

STATE OF CALIFORNIA  
REGIONAL WATER QUALITY CONTROL BOARD  
SAN FRANCISCO BAY REGION

STAFF SUMMARY REPORT: Zachary Rokeach  
MEETING DATE: October 11, 2023

**ITEM: 5**

**Municipal Regional Stormwater NPDES Permit – Municipalities and Flood Management Agencies in Alameda County, Contra Costa County, San Mateo County, Santa Clara County, and Solano County – Amendment of NPDES Permit**

**DISCUSSION**

The Revised Tentative Order (or amendment) would amend Provision C.3 - New Development and Redevelopment, of the Municipal Regional Stormwater NPDES Permit (MRP or Permit), Order No. R2-2022-0009, issued May 11, 2022, for 79 municipalities and local agencies (Permittees) in Alameda, Contra Costa, Santa Clara, San Mateo, and Solano counties. The Revised Tentative order would revise the Special Projects Category C (Affordable Housing) subprovision and add a new subprovision for Alternative Treatment Systems. Appendix A hereto is the Revised Tentative Order, including the revised Fact Sheet, showing proposed changes to the MRP in underline and strikethrough text. It includes changes made to the Tentative Order in response to comments. Appendix B is the Response to Comments Received on the Tentative Order and Fact Sheet. The Tentative Order and Fact Sheet were available for public comment for 30 days from July 21 through August 21, 2023. Appendix C explains how to access the comment letters received during the Tentative Order's formal comment period. Appendix D is the Revised Tentative Order and Fact Sheet, showing the changes made in double-underline and double-strikeout to the Tentative Order that was released for public comment.

Prior to releasing the Tentative Order, we worked extensively with a broad cross section of Permittees and other stakeholders – including representatives of for-profit and non-profit developers, stormwater control manufacturers, U.S. EPA Region 9, Metropolitan Transportation Commission/Association of Bay Area Governments, and San Francisco Baykeeper – in three workgroups that met between August 2022 and April 2023: the Alternative Treatment Systems Workgroup, which met seven times; the Category C / Affordable Housing Workgroup, which also met seven times; and the Road Reconstruction Projects in Disadvantaged Communities Workgroup, which met six times. This engagement led to the distribution in April 2023 of an administrative draft of the amendment. The administrative draft was revised in response to comments and led to the Tentative Order.

We also met outside of the workgroups with Permittees and other stakeholders, including via the Bay Area Municipal Stormwater Collaborative's (BAMSC's) Steering Committee, Development Committee, and Monitoring / Pollutants of Concern Committee, and via other forums.

Below, we highlight key issues for the Special Projects Category C (Affordable Housing) and Alternative Treatment Systems subprovisions, including changes to the Permit that are proposed in the Revised Tentative Order, key comments from the seven comment letters received, and responses to those comments.

- **Special Projects Category C (Affordable Housing).** Consistent with other NPDES municipal stormwater permits in California and nationwide, the MRP requires regulated new development and significant redevelopment projects to treat their polluted runoff using low impact development treatment controls like bioretention planter boxes and cells and rain gardens. In contrast to those permits, the MRP includes flexibility, in its Special Projects Category C subprovision, for projects to treat urban runoff by implementing less-effective non-low impact development urban runoff treatment controls, also called alternative treatment systems. These alternative systems are typically high flow rate vault-based media filters. The flexibility is based on the amount of affordable housing included in the project, with more flexibility accorded to projects that are more affordable.

During the Permit's May 2022 reissuance hearing, the Water Board directed staff to report back on the impacts of the Permit's Category C provision on housing costs. We convened the Category C / Affordable Housing Workgroup. Through the workgroup we developed revisions based on new information. The revisions maintain the Category C focus on affordable housing, but increase flexibility, reduce prescriptiveness, and apply to for-profit projects as long as they include some nominal affordability, which many include to qualify for state and local funding, bonuses, and waivers. The proposed revisions are supported by and based on existing state law, including the state density bonus law. The revisions would also exempt temporary public emergency housing projects, like RV safe parking areas and managed "cabin communities," from having to implement water quality treatment controls. The flexibility to implement less-effective water quality controls, and exemption from implementing controls, are justified because those projects reduce unsheltered homelessness, and thus improve water quality by reducing discharges of trash and sewage associated with unsheltered homelessness. Overall, the revisions provide full flexibility to implement alternative treatment controls for projects that are fully affordable and sliding-scale flexibility for projects that include at least a nominal level of affordable units.

Some workgroup participants and commenters on the Tentative Order requested that Special Projects Category C be reverted to the previous Permit's language, which focused on transit-oriented development rather than affordable housing. They also requested that the Permit allow full flexibility to implement alternative treatment systems for market-rate housing projects that have no affordable housing, because of the ongoing housing crisis and the assertion that low impact development controls are more costly for housing projects than alternative treatment systems. We heard that, generally, any potential cost to projects is too much, and that if built in enough quantity, market-rate housing has the potential to reduce unsheltered homelessness, which would have a water quality benefit. We considered potential cost and related issues, but the workgroup did not identify a significant difference in cost between the alternative treatment systems and low impact development controls, and we were not otherwise able to identify information to justify the requested significant expansion of flexibility to use less-effective alternative treatment system controls.

Similarly, based on the information considered as part of the Permit's reissuance, in the workgroup, and in the comments on the Tentative Order, the Permit's requirements to implement low impact development controls have little, if any, impact on housing production, and there is no basis for reverting to the previous Permit's language because none of the causes for modifying the Permit under the federal regulations are met. Moreover, reverting to the previous permit's approach would have greater adverse water

quality impacts such that it would raise antidegradation and potentially anti-backsliding issues.

Low impact development controls have been implemented in the Bay Area for more than twenty years, are flexible because they can be implemented in a broad range of situations and consist of a range of controls, such as bioretention planter boxes, linear bioretention strips along building edges, bioretention cells in building courtyards or adjacent to streets, and green roofs. Low impact development controls are typically incorporated into parts of projects that were already planned for landscaping. Further, the Workgroup included a tour of low impact development controls in high-density urban infill redevelopment housing projects in San Francisco's Mission Bay neighborhood, which is part of San Francisco's separate storm sewer area, and which included market rate and fully affordable housing projects. Consistent with our review of similar projects elsewhere in the U.S., as described during the MRP reissuance, we found that low impact development treatment controls are feasible when they are incorporated into a project as part of its planning process. While the MRP, as a Clean Water Act stormwater permit, does not require it, such controls often have significant co-benefits that support high population densities, such as reducing the urban heat island effect, providing green space, and enhancing privacy.

- **Alternative Treatment Systems.** During the Permit's May 2022 reissuance hearing, the Water Board directed staff to report on the inclusion of alternative treatment systems, which are typically high flow rate vault-based media filters. The proposed amendment would expand the Permit's flexibility for all projects, regardless of affordability, to use less-effective alternative treatment controls in areas where the controls are relatively more comparable to low impact development systems and when low impact development systems are infeasible. Alternative treatment systems typically require less surface area than low impact development systems. As such, they can provide an alternative treatment tool for particularly constrained projects. However, 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. Finally, alternative treatment systems – especially high flow-rate media filters – can be more challenging to maintain because of their lesser visibility. To achieve the high flow rate, they require more water per unit area to flow through their media. This can result in a need for more-frequent and more-extensive maintenance, and both their capital construction and ongoing operation and maintenance can be more costly.

We convened an Alternative Treatment Systems Workgroup that met from August 2022 to April 2023. The workgroup included Permittees, developers and representatives of developers, stormwater control manufacturers, environmental and engineering consulting firms, and other stakeholders. Through the workgroup, the Water Board developed proposed language based on new information allowing increased flexibility to use certain alternative treatment systems, referred to as media filters. Because media filters have negligible flow control benefits compared to low impact development systems, and because that reduction in flow control can result in significant water quality impacts as compared to low impact development systems, alternative treatment systems must be combined with systems providing flow control to provide overall water quality benefit commensurate with low impact development systems. For a project to qualify to use a media filter, the Revised

Tentative Order requires the project to demonstrate that low impact development systems are infeasible, that the media filters will produce a substantial enough pollutant reduction benefit (by virtue of being certified by an ongoing Washington State certification program), and that the media filter is paired with a flow control system so that it provides water quality benefit commensurate to that provided by low impact development systems. This is necessary to address the Clean Water Act's antidegradation and anti-backsliding requirements.

The Water Board has recognized, in its adoption and reissuances of the municipal regional stormwater permits, that urban runoff's water quality impacts are associated with both the direct impacts of pollutants in urban runoff and increases in runoff flows and volumes from impervious surfaces like roofs, roads, and parking lots, called hydromodification, which itself generates pollutants and impacts beneficial uses. As a result, the MRP's water quality treatment control standard, low impact development, consists of controls that directly reduce pollutants in runoff and that reduce the adverse impacts of hydromodification by slowing, spreading, and sinking runoff. That standard applies to all Regulated Projects—generally projects that create or redevelop 5,000 square feet or more of impervious surface. In addition, the Water Board included a specific subprovision, C.3.g, Hydromodification Management, to address hydromodification impacts from larger projects—those that create an acre (43,560 square feet) or more of impervious surface. This is a compromise approach adopted by the Water Board with the first municipal regional stormwater permit in 2009 (MRP 1), and continued in subsequent reissuances, in lieu of more-robust on-site retention and infiltration requirements supported at the time by U.S. EPA and the Natural Resources Defense Council.

Low impact development controls slow, spread, and capture runoff, reducing pollutant loads and the adverse effects of urbanization on runoff patterns, including increases in surface runoff that increase downstream creek erosion and reductions in creek base flows during the summer drought. By contrast, alternative treatment systems provide minimal hydromodification management benefits. However, in certain parts of the MRP Permittees' jurisdictions, the difference between the two kinds of controls is less significant. That is, those areas close to the Bay where groundwater levels are high (limiting infiltration) and storm drains discharge to creeks that are tidal or hardened all the way to the Bay (limiting the adverse consequences of using systems that have a reduced hydromodification management benefit). In these areas, it is relatively simple to model the estimated benefit of low impact development controls, such that, with modest additional flow control, alternative treatment systems can provide a benefit that is roughly commensurate with low impact development.

Many commenters preferred that the flexibility proposed in the amendment be expanded to the entire MRP area. However, although alternative treatment systems can effectively reduce pollutant concentrations if they are properly maintained, they have limited to no benefit with respect to runoff reduction. There is insufficient information at this time to determine an equivalent hydrologic benefit approach for alternative treatment systems across a broader part of the MRP area. Much of the Bay Area consists of tight, often clay-rich soils that have relatively slow infiltration. Textbook values would suggest that the flow control benefits of low impact development controls in such soils are limited. However, available studies indicate there are substantial benefits from slowing and infiltrating runoff

even in tight soils. In order to consider a potential commensurate benefit approach in other parts of the MRP area, additional information is needed.

As additional data are collected, including via the Permittees' low impact development monitoring that is just getting under way and that includes monitoring of controls' hydrologic performance, the Water Board is committed to considering opportunities for additional flexibility. This may include on-site runoff retention requirements as in many other stormwater permits across the state and country, and it may also include changes to the hydromodification management requirements in Provision C.3.g.

Under the proposed amendment, the broader use of alternative treatment systems is contingent upon the submittal of an acceptable Regional Guidance Document to facilitate and guide Permittees' demonstrations regarding the infeasibility of implementing, and commensurate benefit of, low impact development systems. The guidance document ensures that the demonstrations of technical infeasibility and commensurate benefit are of sufficiently high quality, which will facilitate both Permittee and Water Board review of those demonstrations. It also ensures regional consistency, among other benefits.

A number of commenters expressed concern that the process for implementing alternative treatment controls was burdensome and requested removal of the requirement for Executive Officer approval of individual projects. However, the amendment would allow for Permittee review and approval of such projects as long as the approved Regional Guidance Document is sufficiently detailed, which gives project proponents and Permittees a transparent and predictable guide for considering alternative treatment systems and is appropriately protective.

Some commenters said that media filters certified by the Washington State program can better reduce pollutant concentrations as compared to the bioretention media currently used under the MRP when properly maintained. However, their overall pollutant load reduction is not necessarily better because: they have a higher need for operation and maintenance and are often underground, where their need for maintenance may not be timely identified, if at all; and pollutant load reduction in an alternative treatment control via reductions in flow is limited or negligible because media filters have limited to no vertical or horizontal infiltration into the surrounding soil. Furthermore, because of the negligible flow control provided by media filters, they do not significantly reduce in-stream pollution and impacts resulting from increased flows and erosion potential, unless, as prescribed in proposed amendment, they are paired with systems providing flow control benefits.

Some commenters expressed that not all Permittees may be interested in implementing the proposed new alternative treatment system flexibility, in part because of the limited geographic area where it would apply. Thus, the cost of preparing a Regional Guidance Document would be borne by some, but not all, Permittees. The proposed amendment does not require the Permittees to implement Alternative Treatment Systems. The municipalities that may be more interested in implementing Alternative Treatment Systems are the largest Permittees (e.g., San Jose and Oakland) and include Bay-adjacent cities in San Mateo, Alameda, Santa Clara, and Contra Costa counties. As such, the cost of preparing a one-time report is unlikely to fall significantly on any particular Permittee.

Some commenters criticized the Permit's biotreatment soil media specification as being overly prescriptive and not performing as well as certain proprietary media mixes. However, the current biotreatment soil media specification appears to perform well, and the Water

Board recognizes that the Permittees support a consistent bioretention media specification, in part to ensure Bay Area suppliers can consistently produce and deliver an acceptable quality media to projects. At the same time, the Water Board intends to work with Permittees as part of the Permit's next reissuance to consider updates to the biotreatment soil media specification, informed by the latest studies, in order to improve the specification's effectiveness and consider other opportunities for improvement such as increased water holding capacity that could reduce potable water demand for irrigation.

- **Road Reconstruction Projects in Disadvantaged Communities (DACs).** During the MRP's May 2022 reissuance hearing, the Water Board directed staff to report back on the potential impact of MRP requirements to include clean water controls for road reconstruction projects in DACs. As noted in several comments, the Tentative Order did not include, and the Revised Tentative Order does not include, language excluding or lessening stormwater control requirements for public road reconstruction projects in DACs. That is because the Road Reconstruction Projects in DACs workgroup, convened to address this issue, did not generate new information justifying changed requirements and because there is no separate basis for amending the Permit on this topic.

The DAC workgroup, which included Water Board and Permittee staff, discussed impacts of the Permit's requirements to implement stormwater controls in public road projects that reconstruct one acre or more of contiguous impervious surface. Six workgroup meetings were held, in which Permittees presented information on the potential cost and engineering challenges of implementing stormwater controls on public road projects in DACs. The challenges presented included: lack of funding and space to implement stormwater controls for traffic and pedestrian safety improvement projects, older or solely surface storm drain infrastructure (e.g., valley gutters or curb and gutter as opposed to underground storm drains) in DACs, and older road infrastructure. The Water Board's analysis of this information found that while there are areas in DACs where conditions like substandard roads exist, they are not more significant in DACs as compared to other MRP Permittees, and the conditions are not substantively different than in non-DAC Permittee jurisdictions. Permittees expressed concern that the new requirements would lead to foregoing safety improvement projects. However, this concern was not supported with project-specific evidence, and low impact development can be an integral part of safety improvement projects. Furthermore, there is substantial existing flexibility in Provision C.3.b.ii.(5) for road reconstruction projects in DACs, including alternative sizing criteria that facilitate inclusion of low impact development systems in more-constrained situations.

In the workgroup, we prompted Permittees to propose revise language, potentially including a pilot project approach to implement alternative control measures, that could provide flexibility while still being protective of water quality, but the Permittees did not submit a responsive proposal. We proposed a pilot project approach that was not supported by the Permittees. Instead, the Permittees suggested allowing urban greening (i.e., planting trees in parks and adjacent to roads) as a means of alternative compliance. We recognize that trees provide some benefit by reducing runoff, particularly in small storms. However, on their own, trees do not provide an equivalent water quality benefit as compared to the treatment that would have been foregone, and the effect of the Permittee's proposal would have been to have exempted DACs from treatment control requirements for road reconstruction projects, which was not supported by available information.

In the workgroup there was discussion of funding opportunities, including an influx of federal 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 implementing road reconstruction projects.

We will continue to consider this issue during the current MRP permit term. Permittees’ annual reports during the current permit term, including reporting on road reconstruction projects and green infrastructure retrofit projects, will help inform consideration of changes in a future reissuance.

## **Conclusion**

In response to the Water Board’s direction at the May 2022 MRP reissuance hearing, we convened three stakeholder workgroups, met separately with interested stakeholders, developed amended permit language for public comment, and revised the proposed language in response to comments. We are grateful for the substantial investment of time and interest by all participants. In addition, we made non-substantive copyedit revisions to the proposed language. In addition to the changes proposed in the Revised Tentative Order, we are committed to continuing to develop, receive, and review information on the MRP’s implementation during the permit term, leading to additional potential changes when the permit is next reissued.

## **APPENDICES**

- A. Revised Tentative Order and Fact Sheet
- B. Responses to Comments Received
- C. Comment Letters Received during the Written Comment Period
- D. Changes between Tentative Order and Revised Tentative Order

# Appendix A

## Revised Tentative Order and Fact Sheet



# Appendix B

## Responses to Comments Received

# Appendix C

## Comment Letters Received during the Written Comment Period

To request copies of the annotated comment letters received during the written comment period, send an email to: [RB2-MRP@waterboards.ca.gov](mailto:RB2-MRP@waterboards.ca.gov)

# Appendix D

## Changes between Tentative Order and Revised Tentative Order

Showing only the changes made between the Tentative Order and the Revised Tentative Order, using double-underline for additions and double-strikeout for deletions.