effective, and better treat pollutants of particular concern in this region, such as mercury, PCBs, sediment, and nutrients. As explained above, this adoption of an MRP 3 amendment as proposed in this comment would allow greater flexibility for permittees to implement innovative biofiltration systems that can outperform the conventional bioretention systems for the San Francisco Bay region. Thank you for your consideration of these comments on the Tentative Order. | Regarding the language proposed in the comment, see the response to Contech\_C.3.c.i.(2)(c)(iii)\_2.  Regarding Alternative Treatment Systems “prohibiting” implementation of such systems, see the response to CCCWP\_C.3.c.i.(2)(c)(iii)\_3.  Regarding the claim that alternative treatment systems provide greater water quality benefit than LID stormwater treatment systems, see the responses to Contech\_C.3.c.i.(2)(c)(iii)\_3 and Contech\_C.3.c.i.(2)(c)(iii)\_13.  Regarding the claim that alternative treatment systems are cheaper than LID stormwater treatment systems, see the responses to SCVURPPP\_C.3.b.ii.(5)\_4  SMCWPPP\_C.3.b.ii.(5)\_4  CCCWP\_C.3.b.ii.(5)\_2 and  Wiener\_C.3.e.ii.(5)\_5. |
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| CCCWP\_C.3.e.ii.(5)\_1 | Recommendations made as part of the Special Project Category C Workgroup were not fully considered.  Strict use of area median household income (AMI) for credit determination as currently defined in the amendment language will be challenging as original AMIs by DU can change between stages of project permitting.  Furthermore, the proposed credit multipliers are very low if the goal is to seriously incentivize affordable housing production under MRP 3. For example, many new housing projects seek to qualify for a State Density Bonus a minimum of 5% of the units reserved for very low incomes. Under the State Density Bonus Law, that minimum threshold qualifies the housing project for an incentive/concession from various types of local zoning regulations and a 20% density bonus, and the incentives and bonuses go up from there. That is a powerful incentive to provide affordable housing that comes with a significant loss of local zoning control. Yet, the Tentative Order Amendment would only provide an Affordable Housing Credit of 20% for a 5% Low-Income Density Bonus project, providing a limited incentive to make affordability decisions based on the MRP’s Affordable Housing Credit. In other words, the credit multipliers should be high enough to incentivize housing providers by the MRP 3.0 Affordable Housing Credit alone, rather than other provisions of state law, when deciding to develop affordable housing.  Re-evaluate Special Project Category C Workgroup suggestions and prioritize the importance of affordable housing in the update.  See the recommendation provided under Comment #2 regarding Alternative Treatment System constraints. | See response to CCCWP\_general\_2.  The possibility that certain project details may change during the planning/design/approval does not supersede the justification for the Special Project Cateria C criteria provided in the Tentative Order’s Fact Sheet, which explains, in part: “…the criteria were modified to provide maximum flexibility for the fully affordable projects being built by public and non-profit entities, and to give sliding-scale flexibility for projects with lesser amounts of affordable housing—more typically projects built by for-profit developers. “Sliding-scale flexibility” means that the more a project that is affordable and the more a project’s affordable units are targeted to residents in lower-income categories, the greater flexibility is provided….  “Water Board staff reviewed additional information, including state, regional, and local laws, policies, and programs regarding affordable housing. These included MTC’s Housing-Oriented Transit Fund, Housing Incentive Pool, One Bay Area Grant Program, Bay Area Preservation Pilot Fund, and the Regional Housing Needs Allocation (RHNA). They also included Senate Bill 35, which allows developers’ applications for housing projects to receive streamlined ministerial review and approval, bypassing the local municipality’s requirements for discretionary approval, provided that the local municipality has not achieved its RHNA; Assembly Bill 2011, which allows developers to build residential projects in areas zoned commercial, and allows California Environmental Quality Act exemptions for projects that are 100 percent affordable; Senate Bill 9, which allows homeowners to subdivide single-family residential lots into up to four units; and the California Density Bonus Law, which provides housing developers with a density bonus and additional incentives and concessions based on the amount of affordable dwelling units (DUs) included in housing projects. This review informed how the Permit structures the flexibility criteria to better address the range of affordable projects being built and confirmed that the Order’s flexibility criteria, which are consistent with the approach in the California Density Bonus Law, were not in conflict with existing affordable housing laws, policies, or programs.  “The Workgroup discussed local-level implementation of affordable housing plans, policies, and guidance. At the local level, many municipalities have established their own definitions of affordable housing and their own ordinances, policies, and programs to incentivize affordable housing. For example, the City of Oakland’s Construction Innovation and Expanded Housing Options Ordinance18allows residential occupancy of recreational vehicles (RVs) and tiny homes on wheels (“Vehicular Residential Facilities”) on private property and allows mobile homes and manufactured homes in all zoning districts where residential uses are permitted.19This new information reinforced that public and non-profit entities typically are those who are building fully affordable projects, while private investors typically are building projects for which only a portion of the project’s dwelling units are affordable. The new information supported both the need for revised criteria that apply to the range of affordable projects being built in the region and the decision to provide more flexibility to projects that are relatively more affordable.”  Furthermore, the criteria are already generous and include significant flexibility to accommodate potential changes to project details, as a project can claim up to an additional 9% non-LID Affordable Housing Credit for “free.” For example, if a project has a Weighted Sum of X = 41%, it could claim an Affordable Housing Credit of up to 50%, because 41% ≤ X ≤ 50% (this applies to all rows). And, the project could qualify for up to an additional 30% non-LID credit from Density, Location, and Minimized Surface parking Credits, so, for example, a project with an Affordable housing credit of only X = 41% could qualify for a total non-LID credit of up to 80%. Therefore, the requested flexibility is *already* built into the criteria.  The specific structure and basis of the criteria is explained and justified in the Tentative Order’s Fact Sheet, so it is not possible to change those criteria without additional information that justifies specific revisions, which this comment has not provided.  The following portion of the comment represents a significant misunderstanding of the Category C Special Project criteria: “…many new housing projects seek to qualify for a State Density Bonus a minimum of 5% of the units reserved for very low incomes. Under the State Density Bonus Law, that minimum threshold qualifies the housing project for an incentive/concession from various types of local zoning regulations and a 20% density bonus, and the incentives and bonuses go up from there.” As explained in the Tentative Order and in the Tentative Order’s Fact Sheet, a project with as little as 5% Very Low units would qualify for a 20% Affordable Housing Credit, just as it would qualify for a 20% density bonus pursuant to State law. Likewise, just as the other concessions in State law only increase from there, so too does the non-LID credit for Category C Special Projects. For example, the project can get up to an additional 30% non-LID credit for minimizing surface parking, including a minimum density of units, and being close to a transit hub or within a priority development area (most of which are typically satisfied by urban infill lot-line residential projects). See Example 2 on page 18 of the Tentative Order for an example project that would qualify for 100% non-LID credit with only 70% Affordable Housing Credit, using the three other forms of non-LID credit mentioned in the previous sentence. We also note that a Category C project with 95% market-rate units and only 5% Very Low units, or 90% market-rate units and only 10% Low units (etc.), could qualify for up to 20% Affordable Housing Credit and up to 50% total non-LID credit. In other words, the Category C Special Project criteria are flexible, forgiving of changing project details, and provide substantial flexibility that aligns with the kinds of projects cited by the commenter.  Regarding the following portion of the comment, “[t]he credit multipliers should be high enough to incentivize housing providers by the MRP 3 Affordable Housing Credit alone, rather than other provisions of state law, when deciding to develop affordable housing. Re-evaluate Special Project Category C Workgroup suggestions and prioritize the importance of affordable housing in the update,” the comment does not provide specific information regarding how or why the credit multipliers are low, nor does it provide specific suggestions of how high the credit multipliers should be raised, with an accompanying justification. The rationale for the Tentative Order’s criteria is provided in the Tentative Order and in the Tentative Order’s Fact Sheet, and in this response, and it explains and justifies the criteria as proposed in the Tentative Order.  We agree that the MRP is not intended to drive local land use policy. In response to information provided by workgroup participants, the Tentative Order Fact Sheet states: “a statement is added to the Permit’s existing Fact Sheet clarifying that the Water Board is not a local land use agency, and that Permit flexibility is intended to be applied to projects as they appear, not to drive housing policy.” The added statement is: “The Water Board is not a land use agency and has not established an inclusionary housing policy in the Permit; instead, the Permit recognizes the indirect water quality benefit provided by housing development based on the level of affordability of their DUs, and accordingly provides an amount of non-LID credit proportional to that affordability.”  Affordable housing is expressly prioritized in the Tentative Order by the flexibility it provides for projects that include affordable units |
| SCVURPPP\_C.3.e.ii.(5)\_1  SMCWPPP\_C.3.e.ii.(5)\_1 | The proposed new methodology represents an improvement over the current approach. The methodology for calculating affordable housing credits better reflects the diverse mixes of income-based dwelling units in affordable housing projects and will allow more projects to qualify for the LID treatment reduction credit where needed. | Comment noted. |
| SCVURPPP\_C.3.e.ii.(5)\_2  SMCWPPP\_C.3.e.ii.(5)\_2 | The proposed methodology does not completely address concerns expressed by SCVURPPP Co-permittees in the Special Projects Category C Work Group about emergency/temporary housing and facilities for unsheltered homeless populations. An exemption for emergency housing from the deed restrictions for affordable housing was provided as a footnote in the Administration Draft Amendment, but was removed from the Tentative Order. The footnote was helpful and should be included; however, it does not address other challenges with emergency housing. Emergency housing projects are often built on vacant lands that cannot be used for typical development projects and have tight timelines and budgets. These projects should be exempted from C.3 treatment requirements until they are redeveloped into permanent housing projects. Implementing C.3 treatment requires space, funding, and maintenance that could be used towards building housing units and/or funding critical onsite services, secured storage needs, and operations. Most of these projects are also temporary; C.3 treatment built on emergency/temporary housing projects may need to be removed/redesigned to meet necessary C.3 requirements for a future regulated project. These types of facilities are crucial for getting unsheltered homeless persons out of encampments and away from creeks, thus reducing trash and other negative impacts near waterways. They have also been found to be a successful approach to addressing the issue of homelessness within Permittee jurisdictions, with a large percentage of residents transitioning to permanent housing. | We have considered new information that justifies excluding temporary emergency homeless shelters from compliance with Provisions C.3.c-d. This information includes the Bay Area Municipal Stormwater Collaborative report, dated September 30, 2023, “Regional Best Management Practices Report for Addressing Non-Stormwater Discharges Associated with Unsheltered Homeless Populations.” At the time of Permit amendment, the Report had been recently submitted and was under review by the Water Board. The report recognizes temporary emergency homeless shelters, such as managed RV safe parking areas and managed encampment sites like “cabin communities,” as tools in transitioning to shelter Bay Area residents experiencing unsheltered homelessness, and thus reducing associated non-stormwater discharges. Similarly, the Water Board considered shifts in effort by MRP Permittees, including the cities of Oakland and San Jose, to increase focus on temporary emergency housing as one tool in the toolbox of reducing unsheltered homelessness. This includes the City of San Jose’s five-year municipal budget projection (e.g., Expenditure Forecast: “In addition, the City has committed the remaining $56.6 million of federal funding from the American Rescue Plan Act to augment and continue critical pandemic response and recovery programs in 2022-2023, including Emergency Interim Housing Construction and Operation, child and youth services investments, contractual services for Beautify San José Consolidated Model, SOAR Expansion, and Digital Equity, which will also be re-evaluated for continuation in 2023- 2024 in consideration of ongoing community needs." p.54 of 184, <https://www.sanjoseca.gov/home/showpublisheddocument/95049/638134342380800000>). And the Water Board considered newly published references indicating that temporary emergency housing is part of the set of tools needed to address unsheltered homelessness. Provision C.3.e.ii.(5)(a) of the Tentative Order is accordingly revised.  **Proposed Revision:** Tentative Order Provision C.3.e.ii.(5)(a) is revised as follows, to add footnote g:  “Emergency homeless shelters constructed pursuant to and consistent with Government Code § 8698.4, including the definition of “homeless shelter” in subdivision (c), and that are temporary are not Regulated Projects under Provision C.3.b. As such, they are not subject to Provisions C.3.c (Low Impact Development) and C.3.d (Numeric Sizing Criteria for Stormwater Treatment Systems) and shall instead comply with Provision C.3.i (Site Design Measures for Small Projects) and implement relevant best management practices developed under Provision C.17 (Discharges Associated with Unsheltered Homeless Populations). Should the homeless shelter become permanent and the impervious surfaces it created or replaced meet the thresholds for a regulated project, or if there is a new Regulated Project and/or Special Project at the site, the project shall comply with Provision C.3, including Provisions C.3.c and C.3.d.”  The following text is added to the MRP Fact Sheet in Item 5 of the Revised Tentative Order:  Provision C.3.e.ii.(5) excludes from compliance with Provisions C.3.c (Low Impact Development) and C.3.d (Numeric Sizing Criteria for Stormwater Treatment Systems) emergency housing projects for people experiencing unsheltered homelessness, when those projects are constructed pursuant to and consistent with Government Code § 8698.4, including the definition of “homeless shelter” in subdivision (c), and that are temporary.[[37]](#footnote-38) It requires those projects instead to comply with Provision C.3.i (Site Design Measures for Small Projects) and to implement relevant best management practices developed under Provision C.17 (Discharges Associated with Unsheltered Homeless Populations), such as provision of appropriate trash collection and sanitary sewage services.[[38]](#footnote-39) This recognizes the projects’ water quality benefits from reducing the number of people experiencing unsheltered homelessness, and the discharges associated with unsheltered homelessness, as described elsewhere in this section. As described in the Fact Sheet section for Provision C.17, it further recognizes the urgent need for such projects and the limited resources available to address unsheltered homelessness relative to the identified need. The flexibility is justified by the water quality benefit from reducing unsheltered homelessness and because it is temporary. If the project becomes permanent and if its created or replaced impervious surfaces meet the thresholds for a Regulated Project, or if a new Regulated Project or Special Project is constructed, then it must comply with Provision C.3, including Provisions C.3.c and C.3.d.  The Revised Tentative Order’s Fact Sheet is revised as follows:  “This Order also modifies Permit Provision C.3.e.ii.(5) Special Projects: Category C to better align it with how affordable housing projects are planned and built in the region, and to exempt from Provision C.3.c and C.3.d temporary emergency homeless shelters for people experiencing unsheltered homelessness, instead requiring those projects to comply with Provision C.3.i and to implement relevant best management practices developed under Provision C.17. The modification better facilitates the construction of affordable housing, and temporary transitional shelters, that reduce~~s~~ water quality impacts associated with unsheltered homelessness.”  The Revised Tentative Order’s Fact Sheet is also revised with the following addition under New Information Justifying, and Rationale and Basis for, Amendments to Provision C.3.e.ii.(5) Category C Special Projects:  “Provision C.3.e.ii.5 has been revised to exempt from Provision C.3.c and C.3.d temporary emergency homeless shelters for people experiencing unsheltered homelessness, instead requiring those projects to comply with Provision C.3.i and to implement relevant best management practices developed under Provision C.17. Should the use become permanent, or if there is a new Regulated Project and/or Special Project at the site, the project shall comply with Provision C.3, including Provisions C.3.c and C.3.d. The revision facilitates the construction of temporary emergency housing for people experiencing unsheltered homelessness, which reduces discharges of trash and sewage associated with unsheltered homelessness. It is limited because the exemption is removed if the use becomes other than temporary, or if a new Regulated Project or Special Project is constructed at the site. It is further limited because it applies only to temporary emergency housing projects that would have otherwise been Regulated Projects. Many temporary emergency housing projects are not Regulated Projects because they do not create or replace impervious surface (e.g., RV safe parking areas and cabin communities constructed on existing paved areas). It has been included because of the ongoing significant populations of residents experiencing unsheltered homelessness within MRP Permittee jurisdictions, because of the increasing recognition of the benefits of temporary transitional housing by Permittees including Oakland and San Jose,[[39]](#footnote-40) and Permittee recognition of temporary transitional housing as a practice that can address unsheltered homelessness and the non-stormwater discharges associated with it.[[40]](#footnote-41) The revision recognizes new information that justifies excluding temporary emergency homeless shelters from compliance with Provisions C.3.c-d. This information includes the Bay Area Municipal Stormwater Collaborative report, dated September 30, 2023, “Regional Best Management Practices Report for Addressing Non-Stormwater Discharges Associated with Unsheltered Homeless Populations.” At the time of Permit amendment, the Report had been recently submitted and was under review by the Water Board. The report recognizes temporary emergency homeless shelters, such as managed RV safe parking areas and managed encampment sites like “cabin communities,” as tools in transitioning to shelter Bay Area residents experiencing unsheltered homelessness, and thus reducing associated non-stormwater discharges. Similarly, the Water Board considered shifts in effort by MRP Permittees, including the cities of Oakland and San Jose, to increase focus on temporary emergency housing as one tool in the toolbox of reducing unsheltered homelessness. This includes the City of San Jose’s five-year municipal budget projection (e.g., Expenditure Forecast: “In addition, the City has committed the remaining $56.6 million of federal funding from the American Rescue Plan Act to augment and continue critical pandemic response and recovery programs in 2022-2023, including Emergency Interim Housing Construction and Operation, child and youth services investments, contractual services for Beautify San José Consolidated Model, SOAR Expansion, and Digital Equity, which will also be re-evaluated for continuation in 2023-2024 in consideration of ongoing community needs." p.54 of 184, <https://www.sanjoseca.gov/home/showpublisheddocument/95049/638134342380800000>). And the Water Board considered newly published references indicating that temporary emergency housing is part of the set of tools needed to address unsheltered homelessness.” |
| SCVURPPP\_C.3.e.ii.(5)\_3  SMCWPPP\_C.3.e.ii.(5)\_3 | Include emergency/temporary housing and facilities for unsheltered homeless persons including those authorized under the State Shelter Crises Act, California Government Code Section 8698, et seq., and other temporary or emergency housing and facilities funded by State or Federal Funds and reserved for the homeless, such as State Homekey projects, into the C.3.i Small Development and Redevelopment Projects definition (i.e., require site design measures but exempt them from C.3 treatment requirements). | See the response to SCVURPPP\_C.3.e.ii.(5)\_2  SMCWPPP\_C.3.e.ii.(5)\_2.  **Proposed Revision:** See the proposed revision for  SCVURPPP\_C.3.e.ii.(5)\_2 and  SMCWPPP\_C.3.e.ii.(5)\_2. |
| SCVURPPP\_C.3.e.ii.(5)\_4  SMCWPPP\_C.3.e.ii.(5)\_4 | If the above request cannot be met, restore the following footnote to subprovision C.3.e.ii.(5)(a), after the phrase “with deed restrictions running at least 55 years”:  All qualifying affordable housing DUs in public emergency housing projects may be exempt from this deed restriction requirement, as long as they are maintained at the rent/mortgage rates (including utilities) which the project is relying on for its Affordable Housing Credits, for as long as the project is utilizing those Affordable Housing Credits. If there is a new Regulated Project and/or Special Project at that site, its compliance with Provisions C.3.c and C.3.d must be re-evaluated. | See the response to SCVURPPP\_C.3.e.ii.(5)\_2  SMCWPPP\_C.3.e.ii.(5)\_2.  **Proposed Revision:** See the proposed revision for SCVURPPP\_C.3.e.ii.(5)\_2 and  SMCWPPP\_C.3.e.ii.(5)\_2. |
| SCVURPPP\_C.3.e.ii.(5)\_5  SMCWPPP\_C.3.e.ii.(5)\_5 | The Subprovision C.3.e.ii.(5)(a) section of the affordable housing exemption is incorrect with respect to how rents are currently determined under Low-Income Housing Tax Credit and Housing and Community Development regimes and does not reflect any conventional form of recorded restriction. With respect to incomes, the restriction should not be required to exactly match this U.S. Department of Housing and Urban Development definition, but just not to exceed it. Update the language in Subprovision C.3.e.ii.(5)(a) as follows:  “(a) For the purposes of attributing Affordable Housing Credits, affordable housing is defined as preserved housing with deed restrictions running at least 55 years, at rent/mortgage rates (including utilities) no greater than 30 percent of the ~~total household income~~ maximum percentage of area median income as adjusted for assumed family size as allowed under the applicable statute or rule, and ~~which meets~~ for which the associated income limits do not exceed the maximums for the following income levels specified in the Federal Department of Housing and Urban Development’s (HUD’s) definition of affordable housing in metropolitan areas:…” | We agree that the language should be revised for clarity. The suggested edits are consistent with the intent of the proposed language and we have revised it as shown at right.  The language already says the following “...at rents/mortgage rates *no greater than* 30 percent of the total household income...” (emphasis added), meaning no greater than the respective income limits for each category of affordability relative to AMI (I.e., no greater than 30% of 15% of AMI for Acutely Low, and so on).  **Proposed Revision:** Tentative Order Provision C.3.e.ii.(5)(a) is revised as follows:  “...at rent/mortgage rates (including utilities) no greater than 30 percent of the ~~total household income~~ maximum area median household income (AMI) limits adjusted for household size, according to ~~and which meets the following income levels specified in~~ the Federal Department of Housing and Urban Development’s (HUD’s) definition of affordable housing in metropolitan areas: For metropolitan areas, HUD defines Acutely Low household incomes as 0-15 percent of ~~area median household income (~~AMI~~)~~, Extremely Low household incomes as 16~~0~~-30 percent of ~~area median household income (~~AMI~~)~~, Very Low household incomes as 31-50 percent of AMI, Low household incomes as 51-80 percent of AMI, and Moderate household incomes as 81-120 percent of AMI.”  Additionally, Provision C.3.e.ii.(5)(c) of the Tentative Order is revised as follows: “...the most current Official State Income Limits (adjusted for household size, and specific to each county), which are defined on the California Department of Housing and Community Development’s website.h,I  ...  h [~~https://www.hcd.ca.gov/grants-funding/income-limits/state-and-federal-income-limits.shtml~~](https://www.hcd.ca.gov/grants-funding/income-limits/state-and-federal-income-limits.shtml)<https://www.hcd.ca.gov/grants-and-funding/income-limits/state-and-federal-income-rent-and-loan-value-limits>  i As of ~~December 31, 2021~~June 6, 2023, they are: [~~https://www.hcd.ca.gov/grants-funding/income-limits/state-and-federal-income-limits/docs/income-limits-2021.pdf~~](https://www.hcd.ca.gov/grants-funding/income-limits/state-and-federal-income-limits/docs/income-limits-2021.pdf) <https://www.hcd.ca.gov/sites/default/files/docs/grants-and-funding/income-limits-2023.pdf>” |
| Wiener\_C.3.e.ii.(5)\_1 | On May 4, 2022, we wrote to express our concerns with the then-proposed amendments to the National Pollutant Discharge Elimination System (NPDES) Permits. In particular, we expressed concerns with the decision to subject Special Category C projects to low-income housing requirements, which risked obstruct [sic] ongoing efforts by the Legislature and the Governor to ensure that every Californian has a place to call home. We write today to express our dismay that your current proposal does not address our core concerns, and we urge you to reverse your decision to subject this part of the permit to affordable housing requirements. | The proposed amended language is consistent with the new information generated during the past year, as described below, and represents modifications that are also consistent with federal Clean Water Act limits on amendments during the term of an adopted NPDES permit pursuant to 40 CFR section 122.62.  The Water Board convened a Category C Special Projects / Affordable Housing Workgroup that met seven times between September 2022 and April 2023 in order to discuss the topic of Provision C.3.e.ii.(5) Category C Special Project Criteria (Affordable Housing). The Workgroup was co-chaired by the Water Board and by the City of Clayton’s City Manager, who together crafted the agendas and summaries for each workgroup meeting. Workgroup participants included non-profit/affordable housing advocates, for-profit housing advocates, municipal housing authorities, Permittees, MTC/ABAG, and others. Presentations were given by the workgroup participants on the following topics: 1) How to define affordable housing, 2) What are the kinds of projects implemented in our region that include affordable housing, 3) Concerns about how those affordable housing projects are affected by the existing Category C Special Project criteria, and  4) Recommended changes to Category C Special Projects.  The Work Group also considered information presented by participants on market-rate housing, and reviewed built market-rate and fully affordable high-density ultra-urban housing and other land use projects that incorporate LID treatment controls to understand how LID is incorporated into such projects and the extent to which it may present a barrier to their successful design and construction. While information was presented suggesting generally that LID controls could have the potential to affect a small number of projects within MRP jurisdictions, no specific projects were identified where that was the case and the Work Group also considered two additional issues: the Permit’s existing flexibility to complete off-site alternative compliance, and the proposed flexibility to complete Alternate Treatment Systems when LID controls were infeasible in certain geographic areas, generally defined as developed areas closer to the Bay.  Based on the Water Board’s engagement in the workgroup, we developed changes to Category C Special Projects, with the following goals: 1) retain the criteria’s focus on support for affordable housing projects, 2) reduce prescriptiveness, 3) Broaden the range of affordable housing projects that the criteria apply to, and 4) make other miscellaneous changes as needed.  Among other relatively minor changes to Category C Special Projects, the main change to Category C Special Projects is that the existing structure for Affordable Housing Credit adopted as part of MRP 3 has been wholly removed and replaced with a clear and flexible two-step process that accommodates projects with a wide range of affordability, from projects with 100% affordability to projects with very small percentages of affordable DUs.  The changes proposed in the Tentative Order represent a significant increase in flexibility and crediting for a wide range of housing projects, including market-rate housing projects with fairly-limited affordability, which increase is justified in the Tentative Order and in the Tentative Order’s Fact Sheet, and which is the product of discussions that took place in 7 workgroup meetings over 8 months from late 2022 to early 2023, and which received support from a majority of workgroup participants.  Finally, we note that the Permit is not intended to impose unique burdens on affordable housing projects. Rather, the permit recognizes the water quality benefits of affordable housing projects in reducing unsheltered homelessness and, on that basis, provides affordable housing projects with additional flexibility beyond what is already allowed in the Permit to meet low impact development requirements. |
| Wiener\_C.3.e.ii.(5)\_2 | California continues to face an unprecedented housing and homelessness crisis. Before the COVID-19 pandemic, California ranked 49th in the country in housing units per resident and suffered the third highest per capita rate of homelessness in the nation. The global pandemic has only increased the pressure on an already tenuous structure that lacked enough resources for individuals struggling to maintain housing. The lack of supply at all income levels is the primary factor underlying California’s housing crunch and homelessness crisis. California has failed to produce sufficient housing every year since 1989. The state Department of Housing and Community Development (HCD) estimates that California needs to build 180,000 new homes a year to keep up with population growth. More recently, HCD noted in its statewide housing plan that California must plan for more than 2.5 million homes over the next eight-year cycle, and no less than one million of those homes must meet the needs of lower-income households. This represents a need more than double the housing planned for in the last eight-year cycle. This statement of dramatic needs should underscore our concern that initial reports of housing production for 2023 suggest that the state is on track to produce only 100,000 homes, slightly more than half the homes we need and a 30 percent reduction from last year. | We fully recognize and appreciate the housing challenges facing California and your efforts to address the problem. Please understand that the Permit’s LID approach has been included in part because it is a flexible approach that can be incorporated into a broad range of project types and landscape contexts. It supports new projects, including housing projects, due to its flexibility and adaptability while still protecting water quality.  Information was not presented in the Category C / Affordable Housing Workgroup demonstrating that requirements to implement LID stormwater treatment impede the production of housing as compared to allowing less-effective Alternative Treatment Systems.  The water quality basis of the flexibility provided in Provision C.3.e.ii.(5) Category C Special Projects (Affordable Housing) is the direct provision of housing to people experiencing – and threatened with – unsheltered homelessness, and the resulting avoided adverse water quality impacts associated with unsheltered homelessness. As explained in Item 5 of the Tentative Order, “…affordable housing credited by this Provision will help reduce unsheltered homelessness, which will reduce pollutant discharges (e.g., of trash and sewage) from homeless encampments and other sources (e.g., RVs) into MS4s.”[[41]](#footnote-42) This is also explained in the Tentative Order’s Fact Sheet: “The modifications continue to be justified based on the water quality benefit provided by housing residents who are unsheltered, and thus reducing the substantial discharges of pollutants, including trash and sewage, from unsheltered residents. The result is that significantly affordable projects, and essentially all public and non-profit projects, have maximum flexibility. However, less-affordable projects are still given flexibility that recognizes their contribution to reductions in polluted discharges associated with unsheltered homelessness.”  We considered information presented by the building industry, municipalities, and others as part of the Category C / Affordable Housing Workgroup. That information did not include demonstration about offsetting water quality benefits from building market-rate housing. It posed the idea that, over time, and given changes in other limiting factors (e.g., zoning requirements that limit project densities and amounts and limits on property taxes, which result in new and redevelopment projects being tapped as a source of funds via impact fees and other exactions), significant increases in production of market-rate housing could reduce housing costs and might reduce unsheltered homelessness. This proposed link was not sufficiently supported by quantitative evidence for the Bay Area, the strength of its effect given the available evidence was questionable, and it was insufficient to justify the amendment of an adopted NPDES permit. We would welcome additional or new information on that, and which more clearly draws a predictable or verifiable water quality link. That said, recognizing the range of challenges developers face, and the need for housing, the MRP has substantial flexibility that includes an allowance for off-site alternative compliance, LID itself is quite flexible, as we saw in a Workgroup tour of high-density redevelopment projects in the City of San Francisco’s Mission Bay neighborhood, and projects have been successfully incorporating LID designs for more than 20 years in the Bay Area and nationally. The workgroup discussions found that alternative, less-effective measures do not have a significant cost difference – see the response to Wiener\_C.3.e.ii.(5)\_5 – and municipalities are developing additional flexibility, such as Contra Costa County’s countywide alternative compliance program. All of those things support housing production, and especially housing that, via LID, is relatively more resilient in the face of climate change, that provides better water quality benefits, and that better supports high population densities.  The Tentative Order’s Fact Sheet explains this in greater detail, as follows:  “The new information presented at the Workgroup and reviewed by Water Board staff did not identify a cost impact from the Permit’s LID standard that was different from the cost of alternative treatment systems. Additionally, Workgroup discussions and the Water Board’s review of incentive programs and related information determined that there was not a conflict with the incentive programs. However, the information demonstrated that the Category C criteria in the Permit, as issued, would in practice apply primarily to fully affordable projects constructed by public or non-profit entities. The criteria had the effect of excluding from potential flexibility certain projects (primarily for-profit projects) that provided affordable housing but were not fully affordable. That was not the intent and, thus, there was an opportunity to better align the Category C criteria with the full range of affordable projects being built in the region and their associated water quality benefits, while still focusing on maximizing flexibility (through credits) for the most affordable housing. The result is that the criteria were modified to provide maximum flexibility for the fully affordable projects being built by public and non-profit entities, and to give sliding-scale flexibility for projects with lesser amounts of affordable housing—more typically projects built by for-profit developers. “Sliding-scale flexibility” means that the more a project that is affordable and the more a project’s affordable units are targeted to residents in lower-income categories, the greater flexibility is provided. This is appropriate because of how costs are apportioned across projects (projects that are more affordable are generally harder to build) and because projects targeted to residents in lower-income categories are more likely to provide a water quality benefit by shifting residents into housing from being unsheltered.  “Water Board staff reviewed additional information, including state, regional, and local laws, policies, and programs regarding affordable housing. These included MTC’s Housing-Oriented Transit Fund, Housing Incentive Pool, One Bay Area Grant Program, Bay Area Preservation Pilot Fund, and the Regional Housing Needs Allocation (RHNA). They also included Senate Bill 35, which allows developers’ applications for housing projects to receive streamlined ministerial review and approval, bypassing the local municipality’s requirements for discretionary approval, provided that the local municipality has not achieved its RHNA; Assembly Bill 2011, which allows developers to build residential projects in areas zoned commercial, and allows California Environmental Quality Act exemptions for projects that are 100 percent affordable; Senate Bill 9, which allows homeowners to subdivide single-family residential lots into up to four units; and the California Density Bonus Law, which provides housing developers with a density bonus and additional incentives and concessions based on the amount of affordable dwelling units (DUs) included in housing projects. This review informed how the Permit structures the flexibility criteria to better address the range of affordable projects being built and confirmed that the Order’s flexibility criteria, which are consistent with the approach in the California Density Bonus Law, were not in conflict with existing affordable housing laws, policies, or programs.”  During the workgroup’s third meeting on November 1, 2022, a participant stated that “a 10 percent increase in new market rate units is associated with a 1% drop in real rents,” citing to a 2019 paper by an author whose research was funded by Fannie Mae and who currently works for Pretium, an investment firm that focuses on investments in residential real estate and corporate and structured credit. The participant implied that the changes to Category C Special Projects in MRP 3 (which would be modified by the amendment to apply to a broader range of projects and better align with the affordable housing produced in the Bay Area) would result in an analogous reduction in the Bay Area’s housing production (i.e., 10 percent) and an analogous increase in rent (e.g., 1 percent), or that the changes would prevent an analogous increase in the housing supply such that rent will not decrease regionally when it otherwise would have due to additional supply. Our analysis of the cited study did not reveal new information sufficient to justify the requested reversion of the criteria in MRP 3 to the criteria in MRP 2, because we did not find evidence that the changes to Category C Special Projects were likely to cause the adverse impacts to housing in the Bay Area that were hypothesized by the participant and by the cited study.  We recognize that a range of factors affect housing supply and displacement.[[42]](#footnote-43) Because MRP 3’s required clean water controls for new and redevelopment projects are flexible, generally cost-neutral relative to Alternative Treatment Systems, and have been implemented in built projects for more than twenty years, and because the Permit further allows additional options for alternative compliance such that clean water controls do not have to be built on a project site when it is infeasible to do so, it is not clear that the Permit has any effect, or any measurable effect, on housing supply. As noted above, the Workgroup did not identify any projects that had or would have been stopped by the Permit’s clean water requirements. Such requirements are present in NPDES municipal stormwater permits nationwide and, as noted during the MRP 3 reissuance process, similar low impact development control implementation expectations are in place in cities under consent decrees to reduce combined sewer overflows. Thus, Bay Area expectations are similar to those in similarly situated communities nationwide. In addition, because, in practice, low impact development systems are incorporated into project areas onsite and in the adjacent public right of way that are already dedicated to landscaping or open space, low impact development controls do not necessarily require additional space to implement or take up space onsite that conflicts with a building’s footprint. This further supports the idea that such controls have limited effect on housing production.  Notwithstanding the Permit’s limited or lack of effect on housing production, the workgroup considered whether there was new information that the reduction in rents noted by the participant (e.g., of 1 percent) would significantly benefit the unhoused population, such as people living within Guadalupe River and Coyote Creek in the City of San Jose, resulting in a previously unidentified substantial water quality benefit that might justify additional flexibility. The Workgroup reviewed information including a Zillow article asserting that a 5 percent increase in market rents in the City of Los Angeles would cause 2,000 new people to become homeless. This suggests the converse, that a reduction in rents can reduce unsheltered homelessness. We agree. However, the Workgroup did not identify information demonstrating that Permit requirements measurably slow or stop housing projects or otherwise significantly affect housing supply.  To the contrary, we note that the purpose of the criteria is to maintain water quality and support housing production by providing additional flexibility to accommodate affordable housing projects on a sliding scale, with more credit provided for housing projects that are more affordable.  Regarding the comment about the Bay Area’s housing production needs, as explained in the Tentative Order’s Fact Sheet, “Water Board staff reviewed reports of housing production in Permittee jurisdictions and how it was meeting the Regional Housing Needs Allocation (RHNA) goals, along with information provided by the building industry on average profits for for-profit single-family housing projects during the Great Recession. This was done in part to consider whether Category C should be expanded to include “market-rate” projects that did not have any affordable units.  According to the California Department of Housing and Community Development’s Housing Element Implementation and Annual Progress Report Dashboard,[[43]](#footnote-44) for the fifth RHNA cycle (2015-2022), statewide, Bay Area, and countywide RHNA attainment numbers are as shown in the table below. Taken together, these data suggest that MRP Permittees are producing market-rate units significantly in excess of their identified RHNA targets. However, it indicates that there is a shortage of affordable units, with a worse shortage for the lower income brackets, which are the income brackets more likely to experience homelessness.   |  |  |  |  |  | | --- | --- | --- | --- | --- | | RHNA 5th Cycle (2015-2022) | | | | | |  | RHNA Attainment | | | | | County | Above-Moderate Units | Moderate Units | Low Units | Very Low units | | Alameda | 227% | 22% | 38% | 40% | | Contra Costa | 218% | 68% | 58% | 23% | | San Mateo | 194% | 48% | 85% | 44% | | Santa Clara | 186% | 69% | 30% | 25% | | Solano | 245% | 132% | 66% | 18% | | 5-County Total[[44]](#footnote-45) | 208% | 55% | 44% | 31% | | 9-County Total[[45]](#footnote-46) | 202% | 57% | 52% | 37% | | California Total | 143% | 55% | 30% | 20% |   ” |
| Wiener\_C.3.e.ii.(5)\_3 | In our initial letter of concern to you about changes to Special Category C, we urged you to conduct a stakeholder feedback process, and we thank you for taking this suggestion. During that process, stakeholders heard that as much as half of all housing production in San Jose and Oakland is affected by the changes to Special Category C and that almost all subsidized housing would not have been eligible for the streamlining under the current version of Special Category C. Your staff also heard from affected developers that their dense infill projects would be significantly harder to build, and in some cases, infeasible. | The Category C / Affordable Housing Workgroup also considered whether one of the most constrained kinds of housing projects, dense urban infill projects, would be significantly harder to build from a technical or financial standpoint, or in some cases infeasible, as a result of the changes proposed in the Tentative Order. The workgroup did not identify information showing that there would be a significant effect.  Regarding the comment that half of all housing production in San Jose and Oakland would be negatively affected by the changes proposed in the Tentative Order, see the response to BAC\_C.3.e.ii.(5)\_14.  [We respectfully disagree with the comment that the workgroup produced information that almost all subsidized housing would not have been eligible for the credits provided by Provision C.3.e.ii.(5) Category C Special Projects in MRP 3. Many fully-affordable and nearly-fully-affordable projects would have been eligible for those credits, according to our review of such projects during the MRP 2 term. As acknowledged in the Tentative Order’s Fact Sheet, “…the information [reviewed in the workgroup] demonstrated that the Category C criteria in the Permit, as issued, would in practice apply primarily to fully affordable projects constructed by public or non-profit entities. The criteria had the effect of excluding from potential flexibility certain projects (primarily for-profit projects) that provided affordable housing but were not fully affordable. That was not the intent and, thus, there was an opportunity to better align the Category C criteria with the full range of affordable projects being built in the region and their associated water quality benefits, while still focusing on maximizing flexibility (through credits) for the most affordable housing. The result is that the criteria were modified to provide maximum flexibility for the fully affordable projects being built by public and non-profit entities, and to give sliding-scale flexibility for projects with lesser amounts of affordable housing—more typically projects built by for-profit developers. ‘Sliding-scale flexibility’ means that the more a project that is affordable and the more a project’s affordable units are targeted to residents in lower-income categories, the greater flexibility is provided. This is appropriate because of how costs are apportioned across projects (projects that are more affordable are generally harder to build) and because projects targeted to residents in lower-income categories are more likely to provide a water quality benefit by shifting residents into housing from being unsheltered.”  As noted in our response to Wiener\_C.3.e.ii.(5)\_2, recognizing the range of challenges developers face, and the need for housing, the MRP has substantial flexibility that includes an allowance for off-site alternative compliance, LID itself is quite flexible, as we saw in a tour of the City of San Francisco’s Mission Bay neighborhood earlier this year, and projects have been successfully incorporating LID designs for more than 20 years in the Bay Area and nationally.  See response to Wiener\_C.3.e.ii.(5)\_2. |
| Wiener\_C.3.e.ii.(5)\_4 | We thank your staff for proposing to reverse some of the changes that prevented subsidized affordable housing projects from benefiting from the streamlining, but we urge you to go further. The changes still dramatically reduce the credit given to most mixed income projects as compared to the version in Municipal Regional Stormwater Permit (MRP) 2. The Bay Area needs housing production of all types and to achieve that, we need to reduce – and certainly not increase – the cost of building housing. The logic of the existing permit, which argues that affordable housing reduces homelessness and therefor has positive water quality impacts from fewer encampments on waterways, must logically also be extended to housing production of all types, as it is our region’s historic shortage of housing at all income levels that housing policy experts agree has caused our immense housing crisis. As a matter of environmental science and of housing policy, to establish a division between deed-restricted housing projects and the same projects without a deed restriction is fundamentally arbitrary. | Through the Water Board’s engagement in the Category C / Affordable Housing Workgroup, we did not become aware of evidence that the changes proposed to Category C Special Projects in the Tentative Order would contribute to the region’s housing shortage and/or would increase rent and mortgage costs.  We respectfully disagree with the comment that establishing a division between deed-restricted housing projects and the same projects without a deed restriction is fundamentally arbitrary. For more on why that is, including why non-LID credit is justified for affordable housing projects but not for fully market rate projects without any affordability, please see the response to Wiener\_C.3.e.ii.(5)\_2. Separately, we note the Tentative Order would provide significant Affordable Housing Credit and total non-LID credit even to housing projects with very small percentages of deed-restricted affordable DUs (e.g., 10% Low or 5% Very Low), which, as discussed in the Tentative Order’s Fact Sheet, is aligned with the small percentages of affordability often required/encouraged/incentivized by municipal ordinance and state law.  For more explanation regarding the credit available even to projects with nominal amounts of affordability, see the response to CCCWP\_C.3.e.ii.(5)\_1.  Regarding the comment on negative effects of the Tentative Order on housing production, and regarding the water quality benefits associated with market rate housing vs affordable housing, see the response to Wiener\_C.3.e.ii.(5)\_2.  Regarding the comment on negative effects of the Tentative Order on housing production, see also the response to Wiener\_C.3.e.ii.(5)\_3.  Regarding the comment that proprietary media filters or “biofilters” are cheaper than conventional bioretention, see the response to Wiener\_C.3.e.ii.(5)\_5. |
| Wiener\_C.3.e.ii.(5)\_5 | We sympathize with the Board’s desire to see low impact development (LID) treatments in more projects and we constrain our critique of your policy solely to Special Category C, which is supposed to provide flexibility to particularly dense projects next to transit with specific site constraints. It is important to note that the alternatives that would be required under Special Category C provide a cheaper, science-based pathway for accomplishing the same water quality benefits as LID. | The Category C / Affordable Housing Workgroup did not generate evidence that non-LID stormwater treatment BMPs are cheaper than LID stormwater treatment BMPs. Discussion at that workgroup and the Alternative Treatment Systems Workgroup suggested that the costs of the two kinds of systems are comparable.  The Water Board also reviewed the International Stormwater BMP Database’s Urban BMP Cost Database to compare costs between conventional bioretention and high flow rate “biofilters,” and the data indicate that both capital construction costs, as well as operation and maintenance costs, of high flow rate “biofilters” are roughly an order of magnitude greater than that of conventional bioretention. In fact, the database suggests that alternative treatment systems are significantly more expensive than conventional LID bioretention; however, it is likely that in high-density, ultra-urban redevelopment projects, these costs are relatively closer. That is because bioretention is likely to include components (e.g., to be constructed in planter boxes as opposed to in the ground) that are relatively more similar to alternative treatment systems. This indicates that the two kinds of systems are, at best, roughly cost neutral.  We respectfully disagree that non-LID stormwater treatment BMPs necessarily provide the same water quality benefits as LID. As explained in the Tentative Order’s Fact Sheet, “... alternative treatment systems must be combined with flow controls so that their water quality benefits—improvements to runoff quality and hydrologic benefits that benefit downstream water quality—are consistent with those provided by the Permit’s LID standard.”  The Tentative Order’s Fact Sheet goes on to explain this in greater detail, as follows: “Alternative treatment systems are similar to the Permit’s LID standard in that they contain media similar to the bioretention media allowed pursuant to Provision C.3.c.i.(2)(c)(ii) that has similar unit processes for pollutant removal, including filtration, adsorption, and degradation over time of certain pollutants. However, there are differences between the alternative treatment systems and the Permit’s LID approach. Alternative treatment system media is typically contained within an impervious or largely impervious vault and is designed to have substantially higher flow rates of water through the media. As compared to bioretention cells, typically the most used water quality control within the LID framework, alternative treatment systems have limited to negligible flow control benefits due to limited storage within the device and minimal time and space for water to be detained prior to infiltration. This reduces pollutant load losses associated with the control because runoff that would infiltrate into the soil, be retained within the control, or evapotranspire in LID systems is, in an alternative treatment system, instead discharged through the media and back into the MS4 or to a receiving water. An additional result is reduced effectiveness of hydromodification management. To provide comparable benefit, alternative treatment systems must be supplemented with systems that provide flow control benefits at least equivalent to those provided by LID systems.  “LID systems provide hydromodification management and associated water quality benefits via measures that include retention (e.g., via infiltration, evapotranspiration, and retention in an LID control’s media) and detention. Determining a comparable benefit between LID systems and alternative treatment systems is complicated because alternative treatment systems typically have negligible retention. In addition, while the flow control benefits of LID systems have been documented, the range of those benefits—including from infiltration into less infiltrative soils and horizontal infiltration—is not yet well quantified from monitoring data and field studies. Studies have, however, found greater benefit than would be expected from textbook infiltration values. Currently, approaches to quantify the flow control benefits are primarily hydrologic models that are imprecise and can be biased by the use of potentially non-conservative or inaccurate assumptions.” |
| Wiener\_C.3.e.ii.(5)\_6 | Each of us has impeccable environmentalist credentials, and we share your desire to make the Bay Area a sterling example of environmental stewardship. Those environmental values motivate us to build as much housing as possible next to transit in areas served by high quality infrastructure and close to jobs, because doing so dramatically reduces emissions and other environmental impacts, including to water quality. According to U.S. EPA, location efficiency is a key strategy for reducing stormwater impacts, justifying the use of cheaper alternative envisioned by Special Category C streamlining for all infill housing, not just deed-restricted housing. The changes to Special Category C since MRP 2 risk harming the environment by adding cost and land constraints to the housing approval process, threatening the environmental progress we are attempting to make in passing laws to incentivize infill development next to transit. | The Tentative Order recognizes the environmental benefits of location efficiency, as it maintains the Location Credits included in the existing version of MRP 3, thereby incentivizing the provision of housing in ultra-urban settings generally, and near transit hubs and priority development areas (PDAs) specifically.  We are not aware of evidence that the changes proposed in the Tentative Order risk harming the environment by adding cost and land constraints to the housing approval process. Rather, it increases the flexibility for the use of non-LID alternative treatment systems, and maintains the substantial flexibility inherent in the low impact development approach and the Permit’s allowance for alternative offsite compliance, which includes allowing up to five years for alternative compliance projects to be constructed after a Regulated Project has been constructed. Additionally, while the Permit is a Clean Water Act permit focused on water quality outcomes, the low impact development approach provides substantial co-benefits, including urban greening, reductions in the urban heat island, moderation of flood flows, and potential improvements to air quality. Those benefits can be of particular importance in environmental justice communities, such as West Oakland, that have been historically impacted by relatively large areas of impervious surface, limited urban green space, and poor air quality associated with heavy industry, ports, and highways.  See response to Wiener\_C.3.e.ii.(5)\_3.  Regarding the comment that proprietary media filters or “biofilters” are cheaper than conventional bioretention, the information reviewed by the Water Board indicated that proprietary controls are more expensive, or at best roughly cost-neutral, and have less-certain water quality outcomes. See the response to Wiener\_C.3.e.ii.(5)\_5. |
| Wiener\_C.3.e.ii.(5)\_7 | We remain convinced that the changes to the NPDES Permits risk preventing housing production and exacerbating the housing crisis in the Bay Area by imposing exorbitantly high inclusionary housing requirements via a water quality regulation. We remain convinced that with these changes the Board seeks to infringe on the right of local governments to set inclusionary zoning policy in an evidence-based way that responds to market conditions and maximizes production, as it infringes the Legislature’s right to do so. We remain convinced the Board should not be setting housing policy. | Regarding concerns that the Tentative Order inhibits or impedes housing production, see responses to above comments, including to Wiener\_C.3.e.ii.(5)\_2.  We fully recognize that the Water Board is not a local land use agency. The Permit is not intended to impose inclusionary housing requirements. That is, it is not intended to be the Clean Water Act water quality tail wagging the local land use planning dog. The MRP is intended to provide flexibility based on the water quality-related outcomes of local land use planning decisions, not to drive those decisions. To avoid confusion on this point, the Amendment would add the following language, as discussed in the Tentative Order: “The Water Board is not a land use agency and has not established an inclusionary housing policy in the Permit; instead, the Permit recognizes the indirect water quality benefit provided by housing development based on the level of affordability of their DUs, and accordingly provides an amount of non-LID credit proportional to that affordability.” |
| Wiener\_C.3.e.ii.(5)\_8 | We understand that the Water Board plans to vote on updates to its permit in October. We strongly urge you to reverse the changes you have made to Special Category C and revert to the version of Special Category C that was in MRP 2. | Comment noted.  See response to individual comments, above. |
| Wiener\_C.3.e.ii.(5)\_9 | As you may know, AB 990 (Grayson) is pending before the Legislature. The bill would require the Board to update its regulations to revert to a substantially similar version of Special Category C as it appeared in MRP 2. After unanimous support for the bill during the policy committee process, the bill was paused to allow the Board to change its regulations of its own volition. If our concerns around Special Category C are not satisfied, it is our intent to pursue the passage of AB 990 when it is eligible for legislative action in 2024. | Comment noted.  The Water Board has worked over the past year to identify potential unintended adverse outcomes on development projects, including housing, resulting from the Special Projects Category C language in MRP 3, as well as from Provision C.3 generally. In response to that work, and as described in the responses to comments on this subprovision, the Water Board developed the proposed amendment, which is consistent with federal Clean Water Act requirements to limit changes during an amendment process to, for example, new information that would have led to changed requirements when a permit was reissued. Put another way, the proposed amendment maximizes flexibility relative to the available information.  The Water Board will continue to develop and consider information on the Permit’s role in and potential effects on development projects, including housing projects. That will include continuing to review the potential effects of the similar requirements that are in place nationwide. And it will include continuing to work with MRP Permittees to develop additional flexibility to implement clean water controls, including off-site alternative compliance programs such as the program recently developed in Contra Costa County, and similar programs being considered in San Mateo and Santa Clara counties. We recognize the identified housing challenges faced in the Bay Area and statewide and, as well, recognize that Permit expectations include substantial flexibility to support the need for housing production. Consistent with Clean Water Act requirements, the Water Board is committed to avoiding unintended adverse effects from clean water requirements. |
| BAC\_C.3.e.ii.(5)\_1 | On behalf of the Bay Area Council, the Building Industry Association of the Bay Area, California YIMBY, and the Housing Action Coalition, we write to reiterate our opposition to the continued imposition of limitations on the eligibility for Special Project Category C stormwater treatment credits. Developers of thousands of desperately needed homes near transit, jobs and shopping throughout the Bay Area have historically relied on these credits as a key component in the long list of financial and engineering challenges of building dense, infill housing near transit. Eliminating this streamlining sends the state backward in housing policy at a time when we need to dramatically increase the production of housing at all income levels. | Through our engagement in the Category C / Affordable Housing Workgroup and review of Permittee reporting on Special Projects Category C under MRP 2, including reviews of plans for planned projects before they were built, and built projects after they were constructed, the Water Board considered the projects that have used this subprovision during MRP 2. However, we were not made aware of evidence that the projects that used the subprovision under MRP 2 would have been prevented from having been built under the affordable housing focus in MRP 3, or that changes proposed in the Tentative Order would send the state backward in housing policy or otherwise inhibit the production of housing at all income levels.  See also the response to Wiener\_C.3.e.ii.(5)\_6.  Regarding the Category C / Affordable Housing Workgroup, the flexibility of LID, and our inspections/tours of built projects that incorporated LID even in highly constrained situations, see the response to Wiener\_C.3.e.ii.(5)\_2. Regarding the flexibility of LID, see also the response to CCCWP\_C.3.c.i.(2)(c)(iii)\_9. |
| BAC\_C.3.e.ii.(5)\_2 | The Municipal Regional Stormwater Permit (MRP) implements the National Pollution Discharge Elimination System Permit Program (NPDES) as required by federal law. All of us share its mission to improve the environmental quality of the Bay Area and our objections are confined to the anti-housing changes made to Special Projects Category C. | Comment noted.  The proposed changes to Special Projects Category C are intended to better align permit language with the kinds of affordable housing produced in the Bay Area. As such, they support housing production. |
| BAC\_C.3.e.ii.(5)\_3 | Pursuant to the MRP, every residential project must incorporate runoff treatment to meet clean water standards. Regulators prefer and require the use of a passive treatment method called Low Impact Development (LID), but this often requires the dedication of more land than a dense, infill project may accommodate. A treatment credit allows the homebuilder to use alternative treatment systems that operate within smaller footprints, but produce equivalent water quality benefits. | As noted in the Tentative Order’s Fact Sheet, LID is an approach to stormwater management that is cost-effective, sustainable, and environmentally sound, and it is exceedingly flexible with respect to siting and configuration. See response to Wiener\_C.3.e.ii.(5)\_2.  Generally, alternative treatment systems do not provide water quality benefits equivalent to those provided by LID. See response to Wiener\_C.3.e.ii.(5)\_5.  The Water Board considered the land requirements of low impact development measures and also reviewed built high-density projects, including dense urban infill projects, that incorporated LID controls. We found that as project density increased, low impact development control design tended to shift to landscaped areas (e.g., landscaping strips) between structures and sidewalks, to flow-through planter boxes that could be built adjacent to structures or in podium areas (e.g., bioretention cells and planter boxes that were incorporated into open public spaces), and could also include green roofs. In general, low impact development water quality controls were feasible when they had been included as part of a project’s initial design, and often provided non-water-quality based co-benefits such as reductions in urban heat island effects, provision of urban greenspace, and visual screening in high-density situations. See also response to:  BAC\_C.3.e.ii.(5)\_9. |
| BAC\_C.3.e.ii.(5)\_4 | Under MRP 3, adopted in May 2022, the use of Category C credits was restricted to certain affordable housing projects. We registered our objections at the time and your Board directed staff to work with stakeholders to study the impact of this draconian shift on the housing supply. | See response to Wiener\_C.3.e.ii.(5)\_1 |
| BAC\_C.3.e.ii.(5)\_5 | While we appreciate that at the conclusion of that outreach process, the proposed language in MRP 3.1 represents a modest expansion of the number of housing units eligible for treatment credits, we request that the Board restore Special Projects Category C as it existed under MRP 2.0. | Comment noted.  See responses to Bay Area Council’s other comments, above and below. |
| BAC\_C.3.e.ii.(5)\_6 | We are aware of no judicial decision or change in federal law or regulation that requires the Water Board to modify the existing treatment credit provision or demonstrates that maintaining the MRP 2 treatment credit provision would render MRP 3 invalid. There is no legal or public policy justification for increasing the regulatory burden by decreasing the allowable treatment credits on new infill housing whether market rate or deed restricted. | This commenter appears to be commenting on the changes from MRP 2 to MRP 3, which change was addressed during the adoption of MRP 3. As explained in MRP 3’s fact sheet and responses to comments, MRP 2’s Special Projects Category C credited transit-oriented development instead of affordable housing. MRP 2 resulted in the treatment of approximately 414 acres of impervious surface by non-LID measures region-wide, but most of the projects did not clearly demonstrate that it would have been infeasible to incorporate LID on or offsite. Category C was, therefore, changed to credit affordable housing instead since the permit already allows for LID credits for dense, urban projects (residential or otherwise) and provides additional flexibility by allowing LID treatment offsite or through paying in-lieu fees.  Please see also the response to Wiener\_C.3.e.ii.(5)\_2. |
| BAC\_C.3.e.ii.(5)\_7 | If, as the Water Board posits, there is a demonstrable connection between affordable housing and water quality, and the Bay Area is experiencing an increasingly dire homelessness problem that has, since the adoption of MRP 2.0, contributed to untreated wastewater flowing into the storm system, the answer is to expand the MRP 2.0 treatment credit program to increase the feasibility of developing all housing projects in the Bay Area. | See response to Wiener\_C.3.e.ii.(5)\_2 |
| BAC\_C.3.e.ii.(5)\_8 | Furthermore, the staff’s evidence that subsidized housing has a distinct impact on water quality that market rate housing lacks is incorrect, and the tentative order reaches the wrong conclusion about how to solve homelessness and its water quality impacts in the Bay Area. Staff aims to reduce homelessness by incentivizing affordable housing by extending treatment credits to these projects, but the research is clear: Reducing homelessness in the Bay Area requires a tremendous increase in the amount of market rate housing so that prices stabilize, and housing subsidies are allowed to work at scale. | See the response to Wiener\_C.3.e.ii.(5)\_2 |
| BAC\_C.3.e.ii.(5)\_9 | It is also important to understand the impact of the stormwater policy on the companies that build our new housing and the people who want to live there. Lacking access to treatment credits, developers face a set of undesirable options that would result in higher mortgages or rents, fewer units or no units at all. One, they could reduce the number of overall housing units in the project to accommodate larger LID treatment facilities. Two, they could add affordable units but at a production cost of $1 million per home, as the Los Angeles Times detailed in a 2022 investigation, the price tag could topple the project altogether. Three, they could hike sales prices or rents to cover the increased costs but that only works if the market supports it. | We are aware of no quantitative evidence that implementation of LID stormwater treatment measures instead of non-LID stormwater treatment measures would result in higher mortgages or rents, fewer units, or no units at all.  Developers do not necessarily need to reduce the number of overall housing units in a project to accommodate larger LID treatment facilities, Although that is an option a project designer could consider, we are not aware of evidence that that option has ever been implemented. In our experience inspecting Regulated Projects and Special Projects, and in reviewing project plans, the options that developers typically choose instead include: implementing green roofs and/or rainwater harvesting and reuse; implementing LID in locations where landscaping would otherwise be implemented; implementing LID in adjacent sidewalks and streets reconstructed as part of the project (many municipalities require projects meeting certain thresholds to reconstruct a portion of the adjacent public right of way). And we note that an option that is increasingly being considered is the implementation of offsite LID as allowed by MRP Provision C.3.e.i, Alternative Compliance, and as encouraged by the Water Board, which can be done on a one-off project-by-project basis, and also systematically via a municipal, countywide, or regional alternative compliance program, such as the countywide programs under development for Contra Costa County and being considered in San Mateo and Santa Clara counties.  Regarding the comment that developers might add affordable units only in order to qualify for non-LID credits for qualifying Category C Special Projects, but that the high cost of affordable units would preclude such a decision, we reiterate that we are not aware of any quantitative evidence that non-LID stormwater treatment BMPs are cheaper than LID stormwater treatment BMPs, and therefore the decision to include some percentage of affordable units in order to implement a proportional amount of non-LID instead of LID in order to spend less money on stormwater treatment measures misunderstands the reality of implementation.  We disagree with, and we are aware of no evidence to support, the assertion that, if only affordable units were cheaper to construct, developers would proactively choose to include additional affordable units in their projects specifically in order to receive non-LID credits, beyond the affordable units (if any) that they were already required by local ordinance to include, or that they did not already choose to include in order to qualify for local/regional/state bonuses, concessions, or grants.  Regarding the comment that developers could hike sales prices or rents to cover the increased costs of implementing LID stormwater treatment measures instead of non-LID stormwater treatment measures, we again reiterate that we are aware of no quantitative evidence that LID is more expensive than non-LID.  See response to BAC\_C.3.e.ii.(5)\_3.  Regarding the comment that proprietary media filters or “biofilters” are cheaper than conventional bioretention, see the response to Wiener\_C.3.e.ii.(5)\_5. |
| BAC\_C.3.e.ii.(5)\_10 | Recognizing that added regulatory costs are hampering their progress toward meeting their state-mandated housing production goals, some local governments like San Francisco are even reducing impact fees and the required percentage of affordable units required for market-rate projects. The Board is therefore moving in the opposition direction of most governments in the Bay Area, making infill housing projects more costly, potentially losing units, or even rendering projects infeasible. | See response to BAC\_C.3.e.ii.(5)\_9.  The commenter appears to address changes between MRP 2 and MRP 3 rather than changes between MRP 3 and the Tentative Order, which is the subject of this proceeding. As the Tentative Order’s Fact Sheet explains, the Tentative Order “…modifies Permit Provision C.3.e.ii.(5) Special Projects: Category C to better align it with how affordable housing projects are planned and built in the region,” and, “…the criteria were modified [in the Tentative Order] to provide maximum flexibility for the fully affordable projects being built by public and non-profit entities, and to give sliding-scale flexibility for projects with lesser amounts of affordable housing—more typically projects built by for-profit developers”  Regarding the comment that proprietary media filters or “biofilters” are cheaper than conventional bioretention, see the response to Wiener\_C.3.e.ii.(5)\_5. |
| BAC\_C.3.e.ii.(5)\_11 | Category C allows housing projects to clean water to the same standards required by the permit through a cheaper, more land-efficient method than the LID standards typically used on projects where land constraints are not high. But in dense, urban infill areas, LID requirements can make housing projects infeasible because of the land or irrigation systems required. While staff suggests that LID facilities could be installed in local rights of way, such a requirement depends on more than just the cooperation of local governments, something that housing advocates know is not fair to assume in almost any circumstance. | LID facilities are currently being installed in local rights of way for projects meeting certain thresholds that trigger requirements included in municipal ordinances. We agree that it requires coordination with local governments. It is unclear what is meant by “such a requirement depends on more than just the cooperation of local governments.”  See response to BAC\_C.3.e.ii.(5)\_9  See response to Wiener\_C.3.e.ii.(5)\_5 |
| BAC\_C.3.e.ii.(5)\_12 | In combination with ongoing rising interest rates and materials costs that make it more challenging to build, California is headed for a 36 percent reduction in the amount of housing built per year, according to the Department of Finance. According to the state, this is less than half the housing we need to build to prevent prices from rising. | Comment noted.  See response to Wiener\_C.3.e.ii.(5)\_2 and BAC\_C.3.e.ii.(5)\_9. |
| BAC\_C.3.e.ii.(5)\_13 | Staff and the Board implicitly acknowledge that eliminating Special Category C for mixed-income projects would discourage these projects because that is the argument they provide as to why Category C is intended be preserved for subsidized projects. The Bay Area needs the mixed-income housing that eliminating the option of treatment credits in Category C could render infeasible, just as developers told us during the stakeholder process it could. | We do not agree that the changes proposed in the Tentative Order for Category C Special Projects would discourage mixed-income projects; we have not seen any quantitative evidence to support that claim. To the contrary, the proposed amendment would increase flexibility for affordable housing projects, including mixed-income projects, because it would add sliding-scale flexibility for mixed-income projects.  It is incorrect that we have used that claim as justification for why Category C is intended to be preserved for subsidized projects. As explained in the Tentative Order, MRP 2 Special Projects Category C primarily credited transit-oriented development (via Location Credits) and resulted in the treatment of approximately 414 acres of impervious surface by non-LID measures region-wide, most of which is attributable to projects for which the Permittees’ reporting did not clearly demonstrate that it would have been infeasible to incorporate onsite LID or contribute to offsite LID as allowed by Provision C.3.e.i and as encouraged by the Water Board. Therefore, Category C was revised to target affordable housing projects, as Provision C.3.e.i already provides sufficient flexibility for other non-affordable housing projects that would have qualified as Category C Special Projects under MRP 2. The Tentative Order goes even further than that because it would grant additional flexibility with respect to the type of stormwater treatment measure even for projects that include only a small percentage of affordable units.  See response to Wiener\_C.3.e.ii.(5)\_4  We are aware of no quantitative evidence that “eliminating the option of treatment credits” would render mixed-income housing projects infeasible. And as stated reiterated repeatedly in the Tentative Order and in this response to comments, mixed-income housing projects can qualify for significant non-LID credit so long as they include small percentages of affordable units. |
| BAC\_C.3.e.ii.(5)\_14 | Likewise, we heard from Oakland and San Jose that nearly half of their housing pipelines use Category C in some form. The crisis in the Bay Area demands that we not risk making those projects harder to finance, especially given the historic difficulty financing projects and the immiserating costs of housing. If, as the Board contends, building deed-restricted housing has a positive water quality impact because it reduces homelessness, then it must also recognize the water quality benefits of building market rate housing because the research is clear that it is the lack of housing generally that most significantly explains high rates of homelessness. The research is also clear that building market rate housing directly produces more affordable housing through a process called “chain migration,” and directly reduces rents and displacement, leading causes of homelessness. Put simply, building more market rate housing is also a part of the solution to homelessness. | This comment misunderstands the information presented by Oakland and San Jose staff at the workgroup meeting. San Jose staff said was that approximately half of their housing projects were able to qualify as Special Projects under the MRP 2 criteria because of their location, while the other half of their housing projects were not able to, and, there was no discernable difference that San Jose was aware of between the housing projects which could qualify as Special Projects and those that could not, other than the coincidence of their location respective to transit hubs and priority development areas (PDAs). In other words, there is no evidence that those housing projects that *could* qualify as Special Projects and receive non-LID credits had any greater need to qualify as compared to those housing projects that *could not* qualify as Special Projects.  In addition to there being no discernable difference between the projects that could and could not qualify, there was also no evidence that the projects that could qualify would have been unable to proceed, should they not have qualified as a Special Project. In other words, our understanding – based on the information presented by the Permittees at the workgroup and our inspections and reviews of projects – is that the housing projects were not limited by whether they qualified for non-LID credit.  We considered, but did not find evidence sufficient to support, the concept that “chain migration’s” effect on reducing homelessness[[46]](#footnote-47) is similar or equivalent to that of directly sheltering homeless people or otherwise housing people who cannot afford market-rate housing. That concept relies on the premise that households will readily become willing and able to pay higher rents as soon as more expensive units are built (which relies on the questionable assumption that there is not already an excess of relatively more-expensive units in the Bay Area – for more on this, see the response to Wiener\_C.3.e.ii.(5)\_2), and, when those more-affluent households move “up the chain,” then less-affluent households will be able to move into the relatively more-affordable units vacated by those affluent households.  There are several problems with these claims relative to the cited study:  First, it is unclear how applicable the study’s conclusions are to the Bay Area, given that the data used in the study is from the City of Chicago, and not from any city in the Bay Area or in California, and given the differences between the two, including issues like the substantial housing pressure and income inequality in the Bay Area.  Second, the study (e.g., Figure 1) does not compare a household’s jump from one income threshold to another higher income threshold, or from one relatively less-expensive unit to another relatively more-expensive unit, but instead from one relatively less-affluent neighborhood to another relatively more-affluent neighborhood, and from this it is not clear if or how a rate at which affordable units are vacated can be extrapolated. The presented results also do not give a time scale over which these chain migration jumps are made, i.e., how frequently a household is likely to jump from a relatively less-affluent neighborhood to a relatively more-affluent neighborhood (e.g., on the order of a year, five years, or more). The rate of this jump is critical; without knowing the rate, it is challenging to evaluate the implied effect.  Third, the author of the study states on the third page that “…these statistics... do not quantify the effect of new housing on the lower-income market,” and briefly cites dramatic simulation results: “...100 new market rate units create 70 equivalent units in neighborhoods with household incomes below the metro area media, and 39 in neighborhoods with household incomes from the bottom fifth.” However, no supporting information, demonstration, or analysis was provided to support this claim. Furthermore, the author caveats their own claim as follows: “...I do not directly estimate these implied effects.”  Fourth, on the fourth page, the author explains that the “migration chain mechanism” is likely to have little effect on those at the bottom: “there are several shortcomings of the migration chain mechanism, particularly in the lowest-cost and most-rent-burdened neighborhoods... Given that rents are generally already low in such neighborhoods, this suggests that reducing demand through the migration chain mechanism is unlikely to lower costs further, perhaps because rents have reached the minimum cost of housing...” These caveats by the author call into question the commenters’ claims that an idealized chain migration mechanism will necessarily produce an effect equivalent to that provided by the direct provision of affordable housing, or that the effect otherwise justifies non-LID credit for 100 percent market-rate housing.  While there is a logic to chain migration playing a role in housing choice and availability, we are left with the same questions regarding the concept, including: is there evidence that the Category C Special Project criteria, considered together with the Permit’s broad flexibility to implement LID treatment controls, impede any potential effects of chain migration; how can its trickle-down effect be quantified and predicted in the Bay Area; and how does it measurably provide new affordable DUs, in particular to people experiencing unsheltered homelessness or to people at risk of experiencing unsheltered homelessness, and lastly, what evidence is there that the Category C Special Project criteria impede any assumed effects resulting from chain migration?  The comment also refers to a different study,[[47]](#footnote-48) which asserts that “increasing supply of market rate housing has beneficial spillover effects for incumbent renters, reducing rents and displacement pressure while improving neighborhood quality.” But the question is not whether the positive effects of increased supply are zero or nonzero (and we concur that it is more likely nonzero than zero), but instead of the significance of that positive effect, whether it is felt by those experiencing unsheltered homelessness or those threatened with unsheltered homelessness, and whether the effect measurably reduces homelessness sufficient to justify the implementation of non-LID stormwater treatment measures with lesser water quality benefits. We note that the cited study identified a competing gentrification effect of new market-rate housing, which was that neighborhoods within 100 kilometers of new construction were ~30 percent more likely to experience gentrification (there was no significant gentrification effect from new affordable housing), and, according to the study, although market rate housing can help people who live nearby, its price impacts become less effective if the city continues to gentrify and nearby residents are less sensitive to small changes in rent. In other words, the assumed positive spillover effects of new market rate housing do not reduce gentrification and may not continue to reduce displacement in the long term.  Lastly, the study data was from exogenous market-rate housing (in this case, new market-rate housing that resulted from fires) and, therefore, it is unclear how applicable the study’s conclusions are to other types of market rate housing. |
| BAC\_C.3.e.ii.(5)\_15 | We thank your staffer Keith Lichten for sharing his immense expertise, engaging with us seriously and taking the extra step to arrange a walking tour of LID treatments in new buildings in San Francisco to help us better envision the future the Board is aiming for. | Comment noted. We are grateful to the workgroup participants and other stakeholders who joined the tour of built LID treatment controls in high-density redevelopment projects, including both market-rate and affordable housing projects, in San Francisco’s Mission Bay neighborhood, which has a separate storm sewer system similar to those in MRP Permittees’ jurisdictions. |
| BAC\_C.3.e.ii.(5)\_16 | Our organizations support that vision to the extent that building housing remains feasible in the Bay Area, especially denser, infill homes within existing communities near transit where it is needed the most. | Comment noted. |
| BAC\_C.3.e.ii.(5)\_17 | We urge you to restore access to treatment credits for all infill residential projects near transit and explore the development of additional credits that would further incentivize affordable housing. We reiterate our desire that the Board revert to the version of Special Projects Category C in MRP 2. | Comment noted.  See response to the Bay Area Council’s other comments, above. |
|  |  |  |
| SCVURPPP\_C.3.b.ii.(5)\_1  SMCWPPP\_C.3.b.ii.(5)\_1  CCCWP\_C.3.b.ii.(5)\_1 | The Tentative Order (TO) is not responsive to concerns regarding the impact of Road Reconstruction Projects on disadvantaged communities (DACs) expressed by Permittees and Water Board Members at the MRP 3 adoption hearing. | The Water Board convened the Road Reconstruction Projects in DACs Workgroup, in which the Water Board worked with Permittees to both identify new information that would support changes to MRP Provision C.3.b.ii.(5), and draft potentially productive changes. That work included trying to identify specific challenges encountered by DACs and differences between implementation of LID for road reconstruction projects in DACs and non-DACs that would justify an “alternative” to the adopted permit language. However, we were not able to identify significant differences between DACs and non-DACs regarding this subprovision. Some of the potential differences considered were: soil conditions (e.g., were soils generally more difficult to build clean water controls on as compared to non-DACs); relative amounts of tidal zone coverage; road dimensions (e.g., narrower and particularly constrained roads, flatter roads); pavement conditions (e.g., whether the pavement condition index [PCI] [an all-encompassing metric for road condition] is worse in DACs, meaning they would be relatively more impacted by a need to rebuild poor-quality roads); sidewalk conditions (e.g., whether the sidewalks are narrower or less continuous); storm drain conditions (e.g., whether there is less (or more-limited) storm drain infrastructure in DACs); and transportation grant funding source differences (e.g., whether DACs are able to access transportation grant funding in a manner similar to other communities). The Workgroup heard information, presented by City of San Pablo staff, that there are likely more traffic injuries/fatalities in DACs as compared to non-DACs, and a few municipalities presented anecdotal information about challenging road reconstruction projects in DACs. However, the Workgroup also heard that, consistent with the MRP 3 Fact Sheet and adoption hearing testimony, substantial transportation infrastructure funding is also available.  During the Workgroup’s fourth meeting, one participant said that there “might not be an on-the-ground difference, [instead] it’s all the other things that surround DACs,” such as lack of funding of public infrastructure projects by private development (in DACs). Indeed, the Permittees concluded that Road Reconstruction Projects are more challenging to implement in DACs not because identified engineering constraints are more common in DAC census tracts versus in non-DAC census tracts, but because of disparities in how road retrofit projects are funded in DAC census tracts versus in non-DAC census tracts. We found this might reduce the total number of projects completed in DACs, but was not a sufficient reason to omit treatment control requirements from the road reconstruction projects that are built.  The challenges presented in the workgroup included lack of funding and space to implement stormwater controls for traffic and pedestrian safety improvement projects; older or non-existent storm drain infrastructure in DACs; and older road infrastructure. Our analysis shows that while there may be some areas of DACs where these conditions exist, similar conditions can be present in any MRP Permittee’s jurisdiction. The information presented and discussed at the workgroups did not demonstrate that the challenges in DACs are more significant or substantively different than in non-DACs.  We also heard comments that the new requirements would lead to municipalities foregoing safety improvement projects; however, no project-specific evidence was presented that demonstrated this. In one case, the workgroup heard that one multi-modal “complete streets” project might be foregone because of added costs associated with Bay Area Air Quality Management District requirements. Because the workgroup did not identify new information justifying changes to the reissued Permit and there is no other basis for making changes, exempting road reconstruction projects in DACs from stormwater control implementation requirements, as requested by the Permittees, is not appropriate at this time.  In the Workgroup, we also discussed funding opportunities and the influx of infrastructure funding and potential Caltrans cooperative partnership project opportunities where funds could be leveraged by permittees to meet stormwater treatment requirements. This indicated that resources could be available to support “sustainable streets” designs that include low impact development clean water controls when permittees are doing road reconstruction projects.  At the same time as the Water Board investigated whether additional flexibility for road reconstruction projects in DACs is justified, we completed a parallel effort to identify potentially acceptable alternative permit language. This included repeatedly asking the Permittees to submit their ideas for alternatives to the adopted permit language. We sent Permittees guidance to aid their development of proposals, and proposed a potential alternative that would have allowed DAC Permittees to pilot innovative alternative LID measures in exchange for reducing expectations for road reconstruction projects. However, the Water Board alternative was not supported and Permittee-suggested proposals, which were generally to exclude road reconstruction projects from clean water requirements, would have resulted in increased water quality impacts, but lacked support sufficient to justify the increased impacts. The lack of new information sufficient to justify changed language meant that the proposals could not be incorporated.  Separately, we have committed to engaging with MTC, other regional agencies and organizations, and the Permittees to work on improving accessibility of funds to LID implementation in the various transportation grant programs that MTC administers, by re-joining a workgroup led by Save the Bay and the San Francisco Estuary Partnership that includes MTC, the Water Board, Permittees, and others. This workgroup stopped upon the onset of the pandemic in 2020, but has recently reconvened. |
| SCVURPPP\_C.3.b.ii.(5)\_2  SMCWPPP\_C.3.b.ii.(5)\_2  CCCWP\_C.3.b.ii.(5)\_3 | The Permittees are disappointed because of the importance of this issue and because of the significant time and resources expended engaging with Water Board staff on this issue, without responsive permit language changes included in the Tentative Order. The Tentative Order is not responsive to the numerous proposals put forward by Permittees in the Road Reconstruction Projects in DACs Workgroup. | We agree that it is important to avoid adverse impacts to DACs, but we note that we did not find sufficient evidence of such impacts to justify changes in the Tentative Order. We thank the Permittees for engaging in this workgroup process with us, and express our appreciation that they expended time and staff resources on the workgroup without responsive changes in the Tentative Order. See the response to combined comment:  SCVURPPP\_C.3.b.ii.(5)\_1  SMCWPPP\_C.3.b.ii.(5)\_1  CCCWP\_C.3.b.ii.(5)\_1  Regarding the Permittees’ proposals that were not included in the Tentative Order, the proposals consisted of the following:  First, a request that the Metropolitan Transportation Commission’s definition of Equity Priority Communities[[48]](#footnote-49),[[49]](#footnote-50) from Plan Bay Area 2050 be used as the definition and areal extent of DACs, instead of the DAC definitions promulgated either by the Proposition 1 IRWM Guidelines[[50]](#footnote-51),[[51]](#footnote-52),[[52]](#footnote-53) or by CalEnviroScreen 4.0,[[53]](#footnote-54),[[54]](#footnote-55) because the Equity Priority Communities definition applies to a greater number of areas than the Prop 1 IRWM or CalEnviroScreen 4.0 definitions apply to, and because the Equity Priority Communities definition is what MTC uses when evaluating applications to its transportation funding programs. We disagree that it would have been more appropriate to use MTC’s Equity Priority Communities definition in lieu of either the Prop 1 IRWM definition or the CalEnviroScreen 4.0 definition, because the State of California also administers funds for transportation projects and other projects using the two aforementioned definitions established by Proposition 1 and SB 535 and therefore those definitions are more appropriate for the Water Board to use as a state regulatory agency, and because there is a high amount of overlap between the definitions.  Second, a request that Provision C.3.b.ii.(5) be revised to exempt Road Reconstruction Projects in Equity Priority Communities from the requirements of Provisions C.3.c and C.3.d, for such projects that include any amount of active transportation and safety improvements (e.g., elevated/separated bike lanes and sidewalk improvements). It is not possible to go ahead with this request; LID stormwater treatment measures must be implemented to the maximum extent practicable (MEP), and therefore it is not possible to implement zero stormwater treatment for a qualifying Regulated Project because that violates the explicit MEP standard.  Finally, a request that Provision C.3.b.ii.(5) be revised to exempt all other Road Reconstruction Projects in Equity Priority Communities from the requirements of Provisions C.3.c and C.3.d, as long as those projects alternatively implemented an undefined amount of urban greening (e.g., street tree planting and park improvements). The request was not acceptable because it is vague, does not specify the level of effort and amount of water quality benefit that would be provided by the alternatives, such that it was not justifiable, and because it is likely to result in significantly poorer water quality outcomes in DACs, which is an avoidable impact to environmental justice communities. |
| SCVURPPP\_C.3.b.ii.(5)\_3  SMCWPPP\_C.3.b.ii.(5)\_3 | A request from Water Board staff that Permittees provide detailed information on alternative approaches for pilot projects that could not meet the road reconstruction requirements came too late for Permittees to respond within the allotted timeframe. | The Water Board requested that Permittees provide alternative approaches for pilot projects as early as the first workgroup meeting in September 2022, and repeated this request in each of the subsequent four workgroup meetings through March 2023.  On May 4, 2023, after the workgroup had met five times and the Water Board had requested the information specified above, and after the informal review and comment period for the administrative draft for the amendment had ended (released April 7, 2023; informal review and comment period ended May 1, 2023), in response to an email sent from Permittees to the Water Board expressing concern that no responsive language for Road Reconstruction Projects in DACs had been included in the administrative draft, the Water Board sent an email to the permittees containing additional guidance for proposals of pilot projects as alternatives to compliance with Provisions C.3.c-d for certain road reconstruction projects in DACs, providing Permittees an additional opportunity to submit these proposals, and reiterating the Water Board’s request for justification for the proposals. This was sent in a continuing effort to identify an alternative with the potential to maintain water quality outcomes while providing additional flexibility to DAC Permittees implementing road reconstruction projects.  Permittees responded, but questioned the level of effort needed to complete alternative/pilot work to maintain water quality outcomes, and we were unable to craft a change that could meet the requirements for modifying the Permit, antidegradation, and expectations for flexibility that could be incorporated into the public draft of the amendment. |
| SCVURPPP\_C.3.b.ii.(5)\_4  SMCWPPP\_C.3.b.ii.(5)\_4  CCCWP\_C.3.b.ii.(5)\_2 | Without cheaper alternatives to high-cost green stormwater infrastructure (GSI) in grant-funded, high safety impact, road reconstruction projects designed to lower traffic fatalities in DACs or protect DACs from flooding, such projects will be scaled back to less effective designs or will not be built at all. | We have not seen evidence that non-LID stormwater treatment measures are cheaper than LID stormwater treatment measures – see the response to Wiener\_C.3.e.ii.(5)\_5 – or that projects will be scaled back to less-effective designs or will not be built at all because of a difference in cost between the kinds of measures. We recognize the benefit from continuing to increase the toolbox of water quality controls available to address urban runoff impacts, and for that reason had included as a draft proposal flexibility based on piloting controls currently not in wide use in the Bay Area. We will continue to work with Permittees to develop new measures that maintain water quality outcomes while giving additional flexibility in terms of the range of tools that can be implemented.  See responses to individual comments, above, regarding the inadequate proposals submitted by Permittees, as well as the inadequate justifications provided for those proposals. |
| SCVURPPP\_C.3.b.ii.(5)\_5 | The regulation of levee roads under these provisions places an inappropriate burden on flood protection projects that benefit vulnerable DACs. | This topic was addressed as part of the adoption of MRP 3.  This is the first time this topic has been raised since the MRP 3 adoption hearing.  A change responsive to this concern must be based on new information that was not available at the time of permit issuance and would have justified the application of different permit conditions at the time of issuance; the comment does not provide new information. To our knowledge, the requirement to address polluted runoff from a new or reconstructed levee road, often done by allowing the runoff to filter across the existing vegetated areas adjacent to those roads, does not place an inappropriate burden on DACs. It also avoids a potential adverse water quality impact on environmental justice communities as compared to other MRP Permittees. |
| SCVURPPP\_C.3.b.ii.(5)\_6  SMCWPPP\_C.3.b.ii.(5)\_5 | We request that Water Board members and staff continue to work with us to identify ways to advance our shared goals – safe communities, clean water, sustainable transportation, reducing pollution and climate change, and trees and landscaping that mitigate urban heat islands – without making road reconstruction projects financially infeasible. An exemption should be considered for public safety projects that benefit DACs. Please direct staff to continue evaluating options to address these concerns. | Comment noted.  The Water Board remains committed to working with Permittees on this issue.  Regarding the request for an exemption for public safety projects that benefit DACs, see responses to individual comments, above. |
| CCCWP\_C.3.b.ii.(5)\_4 | The State of California passed AB 2108 (enacted September 2022) which requires the State Board and each Regional Board to make a finding, as specified, on potential environmental justice, tribal impact, and racial equity considerations when adopting water quality control plans or state policies for water quality control, and when issuing or reissuing waste discharge requirements or waivers of waste discharge requirements.  The Water Board and the MRP 3 requirements should incorporate environmental justice best practices in regulations that will be applied to DACs. | AB 2108 added sections 189.7 and 13149.2 to the Water Code. Under section 13149.2, the Water Board must make findings on anticipated water quality impacts in disadvantaged communities or tribal communities as a result of the Tentative Order, any environmental justice concerns within the Water Board’s authority that are raised by interested persons regarding those water quality impacts, and available measures within the Water Board’s authority to address those water quality impacts. The Tentative Order includes the required finding and concludes that the amendments to the MRP will not result in adverse water quality impacts.  The Tentative Order addresses environmental justice in relation to water quality because it helps maintain and improve water quality in all Bay Area communities, including DACs. The Permittees’ proposal to exempt road reconstruction projects from treatment control requirements would necessarily lead to worsened water quality outcomes in DACs (because it would result in lesser treatment of stormwater in DACs compared to non-DACs) and would exacerbate the disparity in water quality outcomes between DACs and non-DACs, which is counter to the intent of AB 2108.  Moreover, as explained in responses to individual comments, above, we have not seen evidence that the Road Reconstruction Project requirement will adversely affect DACs, that it will affect DACs differently than non-DACs, or that it will cause adverse impacts to environmental justice, tribes, or racial equity. The comment does not provide information to the contrary.  We recognize that road reconstruction projects can include other benefits, such as improved safety for multi-modal users (e.g., bicyclists and pedestrians) and improved pavement quality for drivers. Because transportation grants are available to support inclusion of clean water controls in road reconstruction projects along with related benefits, there is not a disparate environmental justice impact.  **Proposed Revision:** Finding 6 is revised to add the following:  There were no environmental justice concerns raised pertaining to water quality impacts within the Water Board’s authority. However, interested persons raised other environmental justice concerns regarding potential adverse impacts that the MRP’s road reconstruction requirements could have on road safety in disadvantaged communities. The Water Board considered these concerns and determined that changes to the requirements of the Order are not warranted. The requested changes to the MRP’s road reconstruction requirements would result in adverse water quality impacts in disadvantaged communities and are not authorized under the NPDES regulations (40 C.F.R. § 122.62). |
| CCCWP\_C.3.b.ii.(5)\_5 | Include language for accommodating road reconstruction projects in DACs per Road Reconstruction in DACs Workgroup recommendations such as:  Allow the use of alternative urban greening techniques (e.g., street trees, improvements to parks) in lieu of GI requirements for road reconstruction projects in DACs.  Allow exemption of projects in DACs that promote active transportation and provide safety (e.g., elevated/separated bike lanes, sidewalk improvements) from GI requirements.  Include changes to the limitations on Alternative Treatment Systems to allow more leniency in DACs and facilitate usage in ROWs in DACs or that adjoin projects within DACs. | See above responses regarding these proposals. |
| CCCWP\_C.3.b.ii.(5)\_6 | If it does not seem feasible at this time to provide amendments addressing DAC concerns regarding overly burdening these communities through the new requirements for road reconstruction, CCCWP recommends that the Water Board pursue more constructive engagement processes with DAC government and community groups on this issue. More constructive two-way engagement processes should be informed by state-of-the-art community engagement best practices and use tools that will focus on understanding shared water quality goals, the needs and often competing priorities of the affected DACs, and developing adequate resourcing strategies to support DACS in meeting existing or alternate NPDES permit requirements. The model of a working group composed of regulatory permit experts focused primarily on altering regulatory language based on each institution’s own goals is not providing functional solutions or addressing DAC populations or SFBRWQCB members’ concerns. | See the response to SCVURPPP\_C.3.b.ii.(5)\_6  SMCWPPP\_C.3.b.ii.(5)\_5. |
| CCCWP\_C.3.b.ii.(5)\_7 | The SFBRWQCB needs to pursue more constructive two-way engagement processes with the DAC government and community groups regarding a wider range of MRP 3.0 provisions, including road reconstruction requirements, but also provisions related to trash, unsheltered communities, etc. This engagement process should be informed by state-of-the-art engagement best practices and use tools that will focus on developing an understanding of shared water quality goals, the needs and often competing priorities of the affected DACs, and developing adequate resourcing strategies to support DACs in meeting existing or alternate NPDES permit requirements and shared water quality goals. The engagement processes should use metrics to track progress from both process- and outcome-based perspectives. | See the response to SCVURPPP\_C.3.b.ii.(5)\_6  SMCWPPP\_C.3.b.ii.(5)\_5 |
| CCCWP\_C.3.j.ii.(3)(c)\_1 | In the MRP 3 Provision C.3 Amendment Administrative Draft, a new Provision C.3.j.ii.(3)(c) had been included to allow for partial crediting of Regional Projects for compliance with C.3.j.ii.(2) Numeric Implementation requirements. The new Provision C.3.j.ii.(3)(c) has been removed in the Tentative Order.  CCCWP appreciated that the Water Board had considered a subprovision to allow for partial credit for stormwater treatment controls. There are many constraints in the urbanized Bay Area that limit the locations and sizes of stormwater treatment controls. These include but are not limited to: physical constraints, including high groundwater, geotechnical hazards, subsurface contamination, and near-Bay hydraulic/tidal constraints; infrastructure constraints, including dense built-out urban infrastructure, utilities, and building and roadway structural foundations; and site use constraints, including existing community site uses incompatible with installing stormwater treatment controls, and limited permittee-owned sites. Given these constraints, stormwater treatment controls for impervious surface retrofits are very difficult to site and available space on a given site may not be sufficient to provide storage to capture the water quality design basis for the tributary drainage area.  CCCWP endorses development of Water Board-approved, consistent, region-wide methods for partial credit towards impervious surface retrofit and stormwater treatment targets. CCCWP also agrees that these methods should be discussed and developed more broadly with Permittees throughout the region before the calculation methods are included in the MRP. | The Water Board may amend the Permit with good cause pursuant to 40 C.F.R. §122.62(a)(2) only if it receives new information that was not available at the time of the Permit’s issuance (other than revised regulations, guidance, or test methods) which would have justified the application of different permit conditions at the time of issuance. The information the Water Board received regarding regional projects did not meet these criteria, therefore it is not possible to include a responsive change to permit language in the Tentative Order.  There are several significant issues associated with partial crediting of large regional-scale projects that remain unresolved. The Water Board is committed to considering these issues and any new information to support them when the MRP is next reissued. By way of illustration, a recent proposal from one Permittee proposed to proportionally credit a treatment system consisting of Silva cells and media filters in series which would drain 14.09 acres of effective impervious area, but the treatment system would be sized at only 0.3 percent of the 14.09 acres of effective impervious area, substantially below the standard sizing of 4 percent. That system does not comply with the standard specified in Provision C.3.d to treat at least 80 percent of average annual runoff since it would treat only 25 percent of average annual runoff. That is separate from the system’s more-limited benefits, as compared to LID systems, of reduced retention and detention. In other words, the large size of this and other regional projects allows for treatment of only a portion of the flows that are otherwise required to be treated by the MRP; to credit such a project, Provision C.3.d would need to be revised, and there would need to be information sufficient to justify the revision.  Regional projects, by virtue of their large tributary drainage areas and typical locations towards the bottom of watersheds, often cannot provide the same level of flow control (e.g., via detention, infiltration, and evapotranspiration) that would be provided by distributed or smaller, district-scale stormwater treatment BMPs. For more on the consequences of diminished flow control benefit, and on the importance of providing flow control benefit equivalent to that which is provided by LID, see the responses to Contech\_C.3.c.i.(2)(c)(iii)\_2 and to Contech\_C.3.c.i.(2)(c)(iii)\_19.  Another significant issue is that regional projects like the above example, which additionally divert a portion of flows from receiving waters, are using the upstream segments of those receiving waters as untreated detention basins, therefore those upstream areas experience increased creek erosion and pollutant exposure as compared to approaches that treat runoff higher in a catchment. There may also be significant impacts associated with diverting from receiving waters, such as fill and take of species. Those impacts may be addressable but may be substantial and require additional analysis before changes to the Permit are considered. |

Attachment 1





Attachment 2

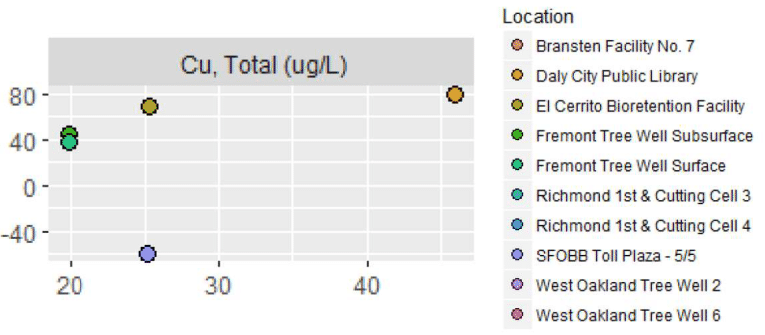


Figure 21. Performance as a function of influent concentration. Y-axis: performance as percentage reduction. X-axis: influent concentration (ug/L).

1. As noted in the MRP 3 Fact Sheet, increases in impervious surface (e.g., roofs, roads, parking lots, sidewalks) are linked to changes in runoff that adversely impact receiving waters. Those changes include loss of aquatic function as measured by changes in channel morphology, fish and amphibian populations, vegetation succession, and water chemistry (e.g., MRP 3 Fact Sheet pp. A-116, 117, and 150). [↑](#footnote-ref-2)
2. Roofs, terraces, patios, courtyards, plazas, quadrangles, athletics areas, outdoor pool areas, playgrounds, parks, bike-separation strips, and adjacent public sidewalks, roads, and rights of way (ROWs). [↑](#footnote-ref-3)
3. <https://www3.epa.gov/region1/npdes/stormwater/assets/pdfs/IncorporatingLID.pdf>. U.S. EPA New England, April 2009. Incorporating Low Impact Development into Municipal Stormwater Programs. [↑](#footnote-ref-4)
4. Geosyntec and Wright Water Engineers, January 2011. International Stormwater BMP Database Technical Summary: Volume Reduction (www.bmpdatabase.org).

   Geosyntec and Wright Water Engineers, May 2012. International Stormwater BMP Database Addendum 1 to Volume Reduction Technical Summary (January 2011). Expanded Analysis of Volume Reduction in Bioretention BMPs (www.bmpdatabase.org).

   Braswell, et al., Oct. 2018. Hydrologic and water quality performance of permeable pavement with internal water storage over a clay soil in Durham, North Carolina. J. Environmental Mgmt. 224:277-287.

   Contra Costa Clean Water Program, September 15, 2013. IMP Monitoring Report, chapters 6-7.

   Winston, et al., May 2016. Quantifying volume reduction and peak flow mitigation for three bioretention cells in clay soils in northeast Ohio. Science of the Total Environment 553:83-95. [↑](#footnote-ref-5)
5. Ibid.

   In addition to the information included in the MRP 3 Fact sheet, the Water Board considered studies including: Horner and Chapman, 2007. NW 110th Street Natural Drainage System Performance Monitoring, with summary of Viewlands and 2nd Avenue NW SEA Streets monitoring. Seattle: University of Washington; and Horner, et al. September 2002. Hydrologic Monitoring of the Seattle Ultra-Urban Stormwater Management Projects. Water Resources Series Technical Report No. 170. Seattle: University of Washington. [↑](#footnote-ref-6)
6. NRDC and Baykeeper comment letter on the Revised Tentative Order for MRP 1, April 3, 2009. [↑](#footnote-ref-7)
7. EPA et al., Green Infrastructure Statement of Intent, April 19, 2007, available at <http://www.msdgc.org/downloads/wetweather/greenreport/Files/Green_Report_Exhibit_A.pdf> [↑](#footnote-ref-8)
8. U.S. EPA Region 9, comment letter on the Revised Tentative Order for MRP 1, April 3, 2009. [↑](#footnote-ref-9)
9. <https://www.youtube.com/watch?v=PqnGwDlBUHw>. Milesi and Howie, July 2023. Updates to TAPE and transition to STEPP. Washington Stormwater Center and Washington State Department of Ecology. [↑](#footnote-ref-10)
10. <https://www.stormcon.com/2023/session/1438576/evaluating-maintenance-needs-for-manufactured-treatment-devices-following-the-tape-protocols-paired-with-monitoring-and-testing-stormwater-treatment-systems?c_2594252=13074822>. Milesi, Howie, and Simms, August 30, 2023. Evaluating Maintenance Needs for Manufactured Treatment Devices following the TAPE Protocols paired with Monitoring and Testing Stormwater Treatment Systems. Stormcon, Dallas, Texas. [↑](#footnote-ref-11)
11. Geosyntec and Wright Water Engineers, January 2011. International Stormwater BMP Database Technical Summary: Volume Reduction (www.bmpdatabase.org).

    Geosyntec and Wright Water Engineers, May 2012. International Stormwater BMP Database Addendum 1 to Volume Reduction Technical Summary (January 2011). Expanded Analysis of Volume Reduction in Bioretention BMPs (www.bmpdatabase.org).

    Braswell, et al., Oct. 2018. Hydrologic and water quality performance of permeable pavement with internal water storage over a clay soil in Durham, North Carolina. J. Environmental Mgmt. 224:277-287.

    Contra Costa Clean Water Program, September 15, 2013. IMP Monitoring Report, chapters 6-7.

    Winston, et al., May 2016. Quantifying volume reduction and peak flow mitigation for three bioretention cells in clay soils in northeast Ohio. Science of the Total Environment 553:83-95. [↑](#footnote-ref-12)
12. Ibid. [↑](#footnote-ref-13)
13. A project may potentially jump straight to the third option without demonstrating technical infeasibility. [↑](#footnote-ref-14)
14. Under certain narrow conditions specified in the permit, post-construction discharges may instead match existing land cover conditions (i.e., the pre-project condition). This requires Executive Officer approval. [↑](#footnote-ref-15)
15. Geosyntec and Wright Water Engineers, January 2011. International Stormwater BMP Database Technical Summary: Volume Reduction (www.bmpdatabase.org).

    Geosyntec and Wright Water Engineers, May 2012. International Stormwater BMP Database Addendum 1 to Volume Reduction Technical Summary (January 2011). Expanded Analysis of Volume Reduction in Bioretention BMPs (www.bmpdatabase.org).

    Braswell, et al., Oct. 2018. Hydrologic and water quality performance of permeable pavement with internal water storage over a clay soil in Durham, North Carolina. J. Environmental Mgmt. 224:277-287.

    Contra Costa Clean Water Program, September 15, 2013. IMP Monitoring Report, chapters 6-7.

    Winston, et al., May 2016. Quantifying volume reduction and peak flow mitigation for three bioretention cells in clay soils in northeast Ohio. Science of the Total Environment 553:83-95. [↑](#footnote-ref-16)
16. Ibid. [↑](#footnote-ref-17)
17. Winston, Ryan, 2004. Ph.D. dissertation, Resilience of Green Infrastructure Under Extreme Conditions. Univ. of North Carolina. <https://repository.lib.ncsu.edu/bitstream/handle/1840.16/10890/etd.pdf?sequence=2> [↑](#footnote-ref-18)
18. Traver, 2004. Infiltration strategies for LID. World Wat. and Env. Resources Congress, EWRI of ASCE. <https://doi.org/10.1061/40737(2004)83> [↑](#footnote-ref-19)
19. Traver and Ebrahimian, July 19, 2017. Dynamic design of green stormwater infrastructure. Frontiers of Env. Sci. & Engineering 11(15). <https://link.springer.com/article/10.1007/s11783-017-0973-z> [↑](#footnote-ref-20)
20. Winston et al., May 2016. Quantifying volume reduction and peak flow mitigation for three bioretention cells in clay soils in northeast Ohio. Science of the Total Environment 553(15). <https://doi.org/10.1016/j.scitotenv.2016.02.081>. [↑](#footnote-ref-21)
21. [<https://ecology.wa.gov/Regulations-Permits/Guidance-technical-assistance/Stormwater-permittee-guidance-resources/Emerging-stormwater-treatment-technologies>](https://ecology.wa.gov/Regulations-Permits/Guidance-technical-assistance/Stormwater-permittee-guidance-resources/Emerging-stormwater-treatment-technologies) [↑](#footnote-ref-22)
22. Gilbreath, A.; Pearce, S.; Shimabuku, I.; McKee, L. 2018. Bay Area Green Infrastructure Water Quality Synthesis. SFEI Contribution No. 922. San Francisco Estuary Institute: Richmond, CA. https://www.sfei.org/documents/bay-area-green-infrastructure-water-quality-synthesis [↑](#footnote-ref-23)
23. Water Board review of 2018 SFEI study “Bay Area Green Infrastructure Water Quality Synthesis,” May 2023. The Water Board analysis of the 2018 SFEI study indicates that it is not clear that media filters have significantly greater performance than LID systems, given the small sample size of media filters (2) compared to LID facilities (8) in the study, the range of influent concentrations for each monitored system, and the study’s self-identified limitations. [↑](#footnote-ref-24)
24. While not new information, the Water Board also considered general information regarding potential increases to near-Bay groundwater elevations associated with rising tides, because higher groundwater levels can reduce infiltration from a treatment control into the surrounding ground when they are close to the bottom of the control. [↑](#footnote-ref-25)
25. <https://ecology.wa.gov/Regulations-Permits/Permits-certifications/Stormwater-general-permits/Municipal-stormwater-general-permits> The Phase II MS4 Permit thresholds that trigger the requirement to include onsite treatment control measures are significantly lower than the MRP’s thresholds, and a baseline expectation that post-construction discharge rates match the pre-development condition (i.e., “make it better”). This contrasts with the MRP’s baseline less-stringent expectation that post-construction discharge rates only match the pre-construction condition (i.e., “don’t make it worse”). [↑](#footnote-ref-26)
26. <https://www.waterboards.ca.gov/sandiego/water_issues/programs/stormwater/> [↑](#footnote-ref-27)
27. Anacostia Waterfront Corporation (June 1, 2007) Final Environmental Standards, p. 16; *See also*, State Water Resources Control Board (December 2007) A Review of Low Impact Development Policies: Removing Institutional Barriers to Adoption, at 20-21. [↑](#footnote-ref-28)
28. Central Coast Regional Water Quality Control Board, Letter from Roger Briggs re: Notification to Traditional, Small MS4s on Process for Enrolling under the State’s General NPDES Permit for Storm Water Discharges (Feb. 15, 2008). [↑](#footnote-ref-29)
29. Pennsylvania Department of Environmental Protection (December 30, 2006) *Pennsylvania Stormwater Best Management Practices Manual*, Chapter 3, p.7. Additionally, Pennsylvania is currently completing an update to the Manual (in draft as of Dec. 2022) that continues to focus on management of volume as a key component of water quality and recognizes the increased importance of that aspect as the result of climate-change-driven changes in precipitation intensity, depth, and frequency. Furjanic, Traver, Bowen, and Hess, Nov. 2022. PA DEP Stormwater Manual Updates (slide presentation). [↑](#footnote-ref-30)
30. City of Philadelphia, Philadelphia Stormwater Regulations § 600.5; City of Philadelphia (2006) *Philadelphia Stormwater Management Guidance Manual: Version 2.0*, Section 1-1, Appendix F.4.1. [↑](#footnote-ref-31)
31. State of West Virginia (December 11, 2008) Department of Environmental Protection, Division of Water and Waste Management, Draft General National Pollution Discharge Elimination System Water Pollution Control Permit, NPDES Permit No. WV0116025, pp. 13-14. [↑](#footnote-ref-32)
32. Personal communication, Keith Lichten, Watershed Management Division Manager, and Vaikko Allen, Contech, at CASQA Annual Conference, September 2022. [↑](#footnote-ref-33)
33. Gilbreath, A.; Pearce, S.; Shimabuku, I.; McKee, L. 2018. Bay Area Green Infrastructure Water Quality Synthesis. SFEI Contribution No. 922. San Francisco Estuary Institute: Richmond, CA. <https://www.sfei.org/documents/bay-area-green-infrastructure-water-quality-synthesis> [↑](#footnote-ref-34)
34. Kadlec R. H. & Knight R. L. (1996). *Treatment Wetlands*. Lewis Publisher CRC Press, Florida. [↑](#footnote-ref-35)
35. Wright Water Engineers and Geosyntec Consultants, 2007. Frequently Asked Questions Fact Sheet for the International Stormwater BMP Database: Why does the International Stormwater BMP Database Project omit percent removal as a measure of BMP performance? (as posted on www.bmpdatabase.org) [↑](#footnote-ref-36)
36. International Stormwater BMP Database 2007 Percent Removal FAQ. <https://static1.squarespace.com/static/5f8dbde10268ab224c895ad7/t/5fbd399a2378d9213a92c43d/1606236571807/2007_FAQPercentRemoval.pdf> [↑](#footnote-ref-37)
37. Examples of temporary emergency housing projects are: formal “community cabin” or tent communities; RV safe parking areas; and homeless “navigation centers” with housing, that are temporary and provide housing for people experiencing unsheltered homelessness. [↑](#footnote-ref-38)
38. Examples of additional best management practices that could be considered include, but are not limited to, those described in the Bay Area Municipal Stormwater Collaborative report, dated September 30, 2023. “Regional Best Management Practices Report for Addressing Non-Stormwater Discharges Associated with Unsheltered Homeless Populations.” At the time of Permit amendment, the Report had been recently submitted and was under review by the Water Board. [↑](#footnote-ref-39)
39. For example: Guy Marzorati, June 14, 2023. “San Jose City Council Approves Modest Shift Toward Temporary Homeless Housing.” KQED. <https://www.kqed.org/news/11952913/san-jose-council-approves-modest-shift-toward-temporary-homeless-housing>.

    McKinsey & Company, March 23, 2023. The ongoing crisis of homelessness in the Bay Area: What’s working, what’s not. <https://www.mckinsey.com/industries/public-sector/our-insights/the-ongoing-crisis-of-homelessness-in-the-bay-area-whats-working-whats-not#/>

    National Alliance to End Homelessness, February 24, 2023. Taking an Equitable Approach to Unsheltered Homelessness. https://endhomelessness.org/blog/taking-an-equitable-approach-to-unsheltered-homelessness/ [↑](#footnote-ref-40)
40. See the Bay Area Municipal Stormwater Collaborative report, dated September 30, 2023. “Regional Best Management Practices Report for Addressing Non-Stormwater Discharges Associated with Unsheltered Homeless Populations.” At the time of this Permit amendment, the Report had been recently submitted and was under review by the Water Board. [↑](#footnote-ref-41)
41. Batko, Oneto, and Shroyer, Dec. 2020. Unsheltered Homelessness: Trends, Characteristics, and Homeless Histories. Urban Institute, pp. 12-13.

    Kushel, Moore, et al., June 2023. Toward a new understanding: The California statewide study of people experiencing homelessness. UCSF. Incl. pp. 83-84.

    See also MRP Fact Sheet Sections C.10-5(4) (Attachment A – 234), C.10.f.ii (Attachment A, p. A-247), and C.17 (Attachment A, p. A-326) for discussion of the adverse water quality impacts of unsheltered homelessness. [↑](#footnote-ref-42)
42. E.g., see Zuk and Chapple, Housing Production, Filtering and Displacement: Untangling the Relationships, May 2016. Berkeley: UC Berkeley Institute of Governmental Studies. [↑](#footnote-ref-43)
43. <https://www.hcd.ca.gov/planning-and-community-development/housing-open-data-tools/housing-element-implementation-and-apr-dashboard> [↑](#footnote-ref-44)
44. Alameda, Contra Costa, San Mateo, Santa Clara, and Solano Counties. [↑](#footnote-ref-45)
45. Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, Santa Clara, Solano, and Sonoma Counties. [↑](#footnote-ref-46)
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48. <https://mtc.ca.gov/planning/transportation/access-equity-mobility/equity-priority-communities> [↑](#footnote-ref-49)
49. <https://mtc.maps.arcgis.com/apps/mapviewer/index.html?layers=28a03a46fe9c4df0a29746d6f8c633c8> [↑](#footnote-ref-50)
50. <https://vig.cdn.sos.ca.gov/2014/general/en/pdf/text-of-proposed-law-prop1.pdf> [↑](#footnote-ref-51)
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52. <https://gis.water.ca.gov/app/dacs/> [↑](#footnote-ref-53)
53. <https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=201120120SB535> [↑](#footnote-ref-54)
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