October 4, 2024

Joaquin Esquivel, Chair
Courtney Tyler, Clerk to the Board
State Water Resources Control Board
1001 I Street, 24 Floor
P.O. Box 100
Sacramento, CA 95812-0100

Sent via electronic submission to: commentletters@waterboards.ca.gov

RE: COMMENT LETTER: SMALL MUNICIPAL STORMWATER PERMIT

Dear Chair Esquivel and Members of the State Water Board:

California Coastkeeper Alliance ("CCKA") represents watershed-focused California Waterkeepers in fighting for drinkable, swimmable, fishable waters for all Californians. On behalf of CCKA, we appreciate the opportunity to provide the following comments regarding the Informal Draft of the Small Municipal Stormwater Permit (Phase II Permit).

Clean coastal areas, beaches, rivers, and bays are a big part of what makes living in California so great. They also fuel California's tourist-driven economy. Yet too often Californians and visitors cannot enjoy our iconic coast and beaches because the water is contaminated. Our state struggles to meet water quality standards set to protect human health and the environment, and too many waters are unsafe for swimming, drinking, and fishing. Contamination from stormwater at Southern California beaches sickens approximately one million swimmers every year, resulting in public health costs of $21 million to $51 million This is due to our failure to control stormwater runoff—the single greatest source of contamination to California's urban waterways.

The reissuance of the Phase II Stormwater Permit is a major opportunity to update California's stormwater program. The State Water Board must review and revise the Phase II Permit every five years. However, the last Phase II Permit was adopted in 2012, making this reissuance seven years late and counting. Critically, despite years of promises that K-12 schools would be included in this reissued Phase II Permit, the current informal draft once again exempts schools from obligations to address stormwater pollution from their campuses that may be causing or contributing to water quality violations. Considering the delay in reissuing the Phase II Permit, it is critical that the State Water Board now modernize the Phase II Permit and keep in mind how issues that left unaddressed—like regulating schools under the current draft—will likely have to wait at least another twelve years before they could realistically be addressed in the future.

To modernize California's stormwater program, the State Water Board must revise the Informal Draft Phase II Permit to:

(1) Revoke a discharger's ASBS Exception coverage and/or deem such coverage forfeited for all Phase II Permittees that are currently out of compliance with the ASBS General Exception;

(2) Make clear that General Exception, section A.2.h (1-3) are requirements of the Permittee, before exempting them from those requirements;

(3) Clarify in Attachment F that "implementation" of an ASBS Compliance Plan includes installing structural BMPs and demonstrating that the Permittee is maintaining natural ocean water quality;

(4) Require Phase II permittees to conduct regular monitoring to demonstrate ongoing compliance with the ASBS General Exception and, in particular, the requirement to maintain natural ocean water quality;

(5) Add to Attachment F, Section F.3 requirements for detection and reporting of future alterations of natural ocean water quality;

(6) Include K-12 schools into the Phase II Permit to 'Protect Children from Extreme Heat' and because they are contributors to violations of water quality objectives and significant contributors of pollutants to Waters of the United States;

(7) If the State Water Board proceeds with its alternative compliance approach, the Board needs to follow its own 2015 and 2020 precedential orders for alternative compliance and require rigor, accountability, and transparency;

(8) Increase the design capacity for post-construction standards based on national standards that have increased the MEP standards above an 85th Percentile storm event; and

(9) Require all permittees to conduct end-of-pipe and receiving water monitoring sufficient to determine compliance.

These comments are explained in greater detail below.

I. The State Water Board Must Ensure That Phase II Permittees Discharging to ASBS Maintain Natural Ocean Water Quality.

California has designated 34 Areas of Special Biological Significance ("ASBS"), which comprise one-third of the California coastline and support a wide variety of unique marine species that are the "basic building blocks" for a sustainable and resilient coastal environment and economy.[1] The concept of "special biological significance" was developed in recognition that certain biological communities, because of their value or fragility, deserve special protection, including the preservation and maintenance of natural water quality conditions. For this reason, the Water Quality Control Plan for Ocean Waters of California (the "Ocean Plan") explicitly prohibits the discharge of waste into ASBS.

In 2012, the State Water Board adopted the ASBS General Exception, which conditionally exempts limited categories of ASBS discharges from the Ocean Plan's ASBS waste discharge prohibition where the discharges are properly authorized and in compliance with the Exception's special conditions.[2] The cornerstone of the Exception's special conditions is the requirement that discharges maintain ASBS natural ocean water quality.[3] At a high level, the Exception required dischargers to submit an ASBS-specific plan, monitor receiving waters for natural ocean water quality exceedances, install control measures as needed, and comply with the requirement that discharges maintain natural ocean water quality by 2018.[4]

Due to the State Water Board's lack of oversight, the ASBS General Exception is fraught with non-compliance. A core facet of the General Exception is its conditionality: to lawfully discharge into ASBS, Exception holders must comply with the Exception's special conditions.[5] Indeed, the State Water Board's

[1] https://www.waterboards.ca.gov/water_issues/programs/ocean/asbs_map.shtml.
[2] *See* State Water Resource Control Board (SWRCB) Order No. 2012-0012, Attachment B, Special Protections for Areas of Special Biological Significance, Governing Point Source Discharges of Storm Water and Nonpoint Source Waste Discharges (hereinafter, "Exception" or "General Exception"), §§ I.A.1, I.B.1.
[3] *Id.* at §§ I.A.1.b, I.A.1.e.3, I.B.1.b., I.B.1.e.3.
[4] *Id.* at §§ I.A.2, I.A.3, I.B.2, I.B.3, and IV.
[5] *Id.* at Sections I.A.1.a.2, I.B.1.a.2.

finding that granting the Exception would not compromise beneficial use protections was made expressly contingent upon Exception holders' compliance.[6]

The ASBS General Exception's compliance deadline was 2018. The General Exception imposes special conditions on the 27 stormwater and nonpoint source dischargers that were granted an exception to the ASBS discharge prohibition. The prohibitions and conditions contained in the General Exception comprise "Special Protections" that include the explicit mandate that stormwater discharges "shall not alter natural ocean water quality in an ASBS."[7] Meanwhile, the General Exception's conditions include the requirement to submit a final ASBS Compliance Plan to the State Water Board by September 20, 2014—30 months after the General Exception's 2012 effective date[8]—and that pollutant reductions be achieved within six years of the effective date, *i.e.* by 2018.[9] Unfortunately, the General Exception conditions have failed to make "measurable progress"—if any progress at all—due to rampant discharger non-compliance and the State Water Board's lack of oversight to ensure final ASBS Compliance Plans were completed and that comprehensive monitoring and control efforts were enacted.

The current ASBS General Exception is flawed and must be reformed, but until ASBS reform is achieved, the State Water Board needs to take oversight of the rampant non-compliance more seriously. A review of the ASBS General Exception data and submitted ASBS Plans revealed the following:

(1) The ASBS General Exception compliance deadline was over 6 years ago (March 20, 2018); however, there is no evidence that structural and/or non-structural BMPs were ever employed nor that natural ocean water quality or a 90% reduction in pollutant loading was ever achieved.

(2) All ASBS General Exception dischargers that have submitted water quality data have failed to comply with the natural water quality standard.

(3) Of the 27 General Exceptions granted, 14 of 16 (88%) of public agencies and water districts, 100% of Caltrans sites, 3 of 5 (60%) of private entities, and 2 of 3 (67%) of Department of Defense sites have demonstrated water quality exceedances since 2012.

(4) No water quality data is available for 4 General Exception dischargers, therefore compliance with the natural water quality standard is unknown.

(5) The submitted ASBS Compliance Plans and Pollution Prevention Plans do not provide adequate justification for continued natural water quality exceedances, nor provide a substantial plan to rectify these exceedances.

In light of the numerous issues regarding ASBS compliance, the State Water Board must closely examine the provisions of the Phase II Permit pertaining to ASBS and make the following revisions to ensure that Phase II permittees properly implement the required compliance actions under the ASBS General Exemption.

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[6] *Id.* at Finding 9 ("The State Water Board finds that granting the requested exceptions will not compromise protection of ocean waters for beneficial uses, ***provided that the applicants comply with the prohibitions and special conditions that comprise the Special Protections contained in this resolution***.") (emphasis added).

[7] *Id.* at § I.A.1.b.

[8] While the 2019 SWRCB Water Quality Control Plan for Ocean Waters (Ocean Plan) (2019) lists July 1, 2013 as the effective date of SWRCB Resolutions 2010-0057 and 2011-013, the SWRCB staff response letters to draft compliance plans reference the March 20, 2012 adoption date when calculating compliance dates.

[9] *See* Exception, § I.A.3.

A. The State Water Board Should Revoke a Discharger's ASBS Exception Coverage or Deem Such Coverage Forfeited Where the Discharger has Failed to Live Up to its Pollution Control Obligations.

Where natural ocean water quality exceedances persist and/or a discharger fails to install adequate corrective management practices, the State Water Board should revoke Exception coverage and require the discharger to immediately comply with the Ocean Plan's baseline ASBS waste discharge prohibition. While the ASBS General Exception is more akin to a water quality variance than alternative compliance, the State Water Board should still follow its own precedential Order on the use of "safe harbors" in stormwater permits.

In the State Water Board's 2015 and 2020 Orders[10] regarding the Los Angeles Phase I stormwater permit,[11] the State Water Board set a statewide precedent that gave dischargers a safe harbor from receiving water limitation compliance if certain commitments were achieved. Analogous here, the State Water Board has provided a safe harbor from the Ocean Plan's prohibition of waste discharge into ASBS. In the case of the Los Angeles Phase I stormwater permit, the tradeoff for a safe harbor was retaining stormwater from an 85th percentile storm. In the context of the ASBS Exception, dischargers must meet natural ocean water quality (versus a complete discharge prohibition)—something they are failing to do. When approving the Los Angeles Phase I alternative compliance approach, the State Water Board set a statewide precedent that the "[f]ailure to demonstrate the *completion of all work* associated with prior and current milestones or to otherwise comply with an approved plan results in a *loss of deemed compliance*."[12] The precedential nature of State Water Board Orders WQ 2015-0075 and WQ 2020-0038 demand the State Water Board revoke ASBS Exception coverage or deem such coverage forfeited for all ASBS dischargers that have failed to demonstrate compliance of all work associated with the ASBS General Exception.

Dischargers who continuously flout the Exception's special conditions should not be allowed to take refuge in its safe harbor. The State Water Board should formally revoke a discharger's ASBS Exception coverage and/or deem such coverage forfeited for all Phase II Permittees that are currently out of compliance with the ASBS General Exception.

B. The State Water Board Must Clarify in Attachment F, Section 3 that Polluters Are Required to Install Structural BMPs to Maintain Natural Ocean Water Quality.

CCKA is confused and concerned as to how the Informal Draft Phase II Permit's Attachment F, Section F.3 will be implemented. Section F.3 states:

> As long as the Permittee has complied with the procedures described below, has implemented its ASBS Compliance Plan under the previous permit, and is implementing an updated ASBS Compliance Plan according to the requirements of this Attachment, the Permittee does not have to repeat the same procedure for continuing or recurring exceedances of natural ocean water quality conditions due to the same constituent-location pair (General Exception, section A.2.h.(4)).

To begin, Section F.3 should be stated as a directive, not an exemption:

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[10] SWRCB, Water Quality Order No. 2015-0075, https://www.waterboards.ca.gov/board_decisions/adopted_orders/water_quality/2015/wqo2015_0075.pdf; SWRCB, Water Quality Order No. 2020-0038, https://www.waterboards.ca.gov/board_decisions/adopted_orders/water_quality/2020/wqo2020_0038.pdf.

[11] Los Angeles Regional Water Quality Control Board, Order No. R4-2012-0175, https://www.waterboards.ca.gov/losangeles/board_decisions/adopted_orders/docs/6948_R4-2012-0175_WDR_PKG.pdf (renewed in 2021 via Los Angeles Regional Water Quality Control Board, Order No. R4-2021-0105).

[12] SWRCB, Order No. 2020-0038 at p. 165.

> "The Permittee shall repeat the procedure for continuing or recurring exceedance of natural ocean water quality conditions in accordance with General Exception, section A.2.h., unless the Permittee has complied with the procedures described below, has implemented its ASBS Compliance Plan under the previous permit, and is implementing an updated ASBS Compliance Plan according to the requirements of this Attachment."

The State Water Board should make clear that General Exception, section A.2.h (1-3) are the permittees' base requirements before exempting permittees from those requirements pursuant to section A.2.h(4).

Next, it is unclear what the State Water Board intends by the language "has implemented its ASBS Compliance Plan under the previous permit." In our opinion, no ASBS discharger has sufficiently implemented its ASBS Compliance Plan; ASBS dischargers remains out of compliance across the board. At the September 3, 2024 Staff Workshop on the Informal Draft Phase II Permit, CCKA heard several concerning comments alluding to a false notion that "implementation" of a compliance plan meant solely analyzing compliance based on previously conducted sampling. For example, when CCKA asked "how are 'priority discharge locations' determined?", we were very concerned to hear Staff's response that priority discharge locations are "identified to pose the greatest threat to water quality *and require monitoring.*" This is not how the ASBS General Exception defines priority discharge locations. Exception, Section I.A.2.a defines priority discharges as "those that pose the greatest water quality threat and which are identified to *require installation of structural BMPs*." Nowhere does the Exception limit monitoring to priority discharge locations.

Regardless, monitoring alone is not enough to inform ASBS Compliance Plan implementation; the ASBS Exception requires (i) structural BMPs to address natural ocean water quality alterations and, foundationally, (ii) maintenance of natural ocean water quality. The Exception is clear: discharges shall not alter natural ocean water quality.[13] This prohibition is mandated by California law.[14]

The Exception defines natural ocean water quality exceedances as occurring when two consecutive post-storm receiving water samples indicate pollutant concentrations in excess of pre-storm and reference water samples.[15] As discussed above, dischargers were required to submit Compliance Plans nearly 10 years ago.[16] The Plans were required to include, *inter alia*, descriptions of how pollutant reductions necessary to comply with the Exception's special conditions would be achieved through management measures and practices.[17] The Plans were also required to include a schedule for structural controls based on the results of Exception-required monitoring.[18] Pollution control management measures/practices were to be designed to achieve on average: (1) Ocean Plan Chapter II, Table 3 (former Table B) Instantaneous Maximum Water Quality Objectives or (2) a 90% reduction in pollutant loading during storm events.[19] ASBS Plan-identified structural controls necessary to comply with the Exception's special conditions were to be operational by 2018.[20] In sum, the Exception provides that: (1) discharges shall not alter natural ocean water quality, (2) ASBS Plans shall outline structural controls necessary to comply with the Exception, and (3) controls should have been implemented by 2018.[21]

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[13] Exception at §§ I.A.1.b, I.A.1.e.3, I.B.1.b, I.B.1.e.3.
[14] *See* Cal. Pub. Res. Code § 36700(f) (defining "state water quality protection areas"—of which ASBS are a special subset—as areas "designated to protect marine species or biological communities from an undesirable alteration in natural water quality.") *See also* Ocean Plan, Appendix I: Definition of Terms defines ASBS as "those areas designated by the State Water Board as ocean areas requiring protection of species or biological communities ***to the extent that maintenance of natural water quality is assured***." (emphasis added).
[15] Exception, Attachment 1.
[16] *Id.* at §§ I.A.3.b (point sources), I.B.3.b (nonpoint sources).
[17] *Id.* at §§ I.A.2.d (point source storm water discharges), I.B.2.b (nonpoint source storm water discharges).
[18] *Id.* at §§ I.A.3.b, I.B.3.b.
[19] *Id.* at §§ I.A.2.d, I.B.2.b.
[20] *Id.* at §§ I.A.3.d, I.B.3.d.
[21] *Id.* at §§ I.A.1.b, I.A.1.e.3, I.A.3.b, I.A.3.d, I.B.1.b, I.B.1.e.3, I.B.3.b, I.B.3.d.

Yet, six years past the compliance deadline ASBS dischargers continue to delay structural control implementation and Exception compliance.[22] CCKA requests that the State Water Board clarify in Attachment F that "implementation" of an ASBS Compliance Plan includes installing structural BMPs and demonstrating that the Permittee is maintaining natural ocean water quality.

Finally, when the State Water Board releases its Draft Staff Report, the Board must clarify who will determine whether Permittees are "implementing" their ASBS Compliance Plans. At the September 3 Workshop, Staff indicated that the Regional Boards would determine whether ASBS Compliance Plans were being appropriately implemented. CCKA is concerned that Regional Boards are not aware that it is their duty to assess and make a determination as to this requirement. Given that ASBS Compliance Plans are subject to approval by the State Water Board's Executive Director for statewide permits (see General Exception, Res. No. 2012-0031, Section I.A.2), we believe the Compliance Plan should be submitted to the State Water Board.

C. The State Water Board Should Require Permittees to Conduct Regular Monitoring to Demonstrate Ongoing Compliance with the ASBS General Exception.

Crucially, the State Water Board must revise the Informal Draft Phase II Permit to require Phase II Permittees to conduct regular monitoring to verify their ongoing compliance with Draft Permit Sections 5.2.1 and 5.2.2. Sections 5.2.1 and 5.2.2 mandate that stormwater or authorized non-storm water discharges maintain natural ocean water quality in ASBS.

The General Exception's prohibition against altering natural ocean water quality alteration is rendered effectively meaningless without clear, ongoing monitoring requirements.[23] Consistent and ongoing monitoring is imperative to ground truth natural ocean water quality maintenance and ensure pollution control efficacy over time. Thus, Phase II Permittees must be required to collect a minimum number of annual water quality samples and share the results in a publicly accessible annual report. The report should also include an explanation for any variances from the minimum sampling requirements (such as in drought years). The State Water Board should incorporate regular monitoring requirements and protocols sufficient to ensure consistent, accurate, and comprehensive water quality testing results into ASBS discharge authorizations.

D. The State Water Board Should Require Detection and Reporting of Alterations to Natural Ocean Water Quality.

The Informal Draft Permit's Attachment F, Section F3, paragraph 15 requires permittees to "[i]nclude the strategy to ensure the Permittee's dischargers to areas listed in the table required under section F3, item 5, above, in this Attachment, or in areas where future alterations of natural ocean water quality are detected, do not cause or contribute to alterations." However, particularly without the ongoing monitoring requested above, we do not see how future alterations of natural ocean water quality will be detected and reported. Therefore, we recommend the State Water Board add to Attachment F, Section F.3 requirements for detection and reporting of future alterations of natural ocean water quality.

[22] *See, e.g.* Caltrans Compliance Plan for Areas of Special Biological Significance dated May 1, 2024 (hereinafter, "Caltrans Compliance Plan") at Section 8 (Table 10 Implementation Schedule describing structural control BMPs with planning scheduled to occur in either FY 27/28 or FY 29/30 and completion to occur "TBD").

[23] *Compare* Exception, Sections I.A.1.b, I.A.1.e.3, I.B.1.b, and I.B.1.e.3 (discharges shall not alter natural ocean water quality) *with* Section IV (setting forth monitoring requirements).

II. The State Water Board Should Incorporate K-12 Schools into the Phase II Permit as Non-Traditional Permittees to "Protect Children from Extreme Heat" and Because Schools are Contributors to Water Quality Objective Violations by Discharging Pollutants to Waters of the United States.

For many years, the State Water Board has recognized the importance of incentivizing multi-benefit stormwater capture projects, including on K-12 school campuses, as a way to achieve water quality compliance objectives while simultaneously promoting numerous other objectives:

> "Stormwater is a resource and an asset and should not be treated as a waste product. Managing rainwater and stormwater at the source is a more effective and sustainable alternative to augmenting water supply, preventing impacts from flooding, mitigating stormwater pollution, creating green space, and enhancing fish and wildlife habitat. California encourages alternative, innovative, multi-objective solutions to help use and protect this valuable resource, while at the same time controlling pollution due to urban runoff."[24]

Despite over a decade moving toward school greening and stormwater capture projects on school campuses, the State Water Board has now decided to reverse course entirely. Although the State Water Board has indicated for years that K-12 schools would be covered as permittees under the Phase II Permit, the Informal Draft inexplicably includes only **one unified school district in the entire State** as a non-traditional permittee in Attachment A.[25]

We are disappointed in the State Water Board's unwillingness to address polluted stormwater runoff from K-12 schools as part of the Phase II Permit, which is the regulatory tool most appropriate to address such pollution. The failure to include school districts in the permit will exempt schools from requirements to mitigate pollution from its campuses, and the State Water Board will be abandoning a significant opportunity to advance water quality compliance, enhance climate resilience, and promote community benefits for schools and surrounding neighborhoods through multi-benefit greening projects.

For the reasons explained in greater detail below, we urge the State Water Board to revise the Informal Draft Phase II Permit to incorporate public school districts throughout the State into the list of Non-Traditional Permittees in Attachment A.

A. K-12 School Districts Should Be Regulated under the Phase II Permit Because Schools Are Sources of Stormwater Pollution that Contribute to Water Quality Violations.

The State Water Board must regulate K-12 schools under the Phase II Permit for a fundamental reason: schools are pollution sources that cause or contribute to violations of water quality standards. Therefore, regulating stormwater runoff from schools will improve water quality conditions in receiving waters.

1. Impervious surfaces, including those on school campuses, are a known source of pollutants and contributor to water quality violations.

    i. Urban stormwater runoff is generally understood to be a water quality problem.

[24] State Water Resources Control Board, California Practices to Use Runoff Effectively at Schools (Dec. 2018), at p. 10 (quote attributed to 2013), *available at* https://www.waterboards.ca.gov/water_issues/programs/stormwater/storms/docs/swrcb_schools_lid_2018fnl.pdf.

[25] Informal Draft Phase II Permit, Attachment A, Table A6.3 Non-Traditional Permittees, at p. A-19 (identifying Elk Grove Unified School District in Sacramento County as a non-traditional permittee).

The U.S. Environmental Protection Agency (EPA) accepts that stormwater runoff is a "contributor to water quality impairments across the country, particularly in developing and urbanized areas."[26] Stormwater causes these problems in large part due to the harmful contaminants that it carries into receiving waters. According to the National Research Council (NRC), the "chemical effects of stormwater runoff are pervasive and severe throughout the nation's urban waterways, and they can extend far downstream of the urban source. . . . A variety of studies have shown that stormwater runoff is a vector of pathogens with potential human health implications."[27] Over 250 studies reveal that increases in impervious area associated with urban development are a "collection site for pollutants,"[28] and generate greater quantities (and additional types) of contaminants. Urban development creates new pollution sources as population density increases and brings with it "proportionately higher levels of car emissions, maintenance wastes, pet waste, litter, pesticides, and household hazardous wastes, which may be washed into receiving waters by storm water."[29] These increases in pollutant loadings can result in immediate and long-term effects on the health of the water body and the organisms that live in it.[30] The U.S. Geological Survey found that, in areas of increased urban development, local rivers and streams exhibited increased concentrations of contaminants such as nitrogen, chloride, insecticides, and polycyclic aromatic hydrocarbons (PAHs).[31]

The increased stormwater volume and pollutant loadings caused by urbanization, especially impervious cover, are closely connected with water body impairment. Contaminants, habitat destruction, and increasing streamflow flashiness resulting from urban development have been associated with the disruption of biological communities.[32] The NRC states: "By almost any currently applied metric . . . the net result of human alteration of the landscape to date has resulted in a degradation of the conditions in downstream watercourses."[33] A review of the lists of impaired waters states must compile in compliance with the Clean Water Act (CWA or Act) reveals the deleterious effects of urbanization on water quality. Urban stormwater is listed as the "primary" source of impairment for 13% of all rivers, 18% of all lakes, and 32% of all estuaries, despite the fact that urban areas cover just 3% of U.S. land mass.[34] In California, urban runoff is a "leading source" of water body impairment.[35]

Since the 1999 adoption of the Phase II stormwater rule[36]—which established permitting requirements for small municipalities and construction sites—the scientific understanding of the correlation between impervious surfaces and water quality impairments has increased significantly. EPA recognizes the now-well-understood connection between high percentages of impervious cover in watersheds and pollutant loading-driven impairments (among many other deleterious effects). EPA commonly approves state-developed 303(d) lists identifying impaired waters afflicted by pollutants typically discharged from

[26] U.S. Environmental Protection Agency (EPA), TMDLs to Stormwater Permits Handbook, Office of Water cover letter (2008), available at http://www.epa.gov/owow/tmdl/pdf/tmdl-sw_permits11172008.pdf.
[27] National Research Council (NRC), Committee on Reducing Stormwater Discharge Contributions to Water Pollution, Urban Stormwater Management in the United States at 25 (2009), available at http://www.nap.edu/catalog.php?record_id=12465.
[28] EPA, Office of Water, Technical Guidance on Implementing the Stormwater Runoff Requirements for Federal Projects under Section 438 of the Energy Independence and Security Act.
[29] National Pollutant Discharge Elimination System—Regulations for Revision of the Water Pollution Control Program Addressing Storm Water Discharges, 64 Fed. Reg. 68,722, at p. 68,725 (Dec. 8, 1999).
[30] U.S. Geological Survey, Effects of Urban Development on Stream Ecosystems in Nine Metropolitan Study Areas Across the United States at 20 (2012), available at http://pubs.usgs.gov/circ/1373/.
[31] *Id* at 3.
[32] *Id* at 1.
[33] NRC, Committee on Reducing Stormwater Discharge Contributions to Water Pollution, Urban Stormwater Management in the United States at 25 (2009), available at http://www.nap.edu/catalog.php?record_id=12465.
[34] *Id* at 25.
[35] EPA, Region 9, Municipal Storm Water and Ground Water Discharge Regulations in California (2002), available at http://www.epa.gov/region9/water/groundwater/uic-pdfs/calif5dmuniguide.pdf.
[36] National Pollutant Discharge Elimination System—Regulations for Revision of the Water Pollution Control Program Addressing Storm Water Discharges, 64 Fed. Reg. 68,722 (Dec. 8, 1999).

stormwater sources. Numerous peer-reviewed scientific articles and publications document the connection between impervious cover and declines in water quality and stream health.

Beyond the current understanding of pollutant concentrations and loadings from urban areas, it is also generally accepted that there is a connection between large areas of impervious cover and water quality impairments in waterways receiving discharges from those impervious areas. As EPA acknowledges: "[t]here is a direct relationship between the amount of impervious cover and the biological and physical condition of downstream receiving waters."[37] The fact that commercial, industrial, and institutional facilities with large areas of impervious cover contribute pollutants to receiving waters can no longer be reasonably refuted.

ii. Schools have large parking lots.

K-12 schools in many parts of the State contain particularly high proportions of impervious surfaces. In a study by the University of Berkley studying 54 new California high schools, research concluded that the "land acreage devoted to parking is significant."[38] On average, schools in California have parking lots ranging from 3.8 to 7.0 acres of impervious surface that, today, are completely unregulated by California's stormwater program.[39] The space devoted to cars is equal to approximately 92% of the space devoted to buildings, and it also makes up 8.6% of the total property acreage of the high schools.[40] Based on these calculations, the space devoted to cars is, cumulatively, nearly 10% of schools' profile and is nearly equal to the land area devoted to educational and administrative space.[41]

In Los Angeles alone, the Pacific Institute estimates that the total stormwater runoff generated from 1,888 LA County public school campuses is approximately 3.15 billion gallons (9,510 acre-feet) per year.[42] That is 3.15 billion gallons of untreated runoff, largely from school parking lots and other impervious surfaces, that goes untreated and unregulated in today's stormwater program. As discussed below, the mean concentration of pollutants from parking lot runoff is a significant contributor of pollutants to Waters of the United States (WOTUS) regulated under the CWA.[43]

iii. Stormwater discharges from sites with large parking lots contain significant quantities of pollutants, including but not limited to copper, zinc, and ammonia.

Runoff from sites with large parking lots consistently contains high levels of copper, zinc, and ammonia. As EPA has noted, heavy metals, particularly copper and zinc, are by far the most prevalent priority pollutant constituents found in urban runoff, and these metals have the potential to cause acute or chronic toxic impacts for aquatic life.[44] EPA lists automobiles as the primary sources of metals in urban runoff.[45] Metals like zinc and copper get into runoff from impervious areas that are trafficked by vehicles, such as driveways and parking lots, from vehicle wear, tire wear, motor oil, grease, and rust.[46] Ammonia is "the

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[37] EPA, Managing Stormwater with Low Impact Development Practices: Addressing Barriers to LID 1 (Apr. 2009), available at http://www.epa.gov/region1/npdes/stormwater/assets/pdfs/AddressingBarrier2LID.pdf.
[38] Center for Cities and Schools, University of Berkeley, A Lot [of Parking], Quantifying Parking at New Public High Schools in California, pg. 23; available at https://citiesandschools.berkeley.edu/wp-content/uploads/A-Lot-of-Parking.pdf.
[39] *Id* at 26.
[40] *Id*.
[41] *Id*.
[42] Pacific Institute, Advancing Stormwater Capture for Greener Schools in Los Angeles, pg. 19 (August 2024); available at https://pacinst.org/publication/advancing-stormwater-capture-for-greener-schools-in-los-angeles/.
[43] 33 U.S.C. § 1362(7).
[44] EPA, Preliminary Data Summary of Urban Storm Water Best Management Practices at 4-16 (Aug. 1999), available at http://water.epa.gov/scitech/wastetech/guide/stormwater/.
[45] *Id*.
[46] U.S. Department of Transportation, Federal Highway Administration, Stormwater Best Management Practices in an Ultra-Urban Setting: Selection and Monitoring Chapter 2, Table 1, available at http://environment.fhwa.dot.gov/ecosystems/ultraurb/uubmp2.asp.

nitrogen form that is usually the most readily toxic to aquatic life."[47] Research demonstrates, and EPA has recognized, that sites with large parking lots consistently discharge metals and nitrogen (including ammonia) at expected, elevated concentrations (both generally and for specific runoff events) and have large annual per-acre pollutant loads. Relying on the National Stormwater Quality Database (NSQD) and a literature review of other studies, EPA determined that "it can be reasonably assumed" that urban stormwater discharges, which include discharges from large parking lot sites, contain metals and nutrients at predicted average concentrations.[48]

Further research has found that parking lot land uses had consistently high copper and nitrogen levels in addition to the zinc levels cited in the EPA analysis and shows that stormwater nutrient runoff may stimulate ammonia production.[49] These long-accepted estimates of total annual loading underscore that sites with parking lots are large per-acre contributors of pollutants.[50]

Moreover, emerging research has identified additional harmful toxic contaminants, such as per- or polyfluoroalkyl substances (PFAS) and 6PPD, that are prevalent on impervious surfaces in urbanized areas. For more than a decade, schools across the State have increasingly turned to rubber-based products to help reduce water use and maintenance fees. From artificial turf and rubberized tracks to rubber mats and recycled tire mulches, rubber has become one of the most prevalent replacements for nature-based materials once found on schoolyards like sand, dirt, wood, and grass. Recent studies show that many of these rubber-based products, especially those made with "crumb rubber," contain concentrations of PFAS, 6PPD, and other compounds known to pose environmental and health concerns.[51] Because schools are not presently regulated under the Phase II Permit, these known contaminants are then washing off schoolyards and entering our waterways without BMPs in place to protect against the resulting water quality and environmental harms that we are now aware of. By requiring onsite BMPs and encouraging NPDES permittees to invest in school stormwater systems and alternative solutions (e.g., cork, sand, coconut fibers, etc.), both our schools and our water quality would benefit.

iv. The NSQD finds concentrations from large parking lots to be a significant contributor of pollutants.

The aggregate of stormwater pollution research consistently supports the conclusion that sites with land uses typically associated with large parking lots generate pollutant loadings that are many times greater than loadings from undeveloped land. According to EPA-accepted data, parking lots generate copper loadings 8.6 times greater sites than loadings generated by undeveloped open space such as parks.[52] Sites with large parking lots also generate zinc loadings that are 12 times greater than loadings generated by

[47] U.S. EPA, Preliminary Data Summary of Urban Storm Water Best Management Practices at 4-16 (Aug. 1999), available at http://water.epa.gov/scitech/wastetech/guide/stormwater/.
[48] U.S. EPA Region 1, Statement of Basis for Proposed Modifications to the Draft General Permits for Stormwater Discharges from Small Municipal Separate Storm Sewer Systems in New Hampshire at 2 (2015), available at http://www.epa.gov/region1/npdes/stormwater/nh/nhms4-renotice-statement-of-basis.pdf (hereinafter "New Hampshire MS4 Statement of Basis").
[49] G.A. Burton & R.E. Pitt, Stormwater Effects Handbook (2002).
[50] National Research Council, Committee on Reducing Stormwater Discharge Contributions to Water Pollution, Urban Stormwater Management in the United States at 25 (2009), available at http://www.nap.edu/catalog.php?record_id=12465.
[51] A. Duque-Villaverde et al., Recycled tire rubber materials in the spotlight. Determination of hazardous and lethal substances., SCI. TOTAL ENVIRON., 929 (2024), Article 172674, 10.1016/j.scitotenv.2024.172674; California Department of Toxic Substances Control & Safer Consumer Products Program, Background Document on Candidate Chemicals in Artificial Turf (Aug. 2024), available at https://dtsc.ca.gov/wp-content/uploads/sites/31/2024/07/Background-Document-on-Candidate-Chemicals-in-Artificial-Turf.pdf.
[52] Earl Shaver et al., Fundamentals of Urban Runoff Management: Technical and Institutional Issues 3-59 (2007), available at http://www.ilma-lakes.org/PDF/Fundamentals_full_manual_lowres.pdf; G.A. Burton & R.E. Pitt, Stormwater Effects Handbook (2002); J. Marsalek, National Water Research Institute, Canada Centre for Inland Waters, Pollution Due to Urban Runoff: Unit Loads and Abatement Measures at Table 7 (1978), available at http://agrienvarchive.ca/download/PLUARG_pollution_urban_runoff.pdf.

undeveloped open space.[53] Finally, large parking lot sites generate nitrogen loadings (which include ammonia) 50 times greater than undeveloped land.[54]

These results indicate that sites with parking lots usually generate heavy metal and nitrogen/ammonia loadings that are, conservatively, at least an order of magnitude greater than loadings from undeveloped land. In 2013, EPA accepted that many sites with parking lots have "significant amounts of impervious surface, which are exposed to a variety of pollutants that can discharge during rain events."[55] As such, EPA agree[d] that it is reasonable to expect that the pollutants identified . . . [including ammonia, copper, and zinc] may be exposed to precipitation at sites with impervious cover."[56] Further, EPA noted that when the agency was considering additional categories of stormwater discharges for potential permitting under the Phase II stormwater program, it considered NSQD data, indicating that the agency considers the NSQD to be a reputable data source.[57]

Analyses of the extensive NSQD dataset confirm that stormwater discharges from sites with large parking lots consistently contain high loading levels of these impairment-causing pollutants. Analysis and comparison of both median and mean pollutant concentrations in the data across numerous parameters clearly demonstrates that sites with large parking lots discharge elevated concentrations of zinc, copper, and nitrogen (including ammonia).[58] These elevated concentrations are responsible in part for the high pollutant loadings from these land uses; the increased impervious cover on these types of sites generates greater runoff volumes and loadings are the product of volume and pollutant concentration.

2. Incorporating schools into the Phase II Permit will reduce a significant contributor to water quality pollution.

Most K-12 schools in the State contain large areas of impervious surfaces, but do not actively manage stormwater flowing from their campuses or take meaningful actions to mitigate pollution in runoff. Thus, regulation under the Phase II Permit is necessary. Prior to the late 1980s, school construction did not include stormwater controls.[59] Although stormwater management techniques and BMPs evolved over time, and even though we now have a better understanding of how to manage and use stormwater, there has been little to no progress to date to modernize K-12 school campuses to mitigate stormwater pollution effectively.

Many newer NPDES permits require retrofitting existing unmanaged and/or inadequately managed stormwater runoff. A stormwater permit usually specifies that the permit holder reduce the amount of untreated impervious surface area, reduce specific pollutant loads to nearby waterways, or require other measures to improve water quality. Given this motivation, if K-12 schools were to be covered under the Phase II Permit, school permittees may be willing to support runoff capture practices on their campuses through funding and resources. Schools and their districts, then, can benefit from this assistance. Regardless of the potential forms of compliance, allowing schools to remain entirely unregulated for stormwater pollution will perpetuate the existing water quality impairments in many urban areas and will continue to place an elevated burden on municipal permittees operating the receiving MS4 to address pollution from schools.

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[53] *Id*.
[54] *Id*.
[55] Enclosure to letter from Jared Blumenfeld, Regional Administrator, U.S. EPA Region 9, to Jon Devine, Natural Resources Defense Council, at 6 (Mar. 12, 2014).
[56] *Id*.
[57] *Id* at 5.
[58] Pitt et al., The National Stormwater Quality Database (NSQD, Version 1.1).
[59] U.S. EPA, STORM SMART SCHOOLS: A Guide to Integrate Green Stormwater Infrastructure to Meet Regulatory Compliance and Promote Environmental Literacy (June 2017); *available at* www.epa.gov/sites/default/files/2017-10/documents/storm_smart_schools_print_final_071317.pdf.

As a result of a lack of stormwater management on school campuses, schools continue to cause or contribute to water quality violations throughout the State. Thus, schools must be included as non-traditional permittees in the Phase II Permit to advance water quality compliance through the imposition of compliance requirements that reduce the quantity of pollution and/or runoff from schools.

B. Regulating K-12 Schools under the Phase II Permit Will Incentivize Collaboration on Multi-Benefit Stormwater Capture Projects, Advance Water Supply Objectives, Improve Student Health and Wellbeing, and Provide Community Education Opportunities.

The benefits of regulating K-12 schools under the Phase II Permit go far beyond having schools reduce stormwater pollution from their own sites. School campuses serve as a critical opportunity for a variety of additional benefits that can result from effective stormwater management and implementation of multi-benefit stormwater capture projects.

1. Incorporating schools into the Phase II Permit provides opportunities for existing NPDES stormwater permittees to collaborate and build stormwater retention on school land.

Schools provide valuable opportunities for NPDES permittees to implement regional or off-site stormwater management practices and/or retrofit areas to meet permit requirements. School districts are one of the largest land managers in every city across the United States. With over 130,000 acres throughout California managed by school districts, incentives exist for school districts to jointly manage runoff with other local entities, particularly NPDES permittees.[60] For example, San Francisco has identified schools as a critical partner to implementing green infrastructure citywide, understanding they provide a unique opportunity to manage stormwater while delivering significant co-benefits to students, teachers, and the community. MS4 permittees often consider these properties ideal for implementing regional runoff capture facilities distributed throughout an urban area. And according to the State Water Board's own report, such "coverage can go a long way in achieving permit compliance."[61]

Unfortunately, other parts of California have not seen similar success. In Los Angeles County, for example, the Safe Clean Water Program—providing $280 million annually for regional stormwater capture projects throughout the county—has been widely utilized by various municipal permittees for funding previously-planned stormwater capture projects, but the Los Angeles Unified School District has not had success in applying for and receiving funding for projects on school campuses.[62] Additional regulatory requirements via the Phase II Permit are necessary to incentivize schools to collaborate more effectively with other permittees to design, fund, and implement green stormwater projects on school campuses to achieve collective water quality goals.

2. Incorporating schools into the Phase II Permit can advance statewide water supply objectives.

Stormwater projects on school grounds also have significant potential to serve vital water supply needs in regions throughout the State struggling with water insecurity during drought conditions. For example, recent research by the Pacific Institute concluded that about 2.04 billion gallons (6,190 acre-feet) per year of Los Angeles school runoff could potentially be captured to augment water supplies through groundwater

[60] State Water Resources Control Board, Guidance for Stormwater and Dry Weather Runoff Capture at Schools (Dec. 2018); *available at* https://www.waterboards.ca.gov/publications_forms/publications/legislative/docs/2018/stormwater_capture_at_schools_with_appendices.pdf.

[61] *Id.*

[62] Los Angeles Waterkeeper, Changing the Course? What's Worked, What Hasn't, and What's Next for the SCWP (Feb. 2023), at pp. 7, 17, available at https://drive.google.com/file/d/1kEIlOeEPdMCltzan6jLpzNZt4z4YE_8g/view; Erin Stone, *Stormwater Program Has Helped Fight The Drought, But There's A Long Way To Go*, LAist (Feb. 16, 2023), https://laist.com/news/climate-environment/stormwater-program-has-helped-fight-the-drought-but-theres-a-long-way-to-go.

infiltration.[63] Capturing and using this runoff can offset municipal demand and contribute to greening of school campuses without increasing demand and putting additional pressure on regional and local water supplies. The same Pacific Institute report calculated that managing this stormwater from schools would also help prevent approximately 1,220 tons of pollutants from entering local waterways,[64] showing the critical need to address school runoff under the Phase II Permit.

3. Incorporating schools into the Phase II Permit can provide public education.

Schools play an essential role in public education, involvement, and outreach efforts. They serve as centers of learning and connect neighbors to one another. Schools provide the ability to combine environmental education with environmental service-learning opportunities. In addition to educating children, schools can serve as a vital source of community education that can support NPDES permittees' requirements for public outreach and education.

School districts that implement runoff-minimizing practices can create projects that offer teachers and students opportunities in the science, technology, engineering, and mathematics (STEM) fields, and possibly other areas such as language arts, social studies, government, and the arts. Projects can incorporate education regarding the beneficial uses of capturing runoff to sustain future supplies and reduce flood risks. A great example of an existing educational opportunity is the SWPPP internship program offered by some California school districts. More broadly, schools that create green schoolyards (which can include runoff capture features) can be used to enhance educational opportunities across almost every subject at every grade level in a variety of ways.

Educational opportunities regarding stormwater pollution and water quality management on school campuses go beyond just teachers and students. Another significant benefit of greening schoolyards is the opportunity to create new parks and green spaces for park-poor communities lacking suitable access to parks or green spaces within walking distance. In many such communities, schools serve as not only the best, but as the only feasible option for new community parks due to historical land use decisions. As part of collaboration with municipalities on regional stormwater capture projects at schools, new parks on school grounds could be opened to the public outside of school hours and on weekends. Establishing stormwater capture projects at schools thus serves a critical opportunity to teach the general public about the water quality and water supply benefits of stormwater capture and mitigating polluted runoff.

4. Incorporating schools into the Phase II Permit supports physical and mental health to children.

Many runoff capture practices can be used to create green spaces that support the physical and mental well-being of students. Project designs where large non-permeable areas in the main schoolyards are replaced with living materials and trees increase student activity levels and create shade, which reduces playground temperatures, and provide opportunities for children to be more active, improving their physical fitness and motor coordination. In addition, research indicates that students with views and access to trees and nature

[63] Pacific Institute, Advancing Stormwater Capture for Greener Schools in Los Angeles, pg. 19 (August 2024); available at https://pacinst.org/publication/advancing-stormwater-capture-for-greener-schools-in-los-angeles/.
[64] *Id*.

recover faster from stress and mental fatigue,[65] and improve their ability to pay attention, along with measurably improved test scores.[66]

C. The State Water Board Can Help Implement Governor Newsom's "Protecting Californians from Extreme Heat" Action Plan by Regulating Schools in the Phase II Permit.

Importantly, regulating schools can provide green space for children to provide relief from extreme heat, particularly in underserved urban communities. California's public schools play a central role in the daily lives of more than 5.8 million children, providing an enriching and safe environment for children to learn and grow. Yet urban schools, particularly those serving under-resourced communities, are often covered in asphalt and offer little green space. California children are often disproportionately impacted by extreme heat at schools. The lack of shade, combined with intensely hot temperatures, can create dangerous conditions, with reports of asphalt reaching 140 degrees Fahrenheit and rubber surfaces reaching 165 degrees Fahrenheit.[67]

Intentionally incorporating green space into school campuses, or "greening" schools, means creating outdoor areas that minimize asphalt and prioritize a natural environment, providing benefits for the students, the surrounding community, and the environment. A key school greening strategy is the thoughtful and directed management of stormwater runoff. When applied in a school setting using nature-based approaches, stormwater capture can add much-needed green space, lower playground temperatures, and help reduce neighborhood flooding.[68] According to the Center for Disease Control, "Students who are physically active tend to have better grades, school attendance, cognitive performance (e.g., memory), and classroom behaviors (e.g., on-task behavior)."[69]

The best defense to protect our children from hotter temperatures on school property—especially those in underserved communities—is nature. Cooling and shading outdoor areas at schools mitigates the dangerous impacts of extreme heat and pollution, all while expanding students' access to the benefits of play and hands-on learning opportunities like garden education. Investments in green spaces where children can safely learn, move, and explore will nurture their physical and mental well-being and bolster long-term community health and resiliency. Further, green spaces and trees reduce the urban heat island effect while allowing greater opportunities for stormwater to infiltrate into the soil, reducing the extent of stormwater pollution reaching surface waters and creating opportunities to enhance local water supplies through groundwater recharge, while also helping to maximize the ecological health of regional ecosystems and decrease flood pressure. Finally, schoolyards serve as a key opportunity to expand access to parks and open space outside of school operating hours for many underserved communities that lack suitable access to open

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[65] Cox, D. T.C. et al. (2018), The impact of urbanization on nature dose and the implications for human health. Landscape & Urban Planning, 179: 72-80. https://doi.org/10.1016/j.landurbplan.2018.07.013; Jiang, B., Li, D., Larsen, L., & Sullivan, W. C. (2016), A Dose-Response Curve Describing the Relationship Between Urban Tree Cover Density and Self-Reported Stress Recovery. Environment & Behavior, 48(4), 607-629. https://doi.org/10.1177/0013916514552321; Lovasi G. S., Quinn J. W., Neckerman K. M. et al. (2008), Children living in areas with more street trees have lower prevalence of asthma. Epidemiology & Community Health, 62: 647-649. https://doi.org/10.1136/jech.2007.071894; Faber Taylor, A. & Kuo, F.E. (2011), Could Exposure to Everyday Green Spaces Help Treat ADHD? Evidence from Children's Play Settings. Applied Psychology: Health and Well-Being, 3: 281-303. https://doi.org/10.1111/j.1758-0854.2011.01052.x.

[66] Li, Dongying & Sullivan, William C. (2016) Impact of views to school landscapes on recovery from stress and mental fatigue. Landscape & Urban Planning, 148: 149-158. https://doi.org/10.1016/j.landurbplan.2015.12.015.

[67] Laura Klivans, *Climate change is making schoolyard play dangerously hot. California has a solution*, NPR (Aug. 26, 2023), https://www.npr.org/2023/08/26/1196170854/climate-change-is-making-schoolyard-play-dangerously-hot-california-has-a-soluti.

[68] See Earth Economics, The Benefits of Schoolyard Greening, https://www.eartheconomics.org/all-publications/2023/10/31/the-benefits-of-schoolyard-greening#; Earth Economics & Amigos de los Rios, The Next Generation of Schoolyards: Lessons from the Watershed Discovery Campus (2023), available at https://static1.squarespace.com/static/561dcdc6e4b039470e9afc00/t/656e242f14bfe849606a21d3/1701717047504/EE+etal+2023.12.04+Next+generation+of+schoolyards.pdf.

[69] Center for Disease Control, CDC Healthy Schools, Physical Activity Facts, https://www.cdc.gov/healthyschools/physicalactivity/facts.htm (last updated July 26, 2022).

space in their neighborhoods. For these reasons, it is important to incentivize nature-based designs on school campuses as an option for compliance with the Phase II Permit and other applicable municipal stormwater permits, which will simultaneously provide multiple benefits for communities' safe physical activity, mental health, and overall wellbeing.

By regulating schools under the Phase II Permit, the State Water Board can help implement Governor Newsom's "Protecting Californians from Extreme Heat" Action Plan.[70] Many of the Governor's Action Plan goals can be furthered by including schools in the Phase II Permit, including:

- TRACK D - GOAL 1, R4: …increasing of urban tree canopy for Californians, especially in low-income, vulnerable communities.[71]
- TRACK D - GOAL 1, R5: Promote increased use of green barriers between agricultural fields and residences and schools to increase the area of permeable surfaces and green space, while reducing the potential for offsite movement of pesticides, fertilizers, and dust.[72]
- TRACK C - GOAL 2, R9: Explore implementation of indoor and outdoor heat exposure rules for schools.[73]
- TRACK C - GOAL 3, R2: Assess and address the unique outdoor water needs for extreme heat events at institutions such as schools and other community gathering places.[74]

The Governor seems very interested in creating 'plans' to address important topics for Californians, but his Administration should invest more effort into implementing those plans into meaningful on-the-ground actions. By including K-12 schools in the Phase II Permit and providing those schools with incentives to tear out their asphalt and replace it with green space, the State Water Board would not only advance the Governor's school-specific goals set forth in his Action Plan, but the State Water Board would also help local communities reduce polluted runoff and increase local water supplies.

D. California Has a History of Incentivizing Schools to Address Stormwater Through Green Space and Education.

California has a history of encouraging nature-based solutions at schools, so there is precedent to incorporate K-12 schools as non-traditional Phase II permittees. The State Water Board adopted the Drought Response Outreach Program for Schools (DROPS) Guidelines on August 19, 2014.[75] DROPS established a process and criteria for the State Water Board to use to solicit applications, evaluate and select proposals, and award grants to build projects implementing low impact development strategies designed to maintain predevelopment hydrology on school campuses. A total of approximately $25.5 million was set aside for DROPS, which included approximately $24.4 million from Proposition 13 (Nonpoint Source Pollution Control and Watershed Protection) and approximately $1.1 million from Proposition 40.[76] DROPS prioritizes projects that reduce stormwater pollution and provide multiple benefits including water conservation, water supply augmentation, energy savings, increased awareness of water resource sustainability, and reduced dry weather runoff.[77] All projects included an education and/or outreach

[70] Governor Gavin Newsom & California Natural Resources Agency, Protecting Californians from Extreme Heat: A State Action Plan to Build Community Resilience (Apr. 2022), https://resources.ca.gov/-/media/CNRA-Website/Files/Initiatives/Climate-Resilience/2022-Final-Extreme-Heat-Action-Plan.pdf.
[71] *Id.* at p. 57.
[72] *Id.*
[73] *Id.* at p. 44.
[74] *Id.* at p. 47.
[75] SWRCB, Drought Response Outreach Program for Schools (DROPS), https://www.waterboards.ca.gov/water_issues/programs/grants_loans/drops/ (last updated July 20, 2022).
[76] SWRCB, Drought Response Outreach Program for Schools: Guidelines (adopted Aug. 19, 2014), at p. 7, available at https://www.waterboards.ca.gov/water_issues/programs/grants_loans/drops/docs/drops_final_guidelines_082114.pdf.
[77] *Id.* at p. 6.

component designed to increase student and public understanding of the project's environmental benefits, and the sustainability of California's water resources directly related to the project.[78]

In 2017, Senate Bill 541 (Allen) was enacted to require the State Water Board to "recommend best design and use practices for stormwater and dry weather runoff capture practices that can generally be applied to all new, reconstructed, or altered public schools, including school grounds."[79] The intent of such practices is: " . . . to control water pollutants, pollutant loads, and water runoff volume exiting a site to the maximum extent feasible by minimizing impervious surface area and controlling runoff from impervious surfaces through infiltration, evapotranspiration, bioretention, treatment, and rainfall harvest." Senator Allen stated that he introduced the bill because cities and counties are "required to ensure stormwater discharges meet water quality standards, but many struggle to find adequate funding and open space sites needed to clean up the pollution, particularly in Los Angeles County."[80] Cities are working with their local park districts to find suitable open space sites to capture and begin to treat stormwater, but in many urban areas, particularly in places like Los Angeles or the Bay Area, school sites are among the largest parcels in otherwise fully built-out municipalities. However, because schools are not currently subject to an MS4 permit, there are no standards or best practices for schools to follow to encourage their partnership. By partnering with local governments to capture and treat stormwater, schools can also improve their facilities for the benefit of their students. Stormwater capture and treatment projects, which could include the addition of rain gardens, bio-swales, infiltration galleries, cisterns, and planting native plants, will help to improve the environmental quality of the school sites by adding more greenspace, shade trees, gardens, and natural features.

California is also working to protect children from extreme heat by helping schools tear out pavement contributing to the urban heat island effect in favor of trees and plants that provide safer outdoor spaces. On July 13, 2023, Governor Newsom announced CAL FIRE is providing $47 million in grants under the Green Schoolyard Grant program to help schools convert asphalt to green spaces and plant trees and other vegetation adding cooler spaces essential to protecting children from dangerous extreme heat.[81] The Green Schoolyard Grant program helps schools convert pavements to green spaces, create drought-tolerant natural areas on school grounds, and other activities to help children connect to nature.

Regulating K-12 schools under the Phase II Permit would be consistent with these and other previous green school initiatives throughout California, and would help advance the goals of those initiatives. Conversely, continuing to exempt schools from coverage under the Phase II Permit entirely would do nothing to incentivize schools to green their campuses for stormwater management purposes or otherwise.

E. The State Water Board Should Adopt CCKA's Alternative Compliance Approach for Retaining Stormwater on School Properties.

Despite this Administration's so-called "commitment" to "Protecting Californians from Extreme Heat," the State Water Board is missing a crucial opportunity to regulate schools and stimulate a compliance pathway to capture stormwater onsite to provide education and green space for children. In **Attachment A** to this letter, CCKA proposes an Alternative Compliance pathway for schools to be included in the Phase II Permit that would encourage school greening as a mode of CWA compliance.

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[78] *Id.* at p. 13.
[79] SB-541 Water: school facility water capture practices (2017-2018), Text, https://leginfo.legislature.ca.gov/faces/billTextClient.xhtml?bill_id=201720180SB541.
[80] SB-541 Water: school facility water capture practices (2017-2018), Bill Analysis, https://leginfo.legislature.ca.gov/faces/billAnalysisClient.xhtml?bill_id=201720180SB541# ("04/17/17- Senate Environmental Quality" hyperlink to PDF).
[81] Governor Gavin Newsom, California Schools to get More Shade and Nature to Protect Kids from Extreme Heat, https://www.gov.ca.gov/2023/07/13/california-schools-to-get-more-shade-and-nature-to-protect-kids-from-extreme-heat/ (last visited Oct. 3, 2024).

CCKA's approach outlined in **Attachment A** would incentivize schools to replace asphalt with green infrastructure projects that would capture and infiltrate stormwater while providing children with safer, cooler spaces at school. Publicly owned schools represent a significant opportunity for municipalities and private permittees to collaborate on regional stormwater capture projects that will facilitate compliance with their applicable state or regional stormwater permits. Yet, schools have been largely overlooked as a suitable location for stormwater projects to-date, as explained above. Therefore, CCKA's Alternative Compliance approach seeks to incentivize School Permittees to coordinate with third-party dischargers to build stormwater projects on school property that capture offsite stormwater from surrounding areas to facilitate more efficient stormwater permit compliance broadly, while simultaneously improving the health and wellbeing of California's children. School greening would be a win-win-win for California students, communities, and the environment.

As outlined in **Attachment A**, to incentivize school greening, a School Permittee's compliance would be determined on a facility-by-facility basis through one of the three proposed compliance options. Compliance Option 1—an agreement with third-party dischargers to capture offsite stormwater at a school facility—is the preferred compliance option that will maximally incentivize school greening while serving broader objectives of facilitating regional stormwater permit compliance beyond school property. Compliance Option 2—capture and retention of a school facility's stormwater up to generally accepted design standards—is the second preferred compliance option to incentivize school greening, but without additional co-benefits at the regional level. Compliance Option 3—direct demonstration of compliance with water quality standards—is the least preferred compliance option.

Our proposal in Attachment A is a creative way for schools to be regulated under the Phase II Permit through a collaborative process with municipal stormwater permittees who are also striving for CWA compliance. The proposed Alternative Compliance approach includes the option for a local community to pay for nearby schools' compliance. With this approach, the schools would benefit from green space for children to cooldown during hot summer months and the opportunity to use their green infrastructure systems as educational tools for students. However, if this Administration is not interested in protecting children from extreme heat, the CWA provides more draconian means of regulating schools that are a significant contributor of pollutants to federally protected surface waters.

F. The State Water Board Is Legally Responsible for Regulating Schools Because They Are a Significant Contributor of Pollutants to Federally Protected Surface Waters and Contribute to Violations of Water Quality Standards.

Under California's current stormwater program, municipalities bear the brunt of legal requirements to address the impacts of urban runoff pollution, especially from unregulated sources discharging stormwater into the MS4. However, remediating the degradation caused by stormwater often requires managing the runoff from a greater proportion of the landscape than a municipality directly controls. As a result, it is essential for non-traditional properties with large amounts of impervious surfaces—like schools—to take part in watershed restoration efforts, helping to implement the stormwater controls that are needed to reduce pollution and achieve clean rivers and streams. Imposing permitting requirements on schools through the CWA's residual designation authority (RDA) process would make those sites part of the solution to California's stormwater problems and would represent a more equitable allocation of clean-up responsibilities.

Having acknowledged the now well-understood facts regarding large impervious areas causing and contributing to water quality impairments (as described above), EPA must, at long last, assist municipalities in addressing these pollutant sources by exercising its RDA under the CWA to require those facilities to address their contribution to violations of water quality standards and contribution of pollutants.

1. The CWA's Residual Designation Authority was intended to capture stormwater discharges—such as schools with impervious surface—that do not fall neatly into a discrete, predetermined category.

In order to achieve the CWA's fundamental goal of "restor[ing] and maintain[ing] the chemical, physical, and biological integrity of the Nation's waters,"[82] EPA and states that are delegated authority to administer the Act must establish minimum water quality standards.[83] These standards define "the water quality goals of a water body, or portion thereof, by designating the use or uses to be made of the water and by setting criteria necessary to protect the uses."[84] California has established, and EPA has approved, water quality standards pursuant to this requirement.[85]

EPA declined to regulate stormwater through the NPDES program until Congress amended the statute in 1987 to explicitly require it,[86] and EPA subsequently promulgated its Phase I and II regulations in 1990 and 1999, respectively.[87] As a result, the CWA requires NPDES permits for discharges of industrial and municipal stormwater.[88] While these are the only categories of stormwater discharges called out for regulation in the text of the statute, Congress also created a catch-all provision directing EPA to require NPDES permits for any stormwater discharge that the Administrator or the State director determines "contributes to a violation of a water quality standard or is a significant contributor of pollutants to waters of the United States."[89]

This catch-all authority—known as residual designation authority—is a critical tool to ensure that problematic stormwater discharges do not go unregulated. In the preamble to its Phase II stormwater regulations, EPA described the need for this authority: "EPA believes . . . that individual instances of storm water discharge might warrant special regulatory attention, but do not fall neatly into a discrete, predetermined category. Today's rule preserves the regulatory authority to subsequently address a source (or category of sources) of stormwater discharges of concern on a localized or regional basis."[90]

2. Citizen groups—such as CCKA—can petition for schools to be regulated under the Phase II Permit because they are a significant contributor of pollutant to federally protected surface waters and contribute to water quality violations.

Citizens may petition for designation of stormwater sources for regulation under the RDA.[91]

Residual designation is not optional when a site is found to be a significant contributor of pollutants to WOTUS. Once EPA has made a finding or determination that a category of discharges meets the statutory criterion of "contribut[ing] to a violation of a water quality standard," it must designate that category for regulation, and those "operators shall be required to obtain a NPDES permit." In other words, "the Agency's residual designation authority is not optional."[92] Furthermore, categories of sources designated under RDA may be geographically broad. EPA has stated that "the designation authority can be applied within different geographic areas to any single discharge (i.e., a specific facility), or category of discharges . . . . The added

[82] 33 U.S.C. § 1251(a).
[83] 33 U.S.C. § 1313; 40 C.F.R. § 131.2.
[84] 40 C.F.R. § 131.2.
[85] U.S. EPA, "State, Tribal & Territorial Standards: Repository of Documents: California," http://water.epa.gov/scitech/swguidance/standards/wqslibrary/ca_index.cfm.
[86] See 33 U.S.C. § 1342(p).
[87] National Pollutant Discharge Elimination System Permit Application Regulations for Storm Water Discharges, 55 Fed. Reg. 47,990 (Nov. 16, 1990); National Pollutant Discharge Elimination System—Regulations for Revision of the Water Pollution Control Program Addressing Storm Water Discharges, 64 Fed. Reg. 68,722 (Dec. 8, 1999).
[88] 33 U.S.C. § 1342(p)(2).
[89] 33 U.S.C. § 1342(p)(2)(E); 40 C.F.R. § 122.26(a)(1)(v).
[90] National Pollutant Discharge Elimination System—Regulations for Revision of the Water Pollution Control Program Addressing Storm Water Discharges, 64 Fed. Reg. at 68,781.
[91] 40 C.F.R. § 122.26(f)(2).
[92] In re Stormwater NPDES Petition, 910 A.2d at 835-36.

term 'within a geographic area' allows 'State-wide' or 'watershed-wide' designation within the meaning of the terms."[93] The Ninth Circuit Court of Appeals and Supreme Court of Vermont have each found that the designation of broad regional categories of sources is a reasonable exercise of statutory authority.[94]

If the State Water Board refuses to incorporate K-12 schools into the coverage of the Phase II Permit, CCKA and other citizen groups are authorized to petition EPA to regulate runoff from schools using its RDA. As outlined in Section II.A above, sufficient research and evidence exists to identify schools as causing or contributing to water quality violations, necessitating regulation of school stormwater runoff.

3. Average pollutant concentrations and loading data has been used as evidence sufficient to support the imposition of NPDES permit obligations on those stormwater sources.

In proposing to designate new MS4s for NPDES permitting in New Mexico, EPA Region 6 described how it determined whether the discharges at issue were contributing to water quality impairments. Because the discharges "contain pollutants for which the state of New Mexico has listed receiving waters as impaired," Region 6 determined that "these discharges are at least contributing to the associated water quality impairments."[95] Region 6 additionally cited assessments by the state of New Mexico attributing the impairments to "urban-related causes."[96]

In proposing modified conditions for MS4 permits in New Hampshire, EPA Region 1 performed a literature review and analysis of NSQD data to "reasonably assume" that stormwater discharges from urban areas contain certain pollutants at expected average concentrations.[97] Region 1 went on to state:

> When a waterbody is found to be impaired pursuant to Clean Water Act (CWA) Section 303(d) or 305(b) for a particular pollutant, or the receiving water is experiencing an excursion above water quality standards due to the presence of a particular pollutant, it indicates that the waterbody has no assimilative capacity for the pollutant in question. EPA reasonably assumes that urban stormwater discharges from urbanized areas in New England contain bacteria/pathogens, nutrients, chloride, sediments, metals, and oil and grease (hydrocarbons) and finds that MS4 discharges are likely causing or contributing to the excursion above water quality standards when the receiving waterbody impairment is caused by bacteria/pathogens, nutrients, chloride, metals, sediments or oil and grease

[93] National Pollutant Discharge Elimination System—Regulations for Revision of the Water Pollution Control Program Addressing Storm Water Discharges, 64 Fed. Reg. at 68,781.
[94] *Environmental Defense Center v. EPA*, 344 F.3d 832, 875-76 (9th Cir. 2003); *In re Stormwater NPDES Petition*, 910 A.2d 824, 829-32 (Vt. 2006).
[95] U.S. EPA Region VI, Los Alamos County Preliminary Designation Document (Mar. 2015), available at http://www.epa.gov/region6/water/npdes/publicnotices/nm/preliminary_designation_los_alamos_full_doc.pdf; U.S. EPA Region IX, Request for Designation of MS4 Discharges on the Island of Guam for NPDES Permit Coverage (Feb. 2011), available at http://www.epa.gov/region9/water/npdes/pdf/guam/Guam-ms4-residual-designationmemo.pdf; Vermont Agency of Natural Resources, Department of Environmental Conservation, Final Designation Pursuant to the Clean Water Act for Designated Discharges to Bartlett, Centennial, Englesby, Morehouse and Potash Brooks (Nov. 2009), available at http://www.vtwaterquality.org/stormwater/docs/swimpairedwatersheds/sw_rda_final_determination.pdf; U.S. EPA Region I, Final Determination Under Section 402(p) of the Clean Water Act—Long Creek (Oct. 2009), available at http://www.epa.gov/region1/npdes/stormwater/assets/pdfs/LongCreekFinalResidualDesignation.pdf; U.S. EPA Region I, Residual Designation Pursuant to Clean Water Act—Charles River (Nov. 2008), available at http://www2.epa.gov/sites/production/files/2015-03/documents/rodfinalnov12.pdf.
[96] *Id* at 8.
[97] U.S. EPA Region 1, Statement of Basis for Proposed Modifications to the Draft General Permits for Stormwater Discharges from Small Municipal Separate Storm Sewer Systems in New Hampshire at 2 (2015), available at http://www.epa.gov/region1/npdes/stormwater/nh/nhms4-renotice-statement-of-basis.pdf (hereinafter "New Hampshire MS4 Statement of Basis").

(hydrocarbons). EPA has determined that it is appropriate to require additional controls on such discharges to protect water quality.[98]

This statement indicates that EPA accepts average pollutant concentration and loading data as evidence that a category of stormwater discharges is causing or contributing to violations of water quality standards, and that the agency considers such evidence sufficient to support the imposition of NPDES permit obligations on those stormwater sources. As outlined in Section II.A above, such evidence exists linking school stormwater runoff and receiving water quality violations in urban areas throughout the State due to schools' significant impervious surfaces.

In conclusion, the CWA places EPA under a non-discretionary duty to exercise residual designation authority over non-NPDES-permitted schools. Schools are well known to have large areas of impervious surface, particularly from parking lots. All available evidence strongly indicates that stormwater runoff from parking lots is a significant contributor to pollutants into WOTUS. Well understood parking lot pollutants, such as zinc, copper, and ammonia are pollutants that impair California's waterways. The State has a mandatory duty under its CWA responsibilities to regulate schools under the Phase II Permit.

III. The State Water Board Should Require Rigor, Accountability, and Transparency for Permittees that Use Alternative Compliance Instead of Complying with Receiving Water Limitations.

The State Water Board should remove Alternative Compliance Attachment I from the Informal Draft Permit. But at a minimum, if the State Water Board insists on including alternative compliance, it must require clear and concrete milestones toward achievement of receiving water limitations, deadlines for achieving receiving water limitations, and a rigorous and transparent process to ensure that those milestones and deadlines are in fact met.

Similar in concept to the Los Angeles 2015 Phase I Order that deems permittees in compliance with receiving water limitations when they implement storm water retention,[99] Attachment I of the Informal Draft Phase II Permit allows permittees to be deemed in compliance for capturing stormwater. Attachment I, page 1, states that if the Permittee has implemented on-site or off-site stormwater infiltration to capture an 85th percentile 24-hour storm for the entire drainage area then the Permittee is deemed in compliance with the Permit's Discharge Prohibitions, sections 5.1 (Maximum Extent Practicable), sections 5.4 (Exceedances of Water Quality Objectives and Standards), sections 5.5 (Pollution or Nuisance), Effluent Limitations section 6.2, Receiving Water Limitations, sections 7.1 (Implementation of Receiving Water Limitations) and sections 7.2 (Total Maximum Daily Loads). However, the Draft Phase II Permit does not require any WMP/EWMP planning, nor the appropriate monitoring, reporting, and adaptive management necessary to offer a safe harbor to permittees.

A. The State Water Board's Alternative Compliance Attachment Fails to Have Rigor, Accountability, or Transparency.

The Draft Phase II Permit fails to follow the State Water Board's own precedential Order on alternative compliance. In review of the 2012 Los Angeles Phase I MS4 Permit (Order R4-2012-0175),[100] the State Water Board stated that it can support an alternative approach to compliance with receiving water limitations "only to the extent that that approach requires clear and concrete milestones and deadlines toward achievement of receiving water limitations and a rigorous and transparent process to ensure that

[98] *Id* at 2-3.
[99] SWRCB, Water Quality Order No. 2015-0075, https://www.waterboards.ca.gov/board_decisions/adopted_orders/water_quality/2015/wqo2015_0075.pdf.
[100] Los Angeles Regional Water Quality Control Board, Order No. R4-2012-0175, https://www.waterboards.ca.gov/losangeles/board_decisions/adopted_orders/docs/6948_R4-2012-0175_WDR_PKG.pdf (renewed in 2021 via Los Angeles Regional Water Quality Control Board, Order No. R4-2021-0105).

those milestones and deadlines are in fact met."[101] The Los Angeles MS4 Order requires compliance with receiving water limitations, but allows implementation of control measures through the WMPs/EWMPs to constitute such compliance, and reserves direct enforcement of the receiving water limitations to situations where a permittee fails to comply with the WMP/EWMP provisions. However, the proposed Draft Phase II Permit requires no EWMP-like planning requirements to offer rigor to the alternative compliance, nor the accompanying public comment or enforceability that was required in the LA Order. In order to provide a safe harbor from receiving water limitations and discharge prohibitions, the State Water Board must, at minimum, require EWMP-like planning before allowing an alternative compliance approach.

B. The State Water Board's Lack of Verification that Final TMDL-Specific Limitations or Receiving Water Limitations Will in Fact Be Met Violates the Board's Own Precedential Order.

The Phase II Order lacks accountability and transparency due to the exemption to demonstrate TMDL compliance, perform water quality monitoring, or provide any reporting on TMDLs or monitoring. Attachment I states that if the Permittee is in compliance with this attachment and all other applicable requirements of this Order, the Permittee is exempt from the following sections in the Permittee's respective attachment (D or E) of this Order in areas of their jurisdiction addressed by a Compliance Option: TMDL Demonstration of Compliance (D7 and E7); Water Quality Monitoring (D8 and E8); Total Maximum Daily Loads Compliance Reporting (D10.8 and E10.8); and Water Quality Monitoring Reporting (D10.9 and E10.9). Without requiring these provisions, there is not evidence in the Administrative Record sufficient to establish that a stormwater retention approach will achieve effluent limitations.

Similar to the flawed 2012 Los Angeles Phase I MS4 Permit, the Informal Draft Phase II Permit's Alternative Compliance approach assumes compliance with final WQBELs and other TMDL-specific limitations, and accordingly, compliance with the receiving water limitations, even if the final WQBELs and other TMDL-specific limitations are not actually being achieved. When the State Water Board reviewed the 2012 Los Angeles Permit, it stated in its 2015 Order that it had concerns with the "lack of verification in the Los Angeles MS4 Order that final and other TMDL-specific limitations or receiving water limitations will in fact be met as a result of implementation of the storm water retention approach."[102] The State Water Board's Order went on to state that "the evidence in the Administrative Record is not sufficient to establish that the storm water retention approach will in all cases result in achievement of final WQBELs and other TMDL-specific limitations and, more importantly, are concerned that the Order itself does not incorporate clear requirements that would provide for such verification in the process of implementation."[103]

With no definitive evidence in the record establishing that the storm water retention approach will achieve final requirements, no reasonable assurance analysis required at the outset, and reliance only on subsequent monitoring and adaptive management to improve results if final limitations are not in fact achieved, the State Water Board concluded that the "storm water retention approach does not provide a level of assurance of success that would lead us to conclude that its implementation, with nothing else, is sufficient to constitute compliance with final WQBELs and other TMDL-specific limitations."[104]

The State Water Board was clear that it was "not willing to go as far as saying that compliance with the storm water retention approach alone constitutes compliance with final WQBELs and other TMDL-specific limitations for all time, regardless of the actual results." And yet, the Informal Draft Phase II Permit says just that. That a Phase II Permittee is deemed in compliance with TMDL-limits, Discharge Prohibitions,

[101] State Water Resources Control Board, Water Quality Order No. 2015-0075, at p. 33.
[102] State Water Resources Control Board, Water Quality Order No. 2015-0075, at p. 42.
[103] *Id.*
[104] *Id.* at p. 44.

and Receiving Water Limitations without needing to do any monitoring, reporting, or compliance determinations.

Furthermore, the State Water Board is failing to follow its own rule by deeming permittees in compliance with Discharge Prohibitions, Effluent Limitations, and Receiving Water Limitations without concrete milestones and deadlines.

If the State Water Board proceeds with its Alternative Compliance approach, the Board needs to follow its own 2015 and 2020 precedential orders for alternative compliance and require rigor, accountability, and transparency.

IV. The State Water Board Should Increase the Design Storm Capacity Based on National Standards that Have Increased the MEP Standard Above an 85th Percentile Storm.

At present, the Informal Draft Phase II Permit sets an 85th percentile design storm standard for post-construction requirements and alternative compliance. The State Water Board must utilize this Phase II permit reissuance process to strengthen this design storm standard. Per the CWA, MS4 permits "shall require controls to reduce the discharge of pollutants to the ***maximum*** extent practicable . . ." (MEP).[105] The MEP standard is adaptive and intended to evolve over time to more effectively address pollution as knowledge and science expand. National standards have raised the MEP bar above the 85th percentile storm. For example:

- Washington D.C.'s MS4 permit implements a 90th percentile retention standard for major land-disturbing activities. Further, the permit calls for D.C. to gather information about further increasing this standard.[106]
- The City of Anchorage's MS4 permit implements post-construction design standards to treat and manage runoff generated from the 90th percentile rainfall event.[107]
- The Middle Rio Grande Watershed NPDES permit—which includes the City of Albuquerque—requires development, implementation, and enforcement of regulatory mechanisms incorporating a stormwater quality design standard that manages onsite the 90th percentile storm event discharged volume associated with new development.[108]
- The City of Portland's MS4 permit's storm event percentile-based method for numeric stormwater retention site performance and treatment standards is the 95th percentile storm.[109]
- New York State's Stormwater Design Manual implements a 90th percentile design storm.[110]
- The City of Pittsburgh implements the 95th percentile storm standard using future climate change rainfall projections.[111]

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[105] 33 U.S.C. § 1342(p)(3)(B)(iii) (emphasis added).
[106] *See* EPA NPDES Permit No. DC0000221, Authorization to Discharge Under the National Pollutant Discharge Elimination System Municipal Separate Storm Sewer System Permit at Sections 3.2.2 (setting on onsite retention standard of 1.2" of stormwater for development and redevelopment for projects greater than or equal to 5,000 square feet), 3.2.4 (noting that in some situations, MEP for projects in public rights-of-way may require management of more than the 1.2" retention volume) and 2.2.4.3 (requiring a detailed analysis as to the effect of increasing the 1.2" retention standard to 2"), *available at*: https://doee.dc.gov/sites/default/files/dc/sites/doee/publication/attachments/final_dc_ms4_permit_11-16-23.pdf. *See also* District of Columbia, Department of Energy & Environment, Stormwater Management Guidebook (Jan. 2020) at Table 2-1 (noting the 1.2" storm is the 90th percentile event), *available at*: DOEE Stormwater Management Guidebook January 2020.pdf.
[107] *See* Alaska Department of Environmental Conservation Permit No. AKS052558, Sections 3.2.1.1 and Fact Sheet, Sections 3.1.2 and 4.2.
[108] *See* EPA NPDES Permit No. NMR04A000, Section I(D)(5)(b)(ii)(b).
[109] *See* State of Oregon Department of Environmental Quality Permit No. 101314, Section A(3)(e)(iii).
[110] *See* New York State Department of Environmental Conservation, Stormwater Management Design Manual, Section 4.2.
[111] PITTSBURGH, PA., CODE OF ORDINANCES, Section 1303.03 (2021).

This non-exhaustive list of examples demonstrates the feasibility of more protective design storm standards. To control pollution to the *maximum* extent practicable, California must rise to the occasion and increase the Informal Draft Permit's design storm standard to at least the 90th percentile storm.

Additionally, the 85th percentile design storm standard must be updated to account for the new realities of anthropogenic climate change. Scientists project that climate change will alter global rainfall patterns and increase storm intensity. While some regions may become drier, other regions will receive notable increases in precipitations. The State Water Board must adopt more robust post-construction standards that reflect and consider California's new climate change realities of more frequent extreme weather events.

V. The State Water Board Must Require End-of-Pipe and Receiving Water Monitoring Requirements for all Permittees Sufficient to Determine Compliance.

Monitoring is an integral part of the CWA permitting program.[112] Indeed, the very purpose of the Phase II MS4 Permit—and the CWA altogether—is to protect and improve water quality, which cannot be done without monitoring to assess progress and identify continued needs. It is axiomatic that you cannot detect what you do not test for: without adequate monitoring dischargers, regulators, and the public left in the dark about whether permittees are complying with permit conditions.

During the last Phase II permit cycle, CCKA and others raised numerous concerns about insufficient monitoring requirements. Unfortunately, the Informal Draft Permit appears to have carried over prior issues and then some. The Informal Draft Permit is headed in the wrong direction; the State Water Board must reverse course and revise the Informal Draft Permit's water quality monitoring provisions to include end-of-pipe and receiving water monitoring requirements sufficient to determine compliance for all permittees.[113]

First, the Informal Draft Permit's monitoring requirements are inappropriately cabined to three categories of dischargers: permittees discharging to ASBS, permittees discharging to waterbodies with TMDLs, and permittees discharging to 303(d)-listed waterbodies. This categorization inappropriately omits monitoring requirements for a broad swath of Phase II permittees. Though the Informal Draft Permit prohibits all permittees from, *inter alia*, discharging in a manner that causes or contributes to the violation of water quality standards or causes or threatens to cause a condition of pollution or nuisance, the Informal Draft Permit fails to provide a way to meaningfully assessing permittee compliance with these and other permit conditions. The State Water Board must require such assessment via monitoring.[114] Even the current Phase II permit requires another category of permittees to participate in a monitoring program. While CCKA maintains that the current permit's monitoring categories are likewise too lean, even its requirements would be an improvement on the Informal Draft Permit.[115] The State Water Board must include water quality monitoring requirements for all permittees sufficient to determine compliance with the permit's discharge prohibitions and other conditions. These requirements must include both end-of-pipe and receiving water monitoring requirements, both of which are critical components of any water quality monitoring program.[116]

Second, even for the specified categories of dischargers who must conduct monitoring, the Informal Draft Permit's monitoring requirements are inadequate. ASBS, TMDL, and impaired waterbody monitoring are not necessarily sufficient to assess a waterbody's condition from municipal discharges. These specific types

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[112] 33 U.S.C. §§ 1318, 1342(a)(2); 40 C.F.R. §§ 122.26(d), 122.34(g), 122.41, 122.42, 122.44, 122.48.
[113] *See* 33 U.S.C. § 1342(o) (CWA's prohibition on backsliding in NPDES permits).
[114] *See* 33 U.S.C. §§ 1318, 1342(a)(2); 40 C.F.R. §§ 122.26(d), 122.34(g), 122.41, 122.42, 122.44, 122.48.
[115] *See* 33 U.S.C. § 1342(o) (CWA's prohibition on backsliding in NPDES permits).
[116] *See, e.g.* State Water Resources Control Board, ORDER WQ 2015-0075, p. 65-66 ("Wet weather receiving water monitoring is fundamental to assessing the effects of storm water discharges on water quality and determining the trends in water quality as Permittees implement control measures.").

of monitoring serve different purposes and should be used as supplements, not substitutes, to a baseline water quality monitoring program. Additionally, as discussed in other sections of this letter, the ASBS monitoring requirements are fundamentally flawed and must require regular monitoring to verify ongoing compliance with the ASBS General Exception's natural ocean water quality maintenance requirement.

Further, and likewise as discussed above, the Informal Draft Permit's alternative compliance approach—which allows for a potential exemption from TMDL Demonstration of Compliance (D7 and E7); Water Quality Monitoring (D8 and E8); Total Maximum Daily Loads Compliance Reporting (D10.8 and E10.8); and Water Quality Monitoring Reporting (D10.9 and E10.9)—falls far short of the State Water Board's own standards. It is inappropriate for the State Water Board to allow for an alternative compliance pathway for TMDL wasteload allocations on or after their deadline.[117] It is also inappropriate for the State Water Board to allow for an exemption from monitoring requirements. If the State Water Board is inclined to include an alternative compliance option in the Informal Draft Permit, "Permittees should be further required, again through a transparent process, to monitor the results and return to their analysis to verify assumptions and update the solutions."[118]

Finally, during the last permit cycle's response to comments, State Water Board staff committed to revisiting toxicity monitoring. CCKA expects the State Water Board to keep to its word and now revisit toxicity monitoring in this Phase II permit cycle.

VI. The State Water Board Must Include All Appropriate Phase II Permittees.

Additionally, the Draft Phase II Permit must be modified to name all necessary permittees. More specifically, it has come to CCKA's attention that Cal Poly Humboldt was left off Attachment A, Table A6.3. It also appears that Point Dume State Beach, Point Mugu State Park, and Robert H. Meyer Memorial State Beach—all adjacent to California's largest ASBS, Latigo Point to Laguna Point—were omitted from the Department of Parks and Recreation Table A6.4.

VII. The State Water Board Should More Broadly Address Animal Waste.

CCKA believes that the proposed language in Attachment D, Section D4.16 and Attachment E, Section E4.16 can be more clearly broadened to also apply to feral cat populations frequently found congregating around our waterways. Feral cat populations are known to carry a variety of diseases and parasites that are harmful to humans, and cats are also the sole known carrier of *Toxoplasma gondii*, a parasite fatal to downstream sea otters.[119]With populations rampant throughout the state, feral cats are known to wreak havoc on local ecosystems and have largely been allowed to go unchecked despite available management methods. From neutering and relocation programs to programs that restrict public feeding and available habitat, there are several methods available to permittees that would help reduce feral cat population sizes and, resultingly, harmful impacts to our waterways. Further, unlike trying to change individual human behavior to address issues caused by domestic dog owners, available management practices would largely be within the permittees' control and thus, more likely to result in water quality improvements.

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[117] State Water Resources Control Board, ORDER WQ 2015-0075, p. 45 (State Water Board "not willing to go as far as saying that compliance with the storm water retention approach alone constitutes compliance with final WQBELs and other TMDL-specific limitations for all time, regardless of the actual results").
[118] *Id.* at 52.
[119] https://ipm.ucanr.edu/home-and-landscape/feral-cats/pest-notes/#gsc.tab=0

California has waited too long for stormwater polluters to be adequately regulated. The Phase II regulations went into effect in 1999, and the current Phase II Permit has been in effect since 2012. We cannot wait another 12 years before polluters, including ASBS dischargers and schools, are properly regulated.

CCKA has put significant time and resources into offering the State Water Board a program for greening schools and detailed analysis as to the flawed ASBS General Exception and those dischargers violating said Exception. We urge you to consider the analyses we have provided to-date and the related recommendations we have provided in this letter. We look forward to continuing to work with the State Water Board to modernize the state's stormwater management so that all Californians have access to fishable, swimmable, and drinkable waters.

Sincerely,

Sean Bothwell
Executive Director
California Coastkeeper Alliance

ATTACHMENT A
PROPOSAL TO PROTECT CHILDREN FROM EXTREME HEAT

ATTACHMENT F – PROVISIONS FOR K-12 SCHOOL SMALL MS4 PERMITTEES

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F1. PROGRAM MANAGEMENT

F1.1 Legal Authority

Within 12 months of the Effective Date of this Order or the Permittee's Effective Date of Designation~~Effective Date of the permit or designation under this Order~~, whichever is later, School Permittees shall review and revise as necessary relevant ordinances, policies, contractual provisions, tenant and lease agreements, base orders, conditions of lease, resolutions or other regulatory mechanisms, or adopt any new relevant ordinances, policies, legally binding agreements, or other regulatory mechanisms, to obtain legal authority, to the extent allowable under state or local law, to reduce or eliminate pollutants discharging from its storm drain system pursuant to the requirements of this Order. New Permittees shall do so within 2 years of the Effective Date of this Order or the Permittee's Effective Date of D~~d~~esignation, whichever is later. These ordinances, policies, or other regulatory mechanisms shall include authority to:

1. Prohibit dumping or disposal of materials other than stormwater and unauthorized non-stormwater discharges into the Permittee's storm drain system;
2. Effectively prohibit non-stormwater discharges through the MS4. Detect and eliminate unauthorized non-stormwater discharges (illicit discharges) and illegal connections to the Permittee's storm drain system;
3. Respond to the discharge of spills into the MS4 or spills that may discharge into the MS4;
4. Require parties responsible for discharges in excess of incidental runoff from landscaped areas to implement actions necessary to prevent recurring discharges;
5. Require operators of construction sites, new development or redevelopment projects, and industrial and commercial facilities on the School Permittee's property and/or subject to the School Permittee's control to minimize the discharge of pollutants to the MS4 through the installation, implementation, and maintenance of best management practices consistent with the current California Stormwater Quality Association Best Management Practice Handbooks or equivalent;
6. Require third parties to fulfill contractual obligations related to school projects that capture offsite stormwater as specified in Section F2.2 of this Order, to the extent a School Permittee selects Compliance Option 1 for a school facility;

~~6.~~7. Require information necessary to assess compliance with this Order. The Permittee shall only require information in compliance with the Homeland Security Act or any other federal law that concerns security in the United States;

~~7.~~8. Review designs and proposals for new development and redevelopment to determine whether adequate best management practices will be installed,

implemented, and maintained during construction and after final stabilization (post-construction);

~~8.~~9. Enter private property for the purpose of inspecting, at reasonable times, any facilities, equipment, practices, or operations for active or potential stormwater discharges, or non-compliance with local ordinances/standards or requirements in this Order, as consistent with any applicable state and federal laws;

~~9.~~10. Require responsible parties to promptly cease and desist discharging and cleanup and abate actual and threatened discharges, including the ability to:

- Require the responsible parties to abate and clean up their illicit discharge or spill no later than within 72 hours of notification and to expedite clean up of high risk illicit discharges or spills;
- Require abatement within 30 days of notification of uncontrolled sources of pollutants that could pose an environmental threat;
- Perform clean-up and abatement work and bill the responsible party, if necessary;
- Order the cessation of activities until activities resulting in pollutant discharges are adequately addressed or abated;
- Require a new timeframe when all parties agree that clean-up activities cannot be completed within the required timeframe. The responsible party shall provide written notification to the appropriate Regional Water Board within five business days of the determination that the timeframe requires revision.

~~10.~~11. Levy citations or administrative fines against responsible parties; and

~~11.~~12. Require recovery and remediation costs from responsible parties.

F1.2 Certification

The Permittee's Principal Executive Officer, Ranking Elected Official, Legally Responsible Person, or Duly Authorized Representative shall certify that the Permittee has and will maintain full legal authority to implement and enforce each of the requirements contained in this Order. The Permittee shall submit a certification statement in their second annual report. The Permittee's certification statement shall include the following:

1. Identification of all departments within the Permittee's jurisdiction that conduct stormwater-related activities and their roles and responsibilities under this Order;
2. Citation of the Permittee's stormwater runoff related ordinances, relevant policies, contractual provisions, base orders, resolutions, or other regulatory mechanisms and identification of the requirements of this Order that corresponds with each ordinance;

3. Identification of the local administrative and legal procedures available to mandate compliance with stormwater related ordinances and therefore with the conditions of this Order;
4. A description of the procedures to review, update, and implement stormwater-related ordinances and other regulatory mechanisms;
5. A statement that the permittee will implement enforcement actions consistent with its adopted ordinances, relevant policies, contractual provisions, base orders, resolutions, or other regulatory mechanisms; and
6. A statement that the Permittee has adequate legal authority to comply with all Order requirements.

The Permittee shall maintain an up to date certification statement signed by an authorized signatory in SMARTS.

F2. COMPLIANCE PATHWAYS

F2.1 Findings

(1) California's children are often disproportionately impacted by extreme heat at schools. California's public-school grounds cover nearly 130,000 acres and play a central role in the daily lives of more than 5.8 million children. Much of this land is paved and unshaded, leaving vulnerable students across the state exposed to extreme heat. Due to the urban heat island effect, playground asphalt has reached temperatures as high as 145 degrees during heat waves in recent years. California is heading into a hotter, drier future and extreme heat will only become more dangerous.

(2) The best defense to protect our children from hotter temperatures on school property – especially those in underserved communities – is nature. Cooling and shading outdoor areas at schools mitigates the dangerous impacts of extreme heat and pollution, all while expanding students' access to the benefits of play and hands-on learning opportunities like garden education. Investments in green spaces where children can safely learn, move, and explore will nurture their physical and mental well-being and bolster long-term community health and resiliency. Further, green space and trees reduce the urban heat island effect while allowing greater opportunities for stormwater to infiltrate into the soil, reducing the extent of stormwater pollution reaching surface waters and creating opportunities to enhance local water supplies through groundwater recharge, while also helping to maximize the ecological health of regional ecosystems and decrease flood pressure. Finally, schoolyards serve as a key opportunity to expand access to parks and open space outside of school operating hours for many underserved communities that lack suitable access to open space in their neighborhoods. For these reasons, it is important to incentivize nature-based designs on school campuses as an option for compliance with this Permit and other applicable municipal stormwater permits, which will simultaneously provide multiple benefits for communities' safe physical activity, mental health, and overall wellbeing.

(32) California has a history of encouraging nature-based solutions at schools. The State Water Board adopted the Drought Response Outreach Program for Schools (DROPS) Guidelines on August 19, 2014. DROPS established a process and criteria for the State Water Board to use to solicit applications, evaluate and select proposals, and award grants to build projects implementing low impact development strategies designed to maintain predevelopment hydrology on school campuses. A total of approximately $25.5 million was set aside for DROPS, which included approximately $24.4 million from Proposition 13 (Nonpoint Source Pollution Control and Watershed Protection) and approximately $1.1 million from Proposition 40. DROPS prioritizes projects that reduce stormwater pollution and provide multiple benefits including water conservation, water supply augmentation, energy savings, increased awareness of water resource sustainability, and reduced dry weather runoff. All projects must include an education and/or outreach component that is designed to increase student and public understanding of the project's environmental benefits and the sustainability of California's water resources directly related to the project.

(3) California is working to protect children from extreme heat by helping schools tear out pavement contributing to the urban heat island effect in favor of trees and plants that provide safer outdoor spaces. On July 13, 2023, Governor Newsom announced CAL FIRE is providing $47 million in grants under the Green Schoolyard Grant program to help schools convert asphalt to green spaces and plant trees and other vegetation adding cooler spaces essential to protecting children from dangerous extreme heat. The Green Schoolyard Grant program helps schools convert pavements to green spaces, create drought-tolerant natural areas on school grounds, and other activities to help children connect to nature.

(4) This Permit intends to further incentivize schools to tear out asphalt as a means to comply with water quality requirements by implementing green infrastructure projects that will capture stormwater and infiltrate stormwater while providing children with safer, cooler spaces at school. Publicly-owned schools represent a significant opportunity for municipalities and private permittees to collaborate on regional stormwater capture projects that will facilitate compliance with their applicable state or regional stormwater permits. Yet schools have been largely overlooked as a suitable location for stormwater projects to date. Therefore, this Permit seeks to incentivize School Permittees to coordinate with third-party discharges to build stormwater projects on school property that capture offsite stormwater from surrounding areas to facilitate more efficient stormwater permit compliance broadly, while simultaneously improving the health and wellbeing of our State's children. School greening would be a win-win for California students, communities, and the environment.

(5) To incentivize school greening, a School Permittee's compliance with this Attachment F shall be determined on a facility-by-facility basis through one of the three compliance options discussed below in this Section F2. Compliance Option 1—an agreement with third-party dischargers to capture offsite stormwater at a school facility—is the preferred compliance option that will incentivize school greening to the maximum extent, while serving broader objectives of facilitating regional stormwater permit compliance beyond school property. Compliance Option 2—capture and retention of a school facility's stormwater up to generally accepted design standards—is the second preferred compliance option to incentivize school

greening, but without additional co-benefits at the regional level. Compliance Option 3—direct demonstration of compliance with water quality standards—is the least preferred compliance option.

F2.2 Compliance Options for School Permittees

In complying with this Attachment F, the School Permittee must choose one of the following three compliance options, ordered from highest priority to lowest priority:

F2.2.1 Compliance Option 1 – Agreement with Third-Party Dischargers for Offsite Stormwater Capture.

(1) School Permittees shall enter into a legally binding agreement with third-party stormwater dischargers serving as a permittee to a separate stormwater permit from this Attachment F, excluding the Construction General Permit due to the short-term nature of such discharges ("Third-Party Discharger"), to fund, or partially fund, a school greening project at a school facility subject to the School Permittee's control that would capture the Third-Party Discharger('s)' off-site authorized Non-Stormwater Discharges (NSWDs) and stormwater contribution and either reuse, evapotranspire, or infiltrate the waterit on-site at the school after pretreatment if necessary ("School Offsite Capture Project"), consistent with the terms of this Section F2.2.1.

(2) In an agreement described in Section F2.2.1(1), the School Permittee shall provide the land for stormwater controls (structural and/or non-structural BMPs) on school property as part of the School Offsite Capture Project and shall be responsible to ensure such stormwater controls are designed, implemented, and properly operated and maintained with the effective capacity to capture and use, pretreat and infiltrate, and/or evapotranspire all authorized NSWDs and the volume of runoff produced from the area covered by the School Offsite Capture Project up to and during an 85th percentile 24-hour storm event. The volume of runoff produced by an 85th percentile 24-hour storm event, determined as the maximized capture runoff volume for the School Permittee's facility and area under the Third-Party Discharger(s)' control draining into the School Offsite Capture Project, shall be calculated using the formula recommended in Water Environment Federation's Manual of Practice No. 23/ASCE Manual of Practice No. 87, cited in Chapter 5 of the 1998 Edition and Chapter 3 of the 2012 Edition and setting the stormwater volume to exactly the 85th percentile 24-hour storm runoff volume (Straight Calc).

(3) In an agreement described in Section F.2.2.1(1), the Third-Party Discharger(s) shall be responsible for funding a portion of the implementation costs of the stormwater controls on school property as part of the School Offsite Capture Project in an amount attributable to at least the portion of the authorized NSWDs and offsite stormwater contribution from the Third-Party Discharger(s), as described in Section F2.2.1(6).The Third-Party Discharger(s) shall also be responsible for funding all of the ongoing operation and maintenance conducted by the School Permittee for the School Offsite Capture Project.

(4) School Offsite Capture Projects shall provide multiple benefits and reduce the amount of stormwater runoff required for control by bioretention, flow-through, and subsurface infiltration Stormwater Control Measures as described in Section F7.7.4. The School Permittee shall be required to ensure School Offsite Capture Projects to meet stormwater retention and treatment criteria by implementing Permanent Stormwater Control Measures consistent with the order of prioritization and design criteria described in Section F7.7.6. Multiple--benefit projects include projects that address any of the following, in addition to water quality:

(a) Access to green space, including but not limited to access to school greening areas by members of the public outside of school hours;
(b) Recreation, including but not limited to access to outdoor school recreational amenities by members of the public outside of school hours;
(c) Shade, including but not limited to native tree canopies;
(d) Educational opportunities on school properties related to environmental sciences;
(e) Water supply;
(f) Flood control;
(g) Habitat enhancement;
(h) Open space preservation; and
(i) Climate change.

(5) For any stormwater to be infiltrated, the School Offsite Capture Project shall include appropriate pretreatment controls to meet Maximum Contaminant Level (MCL) criteria as determined by a California licensed professional engineer prior to installing and operating infiltration BMPs for compliance with this Compliance Option 1. Pretreatment should be designed to protect the natural function of the soil to treat the storm water before it reaches the groundwater, ensure the life of the infiltration BMP (*e.g.*, prevent/reduce biofouling or siltation), and prevent the addition or migration of pollutants in groundwater that cause or contribute to the exceedance of a water quality objective. The School Offsite Capture Project may also implement groundwater/soil monitoring instead of evaluating and implementing pretreatment controls to meet MCLs for infiltration BMP(s) other than storm water capture and infiltration dry wells. School Permittees would be required to install monitoring devices to evaluate the pollutant concentrations from the infiltration of stormwater and authorized NSWDs into the soil and/or groundwater. This data shall be provided to the Water Boards via SMARTS.

(6) A School Permittee may only participate in Compliance Option 1 if the Third-Party Discharger subject to the agreement described in Section F2.2.1(1) is located within the watershed where the School Offsite Capture Project is located and contributes stormwater into the School Offsite Capture Project. A School Permittee shall prioritize agreements for funding School Offsite Capture Projects with Third-Party Dischargers willing to divert their off-site stormwater to the School Offsite Capture Project. If there are no Third-Party Dischargers available that are willing to contribute stormwater to the School Offsite Capture Project at the school operated by the School Permittee, the School Permittee may identify a downstream Third-Party Discharger to enter into a legally binding agreement described in Section

F2.2.1(1), provided that the downstream Third-Party Discharger agrees to a 1.5x multiplier to the funding necessary for the School Offsite Capture Project described in Section F2.2.1(2) and provided that such funding could be eligible as compliance credits pursuant to the downstream Third-Party Discharger's applicable stormwater permit.

(7) Specific details related to the School Offsite Capture Project shall be documented in the agreement as specified in Section F2.2.1(1) and submitted in the School Permittee's annual reports as described in section F11.1 of this Order. At a minimum, the School Offsite Capture Project shall be adequately sized to address the Third-Party Discharger's authorized NSWDs and offsite stormwater contribution, and the School Permittee's own NSWDs and stormwater volume that would otherwise need to be addressed onsite under Compliance Option 2. The funding level fee structure applicable to the Third-Party Discharger(s) for participation under Compliance Option 1 shall be determined on a project-specific basis, and the funding level must at minimum be proportional to the sum of the Third-Party Discharger's authorized NSWDs and offsite stormwater contribution relative to the School Permittee's authorized NSWDs and stormwater volume that needs to be addressed onsite under Compliance Option 2. Since the volume of stormwater runoff is proportional to imperviousness, imperviousness or another equivalent metric, which is easily determined, may be used in lieu of volume when calculating the funding level.

(8) A Third-Party Discharger willing to fund a School Offsite Capture Project must enter into a signed, legally-binding agreement with the School Permittee's administration or its fiduciary agent. The Third-Party Discharger shall comply with the signed agreement, which may include, but is not limited to:

(a) Payments of any applicable fees and/or alternative means of compensation (*e.g.* easements or property exchanges);

(b) Identification of the School Offsite Capture Project(s) being funded;

(c) The specified timeframe for the agreement;

(d) Whether members of the general public will be permitted to access school greening areas outside of school hours, and the parties' responsibility for operating and maintaining school greening areas in such circumstances;

(e) For a Third-Party Discharger's participation in an upstream School Offsite Capture Project, an attestation signed by all signatories that no downstream regional stormwater project is available to the Third-Party Discharger and no upstream Third-Party Dischargers are available to the School Permittee for the purpose of funding a School Offsite Capture Project; and

(f) Any other provisions agreed upon by the School and the Third-Party Discharger as specified in the agreement.

(9) All School Offsite Capture Projects must include an education and outreach component that is designed to increase student and public understanding of the project's environmental

benefits and the sustainability of California's water resources directly related to the project. Eligible education and outreach activities include, and are not limited to:

(a) Teacher and student time dedicated to project development, curriculum integration, and project site visits;

(b) Student involvement throughout the life of the project (*e.g.*, planning/design, implementation, maintenance)

(c) Additional curriculum materials, including but not limited to the California Education and the Environment Initiative;

(d) Extracurricular activities or programs related to environmental sciences; and

(e) Landscaper or maintenance staff training certification (e.g., Water Management Certification Program) or other training (teacher training).

(10) School Permittees selecting and in compliance with Compliance Option 1 shall be deemed in compliance with the water-quality based effluent limitations established in Attachment G of this Order.

(11) The School Permittee selecting Compliance Option 1 at a school facility shall comply with the requirements specified in the rest of this Attachment F, but is exempt from complying with the following sections at the facility where the School Offsite Capture Project is located:

(a) F4 (Illicit Discharges), provided that the School Permittee shall, consistent with Section F4, promptly address illicit discharges at the school facility that may endanger human health;

(b) F7 (Post-Construction), other than Section F7.8 (Operations & Maintenance) which shall remain applicable to the School Offsite Capture Project;

(c) F8 (TMDLs);

(d) F9 (Water Quality Monitoring); and

(e) F11.4 (Illicit Discharge Reporting), 11.6 (Construction Reporting), 11.7 (Post-Construction Reporting), 11.8 (TMDLs Reporting), and 11.9 (Monitoring Reporting).

(12) School Permittees prematurely terminating a legally binding agreement with a Third-Party Discharger regarding a School Offsite Capture Project pursuant to Section F2.2.1(1) shall notify the Executive Officer at least 30 days prior to the proposed termination date. The notice shall include an explanation for the early termination and the replacement Compliance Option Documents for Compliance Option 2 or 3, as appropriate.

F2.2.2 Compliance Option 2 - Facility-Specific Design Standard to Reduce Stormwater Runoff.

(1) The School Permittee shall design, implement, and properly operate and maintain stormwater controls (structural and/or non-structural BMPs) at a school facility subject to the School Permittee's control with the effective capacity to capture and use, infiltrate, and/or

evapotranspire all NSWDs and the volume of runoff produced at the school facility up to and during an 85th percentile 24-hour storm event ("School Onsite Capture Project").

(2) The volume of runoff produced by an 85th percentile 24-hour storm event, determined as the maximized capture runoff volume for the facility subject to the School Onsite Capture Project, shall be calculated using the formula recommended in Water Environment Federation's Manual of Practice No. 23/ASCE Manual of Practice No. 87, cited in Chapter 5 of the 1998 Edition and Chapter 3 of the 2012 Edition and setting the stormwater volume to exactly the 85th percentile 24-hour storm runoff volume (Straight Calc).

(3) School Onsite Capture Projects shall provide multiple benefits and reduce the amount of stormwater runoff required for control by bioretention, flow-through, and subsurface infiltration Stormwater Control Measures as described in Section F7.7.4. The School Permittee shall be required to ensure School Onsite Capture Projects meet stormwater retention and treatment criteria by implementing Permanent Stormwater Control Measures consistent with the order of prioritization and design criteria described in Section F7.7.6. Multiple--benefit projects include projects that address any of the following, in addition to water quality:

(a) Access to green space, including but not limited to access to school greening areas by members of the public outside of school hours;
(b) Recreation, including but not limited to access to school recreational amenities by members of the public outside of school hours;
(c) Shade, including but not limited to native tree canopies;
(d) Educational opportunities on school properties related to environmental sciences;
(e) Water supply;
(f) Flood control;
(g) Habitat enhancement;
(h) Open space preservation; and
(i) Climate change.

(4) All School Onsite Capture Projects must include an education and/or outreach component that is designed to increase student and public understanding of the project's environmental benefits and the sustainability of California's water resources directly related to the project. Eligible education and outreach activities include, and are not limited to:

(a) Teacher and student time dedicated to project development, curriculum integration, and project site visits;

(b) Student involvement throughout the life of the project (e.g., planning/design, implementation, maintenance)

(c) Additional curriculum materials including but not limited to the California Education and the Environment Initiative;

(d) Extracurricular activities or programs related to environmental sciences; and

(e) Landscaper or maintenance staff training certification (*e.g.*, Water Management Certification Program) or other training (teacher training).

(5) Dischargers selecting and in compliance with Compliance Option 2 shall be deemed in compliance with the water quality based effluent limitations established in Attachment G of this Order.

(6) The School Permittee selecting Compliance Option 2 for a school facility shall comply with the requirements specified in Attachment F, but is exempt from complying with the following sections at the facility where the School Onsite Capture Project is located:

(b) F4 (Illicit Discharges), provided that the School Permittee shall, consistent with Section F4, promptly address illicit discharges at the school facility that may endanger human health;

(c) F7 (Post--Construction), other than Section F7.8 (Operations & Maintenance) which shall remain applicable to the School Onsite Capture Project;

(d) F8 (TMDLs);

(e) F9 (Water Quality Monitoring); and

(f) F11.3 (Illicit Discharge Reporting), 11.6 (Construction Reporting), 11.7 (Post-Construction Reporting), 11.8 (TMDLs Reporting), and 11.9 (Monitoring Reporting).

F2.2.3 Compliance Option 3 - Direct Demonstration of Compliance with Water Quality Based Effluent Limitations.

(1) The School Permittee shall comply with all provisions in this Attachment F and demonstrate direct compliance with the water quality based effluent limitations established in Attachment G of this Order by implementing the monitoring and reporting requirements described in sections F.8 and F.10 of this Order and according to the compliance determination in section F.7 of this Order.

F3. PUBLIC EDUCATION, OUTREACH, INVOLVEMENT, AND PARTICIPATION PROGRAM

F3.1 Definition of Public

The public for a School Permittee is considered the following, if applicable:

1. Faculty
2. Students
3. Staff
4. Visitors
5. Contractors

F3.2 Implementation Options

1. Within 1 year of the Effective Date of this Order or the Permittee's Effective Date of Designation, whichever is later, the Permittee shall select one public education program implementation option below:
   a. Fulfill public education and public participation program requirements within their jurisdictional boundaries individually;
   b. Contribute to a countywide stormwater program which conducts education and outreach on behalf of its members; or
   c. Contribute to a regional outreach and education collaborative effort which shall include members completing the following:
      1) Define a uniform and consistent message(s);
      2) Determine the best methods to communicate the message(s); and
      3) Collaboratively apply what is learned through local jurisdiction groups.
2. The Permittee shall obtain documentation, such as a written agreement, letter, or similar document, which confirms any involvement in or contribution to a countywide stormwater program or regional outreach and education collaborative effort within one year of the beginning of its involvement or contribution.

F3.3 Development and Implementation

1. Within 2 years of the Effective Date of this Order or the Permittee's Effective Date of Designation, whichever is later, the Permittee shall develop, ~~and~~ implement, ~~or~~ review, and update as necessary ~~and begin implement~~ a written public education strategy to attain the following goals related to stormwater pollution prevention and using stormwater as a resource:
   a. Identify who is responsible for implementing specific tasks and create a schedule for task implementation;
   b. Identify the Permittee's target audiences;
   c. Encourage public input (*e.g.*, the opportunity for public comment, or public meetings) in the development of the public education program;
   d. Develop and disseminate educational materials (*e.g.*, printed materials, billboard and mass transit advertisements, signage at select locations, stenciling at storm drain inlets, and websites) for targeted audiences, including multiple languages as appropriate and that address illicit discharge awareness and illicit discharge and spill reporting including promotion of the Permittee's illicit discharge reporting hotline per the section Illicit Discharge and Spill Response Plan.

e. Provide information to educate school-age children about the effects of pollutants in stormwater discharge, actions the permittee is taking to protect and enhance stormwater quality, and actions school-age children can do to help protect receiving water quality in their local area. The Permittee is encouraged to use environmental and place-based experiential learning materials that are integrated into school curricula and school facility management. The Permittee may refer to the Splash (www.sacsplash.org) and Effie Yeaw Nature Center (www.sacnaturecenter.net). The Permittee may also use California's Education and Environment Initiative Curriculum (http://www.californiaeei.org) for examples.

F3.4 Public Participation Program

The Permittee shall involve the public in the development and implementation of its stormwater management program. At a minimum, within 2 years of the Effective Date of this Order or the Permittee's Effective Date of Designation, whichever is later the Permittee shall:

1. Develop electronic, paper, or other communication techniques to ensure the public can easily find information about the Permittee's stormwater management program and opportunities to participate.

~~F3~~F4. ILLICIT DISCHARGE DETECTION AND ELIMINATION PROGRAM

The Permittee shall develop an Illicit Discharge Detection and Elimination Program to detect, investigate, and eliminate illicit discharges, including illegal dumping, into its storm drain system pursuant to the following requirements.

~~F3~~F4.1 Illicit Discharge and Spill Response Plan

Within 1 year of the Effective Date of this Order or the Permittee's Effective Date of ~~the Permittee's~~ Designation, whichever is later, the Permittee shall develop and implement or review, update as necessary and implement an Illicit Discharge and Spill Response Plan that, at a minimum, includes the following elements:

1. A method to receive illicit discharge and spill notifications (e.g., hotline, internet complaint website).;
2. An illicit discharge and spill complaint response process that provides the following:
   a. Material characterization, source identification, containment, abatement, and recovery;
   b. Ability to respond to a reported illicit discharge and conduct assessment and clean-up and abatement, 24-hours-a-day;

c. Receiving water impact assessment, including visual observation and water quality sampling, as appropriate. The Permittee may reference indicator parameters and action level concentrations found in the Center for Watershed Protection's Illicit Discharge Detection and Elimination: A Guidance Manual for Program Development and Technical Assistance (https://www3.epa.gov/npdes/pubs/idde_manualwithappendices.pdf);

d. Identification of responsible party, as applicable;

e. Response timelines for illicit discharges and spills shall be based upon threats to water quality and human health as follows:

- Illicit discharges and spills known or suspected of being either sanitary sewage, hazardous, or contaminated shall be investigated as soon as possible, but no later than 24 hours of the Permittee becoming aware of the discharge.
- The Permittee shall investigate any suspected illicit discharge or spill not meeting the above criteria within 72 hours of becoming aware of the suspected illicit discharge or spill.
- For investigations that require more than 72 hours, the Permittee shall identify the actions being taken to identify and locate the source of the suspected illicit discharge.

f. Roles and responsibilities of responding agencies for all times of day, including illicit discharge and spill response referral process (i.e., transfer of incident command) and notification to appropriate federal, state, and local agencies;

g. A description of who and how and what is used to clean-up and verify illicit discharge and spill clean-up for both hazardous and non-hazardous substances, including storm drain system cleaning;

3. A protocol to track and query the following:

a. Details of complaint or spill, including, but not limited to, time of notification, location of illicit discharge and spill, responsible party or parties, quantity and type of material, and whether actual or potential illicit discharges and spills are abated;

b. Responding parties;

c. Response time to illicit discharges and spills;

d. Inspector's notes and findings;

e. History of prior illicit discharges and spills; and

f. Follow-up actions, including but not limited to, re-inspections, receipt of compliance documentation, referrals to other divisions or agencies, cost recovery, fines, and other enforcement.

~~F3~~F4.2 Dry Weather Flow Investigation and Sampling

1. Within 1 year of the Effective Date of this Order or the Permittee's Effective Date of Designation, whichever is later, the Permittee shall develop or review and update as necessary written procedures to proactively identify, investigate, and eliminate (per section Illicit Discharge and Spill Response Plan) sources of dry weather flows from MS4 outfalls flowing or ponding more than 72 hours after the last rain event. Procedures shall include the following:

   a. A process to investigate outfalls that are flowing or ponding more than 72 hours after the last rain event including sampling of dry weather flows when the Permittee cannot either determine that the discharge is a non-prohibited discharge or identify and eliminate any illicit discharges causing the dry weather flow. Sampling shall include the indicators parameters and actions levels in Table F3.1 Indicator Parameters and Action Level Concentrations, below, and any other parameters of concern based on observation of the flow and other relevant information. The Permittee shall conduct a follow up investigation if action level concentrations are exceeded and the source of the illicit discharge has not been identified and eliminated. The Permittee may reference the Center for Watershed Protection's 2004 document titled "Illicit Discharge Detection and Elimination, A Guidance Manual for Program Development and Technical Assessments" for appropriate field test methods (https://www3.epa.gov/npdes/pubs/idde_manualwithappendices.pdf);

Table ~~F3~~F4.1 Indicator Parameters and Action Level Concentrations

Indicator Parameter	Action Level Concentration
Ammonia	Greater than or equal to 50 milligrams per liter
Color	Greater than or equal to 500 units
Conductivity	Greater than or equal to 2,000 microsiemens per centimeter
Hardness	Less than or equal to 10 milligrams per liter as $CaCO_3$ or Greater than or equal to 2,000 milligrams per liter as $CaCO_3$
pH	Less than or equal to 5 or Greater than or equal to 9
Potassium	Greater than or equal to 20 milligrams per liter
Turbidity	Greater than or equal to 1,000 Nephlometric Turbidity Units

b. Frequency and timeline of proposed outfall investigations;

c. Processes to abate the source of illicit dry weather discharge within time frames specified in the Illicit Discharge and Spill Response Plan;

d. A process to coordinate with field staff with institutional knowledge of chronic dry weather flows or that may observe dry weather flows, for example, during maintenance or inspections near or at outfalls;

e. Documentation of dry weather investigation findings, including dates of inspection and sampling, as well as sampling results.

2. Within 2 years of the Effective Date of this Order or the Permittee's Effective Date of Designation, whichever is later, the Permittee shall implement these written procedures.

~~F3~~F4.3 Illicit Discharge Detection and Elimination Staff Training

Within 2 years of the Effective Date of Order or the Permittee's Effective Date of Designation, whichever is later, the Permittee shall implement a biennial training program for all Permittee staff who, as part of their normal job responsibilities, may be notified of, come into contact with, or otherwise observe a spill, illicit discharge or illegal connection to the storm drain system. The training program shall include, at a minimum:

1. Identification of an illicit discharge or illegal connection;

2. Lessons learned from historical spills and illicit discharges;

3. Proper procedures for reporting and responding to the spill, illicit discharge or illegal connection;
4. Follow-up training as needed to address changes in regulations, procedures, techniques, or staffing;
5. A biennial assessment of trained staff's knowledge of identifying, reporting, and responding to illicit discharges and revisions to the training as needed;
6. Training for new staff no later than six months after the start of employment; and
7. Contact information, including the procedure for reporting a spill or illicit discharge, shall be included in each of the Permittee's fleet vehicles that are used by field staff.

~~F4~~F5. POLLUTION PREVENTION AND GOOD HOUSEKEEPING FOR PERMITTEE OPERATIONS PROGRAM

The Permittee shall develop and implement a pollution prevention and good housekeeping for Permittee operations program to prevent or reduce the amount of pollutant runoff from Permittee operations. The Permittee shall implement appropriate best management practices for preventing or reducing the amount of stormwater pollution generated by Permittee operations.

~~F4~~F5.1 Inventory of Permittee-Owned and Operated Facilities

1. Within 1 year of the Effective Date of this Order or the Permittee's Effective Date of Designation, whichever is later, the Permittee shall develop or review and update as necessary an inventory of Permittee-owned or operated facilities within their jurisdiction that are a threat to water quality. The inventory shall include all Permittee-owned or operated facilities within their jurisdiction that are potential sources of pollution in stormwater, including the following:

    - Animal control facilities;
    - Chemical storage facilities;
    - Composting facilities;
    - Equipment storage and maintenance facilities (including landscape-related operations);
    - Fuel farms;
    - Hazardous waste disposal facilities;
    - Hazardous waste handling and transfer facilities;
    - Incinerators;
    - Landfills;
    - Materials storage yards;
    - Pesticide storage facilities;

- Public parking lots;
- Public golf courses;
- Public swimming pools;
- Public parks and recreation areas;
- Public works yards;
- Public marinas;
- Recycling facilities;
- Salt or de-icing storage facilities;
- Solid waste handling and transfer facilities;
- Transportation hubs (e.g., bus transfer stations);
- Vehicle storage and maintenance areas;
- Vehicle fueling facilities; and
- Other (as directed by the appropriate Regional Water Board).

2. The inventory shall include the following for each facility:

   a. Name and type of facility;
   b. The facility manager's name, title, and contact information;
   c. Physical address and/or decimal latitude-longitude coordinates of facility;
   d. Date of last assessment or inspection;
   e. Industrial General Permit Waste Discharge Identification Number if applicable; and
   f. Indication of facilities identified as hotspots as required in the section Identification of Pollutant Hotspots.

~~F4~~F5.2 Map of Permittee-Owned and Operated Facilities

Within 1 year of the Effective Date of this Order or the Permittee's Effective Date of Designation, whichever is later, the Permittee shall create or review and update as necessary a map or maps of the Permittee-owned or operated facilities identified in section Inventory of Permittee-Owned and Operated Facilities. The map(s) shall include the following:

1. The location of the facilities;
2. The stormwater drainage system serving the facilities, including drain inlets and outfalls;
3. The receiving waters to which these facilities discharge; and
4. Identification of hotspot facilities as required in the section Identification of Pollutant Hotspots.

~~F4~~F5.3 Identification of Pollutant Hotspots

1. Within 2 years of the Effective Date of this Order or the Permittee's Effective Date of Designation, whichever is later, the Permittee shall conduct an initial inspection and assessment of all facilities in the inventory (created per section Inventory of Permittee-Owned and Operated Facilities) that have not already had an initial inspection in previous permit, for pollutant discharge potential and to identify Hotspot Facilities using the Center for Watershed Protection's guide on Urban Subwatershed and Site Reconnaissance, or equivalent. See Chapter 4 of the Center for Watershed Protection's Unified Subwatershed and Site Reconnaissance: A User's Manual. Among the factors to be considered in identifying hotspot facilities are:

   a. The type and volume of pollutants stored at the site;
   b. The presence of improperly stored materials;
   c. Outdoor material handling and equipment maintenance activities
   d. Disturbed or erodible soils;
   e. Proximity to water bodies;
   f. Poor housekeeping practices;
   g. History of deficient pollution prevention best management practice implementation; and
   h. History of illicit discharges.

2. Hotspots shall include, at a minimum, the following:

   a. The Permittee's maintenance and corporation yards;
   ~~b.~~ Vehicle storage, maintenance, washing areas;
   ~~c. Hazardous waste facilities;~~
   ~~d. Fuel storage or dispensing locations;~~
   ~~e. Airports;~~
   ~~f.~~b. ~~Marinas;~~ and
   ~~g.~~c. Any other facilities at which chemicals or other materials are likely to be discharged in stormwater.

3. The Permittee shall document initial inspection and assessment procedures and results of site evaluation checklists used to conduct the initial inspection and assessment.

4. The Permittee shall update the inventory of Permittee-owned or operated facilities annually. Permittees shall conduct the initial inspection and assessment for any facilities added to the inventory within one year.

~~F4~~F5.4 Hotspot Facility Stormwater Pollution Prevention Plan

1. Within 3 years of the Effective Date of this Order or the Permittee's Effective Date of ~~d~~Designation, whichever is later, for each hotspot facility identified per section

Identification of Pollutant Hotspots, the Permittee shall develop or update as needed and implement written site-specific Stormwater Pollution Prevention Plans that identify existing stormwater best management practices installed, implemented, and maintained to minimize the discharge of pollutants to protect water quality.

2. The Stormwater Pollution Prevention Plan(s) shall be kept on-site at each of the Permittee-owned or operated facilities' offices for which it was completed and shall be updated as necessary.

3. At a minimum the Stormwater Pollution Prevention Plan will include the following:

   a. Facility address;
   b. Owner/operator name and contact information;
   c. Purpose of the document;
   d. Key staff/contacts at the facility;
   e. Site map with drainage and discharge locations identified;
   f. Types and location of pollutant generating materials that are handled and stored at the facility that may be exposed to stormwater;
   g. Facility stormwater best management practices;
   h. Spill control and cleanup procedures including spill kit location;
   i. Spill notification procedures (e.g., fire department, Certified Unified Program Agency);
   j. Dates of scheduled quarterly and annual inspections per section Hotspot Facility Inspections, Visual Monitoring and Remedial Action; and
   k. Inspection procedures and checklist for inspections conducted to ensure proper selection, implementation, and maintenance of all best management practices.

4. The Stormwater Pollution Prevention Plan requirements may be satisfied by existing documents such as Hazardous Materials Business Plan, Spill Prevention Control and Countermeasures Plan, Industrial General Permit Stormwater Pollution Prevention Plan, or other equivalent document if all minimum requirements are included.

~~F4~~F5.5 Hotspot Facility Inspections, Visual Monitoring and Remedial Action

Within 3 years of the Effective Date of this Order or the Permittee's Effective Date of D~~d~~esignation, whichever is later, the Permittee shall implement an inspection program of Permittee-owned and operated hotspot facilities per the requirements of this section. The inspections performed as a part of Stormwater Pollution Prevention Plan implementation for facilities covered under the Industrial General Permit can be counted towards the facility inspection requirements in this section.

1. Inspection Frequency - The Permittee shall conduct quarterly best management practice implementation inspections and an annual Comprehensive Inspection for facilities identified as hotspots.

2. Hotspot Facility Quarterly best management practice Implementation Inspections - The permittee shall conduct quarterly best management practice Implementation Inspections that include the following elements at minimum:
    a. Observation of facility discharge locations for stormwater and non-stormwater discharges. Where discharges are observed, identify any observed problems (e.g., color, foam, sheen, turbidity) associated with pollutant sources or best management practices;
    b. An inspection of all areas of pollutant generating activity and associated potential pollutant sources for evidence of, or the potential for, pollutants entering the stormwater conveyance system;
    c. Inspection of best management practices to identify implementation deficiencies and determine the need for maintenance or follow-up; and
    d. Identification of any deficiencies and a schedule of follow-up actions that will be completed to correct deficiencies as soon as practicable.
3. Hotspot Facility Annual Comprehensive Inspections - Once per year concurrent with one of the quarterly inspections, conduct a review of the Stormwater Pollution Prevention Plan and effectiveness of all best management practices and their implementation to ensure pollutants are not being discharged.
4. The Permittee shall document all inspection dates, inspection results, and corrective actions. Facilities shall maintain a log of inspection reports with their procedures.

~~F4~~F5.6 Permittee Operations and Maintenance Activities

Within 3 years of the Effective Date of this Order or the Permittee's Effective Date of D~~d~~esignation, whichever is later, the Permittee shall assess its operation and maintenance activities for potential to discharge pollutants in stormwater. Assessments shall be conducted pursuant to the following requirements:

1. The Permittee shall conduct an assessment to identify operation and maintenance activities that have a potential to discharge pollutants in stormwater, including but not limited to the following:
    a. Road and parking lot maintenance, including sidewalk repair, curb and gutter repair, pothole repair, pavement marking, sealing, and re-paving;
    b. Bridge maintenance, including re-chipping, grinding, saw cutting, and painting;
    c. Cold weather operations, including plowing, sanding, and application of deicing compounds and maintenance of snow disposal areas;
    d. Right-of-way maintenance, including mowing, herbicide and pesticide application, and planting vegetation;

e. Material stockpiling (e.g., asphalt and concrete grindings, construction debris, soil);

f. Permittee-sponsored or sanctioned events such as large outdoor festivals, parades, or street fairs;

g. Green waste deposited in the street;

h. Graffiti removal; and

i. Hydrant flushing.

2. The Permittee shall identify all materials that could be discharged from each of these operation and maintenance activities, and the pollutant characteristics of the materials. Typical pollutants associated with these activities include metals, chlorides, hydrocarbons (e.g., benzene, toluene, ethylbenzene, and xylene), sediment, green waste, herbicide, pesticide, dried paint, and trash.

3. The Permittee shall develop, implement, and document best management practices that, when applied during Permittee operation and maintenance activities, will reduce or eliminate pollutants in stormwater and non-stormwater discharges. The Permittee shall refer to the California Stormwater Quality Association Municipal Handbook or equivalent when developing the best management practices.

4. The Permittee shall annually evaluate all best management practices implemented during operation and maintenance activities for effectiveness and revise as necessary.

5. Disposing of waste materials – The Permittee shall maintain a procedure to dewater and dispose of materials extracted from storm drain system. This procedure shall ensure that water removed during the cleaning process and waste material will not reenter the MS4.

~~F4~~F5.7 Landscape Design and Maintenance

Within 2 years of the Effective Date of this Order or the Permittee's Effective Date of D~~d~~esignation, whichever is later, the Permittee shall implement a landscape design and maintenance program or review and update existing programs to reduce the amount of water, pesticides, herbicides and fertilizers applied during Permittee operations and activities[1]. The program shall address the following requirements:

[1] Water Efficient Landscape Ordinance can be found at: http://www.water.ca.gov/wateruseefficiency/docs/MWELO09-10-09.pdf

1. The Permittee shall evaluate pesticides, herbicides and fertilizers used and application activities performed and identify pollution prevention and source control opportunities.
2. The Permittee shall implement landscape management measures that rely on non-chemical solutions that reduce the discharge of pesticides, herbicides and fertilizers including the following:
    a. Create drought-resistant soils by amending soils with compost;
    b. Create soil microbial community through the use of compost, compost tea, or inoculation;
    c. Use native and/or climate appropriate plants to reduce the amount of water, pesticides, herbicides and fertilizers used;
    d. Practice grass cycling on decorative turf landscapes to reduce water use and the need for fertilizers;
    e. Keep grass clippings and leaves away from waterways and out of the street using mulching, composting, or landfilling;
    f. Prevent application of pesticides, herbicides and fertilizers during irrigation or within 48 hours of predicted rainfall with greater than 50% probability as predicted by National Oceanic and Atmospheric Administration (NOAA);
    g. Limit or replace herbicide and pesticide use (e.g., conducting manual weed and insect removal); and
    h. Reduce grass mowing to allow for greater pollutant removal and infiltration without jeopardizing public safety.
3. The Permittee shall collect and properly dispose of unused pesticides, herbicides, and fertilizers.
4. The Permittee shall minimize irrigation run-off by using an evapotranspiration-based irrigation schedule and rain sensors.
5. The Permittee shall maintain an inventory of each pesticide, herbicide and fertilizer used during Permittee operations and activities in the permit area. The inventory shall include the following:
    a. Name and type of each pesticide, herbicide and fertilizer; and
    b. Approximate annual usage (e.g., gallons/year, cubic feet/year) of each pesticide, herbicide, and fertilizer.

~~F4~~F5.8 Stormwater Asset Management Inventory

The Permittee shall conduct stormwater asset management activities and establish intended levels of service for their MS4 consistent with this Order. Stormwater asset management activities shall include the following:

1. Asset Inventory Timeline

   Within 2 years of the Effective Date of this Order or the Permittee's Effective Date of D~~d~~esignation, whichever is later, the Permittee shall develop an Asset Inventory to include the categories listed in Asset Categories section:

   a. At a minimum, Permittees may review and update an existing outfall inventory to include the Asset Categories.

   b. Within 5 years of the Effective Date of this Order or the Permittee's Effective Date of D~~d~~esignation, whichever is later, the Permittee shall populate the Asset Inventory to include Asset Characteristics for all assets.

2. Asset Characteristics

   The Asset Inventory shall include the following information for each asset (as applicable):

   a. Asset description, class, and/or category;

   b. Purchase, installation, and/or establishment date;

   c. Useful life;

   d. Type or material;

   e. Quantity; and

   f. Size and capacity.

3. Asset Categories

   The following categories of assets shall be included in the Asset Inventory:

   a. Hard Assets

      Include all hard assets critical to the MS4, including, but not limited to the following:

      1) Storm Drain System – Including the following storm drain system assets:

         a) Stormwater Conveyance System – All segments of the MS4 including pipes, ditches, channels. The Permittee may use a logical grouping system where feasible. The characteristics of conveyance features may be populated using information gained during routine field inspections;

         b) Inlets and Manholes – Inlets to the MS4 (e.g., drop inlets, storm drain inlets, catch basins, curb face openings, inflows from outside the MS4

coverage area). The Permittee shall specify presence of internal storage (e.g., sump) and water quality device (e.g., screen, filter, separator, trash Full Capture Systems);

c) Outlets – Outfalls (or outlets) to receiving waters, the Permittee's own or any neighboring MS4s, or to structural controls/best management practices;

d) Roads – All roadways that convey stormwater, including curb and gutter systems. The Permittee may rely on other roadway repair, maintenance tracking, and plans to complete the roads inventory, so long as the Permittees ensure the other tools and documents account for stormwater quality when informing and prioritizing roadway improvements.

2) Structural Controls/best management practices

a) The Permittee may rely on Post-Construction inventory to assist populating the asset inventory;

b) Water quality-based centralized and decentralized best management practices – Stormwater control measures that contribute to reductions of stormwater volume and pollutant loading; and

c) Non-water quality-based centralized and decentralized best management practices – Primary function is flood control and provides minimal reduction of stormwater volume or pollutant loading.

3) Equipment – All equipment and systems, individually valued over $5,000 in replacement costs, used to convey stormwater, and maintain and improve the MS4.

b. Natural Assets

Based on existing and available data, include natural assets, such as waterbodies, riparian vegetation and habitat, and lands that may provide water capture, water quality improvement, or stormwater protection services.

~~F4~~F5.9 MS4 System Map

Within 2 years of the Effective Date of this Order or the Permittee's Effective Date of D~~d~~esignation, whichever is later, the Permittee shall maintain an MS4 System Map (updated as changes occur, at a minimum annually) to include individual identifiers and descriptions, which include information such as name, type, and discharge information, where applicable, for the below system components:

1. Hard Assets – Refer to subsection Hard Assets under the section Stormwater Asset Management Inventory. The map shall identify which portions of the system are open channels (e.g., ditches, manmade channels) and other conveyance

features (e.g., culverts, pipes, curb-and-gutter). Type of structural controls/best management practices shall be identified. The map shall also identify flow direction;

2. Natural Assets – Refer to subsection Natural Assets under the section Stormwater Asset Management Inventory;
3. Ephemeral, intermittent, and perennial waterbodies.
4. Drainage Catchments – Delineated drainage areas defined by both natural topographic divides and anthropogenic features such as constructed portions of the MS4, that reasonably represent areas that convey stormwater runoff to outlets/outfalls or to other drainage areas; and
5. Other Components – Identify other critical components (e.g., cleanouts, pump stations, diversion structures, trash capture devices, infiltration galleries) of system influencing maintenance capacity and conveyance.

~~F4~~F5.10 Asset Maintenance and Improvement Planning

1. Routine Asset Maintenance Plan - Within 2 years of the Effective Date of this Order or the Permittee's Effective Date of D~~d~~esignation, whichever is later, the Permittee shall develop and implement a Routine Asset Maintenance Plan to ensure all assets are properly functioning and do not present risks to water quality. At a minimum the plan shall include the following:
   a. Assigned frequency of inspection and maintenance of assets within the inventory based on a prioritization process that assigns highest priority assets more frequent inspections. Lowest priority assets may not require inspection and maintenance. Priority shall be based on potential threat to water quality, operating capacity (e.g., accumulation of sediment, trash, and other pollutants, or condition assessment). Areas/assets with high potential threat to water quality or high pollutant loading rates relative to treatment capacity are required to be assigned high priority.
   b. At a minimum, inspection and maintenance of all catch basins and Permittee owned structural controls/best management practices are required to be completed annually prior to the rainy season.
   c. Devices installed pursuant to Attachment E – Trash Implementation Requirements, shall be maintained to remain in compliance with those provisions. Permittee shall document inspections and maintenance conducted per the Routine Asset Maintenance Plan. Documentation of inspection and maintenance may be stored within databases required by other provisions (e.g., post-construction provisions, trash provisions) or required inspections and maintenance of those provisions may be documented within the asset management database, if applicable.

2. Labeling storm drain inlets

   a. Within 2 years of the Effective Date of this Order or the Permittee's Effective Date of Dd~~d~~esignation, whichever is later, the Permitte shall ensure that each storm drain inlet in high foot traffic areas includes a legible stormwater awareness message (e.g., a label, stencil, marker, or pre-cast message such as "drains to the creek" or "only rain in the drain").

   b. After storm drain inlets have been labeled, inlets with illegible or missing labels shall be recorded and relabeled within one month of inspection.

~~F4~~F5.11 Alternative and Existing Asset Management Programs

A Permittee may propose, for Regional Water Board Executive Officer approval, an alternative or existing approach for stormwater asset management and planning, provided the Permittee demonstrates the approach includes equivalent elements as the requirements in this Order.

~~F4~~F5.12 Pollution Prevention and Good Housekeeping Staff Training

The Permittee shall train all staff involved in implementing pollution prevention and good housekeeping practices as specified in this section. The training shall occur at least once every two years and include at a minimum:

1. A general stormwater education component;
2. Training on the applicable permit requirements including clear guidance on appropriate stormwater best management practices to use at municipal facilities and during typical operation and maintenance activities;
3. Follow-up training as needed to address changes in procedures, techniques, or staffing;
4. A biennial assessment of trained staff's knowledge of pollution prevention and good housekeeping and revisions to the training as needed; and
5. Training for new staff who will be involved in implementing pollution prevention and good housekeeping practices no later than three months after the start of employment.

~~F4~~F5.13 Third Party Activities

The Permittee shall require that any contractors hired by the Permittee to perform operation and maintenance activities shall be contractually required to comply with all the stormwater best management practices, good housekeeping practices, and standard operating procedures described above. The Permittee shall provide oversight of contractor activities to ensure that contractors are using appropriate best management practices, good housekeeping practices and following standard operating procedures.

~~F5~~F6. CONSTRUCTION SITE STORMWATER RUNOFF PROGRAM

The Permittee shall develop, implement, and enforce a program to prevent construction site discharges of pollutants and impacts on beneficial uses of receiving waters. The program shall include the development of contract language ensuring the Permittee's in-house construction operators or outside contractors comply with the Construction General Permit.

Within the first year of the Ee~~e~~ffective Dd~~d~~ate of thise ~~s~~ Orderpermit~~permit~~, the Permittee shall develop and implement contract language ensuring all outside contractors comply with the Construction General Permit and implement appropriate best management practices. Contract language shall apply to all projects that result in a total land disturbance of either one acre or more or that result in a total land disturbance of less than one acre if part of a larger common plan or development or sale.

~~F6~~F7 POST-CONSTRUCTION STORMWATER MANAGEMENT PROGRAM

~~F6~~F7.1 New and Existing Permittee Program Requirements

1. Within 1 year of the Effective Date of this Order, Renewal Permittees shall review previously adopted or referenced performance criteria for such biotreatment and media filters to ensure they are still applicable or adopt or reference new criteria.
2. Within 2 years of the Effective Date of this Order or the Permittee's Effective Date of Dd~~d~~esignation, whichever is later, New Permittees shall adopt or reference appropriate performance criteria for such biotreatment and media filters.

~~F6~~F7.2 Effective Date for Applicability

1. All projects under the Permittee's jurisdiction that meet any of the below approval milestones shall comply with the post-construction requirements of this Order.
   a. Projects that have not yet received project-specific discretionary approval.
   b. Projects that have received discretionary approval but that have been subsequently modified to include additional impervious area through a process such as a tentative map extension.
   c. Projects that do not require discretionary approval and that have not received ministerial approval.
   d. Public projects that require no ministerial or discretionary approval and have not filed a CEQA Notice of Determination or Notice of Exemption.
2. Effective Date of Post-Construction Requirements
   a. New Permittees

Within 2 years of the Effective Date of this Order or the Permittee's Effective Date of Dd~~,~~esignation, whichever is later~~,~~, New Permittees shall require the Post-Construction Stormwater Management Program be applied on applicable Regulated Projects and Small Projects

b. Renewal Permittees

Within six months of the Effective Date of this Order, Renewal Permittees shall require the Post-Construction Stormwater Management Program be applied on applicable Regulated Projects and Small Projects

~~F6~~F7.3 Enforceable Mechanisms

Within 1 year of the Effective Date of this Order or the Permittee's Effective Date of Dd~~,~~esignation, whichever is later, the~~,~~ Permittee~~s~~ shall develop and/or modify enforceable mechanisms that will effectively implement the requirements in the Post-Construction Stormwater Management Program and may include municipal codes, regulations, standards, and specifications. The Permittee shall:

1. Conduct an analysis of all applicable codes, regulations, standards, and/or specifications to identify modifications and/or additions necessary to fill gaps and remove impediments to effective implementation of project-scale development requirements.
2. Approve new and/or modified enforceable mechanisms that effectively resolve regulatory conflicts and implement the requirements in the Post-Construction Stormwater Management Program if necessary.
3. Apply new and/or modified enforceable mechanisms to all applicable new and redevelopment projects.
4. Develop and make available specific guidance for permittee's plan review process and low impact development Permanent Stormwater Control Measures and best management practice design.
5. Develop a policy and mechanism to coordinate Post-Construction Stormwater Management Program requirements are met for all approving and designing agencies involved during the planning and design stages for a project. The policy must include a visual flow chart that clearly identifies the project planning and design phase and mechanism by which each approving and designing agency is provided the Post-Construction Stormwater Management Program requirements for each project.

~~F6~~F7.4 Small Projects

1. Small Projects include all projects that create and/or replace (including projects with no net increase in impervious footprint) 2,500 square feet or more but less

than 5,000 square feet of impervious surface and not part of a larger plan of development.

2. Small projects do not include linear utility projects and road projects.
3. The Permittee shall require Small Projects to maximize opportunities to implement runoff reduction measures but require implementation of no less than one runoff reduction measures listed in subsection Runoff Reduction Measures under section Low Impact Development Design Standards.

~~F6~~F7.5 Regulated Projects

1. The Permittees shall require all projects fitting the category descriptions listed in Regulated Project Categories (hereinafter called Regulated Projects) to implement low impact development design standards per Low Impact Development Design Standards.
2. Regulated Projects include projects on public or private land that fall under the jurisdictional authority, planning authority, or building authority of the Permittee.
3. The Permittee shall develop and implement an equivalent process for reviewing and implementing these requirements for both public and private development projects.

~~F6~~F7.6 Regulated Project Categories

1. New Development Projects
   a. New development is any land-disturbing activity that results in the creation or addition of exterior impervious surface area on a site on which no past development has occurred.
   b. Regulated Projects include new private and public development projects that create 5,000 square feet or more of impervious surface (collectively over the entire project site). Public infrastructure improvements associated with private development projects shall be considered part of the overall private development project.
2. Redevelopment Projects
   a. Redevelopment is any land-disturbing activity that results in the creation, addition, or replacement of exterior impervious surface area on a site on which some past development has occurred.
   b. Regulated Projects include private and public redevelopment projects that create and/or replace 5,000 square feet or more of impervious surface (collectively over the entire project site).
   c. Specific exclusions to this category are:

1) Interior remodels; and

2) Routine maintenance or repair such as:

a) Roof or exterior wall surface replacement; and

b) Pavement resurfacing within the existing footprint that does not expose the underlying soil or pervious subgrade.

c) Full depth reclamation that does not change the pre-project drainage patterns and is not associated with non-excluded new or redevelopment projects.

d. Redevelopment Partial Site Alteration

1) Where a redevelopment project results in an alteration of 50 percent or more of the impervious surface of a previously existing development, the entire project, consisting of all existing, new, and/or replaced impervious surfaces, shall be included in the stormwater control design (*i.e.*, Permanent Stormwater Control Measures) and shall be designed and sized to treat stormwater runoff from the entire redevelopment project~~)~~.

2) Where a redevelopment project results in an alteration of less than 50 percent of the impervious surface of a previously existing development, only the new and/or replaced impervious surface of the project must be included in the stormwater control design (*i.e.*, Permanent Stormwater Control Measures shall be designed and sized to treat stormwater runoff from the new and/or replaced impervious surface of the project).

3. Road and Linear Utility Projects

Regulated Projects include any of the following types of road projects and linear utility projects that create or redevelop 5,000 square feet or more of impervious surface and that fall under the jurisdictional authority, planning authority, or building authority of a Permittee:

a. New development and redevelopment of streets or roads.

1) Where the addition of new impervious surface results in an alteration of more than 50 percent of the impervious surface of an existing street or road, the entire project, consisting of all existing, new, and/or replaced impervious surfaces, shall be included in the stormwater control design (i.e., Permanent Stormwater Control Measures shall be designed and sized to treat stormwater runoff from the entire street or road that had additional traffic lanes added).

2) Where the addition of new impervious surface results in an alteration of less than 50 percent of the impervious surface of an existing street or road, only the new and/or replaced impervious surface of the project shall be included in the stormwater control design (i.e., Stormwater Control Measures shall be

designed and sized to treat stormwater runoff from only the new traffic lanes).

b. Linear utility projects that create or redevelop more than 5,000 square feet of contiguous impervious surface.

c. The following road and linear utility projects are excluded from the above requirements and are not considered new development or redevelopment projects unless they are associated with non-excluded new or redevelopment projects:

1) Trenching, excavation, and resurfacing associated with linear utility projects;
2) Full-depth reclamation that does not change pre-project drainage patterns;

d. The following road and linear utility projects are excluded from the above requirements and are not considered new or redevelopment projects:

1) Pavement grinding and resurfacing of existing roadways and parking lots that does not expose the underlying soil or pervious subgrade; and
2) Routine replacement of damaged pavement such as pothole repair or replacement of short, non-contiguous sections of roadway.

~~F6~~F7.7 Low Impact Development Design Standards

The Permittee shall adopt and implement requirements and standards to ensure design and construction of Regulated Projects that achieve low impact development design standards to reduce runoff, treat stormwater, and provide baseline hydromodification management to meet the Criteria for Stormwater Treatment, Retention and Peak Flow Control. The Permittee shall only approve projects that meet the following criteria:

~~D~~F~~6~~7.7.1 Site Assessment Methods

At the earliest planning stages, the Permittee shall require Regulated Projects to assess and evaluate how site conditions, such as soils, vegetation, and flow paths will influence the placement of buildings and paved surfaces. The evaluation will be used to meet the goals of capturing and treating runoff and assuring these goals are incorporated into the project design. The Permittee may adopt or reference an existing low impact development site assessment methodology.

The Permittee shall require Regulated Projects to consider optimizing the site layout through the following methods:

a. Define the development envelope and protected areas, identifying areas that are most suitable for development and areas to be left undisturbed.
b. Concentrate development on portions of the site with less permeable soils and preserve areas that can promote infiltration.
c. Limit overall impervious coverage of the site.

d. Employ development setbacks from creeks, wetlands, and riparian habitats.
e. Preserve as many healthy, vigorous, and/or mature trees as feasible.
f. Conform the site layout along natural landforms.
g. Avoid excessive grading and disturbance of vegetation and soils.
h. Replicate the site's natural drainage patterns.

~~D6~~DF7.7.2 *Drainage Management Areas*

A Drainage Management Area is a watershed area draining to a single discharge location or Permanent Stormwater Control Measure. The Permittee shall require each Regulated Project to provide a map or diagram delineating the pre- and post-development discrete Drainage Management Areas within the developed portions of the project site and demonstrate how stormwater from each Drainage Management Area will be managed to meet the Low Impact Development Design standards.

Permanent Stormwater Control Measures shall be sized to manage the runoff from the entire Drainage Management Area, including all new, replaced, and existing areas draining to the Permanent Stormwater Control Measure.

~~D6~~DF7.7.3 *Permanent Best Management Practices Selection and Sizing*

a. Target Pollutants of Concern

Permanent Stormwater Control Measures shall be selected and designed to treat the following pollutants of concern: dissolved and particulate metals, pathogens, nutrients, sediment, hydrocarbons, trash, and fine sediment. This requirement may be met by directing flow and debris into a Permanent Stormwater Control Measure or multiple Permanent Stormwater Control Measures that control these pollutants. Other site-specific, TMDL, and 303(d)-listed pollutants shall also be identified and treated to the maximum extent practicable.

b. Permanent Stormwater Control Measure Prioritization

All projects subject to low impact development requirements shall identify and maximize implementation opportunities for each of the following Low Impact Development measures, in the following order of priority:

1. Site Assessment Methods
2. Runoff Reduction Measures
3. Bioretention Stormwater Control Measures
4. Flow-Through, vegetation-based Stormwater Control Measures
5. Subsurface Infiltration that meets Table F6.1 and Table F6.2 criteria

6. Flow-Through, non-vegetated Stormwater Control Measures and subsurface infiltration that does not meet the Table F6.1 and Table F6.2 criteria.

c. Stormwater Control Measures for High Risk Areas

Facilities serving high-risk areas such as fueling stations, truck stops, auto repairs, and heavy industrial sites may be required to provide additional treatment to address pollutants of concern unless these high-risk areas are not hydraulically connected to stormwater runoff and Permanent Stormwater Control Measures.

~~F6~~F7.7.4 *Runoff Reduction Measures*

Runoff Reduction Measures are Permanent Stormwater Control Measures that reduce the amount of stormwater runoff from a site and reduce area required for control by bioretention, Flow-Through, and subsurface infiltration Stormwater Control Measures. Runoff reduction measures shall be described in the Post-Construction Stormwater Control Plan and preserved and maintained to retain their stormwater control functions. Below are descriptions of the runoff reduction measures that may be used, design requirements, and crediting towards compliance with post-construction requirements.

Runoff reduction measures include Impervious Connection to Vegetated Areas, Interceptor Trees, Pervious Pavement, and Green Roofs, as described in the following sections.

~~F6~~F7.7.4.1 Impervious Connection to Vegetated Areas

1. Description - Impervious Connection to Vegetated Areas

   This Impervious Connection to Vegetated Areas site design measure utilizes properly configured vegetated areas that intercept, slow, and allow infiltration of stormwater runoff from directly connected impervious areas while allowing sediment and other pollutants to settle and infiltrate. Vegetated areas may receive stormwater runoff from impervious areas such as driveways, roads, roof downspouts, and parking lots.

2. Design and Maintenance Requirements - Impervious Connection to Vegetated Areas

   a. The vegetated area shall be sized and designed to maximize infiltration of the design storm.

   b. The maximum paved area that may drain to a single vegetated area is 5,000 square feet. Paved surfaces shall sheet flow onto vegetated areas.

   c. The maximum rooftop area that may drain to a single vegetated area is 600 square feet.

d. Vegetated area slopes shall not exceed 15 percent.

e. The vegetated area length (in direction of flow) shall be as long as the site will reasonably allow, but in no instance shall be less than 15 feet. Where concentrated flow from rooftops are directed to vegetated areas, sufficient vegetated area width and appropriate design measures shall be provided to dissipate flows, prevent concentrated flows and erosion, and maximize infiltration.

f. Level spreaders shall be utilized where impervious contributing paved areas and/or vegetated areas exceed 5 percent slope or where conditions are present that cause concentrated flow. The level spreader shall be a minimum of 10 feet in length (perpendicular to flow) per one cubic foot per second of stormwater flow that is directed to it and in no instance shall be less than 10 feet in length.

g. Vegetation shall be selected to thrive without fertilization and pesticide application, be non-invasive, and grow in great enough density to trap pollutants.

h. Vegetated areas shall be designed and maintained to remain fully functional and free of erosion.

i. Vegetated areas shall be protected from vehicular traffic and other activities that may compact soils, cause erosion, or damage vegetation.

j. The vegetated area shall not contain any built-upon areas except for incidental areas such as utility boxes, signs, and lamp posts.

k. Bioretention, infiltration, detention, or retention basins and chambers do not qualify as an impervious area disconnection site design measure. Such features shall be designed in accordance with section Criteria for Stormwater Treatment, Retention and Peak Flow Control.

3. Crediting - Impervious Connection to Vegetated Areas

a. A maximum of 50 percent of the drainage management area controlled by the vegetated area may be used to meet the requirements of section on Criteria for Stormwater Treatment, Retention and Peak Flow Control.

b. Self-retaining area design and crediting criteria are subject to Regional Board Executive Officer approval and may only be allowed in instances where the self-retaining areas would retain the applicable design criteria flow and/or volume.

~~F6~~F7.7.4.2 Interceptor Tree Planting and Preservation

1. Description - Interceptor Tree Planting and Preservation

Interceptor trees are evergreen or deciduous trees that intercept rainwater on their leaves and branches. Intercepted water is held within the tree canopy and runs down the branches and trunk of the tree where it may infiltrate into the soil at an enhanced rate. Credit for interceptor trees applies to both planted and preserved trees.

2. Design and Maintenance Requirements - Interceptor Tree Planting and Preservation

   a. Mature tree canopies shall overhang impervious areas and trunks shall be located within 25 feet of project impervious areas.

   b. Existing and planted trees shall be and remain healthy. Trees and their root zones shall be adequately protected during construction.

   c. Infrastructure surrounding trees shall be designed to prevent girdling of the tree trunk at all life stages.

   d. Pervious surfaces surrounding the base of new and established trees shall be of sufficient area to allow for infiltration of stemflow and throughfall stormwater runoff. Pervious areas may include bare soil, pervious pavement, permeable pavers, and suspended pavement over uncompacted and/or structural soil.

   e. Soils that support the selected tree species shall be used.

   f. A minimum of two cubic feet of uncompacted or structural soil volume shall be provided for each square foot of estimated mature tree canopy. Adequate soil volume shall be provided to support the estimated mature tree canopy area and shall be certified by a landscape architect or other qualified professional.

   g. Where feasible, a mulch layer consisting of tree leaves and/or an introduced mulch layer shall surround trees to help build a healthy and infiltrative soil, retain moisture from rainfall and/or runoff, and increase evaporation and infiltration of runoff.

   h. Inspection and maintenance plans shall accompany proposals to claim credit for existing and planted trees. At a minimum, inspection and maintenance plans shall include appropriate annual watering, mulch maintenance, and replacement of dead and dying trees.

   i. Native species and trees with large canopies at maturity are preferred. Dwarf, palm, and invasive species are not acceptable.

   j. To maintain existing tree health, avoid grade changes that may impact tree roots and/or accumulation of excess moisture in the trunk area.

k. Where possible, existing plants that are compatible with the tree's irrigation requirements should be preserved.

3. Crediting - Interceptor Tree Planting and Preservation

a. For each drainage management area, an amount equivalent to 75 percent of the actual or estimated mature evergreen tree canopy area may be subtracted from the total impervious area requiring control under the section Criteria for Stormwater Treatment, Retention and Peak Flow Control.

b. For each drainage management area, an amount equivalent to 50 percent of the actual or estimated mature deciduous tree canopy area may be subtracted from the total impervious area requiring control under the section Criteria for Stormwater Treatment, Retention and Peak Flow Control.

~~F6~~F7.7.4.3 Pervious Pavement Systems

1. Description - Pervious Pavement Systems

A pavement system consisting of permeable interlocking concrete pavement (PICP), pervious or permeable concrete unit pavers, pervious grid pavements, pervious concrete, porous asphalt, turf block, grasscrete, and bricks and stones, set on a gravel base with gravel joints, which stores and infiltrates rainfall at a rate equal to natural areas, or that stores and infiltrates the rainfall runoff volume described in provision E6.8. 2. Design and Maintenance Requirements - Pervious Pavement Systems

a. To be considered "pervious," the surface shall infiltrate into the underlying soil at a rate that is equal to or greater than the pre-project pervious, uncompacted soil conditions.

b. Project proponents utilizing this site design measure shall have and implement an inspection and maintenance plan to ensure that the pavement infiltration capacity is maintained over time. Pervious pavement shall be maintained (e.g., vacuum swept) at an appropriate frequency to maintain full functionality.

c. Pervious pavement should not be used in areas with medium to heavy vehicular traffic. Parking lots are acceptable.

d. Limit use in potentially high-pollutant loading areas.

e. No erodible areas or area of high sediment generation may drain onto porous and permeable pavements.

f. No liners or other barriers or design elements, such as lime treatment, which would limit infiltration shall be used below pervious pavement and permeable paver sections.

g. In systems with underdrains, sufficient storage below the underdrain shall be provided by increasing the depth of the permeable base such that the design storm runoff volume will infiltrate.

h. Pervious pavement systems should not be used in areas of known soil and/or groundwater contamination without Regional Water Board prior authorization.

i. Pervious pavement systems that lose their infiltration capacity shall be replaced.

3. Crediting - Pervious Pavement Systems

a. Pervious pavement systems may be considered pervious areas when sizing Permanent Stormwater Control Measures to meet the requirements of the section Criteria for Stormwater Treatment, Retention and Peak Flow Control.

b. Stormwater control credit may not be claimed for any runoff directed to pervious pavement systems.

~~F6~~F7.7.4.4 Green Roofs

1. Description – Green Roofs

Green roofs are roofs that are entirely or partially covered with vegetation and soils. Green roofs function as a soil and plant-based filtration feature that removes pollutants through a variety of natural physical, biological, and chemical treatment processes prior to discharge.

2. Design and Maintenance Requirements – Green Roofs

a. Shall be adequately designed by a qualified engineer, including an appropriate assessment of the necessary load reserves.

b. Overflow requirements shall be considered in the design.

c. Roof design shall provide a sufficient soil layer to support healthy plants, ensure soil is secure and will not erode or sluff, and provide adequate drainage for both plant health and high flow bypass.

d. The green roof system planting media shall be sufficiently deep to provide capacity within the pore space of the media for the required runoff volume specified by section Criteria for Stormwater Treatment, Retention and Peak Flow Control.

e. Plants selected shall be suited for the unique shallow soil conditions.

f. Vegetation should be selected to thrive without irrigation but may be irrigated during establishment and during the dry weather to keep vegetation alive.

g. Green roof plant cover density shall be a minimum of 51 percent.

h. Surface mulching material shall be non-floatable in order to prevent clogging of downstream inlets.

i. Project proponents utilizing green roofs shall have and implement a maintenance plan to ensure that minimum plant cover density and functionality is maintained over time.

3. Crediting – Green Roofs

Green roof areas may be considered pervious areas when sizing Permanent Stormwater Control Measures to meet the requirements of section Criteria for Stormwater Treatment, Retention and Peak Flow Control.

~~F6~~F7.7.4.5 Rainwater Capture and Use

1. Description - Rainwater Capture and Use

Rainwater capture and use involves collecting stormwater runoff from impervious surfaces in tanks (e.g., rain barrels and cisterns) that are appropriately sized to allow for use of the collected runoff. Collected runoff may be used for irrigation, greywater systems, and/or other uses. Cisterns can be installed above or below ground depending upon design requirements and site conditions.

2. Design and Maintenance Requirements - Rainwater Capture and Use

a. Project proponents shall demonstrate to the Permittee through water balance calculations how the captured water will be stored and used to meet section Criteria for Stormwater Treatment, Retention and Peak Flow Control.

b. Project proponents utilizing rainwater capture and use must have and implement a maintenance and operations plan to ensure that rainwater capture will continue to meet section Criteria for Stormwater Treatment, Retention and Peak Flow Control.

c. Rain barrels and cisterns must be designed and maintained to prevent mosquito breeding.

d. Rain barrels and cisterns must be opaque, water-tight, vented, completely covered and all openings must be screened.

e. If used for peak flow controls, design calculations must show continuous capacity to control peak flows,or include appropriately sized detention storage in addition to the retention volumes stored.

3. Crediting - Rainwater Capture and Use

For each Drainage Management Area, the volume captured from the design storm may apply to the total volume of stormwater required for control under section Criteria for Stormwater Treatment, Retention and Peak Flow Control.

~~F6~~F7.7.5 Criteria for Stormwater Treatment, Retention and Peak Flow Control

The Permittee shall require all Regulated Projects be designed to treat, retain, and/or capture and use stormwater to meet the following hydraulic design criteria:

1. Water Quality Treatment Requirements

   Regulated Projects creating and/or replacing between 5,000 and 22,000 square feet of impervious surface shall size and design Permanent Stormwater Control Measures to:

   a. Treat the greater of:

      1) The runoff flow rate produced from a rain event equal to at least 0.2 inches per hour intensity;

      2) The runoff flow rate produced from a rain event equal to at least two times the 85th percentile hourly rainfall intensity (in inches per hour), as determined from local hourly rainfall records; or

   b. Retain the volume of runoff specified in section Retention Requirements, below.

2. Retention Requirements

   Regulated Projects creating and/or replacing greater than 22,000 square feet of impervious surface shall retain a volume of stormwater runoff from the drainage management area equivalent to the volume:

   a. Generated by the 85th percentile, 24-hour rainfall event as determined from local rainfall records[2] ; or

   b. Annual runoff required to achieve 80 percent or more retention, determined in accordance with the methodology in section 5 of the California Stormwater Quality Association's Stormwater Best Management Practice Handbook, New Development and Redevelopment (2003), using local rainfall data.

3. Peak Flow Control Requirements

[2] Determined using the formula and volume capture coefficients in Urban Runoff Quality Management, Water Environment Federation Manual of Practice No. 23/ASCE Manual of Practice No. 87 (1998) pages 175-178.

a. Regulated Projects creating greater than 22,000 square feet of impervious surface shall implement peak flow controls to match pre-development peak flow conditions from the 2-year, 24-hour rain event.

b. Peak flow controls may be designed such that they meet the requirements of both the sections Retention Requirements and the Peak Flow Control Requirements, thus not requiring two separate control measures.

~~F6~~F7.7.6 *Selection of Permanent Stormwater Control Measures for Stormwater Retention and Treatment*

The Permittee shall require Regulated Projects to meet stormwater retention and treatment criteria by implementing Permanent Stormwater Control Measures consistent with the below order of prioritization and design criteria. Implementation of lower-priority Permanent Stormwater Control Measures shall be justified in the Post-Construction Stormwater Control Plan. Use of lower priority Permanent Stormwater Control Measure does not exempt a drainage management area from section Target Pollutants of Concern and section Criteria for Stormwater Treatment, Retention, Peak Flow Control, or the need for offsite alternatives if retention and peak flow requirements cannot be met onsite.

1. Bioretention Stormwater Control Measures

Bioretention Stormwater Control Measures retain stormwater runoff using vegetated depressions and soils engineered to capture, treat, and infiltrate stormwater runoff to ensure no discharges to receiving waters occur. Bioretention best management practices implemented to the maximum extent practicable standard are considered the highest priority Permanent Stormwater Control Measure for all Regulated Projects and shall be demonstrated to be infeasible, per subsection Biofiltration under section Flow-Through Stormwater Control Measures, before Biofiltration or Subsurface Infiltration Stormwater Control Measures are considered. Bioretention Stormwater Control Measures also enable school greening for the health and wellbeing of children, as described in Section F2.1.

a. Bioretention Stormwater Control Measure Design Standards

Bioretention best management practices designed to the maximum extent practicable standard shall achieve treatment and/or retention requirements and comply with the following design standards:

1) Bioretention Stormwater Control Measures shall be vegetated and include at least 51 percent vegetation cover at plant maturity. Appropriate plants shall be selected for the specified soil mix and hydrologic conditions.

a) Bioretention Stormwater Control Measures shall be designed without horizontal liners or barriers that interfere with infiltration. A vertical liner

may be used to prevent lateral flow and to separate the native soil from the bioretention soil media and aggregate, and/or an adjacent geotechnical hazard.

b) Bioretention Stormwater Control Measures designed to achieve retention requirements shall be designed without perforated pipes installed at the bottom of the BMP. In locations with low in-situ soil infiltration rates or other conditions limiting infiltration, the Stormwater Control Measure may be designed with an elevated perforated pipe where the retention volume is achieved below the pipe elevation.

c) Bioretention Stormwater Control Measures shall have a planting medium area sufficient to ensure that the design maximum surface loading rate does not exceed 5 inches per hour, based on the flow rates calculated according to the criteria in Criteria for Stormwater Treatment, Retention, and Peak Flow Control.

d) Bioretention Stormwater Control Measures shall have a minimum surface reservoir volume equal to surface area times a depth of 6 inches.

e) Bioretention Stormwater Control Measures shall have a minimum planting medium depth of 18 inches. The planting medium shall sustain a minimum infiltration rate of 5 inches per hour throughout the life of the project and shall maximize runoff retention and pollutant removal.

f) A mixture of sand (60 to 70 percent) meeting the specifications of American Society for Testing and Materials (ASTM) C33 Method and compost (30 to 40 percent) may be used.

g) Bioretention Stormwater Control Measures shall have subsurface drainage/storage (gravel) layer with an area equal to the surface area and having a minimum depth of 12 inches.

h) Bioretention Stormwater Control Measures shall have no compaction of soils beneath the facility.

i) Pesticides shall not be used in bioretention Stormwater Control Measures.

j) Bioretention Stormwater Control Measures shall be designed with a high flow bypass that is not connected to the underdrain. High flow bypasses shall not create erosive conditions.

k) Bioretention Stormwater Control Measure mulch shall be aged, stabilized, non-floating mulch.

2. Flow-Through Stormwater Control Measures

Flow-through Stormwater Control Measures are Stormwater Control Measures that do not fully meet the Bioretention Stormwater Control Measure criteria, but may be used when use of a Bioretention Stormwater Control Measure is demonstrated to be infeasible as described in subsection Biofiltration, below. Flow-through Stormwater Control Measures shall treat all pollutants of concern to the maximum extent practicable and be used in conjunction with another Stormwater Control Measure, a combination of Stormwater Control Measures, or offsite alternative to fully meet stormwater retention and peak flow control requirements, where applicable. Flow-through Stormwater Control Measures shall be selected in the following order of priority.

a. Biofiltration:

   Biofiltration Stormwater Control Measures are designed consistent with the Bioretention Stormwater Control Measure Design Standards, except they are installed with underdrains and where necessary, impermeable liners. Stormwater Control Measures in this category utilize plants and soils to treat stormwater prior to discharge but may not retain the entire volume specified in the section Retention Requirements. These Stormwater Control Measures may be allowed in the circumstances where installation of Bioretention Stormwater Control Measures are infeasible for one of the following four reasons.

   1) Stormwater retention would cause or exacerbate a geotechnical or structural hazard as established by the geotechnical expert for the project.

   2) Stormwater retention may mobilize pollutants in areas of known groundwater contamination.

   3) Stormwater Control Measure placement is only feasible on a plaza or other elevated structure (e.g., flow-through planter).

   4) Other criteria approved by a Regional Water Board Executive Officer.

b. Alternative Flow-Through Stormwater Control Measures

   Alternative Flow-Through Stormwater Control Measures are Stormwater Control Measures that do not meet biofiltration criteria and are often proprietary devices with varying levels of design, treatment capabilities, and performance. Alternative Stormwater Control Measures may be selected, in the following order of priority, in instances where 1) higher-priority Stormwater Control Measures would interfere with historic structures or landscapes and whose original configuration is required to be preserved by local ordinance in order to maintain their historic integrity, or 2) projects that create or replace an acre or less of impervious area, and are located in a designated pedestrian-oriented commercial district (e.g., smart growth

projects), and have at least 85 percent of the entire project site covered by permanent structures:

1) Landscape-based flow-through Stormwater Control Measures that do not meet the Bioretention or Biofiltration Stormwater Control Measure criteria. Example best management practices include tree-box media filter units and modular wetlands.

2) Physical structured Stormwater Control Measures that are not landscape-based. Example Stormwater Control Measures include in-vault media filters, chambered separator units, hydrodynamic separators, physical filters, trash excluders, and trash separators.

3. Subsurface Infiltration Stormwater Control Measures

Subsurface infiltration Stormwater Control Measures are stormwater holding and infiltration systems that rely upon unsaturated soils above the water table to provide stormwater treatment and include, but are not limited to, infiltration trenches, infiltration basins, dry ponds, dry wells, sumps, infiltration galleries, and underground modular storage units. Subsurface Infiltration Stormwater Control Measures may only be permitted to meet retention requirements after Bioretention Stormwater Control Measures are demonstrated infeasible per subsection Biofiltration, under section Flow-Through Stormwater Control Measures. Subsurface infiltration Stormwater Control Measures may only be permitted to meet water quality treatment control requirements after Bioretention and Biofiltration Stormwater Control Measures are demonstrated infeasible.

Subsurface infiltration Stormwater Control Measures shall 1) be technically feasible, 2) fully infiltrate all stormwater within 72 hours, 3) be protected from construction phase discharges and kept offline until the project site is stabilized and prepared for final occupancy, 4) achieve the required treatment, retention, and peak flow requirements, and 5) not degrade groundwater quality. Proposed subsurface infiltration of stormwater shall demonstrate in the Post-Construction Stormwater Control Plan compliance with one of the following:

a. Infiltration of fully treated and bypassed stormwater

Stormwater fully treated to the maximum extent practicable standard and bypassed stormwater exceeding the required treatment volume may be infiltrated subsurface provided it is consistent with the criteria in Table F6.1 and Table F6.2, except compliance with the minimum unsaturated soil thresholds is not required.

b. Infiltration of untreated or partially treated stormwater

Untreated or partially treated stormwater may be infiltrated subsurface provided subsurface infiltration would be consistent with the criteria in Table F6.1 and Table F6.2. As noted in Table F6.1 and Table F6.2, stormwater runoff from “Main Roads” and “Other Commercial/Industrial” sites shall meet target pollutants of concern and water quality treatment control requirements (i.e., subsection Target Pollutants of Concern under section Permanent BMP Selection and Sizing, and subsection Water Quality Treatment Requirements of section Criteria for Stormwater Treatment, Retention and Peak Flow Control) prior to subsurface infiltration.

c. Infiltration does not meet Table F6.1 and Table F6.2 criteria.

If stormwater cannot be fully treated prior to infiltration and Table F6.1 and Table 6.2 criteria cannot be met, then proposals for subsurface infiltration of stormwater are subject to the prior review and approval of the applicable Regional Water Board Executive Officer. Proposals shall demonstrate that 1) Bioretention Stormwater Control Measures are infeasible per sections subsection Biofiltration, under section Flow-Through Stormwater Control Measures, 2) Flow-Through Stormwater Control Measures are infeasible, 3) subsurface infiltration is feasible, and 4) subsurface infiltration will not degrade groundwater. Proposals shall include the following information:

1) Depth between bottom of infiltration system and seasonally high groundwater. The smaller the distance to groundwater, the greater the threat to water quality and potential for decrease in infiltration rates;

2) Depth between bottom of infiltration system and underlying impermeable layers that may restrict infiltration of stormwater;

3) Proximity of the infiltration system to wells and springs used for drinking water supplies. In certain site-specific conditions, infiltrated stormwater may be a threat to drinking water if hydraulically connected and in close proximity to water supply wells;

4) Proximity to onsite wastewater treatment systems (e.g., septic systems, drain fields.) Stormwater infiltration may interfere with the designed operation of onsite wastewater treatment systems and/or mobilize pollutants;

5) Soil type and characteristics underlying the infiltration system. There is a direct relationship between soil pore space and hydraulic conductivity, and potential for stormwater effects on groundwater. Additionally, soil properties affect pollutant treatment capacity, such as the positive effect of soil cation exchange capacity on phosphorous and metals removal;

6) Proximity to areas of known groundwater contamination. Stormwater infiltration may mobilize groundwater contaminants and plumes;

7) Characterization of expected pollutant sources. Site-specific, potential pollutant sources from the contributing area shall be evaluated for threat to groundwater and need for pre-treatment. For instance, areas subject to deicing practices may produce pollutants that threaten groundwater, and areas with copper roofs or galvanized metals may transport dissolved metals;

8) Proximity to building foundations, utilities, and nearby structures. Infiltration of stormwater adjacent these features may interfere with infiltration, compromise building foundations or base material surrounding utilities, or result in seepage of water into subsurface building spaces;

9) Proximity to landforms that may present or exacerbate geotechnical hazards as a result of stormwater infiltration e.g., low-angle geologic formations and jointing, historic and pre-historic landslides, karst terrain;

10) A maintenance plan that ensures sediment and debris do not interfere with the short- and long-term ability of the system to function as designed. Stormwater infiltration systems may be easily clogged by sediment;

11) A groundwater mounding analysis may be required, where appropriate, such as areas where infiltration occurs in close proximity to:

a) Seasonally high groundwater elevation;

b) Contaminated groundwater;

c) Onsite wastewater treatment systems

d) Building, structure, or underground utility;

e) Other infiltration best management practices; and

f) Soils with low saturated hydraulic conductivity.

4. Alternatives to Onsite Retention and Peak Flow Control Requirements

Permittees may allow Regulated Projects to fulfill a portion or all of its retention and/or peak flow requirements at an offsite location in the following two instances.

a. Offsite Offset

The Permittee may allow a Regulated Project to offset retention and/or peak flow requirements at an offsite location only when:

1) Foregoing onsite retention and peak flow control will not result in significant impacts to receiving waters, such as bank erosion and/or channel incision.

2) Opportunities to implement the requirements (per section Criteria for Stormwater Treatment, Retention, and Peak Flow Control) have been maximized onsite and full or partial compliance with the remaining requirements are demonstrated technically infeasible per sections subsection Biofiltration under section Flow-Through Stormwater Control Measures and subsection Subsurface Infiltration Stormwater Control Measures.

3) The offsite offset project provides hydraulically-sized retention and peak flow control (per section Permanent Stormwater Control Measure Selection and Sizing) of stormwater runoff that meets or exceeds the foregone amount from the applicable Regulated Project.

4) Offsite offset project(s) are within the same watershed as the Regulated Project. Offsite offset project sites located outside the watershed have prior approval of the Regional Board Executive Officer.

5) Offsite offset projects shall be completed as soon as practicable and no longer than three years from the date of the applicable Regulated Project's certificate of occupancy unless a longer period is otherwise authorized by the Regional Water Board Executive Officer.

b. Approved Watershed or Regional Plan

1) Watershed or Regional Plans are plans that present a coordinated strategy to mitigate specific development impacts using regional and watershed-scale stormwater control measures. A project or projects from an approved Watershed or Regional Plan may be used to offset the Regulated Project's required retention and/or peak flow requirements. Proposed Watershed or Regional Plans shall be subject to the prior review and approval of the Regional Board Executive Officer and shall include, at a minimum:

2) Demonstration that implementation of projects per the Watershed or Regional Plan will be as effective in meeting the applicable per section Permanent Stormwater Control Measure Selection and Sizing requirements as meeting them on site.

3) Quantitative analysis (e.g., calculations and modeling) used to evaluate offsite compliance.

4) A demonstration that foregoing onsite retention and peak flow control will not result in significant impacts to receiving waters, such as bank erosion and/or channel incision.

5) A consideration of the long-term cumulative impacts of urbanization, including existing and future development.

6) A description of proposed offset project(s). The proposed offset projects may include existing facilities and/or prospective projects.

7) The location of the proposed offset project(s), which must be within the same watershed as the Regulated Project. Offset project sites located outside the watershed are subject to the approval of the Regional Board Executive Officer.

8) Offset projects shall be completed as soon as practicable and no longer than three years from the date of the applicable Regulated Project's certificate of occupancy unless a longer period is otherwise authorized by the Regional Water Board Executive Officer.

Table ~~F6~~F7.1 Minimum Horizontal Setbacks for Subsurface Stormwater Infiltration Systems

Site Use	Drinking Water Supply Wells and Springs	Onsite Wastewater Treatment Systems	Underground Storage Tanks	Known Contamination Site
Single Residence Lot (<10,000 sq. feet)	Exempt from setback	Exempt from setback	Exempt from setback	Exempt from setback
All Other Residential	600[e]	100[g]	Dependent upon depth to water[h]	Regulatory Agency Approval Required if within 1,500 feet
Transportation Corridor[a]—Main Roads[i]	1,500[f]	100[g]	Dependent upon depth to water[h]	Regulatory Agency Approval Required if within 1,500 feet
Transportation Corridor—Minor Roads	1,500[f]	100[g]	Dependent upon depth to water[h]	Regulatory Agency Approval Required if within 1,500 feet
Railroad and Light Rail Corridors	Not Allowed	Not Allowed	Not Allowed	Not Allowed
High Risk Commercial/Industrial[b]	Not Allowed	Not Allowed	Not Allowed	Not Allowed
Other Commercial/Industrial[c,i]	1,500[f]	100[g]	Dependent upon depth to water[h]	Regulatory Agency Approval Required if within 1,500 feet
Know Contamination Sites[d]	Not Allowed	Not Allowed	Not Allowed	Not Allowed

Table ~~F6~~F7.2 Minimum Required Thickness of Unsaturated Soils Below Subsurface Stormwater Infiltration Systems in Feet

Site Use	Low Vadose Zone Treatment Capacity[j]	Medium Vadose Zone Treatment Capacity[k]	High Vadose Zone Treatment Capacity[l]
Single Residence Lot (less than 10,000 square feet)	Exempt from required thickness	Exempt from required thickness	Exempt from required thickness
All Other Residential	50	20	10
Transportation Corridor[a]—Main Roads[i]	75	45	30
Transportation Corridor—Minor Roads	50	20	10
Railroad and Light Rail Corridors	Not Allowed	Not Allowed	Not Allowed
High Risk Commercial/Industrial[b]	Not Allowed	Not Allowed	Not Allowed
Other Commercial/Industrial[c,i]	75	45	30
Know Contamination Sites[d]	Not Allowed	Not Allowed	Not Allowed

Table 1 and 2 Notes

a. Roads with Average Daily Traffic flow of less than 8,000 are considered “Minor Roads” and roads with Average Daily Traffic flow greater than 8,000 are considered “Major Roads.”
b. Sites use under this category includes, but not limited to, high-risk automobile-related activities (i.e., fueling, repair, maintenance, detailing), fueling stations/areas, waste transfer facilities, petroleum processing and storage, chemical processing and storage, dry cleaners, metal plating, finishing, and fabricating, scrap and waste material disposal and recycling facilities, and plastics and synthetics production.
c. Other Commercial/Industrial includes all other commercial and industrial sites not included in the High Risk Commercial/Industrial category (see Note b).

d. Known contamination sites include all open or closed sites with known environmental releases, including the area overlying the associated soil and/or groundwater plumes. Regulatory agencies overseeing contaminated sites include the Regional Water Quality Control Boards, Department of Toxic Substances Control, Environmental Protection Agency, and the applicable County.
e. Based on California Department of Public Health Drinking Water Source Assessment Program fixed radius for Zone A, which is meant to protect wells from viral, microbial and direct chemical contamination (based on a 2-year travel time).
f. Based on California Department of Public Health Drinking Water Source Assessment Program fixed radius for Zone B10, which is meant to protect wells from long term contamination from chemicals (based on a 5- to 10 year travel time).
g. Consistent with Santa Clara County Sewage Disposal Requirements.
h. Setback from active Underground Storage Tanks (USTs) is dependent upon the depth to seasonally high groundwater. The setback is designed to minimize the potential for the groundwater table to come into contact with the UST system. Setbacks are presented in the Table F6.3:

Table ~~F6~~F7.3 Setbacks from Active Underground Storage Tanks

Depth to Groundwater (feet)	Setback from Underground Storage Tank (feet)
0-15	250
Greater than 15	100

i. Target pollutants of concern and water quality treatment control requirements (i.e., per sections Target Pollutants of Concern and Water Quality Treatment Requirements) must be met prior to subsurface infiltration.
j. Low Vadose Zone Treatment Capacities meet all of the following characteristics:
   - Materials with median grain size greater than 4 millimeter to 64 millimeter.
   - Having a sand to silt/clay ratio greater than or equal to 9:1 and percent sand less than percent gravel.
   - Field-tested saturated hydraulic conductivity between 6 inches per hour and 12 inches per hour at the bottom elevation of the proposed best management practices.
   - Materials with CEC of less than or equal to 2 milliequivalents cation exchange capacity per 100 grams dry soils, and a minimum of 0.5 percent organic content.

- Typical geotechnical descriptive words for appropriate soils may include poorly sorted, silty, or muddy gravel; sandy gravel, gravelly sand, or sand and gravel.
- This category includes some alluvium and outwash deposits.

k. Medium Vadose Zone Treatment Capacities meet all of the following characteristics:

- Materials with median grain size 0.25 to 4 millimeter.
- Having a sand to silt/clay ratio from 1:1 to 9:1 and percent sand greater than percent gravel.
- Field-tested saturated hydraulic conductivity between 2.4 inches per hour and 6 inches per hour at the bottom elevation of the proposed best management practices.
- Materials between 2 and 5 milliequivalents cation exchange capacity per 100 g dry soils, and a minimum of 0.5 percent to 1 percent organic content.
- Typical geotechnical descriptive words for appropriate soils may include fine, medium, or coarse sand; sand with interbedded clay and/or silt; and poorly compacted, poorly sorted materials.
- This category includes some alluvium and outwash deposits.

l. High Vadose Zone Treatment Capacities meet all of the following characteristics:

- Materials with median grain size less than 0.125 millimeter.
- Having a sand to silt/clay ratio of less than 1:1 and sand plus gravel less than 50 percent.
- Field-tested saturated hydraulic conductivity below 2.4 inches per hour at the bottom elevation of the proposed best management practices.
- Materials with cation exchange capacity of greater than or equal to 5 milliequivalents cation exchange capacity per 100 grams dry soils, and a minimum of 1 percent organic content, greater than or equal to 18-inch minimum thickness.
- Typical geotechnical descriptive words for appropriate soils may include Lean, fat, or elastic clay; sandy or silty clay; silt; clayey or sandy silt; sandy loam or loamy sand; silt/clay with interbedded sand; well-compacted, and poorly sorted materials.

m. This category includes till, hardpan, caliche, and loess.

~~F6~~F7.8 Operations and Maintenance of Post-Construction Stormwater Control Measures

~~F6~~F7.8.1 Permittee's Operation and Maintenance Plan

The Permittee shall ensure that operation and maintenance plans exist for all Permanent Stormwater Control Measures (Stormwater Control Measures) in its MS4 boundary, including School Offsite Capture Projects pursuant to Section F2.2.1 and School Onsite Capture Projects pursuant to Section F2.2.2. The Permittee's Operation and Maintenance Plan shall:

1. Require regulated project proponents and their successors develop and implement an adequate Operations and Maintenance Plan.
2. Require at least one of the following from all Regulated Project proponents and their successors in control of the project or successors in fee title:
    a. The project proponent's signed statement accepting responsibility for the operation and maintenance of Permanent Stormwater Control Measures until such responsibility is legally transferred to another entity;
    b. Written conditions in the sales or lease agreements or deed for the project that requires the buyer or lessee to assume responsibility for the operation and maintenance of the installed Permanent Stormwater Control Measures (if any) until such responsibility is legally transferred to another entity;
    c. Written text in project deeds, or conditions, covenants and restrictions for multi-unit residential projects that require the homeowners association or, if there is no association, each individual owner to assume responsibility for the operation and maintenance of the installed Permanent Stormwater Control Measures (if any) until such responsibility is legally transferred to another entity; or
    d. Any other legally enforceable agreement or mechanism, such as recordation in the property deed, which assigns the operation and maintenance responsibility for the installed Permanent Stormwater Control Measures (if any) to the project owner(s) or the Permittee.
3. Develop and implement a written plan that describes operation, maintenance, and inspection of all Permittee-owned and/or operated Permanent Stormwater Control Measures.
4. Coordinate with the appropriate mosquito and vector control agency to establish a protocol for notification of installed Permanent Stormwater Control Measures. Before October 1st of every year, the Permittee shall submit a list of Permanent Stormwater Control Measures installed within the reporting year to the local mosquito and vector control agency and the appropriate Regional

Water Board. The Permittee may submit the list of Regulated Projects. This list shall include the facility locations and a brief description of the Permanent Stormwater Control Measures.

5. Submit requests for a Deferred Maintenance Exemption to the appropriate Regional Water Board when the following conditions are met:
   a. The Permanent Stormwater Control Measure responsible party has worked diligently and in good faith with the appropriate state and federal agencies and the Permittee to obtain approvals necessary to complete deferred maintenance activities; and
   b. Approvals are not granted because maintenance would result in significant impacts to waters of the state.

~~F6~~F7.8.2 Maintenance Assessment / Inspection of Stormwater Treatment Facilities.

The Permittee shall ensure that all Regulated Project Permanent Stormwater Control Measures are properly operated and maintained for the life of the projects. The Permittee shall implement an Operations and Maintenance Verification Program (Verification Program) to verify that all Permanent Stormwater Control Measures maintain full functionality. At a minimum, the Verification Program shall include the following elements:

1. Conditions of approval or other legally enforceable agreements or mechanisms for all Regulated Projects that require the granting of site access to all Permittee representatives for the purpose of performing operation and maintenance inspections of the installed Permanent Stormwater Control Measures.
2. A database or equivalent tabular format inventory of all Regulated Projects (public and private) that have installed Permanent Stormwater Control Measures. This inventory shall include the following information for each Regulated Project:
   a. Name and address of the Regulated Project;
   b. Specific description of the location (or a map showing the location) of the installed Permanent Stormwater Control Measures (if any);
   c. Installation date(s) of the Permanent Stormwater Control Measures;
   d. Description of the type and size of the installed Permanent Stormwater Control Measures;
   e. Responsible operator(s) of Permanent Stormwater Control Measures;
   f. Dates and findings of Permittee inspections (routine and follow-up) of the Permanent Stormwater Control Measures; and

g. Corrective and enforcement actions taken.

3. A process for Permittee verification of the relative maintenance condition of Permanent Stormwater Control Measures. Maintenance condition shall be determined using one of the following options:

   a. Self-Certification Program – The Permittee shall implement a program that includes:

      1) Requirement that authorized parties demonstrate proper maintenance and operations by submitting self-certification annual reports that include:

         a) Field observations to determine the effectiveness of the Permanent Stormwater Control Measures in removing pollutants of concern from stormwater runoff and/or reducing hydromodification impacts as designed.

         b) Long-term plan for conducting regular maintenance of Permanent Stormwater Control Measures, including vegetation. The long-term plan shall identify the frequency of regular maintenance activities.

      2) An inventory and map of existing Permanent Stormwater Control Measures, in GIS if available.

      3) Permittee assessments of the self-certification program annual reports. Assessment shall include a ranking of Permanent Stormwater Control Measures and verification that the control measures are operating to remove pollutants as designed. Regional Permanent Stormwater Control Measures should receive higher priority than lot-scale Permanent Stormwater Control Measures, and Permanent Stormwater Control Measures designed to remove pollutants for which receiving water is impaired should receive priority attention over other Permanent Stormwater Control Measures.

      4) Permittee onsite inspections of at least one-half of all Permanent Stormwater Control Measures every five years. The inspections shall:

         a) Identify whether the Permanent Stormwater Control Measure is functioning as designed;

         b) Include a review of the owner's operations and maintenance actions and documentation to verify conformance with the Operation and Maintenance Plan;

         c) Identify maintenance actions needed and timeline for their implementation; and

d) Determine whether self-certification reports reflect actual site conditions.

b. Permittee-led Inspection Program – Permittees shall develop and implement an annual inspection program to verify Permanent Stormwater Control Measures are properly maintained and operated. The inspection program shall include the following:

1) An inventory and map of existing Permanent Stormwater Control Measures, in GIS if available.

2) Permittee inspection of all Permanent Stormwater Control Measures, at a minimum of once every five years, or more frequently as appropriate based on inspection results. Inspections shall include:

a) Field inspection of the facility;

b) Identify whether the Permanent Stormwater Control Measure is functioning as designed;

c) Identify maintenance actions needed and timeline for their implementation;

d) Review of the owner's operations and maintenance actions and documentation to verify conformance with the Operation and Maintenance Plan; and

e) Documentation of the inspection.

~~F6~~F7.8.3 Permanent Stormwater Control Measure Field Verification

The Permittee shall establish and implement a mechanism (a checklist or other tools) to verify that Permanent Stormwater Control Measures are constructed as designed and approved in accordance with these Permanent Stormwater Management Requirements.

1. Prior to temporary and final occupancy of each Regulated Project, the Permittee shall field verify that the Runoff Reduction, treatment, retention, and peak flow controls have been implemented in accordance with these Post-Construction Requirements. The Permittee may accept third-party verification of Permanent Stormwater Control Measures conducted and endorsed by a registered professional engineer, geologist, architect and/or landscape architect.

~~F6~~F7.9 Planning and Development Review Process

1. The Permittee shall incorporate into their planning and project initiation process standard procedures that require consideration of potential stormwater quality impacts early in the planning process of any project that meets the criteria of this

Order for new development and redevelopment projects. Each Permittee shall clearly demonstrate the developer and Permittee considered stormwater quality site issues before the facilities/projects reached final design. The Permittee must demonstrate review in the conceptual design of stormwater quality protection at the earliest possible stage in the project planning, initiation, and similar discretionary and/or ministerial approval process:

2. The Permittee shall establish a plan review and approval process for regulated projects that includes an organizational structure for communication, coordination, and delineated authority between and among departments that have jurisdiction over project review, plan approval, and project construction to ensure all required post-construction measures are designed to meet this order.
3. For each Regulated Project subject to the Low Impact Development requirements, the Permittee shall develop a Post-Construction Stormwater Control Plan that includes the following and other necessary information to show how the proposed project will comply with the requirements.
    a. Project Name, application number, and location including address and assessor's parcel number.
    b. Name of Applicant.
    c. Project Phase number (if project is being constructed in phases).
    d. Project Type (e.g., commercial, industrial, multiunit residential, mixed-use, public), and description.
    e. Total project site area.
    f. Total new and/or replaced impervious surface area.
    g. Summary of Site Assessment.
    h. Pre-and post-development Drainage Management Areas.
    i. Summary of Permanent Stormwater Control Measures used.
    j. Justification wherever 1) lower-priority Permanent Stormwater Control Measures are selected due to infeasibility of higher priority Permanent Stormwater Control Measures and 2) offsite offset or Watershed Plan projects are used to meet retention and peak flow requirements. The justification(s) shall cite relevant portions of the Order allowing selection of lower priority Permanent Stormwater Control Measures and allowance of the offsite projects.
    k. Summary of Source Controls, Runoff Reduction Measures, and Permanent Stormwater Control Measures by Drainage Management Area, as well as for the entire site.

l. Supporting calculations that document proper design and sizing of runoff reduction measures and stormwater control measures used to comply with the applicable requirements.

4. The Permittee shall not grant approval for construction of impervious surfaces, until the Post-Construction Stormwater Control Plan for the Regulated Project sufficiently demonstrates the Regulated Project design meets the Low Impact Development Design Requirements.

5. New Permittees shall review their planning and permitting process to assess any gaps or impediments impacting effective implementation of these post-construction requirements specified in section Planning and Development Review Process, and where these are found to exist, seek solutions to promote implementation of these requirements within the context of public safety and community goals for land use.

   In Years 1-3 of their enrollment under this Order, New Permittees shall conduct the review using an existing guide or template already developed for MS4s (such as the Municipal Regulatory Update Assistance Program (http://www.casqa.org/LIDDemo/LIDTraining/tabid/246/Default.aspx)). By the fourth year of their enrollment under this Order, any changes to the planning and permitting process will be completed to effectively administer these provisions. Priority shall be placed on review of the landscape code (code detailing landscaping requirements and considerations which should be implemented to protect environmental quality), with the following implementation level:

   a. Within the first year of their enrollment under this Order, the New Permittees shall conduct an analysis of the landscape code to correct gaps and impediments impacting effective implementation of post-construction requirements.

   b. Within the second year of their enrollment under this Order, New Permittees shall complete any changes to the landscape code to effectively administer post-construction requirements.

~~F6~~F7.10 Alternative Post-Construction Stormwater Management Program

1. A Permittee may propose alternative post-construction measures in lieu of some or all of section Post-Construction Stormwater Management Program requirements for multiple benefit projects.

2. Multiple Benefit Projects

   a. Multiple benefit projects include projects that address any of the following, in addition to water quality:

      (a) Water supply;
      (b) Flood control;
      (c) Habitat enhancement;

(d) Open space preservation;
(e) Recreation; and
(f) Climate change.

b. Multiple benefit projects may be applied at various scales including project site, municipal or sub-watershed level.

c. Multiple benefit projects may include, but are not limited to, projects developed under Watershed Improvement Plans (Water Code section 16100 et seq.), Stormwater Resource Plans, Integrated Regional Water Management Plan implementation and green infrastructure projects.

3. Alternative post-construction measures for multiple benefit projects must be equally or more protective of water quality than equivalent requirements it is replacing.

4. Alternative post-construction measures for multiple benefit projects, as described above, may be implemented following approval by the Regional Water Board or the Executive Office after an opportunity for public comment, if the Regional Water Board or Executive Officer finds that the alternative measures are consistent with the maximum extent practicable standard.

~~F7~~F8. TMDL DEMONSTRATION OF COMPLIANCE AND TIME SCHEDULE ORDERS

Attachment G contains a list of TMDL-specific responsible Permittees and implementation, monitoring, and reporting requirements, which are applicable to identified responsible Permittees. The sections TMDL Demonstration of Compliance and the Request for Time Schedule Order, below, provide the reporting requirements for TMDL demonstration of compliance.

~~F7~~F8.1 TMDL Demonstration of Compliance Report

For purposes of this section, the wasteload allocations specified in the applicable TMDLs (as identified in the Fact Sheet) are incorporated by reference. Permittees shall submit a TMDL Demonstration of Compliance report, as follows:

1. Submit to SMARTS and the applicable Regional Water Board Executive Officer for review and consideration of approval.

2. Prior to the deadline to comply with the final wasteload allocation, a Permittee may demonstrate compliance with the applicable TMDL wasteload allocations, if the permittee reports and substantiates that it is timely implementing all best management practices, maintenance, and other requirements specified in Attachment G for that TMDL. Alternatively, the Permittee may make a demonstration of compliance in accordance with subsection F7.1.3.

3. On or after the deadline to attain the final wasteload allocation, a Permittee may demonstrate compliance with the applicable TMDL wasteload allocations if the Permittee meets one or more of the criteria in subsections (a) through (g), as follows:

   a. *Receiving Water Quality Monitoring.* Receiving water monitoring and analysis by the Permittee or other responsible parties under the TMDL, as approved by the Regional Water Board or its designee, demonstrates attainment of the applicable receiving water limitation in the waterbody as determined at the TMDL monitoring attainment locations or as determined at or immediately downstream of the Permittee's discharge; or

   b. *Loads from Other Sources.* Receiving water monitoring does not demonstrate attainment of the applicable receiving water limitation in the waterbody, but the Permittee demonstrates, through an approach approved by the Regional Water Board or its designee, that exceedances of the receiving water limitations for the receiving water are due to loads from other sources and pollutant loads from the Permittee are not causing or contributing to the exceedances; or

   c. *Concentrations.* Where the wasteload allocation is expressed as a concentration, sampling of the Permittee's discharge, as approved by the Regional Water Board or its designee, indicates that the discharge has attained the applicable wasteload; or

   d. *Mass-Based Wasteload.* Where a mass-based wasteload has been allocated to an individual or jointly to a group or is expressed as a percent reduction in load, the Permittee demonstrates, through an approach approved by the Regional Water Board or its designee, that the Permittee's discharge is attaining the individual or joint allocation or the percent reduction; or

   e. *Allowable Exceedance Days.* Where a wasteload allocation is expressed as the number of allowable exceedance days, the Permittee demonstrates, through an approach approved by the Regional Water Board or its designee, that the Permittee's discharge conforms to the allowable exceedance days; or

   f. *No Discharge.* The Permittee demonstrates, in a manner approved by the Regional Water Board or its designee, that no discharges, either directly or indirectly, from the permittee's MS4 to the applicable water body occurred during the relevant time period; or

g. *Other Factors.* The Permittee demonstrates the attainment of the wasteload allocation through other factors as described by the specific TMDL(s)[3] and as approved by the Regional Water Board or its designee.

~~F7~~F8.2 Request for Time Schedule Order

In some cases, Attachment G includes dates that fall outside the term of this Order. Compliance deadlines for wasteload allocations and other permit requirements that exceed the term of this Order become enforceable in the event that this Order is administratively extended. Some wasteload allocation compliance deadlines have already passed and are enforceable on the Effective Date of this Order.

1. Requests for Extensions and Time Schedule Orders

   Where a final deadline to attain a wasteload allocation has passed and the Permittee has not demonstrated compliance, the Permittee may seek a time schedule order pursuant to Water Code section 13300 from the Regional Water Board. Permittees may request a time schedule order individually or together with other Permittees subject to the TMDL. Permittees may also request time schedule orders where the Permittee has not timely complied with a best management practice-based water quality based effluent limits or other TMDL-related permit requirement.

   A request to the applicable Regional Water Board for a time schedule order shall include the following information:

   a. Any available data demonstrating the current quality of the MS4 discharge(s) in terms of the applicable wasteload allocation units (i.e., concentration or load) of the target pollutant(s) to the receiving waters subject to the TMDL;

   b. A description and chronology of structural controls and source control efforts carried out by the permittee since the effective date of the TMDL to reduce the pollutant load in the MS4 discharges to the receiving waters subject to the TMDL;

[3] For example, the TMDL for Sacramento and San Joaquin Delta - Diazinon and Chlorpyrifos states “In determining compliance with the wasteload allocations, the Regional Water Board will consider any data or information submitted by the discharger regarding diazinon and chlorpyrifos inputs from sources outside of the jurisdiction of the permitted discharger, including any diazinon and chlorpyrifos present in precipitation and other available relevant information, and any applicable provisions In the discharger’s NPDES permit requiring the discharger to reduce the discharge of pollutants to the maximum extent possible.” Resolution No. R5-2006-0061, Attachment 1, #11 Page 4.

c. Justification of the need for additional time to achieve the requirements. For School Permittees that have selected Compliance Option 1 or Compliance Option 2 for a school facility subject to the TMDL extension request, justifications for additional time must include, but is not limited to, an explanation why the School Permittee has not been able to implement a School Offsite Capture Project or School Onsite Capture Project, respectively, within the timeframe of the TMDL requirements. For School Permittees that have selected Compliance Option 3 for a school facility subject to the TMDL extension request, justifications for additional time must include, but is not limited to, an explanation why the School Permittee did not select Compliance Option 1 or Compliance Option 2 at the school facility;

d. The specific actions the Permittee will take in order to meet the TMDL requirements and a time schedule of interim and final deadlines proposed to implement those actions, including but not limited to developing a School Offsite Capture Project as described in Section F2.2.1 or a School Onsite Capture Project as described in Section F2.2.2. The actions will reflect the requirements specified for the TMDL in Attachment G; and

e. A demonstration that the time schedule requested is as short as possible, taking into account the technological, operational, and economic factors that affect the design, development, and implementation of the control measures that are necessary to comply with the TMDL requirements.

~~F8~~F9. WATER QUALITY MONITORING

~~F8~~F9.1 Regional Monitoring Programs

1. Upon approval by the applicable Regional Water Board Executive Officer, Permittees may participate in a Regional Water Board approved monitoring program (e.g., Delta Monitoring Program, San Francisco Bay Regional Monitoring Program) in lieu of all or a portion of the Water Quality Monitoring section.
2. As part of its approval, the applicable Regional Water Board Executive Officer shall determine that the Regional Water board approved monitoring program adequately substitutes for the requirements of the Water Quality Monitoring section being substituted for by the approved monitoring program.
3. All Permittees participating in an approved regional monitoring program at the time of the ~~Order~~ Effective Date of this Order shall consult with the Regional Water Board within one year of the Effective Date of this~~e~~ Order~~permit~~ to assess which elements of this Order's Water Quality Monitoring section are adequately addressed by the approved monitoring program and which elements the Permittees should continue to implement.

4. Permittees participating in a regional monitoring program shall complete a memorandum of agreement to participate in the program within one year of the Effective date of this Order or the Permittee's Effective Date of Designation, whichever is later.
5. Where a regional monitoring group has initiated plans before the ~~e~~Effective D~~d~~ate of this Order to conduct monitoring that achieves compliance the Water Quality Monitoring section, the Permittee may request the Executive Officer of the applicable Regional Board tailor compliance dates in this permit to synchronize with the monitoring program. Additionally, existing regional monitoring efforts shall be reviewed and approved by a Regional Water Board Executive Officer.
6. Where a Permittee receives grant funding to conduct monitoring that achieves compliance with the Water Quality Monitoring section, the Permittee may request the Regional Water Board Executive Officer tailor compliance dates in this permit to synchronize with the monitoring program.

~~F8~~F9.2 Areas of Special Biological Significance Monitoring

All Permittees that discharge to an ASBS and are covered by an Ocean Plan exception shall comply with the monitoring requirements described in the terms, prohibitions, and special conditions in Attachment I.

~~F8~~F9.3 TMDL Monitoring

Permittees shall implement monitoring requirements assigned to them in Attachment G.

~~F8~~F9.4 303(d) Monitoring

1. All Permittees that discharge to waterbodies listed as impaired on the 303(d) list at the time of adoption of this Order (see the State Water Board's Surface Water Quality Assessment web page at https://www.waterboards.ca.gov/water_issues/programs/water_quality_assessment/#impaired) where urban runoff is listed as the source, shall consult with the Regional Water Board within one year of the E~~e~~ffective ~~d~~Date of thi~~s~~e ~~permit~~ Order to assess whether new or continued monitoring is necessary and if so, determine the monitoring study design and a monitoring implementation schedule. Permittees shall implement monitoring of 303(d) impaired water bodies as specified by the Regional Water Board Executive Officer. Permittees are encouraged to consider participation in regional monitoring efforts to satisfy monitoring requirements for 303(d) impaired water bodies.
2. Within 2 years of the Effective Date of this Order or the Permittee's Effective Date of D~~d~~esignation, whichever is later, the Permittee shall complete and have

available a report (50 page maximum) that includes a summary of baseline data collections and discussion of monitoring program results.

3. Within 5 years of the Effective Date of this Order or the Permittee's Effective Date of ~~d~~Designation, whichever is later, the Permittee shall complete and have available a report (50 page maximum) that includes a comparison of data collection to baseline data, and discussion of monitoring program results.
4. At a minimum, the monitoring reports shall include the following information:
   - The purpose of the monitoring, contextual background and a description of the study design and rationale.
   - Sampling site(s) locations, including latitude and longitude coordinates, water body name and water body segment if applicable. Sampling design, including sampling protocol, time of year, sampling frequency and length of sampling.
   - Methods used for sample collection: list methods used for sample collection, sample or data collection identification, collection date, and media if applicable.
   - Results of data collection, including concentration detected, measurement units, and detection limits if applicable.
   - Quantifiable assessment analysis and interpretation of data for each monitoring parameter or other data type.
   - Comparison to reference sites (if applicable), guidelines or targets
   - Discussion of whether data collected addresses the objective(s) or question(s) in the study plan.
   - Quantifiable discussion of program/study pollutant reduction effectiveness.

~~F8~~F9.5 Additional Monitoring

The State Water Board or the Regional Water Boards may order additional monitoring as necessary to demonstrate compliance with this Order per Water Code section 13383.

~~F8~~F9.6 Quality Assurance Project Plans

For all monitoring, and where otherwise applicable, the Permittee shall prepare, maintain, and implement a Quality Assurance Project Plan in accordance with the Surface Water Ambient Monitoring Program (SWAMP). All monitoring samples shall be collected and analyzed according to the Program Quality Assurance Project Plan developed for the purpose of compliance with this Order. Information on SWAMP and quality assurance guidance is available on the SWAMP Quality Assurance web page at

https://www.waterboards.ca.gov/water_issues/programs/swamp/quality_assurance.html.

~~F8~~F9.7 Monitoring Plans and Reports

1. Before conducting any new water quality monitoring or making changes to any existing water quality monitoring programs already in place, the Permittee shall complete and have available a monitoring plan that includes a summary of any available baseline data collections or monitoring program results.

   At a minimum, the monitoring plan shall include the following information:

   - The purpose of the monitoring, contextual background and a description of the study design and rationale.
   - Sampling site(s) locations, including latitude and longitude coordinates, water body name and water body segment if applicable.
   - Sampling design, including sampling protocol, time of year, sampling frequency and length of sampling.
   - Methods to be used for sample collection.

2. Within 5 years of the Effective Date of this Order or the Permittee's Effective Date of D~~d~~esignation, whichever is later, the Permittee shall complete and have available a monitoring report that includes a comparison of data collection to baseline data, and discussion of monitoring program results.

   At a minimum, the monitoring report shall include the following information:

   - The purpose of the monitoring, contextual background and a description of the study design and rationale.
   - Sampling site(s) locations, including latitude and longitude coordinates, water body name and water body segment if applicable. Sampling design, including sampling protocol, time of year, sampling frequency and length of sampling.
   - Methods used for sample collection.
   - Sample or data collection identification, collection date, and media if applicable.
   - Results of data collection, including concentration detected, measurement units, and detection limits if applicable.
   - Quantifiable assessment analysis and interpretation of data for each monitoring parameter or other data type.
   - Comparison to reference sites (if applicable), guidelines or targets.
   - Discussion of whether data collected addresses the objective(s) or question(s) in the study plan.

- Quantifiable discussion of program/study pollutant reduction effectiveness.

~~F8~~F9.8 Data Submittal

Water quality data shall be uploaded to SMARTS and must conform to "CEDEN Minimum Data Templates" format. CEDEN Minimum Data Templates are available at http://ceden.org/.

~~F9~~F10. PROGRAM EFFECTIVENESS ASSESSMENT AND IMPROVEMENT

~~F9~~F10.1 Program Effectiveness Assessment and Improvement Plan

1. Within 2 years of the Effective Date of this Order or the Permittee's Effective Date of D~~d~~esignation, whichever is later, New Permittees shall develop and implement a Program Effectiveness Assessment and Improvement Plan that tracks annual and long-term effectiveness of the stormwater program. Within 1 year~~s~~ of the Effective Date of this Order~~-~~, Renewal Permittees shall update their existing Program Effectiveness and Assessment and Improvement Plans to be compliant with this section of this Order.
2. Permittees that have a Program Effectiveness Assessment and Improvement Plan, or equivalent, approved by the applicable Regional Water Board, or that have a schedule approved by the applicable Regional Water Board to develop and implement such a Plan, shall update the approved Plan or schedule as necessary to comply with the section Program Effectiveness Assessment and Improvement Plan.
3. The Program Effectiveness Assessment and Improvement Plan shall include the following elements, at a minimum as applicable:
   a. Description of the strategy used to gauge the effectiveness of prioritized BMPs and program implementation as a whole. Prioritized BMPs include BMPs implemented based on pollutants of concern. Where pollutants of concern are unidentified, prioritized BMPs are based on common pollutants of concern (i.e., sediment, bacteria, trash, nutrients).
   b. How permittee tracks short and long-term progress of the storm water program at implementation of storm water program elements
   c. Identification and targeting of Target Audience(s)
4. Annually after development of the Program Effectiveness Assessment and Improvement Plan, the Permittee shall assess progress towards implementing the Program Effectiveness Assessment and present previous years short and long-term progress of the storm water program through an effectiveness assessment report. The effectiveness assessment report shall incorporate assessments of BMP performance to improve effectiveness. The effectiveness assessments shall

build upon each other from one year to the next and shall identify modifications to the program the Permittee must undertake to improve effectiveness.

~~F9~~F10.2 Stormwater Program Modifications

1. Within the fifth year of enrollment in this Order, the Permittee shall modify best management practices or the entire program to improve compliance with conditions of this Order and improve program effectiveness at reducing pollutant loads, achieving the maximum extent practicable standard, and protecting water quality. The Permittee shall identify and summarize best management practices and program modifications identified in priority program areas. Modifications shall include:
   a. Improving upon best management practices that are underperforming;
   b. Continuing and expanding upon best management practices that proved to be effective, including identifying new best management practices or modifications to existing best management practices designed to increase pollutant load reductions;
   c. Discontinuing best management practices that may no longer be productive and replacing with more effective best management practices; and
   d. Shifting priorities to make more effective use of resources.
2. The Permittee shall use information gained through the program effectiveness assessment and MS4 discharge and receiving water monitoring to identify priority areas for program improvement.

~~F10~~F11. REPORTING PROGRAM

~~F10~~F11.1 Annual Report and Annual Reporting Requirements

1. By October 15 of each year, the Permittee shall use State Water Board SMARTS to submit a summary of the past year activities for each program element and certify compliance with all requirements of this Order. If a Permittee is unable to certify compliance with a requirement, the Permittee shall submit in SMARTS the reason for failure to comply, a description and schedule of tasks necessary to achieve compliance, and an estimated date for achieving full compliance.
2. Permittees shall complete and retain all Annual Report information on the previous fiscal year beginning July 1 and ending June 30 according to the Annual Reporting and Annual Reporting Requirements. The Permittee shall retain documentation as necessary to support their Annual Report. The Permittee shall make this supporting information available during normal business hours, unless otherwise agreed to by the applicable Regional Water Board's Executive Officer.

3. The Permittee shall submit when requested by the Executive Officer of the applicable Regional Water Board a detailed written online Annual Report or in-person presentation of the Annual Report that addresses the activities described in Attachment B. The detailed Annual Report shall clearly refer to the requirements of this Order and describe in quantifiable terms, the status of activities undertaken to comply with each requirement.
4. Permittees involved in regional programs may coordinate with the members to identify reporting responsibility. The one report submitted on behalf of Permittees involved in a regional program shall include a summary of the past year activities for each program element and certification of compliance with all requirements of this Order for each of the Permittees in the regional program.

~~F10~~F11.2. Program Management Reporting

~~F10~~F11.2.1 One-Time Per Permit Term Reporting Items

1. In Year 1 for Renewal Permittees and Year 2 for New Permittees, the Permittee shall submit a certification statement per Certification section.

~~F10~~F11.2.2 Annual Reporting Items

1. Report the total number of actions taken within each category of enforcement (verbal warnings, written notices, escalated enforcement actions) and of those identify the following:
   - Number of corrective actions resolved within permitted time frame; and
   - Number of cleanup and abatement actions performed or contracted by the Permittee for discharges not generated by Permittee.
2. Submit a list of chronic violators including identification information.
3. Submit a list of NPDES referrals including documentation information per section NPDES Permit Referrals.

~~F10~~F11.~~3~~2 Public Education and Outreach Reporting

~~F10~~F11.~~3~~2.1 Public Education and Outreach One-Time per Permit Term Reporting Items

1. In Year 1, report the compliance option selected per Compliance Options section.
2. In Year 1, submit any necessary documentation for collaborative options per Compliance Options section, item 2.
3. In Year 2, submit the public education strategy developed per the Development and Implementation section.

4. In Year 2, list the years that surveys will be conducted per the Development and Implementation section, item 3.

~~F10~~F11.~~2~~3.2 Public Education and Outreach Annual reporting items

Starting in Year 2 submit a summary of all actions completed per the public education strategy and identify which are completed independently or by the group. At a minimum include:

1. List and description of public education and public participation and involvement activities conducted.
2. Total annual expenditure/cost-share to conduct the program.
3. Submit annual reports as required by the Community Based Social Marketing program if required by the Regional Board.

~~F10~~F11.~~4~~3 Illicit Discharge Detection and Elimination Program Reporting

~~F10~~F11.~~4~~3.1 Illicit Discharge Detection and Elimination Reporting One-time Per Permit Term Reporting Items

1. In Year 1, submit Illicit Discharge and Spill Response Plan per the Illicit Discharge and Spill Response section.
2. In Year 1, submit procedures for Illicit Discharge and Spill Response section, item 2.
3. In Year 1, submit Dry Weather Flow Investigation and Sampling procedures per the Dry Weather Flow Investigation and Sampling section.
4. In Year 1, submit procedures for Potential Illicit Discharge Source/Facility Inspections per the Potential Illicit Discharge Source/Facility Inspections section, item 1.
5. In Year 2, submit Illicit Discharge Source Areas map per the Illicit Discharge Source Areas section, item 2.

~~F10~~F11.~~3~~4.2 Illicit Discharge Detection and Elimination Annual Reporting Items

1. Report number of complaints and notifications of illicit discharges and spills.
2. Report findings of any dry weather flow investigations.
3. Beginning in Year 3, submit updated Illicit Discharge Source/Facility Inventory per Potential Illicit Discharge Source/Facility Inventory section.
4. Beginning in Year 2, submit documentation of the past year's staff training events including dates and locations of the training and list of staff trained per the Illicit Discharge Detection and Elimination Staff Training section.

~~F10~~F11.~~5~~4 Pollution Prevention and Good Housekeeping Program Reporting

~~F10~~F11.~~5~~4.1 One-time per Permit Term Reporting Items for the Pollution Prevention and Good Housekeeping Program

1. In Year 1, submit the map of permittee owned and operated facilities per the Map of Permittee-Owned and Operated Facilities section.
2. In Year 1, submit a copy of the initial inspection and assessment procedures per the Identification of Pollutant Hotspots section.
3. In Year 1, submit the documentation of municipal Operation and Maintenance activities and their corresponding best management practices as identified in the Permittee Operations and Maintenance Activities section.
4. In Year 2, submit the initial Asset Inventory per the Stormwater Asset Management Inventory section. Annually thereafter submit updated inventory showing progress towards populating the asset inventory.
5. In Year 1, and annually as changes are made, submit the updated MS4 System Map per the MS4 System Map section.
6. In year 2, and annually as changes are made, submit the Routine Asset Maintenance Plan per the Asset Maintenance and Improvement Planning section, item 1.
7. In Year 5, and annually thereafter, submit the Long-Term Asset Operation and Improvement Plan per the Asset Maintenance and Improvement Planning Section, item 2.

~~F10~~F11.~~5~~4.2 Annual Reporting Items for the Pollution Prevention and Good Housekeeping Program

1. Beginning in Year 2 submit updated asset inventory and map per the Stormwater Asset Management Inventory and the MS4 System Map sections.
2. Report dates, content, and staff roster of staff training conducted per the Pollution Prevention and Good Housekeeping Staff Training section.

~~F10~~F11.~~6~~5 Construction Site Stormwater Runoff Program Reporting

~~F10~~F11.~~6~~5.1 One-time per permit term reporting items

In Year 1, upload the adopted ordinance that complies with Order and errata sheet as necessary citing changes or added language.

~~F10~~F11.~~6~~5.2 Annual reporting items

1. Inventory and Tracking

a. Submit an updated Regulated Construction Project inventory.

b. Number of Priority Regulated Construction Projects.

c. Number of Non-Priority Regulated Construction Projects.

2. Construction Site Inspection and Enforcement

a. Number of inspections performed.

b. Number of inspections leading to enforcement within each category below:

- Written notices.
- Escalated enforcement actions by category (citations/fines, plan review or other authorization withheld, stop work orders).

3. Permittee Construction Staff Training

List staff certified as Qualified Stormwater Pollution Prevention Plan Developer (QSD) and Qualified Stormwater Pollution Prevention Plan Practitioner (QSP).

4. Construction Site Operator Outreach and Education

Submit link to stormwater website containing materials used for outreach and education.

~~F10~~F11.~~7~~6 Post-Construction Program Reporting

~~F10~~F11.~~7~~6.1 One-time per permit term reporting items

1. In Year 2 - Report/Verify mechanism for requiring these post-construction requirements (Upload a copy of the Legal Authority).
2. In Year 1 – Provide list of all projects approved prior to this permit term and not subject to these Post-Construction requirements.
3. In Year 1 submit policy and flowchart for project approval coordination per Section F6.3.5.

~~F10~~F11.~~7~~6.2 Annual reporting items

1. Small Projects

1. Number of projects that have received approval.

2. Regulated Projects

For each Regulated Project approved during the reporting period, the following information shall be reported electronically in tabular form:

1. Project Name, Location
2. Project Type (e.g., commercial, residential, mixed use, industrial, recreational)
3. Project Watershed

4. Total project site area and total area of land disturbed
5. Total new impervious surface area and total replaced impervious surface area.
6. Total pre-project impervious surface area and total post-project impervious surface area
7. Discretionary or Ministerial project approval
8. Status of project (i.e., initial application submittal, tentative and final approval, stormwater control plan, construction commenced (y/n), construction completed.
9. Specific runoff reduction measures used.
10. Are peak flow controls required per section F6.7.5.3? (Y/N)
11. Post-construction stormwater control systems installed onsite, at a shared stormwater treatment facility, at an offsite location, and/or in-lieu fee program.
12. Post-Construction Operation and Maintenance responsible party
13. Post-construction Operation and Maintenance Plan provided (Y/N)?
14. Stormwater Retention and Treatment sizing criteria used (i.e., flow or volume-based)
15. Date of as built field verification

3. Operations and Maintenance:
    1. Total Number of sites with installed stormwater control measures.
    2. Number of permittee-led inspections performed.
4. Post-Construction Stormwater Control Measure Field Verification and Long-Term Maintenance Assessment
    1. Field verification of Permanent Stormwater Control Measures

    a. Number of projects verified by Permittee staff.
    b. Number of projects verified by a third party.

~~F10~~F11.~~8~~7 Total Maximum Daily Loads Compliance Requirements Reporting

The Permittee shall complete and report the status of their implementation of the specific TMDL implementation requirements that have been incorporated into the permit with each Annual Report via SMARTS. Reporting on TMDL implementation shall include the following information:

1. A description of best management practices implemented, including types, number, and locations; and
2. All supplemental information and reports required under the specific TMDL implementation requirements in Attachment G; and

3. An assessment of the effectiveness of implemented best management practices in progressing towards attainment of wasteload allocations within the TMDLs' specified timeframes; and
4. All monitoring data, including a statistical analysis of the data to assess progress towards attainment of wasteload allocations within the TMDLs' specified timeframes; and
5. Based on results of the effectiveness assessment and monitoring, a description of the additional best management practices that will be implemented to attain wasteload allocations within the TMDLs specified timeframes.

~~F10~~F11.~~9~~8 Water Quality Monitoring Reporting

~~F10~~F11.~~9~~8.1 One-time per permit term reporting items

1. In Year 1, Permittees participating in a regional monitoring program shall upload statement of commitment to that program per the requirements in the Regional Monitoring Programs section.
2. In Year 1, Permittees conducting monitoring shall submit a monitoring plan per the requirements in the Monitoring Plans and Reports section, item 1.
3. In Year 5, Permittees conducting monitoring shall submit a monitoring report per the requirements in the Monitoring Plans and Reports section, item 2.

~~F10~~F11.~~9~~8.2 Annual reporting items

In Year 2, and annually thereafter, Permittees conducting monitoring shall submit a report of the results of monitoring activities for the reporting year.

~~F10~~F11.10~~9~~ Program Effectiveness Assessment and Improvement Reporting

~~F10~~F11.10~~9~~.1 One-time per permit term reporting items

1. In Year 2 submit the Program Effectiveness Assessment and Improvement Plan.
2. In Year 5 submit an analysis of the effectiveness of modifications made at improving best management practice or program effectiveness.
3. In Year 5 submit the list of best management practice or program modifications the Permittee will make for priority program areas as specified in the Stormwater Program Modifications section, item 1, including identification of priority program areas and the schedule the Permittee will follow to complete identified modifications during the next permit term.

~~F10~~F11.~~9~~10.2 Annual reporting items

Beginning in Year 3, describe implementation of the Program Effectiveness Assessment and Improvement Plan. Summarize data obtained through quantitative best management practice performance assessments and the short and long-term progress of the stormwater program and provide an analysis of the data to improve program effectiveness, to achieve the Maximum Extent Practicable standard, and protect water quality.