# GLOSSARY OF TERMS

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| Aggradation | The deposition and accumulation of sediment that was eroded and transported from the upstream watershed, resulting in an elevated streambed. |
| Alluvium | Silt, sand, and gravel deposited by flowing water. |
| Armor | A layer of rocks on the surface of a streambed that resists erosion by water flows. The rock can be naturally occurring, caused by the scour of smaller particles from high discharges, or placed by humans to stop channel erosion. |
| Bankfull | The flow at which a stream with a natural, self-formed floodplain just exceeds the capacity of the banks. |
| Bar | A sand or gravel deposit found on the bed of a stream that is often exposed during low-water periods. |
| Basin | An area confined by topographic divides encompassing a number of watersheds that ultimately drain to a common point. In this report, *basin* is the term used to describe the Santa Clara Basin that contains a number of watersheds that drain to the Lower South Bay. The Santa Clara Basin is designated by the USGS as Hydrologic Cataloging Unit No. 18050003. |
| Bedload | Medium-grained sand and coarser material such as gravel that rolls and saltates along the bottom of the stream by the flow of water. |
| Beneficial Use | A waterbody's beneficial uses are the resources, services, and qualities of aquatic systems that are the ultimate goals of protecting and achieving high water quality. The beneficial uses of surface waters, groundwaters, marshes, and mudflats serve as a basis for establishing water quality objectives and the discharge prohibitions or conditions necessary to attain them. |
| Best Management Practice (BMP) | Any program, technology, process, siting criteria, operational method or measure, or engineered system, which when implemented prevents, controls, removes, or reduces pollution. Includes schedules of activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce the water pollution. BMPs also include treatment requirements, operating procedures, and practices to control site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage. |
| Buffer Strip or Zone | Strip of erosion-resistant vegetation over which stormwater runoff is directed. |
| Catch Basin | Box-like underground concrete structure with openings in curbs and gutters designed to collect runoff from streets and pavements. |
| Catchment | An area that drains to a single storm drain outfall. |
| Clay | Hydrous aluminum silicate minerals with platy structure, typically less than 1/256-mm in diameter. |
| Clean Water Act (CWA) | The Federal Water Pollution Prevention and Control Act, or Clean Water Act (33 United States Code 1251 et seq.) is structured to control or eliminate surface water pollution and establish uniform standards for publicly owned treatment works, direct industrial discharges and indirect industrial discharges. |
| Colluvium | Material deposited by gravity at the foot of a slope. |

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| Constructed Wetland | Constructed detention basins that have a permanent pool of water throughout the year and capacity for temporary additional storage of runoff that is released via an outlet structure. They differ from wet ponds in that they are typically shallower and have greater vegetation coverage. |
| Continuous Simulation | Model simulation that utilizes actual measured rainfall from a nearby gage over a long period of time, through multiple rain events. |
| Conveyance System | Any channel or pipe for collecting and directing the stormwater. |
| Critical Flow (Qc) | Qc is defined as the smallest flow that begins movement of the bed material or erosion of the bank. Qc is determined by matching the applied hydraulic shear stress to the critical shear stress of bed and/or bank materials. Flows less than this value do not substantially move bed material or erode the bank. |
| Cross-section geometry | The geometry of a channel from which you can estimate the width, depth, area, wetted perimeter, hydraulic radius and channel conveyance. |
| Design Storm | A synthetic rainstorm defined by rainfall intensities and durations. |
| Detention | The temporary storage of stormwater runoff in ponds, vaults, within berms, or in depressed areas to allow treatment by sedimentation and metered discharge of runoff at reduced peak flow rates. See Infiltration and retention. |
| Directly Discharging | Outflow from a drainage conveyance system that is composed entirely or predominantly of flows from the subject, property, development, subdivision, or industrial facility, and not commingled with the flows from adjacent lands. |
| Directly-Connected Impervious Area (DCIA) | The area covered by a building, impermeable pavement, and/or other impervious surfaces, which drains directly into the storm drain without first flowing across permeable land area (e.g., turf buffers). |
| Discharge | A release or flow of stormwater or other substance from a conveyance system or storage container. |
| Dominant discharge | The channel-forming discharge responsible for creating the primary channel that transports the majority of the sediment load. |
| Drainage Area | Areas smaller than a subwatershed but larger than a catchment. For example, the land drainage to Yerba Buena Creek, which flows into Thompson Creek, is referred to as the Yerba Buena Creek Drainage area. |
| Erosion Potential | The erosion potential (Ep) is a measure of amount work done hydraulically on the stream channel above a baseline condition (pre-project). Ep is expressed as a ratio of the post-project work done to the pre-project work done. Work done is measured using the "effective work index" (W) described in Chapter 3. |
| Erosion | The wearing away of land surface by wind or water. Erosion occurs naturally from weather or runoff but can be intensified by land-clearing practices relating to farming, residential or industrial development, road building, or timber cutting. |
| Event Based Simulation | A single rainstorm event (ranging from perhaps 3 to 24 hours) is simulated. |
| Flood control levees | An embankment raised to contain the floodwaters of a stream or river. |
| Flow Duration | Flow duration is the total long-term period of time (hours) that flows occur at a specified magnitude (not a single storm event duration). The simplest way to visualize this is to consider a histogram of pre- and post-project flows using long-term records of hourly data. To maintain pre-project flow duration means that the total number of hours (counts) within each range of flows in a flow-duration histogram cannot increase between the pre- and post-project condition. Flow duration within the range of geomorphically significant flows is important for managing erosion. |
| Flow-based BMPs | BMPs that treat pollutants from a moving stream of water through filtration, infiltration, and/or biological processes. |

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| Fluvial Geomorphology | The study of forms and characteristics of streams and the physical processes that create them. The processes of hydrology, geology, and sediment supply and transport interact with the watershed and material making up the channel boundary, creating features such as terraces, floodplains, channel planform and geometry, and instream channel features, such as pools, riffles, bars, and secondary channels. |
| Geomorphic reaches | Stream segments that are fairly homogenous in terms of bed and bank characteristics, as well as channel geometry. |
| Geomorphically Significant Flows | Geomorphically significant flows is defined as the range of flows that tend to have the most influence over the stream channel cross section geometry, planform, and longitudinal slope. Geomorphically significant flows begin at a threshold that causes sediment transport or erosion of the stream bank (Qc), and extends up to the elevation where flows spill out onto floodplains, or similar features. |
| Geomorphology | The study of forms and characteristics of the earth's surface and the physical and chemical processes that affect landforms. Weathering, erosion and transport are the fundamental geomorphic processes that break down mountains and supply sediment to stream channels. |
| Grade control structures | Structures installed in a stream channel intended to reduce the energy of flow by reducing the slope of the streambed. Examples include cross-vane grade control structures, weirs and sackrete terrace structures. |
| Gravel | Sedimentary matter having a diameter between 4.75 and 75-mm. |
| Groundwater | Subsurface water that occurs beneath the water table in soils, and geologic formations that are fully saturated. |
| Hardpan | A layer of hard subsoil or clay. |
| HMS | The Hydrologic Modeling System is designed to simulate the precipitation-runoff processes of dendritic watershed systems. It is designed to be applicable in a wide range of geographic areas for solving the widest possible range of problems. This includes large river basin water supply and flood hydrology, and small urban or natural watershed runoff. Hydrographs produced by the program are used directly or in conjunction with other software for studies of water availability, urban drainage, flow forecasting, future urbanization impact, reservoir spillway design, flood damage reduction, floodplain regulation, and systems operation. |
| HEC | The Hydrologic Engineering Center, an organization within the Institute for Water Resources, is the designated Center of Expertise for the US Army Corps of Engineers in the technical areas of surface and groundwater hydrology, river hydraulics and sediment transport, hydrologic statistics and risk analysis, reservoir system analysis, planning analysis, real-time water control management and a number of other closely associated technical subjects. |
| Hydrograph | The way in which stream flow, or discharge, varies with time. A graph describing stream discharge over time. A hydrograph provides a way of seeing seasonal and yearly changes in the flow or discharge of a waterway. |
| Hydrograph matching | A method that maintains the post-project volume and distribution of flows as the same as the pre-project flows for a single discrete storm event. This method can be used in combination with a volume control basin to provide additional control of the discharge rate of the pre-project post-project volume. |
| Hydrographic segments | Segments of a stream that have similar water inputs. Segments are identified based on significant flow increases in the downstream direction due to confluences with major tributaries. |

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| Hydrologic processes | The extent to which precipitation is intercepted by vegetation, infiltrates into the ground, or results in overland flow, influencing the rate and magnitude of stream flows. |
| Hydrology | The scientific study of the properties, distribution, and effects of water on the earth's surface, in the soil and underlying rocks, and in the atmosphere. |
| Hydromodification Management Plan (HMP) | Required by the C.3 provisions to the stormwater NPDES permit, the HMP will be submitted to the Regional Water Quality Control Board (Regional Board) in June 2004. The HMP, once approved by the Regional Board, will be implemented so that post-project runoff shall not exceed estimated pre-project rates and/or durations, where the exceedance would result in increased potential for erosion or other adverse impacts to beneficial uses. |
| 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. |
| Imbrication | A shingling effect of deposited sediments, creating a protective barrier on the streambed. |
| Impervious surfaces | A hard surface area that either prevents or retards the entity of water into the soil mantle. A hard surface area which causes water to run off the surface in greater quantities or at an increased rate of flow from the flow present under natural conditions prior to development. Common impervious surfaces include: roofs, roadways, walkways, driveways, parking lots, patios, concrete or asphalt paving, gravel roads, and packed earthen material. |
| Imperviousness | Term applied to surfaces – roads, sidewalks, rooftops, and parking lots – that prevent or inhibit rainfall from sinking into groundcover and groundwater. |
| Impracticable | As applied to on-site treatment BMPs, technically infeasible excessively costly, as demonstrated by set criteria. |
| Incision | The hydrologic processes of stream flow that exceeds the available sediment load and erodes streambeds, resulting in a deepening channel. |
| Infeasible | As applied to on-site treatment BMPs, impossible to implement because of technical constraints specific to the site. |
| Infill Development | Development of vacant or underutilized land within areas that are already developed with urban uses and served with urban infrastructure (e.g., sanitary sewers, water mains, etc.). |
| Infiltration and Exfiltration Trench | Long narrow trench filled with permeable material (e.g., gravel), which may contain perforated pipe (exfiltration), designed to store runoff and infiltrate through the bottom and sides into the subsurface soil. |
| Infiltration Basin | Shallow impoundment that is designed to infiltrate stormwater into the subsurface soil. |
| Infiltration | Seepage of runoff through the soil to mix with groundwater. See retention. |
| Knickpoint | The point of a stream bed where there is an abrupt change in slope, governed by regimen and by the structure and composition of the bed and bank materials of the river. |
| Loam | Soil composed of a mixture of sand, clay, silt, and organic matter. |
| Low Impact Development/Better Site Designs | Low Impact Development is an integrated site design methodology that uses small-scale detention and retention to replicate pre-existing site hydrological conditions. |
| Maximum Extent Practicable (MEP) | Standard, established by the 1987 amendments to the Clean Water Act, for the implementation of municipal stormwater pollution prevention programs. |
| Meander Bends | A bend in the course of a stream, developed through lateral shifting of its course toward the convex side of the bend. |
| New Development | Land disturbing activities; structural development, including construction or installation of a building or structure, creation of impervious surfaces; and land subdivision. |

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| Stormwater NPDES Permit | The permit issued to 13 Santa Clara Basin cities and towns, Santa Clara County, and the Santa Clara Valley Water District by the Regional Water Quality Control Board for the San Francisco Bay Region. Order 01-024. Order 01-119 amended Provision C.3 of the permit. |
| NPDES Permit | An authorization, license, or equivalent control document issued by EPA or an approved State agency to implement the requirements of the National Pollutant Discharge Elimination System (NPDES) program. As part of the 1972 Clean Water Act, Congress established the NPDES permitting system to regulate the discharge of pollutants from municipal sewers and industries. The NPDES was expanded in 1987 to incorporate permits for stormwater discharges as well. |
| Outfall | The point where stormwater discharges from a pipe, channel, ditch, or other conveyance to a waterway. |
| Overland flow | Sheets of surface runoff created by excess precipitation that is not infiltrated or intercepted by vegetation. |
| Peak Flow | |
| Permeability | A property of soil that enables water or air to move through it. Usually expressed in inches/hour or inches/day. |
| Permeable Pavement | Permeable hardscape or paved surface that allows surface runoff to infiltrate into surface soil (e.g., turf block, brick, natural stone, cobbles, gravel). |
| Physiography | **The study of the physical features of the earth's surface** |
| Planform | Stream channel patterns (braided, straight or meandering) as viewed from above. |
| Planned Unit Development (PUD) | Allows land to be developed in a manner that does not conform to existing zoning requirements. Allows greater flexibility and innovation because the PUD is regulated as one unit instead of each lot being regulated separately. |
| Pool | A location in an active stream channel typically located in the outside bend of a meander, that exhibits relatively deep waters and reduced flow velocities. |
| Pool-riffle morphology | Alternating regularly shaped deep and shallow areas of a stream. |
| Pre-project (existing) condition | Pre-project conditions are the on-site conditions at the time of development, before construction begins. |
| Provision C.3 | A reference to the Provisions, added in November 2001, by the Regional Water Quality Control Board to the SCVURPPP stormwater NPDES permit requiring SCVURPPP to change its development review process to control the flow of stormwater and stormwater pollutants from new and redevelopment sites. (Regional Board Order 01-119.) |
| Redevelopment | A project on a previously developed site that results in the addition or replacement of impervious surface on such an already developed site. Development that includes, but is not limited to the following: the expansion of a building footprint or addition or replacement of a structure; structural development including an increase in gross floor area and/or exterior construction or remodeling; replacement of impervious surface that is not part of a routine maintenance activity; land disturbing activities related with structural or impervious surfaces. |
| Regional Water Quality Control Board, San Francisco Bay Area | One of nine (9) California Regional Boards, the Regional Board for the San Francisco Bay Region is responsible for implementing pollution control provisions of the Clean Water Act and California Water Code within the area that drains to San Francisco Bay. |
| Retention | The storage of stormwater to prevent it from leaving the development site; may be temporary or permanent. |
| Riparian | Of or pertaining to the bank of a river or stream. |
| Riverine | Of or pertaining to a river |

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| Runoff | Water originating from rainfall and other precipitations (e.g., sprinkler irrigation) that is found in drainage facilities, rivers, streams, springs, seeps, ponds, lakes, wetlands, and shallow groundwater. |
| Runon | Stormwater surface flow or other surface flow that enters property other than that where it originated. |
| Santa Clara Basin | The Basin refers to the 840 square mile that drain into San Francisco Bay south of the Dumbarton Bridge |
| Santa Clara Valley Urban Runoff Pollution Prevention Program (SCVURPPP) | SCVURPPP is established by a memorandum of understanding among 13 Santa Clara Valley cites and towns, Santa Clara County, and the Santa Clara Valley Water District, who are listed as Co-permittees in an NPDES Stormwater discharge permit issued by the Regional Water Quality Control Board. SCVURPPP implements common tasks and assists the member agencies to implement their local stormwater pollution prevention programs. |
| Sedimentation | The process of depositing soil particles, clays, sands, or other sediments that were picked up by runoff |
| Sediments | Soil, sand, and minerals washed from land into water usually after rain that accumulate in reservoirs, rivers, and harbors, destroying aquatic animal habitat and clouding the water so that adequate sunlight might not reach aquatic plants. |
| Shale | A fissile rock composed of layers of claylike, fine-grained sediments. |
| Silt | Particles with diameters between 0.75 and 0.002-mm. |
| Siltation | The settling of soil and sedimentary particles in lakes, rivers, and streams. |
| Sinuosity | The ratio of stream length to valley length. |
| Source Control BMP or Measure | Any schedules of activities, structural devices, prohibitions of practices, maintenance procedures, managerial practices or operational practices that aim to prevent stormwater pollution by reducing the potential for contamination at the source of pollution. |
| Spill Guard | A device used to prevent spills of liquid materials from storage containers. |
| Storm Drain System | Network of above and belowground structures for transporting stormwater to streams or outfalls for flood control purposes. |
| Storm Event | A rainfall event that produces more than 0.1 inch of precipitation and is separated from the previous storm event by at least 72 hours of dry weather. |
| Stormwater | Stormwater runoff, snowmelt runoff, surface runoff, and drainage, excluding infiltration and irrigation tailwater. |
| Stratigraphy | The study of rock strata, including the distribution, deposition, and age of sedimentary rocks. |
| Structural BMP or Control Measure | Any structural facility designed and constructed to mitigate the adverse impacts of stormwater and urban runoff pollution (e.g. canopy, structural enclosure). The category may include both Treatment Control BMPs and Source Control BMPs. |
| Subwatershed | Refers to the land that drains to a tributary of one of the major streams (for example, the Lower Silver – Thompson Creak subwatershed within the Coyote Creek Watershed). The catchment area of a stream tributary or series of stream tributaries. |
| Treatment Control BMP or Measure | Any engineered system designed to remove pollutants by simple gravity settling of particulate pollutants, filtration, biological uptake, media adsorption or any other physical, biological, or chemical process. |
| Tributary | A stream or river flowing into a larger body of water. |
| Underground Detention System | System that consists of underground detention tank, vault or pipes that is designed to fill with stormwater during large storm events and slowly release it back into stormwater conveyance systems over a number of hours. |

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| Undeveloped Land | Land without improvements (i.e., curb and gutter, sidewalks, structures, etc.). Parking lots, parks, designated open space, cemeteries, golf courses, etc. that have been developed according to the designated zoning for the parcel are not considered undeveloped land. |
| Unlined or Open-Bottomed Vault or Box Below Grade | Below grade structure designed to receive runoff from conveyance systems and store stormwater. Storage structure allows infiltration of stormwater into subsurface soil. (Includes bubble ups and permeable pavement with underground storage) |
| Unlined Retention Basin | A basin without an outlet that is designed for storing runoff and infiltrating stormwater into the subsurface soils. Basin is not designed to drain runoff into any stormwater conveyance system. |
| Urbanization | The transformation of land into residential, commercial, and industrial properties and associated infrastructure such as drainages, roads, and sewers. |
| Vegetated Filter Strip | Linear strips of vegetated surfaces that are designed to treat sheet runoff flow from adjacent surfaces. |
| Vegetated Swale | Open, shallow channels with vegetation covering side slopes and bottom that collect and slowly convey runoff flow to downstream discharge points. |
| Volume-based BMPs | BMPs that detain stormwater for a certain period and treat primarily through settling and infiltration. |
| Volume control | A method in which the difference between the pre-project and post-project runoff volumes is stored on-site in a basin and either infiltrated, discharged to another stream segment which would not be impacted by increased flows, or discharged at a very slow rate (i.e., the critical low flow for the stream, Qc). There is no control of the discharge rate of the remaining (pre-project) runoff volume. |
| Watershed | A region drained by a single major stream system such as Coyote Creek. Watersheds are named for the associated watercourse (for example, the Coyote Creek Watershed). |
| Wet Pond | Constructed detention basins that have a permanent pool of water throughout the year and capacity for temporary additional storage of runoff that is released via an outlet structure. They differ from constructed wetlands in that they typically have a greater average depth and less vegetation. |
| Work | "Work" is a measure of the erosive hydraulic forces on the stream, and a cumulative work curve shows the percentage of total amount of work done for various stream flow rates occurring over the period of rainfall record (as simulated by the hydrologic model). |