

Appendix N: Glossary of Key Terms

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Adaptive management - The iterative approach by which Permittees can adapt the Water Quality Improvement Plan, monitoring and assessment program, and jurisdictional runoff management programs to become more effective towards achieving water quality compliance.

Anthropogenic sources - Refers to source of pollution or flow that are derived from human activities.

Baseline load - Refers specifically to the indicator bacterial load associated with the Bacteria TMDL. This is based on hydrologic conditions for water year 1993 and watershed development conditions as of 2001.

Bed and bank material - Bed material refers to substrate (e.g., sand, silt, clay, rock, bedrock) that makes up the bottom of a stream. Bank material refers to the soil material composition that forms the sides of natural channel walls.

Beneficial use - The uses of water necessary for the survival or well-being of humans, plants, and wildlife. These uses of water serve to promote the tangible and intangible economic, social, and environmental goals or benefits associated with water bodies. "Beneficial Uses" of the waters of the State that may be protected include, but are not limited to, domestic, municipal, agricultural and industrial supply; power generation; recreation; aesthetic enjoyment; navigation; and preservation and enhancement of fish, wildlife, and other aquatic resources or preserves. Beneficial Uses for South Orange County receiving waters are designated in the Water Quality Control Plan for the San Diego Basin (Basin Plan).

Best management practices (BMPs) - The practice or combination of practices that are determined to be the most effective, practicable means of preventing or reducing the amount of pollution generated by nonpoint sources to a level compatible with water quality goals (including technological, economic, and institutional considerations).

Biofiltration - Practices that use vegetation and amended soils to detain and treat runoff from impervious areas. Treatment is through filtration, infiltration, adsorption, ion exchange, and biological uptake of pollutants.

Biological integrity - A balanced, integrated, adaptive community of organisms having a species composition, diversity, and functional organization comparable to that of natural habitat of the region, also referred to as ecosystem health.

Bioretention system with underdrains - see "Biofiltration"

Causal linkage – The establishment of a cause-and-effect relationship between pollutants, stressors, and conditions.

CCME index – Canadian Council of Ministers of the Environment (CCME) methodology used to develop water quality scores for constituents with applicable standards that are used to assess water quality exceedances for the protection of aquatic life.

Coarse sediment supply/reduction – Coarse sediment is the fraction of sediment transported by watershed runoff processes to and within stream channels that supports channel stability. Reductions in sediment load, if severe enough, can starve downstream channel reaches of the bed material load naturally transported by the channel and thus the water flowing in the channel becomes “sediment hungry flow”, meaning the water is more prone to eroding in-stream bed and bank material.

Coastal waters – The territorial marine waters of the State as defined by California law to the extent these waters are outside of enclosed bays, estuaries, and coastal lagoons. Discharges to ocean waters are regulated in accordance with the State Board’s California Ocean Plan.

Composite imperviousness – The total percent of impervious surface covering the land. This includes the composite of all sources of impervious cover.

Connectivity to a receiving water – As defined in this document, this refers to a condition under which water from a storm drain outfall has a defined and normal overland flow path to the receiving water. Water that pools and infiltrates or evaporates near the outfall, in a location outside of the active channel of the receiving stream, is not considered to be connected to the receiving water.

Constituents – Refers to a parameter related to water quality that can be measured.

Consultation Panel – The panel of advisors representing environmental, development, and regulatory communities and other stakeholders convened to provide input on the development of the Water Quality Improvement Plan.

Contact water recreation (REC-1) - Refers to the beneficial use of this name that is defined in the San Diego Basin Plan.

Controllable source (by MS4) – Stormwater or non-stormwater discharges that are considered to be controllable either as discharges to or from the MS4. This term is introduced to distinguish the sources that can be controlled by actions described within the Water Quality Improvement Plan from those sources that cannot be controlled (i.e., natural sources) within the authority of MS4 permittees.

Data propagation – A mapping process to extrapolate in-channel water quality data measurements at discrete monitoring locations to the reaches that may be represented by these

data. The specific methods for data propagation used in the Water Quality Improvement Plan are described in this Plan.

Distributed BMPs - Refers to treatment and/or volume mitigation BMPs implemented at the neighborhood, parcel or site scale and includes features such as green streets, rainwater harvesting, and Low Impact Development-type solutions.

Dry weather - Weather is considered dry if the preceding 72 hours has been without measurable precipitation (>0.1 inch).

Dry weather flows - Flows in and from the MS4 resulting from natural sources (e.g., groundwater seeps), non-stormwater discharges (e.g., irrigation overspray), and/or small precipitation events (<0.1 inches).

Ecological flows - The quantity, timing, and quality of water flows required to sustain freshwater and estuarine ecosystems.

Ephemeral (channel or stream) - Water bodies, or segments thereof, that contain water only for a short period following precipitation events.

Eutrophication - Excessive richness of nutrients in bodies of water which causes a dense growth of plant life and can cause death of aquatic life due to lack of oxygen.

Exception categories - Refers to management of unnatural water balance issues. An exception category defines conditions where total elimination of dry weather flows from an MS4 outfall is not appropriate.

Fecal indicator bacteria - Bacterial surrogates, including total and fecal coliforms, *E. coli* and enterococci, that are used to measure the potential presence of fecal material and associated fecal pathogens. Indicator bacteria are not a direct measure of human health risk.

Flood conveyance - Denotes a particular purpose of a drainage feature, whether a natural stream system or an engineered system.

Flow regime - The variability of flow magnitude, frequency, duration, timing, and rate of change within stream systems over time in response to precipitation, other inputs, temperature, evapotranspiration, and drainage basin characteristics.

Functional groupings - Groupings of individual physical, chemical and biological processes or metrics that occur in ecosystems based on potential causal or coincidental relationships between these processes or metrics to assist with identifying priority conditions.

Function-based framework - A framework for prioritizing conditions or actions that includes consideration of the functional relationships among physical, chemical and biological processes that occur in ecosystems and the relationship of these processes to beneficial uses.

Geographic information system (GIS) - A mapping system designed to capture, store, manipulate, analyze, manage, and present all types of spatial or geographical data.

Geomorphic impacts - Refers to impacts on stream channels related to geomorphic processes, such as channel erosion and incision.

Goals - Numeric goals required by the Permit to be included in the Water Quality Improvement Plan with associated schedules that will be used to measure progress towards achieving the desired outcomes of improvements in water quality.

Green street - A form of green infrastructure that provides source control of stormwater, limits stormwater transport and pollutant conveyance to the collection system, restores predevelopment hydrology to the extent possible, and provides environmentally enhanced roads by incorporating vegetated swales, sidewalk planters, curb extensions, permeable surfaces, green gutters, rain gardens, and trees and/or tree boxes. Successful application of green street elements should encourage soil and vegetation contact and infiltration and retention of stormwater.

Groundwater seepage - Refers to the flow of groundwater into storm drain pipes, other drainage features, or directly in to receiving waters. **H2O algal taxonomic index** - an algal index of biological integrity (IBI) developed and used for assessment of Southern California streams, based on diatoms and soft algae.

High value areas - The areas considered within the San Juan Hydrologic Unit to have the highest intensity of recreational use or having the greatest need for avoidance of impacts related to urban runoff. These include popular surfing areas along the beach that are frequented during both wet and dry weather, as well as large park and open space areas having stream and creek systems that have retained their natural form and function to a significant degree.

Highest priority water quality condition (HPWQC) - Pollutants, stressors and/or receiving water conditions that are identified by the Permittees to be the highest threat to receiving water quality or that most adversely affect the quality of receiving waters.

Human health risk - The nature and probability of adverse health effects in humans who may be exposed to a hazardous substance or pathogen. Human health risk is a function of the degree of exposure and the dose-response relationship.

Human pathogens - A microorganism, such as a virus, bacterium, prion, parasite, or fungus, that causes disease in humans.

Hydrologic modification - Refers to changes in hydrologic regime, including rates, magnitudes, timing, and frequency of runoff and baseflow.

Hydromodification – The change in the natural watershed hydrologic processes and runoff characteristics (i.e., interception, infiltration, overland flow, interflow and groundwater flow) caused by urbanization or other land use changes that result in increased stream flows and sediment transport. In addition, alteration of stream and river channels, installation of dams and water impoundments, and excessive stream-bank and shoreline erosion are also considered hydromodification, due to their disruption of natural watershed hydrologic processes.

Hydromodification impacts – Locations where adverse erosion occurs that alters the form and function of a natural stream system, typically in response to excess flow quantity, energy, or duration of flow resulting from the alteration of upland areas from natural to developed condition.

Impairment – The condition of a water segment that exhibits significant degradation in biological populations and/or communities as compared to reference conditions (as defined by standards or reference site(s)) and is associated with water or sediment concentrations of pollutants including but not limited to chemical concentrations, temperature, dissolved oxygen, and trash.

Impervious surface – Any material that prevents or substantially reduces infiltration of water into the soil. Common impervious surfaces include rooftops, walkways, patios, driveways, parking lots or storage areas, concrete or asphalt paving, gravel roads, packed earthen materials, and oiled surfaces.

Index of biological integrity (IBI) – A single multi-metric index used to characterize biological integrity, typically assembled from measurements related to the community of organisms found at a site. In this Plan, IBI generally refers to the Southern California Index of Biological Integrity.

Infiltration – Movement of water from the land surface into the ground.

Inland waters – Includes all surface waters of the State that do not include the ocean, enclosed bays, or estuaries.

Intermittent (channel or stream) - Water bodies, or segments thereof, that contain water for extended periods during the year, but not at all times.

Invasive species – Plants, animals, or pathogens that are non-native to the ecosystem under consideration and whose introduction causes or is likely to cause harm.

LiDAR - is a surveying method that measures distance to a target by illuminating that target with a laser light.

Low impact development (LID) – A stormwater management and land development strategy that emphasizes conservation and the use of onsite natural features integrated with engineered, small-scale hydrologic controls to more closely reflect pre-development hydrologic functions.

Media filters - A type of BMP that primarily treats water via filtration through a filter bed or cartridge. Media filters are not typically associated with volume reduction.

Municipal separate storm sewer system (MS4) - A conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels, or storm drains) owned by a state, city, town, or other public body that is designed or used for collecting or conveying stormwater, which is not a combined sewer and which is not part of a publicly owned treatment works.

MS4 catchments - For the purpose of this Plan, this term refers to land segments that include MS4 infrastructure and impervious area associated with urban or suburban development as determined through aerial and GIS-data inspection; these land segments catchments are associated with potentially-controllable MS4 pollutant sources and stressors that may be related to water quality conditions observed in downstream receiving waters. This term is not intended to define the regulatory extents of the MS4.

National pollutant discharge elimination system (NPDES) - A permit program, created in 1972 by the Clean Water Act (CWA), that helps address water pollution by regulating point sources that discharge pollutants to waters of the United States.

Non-anthropogenic sources - Refers to sources of pollution that are not derived from human activities.

Non-MS4 catchments - Land segments that are predominantly devoid of MS4 infrastructure and impervious area as determined through aerial and GIS-data inspection. This category of catchments is complementary to “MS4 catchments” defined above. This term is not intended to define the regulatory extents of the MS4.

Non-priority water quality conditions - Pollutants, stressors and/or receiving water conditions that do not appear to warrant consideration as priority conditions as part of this Plan. Criteria for determining non-priority water quality conditions are described in this Plan.

Non-stormwater discharges - All discharges to and from a MS4 that do not originate from precipitation events (i.e., all discharges from a MS4 other than storm water). Non-storm water includes illicit discharges and NPDES permitted discharges.

Non-structural BMPs - Institutional, educational or pollution prevention practices designed to limit the amount of stormwater runoff or pollutants that are generated in the landscape.

Normal stream form and function - Refers to the forms and functions that exist within streams that have not undergone significant alteration. Normal form and function is dependent on many factors, including climate, watershed size, watershed geology and soils, etc. It is not possible to precisely define what is normal. In this Plan, this term is in the context of a

continuum of degrees of normal, where rehabilitation approaches can be used to create conditions that are closer to the forms and functions that exist in an unaltered stream.

Nuisance water – As defined in the Porter-Cologne Water Quality Control Act, a nuisance is “anything which meets all of the following requirements: 1) Is injurious to health, or is indecent, or offensive to the senses, or an obstruction to the free use of property, so as to interfere with the comfortable enjoyment of life or property. 2) Affects at the same time an entire community or neighborhood, or any considerable number of persons, although the extent of the annoyance or damage inflicted upon individuals may be unequal. 3) Occurs during, or as a result of, the treatment or disposal of wastes.” For practical purposes in this Plan, nuisance water is a non-stormwater discharge that contributes to a dry weather discharge or an unnatural flow regime.

Onsite wastewater treatment system – Decentralized wastewater treatment systems that collect and treat wastewater from a home or business and return treated wastewater back into the receiving environment.

Pathogen Health Risk – See “Human Health Risk”

Perennial (channel or stream) – Watercourses such as flood control channels, streams, and rivers that contain water year-round.

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Permitted discharge – For the purpose of this Plan, this term refers to point discharges of stormwater or wastewater permitted with an individual permit or covered under a general permit besides the MS4 permit that are made directly to a receiving water or to a receiving water via the MS4.

Physical habitat – Geomorphologic characteristics and biological attributes that determine habitat structure and affect energy inputs (e.g., channel substrate, diversity of channel form, flow regime, presence of macrophytes and riparian vegetation).

Physicochemical parameters – Measurable parameters pertaining to both physical and chemical properties of waters such as pH, turbidity, conductivity, suspended and dissolved solids, nutrients, and heavy metals.

Priority water quality condition (PWQC) – Pollutants, stressors and/or receiving water conditions that are identified by the Copermittees to be a threat to receiving water quality or that most adversely affect the quality of receiving waters.

Quantitative microbial risk assessment (QMRA) - A probabilistic risk assessment method used to quantify the risk of an adverse health effect due to the exposure to a specific microbial pathogen.

Receiving waters - Surface bodies of water, including naturally occurring wetlands, streams (perennial, intermittent, and ephemeral (exhibiting bed, bank, and ordinary high water mark)), creeks, rivers, reservoirs, lakes, lagoons, estuaries, harbors, bays and the Pacific Ocean which directly or indirectly receive discharges from stormwater conveyance systems.

Riparian ecology - The ecosystem defined by linear corridors of variable width occurring along rivers, streams, and creeks. Hydrologic interaction with a river, stream or creek, and distinct geomorphic features are two unique components of this ecosystem.

Strategies - The jurisdictional- and watershed-scale practices and structural control measures identified for implementation to achieve the numeric goals established in the Water Quality Improvement Plan.

Sensitive resource - The habitat and associated flora and fauna located along inland stream corridors and ocean coastline that have the potential to be adversely impacted by stormwater inputs.

Stream energy - Energy dissipation that occurs as water flows against the bed and banks of a stream. **Stream erosion** - The ability of flowing water to dislodge and transport rock particles or sediment (hydraulic action), scour soil, and cut channel banks or bed.

Stream erosion impacts - The impacts associated with stream erosion including loss of habitat or adverse impacts to embedded infrastructure or adjacent property.

Stream form - A stream channel's bed and bank material as well as its channel geometry (in plan, cross-section, and profile).

Stream function - The special purpose or activity for which a stream exists.

Stream rehabilitation - Remedial measures or activities for the purpose of improving or restoring the beneficial uses of streams, channels or river systems. Techniques may vary from in-stream restoration techniques to off-line stormwater management practices installed in the system corridor or upland areas, or a combination of in-stream and out of stream techniques. Rehabilitation techniques may include, but are not limited to the following: riparian zone restoration, constructed wetlands, channel modifications that improve habitat and stability, and daylighting of drainage systems.

Stream restoration - See stream rehabilitation (terms are used interchangeably in this Plan).

Structural BMPs - A subset of BMPs which detains, retains, filters, removes, or prevents the release of pollutants to surface waters from development projects in perpetuity, after construction of a project is completed.

Subsurface flow wetlands – A type of structural treatment BMP that includes a gravel bed below the ground surface through which water flows and is treated. The gravel bed can be vegetated or unvegetated.

Target load reduction – In the context of this Plan, refers to a numeric goal expressed as a certain amount of load reduction achieved in reference to a baseline condition.

Temporal extent – The time-dependent or seasonal extent of a priority water quality condition (e.g., dry weather and/or wet weather).

Toxicity (aquatic) – Adverse responses of organisms to chemicals or physical agents ranging from mortality to physiological responses such as impaired reproduction or growth anomalies.

Trash separation units – A type of structural treatment BMP intended to separate trash from stormwater or non-stormwater flows.

Water balance – An accounting of all inflows and outflows of water in a hydrological system. In this Plan, the principal elements of the water balance include rainfall, evapotranspiration, discharges resulting from imported or recycled water, infiltration, stormwater runoff, baseflow, aquifer recharge, and aquifer withdrawal.

Water quality – Defined by both a set of concentrations, speciations, and physical partitions of organic and inorganic substances, and the composition and state of aquatic biota found in a waterbody.

Wet weather – Weather is considered wet up to 72 hours after a storm event of 0.1 inches and greater, unless otherwise defined by another regulatory mechanism (e.g. a TMDL).