

# Palo Alto Regulations for Stormwater Pollution Prevention

These regulations were adopted by Council Resolution No. X on X

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### 1. Purpose and Intent (MRP Provisions A.1, A.2, and B.1)

The purpose of these regulations is to elaborate on and help clarify requirements of Chapter 16.11 of the Palo Alto Municipal Code. Chapter 16.11 is a component of the City's stormwater compliance management program and supports the City's authority to implement stormwater and Pollution prevention requirements mandated by the San Francisco Bay Regional Water Quality Control Board. These regulations address City of Palo Alto (City) requirements regarding Stormwater management. The City aims to prohibit Non-Stormwater Discharges into the City's Storm Drain System and to specifically achieve the following objectives:

- (1) Control Discharges from spills, dumping or disposal of materials other than Stormwater;
- (2) Reduce the Discharge of Pollutants in all Stormwater Discharges to the Maximum Extent Practicable;
- (3) Protect and enhance the water quality of local, state and federal water bodies, groundwater, and wetlands in a manner pursuant to and consistent with the Clean Water Act.

The City's Public Works Director (Director) enforces these regulations and all related ordinances, requirements, and specifications. The Director assigns City staff to conduct implementation of requirements and enforcement actions.

These regulations are intended to not only provide detailed requirements but also guidance in meeting these requirements. Additional fact sheets and outreach information supplement this document.

### 2. Applicability

In accordance with Title 16 of the Palo Alto Municipal Code, Chapter 16.11 entitled Stormwater Pollution Prevention, the following regulations shall apply to all Dischargers of Non-Stormwater and Persons that engage in activities with the potential to cause Non-Stormwater Discharges to the Storm Drain System and Receiving Waters, which include local creeks, the Palo Alto Baylands, and the San Francisco Bay.

### 3. Alternate Means and Methods

The Director, upon application in writing by the owner, a lessee, or an authorized representative of the Discharger, and on notice to the Director, is authorized to approve alternate means or methods of compliance with this Chapter, provided that the Director finds that the proposed design, use, or operation satisfactorily complies with the intent of this Chapter and that the material, method of work performed, or operation is, for the purpose intended, at least equivalent to that prescribed in this Chapter in quality and effectiveness in meeting the purposes of this Chapter. As required by the Director, an Applicant must show that compliance with the strict requirements of this Chapter is infeasible, and that the proposed alternate means and methods will meet all applicable regional, state, and federal requirements. The particulars of any such approval made by the Director shall be in writing and a signed copy shall be furnished to the Applicant.

### 4. Fees and Charges

The City may adopt reasonable fees and charges for reimbursement of costs of administering and enforcing this Chapter.

### 5. Definitions and Acronyms

The following terms, whenever used in this document, are capitalized and shall be as defined herein:

**APPLICANT** means any Person that submits an application for a Planning Entitlement or Building Permit from the City of Palo Alto.

**BEST MANAGEMENT PRACTICES or BMPs** mean a combination of general good housekeeping practices, Pollution prevention and educational practices, operations and maintenance procedures, and other practices and requirements to prevent or reduce to the Maximum Extent Practicable Non-Stormwater Discharges directly or indirectly to the Storm Drain System, Sanitary Sewer System, right-of-way, or Receiving Waters. Unless otherwise stated, reference to BMPs generally means non-structural BMPs as described in this definition as opposed to the Structural BMP definition.

BUILDING means any structure used or intended for supporting or sheltering any use or occupancy.

**BUILDING PERMIT** means the authorization provided by the City to build/construct one or more Buildings.

**CASQA** means California Stormwater Quality Association, a professional member association dedicated to the advancement of Stormwater quality management through collaboration, education, implementation guidance, regulatory review, and scientific assessment.

**CASQA STORMWATER BEST MANAGEMENT PRACTICES HANDBOOK** means the current set of handbooks for Development Projects, construction, industrial and commercial, and municipal operations produced by CASQA.

CITY or The CITY means City of Palo Alto, California.

**CONSTRUCTION ACTIVITY** means any earth- or soil-disturbing activity, including but not limited to clearing, grading, paving, landscaping, excavation, stockpiling, material storage, disturbances to land or ground such as building of a structure, and demolition or removal of structures or paved surfaces.

**CONSTRUCTION SITE** means any site where Construction Activity occurs.

**CONTAMINATION** means the same as defined in the Porter-Cologne Water Quality Control Act: impairment of the quality of waters of the state by waste to a degree which creates a hazard to the public health through poisoning or through the spread of disease. "Contamination" includes any equivalent effect resulting from the disposal of waste whether or not waters of the state are affected.

**DETACHED SINGLE-FAMILY HOME PROJECT** means the building of one single new house or the addition and/or replacement of Impervious Surface to one single existing house, which is not part of a larger plan of development.

**DEVELOPMENT PROJECT** means new construction or Redevelopment of any public or private project involving Construction Activity and that requires a Planning Entitlement or Building Permit from the City.

**DIRECTOR** means the Director of Public Works of the City of Palo Alto and their duly authorized designees.

**DISCHARGE** when used as a verb, means a Stormwater or Non-Stormwater material to enter (or flow into) the Storm Drain System or a Receiving Water from any activity or operation. When used as a noun, "Discharge" means the Stormwater or Non-Stormwater Discharge that is released or conveyed.

**DISCHARGER** means any Person who causes or permits a Discharge.

**ENFORCEMENT RESPONSE PLAN or "ERP"** means a reference document for inspection staff and management to ensure a consistent and transparent enforcement process for meeting City, regional and state requirements.

EPA or U.S. EPA means the Environmental Protection Agency of the United States of America.

**FATS, OILS, AND GREASE or "FOG"** means any substance, such as a vegetable or animal product, that is used in, or is a byproduct of, the cooking or food preparation process, and that turns or may turn viscous or solidifies with a change in temperature or other conditions. FOG does not include any products associated with petroleum.

**FOOD FACILITY** means a permanent establishment or Mobile Business operating for the purpose of preparing, serving, or providing food (including only pre-packaged) and/or drinks for consumption by that establishment's members, customers, employees or the general public. "Food Facility" does not include the following:

- i. Locations where food is stored temporarily but not prepared or served;
- ii. Private home kitchens, also known as cottage food operations, as defined by the California Department of Public Health;
- iii. Community Food Producers;
- iv. Farmers' markets and stands Farmers' markets and produce stands, except where food is prepared and served at the market;
- v. Kitchen facilities principally for individual use by employees ancillary to another primary use (i.e., office break rooms);
- vi. Public events at temporary locations without connections to the Sanitary Sewer System and Storm Drain System.

**FULL TRASH CAPTURE DEVICE OR SYSTEM** means a treatment control, or series of treatment controls, that traps all particles that are 5 mm or greater and has a design treatment capacity that is either: a) of not less than the peak flow rate, Q, resulting from a one-year, one-hour storm in the subdrainage area, or b) appropriately sized to, and designed to carry at least the same flows as, the corresponding storm drain. The device(s) shall also have a trash reservoir large enough to contain a reasonable amount of trash safely without overflowing trash into the overflow outlet between maintenance events.

**GREEN STORMWATER INFRASTRUCTURE OR GSI** means infrastructure that uses vegetation, soils, and natural processes to manage Stormwater Runoff. At the scale of a city or county, GSI refers to the patchwork of natural areas that provides habitat and manages smaller storms, cleaner air, and cleaner

water and eliminates street ponding. At the scale of a neighborhood or project site, GSI refers to Stormwater management systems that mimic the natural hydrologic cycle by soaking up and storing water.

HAZARDOUS MATERIAL means any material designated as hazardous by Title 17 of this Code.

**HAZARDOUS WASTE** means any material designated as a Hazardous Waste by applicable federal, state or local regulations.

**ILLICIT CONNECTION** means any device, artifice, method or connection that conveys Non-Stormwater to the Storm Drain System. Examples may include connections from interior floor drains, industrial processes, sinks, and toilets. An Illicit Connection does not include methods of conveyance of groundwater during Construction Activities in compliance with this Code and as approved by the Director.

**ILLICIT DISCHARGE** means any Discharge that is prohibited under local, state, or federal statutes, ordinances, codes, or these regulations. Illicit Discharges do not include Discharges that are exempt or conditionally exempt under MRP Provision C.5, regulated by a NPDES Permit other than the MRP, or authorized by the Executive Officer of the Regional Water Board or the Director.

**IMPERVIOUS SURFACE** means land that has been modified to reduce or remove the land's natural ability to absorb and infiltrate rainfall. Impervious Surfaces include but are not limited to rooftops, pavement, sidewalks, walkways, patios, driveways, and parking lots where such surfaces are not constructed with Pervious materials and/or are not designed to infiltrate Stormwater.

**INFILTRATION DEVICE** means any unlined structure that is deeper than wide and designed to infiltrate Stormwater into the subsurface, and, as designed, bypass the natural groundwater protection afforded by surface soil. These devices include dry wells, injection wells, and infiltration trenches (includes french drains).

**JOINT STORMWATER TREATMENT FACILITY** is a Stormwater treatment facility built to treat the combined runoff from two or more Regulated Projects located adjacent to each other.

**LOADING DOCK** means a raised or lowered area of a facility designed to accommodate a truck, trailer or other large delivery vehicle for the loading and unloading of equipment or materials. A Loading Dock does not include areas where the deliveries are limited solely to furniture and non-electronic office supplies.

**LOW IMPACT DEVELOPMENT or LID** means a land planning and engineering design approach with a goal of reducing Stormwater Runoff and mimicking a site's predevelopment hydrology by minimizing disturbed areas and Impervious Surfaces and infiltrating, storing, detaining, evapotranspiring, and/or biotreating Stormwater Runoff close to its source or onsite.

**MAXIMUM EXTENT PRACTICABLE or MEP** means utilizing all reasonably feasible means, including implementation of BMPs, control techniques, and system, design and engineering methods, to prevent or minimize Pollutants being Discharged to Receiving Waters.

**MOBILE BUSINESS** means a business that does not operate from a permanent structure but instead provides mobile services during particular time periods or upon request at temporary locations whose operations may produce or result in the production of Pollutants. Types of services include cleaning or power washing of vehicles, structures, windows, or parking lots; engine or equipment degreasing; acid cleaning of unpainted trucks or containers; steam cleaning; carpet cleaning; dental and medical care; food preparation and vending; vehicle repair, servicing, fueling and cleaning; and pet services (including grooming, veterinary care and other miscellaneous services).

**MOBILE HOME (MANUFACTURED HOUSING)** is defined in Section 18.04.030 of Title 18 of Palo Alto Municipal Code.

**MULTIPLE-FAMILY (RESIDENTIAL) USE** is defined in Section 18.04.030 of Title 18 of the Palo Alto Municipal Code.

**MUNICIPAL CODE or PAMC** means the ordinances and laws adopted and enforced by the City of Palo Alto.

**MUNICIPAL REGIONAL STORMWATER PERMIT or MRP** means the most recently adopted San Francisco Bay Area Municipal Regional Stormwater Permit (MRP), a multi-countywide municipal Stormwater NPDES Permit issued by the California Regional Water Quality Control Board, San Francisco Bay Region-Region 2 (Regional Water Board) to regulate Discharges from municipalities and local agencies in Alameda, Contra Costa, San Mateo, and Santa Clara counties, and the cities of Fairfield, Suisun City, and Vallejo.

**NON-STORMWATER DISCHARGE** means any Discharge that is not entirely composed of Stormwater (or rain). Non-Stormwater Discharges include but are not limited to polluted groundwater, any Pollutant, Discharges allowed under an NPDES Permit, or an Illicit Discharge.

**NPDES** means National Pollutant Discharge Elimination System, which is a national program for issuing, modifying, revoking and reissuing, terminating, monitoring and enforcing Permits, and imposing and enforcing pretreatment requirements, under Sections 307, 402, 318, and 405 of the Federal Clean Water Act.

**PCB (Polychlorinated Biphenyls) SCREENING ASSESSMENT** means a report prepared by an Applicant for a demolition Permit containing any information and data (investigations, reports, soil samples, laboratory results, Construction Site controls, etc.) reasonably required by the Director.

**PERMIT** means any authorization issued by the City to carry out an action or activity according to the City's Municipal Code, rules, and regulations.

**PERSON** means any individual, partnership, firm, company, corporation, association, joint venture, joint stock company, trust, estate, governmental entity, or any other legal entity or their representatives, agents, or designees.

**PERVIOUS** means the capability of a material or surface (such as landscaping or a natural landscape) to allow water to infiltrate below the surface. Pervious materials may include but are not limited to permeable interlocking concrete pavers, permeable pavers, Pervious concrete and porous asphalt.

**PLANNING ENTITLEMENT** means approval provided by the City to develop a Building (or Buildings) or a piece of land for a specific use according to the City's development standards, rules, and regulations.

**POLLUTANTS or POLLUTANT** means those substances that may cause or contribute to the degradation of water quality of Receiving Waters and are harmful to aquatic life, human health and the environment. Pollutants commonly associated with Stormwater Runoff include but are not limited to total suspended solids; sediment; pathogens (e.g., bacteria, viruses, protozoa); heavy metals (e.g., copper, lead, zinc, and cadmium); petroleum products and polynuclear aromatic hydrocarbons; synthetic organics (e.g., pesticides, herbicides, and PCBs); nutrients (e.g.,

nitrogen and phosphorus fertilizers); oxygen-demanding substances (e.g., decaying vegetation and animal waste); and trash.

**POLLUTION** means the presence, introduction or Discharge into a Receiving Water of a Pollutant that has harmful or poisonous effects on aquatic life, ecological habitat, natural processes of creeks and waterbodies, public health and the environment.

**RECEIVING WATER** means waters of the state, as defined by the Porter-Cologne Water Quality Control Act. Receiving Waters include but are not limited to creeks, marshes, wetlands, shorelines, estuaries, and bays.

**REDEVELOPMENT** means 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. This category includes projects on public or private land that require a Planning Entitlement or Building Permit from the City.

**REFUSE** means and includes compostable materials, recyclable materials, and solid waste. Solid waste means solid and semisolid wastes, generated in or upon, related to the occupancy of, remaining in or emanating from residential premises or commercial premises including but not limited to garbage, trash, rubbish, ashes, and industrial wastes.

**REGIONAL WATER BOARD or WATER BOARD** means the California Regional Water Quality Control Board, San Francisco Bay-Region 2, which issues and enforces the MRP.

REGULATED PROJECT means a project described in Chapter 16.11.150, "Regulated Projects."

**REMODEL** is an extension or modification to an existing structure. This may include a one or secondstory addition that increases the footprint of the structure or an interior reconfiguration.

**RESCAPE** means a program based on nature-based principles that support and protect the Receiving Waters and environment, including but not limited to conserving water and topsoil, using integrated pest management and protecting wildlife.

**RESPONSIBLE PARTY** means any Person who owns, operates, or manages a property, business, facility, or site, or who is otherwise responsible for the activities thereon or the Person whose action or omission causes or results in the violation.

**SANITARY SEWER TREATMENT SYSTEM** means the collection system, all sewers, treatment plants, and other facilities owned or operated by the City for carrying, collecting, storing, treating, reclaiming and disposing of sanitary Sewage and industrial wastes (as defined in Section 16.09.015 of Title 16 of the PAMC).

**SCVURPPP or SANTA CLARA VALLEY URBAN RUNOFF POLLUTION PREVENTION PROGRAM** means an association of fifteen agencies in Santa Clara Valley that share a common NPDES MRP to Discharge to south San Francisco Bay. Member agencies (also referred to as Co-permittees) include the cities or towns of Campbell, Cupertino, Los Altos, Los Altos Hills, Los Gatos, Milpitas, Monte Sereno, Mountain View, Palo Alto, San Jose, Santa Clara, Saratoga, and Sunnyvale, Santa Clara County, and the Santa Clara Valley Water District (Valley Water).

**SEWAGE** means the wastewater of the community derived from residential, agricultural, commercial, or industrial sources, including domestic Sewage, and industrial wastewater, which is required to be conveyed to the Sanitary Sewer System.

**SITE DESIGN MEASURE** means a site planning technique to conserve natural spaces and/or limit the amount of Impervious Surface at Development Projects in order to minimize runoff and the transport of Pollutants in Stormwater Runoff.

**SOURCE CONTROL MEASURE** means any BMP that prevents Pollutant generation, Discharge, and runoff through control at its source or, at a minimum, by limiting Pollutant exposure to Stormwater to prevent Pollutants from entering the Storm Drain System and Receiving Waters.

**SPECIAL PROJECTS** means a type of Regulated Project that meets particular criteria based on size, land use type, and density per the MRP Provision C.3. These projects are typically located in high density areas and are centered around transit-oriented development. If criteria determined by MRP Provision C.3 are met, projects are provided incentive LID treatment reduction credits approved by the Water Board.

**STORM DRAIN SYSTEM** means the storm drain facilities owned, managed, or operated by the City by which Stormwater is collected and/or conveyed to Receiving Waters including but not limited to streets and roads, gutters, curbs, inlets, piped storm drains, culverts, pumping facilities, retention and detention basins, natural and human-made or altered drainage channels, reservoirs, and other drainage structures which are within the City's jurisdiction. The Storm Drain System also includes pipes, underground and surface conveyances, and other components on private property and other property within the City's limits not owned by the City that connect and/or route Stormwater and Stormwater Runoff to the City's Storm Drain System.

**STORMWATER** means any surface flow, runoff, and drainage consisting entirely of water that originates from precipitation events.

**STORMWATER POLLUTION PREVENTION PLAN OR SWPPP** means the plans as described in the General Construction Stormwater General Permit or the Industrial General Permit issued by the State Water Resources Control Board, which specifies BMPs that shall prevent Pollutants from contacting Stormwater and all products of erosion from moving off-site into the Storm Drain System and Receiving Waters.

**STORMWATER RUNOFF** means flow that is created when precipitation falls on Impervious Surfaces or compacted Pervious surfaces that do not allow water to infiltrate into the ground and which typically picks up Pollutants from these surfaces.

**STORMWATER RUN-ON** means flow that runs across Impervious Surfaces or compacted Pervious surfaces from one property to another or from one use on a property to another.

**STORMWATER TREATMENT MEASURE** means any engineered, non-mechanical, or constructed system designed to meet MRP Provision C.3 requirements and remove Pollutants from Stormwater Runoff by simple gravity settling of particulate Pollutants, filtration, infiltration, biological uptake, media adsorption, or any other physical, biological, or chemical process that temporarily detains Stormwater and infiltrates when conditions allow.

**STRUCTURAL RETROFIT BEST MANAGEMENT PRACTICES or STRUCTURAL RETROFIT BMPs** means a retrofit to a structure, fixed feature, or property to prevent or minimize the potential of a Non-Stormwater Discharge to the Storm Drain System or Receiving Waters, in association with an enforcement action due to noncompliance.

**WASTE OIL** means FOG generated by cooking or Food Facility equipment that is not plumbed to the Sanitary Sewer Treatment System but is collected, stored, and hauled off-site. Waste Oil is also known as cooking oil, yellow oil, or tallow.

**WET SEASON** means the period of time from October 1 until April 30 each year.

### 6. Inspection Authority and Types of Required Inspections (PAMC Section 16.11.110)

### A) Authority to Inspect

The Director shall have the authority to inspect private and public facilities, sites, structures, drainage systems, whether existing or under construction, and Mobile Businesses whenever necessary to ensure and confirm compliance with Chapter 16.11.110, San Francisco Bay Area Municipal Regional Stormwater Permit (MRP), these regulations, and any other applicable City or State regulations. These inspections will be conducted by the Watershed Protection Group in the Environmental Services Division of the Public Works Department.

### B) Authority to Enter

The Director shall be authorized to enter, without unreasonable delay, and upon reasonable notice, any premises subject to the requirements of Chapter 16.11.110 to conduct inspections and monitoring to assure compliance with Chapter 16.11.110, these regulations, and any other applicable City or State regulations. An inspection fee shall be charged for each inspection at the amount listed in the City's

Adopted Municipal Fee Schedule<sup>1</sup>. Records related to compliance, including but not limited to operations and maintenance records and agreements, reports, test results, and other information, shall be available to City inspection staff for inspection and documentation.

### C) Refusal of Entry

In the event the owner or occupant of the premises refuses entry after a request to enter and inspect the premises has been made, the City is empowered to seek authorization from any court of competent jurisdiction for such entry.

### D) Types of Inspections

The Director's authority to inspect includes but is not limited to the following types:

- i. Stormwater Treatment Measures, Hydromodification Management Measures and Low Impact Development features to verify proper installation and operations and maintenance (MRP Provision C.3.h.). Per the City's Adopted Municipal Fee Schedule<sup>1</sup>, fees shall be assessed for "Stormwater Treatment Feature Operations and Maintenance Inspections." Frequency of inspections may vary from annually to once every three years.
- ii. Construction Sites and operations for conformance with required plans, applicable Permits, and City requirements for effectiveness of BMPs in preventing Non-Stormwater Discharges (MRP Provision C.6). Per the City's Adopted Municipal Fee Schedule<sup>1</sup>, fees shall be assessed for "Wet Season Construction Site Stormwater Inspections."
- iii. Facilities and operations of industrial and commercial sites that may be sources of Pollutants when exposed to Stormwater or that support industrial and commercial activities that have a reasonable likelihood to be sources of Pollutants to Stormwater and Non-Stormwater Discharges (MRP Provision C.4). Fees shall be assessed per the City's Adopted Municipal Fee Schedule<sup>1</sup>.
- Facilities with trash capture devices in private storm drain inlets that flow directly to the Storm Drain System shall be inspected to verify proper operations and maintenance of the device.
  Fees shall be assessed per the City's Adopted Municipal Fee Schedule<sup>1</sup>.
- v. Construction Sites during demolition determined to have PCB concentrations of 50ppm or greater to verify adequate implementation of Construction Site controls and proper disposal of PCB-containing materials (MRP Provision C.12.g.).
- vi. Inspections in response to reports of potential violations of PAMC Chapter 16.11.

### 7. Required Corrective Actions

### A) Violations and Enforcement

Violations of Chapter 16.11 and these regulations may be enforced as allowed by Title I of the Palo Alto Municipal Code. The Director is authorized to exercise the authority provided in the California Penal Code section 836.5. In addition to any enforcement action authorized under the Municipal Code, the

<sup>&</sup>lt;sup>1</sup> Refer to the <u>https://www.cityofpaloalto.org/Departments/Administrative-Services/City-Budget/Archived-Budget-Documents/Municipal-Fees</u>

Director may require any Person engaged in activities that have resulted in a violation of Chapter 16.11 or these regulations to take any or all the following actions:

- i. Remediation of Discharge. Remediation of a Discharge and restoration of the affected property and/or City right-of-way within a specified time, as needed. The Responsible Party shall also be responsible for cleanup or reimbursement of cleanup costs incurred by the City for cleanup and remediation activities associated with any Discharges that have entered the City's right-of-way, Storm Drain and/or Sanitary Sewer Systems.
- ii. Implementation of Non-Structural BMPs. Implementation of applicable non-structural BMPs to protect the Storm Drain System, Sanitary Sewer System and Receiving Waters to address Pollutant sources, including but not limited to those associated with outdoor Waste Oil storage and disposal areas, outdoor Refuse Management Areas, outdoor parking areas and access roads, outdoor areas used by customers and employees, outdoor vehicle and equipment maintenance and wash areas, outdoor drainage from indoor areas, rooftop equipment, and other sources that have a reasonable potential to contribute to Pollution.
- iii. Implementation of Structural BMPs. Implementation of Structural Retrofit BMPs to address noncompliance of Chapter 16.11 and these regulations. Structural Retrofit BMPs may be required if non-structural BMPs are not adequate for a business to comply with these regulations. Structural Retrofit BMPs may require a Planning Entitlement or Building Permit from the City. Examples of Structural Retrofit BMPs include:
  - New or improvements to Outdoor Refuse Management Areas (e.g., adding walls, roofs, or drains to the Sanitary Sewer System);
  - Covered outdoor materials handling and storage areas; and
  - Installation of pretreatment systems in areas of high Pollutants.

B) Stormwater Enforcement Response Plan (PAMC Section 16.11.120)

The City issues enforcement actions, citations, and invoices for cost recovery according to its Stormwater Enforcement Response Plan and authorized by the City's Municipal Code.

This Plan details enforcement measures for violations of the following MRP Provisions:

- C.3.h Operation and Maintenance of Stormwater Treatment Systems
- C.4: Food Facility Site Controls and Industrial and Commercial Stormwater Inspection Program
- C.5 Illicit Discharge Detection and Elimination Program
- C.6. Construction Site Control (includes C.12 construction inspections at sites with high PCB concentrations)
- C.10. Trash Load Reduction

Violation levels can be minor, moderate, or significant. Enforcement measures can include the following, in order of severity and escalation per the Enforcement Response Plan:

- Verbal Warning;
- Written Warning;
- Notice of Violation with or without Administrative Citation;
- Compliance Meeting/Potential Compliance Order; and

- Possible criminal and civil penalties (per day of violation or other time period determined appropriate for type of violation).
- C) Additional Remedies.

The remedies established in this Part are not exclusive. In addition to any other remedies allowed under the Palo Alto Municipal Code, violations may be subject to penalties established by resolution of the Council or any other enforcement mechanisms allowed by law.

### 8. Prohibited Discharges (MRP Provision C.1; PAMC Section 16.11.060)

### A) Prohibited Discharges

No Person shall cause, allow, or permit any Non-Stormwater Discharge other than those designated as exempt or conditionally exempt by Chapter 16.11. Prohibited Discharges include but are not limited to those associated with the following sources and activities:

- i. Maintenance and use of swimming pools, spas, fountains, and ponds, including Discharges from acid cleaning or filter cleaning/backwash.
- ii. Use or maintenance of and Discharges from the Sanitary Sewer System.
- iii. Industrial activities, uses, and processes including but not limited to industrial waste; cooling systems; heat exchangers; boiler drain lines; compressors; outdoor process and manufacturing areas; and any other industrial fluids and materials.
- iv. Fixed and mobile commercial, industrial, and Food Facility-related business activities, including but not limited to material storage (including Hazardous and non-Hazardous Material and Waste); vehicle fueling; outdoor waste storage and disposal areas; outdoor vehicle and equipment storage and maintenance areas; outdoor parking areas and access roads; outdoor wash areas, for example, areas used to clean equipment and tools; outdoor drainage from indoor areas; rooftop equipment; cleaning and maintenance of paved and unpaved exterior and paved interior surfaces and structures; landscaping installation and maintenance, including weed, pest, and root control; and vehicle service facilities/ fueling service stations.
- v. Construction, demolition, and deconstruction activities, including but not limited to painting; paving and concrete work; saw cutting (of wood, brick, tile, concrete, etc.); grading; waste management; storage and transport of chemicals and other materials; and equipment maintenance and cleaning.
- vi. Residential activities, including maintenance and cleaning of property using soap, cleaners, and other materials for structures, vehicles, and paved surfaces; landscaping installation and maintenance, including weed, pest, and root control; tree landscaping and maintenance; and management of pet waste.
- vii. Chlorinated Potable Water Discharges. It shall be prohibited to allow chlorinated potable water Discharges, including from firefighting testing and training activities.

### B) Dumping of Waste and Wastewater

It is prohibited to cause or permit the disposal of sanitary waste; septic waste; grease; wastewater from sinks, washing machines, dishwashers and bathrooms; Sewage; or any flows from interior drains into the Storm Drain System or Receiving Waters from any property, Mobile Home, recreational vehicle, camper, bus, boat, holding tank, portable toilet, vacuum truck, or other Mobile Source of a waste holding tank, container, or device.

### C) Dumping of Trash and Materials

It is prohibited to throw, deposit, leave, abandon, maintain, or keep materials or wastes on public or private lands in a manner and place where they may result in or cause an Illicit Discharge or may be or may become a Pollutant. In addition, any other material that causes or contributes to Contamination, a nuisance, or Pollution in the City's Storm Drain System or causes a violation of any waste disposal regulations, waste Discharge requirements, or water quality standards or objectives adopted by the State Water Resources Control Board or Regional Water Quality Control Board is prohibited.

### 9. Discharge Exemptions (MRP Provision C.15; PAMC Section 16.11.080)

Unless determined by the Director or the Regional Water Board to be sources of Pollutants to Receiving Waters, the following Discharges are exempt from Discharge prohibitions established by Chapter 16.11.070 and these regulations and are allowed to flow into the Storm Drain System and Receiving Waters:

- Flows from riparian habitats or wetlands;
- Diverted stream flows;
- Flows from natural springs;
- Uncontaminated rising groundwater due to natural processes;
- Uncontaminated and unpolluted groundwater infiltration;
- Pumped groundwater from crawl space pumps and foundation and footing drains of single-family homes. Discharges larger than 2,500 gallons per day shall be treated as conditionally exempt Discharges and shall meet the testing, treatment, maintenance, and reporting requirements of MRP Provision C.15 and these regulations;
- Pumped groundwater from drinking water aquifers (excludes well development);
- Discharges permitted under a NPDES Permit issued to the Discharger and administered by the State of California pursuant to Division 7, Chapter 5.5 of the California Water Code, provided that the Discharger is in compliance with all requirements of the Permit and all other applicable laws and regulations; and
- Any other Discharge exempt from the general prohibition on Discharges to the Storm Drain System under the MRP Provisions A.1, A.2, and C.15.

If any of the above are identified by the Director or the Regional Water Board as sources of Pollutants to Receiving Waters, such categories or sources shall be treated as conditionally exempt Discharges in accordance with Chapter 16.11.090 and these regulations.

### 10. Conditionally Exempt Discharges (MRP Provision C.15; PAMC Section 16.11.090)

The following Discharges are conditionally exempt only if appropriate control measures to eliminate adverse impacts of such sources are implemented in accordance with MRP Provision C.15 and these regulations. If the Director or Water Board deem that any of the following Discharges cause adverse impacts to Receiving Waters, that Discharge will no longer be exempt.

A) Pumped groundwater, foundation drains, and water from crawl space pumps and footing drains Pumped groundwater, foundation drains, and water from crawl space pumps and footing drains not from single-family homes that Discharge less than 10,000 gallons a day. Proposed new Discharges of uncontaminated groundwater at flows of 10,000 gallons/day or more and all new Discharges of potentially Contaminated groundwater shall be reported to the Regional Water Board. Flows greater than 2,500 gallons a day that cannot be Discharged to a landscaped area or Stormwater treatment or green Stormwater measure shall be subject to monitoring and BMP requirements.

### B) Air conditioning condensate.

Air conditioning condensate shall be reused or directed to landscaped areas. If neither is feasible, Discharging to the Storm Drain System shall be allowed with the Director's approval.

C) Water and foam generated from emergency response and/or firefighting activities. BMPs shall be implemented to the Maximum Extent Practicable to minimize potential adverse water quality impacts from water, foam, and other Pollutants Discharged during emergency response and firefighting activities. Such implementation shall not interfere with immediate emergency response operations or impact public health and safety. BMPs and SOPs will be developed as part of a regional collaboration effort by October 2025.

### D) Individual residential car washing.

Individual residential car washing shall be reused or directed to landscaped areas. If neither is feasible, residents shall make every attempt to use commercial car wash facilities. If residential car washing cannot be avoided, minimal amounts of biodegradable and eco-friendly soaps and detergents shall be used.

### E) Irrigation water, landscape irrigation, and law or garden watering

Water from Irrigation water, landscape irrigation, and law or garden watering activities shall not overflow to the curb and gutter or other paved areas or private drainage system that directly flows to the curb and gutter and the City's Storm Drain System.

### F) Protection of Public Health and Safety

Any Discharge that the Director, the local health officer, the Regional Water Quality Control Board, or state or federal agency determines in writing is necessary for the protection of the public health and safety, as allowed under applicable law.

## 11. Obstruction, Damage or Impairment to City Storm Drain System and Right-of-Way (PAMC Section 16.11.140)

Dischargers shall be responsible for and liable to the City for any obstruction, damage, or impairment to the City Storm Drain System and other rights-of-way associated with a violation of Chapters 16.11 and 16.13 that causes an obstruction, damage, or any other impairment to the Storm Drain System. The City

may assess a charge against the Discharger to reimburse the City for costs incurred to clean or repair said obstruction, damage or impairment.

### 12. Development Project Requirements (MRP Provision C.3)

A) Regulated Projects (PAMC Section 16.11.150)

All projects fitting the category descriptions below (hereinafter called "Regulated Projects") shall implement Source Control, site design, and Stormwater Treatment Measures per MRP Provision C.3.c. *Figures 1 and 2* provide summaries of the requirements for Stormwater treatment for private property projects and public projects, respectively. *Figure 3* summarizes what specific activities are included or excluded when calculating threshold area.

Project Type/Description	Threshold Area	Impervious surface area created or replaced
Parcel-Based Requirements		
Detached single-family home not part of a larger plan of development	Cumulative	10,000 SF
Private development	Cumulative	5,000 SF
Private Redevelopment project	Cumulative	5,000 SF
Renovation of existing private parking lots and other pavement (see applicable activities below)	Cumulative	5,000 SF
Private Roads, Sidewalks, and Trails		
New private roads, including sidewalks and bike lanes	Contiguous*	5,000 SF
New private stand-alone trail projects 10 feet wide or wider with Impervious Surface	Contiguous*	5,000 SF
Private sidewalk gap closures, sidewalk replacement, ADA curb ramps not associated with a parcel-based project	Contiguous*	5,000 SF

\*Contiguous project areas are interrupted by cross streets or intersections

*Figure 1: Types of Private Projects that Trigger Regulated Project Requirements (Source: SCVURPPP). See Figure 3 for what activities are included or exempt when calculating threshold area.* 

Project Type/Description	Threshold Area	Impervious surface area created or replaced
Parcel-Based Requirements		
Public development (e.g. new library on previously undeveloped site)	Cumulative	5,000 SF
Public Redevelopment project	Cumulative	5,000 SF
Renovation of existing public parking lots and other pavement (see applicable activities below)	Cumulative	5,000 SF
Public Roads, Sidewalks, and Trails		
New roads, including sidewalks and bike lanes	*Contiguous	5,000 SF
Adding traffic lanes to an existing road	*Contiguous	5,000 SF
New stand-alone trail projects 10 feet wide or wider with Impervious		
Surface (Note: Work may be exempt if runoff is directed to a vegetated	*Contiguous	5,000 SF
area.)		
Sidewalk gap closures, sidewalk replacement, ADA curb ramps not	*Contiguous	5,000 SF
associated with a parcel-based project	-	
Road Maintenance Projects		
Reconstructing existing roads, including adjacent sidewalks and bicycle lanes (see applicable activities below)	*Contiguous	1 acre
Extending roadway edge (e.g., lane widening, safety improvement, paving a graveled shoulder)	*Contiguous	1 acre
Utility trenching projects ≥ 8 feet wide on average over entire length of project	*Contiguous	1 acre

\*Contiguous project areas are interrupted by cross streets or intersections

*Figure 2: Requirements for Stormwater Treatment for Public Property Projects (Source: SCVURPPP). See Figure 3 for what activities are included or exempt when calculating threshold area.* 

	Impervious surface
Specific Activity	area created or
	replaced
Upgrade from dirt to gravel (exempt if built to spec for Pervious pavement)	Included
Upgrade from dirt/gravel to pavement (exempt if built to spec for Pervious pavement)	Included
Removing/replacing asphalt or concrete to top of base course or lower	Included
Repair of pavement base (i.e. base failure repair)	Included
Extending the pavement edge or paving graveled shoulders	Included
Interior Remodels	Exempt
Repair of roof or exterior wall surface	Exempt
Pothole and square cut patching	Exempt
Overlay gravel on existing gravel	Exempt
Overlay asphalt or concrete on existing asphalt or concrete (no increase in area)	Exempt
Upgrade from chip seal or cape seal to asphalt or concrete (no increase in area)	Exempt
Shoulder grading	Exempt
Reshaping/regrading drainage	Exempt
Crack sealing	Exempt
Pavement preservation that does not expand road prism	Exempt
Vegetation maintenance	Exempt

*Figure 3: Work Included or Exempt When Calculating Threshold Area of a Project (Source: SCVURPPP).* 

The categories of Regulated Projects are:

i. New Development Projects or Redevelopment Projects (PAMC Section 16.11.150(a))

New Development or Redevelopment projects that create and/or replace 5,000 square feet or more of Impervious Surface (collectively over the entire project site), including commercial, industrial, residential housing subdivisions (i.e., detached single-family home subdivisions), multi-family attached subdivisions (i.e., town homes, condominiums, and apartments), mixed-use, new and reconstructed private roads and private trails, and public projects (other than public road and trail projects). Public projects include sidewalks and any other portions of the right-of-way that are developed or redeveloped as part of the projects.

Specific exclusions that apply to this category are listed in Subsection vi. below. Public Works projects that are additionally excluded from this category – unless they create and/or replace 5,000 Contiguous (i.e., project areas interrupted by cross streets or intersections) square feet or more of Impervious Surface – include the following examples: sidewalk gap closures, sidewalk section replacement, and Americans with Disabilities Act-compliant curb ramps.

Where a Redevelopment project results in an alteration of 50 percent or more of the Impervious Surface of a previously existing development that was not subject to this Part (not previously considered a Regulated Project), Stormwater Treatment Measures shall be designed and sized to treat Stormwater Runoff from the entire Redevelopment project. Where a Redevelopment results in an alteration of less than 50 percent of the Impervious Surface of a previously existing development that was not subject to this Part, Stormwater Treatment Measures shall be designed and sized to treat Stormwater Runoff from only the new and/or replaced Impervious Surface of the project. The calculations in this Subsection shall include portions of the public right-of-way that are developed or redeveloped as part of the Regulated Project.

ii. New or Widening Road Projects (PAMC Section 16.11.150(b))

Any of the following types of road projects (including both public and private road projects) that create 5,000 square feet or more of newly constructed Contiguous Impervious Surface and that may require a Planning Entitlement or Building Permit from the City:

- 1) Construction of new streets or roads, including sidewalks and bicycle lanes built as part of the new streets or roads.
- 2) Widening of existing streets or roads with additional traffic lanes.
  - Where the addition of traffic lanes results in an alteration of 50 percent or more of the Impervious Surface of an existing street or road within the project that was not subject to this Part, Stormwater Treatment Measures shall be designed and sized to treat Stormwater Runoff from the entire street or road that had additional traffic lanes added. Where the addition of traffic lanes results in an alteration of less than 50 percent of the Impervious Surface of an existing street or road within the project that was not subject to this Part, Stormwater Treatment Measures shall be designed and sized to treat Stormwater Stormwater Treatment Measures shall be designed and sized to treat Stormwater Runoff from only the new traffic lanes. However, if the Stormwater Runoff from the existing traffic lanes and the added traffic lanes cannot be separated, any onsite treatment system shall be designed and sized to treat Stormwater system is installed or in-lieu fees paid in accordance with MRP Provision C.3.e, the offsite treatment system or in-lieu fees shall address only the Stormwater Runoff from the added traffic lanes.
- 3) Construction of impervious trails that are greater than or equal to 10 feet wide or are creek-side (within 50 feet of the top of bank).
- 4) Specific exclusions to this Subsection include the following:
  - Sidewalks built as part of new streets or roads and built to direct Stormwater Runoff to adjacent vegetated areas;
  - Bicycle lanes built as part of new streets or roads, but that are not hydraulically connected to the new streets or roads and that direct Stormwater Runoff to adjacent vegetated areas;
  - Impervious trails that direct Stormwater Runoff to adjacent vegetated areas, or other non-erodible permeable areas, preferably away from creeks or towards the outboard side of levees, where those areas are at least half as large as the contributing Impervious Surface area;
  - Sidewalks, bicycle lanes, or trails constructed as Pervious pavement systems; and
  - Caltrans highway projects and associated facilities.
- iii. Road Reconstruction and Utility Trenching Projects (PAMC Section 16.11.150(c))

Road projects that involve the reconstruction of existing streets or roads, which create and/or replace at least one Contiguous acre of Impervious Surface and that are public road projects, including sidewalks and bicycle lanes that are built or rebuilt as part of the existing streets or roads. There projects may require Planning Entitlement or a Building Permit from the City. This Regulated Project category includes utility trenching projects which are - on average, over the entire length of the project - greater than or equal to eight (8) feet wide. It also includes public pavement maintenance practices listed in subsection v.(3) if they are part of a project that otherwise meets the requirements of this section.

Where the reconstruction project results in an alteration of greater than or equal to 50 percent of the Impervious Surface of an existing street or road within the project that was not subject to this Part, Stormwater Treatment Measures shall be designed and sized to treat Stormwater Runoff from the entire street or road that was reconstructed. Where the reconstruction project results in an alteration of less than 50 percent of the Impervious Surface of an existing street or road within the project that was not subject to this Part, Stormwater Treatment Measures shall be designed and sized to treat Stormwater Runoff from the entire study of the Impervious Surface of an existing street or road within the project that was not subject to this Part, Stormwater Treatment Measures shall be designed and sized to treat Stormwater Runoff from only the new and/or replaced Impervious Surface within the project footprint. However, if the Stormwater Runoff from the existing Impervious Surface and the added Impervious Surface cannot be separated, any onsite treatment system shall be designed and sized to treat Stormwater Runoff from the entire street or road. If an offsite treatment system is installed or in-lieu fees paid in accordance with MRP Provision C.3.e, the offsite treatment system or in-lieu fees shall address only the Stormwater Runoff from the added Impervious Surface.

iv. Large Detached Single-Family Home Projects (PAMC Section 16.11.150(d) and MRP Provision C.3.b.ii.(2)-(3))

Detached Single-Family Home Projects that create and/or replace 10,000 square feet or more of Impervious Surface (collectively over the entire project site) and are not part of a larger development or Redevelopment plan regulated under "New Development Projects or Redevelopment Projects" - see section i above (see also PAMC Section 16.11.150(a)). This Regulated Project category includes the addition of an accessory dwelling unit (ADU) on an existing parcel with one single-family home that is not part of a subdivision or plan.

Where a single-family home project results in an alteration of 50 percent or more of the Impervious Surface of a previously existing project that was not subject to this Part, Stormwater Treatment Measures shall be designed and sized to treat Stormwater Runoff from the entire project (MRP Provision C.3.b.ii(6). Where a single-family home project results in an alteration of less than 50 percent of the Impervious Surface of a previously existing project that was not subject to this Part, Stormwater Treatment Measures shall be designed and sized to treat Stormwater Runoff from the new and/or replaced Impervious Surface of the project.

The calculations in this Subsection shall include portions of the public right-of-way that are developed or redeveloped as part of the Regulated Project.

- v. Exemptions for Redevelopment Projects and Road Reconstruction Projects (PAMC Section 16.11.150(e))
  - 1) The following interior and exterior practices are excluded:
    - Interior Remodels; and
    - Routine maintenance or repair such as roof or exterior wall surface replacement.
  - 2) The following pavement maintenance practices are excluded:
    - Pothole and square cut patching;
    - Overlaying existing asphalt or concrete pavement with asphalt or concrete without expanding the area of coverage;
    - Shoulder grading;
    - Reshaping/regrading drainage systems;
    - Crack sealing;

- Pavement preservation activities that do not expand the road prism;
- Upgrading from a bituminous surface treatment (e.g., chip seal) with an overlay of asphalt or concrete, without expanding the area of coverage;
- Applying a bituminous surface treatment to existing asphalt or concrete pavement, without expanding the area of coverage;
- Vegetation maintenance; and
- Layering gravel over an existing gravel road, without expanding the area of coverage.
- 3) The following pavement maintenance practices are not excluded from being Regulated Projects. For Road Reconstruction Projects, these practices are included only if they trigger all criteria specified in Subsection (iii) "Road Reconstruction Projects" above, including the criteria regarding Contiguousness.
  - Removing and replacing asphalt or concrete pavement to the top of the base course or lower (*Figure 4*) or repairing the pavement base (including repair of the pavement base in preparation for bituminous surface treatment, such as chip seal), as these are considered replaced Impervious Surfaces;



Figure 4: Paved Impervious Surface Cross Section (Figure adapted from <u>City of</u> <u>Portland 2020 Stormwater Management</u> <u>Manual</u>)

- Extending the pavement edge without increasing the size of the road prism, or paving graveled shoulders, as these are considered new Impervious Surfaces; and
- Resurfacing by upgrading from dirt to gravel, to a bituminous surface treatment (e.g., chip seal), to asphalt, or to concrete; or upgrading from gravel to a bituminous surface treatment, to asphalt, or to concrete, as these are considered new Impervious Surfaces.
- 4) For a project consisting of a combination of exempted pavement maintenance practices and non-exempted pavement maintenance and/or practices that fall under any other Regulated Project category, the parts of the project that are not exempt shall be evaluated as a Regulated Project.

- B) Source Control Measures for Regulated Projects (PAMC Section 16.11.160)
  - i. Applicability. All Regulated Projects shall implement Source Control Measures onsite that prevent Pollutants from entering Stormwater Runoff and leaving the site via surface runoff or through a private drainage system, if in existence.
  - ii. Source Control Measures. At a minimum, Regulated Projects must include Source Control Measures as described in MRP Provision C.3.c.i ). Additional measures may be required for projects deemed to create and/or store significant Pollutants. Additional information regarding implementation of Source Control Measures can be found in the SCVURPPP C.3 Handbook<sup>2</sup>. Specific requirements include the following:
    - 1) Interior floor drains. Interior floor drains shall never be connected to the Storm Drain System and shall be plumbed to the Sanitary Sewer System per the Sewer Use Ordinance, Chapter 16.09.160. Contact <u>pretreatment@cityofpaloalto.org</u> for more information.
    - 2) Discharges associated with Food Facility operations and activities. All indoor operations, including but not limited to food prep, dishwashing, and equipment cleaning, shall flow to the Sanitary Sewer System per Chapter 16.13. Outdoor cleaning shall be conducted in an enclosed or bermed area (as appropriate) to contain materials and wash water. This area may be designed as part of the Refuse Management Area (see Part 12, Section N) or as its own structure.
    - 3) Discharges from outdoor wash areas that are part of Multiple-Family Residential Use projects. Outdoor wash areas at structures that are part of Multi-Family residential projects with 25 or units shall only be located in designated areas which are designed, engineered, and/or operated per Chapter 16.09.170 and to prevent impacts to creeks, the Bay, and Receiving Waters. Contact pretreatment@cityofpaloalto.org for more information.
    - 4) Discharges from outdoor wash areas used for business operations. Business activities that involve outdoor washing of vehicles, equipment, tools, and for other business operations shall only flow to the Sanitary Sewer System per Chapter 16.09. Contact <u>pretreatment@cityofpaloalto.org</u> for more information.
    - 5) Discharge drains for swimming pools, spas, and fountains. Discharges shall flow to the Sanitary Sewer System per requirements provided in Chapter 16.09.180. If the Discharge is larger than 20,000 gallons, an Exceptional Waste Discharge Permit is required. Contact <a href="mailto:pretreatment@cityofpaloalto.org">pretreatment@cityofpaloalto.org</a> for more information.
    - 6) Fire sprinkler systems. Flows from fire sprinkler testing, may be Discharged for infiltration to landscaping, if flows do not overflow onto any paved surface or curb and gutter. Where Discharge to landscaping is not feasible, flows may be Discharged to the Sanitary Sewer System per Chapter 16.09.180. Contact <u>pretreatment@cityofpaloalto.org</u> for more information.
    - 7) Outdoor storage, fueling, process areas, and maintenance areas. The following, at minimum, shall be designed to prevent rain from entering the area, prevent materials from exiting the area, be covered and enclosed, and have properly-designed covers, drains, and storage precautions to contain spills in place: outdoor material storage areas; Loading Docks; outdoor waste storage and disposal areas; outdoor vehicle and equipment storage

<sup>&</sup>lt;sup>2</sup> Reference Section 2.2.2 and Appendix H of SCVURPPP's C.3 Stormwater Handbook. https://scvurppp.org/2016/06/20/c-3-stormwater-handbook-june-2016/.

and maintenance areas; and vehicle service facilities/fueling service stations. Discharges from certain types of activities may be required to drain to the Sanitary Sewer System per Chapter 16.09. Contact <a href="mailto:pretreatment@cityofpaloalto.org">pretreatment@cityofpaloalto.org</a> for more information.

- 8) Landscaping. Landscape shall be designed with efficient irrigation systems in a manner that minimizes runoff, promotes surface infiltration, minimizes the use of pesticides and fertilizers, and incorporates other appropriate sustainable landscaping practices and programs such as Rescape California.
- 9) Structures shall be designed to discourage the occurrence and entry of pests into Buildings, thus minimizing the need for pesticides.
- 10) Roof drains and rooftop equipment shall Discharge to an unpaved area or landscaping where feasible.
- iii. Conformance. The design and implementation of the Source Control Measures shall be in accordance with the guidelines and technical specifications established by the Director, these regulations, and MRP Provision C.3.a.i (7)). Source Control Measures shall not be altered without permission from the Director.
- C) Site Design Measures for Regulated Projects (PAMC Section 16.11.170 and MRP Provision C.3.b-c))
  - i. Applicability. All Regulated Projects shall integrate Low Impact Development (LID) Site Design Measures into the project design. LID Site Design Measures for Stormwater quality protection are site planning techniques intended to reduce the project's impact on water quality of Receiving Waters and beneficial uses<sup>3</sup>. Including Site Design Measures such as reducing the amount of Impervious Surfaces in a project can help reduce the size of Stormwater Treatment Measures<sup>4</sup> that are required to be installed at the site of Regulated Projects.
  - ii. Site Design Measures. Per Chapter 16.11.170 and these regulations, all Regulated Projects shall implement all the following Site Design Measures to the Maximum Extent Practicable:
    - 1) Limit disturbance to the site's natural topography, and avoid development on steep slopes and soils that are susceptible to erosion;
    - Limit disturbance to natural water bodies, and drainage systems; minimize compaction of highly permeable soils; protect slopes and channels; and minimize impacts from Stormwater Runoff on the biological integrity of natural drainage systems and water bodies;
    - Conserve natural areas, including existing trees, other vegetation, and soils where feasible. Refer to the <u>City's Urban Forestry program</u> for information about tree protection requirements;
    - 4) Minimize Impervious Surfaces throughout the site by clustering structures and paved areas, reducing Building footprints, designing minimum-impact parking such as shared spaces and reducing sizes of parking stalls, and reducing the length and width of driveways and other paved surfaces;
    - 5) Minimize Stormwater Runoff by implementing one or more of the following Site Design Measures:

<sup>&</sup>lt;sup>3</sup> For an explanation on SF Bay Region's beneficial uses, see

https://www.waterboards.ca.gov/rwqcb2/water\_issues/programs/planningtmdls/basinplan/web/docs/bp\_ch2+tables.pdf <sup>4</sup> For more information, see SCVURPPP's C.3 Stormwater Handbook: https://scvurppp.org/2016/06/20/c-3-stormwater-handbook-june-2016/

- Downspout disconnection
  - (i). Direct roof runoff into cisterns or rain barrels for reuse; and/or
  - (ii). Direct roof runoff onto vegetated areas.
- Redirection of runoff from Impervious Surfaces
  - (iii). Direct runoff from sidewalks, walkways, and/or patios onto vegetated areas; and/or
  - (iv). Direct runoff from driveways and/or uncovered parking lots onto vegetated areas.
- Pervious pavement as alternative to Impervious Surface
  - (v). Construct sidewalks, walkways, and/or patios with Pervious pavement systems (*Figure 5*); and/or
  - (vi). Construct driveways, bike lanes, and/or uncovered parking lots with Pervious pavement.
- iii. Conformance. The design and implementation of the Site Design Measures shall be in accordance with the guidelines and technical specifications established by the Director, these regulations, and MRP Provision C.3.b-c. Site design Measures shall not be altered without permission from the Director.



*Figure 5: Pervious paving at Mayfield Soccer Field, City of Palo Alto. Source: SCVURPPP.* 

- D) LID Stormwater Treatment Measures for Regulated Projects (PAMC Section 16.11.180 and MRP Provision C.3.c.i.(2)(c))
  - i. Applicability. All Regulated Projects shall incorporate LID Stormwater Treatment Measures, which shall be designed, constructed, maintained, and operated for the entire duration that the project is in use in accordance with MRP Provision C.3.c.i.(2)(c), Chapter 16.11.180, and applicable design specifications and requirements, including the SCVURPPP's C.3 Stormwater Handbook<sup>5</sup> and Green Stormwater Infrastructure Handbook<sup>6</sup> and the City's Green Stormwater Infrastructure Handbook. City projects shall adhere to the City's Green Stormwater Infrastructure Handbook and other City specifications and standards.
  - ii. LID Stormwater Treatment Measures are any engineered, non-mechanical, or constructed system designed to meet MRP Provision C.3.c.i.(2)(c) requirements and remove Pollutants from Stormwater Runoff by simple gravity settling of particulate Pollutants, filtration, infiltration, biological uptake, media adsorption, or any other physical, biological, or chemical process that temporarily detains Stormwater and infiltrates when conditions allow. The goal of these treatment measures is to reduce runoff by mimicking a site's predevelopment hydrology by minimizing disturbed areas and impervious cover and then infiltrating, storing, detaining, evapotranspiring, and/or biotreating Stormwater Runoff close to its source. Types of Stormwater Treatment Measures include rain barrels and cisterns, flow-through planters,

<sup>&</sup>lt;sup>5</sup> For the C.3 Stormwater Handbook, visit https://scvurppp.org/2016/06/20/c-3-stormwater-handbook-june-2016/. <sup>6</sup> For GSI Handbook, visit https://scvurppp.org/2019/09/01/scvurppp-green-stormwater-infrastructure-handbook/.

biotreatment (or bioretention) areas/systems, infiltration trenches and systems, and green roofs (if designed per required specifications).

- iii. Treatment of Stormwater Runoff with LID Treatment Measures (MRP Provision C.3.c). All Regulated Projects, except Special Projects, shall treat one hundred percent of the amount of Stormwater Runoff identified in accordance with MRP Provision C.3.c requirements for the Regulated Project's drainage area with Low Impact Development (LID) Stormwater Treatment Measures onsite or at a Joint Stormwater Treatment Facility per MRP Provision C.3.c, Chapter 16.11.180, SCVURPPP, and City specifications. LID treatment measures include harvesting and use, infiltration, evapotranspiration, and biotreatment. Any Regulated Project that cannot feasibly comply with this requirement shall meet the requirements for alternative compliance established in accordance with Subsection (F) below.
- iv. Conformance. At minimum, all Stormwater Treatment Measures shall conform to these regulations, design and material guidelines and specifications established by the Director, the MRP Provision C.3.c, and regional guidance and requirements. Stormwater Treatment Measures shall not be altered without permission from the Director.
- v. Hydraulic Sizing Criteria (PAMC Section 16.11.180 and MRP Provision C.3.d) Stormwater Treatment Measures shall meet at least one of the following hydraulic sizing criteria<sup>7</sup>:
  - Volume Hydraulic Design Basis. Stormwater Treatment Measures with a primary mode of action that depends on volume capacity, where Stormwater is detained for periods of time and is treated primarily through settling and/or filtration processed. Examples of volumebased measures include detention/retention units, cisterns, infiltration structures, bioretention areas, and flow-through planters. Such Stormwater Treatment Measures shall be designed to treat Stormwater Runoff equal to:
    - The maximized Stormwater quality capture volume for the area, based on historical rainfall records, determined using the formula and volume capture coefficients set forth in *Urban Runoff Quality Management*, WEF Manual of Practice No. 23/ASCE Manual of Practice No. 87 (1998), pages 175 178 (e.g. approximately the 85th percentile 24-hour storm runoff event) or the most recent version of this guidance document; or
    - The volume of annual runoff required to achieve 80% or more capture, determined in accordance with the methodology set forth in the CASQA Stormwater Best Management Practices Handbook for New Development and Redevelopment (2003), or the most recent version of this guidance document, using local rainfall data.
  - 2) Flow Hydraulic Design Basis. Stormwater Treatment Measures with a primary mode of action that depends on flow capacity, remove Pollutants from Stormwater flows through filtration, infiltration, or biological processes, and the measures are sized based on hourly or peak flow rates. Examples include tree well filters, media filters, bioretention areas, and flow-through planters. These types of measures shall be sized to treat:

<sup>&</sup>lt;sup>7</sup> Refer to Chapter 5 of the SCVURPPP C.3 Stormwater Handbook for details: visit https://scvurppp.org/2016/06/20/c-3-stormwater-handbook-june-2016/.

- Ten percent of the 50-year peak flow rate; or
- The flow of runoff produced by a rain event equal to at least two times the 85th percentile hourly rainfall intensity for the applicable area, based on historical records of hourly rainfall depths; or
- The flow of runoff resulting from a rain event equal to at least 0.2 inches per hour intensity.
- 3) Combination Flow and Volume Design Basis. Treatment Measures that use a combination of flow and volume capacity shall be sized to treat at least 80% of the total runoff over the life of the project, using local rainfall data. In addition to serving as examples of both flow-based and volume-based Treatment Measures, bioretention areas and flow-through planters can also be sizing using this method.
- vi. Biotreatment/Bioretention Systems. If a biotreatment (also known as bioretention) system (or area) is included in a Regulated Project, the biotreatment system shall be designed to have a surface area no smaller than what is required to treat runoff with a 5.0 inches/hour Stormwater Runoff surface loading rate, infiltrate runoff through biotreatment soil media at a minimum of 5.0 inches/hour, and maximize infiltration to native soil during the life of the measure. The biotreatment soil media shall be designed to sustain plant growth and maximize Stormwater Runoff retention and Pollutant removal and shall conform to specifications approved by the Regional Water Board (per MRP Provision C.3.d and as detailed in Appendix C of the SCVURPPP C.3 Stormwater Handbook) and the Director.
- vii. Green Roofs. Green roofs may be considered biotreatment systems for treatment of roof runoff only if they conform to specifications approved by the Regional Water Board and the Director as described in MRP Provision C.3.c and City regulations. At minimum, the following requirements shall be followed:
  - 1) 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 the MRP Provision C.3.d.i.(1) and the Director.
  - 2) The green roof system planting media shall be sufficiently deep to support the long-term health of the vegetation selected for the green roof, as specified by a landscape architect or other knowledgeable professional.
- E) Limitations on Use of Infiltration Devices as Stormwater Treatment Systems (Measures)
  - viii. Design Requirements. Regulated Projects that propose to install Stormwater Treatment Measures without an underdrain shall not cause or contribute to the degradation of groundwater quality at project sites. Stormwater Treatment Measures intended to primarily function as Infiltration Devices shall be designed, implemented and maintained as follows:
    - Appropriate Pollution prevention and Source Control Measures shall be implemented to protect groundwater at the project site, including the inclusion of a minimum of two feet of suitable native soil to achieve a maximum 5.0 inches/hour infiltration rate for the infiltration system.
    - 2) The vertical distance from the base of any Infiltration Device to the seasonal high groundwater mark shall be at least ten feet. In areas with high groundwater levels, the Director may determine that a greater vertical distance is necessary.

- 3) Unless Stormwater is first treated by a method other than infiltration, Infiltration Devices are not approved as treatment measures for runoff from areas of industrial or light industrial activity; areas subject to high vehicular traffic (i.e., 25,000 or greater average daily traffic on a main roadway or 15,000 or more average daily traffic on any intersecting roadway); automotive repair shops; commercial car washes; fleet storage areas; nurseries; and other land uses that pose a high threat to water quality.
- 4) Infiltration Devices shall not be placed in the vicinity of known soil or groundwater Contamination sites unless it has been demonstrated to the Director's satisfaction that increased infiltration will not increase leaching of Contaminants from soil, alter groundwater flow conditions affecting Contaminant migration in groundwater, or adversely affect remedial activities.
- 5) Infiltration Devices shall not be located less than 100 feet horizontally from any known water supply wells, septic systems, and underground storage tanks with Hazardous Materials.
- 6) Adequate maintenance shall be provided to maximize Pollutant removal capabilities.

F) Alternate Compliance (16.11.180(c), 16.11.220(d) and MRP Provision C.3.e)

If a Development Project cannot meet the requirements of Chapter 16.11 or these regulations, the Director may approve alternate compliance and allow in-lieu measures and/or fees if deemed necessary by individual site conditions. Projects shall still meet all Regulated Project requirements but may be allowed to do so partially onsite or fully off-site or through payment of in-lieu fees. This approval shall occur prior to issuance of Planning under Title 18 of this Code, or a Building Permit if no Entitlement is required, unless the Director allows an exception.

G) Special Projects (PAMC Section 16.11.180 and MRP Provision C.3.e.ii.)

Projects that are considered "smart growth" or "high-density" are designed in a manner that can reduce existing Impervious Surfaces or create less "accessory" impervious area and automobile-related Pollutant impacts. These types of projects shall be allowed to apply for Incentive LID Treatment Reduction Credits per the Water Board's process outlined in MRP Provision C.3.e.ii. For any Special Project, the allowable incentive LID Treatment Reduction Credit is the maximum percentage of the amount of runoff identified in MRP Provision C.3.d for its drainage area that may be treated with one or a combination of the following non-LID treatment systems: tree-box-type high flowrate biofilters or vault-based high flowrate media filters. MRP Provision C.3.e.ii requirements shall be fully met in order to be considered a Special Project and eligible for LID Treatment Reduction Credits.

H) Certification of Compliance for Regulated Projects (PAMC Section 16.11.190)

- i. Prior to the issuance of a Planning Entitlement under Title 18 of this Code, or a Building Permit if no Entitlement is required, for a Regulated Project, the Applicant or designee of a Regulated Project shall submit a certification by a qualified third-party reviewer acceptable to the Director that the design of the project complies with the requirements of Chapter 16.11.190, these regulations, MRP Provision C.3, and any plan review comments provided by the Director.
- ii. Prior to the issuance of a final certificate of occupancy, the Applicant or a designee shall submit a written certification by a qualified third-party reviewer acceptable to the Director that a Regulated Project was constructed or installed in accordance with the approved plans and drawings and per these regulations and MRP Provision C.3.

- iii. The third-party reviewer shall be an independent civil engineer, licensed architect, or landscape architect registered in the State of California, shall have current training in Stormwater Treatment Measure design and construction, and meet other requirements set forth by these regulations. The third-party reviewer shall not be any consultant or contractor hired to design and/or construct a Stormwater Treatment Measure for the Regulated Project. Certifications and documentation required by this Part shall be in the form prescribed by the Director.
- iv. During the Building Permit application process, the Applicant or designee shall submit a draft Operations and Management Agreement Document that provides property information and fully describes the Stormwater Treatment Measures to be installed at said property. After the final copy of the Agreement is approved by the Director and signed by the Applicant, property owner, or designee and City designated representatives, the Agreement shall be filed with the property deed at the County Records Office. A Building Permit shall not be issued if the agreement is not approved by the Director.
- v. The Director may impose additional requirements as necessary to effectuate the purposes of Chapter 16.11.190.
- vi. The Applicant is responsible for ensuring that the Stormwater Treatment Measure is constructed per the design approved by the Director.

I) Green Infrastructure Design and Construction Requirements (PAMC 16.11.200) Regulated Projects shall comply with applicable design and construction guidelines and standard specifications included in the City's Green Stormwater Infrastructure Plan (MRP Provision C.3.j) and related documents, including the SCVURPPP C.3 Stormwater Handbook and Green Stormwater Infrastructure Handbook and other design guidelines, standard specifications, and requirements established by the Director. City projects shall adhere to the City's Green Stormwater Infrastructure Handbook.

- J) Required Hydromodification Management Measures for Regulated Projects (PAMC 16.11.210 and MRP Provision C.3.g)
  - i. Applicability. All Regulated Projects that create and/or replace one acre (43,560 square feet) or more of Impervious Surface and result in a net increase in Impervious Surface over the preproject condition shall implement Hydromodification Management Measures as required by MRP Provision C.3.g. These measures are intended to limit increases in runoff peak flow, duration, and volume where such increases may cause increased erosion of creek beds and banks, silt Pollutant generation, or other impacts to beneficial uses.
  - ii. Exemption. Projects that meet one or more of the following criteria are exempt from the requirements of this Section:
    - 1) Projects located in a catchment that drains to a hardened channel, such as continuously lined in concrete, engineered channel or enclosed pipes, which extend continuously to the SF Bay or in a catchment that drains to channels that are tidally influenced.
    - 2) Projects located in a catchment or subwatershed that is highly developed (70% or more imperviousness).

Areas considered exempt are designated in the Hydromodification Applicability Map contained in Attachment C of the MRP.

- iii. Requirements. Projects that meet Hydromodification Management criteria shall be designed and implemented in accordance with these regulations, any subsequent orders established by the Director, and MRP Provision C.3.g requirements, the provisions of the Hydromodification Management Plan of the MRP as approved by the Regional Water Board, and other applicable regulations and policies. Refer to the MRP Provision C.3.g and Chapter 7 of the SCVURPPP C.3 Handbook<sup>8</sup> for more information.
- iv. All Hydromodification Management Measures are subject to inspection and approval by the Director.
- K) Operation and Maintenance of Stormwater Treatment Measures and Hydromodification Management Measures (PAMC 16.11.220)
  - i. Applicability. All Regulated Projects that construct any type of Stormwater Treatment Measure(s) and Hydromodification Management Measures shall submit, and update as needed, a maintenance agreement in accordance with MRP Provision C.3, Chapter 16.11.220, and these regulations. The property owner, manager, and/or other representative taking responsibility for maintenance and operation of the measure(s) is designated in the agreement. Measures identified in the agreement may not be modified without approval from the Director.
  - ii. Responsibility for Maintenance. The property owner(s), its administrators, successors, and any other Persons responsible for the management of the property, including a homeowner's association, shall take all necessary actions to ensure that the Stormwater Treatment and Hydromodification Management Measures are properly maintained so that all measures continue to operate as originally designed and approved for the life of the project. These measures shall not be removed, replaced, or amended without the Director's approval.
  - iii. Maintenance Agreement Submittal. Before a Building Permit is issued, an Applicant shall submit a maintenance agreement including all information and documentation required by the Director. This agreement shall be approved by the Director, signed by the City Attorney or designee and property owner(s), and recorded with Santa Clara County.
  - iv. City Oversight. The operation and maintenance of the Measures shall be conducted in accordance with the terms and conditions of the agreement. Such maintenance shall be inspected by City staff on a regular frequency at no less than once every three years, and an inspection fee shall be charged for each inspection at the amount listed in the City's Adopted Municipal Fee Schedule<sup>9</sup>.
  - v. If the property changes ownership at any time, the new property owner(s) shall take on responsibility for maintenance of any Stormwater Treatment and Hydromodification

 <sup>&</sup>lt;sup>8</sup> See SCVURPPP's C.3 Stormwater Handbook: https://scvurppp.org/2016/06/20/c-3-stormwater-handbook-june-2016/
<sup>9</sup> Refer to the "Stormwater Treatment Feature Operations and Maintenance Inspections" at

https://www.cityofpaloalto.org/Departments/Administrative-Services/City-Budget/Archived-Budget-Documents/Municipal-Fees

Management Measures located on that property and shall adhere to the maintenance agreement.

- vi. Any Stormwater Treatment Measure(s) and/or Hydromodification Management Measures that has been constructed through an alternate compliance option (allowed by the Director) shall also have a maintenance agreement.
- L) Low Impact Development Source Control and Site Design Measures for Projects Other Than "Regulated Projects" Under Section 16.11.160 (PAMC Section 16.11.230)
  - i. Applicability. This Section shall apply to Development and Redevelopment Projects that require a Planning Entitlement or a Building Permit from the City but are not Regulated Projects. This may include commercial, industrial, residential housing subdivisions, Multiple-Family Residential Use, mixed-use, Detached Single-Family Homes, two-family (duplex) homes, new and reconstructed private roads and private trails, and public projects other than public road and trail projects.
  - ii. Projects shall implement site design and Source Control Measures described in MRP C.3.c.i(1) and (2)(a) to the Maximum Extent Practicable. At a minimum:
    - All Development Projects that require a Planning Entitlement or Building Permit from the City and which create or replace two thousand five hundred square feet or more and less than five thousand square feet of Impervious Surface and smaller Detached Single-Family Home Projects that create and/or replace two thousand five hundred square feet or more of Impervious Surface and less than ten thousand square feet of Impervious Surface will install one or more of the following Site Design Measures:
      - Direct roof runoff into cisterns or rain barrels for reuse;
      - Direct roof runoff onto vegetated areas;
      - Direct runoff from sidewalks, walkways, and/or patios onto vegetated areas;
      - Direct runoff from driveways or uncovered parking areas/lots onto vegetated areas;
      - Construct sidewalks, driveways, and/or patios with permeable surfaces;
      - Construct bike lanes, driveways, and/or uncovered parking lots or areas with permeable surfaces.
    - 2) All new development and Redevelopment projects that create or replace less than two thousand five hundred square feet of impervious surface and require a Planning Entitlement or Building Permit from the City, but do not meet the definition of Regulated Project, are encouraged to include adequate Site Design Measures that include minimizing land disturbance and Impervious Surfaces. These may include clustering of structures and pavement; directing roof runoff to vegetated areas, use of micro-detention, including distributed landscape-based detention of Stormwater, preservation of open space and/or restoration of riparian areas or wetland as project amenities.
  - iii. Conformance. The design and implementation of the Site Design and Source Control Measures shall be in accordance with the guidelines and technical specifications established by the Director, these regulations, and MRP Provision C.3. Measures shall not be altered without permission from the Director.

- M) Requirements for All Development Projects (PAMC 16.11.240)
  - i. Applicability. This Section shall apply to any Development Project that requires a Planning Entitlement, except for minor projects such as those limited to signs, fences, and parking restriping that have no or minimal potential to create Non-Stormwater Discharges.
  - ii. Industrial rooftop equipment, including, but not limited to, mechanical, heating and cooling, shall drain to the Sanitary Sewer System per Chapter 16.09. Single-family and two-family residences that are not part of a larger development plan are exempt from the requirements of this section. Contact <u>pretreatment@cityofpaloalto.org</u> for more information.
  - iii. No Building materials containing mercury (e.g., switches in sewer or storm drain sumps) shall be used on any structure or equipment that is used, stored, or maintained outdoors in a manner to be exposed, or potentially exposed, to Stormwater.
  - iv. No Building materials containing copper (e.g., roofing, gutters, downspouts, and copper granule-containing asphalt shingles) shall be used on any structure or equipment that is used, stored, or maintained outdoors in a manner to be exposed, or potentially exposed, to Stormwater. Replacement roofing (with roofing material pre-patinated by the manufacturer), gutters, and downspouts on historic structures are exempt from this prohibition. As used herein, "historic structures" means structures designated as Category 1 or Category 2 Buildings in the Palo Alto Historical and Architectural Resources Inventory and Report, as amended.
  - v. Storm drain inlets downgrade of a material storage, Outdoor Refuse Management Area, or secondary containment area shall contain appropriate inlet protection that is regularly maintained in accordance with manufacturer or product specifications.
  - vi. Storm drain inlets located on private property shall be labeled to designate that they drain to the Bay or a nearby creek (if that information is known), such as "No dumping/flows to X Creek/Bay." "X" shall be replaced with the name of the creek to which the property drains. Labels or medallions shall be permanently installed and maintained.
  - vii. All Development projects shall incorporate minimum Best Management Practices required by Section 16.11.290 and implementing City regulations during project design to the extent that the BMPs apply to the portion of the site or facility being developed.
- N) Requirements for Loading Docks (PAMC 16.11.260)
  - i. Applicability. This Section shall apply to any project that includes the construction of a Loading Dock.
  - ii. The following requirements shall be met for all Loading Docks where applicable:
    - 1) The Loading Dock and surrounding area shall consist of Impervious paving appropriate for the material(s) that will be loaded/unloaded to avoid leaching into or degradation of paving.
    - 2) The Loading Dock shall be covered and protected from precipitation, Stormwater Runoff and Stormwater Run-on to minimize potential Non-Stormwater Discharges.

- 3) The Loading Dock shall be designed to drain to the Sanitary Sewer System per Chapter 16.09.160. Drains may be required to be equipped with a fail-safe shut-off Valve, normally closed, or equivalent device according to the type of materials or substances being transferred. Valves shall be immediately shut off if a spill of any size occurs and shall not be opened until the spill is completely remediated. Contact <a href="mailto:pretreatment@cityofpaloalto.org">pretreatment@cityofpaloalto.org</a> for more information.
- O) Drainage Design Standards for Development Projects (PAMC 16.11.270)
  - i. All new Development Projects shall meet the requirements of the Public Works Drainage Design Standards and the Santa Clara County Drainage Manual in effect at the time of submission of a complete Planning Entitlement application, or if no application is required for the Development Project, at the time of submission of a complete application for a Building Permit or excavation and grading Permit, whichever occurs first.
  - ii. All Development Projects and Remodels requiring a Building Permit or excavation and grading Permit shall meet the requirements of the Public Works Drainage Design Standards provided by the Public Works Director for the portion of the site or facility being constructed, Remodeled, or improved.
  - iii. Notwithstanding the foregoing provisions of this Section, a project shall not be subject to the requirements of this Section if the project does not include new or alterations to drainage patterns of the site.
- P) Requirements for Construction Sites and Activities (PAMC 16.11.280) (MRP Provision C.6).
  - i. All workers, contractors, subcontractors, and superintendents of Construction Sites of any size shall follow and implement Best Management Practices (BMPs) to prevent potential Pollutants from being tracked, mobilized, carried, transported, or Discharged into the on-site storm drain inlet(s), City's right-of-way, Storm Drain System, and Receiving Waters, as required by these regulations. A Construction Site is defined as any site where Construction Activity occurs, which includes any earth- or soil-disturbing activity, including but not limited to clearing, grading, paving, landscaping, excavation, stockpiling, material storage, disturbances to land or ground such as building of a structure, and demolition or removal of structures or paved surfaces.
  - ii. Projects covered under the State of California Construction General Permit (CGP) shall also meet the requirements of this Section. Project Applicants shall provide to the City a copy of the Notice of Intent and Notice of Termination required under the CGP.
  - iii. Contractor/Subcontractor Requirements. The Applicant shall ensure the following actions be conducted for preparation of and during construction projects:
    - Construction BMPs and proper housekeeping shall be in place until exterior Impervious Surfaces, the Building shell, landscaping, and Stormwater Treatment Measures are in place. BMPs shall be referenced from, but not limited to, the latest revised editions of the Construction Volume of the CASQA Stormwater Best Management Practices Handbook and the California Department of Transportation Construction Site Best Management Practices

Manual. At a minimum, the City's "Construction Best Management Practices (BMPs)"<sup>10</sup>, which must be included in all project design plans for contractor/subcontractor reference, shall be followed.

- 2) Comply with and successfully implement all applicable provisions of Stormwater management, Pollution prevention, and erosion and sediment control plans. These plans shall be available at all times at all Construction Sites and updated as changes are made. Preparation of these plans shall be in accordance with Chapter 16.11 and 16.28, these regulations, and any other requirements required by the Director, and must be approved by the Director before issuance of a grading Permit.
- 3) Train employees and subcontractors on all BMPs, waste management, and proper spill prevention, control, and cleanup procedures according to waste type.
- 4) Conduct regular inspections of all BMPs at an appropriate frequency per final site plans or per the Director.
- 5) Within 24 working hours of a forecasted rain event, inspect, replace, and maintain as needed all site BMPs. If BMPs were required to be removed or were removed from the public right-of-way by City staff, they shall be replaced by the end of the following business day or end of rain event by contractor/subcontractor.
- 6) Notify the Director of any spills, leaks or issues encountered in establishing or maintaining BMPs.
- 7) Manage Hazardous Materials and Waste in compliance with Title 17 of this Code, and requirements of Santa Clara County and the State of California.
- iv. All Construction Sites, at minimum, shall have site specific, seasonally, phase-appropriate, and effective BMPs as required by the Director. These BMPs are described in the following six categories:
  - 1) **Erosion Control** retains sediment onsite during Construction Activities and include the following:
    - Preservation of existing vegetation (where possible)
    - Stabilization of non-active areas
    - Use of erosion control in concentrated flow paths via use of erosion control blankets, erosion control seeding, check dams, and other BMPs (*Figure 6*).
    - Application of permanent erosion control prior to completion of construction



Figure 6: Example of erosion control with fiber rolls staked in/trenched on slope (Source: CA Dept. of Transportation).

<sup>&</sup>lt;sup>10</sup> https://scvurppp.org/pdfs/1415/SCVURPPP\_Countywide\_Program\_BMP\_Plan\_Sheet\_041615.pdf

### 2) Run-on and Runoff

**Controls** are temporary or permanent structural measures to prevent flows from entering or leaving the Construction Site. Control measures can include compost socks/berms/blankets and lined channels (*Figure 7*).



Figure 7: Example of Runoff Control-Grass-lined Channel in a Construction Area (Source: Anthony D'Angelo for US EPA, 2017).

### 3) Sediment Control,

including entrance/exit and perimeter controls are temporary or permanent structural measures designed to intercept and settle out soil particles before draining off-site. Sediment control can include silt fences, sediment basins/traps, check dams, fiber rolls, gravel bag berms, street sweeping, sandbag barriers, storm drain inlet protection, compost sock/berm, and entrance/outlet tire wash station (*Figure 8*).



*Figure 8: Example of sediment control: storm drain inlet protection (Source: scvurppp.org).* 

4) Active Treatment Systems reduce turbidity of Construction Site runoff by utilizing coagulants and flocculants (or an electric current) to enhance settling and removal of suspended sediments from Discharge. The active treatment systems require trained operators and are frequently brought in on trailer mounted tanks to the Construction Site. (*Figure 9*).



*Figure 9: Example of Active Treatment Dewatering Rental System (Source: pureeffect.com).* 

- 5) **Good Site Management**, including materials and waste management, can prevent the release of materials to Stormwater Discharges. These measures include:
  - Preventing materials/waste from having direct contact with precipitation and Stormwater.
  - Preventing wind dispersion of loose materials.
  - Preventing spills and dumping of materials and waste.
  - Proper stockpile management (*Figure 10*).
  - Proper waste management, including Contaminated soils, concrete waste, sanitary/septic waste, Hazardous Waste, liquid waste.



*Figure 10: Example of Good Site Management by covering inactive soil stockpiles (Source: CA Dept. of Transportation).* 

- 6) **Non-Stormwater Management** prevents Non-Stormwater Discharges into the Storm Drain System or water bodies (unless authorized by the Director or Water Board). The following Non-Stormwater management BMPs can help at a Construction Site:
  - Vehicle/equipment cleaning/ fueling/ maintenance areas (Figure 10)
    - Illicit Connection/Discharge prevention
    - Dewatering operation
    - Temporary creek crossing
    - o Demolition plan for removal adjacent to water Temporary batch plants
    - Water conservation practices
- v. The Director is authorized to oversee, inspect, and require expedient compliance and cleanup at all Construction Sites year-round. A fee shall be assessed as authorized by the City's Adopted Municipal Fee Schedule<sup>11</sup>.
- vi. Wet Season Construction At a minimum, the following sites shall be subject to monthly inspections (MRP Provision C.6.e.ii (2)) during the Wet Season (October through April):
  - 1) All Construction Sites disturbing a minimum of 10,000 square feet of land;
  - All hillside projects on sites with ≥15 percent slope disturbing greater than or equal to 5,000 square feet; and
  - 3) High Priority Sites Other sites determined by the City or the Water Board determined to be significant threats to water quality.

Inspections may occur at a more frequent basis as established by the Director. Types of sites to be inspected may be amended by the Director at any time to protect the water quality of Receiving Waters.

<sup>&</sup>lt;sup>11</sup> https://www.cityofpaloalto.org/Departments/Administrative-Services/City-Budget/Archived-Budget-Documents/Municipal-Fees

vii. The Applicant shall be responsible for ensuring compliance of this Section by its contractors and subcontractors.

### 13. Required Best Management Practices for All Dischargers (PAMC 16.11.290)

Required Best Management Practices (BMPs). Any Person engaged in activities or operations that will or may result in a Non-Stormwater Discharge, or who owns or manages a facility or property where such activities or operations occur, shall implement and consistently comply with the following BMPs to manage sources of Pollutants:

i. Secondary containment shall be provided for exterior work areas where motor oil, brake fluid, gasoline, diesel fuel, radiator fluid, liquid chemicals, or other Hazardous Materials or Wastes are temporarily or permanently used or stored in accordance with requirements of the California Department of Toxic Substances Control, Santa Clara County, and Title 17 of this Code. Liquid materials shall be stored in a secure manner to prevent Discharges to the Sanitary Sewer or Storm Drain Systems, including any inlets, manholes, or connections during facility activities or spills. No components of the Storm Drain System shall be



Figure 11: Hazardous Waste Disposal Checklist Example

installed within or downgrade of the secondary containment areas. The County of Santa Clara Hazardous Materials Compliance Division provides information and answers questions on proper disposal of Hazardous Waste<sup>12</sup>. Proper disposal of Hazardous Waste first involves understanding where to dispose of each type of waste. The County has developed Hazardous Waste disposal checklists for many types of businesses, including Mobile Businesses and small automotive repair facilities, among other types (*Figure 11*).

- ii. Storm drain inlets shall be clearly marked with the words "No dumping Flows to Bay" or equivalent.
- iii. Sustainable, nature-based landscaping practices from the Rescape Program<sup>13</sup> shall be used during landscaping maintenance operations.
- iv. Outdoor Site Maintenance
  - 1) Parking lots, outdoor work areas, Loading Docks, outdoor storage areas, and Refuse management areas shall be kept free of trash, sediment, wash water, cigarette butts and any other potential Pollutants generated, stored, or disposed of on that property.

<sup>&</sup>lt;sup>12</sup> https://hazmat.sccgov.org/programs-and-services/hazardous-waste

<sup>&</sup>lt;sup>13</sup> https://www.rescapeca.org/

- 2) Paved areas shall be swept manually using dry methods or with mechanical equipment intended to use minimal water. If the paved area shall be subsequently cleaned with water,
- wash water shall be contained, captured, and reused, or properly disposed of in the Sanitary Sewer System<sup>14</sup> with approval from the Director.
- 4) If cigarette smoking is allowed in outdoor areas of the property, the property owner or operator shall provide ashtrays and maintain the ashtrays and smoking areas to prevent cigarette butts from being blown to the adjacent sidewalk and street and being Discharged to the Storm Drain System.
- 5) Prevent materials/waste from having direct contact with precipitation and Stormwater.
  - Prevent wind dispersion of loose materials.
  - Prevent spills and dumping of materials and waste.
  - Ensure proper stockpile management.
- v. On-site Cleaning and Maintenance of Vehicles, Tools and Equipment
  - 1) Water and Pollutants associated with cleaning and maintenance activities of vehicles, tools, equipment, and other items used in business operations shall not enter the Storm Drain System. Cleaning activities shall be conducted at a facility or location designed and permitted for these uses and shall not allow Stormwater Runoff or Run-on. Washwater may either drain directly to the Sanitary Sewer System per Chapter 16.09, or be contained, captured, and disposed of off-site appropriately. Contact <a href="mailto:pretreatment@cityofpaloalto.org">pretreatment@cityofpaloalto.org</a> for more information.
  - 2) BMPs for on-site cleaning and maintenance of vehicles, tools, and equipment:
    - All vehicle and equipment maintenance shall be performed indoors. If work is done outdoors per approval by the Director, work under a roof overhang or temporary shelter and/or use curbs, berms, tarps, or dikes to contain spills and runoff.
    - Spill containment and cleanup kits shall be onsite and always kept up-to-date.
    - Change fluids carefully using a drip pan to avoid spills.
    - Prevent fluid leaks from stored vehicles by draining fluids (gas, transmission, hydraulic, break, radiator) prior to storage.
    - Use a funnel when pouring liquids and place a tray underneath to catch spills. Clean up spills immediately using dry clean-up methods.
    - Conduct daily inspections of vehicle parking areas for leaks/spills.
    - Designate a permitted washing area where water drains to the Sanitary Sewer System.
    - Shop floors shall not be hosed down and shall be swept regularly. Minimal water may be used if wash waster is disposed of appropriately per Sanitary Sewer BMPs.
    - Dispose of Refuse frequently.
    - Park vehicles under cover and on an Impervious Surface whenever possible.
    - Train all employees on BMPs, and conduct refresher trainings as necessary. Keep records of all trainings. Records shall be made available during City inspections upon request.

<sup>&</sup>lt;sup>14</sup> Please call (<u>650) 329-2122</u> or email <u>cleanbay@cityofpaloalto.org</u>. For urgent issues regarding Hazardous Materials entering the storm drain or illegal dumping, please call <u>650-329-2413</u> or use the City's Palo Alto 311 system: https://www.cityofpaloalto.org/Residents/Services/Report-an-Issue/Palo-Alto-311

- vi. Persons storing chemicals or chemical waste outdoors are required to install spill containment subject to requirements established by the Director, Palo Alto Municipal Code, and federal, state and county standards. Persons storing any other materials or equipment that are potential sources of Stormwater Pollution are also required to install spill containment. No Person shall operate a spill containment system that could allow incompatible materials and/or wastes to mix, thereby creating hazardous or toxic substances in the event of failure of one or more containers.
- vii. Spill containment systems shall consist of a system of dikes, walls, barriers, berms, and/or other devices designed to contain the spillage of the liquid contents of the containers stored in them and to minimize the buildup of Stormwater from rain, and run-on from roof drainage and outside areas. If the spill containment system does not have a roof which covers the entire contained area, the spill containment system shall have the capacity to contain precipitation from at least a twenty-four (24) hour, twenty-five (25) year rainfall event plus ten percent (10%) of the total volume of the material stored or the volume of the largest container, whichever is greater. Spill containment systems shall also be constructed of impermeable and non-reactive materials to the materials and/or wastes being contained.
- viii. On-site Storm Drain Inlets
  - On-Site storm drain inlets shall be inspected and maintained annually, at a minimum, before the Wet Season. Storm drain inlets at sites where sediment and other debris are generated or stored may be required to be monitored, cleaned, and maintained at a higher frequency, as determined in these regulations or during a site inspection by the City.
  - 2) Facilities where outside activities involving oil and grease are conducted, or that store sediment, soil, and other materials in areas that have storm drain inlets located downgrade or near these types of activities or materials, may be required to install oil and water separators on-site to capture Pollutants to prevent them from entering the Storm Drain System, as determined in these regulations or during an inspection. Areas that drain to the Sanitary Sewer System shall not be subject to this provision but shall instead adhere to the requirements of Chapter 16.09 of this Code.
  - 3) If trash capture devices are required by the Director (see Section 14 Trash Load Reductions (MRP C.10)), property owners shall take responsibility for maintenance and upgrades as determined necessary. Trash capture devices shall be subject to inspections to ensure optimal performance.

### Q) Structural Retrofit BMPs

The Director may require compliance with additional requirements such as Structural Retrofit BMPs, if necessary, to achieve the purposes of these regulations. Examples of Structural Retrofit BMPs include:

- Properly designed Refuse Management Areas with drains to Sanitary Sewer System and compliance with Chapter 16.13 if business is defined as a Food Facility;
- Covered outdoor materials handling and storage areas; and
- Permitted vehicle wash areas approved by the Director.

### R) State of California Industrial General Permit

Any business subject to the State of California Industrial General Permit shall provide a copy of its Stormwater Pollution Prevention Plan (SWPPP) upon request.

### S) Hazardous Materials Plan

If a business is required to have a Hazardous Materials Release Response Plan and Inventory under Division 20 of the California Health and Safety Code, or a Hazardous Waste Generator Contingency Plan and Emergency Procedures under California Code of Regulations, Title 22 Sections 66265.51-66265.56, a copy of the required plan shall be provided to the City upon request.

### T) BMP Inspections

The Director is authorized to oversee, inspect, and require expedient compliance of this section at all commercial and industrial businesses and other facilities that are determined to potentially generate or store Pollutants. Inspection fees shall be assessed per the City's Adopted Municipal Fee Schedule<sup>15</sup>.

## 14. Illicit Discharge Detection and Elimination and Illicit Connections (MRP Provision C.5; PAMC 16.11.300 and PAMC 16.11.310)

- A) Prohibition of Illicit Connections (C.5; PAMC 16.11.300)
  - Illicit Connections include any device, artifice, method, or connection that conveys Non-Stormwater to the Storm Drain System, directly to a creek, or to the Bay. No Person shall construct, use, maintain, or permit or suffer the construction, use, maintenance, or continued existence of an Illicit Connection (*Figures 12 and 13*).
  - Illicit Connections shall be immediately removed, permanently plugged, or re-plumbed to a connection point approved by the Director.
  - iii. The provisions of this Section shall apply to, without limitation, Illicit Connections established in the past, regardless of whether the connection was permissible under law or practices applicable or prevailing at the time of connection.



*Figure 12: Example of an illicit connection.* 

- B) Spill Containment and Notification of Non-Stormwater Discharges (C.5; PAMC 16.11.300)
  - i. Any Responsible Party who has knowledge or information of any known or suspected release of materials, which has resulted in or may result in, a Non-Stormwater Discharge, other than that permitted by these regulations, shall take all necessary steps to immediately cease, contain, report, and clean up the spill (or potential thereof). Per the Director, these actions may include cleaning the impacted public and private Storm Drain System or performing additional monitoring to determine the nature and extent of the Discharge. If a Person cannot identify the spilled material, the Person shall not attempt to clean it up in a manner that may result in a Non-Stormwater Discharge or harm to human health and shall instead call the Palo Alto non-emergency dispatch at (650) 329-2421.

<sup>&</sup>lt;sup>15</sup> https://www.cityofpaloalto.org/Departments/Administrative-Services/City-Budget/Archived-Budget-Documents/Municipal-Fees

- ii. If a spill occurs on private property, the Responsible Party shall be responsible for cleaning the private property and any private sanitary or storm drain components located on said property. The Responsible Party shall seek guidance from City staff before cleaning the private sanitary or storm drain components.
- iii. Dry clean-up methods shall be used to minimize movement of material from the spilled area.
  Examples of dry clean-up methods for dry and wet materials are provided below:
  - 1) Dry materials (such as granular, dust, and powder)
    - Cover the spill with plastic or a tarp to prevent a breeze from moving the material.
    - Put weights on the cover.



Figure 13: Illicit Connection discharging pump water to gutter (Source: SCVURPPP May 2018 Industrial, Commercial and Illicit Discharge Stormwater Inspector Workshop).

- Use a broom, dustpan, or shovel to sweep up the spill while rolling back the tarp to expose only a small area at a time.
- Place spillage in metal or plastic containers. Plastic bags may be used, but only as a last resort.
- Secure and label the containers for later disposal. Dispose of material as Hazardous or non-Hazardous Waste depending on type of product.
- 2) Liquid spills
  - Soak up the liquid with an appropriate absorbent such as a sweeping compound or sawdust.
  - Use a broom to work the absorbent into the spill.
  - Gather the combined material and deposit it in a labeled plastic or metal container.
  - Contaminated soil may need to be removed. Soil should be packaged in labeled containers for later disposal. Dispose of the material as Hazardous or Non-Hazardous waste depending on the type of product.
- iv. If a spill has entered or will enter the City's right-of-way (such as the sidewalk, gutter, street or storm drain), the Responsible Party shall immediately contact the City's non-emergency Police Dispatch at (650) 329-2413 for assistance. Although the Responsible Party shall also clean or have cleaned the impacted City property and/or Storm Drain System and/or Sanitary Sewer System, said Party or representative shall not perform cleaning until direction and approval is provided by Director.
- v. If a Person cannot identify the spilled material, the Person shall not attempt to clean it up in a manner that may result in a Discharge or harm to human health. The Person shall contact the City's non-emergency Police Dispatch at (650) 329-2413 for assistance.
- vi. In the event a spill or incident reaches the City's right-of-way, the Director shall conduct an investigation and enforcement per the Enforcement Response Plan until the issue is deemed

corrected. The Responsible Party may also be charged for City staff time and equipment used as deemed necessary.

- vii. The Responsible Party and their agents shall adhere to the requirements of Title 17 of this Code with respect to Hazardous Materials and Wastes, and all applicable requirements of the County of Santa Clara and the State of California.
- C) Mobile Businesses (PAMC 16.11.310)
  - i. Applicability. This section applies to Mobile Businesses, defined as those whose operations may produce or result in the production of Pollutants and that do not operate from a permanent structure but provide mobile services during particular time periods or upon request at temporary locations. Types of Mobile Businesses include but are not limited to cleaning or power washing of vehicles, structures, windows, or parking lots; engine or equipment degreasing; acid cleaning of unpainted trucks or containers; steam cleaning; carpet cleaning; dental and medical care; vehicle repair, servicing, fueling and cleaning; food preparation and vending; and pet services (including grooming, veterinary care and other miscellaneous services). These services may include the use of detergents, degreasers, soaps, brake pad and tire dust, toxic chemicals, and Contaminated water, all of which are considered Pollutants. Wash water and Pollutants draining from Mobile Businesses washed into the street and Storm Drain System flow to local creeks and San Francisco Bay without any cleaning or filtering, harming water quality. Federal, state, and City regulations prohibit Discharge of anything but rainwater into the Storm Drain System.
  - ii. Non-Stormwater Discharges from Mobile Businesses (MRP Provision C.5.e). Activities conducted by Mobile Business shall not result in Non-Stormwater Discharges, which include wash water and any other Pollutants associated with said activities. Wash water and other substances used to conduct Mobile Business activities shall not be allowed to Discharge into a storm drain inlet or other component of the Storm Drain System, onto the street, sidewalk, or other paved surface, or directly into a water body (Figure 14). Instead, all wash water and Pollutants shall be disposed of in a cleanout that is connected to the Sanitary Sewer System with prior permission from the City of Palo Alto Pretreatment Program. Contact this program for more information at Pretreatment@cityofpaloalto.org.



Figure 14: Only rain down the drain (Source: SCVURPPP.org).

iii. Mobile businesses shall use BMPs to prevent Pollutants from Discharging to the Storm Drain System or the Sanitary Sewer Systems without pretreatment. BMPs shall be in place at all times and are subject to inspection by City staff. The list of required BMPs for Mobile Businesses described below shall be followed at a minimum, but additional BMPs may be required dependent on the type of activities conducted<sup>16</sup>.

- 1) Contact the City's Pretreatment Program at Pretreatment@cityofpaloalto.org to determine what materials can be disposed of in the Sanitary Sewer System with or without pretreatment. Discharge connections to the sanitary may include a floor, utility or mop sink, a toilet, or cleanout. Small amounts of wash water may be Discharged to nearby landscaping if it does not overflow to other surfaces.
- 2) For wet cleaning (or outdoor cleaning that requires water), temporarily seal the storm drain inlet and pump or hose wash water to a Sanitary Sewer System connection, with prior permission. Equipment such as a drain mat or berm shall be used to contain wash water. Screens shall be used to collect wash water particles (such as from filters used in carpet cleaning or pet grooming) before they are pumped to a sanitary sewer connection. Material trapped by filters can generally be disposed of in a trash receptacle, unless considered hazardous.
- 3) Clean up materials and wash water that are spilled, leak, or remain on outdoor surfaces using dry clean-up methods (such as sweeping or vacuuming) first. Surfaces shall not be washed or hosed down, even if with clean potable water, as Pollutants may be washed into the street, sidewalk, or Storm Drain System.
- 4) Use cleaning products labeled "biodegradable" or "non-toxic" when available. These types of products decrease the amount of chemicals (or Pollutants) used, although they may still be harmful to aquatic life and wildlife and should not be Discharged to the Storm Drain System, local creeks, or the SF Bay.

### 15. Pesticides Toxicity Control (MRP Provision C.9; PAMC 16.11.320)

### A) Pesticides Overview

Pesticides are often toxic to fish and other aquatic life. Certain types of pesticides, such as organophosphates and pyrethroids (used in common insecticides), are especially harmful to humans and the aquatic food chain and have been found in local creeks. Urban environments are a major source of these toxic pesticides to creeks.<sup>17</sup>

Urban uses of pesticides include commercial landscaping, personal gardens, and general control of outdoor weeds and bugs. Rain and irrigation water can wash pesticide residues from homes and businesses into the Storm Drain System, creeks, and the San Francisco Bay. Consequently, the least-toxic method for controlling specific pests shall be used whenever possible.

### B) Urban-Use Pesticides of Concern

Although all urban-use pesticides may harm water quality, MRP Provision C.9 describes the following as priority urban-use pesticides of concern (Pesticides of Concern): diamides (chlorantraniliprole and cyantraniliprole); diuron, fipronil and its degradates; indoxacarb; organophosphorous insecticides (chlorpyrifos, diazinon, and malathion); pyrethroids (metofluthrin, bifenthrin, cyfluthrin, beta-cyfluthrin,

<sup>&</sup>lt;sup>16</sup> Mobile business BMPs adapted from SCVURPPP's "Mobile Business Best Management Practices" handout. https://scvurppp.org/2012/05/01/mobile-businesses-best-management-practices/

<sup>&</sup>lt;sup>17</sup> Source: Santa Clara Valley Urban Runoff Pollution Prevention Program (SCVURPPP). Pesticides Toxicity Reduction webpage. https://scvurppp.org/pesticides/

cypermethrin, deltamethrin, esfenvalerate, lambda-cyhalothrin, and permethrin); carbamates (e.g., carbaryl and aldicarb); and neonicotinoids (e.g., imidacloprid, acetamiprid, and dinotefuran).

### C) Integrated Pest Management Policy

To reduce the use of pesticides, MRP Provision C.9 requires that City employees and contractors comply with the City's Integrated Pest Management Policy and procedures in City operations and on City property. The Integrated Pest Management Policy<sup>18</sup> and procedures for the use of pesticides shall be used by both City employees and staff. The purpose of this Integrated Pest Management (IPM) Policy is to establish landscape and structural pest management practices that reduce ecotoxicity and protect water quality and human health. Contractors shall be required to follow this policy and procedures at all times, unless an exemption is provided by the Director. For additional information on what Palo Alto and other Santa Clara County cities are doing to reduce the effects of toxic pesticides, visit the SCVURPP Pesticide Toxicity Reduction website: <u>https://scvurppp.org/pesticides/.</u>

### 16. Trash Load Reduction (MRP Provision C.10; PAMC 16.11.330)

### A) Trash Loads Overview.

Trash and litter are significant Pollutants and impact water quality of the San Francisco Bay, local creeks, estuaries, and the Pacific Ocean (*Figure 15*). Data suggest that plastic trash persists for hundreds of years in the environment and can pose a threat to wildlife through ingestion, entrapment, as well as harboring chemicals harmful to the aquatic environment<sup>19</sup>. MRP Provision C.10 includes significant trash reduction requirements to be met by July 1, 2025.

<sup>&</sup>lt;sup>18</sup> The 2020 Integrated Pest Management Policy can be found on the City's website here:

https://www.cityofpaloalto.org/files/assets/public/sustainability/policies-and-plans/integrated-pest-management-policy-july-2020.pdf

<sup>&</sup>lt;sup>19</sup> Source: Santa Clara Valley Urban Runoff Pollution Prevention Program (SCVURPPP). Trash Reduction webpage. https://scvurppp.org/trash/



Figure 15: How Trash Gets Into Creeks (Source: SCVURPPP.org).

### B) Requirements for Existing Businesses

By July 1, 2025, private properties that generate moderate, high, or very high trash loads as determined by City assessments per the allowed MRP Provision C.10 protocol and that "directly" Discharge Stormwater into the Storm Drain System or to a water body shall be equipped with Full Trash Capture Device or Systems or be managed with trash Discharge control actions equivalent to or better than Full Trash Capture Systems. "Directly Discharging" means that the flows and Pollutants enter a storm drain inlet on private property and directly connect to the City's Storm Drain System. Private property owners are responsible for maintenance and upgrades and shall be subject to inspections as required by the Director.

### C) Requirements for Development Projects

All Development Projects that have operable private storm drain inlets on their property that directly Discharge to the City's Storm Drain System, creeks, or San Francisco Bay shall install Full Trash Capture Devices or Systems approved by the State Water Resources Control Board<sup>20</sup>. Private property owners shall take responsibility for maintenance and upgrades as determined necessary by the Director and shall be subject to inspections to ensure optimal performance.

<sup>&</sup>lt;sup>20</sup> List of approved devices provided <u>here</u>:

https://www.waterboards.ca.gov/water\_issues/programs/stormwater/docs/trash\_implementation/2023/full-cptre-available-to-public.11.27.2023.pdf

- D) Full Trash Capture Device or System Requirements
  - i. Full Trash Capture Device or System Design Requirements (see examples in *Figures 16-19*). All Full Trash Capture Devices or Systems shall meet the following requirements:
    - Trap all particles that are 5mm or greater
    - Have design treatment capacities that are either:
      - No less than the peak flow rate (Q) resulting from a one-year, one-hour storm in the subdrainage area, OR
      - Appropriately sized to, and designed to carry at least the same flows as, the corresponding storm drain pipe.
    - Have a trash reservoir large enough to contain a reasonable amount of trash safely without overflowing trash into the overflow outlet between maintenance events.
    - Be certified by the State Water Resource Control Board<sup>21</sup>.



*Figure 17: Example Full Trash Capture Device (Source: stormtrap.com).* 



*Figure 16: Example Full Trash Capture Device (Source: ADSpipe.com).* 



*Figure 18: Example Full Trash Capture Device (Source: oldcastleinfrastructure.com).* 

<sup>&</sup>lt;sup>21</sup> <u>https://www.waterboards.ca.gov/water\_issues/programs/stormwater/docs/trash\_implementation/2023/full-cptre-available-to-public.11.27.2023.pdf</u> or reference the list provided by CASQA here: <u>https://www.casqa.org/resources/water-guality-priorities/trash/certified-trash-full-capture-systems-available-to-the-public</u>



*Figure 19: Example Full Trash Capture Device (Source: hydro\_int.com).* 

ii. Full Trash Capture Device or System Maintenance Requirements. Full Trash Capture Devices or Systems shall be inspected by City staff and maintained by the property owner to ensure that they are operating appropriately and have sufficient operating capacity to capture trash consistent with these requirements. The inspection and maintenance of each Full Capture Device shall be at a frequency sufficient to prevent overflow or bypassing of trash, including plugging of the 5 mm screen and the device's trash reservoir. In addition to inspection by City staff, the property owner shall inspect and maintain all Full Trash Capture Devices at least once per year. In High and Very High trash generation areas, the property owner shall inspect and maintain Full Trash Capture Devices a minimum of twice per year, with the inspections spaced at least three months or more apart.

For catch basin insert type full capture systems, if any such device is found to have a plugged or blinded screen, or is 50 percent full or greater, during an inspection or a maintenance event, the inspection and maintenance frequency shall be increased so that the device is neither plugged nor 50 percent or more full of trash at the next inspection or maintenance event. For high-flow capacity devices, if any such device is found to have a plugged or blinded screen or exhibits a condition that exceeds the manufacturer's guidelines for requiring maintenance, the inspection and maintenance frequency shall be increased so that the device is neither plugged nor exceeds the manufacturer's guidelines during the next inspection or maintenance event.

- iii. The private property owner shall provide the mapped location and drainage area served by each system. The private property owner shall maintain maintenance records, including: device type, date of installation, location, drainage area, date(s) of inspection and maintenance, the capacity condition of the device at the time of inspection and maintenance (full and overflowing or with storage capacity remaining), any special problems such as flooding, screen blinding or plugging from leaves, plastic bags, or other debris causing overflow, any damage reducing function, or other negative conditions.
- iv. Trash generation rate categories (*Figures 21-23*). For the purposes of this Section, trash generation rate categories shall be defined as follows:

### \*NOT YET APPROVED\*

Low = less than 5 gal/acre/yr; Moderate = 5-10 gal/acre/yr; High = 10-50 gal/acre/yr; and Very High = greater than 50 gal/acre/yr.



Figure 21: LOW trash level (Source: Onland Visual Trash Assessment Protocol for Stormwater, EOA, Inc.).



Figure 22: HIGH trash level (Source: On-land Visual Trash Assessment Protocol for Stormwater, EOA, Inc.).



Figure 20: MODERATE trash level (Source: On-land Visual Trash Assessment Protocol for Stormwater, EOA, Inc.).



Figure 23: VERY HIGH trash level (Source: On-land Visual Trash Assessment Protocol for Stormwater, EOA, Inc.)

### 17. Mercury Controls (MRP Provision C.11; PAMC 16.11.340)

### A) Mercury Overview

Mercury exists naturally in the Earth's rocky crust as a stable element, but two things have led to harmful amounts of mercury in the San Francisco Bay:

- Legacy and ongoing human activity has concentrated and released unnaturally large amounts of it into the environment (historic mercury, gold & silver mining in the 1800s and artisanal mining today, fossil fuel combustion, concrete production, consumer goods).
- Newly available mercury from human activity deposits from air, washes or seeps into local waterways, and is then turned into its toxic form (methylmercury) by bacteria that live in wet soils and aquatic environments. Methylmercury is a neurotoxin<sup>22</sup>.

It is unsafe to eat certain fish and shellfish caught in the San Francisco Bay, because they have built-up toxic levels of mercury (and Polychlorinated Biphenyls (PCBs))<sup>22</sup>. Eating Contaminated seafood can lead to health problems in humans and wildlife, including muscle weakness, brain damage, reproductive issues, and even cancer.

### B) Mercury Control Program

The City has implemented a mercury control program consisting of an assessment methodology and data collection program to identify and quantify reductions of mercury loads in Stormwater through implementation of Pollution prevention, Source Control, treatment control, and Green Stormwater Infrastructure (GSI) measures, and other measures (*Figure 24*). In addition, the City's Zero Waste Program collects household mercury waste as part of its Household Hazardous Waste Program.<sup>23</sup> Mercury waste collected in this program includes thermometers, thermostats, and switches.

### C) Source Property Identification and Abatement

The Director shall investigate and identify properties and land areas that likely contribute mercury to the Storm Drain System and take action to abate or cause abatement of the mercury sources, or to refer the identified properties to the Regional Water Board for follow-up measures. These investigations will likely focus on land areas where industrial activities occurred prior to 1980 and continue today (i.e., old industrial land use areas). Source properties referred to the Water Board shall implement interim enhanced operation and maintenance measures as required by the Director.



Figure 24: City of Palo Alto Green Stormwater Infrastructure Plan Framework (Source: cityofpaloalto.org/gsi).

### D) Designated Properties

Properties currently or formerly zoned for Medical Office and Medical Research (MOR) District Research, Office and Limited Manufacturing (ROLM) District Research, Office and Limited Manufacturing

<sup>&</sup>lt;sup>22</sup> Source SCVURPPP Sources of PCBs and Mercury webpage: https://scvurppp.org/pcbs-hg/pcbs-hg-sources/

<sup>&</sup>lt;sup>23</sup> https://www.cityofpaloalto.org/Departments/Public-Works/Zero-Waste/What-Goes-Where/Hazardous-Waste

Subdistrict - Embarcadero [ROLM(E)] Research Park District [RP] Research Park Subdistrict 5 [RP(5)] General Manufacturing District [GM] and other properties designated by the Director shall implement treatment control measures, GSI measures, or other control measures to treat Stormwater per MRP Provision C.11, regional guidance and these regulations.

### E) Green Stormwater Infrastructure

Per its Green Stormwater Infrastructure (GSI) Plan Framework (June 30, 2017)<sup>24</sup> the City encourages GSI that will reduce loads of Pollutants of concern, including mercury. Over the next few decades, the City will reduce the load of mercury in Stormwater Discharges through various means, with a portion of these load reductions achieved through the installation of GSI measures.

### 18. Polychlorinated Biphenyls (PCBs) Controls (MRP Provision C.12; PAMC 16.11.350/360)

### A) PCBs Overview

Polychlorinated biphenyls (PCBs) are a group of man-made chemical compounds that were once used in many industrial, construction, and electrical applications. They were widely used by many industries because of their low electrical conductivity, high boiling point, chemical stability, and flame-retardant properties. The largest use of PCBs was in electrical equipment, including transformers and capacitors, but they were also widely used in a variety of other applications, including hydraulic fluids, dust control, flame retardants, lubricants, paints, sealants, wood preservatives, thermal or fiberglass insulation, adhesive mastics, rubber window gaskets, inks, dyes, and plasticizers (*Figure 25*). PCBs have also been found in a variety of non-liquid materials, including construction materials such as insulation, roofing, and siding.

PCBs were made in the United States (U.S.) for 50 years until the manufacturing of PCBs was banned in 1979. Their import, export, and distribution in commerce were also banned, and PCB uses were restricted to totally enclosed applications. The U.S. Environmental Protection Agency (EPA) authorized other minor uses, but the unavailability of PCBs and health concerns ended their use in new applications. Demolition of older Buildings are potential sites of ongoing concern.<sup>25</sup>



*Figure 25: Caulk, gaskets, and insulation can all contain PCBs (Source: SCVURPPP).* 

It is unsafe to eat certain fish & shellfish caught in

the San Francisco Bay because they have built-up toxic levels of PCBs. Eating Contaminated seafood can lead to health problems in humans and wildlife, including muscle weakness, brain damage, reproductive issues, and even cancer.

<sup>&</sup>lt;sup>24</sup> The City's Green Stormwater Infrastructure Plan Framework (June 30, 2017) can be found here:

https://www.cityofpaloalto.org/files/assets/public/public-works/environmental-compliance/stormwater-wpg/greenstormwater-infrastructure-gsi/city-of-palo-alto-gsi-plan-framework\_final-with-signature.pdf

<sup>&</sup>lt;sup>25</sup> Source SCVURPPP Sources of PCBs and Mercury webpage: https://scvurppp.org/pcbs-hg/pcbs-hg-sources/

### B) PCBs Control Program

The City has implemented a polychlorinated biphenyls (PCBs) control program consisting of an assessment methodology and data collection program to identify and quantify reductions of PCB loads in Stormwater through implementation of Pollution prevention, source control, treatment control, Green Stormwater infrastructure (GSI) measures, and other measures taken as part of the PCBs control program.

### C) Source Property Identification and Abatement

The Director shall investigate and identify properties and land areas that likely contribute PCBs to the Storm Drain System and take action to abate or cause abatement of the PCB sources or refer the identified properties to the Regional Water Board for follow-up measures. These investigations will likely focus on land areas where industrial activities occurred prior to 1980 and continue today (i.e., old industrial land use areas). Source properties referred to the Water Board shall implement interim enhanced operation and maintenance measures as required by the Director.

### D) Designated Properties

Properties currently or formerly zoned for Medical Office and Medical Research (MOR) District Research, Office and Limited Manufacturing (ROLM) District Research, Office and Limited Manufacturing Subdistrict - Embarcadero [ROLM(E)] Research Park District [RP] Research Park Subdistrict 5 [RP(5)] General Manufacturing District [GM] and other properties designated by the Director shall implement treatment control measures, GSI measures, or other control measures to treat Stormwater per MRP Provision C.12, regional guidance and these regulations.

- E) Management of PCBs During Building Demolition Activities
  - i. Applicability. This section shall apply to projects that require a Demolition Permit. Demolitions of single-family residences and wood-framed structures are exempt.
  - PCB Screening Assessment required for projects involving demolition. Any Person undertaking a project that requires a Demolition Permit and involves a structure constructed or Remodeled between January 1, 1950 and December 31, 1980, inclusive, shall perform a PCB Screening Assessment to determine the presence of PCBs and other hazardous substances at the demolition site and to follow applicable disposal requirements. PCBs from these structures, a Pollutant, can enter the Storm Drain System during and/or after demolition through vehicle track-out, airborne releases, soil erosion, or Stormwater Runoff. The City has documented these requirements in its "PCBs in Priority Building Materials Program: Managing PCBs During Whole Building Demolitions" document<sup>26</sup> (*Figure 26*).



Figure 26: PCBs in Priority Building Materials Program. Source: City of Palo Alto and BASMAA

<sup>&</sup>lt;sup>26</sup> The City's "PCBs in Priority Building Materials: Model Screening Assessment Applicant Package" can be found here: https://www.cityofpaloalto.org/Departments/Public-Works/Watershed-Protection/PCBs-Deconstruction-Program

The PCB Screening Assessment shall be submitted prior to issuance of any demolition Permit. The Director may require the PCB Screening Assessment to include any information deemed reasonable to determine the concentration of PCBs in any Primary Building Materials.

- iii. For Demolition Permits approved on and after July 1, 2023, for structures that have been screened for PCBs and have materials with PCBs concentrations of 50 ppm or greater per the required sampling procedures, demolition contractors shall notify City, the Regional Water Board, and U.S. EPA at least four weeks before any demolition is to occur (*Figure 27*). Structures that have materials with PCB concentrations of 1ppm or greater shall notify the City a minimum of two weeks in advance. The demolition contractors shall provide notification to the City that the demolition is complete within five workdays of completion.
- iv. Hazardous Waste Manifests. For projects with any amount of PCBs concentrations, demolition contractors shall submit a Hazardous Waste manifest for the disposal of the PCBs materials to the City's Public Works-Watershed Protection staff within one week of it becoming available.
- v. Demolition projects with materials containing PCB concentrations of 50 ppm or greater shall be

### Notes Regarding Federal and State PCBs Regulations

1. See 40 Code of Federal Regulations (CFR) 761.3 for important information relative to disposal of PCBs-containing building materials, including definitions of PCBs bulk product wastes and PCBs remediation wastes. Also see the memorandum dated October 24, 2012 "PCB Bulk Product Waste Reinterpretation" from Suzanne Rudzinski, Director, Office of Resource Conservation and Recovery, EPA.

2. Disposal of PCBs wastes are subject to TSCA requirements such as manifesting of the waste for transportation and disposal. See 40 CFR 761 and 40 CFR 761, Subpart K.

3. TSCA-regulated does not equate solely to materials containing PCBs at or above 50 ppm. There are circumstances in which materials containing PCBs below 50 ppm are subject to regulation under TSCA. See 40 CFR 761.61(a)(5)(i)(B)(2)(ii).

4. Disposal of PCBs wastes are subject to California Code of Regulations (CCR) Title 22, Section Division 4.5, Chapter 12, Standards Applicable to Hazardous Waste Generators.

5. California hazardous waste regulatory levels for PCBs are 5 ppm based on the Soluble Threshold Limit Concentration test and 50 ppm based on the Total Threshold Limit Concentration test, see CCR, Title 22, Section 66261.24, Table III.

#### Figure 27: PCBs in Priority Building Materials Program. Source: BASMAA

inspected by City staff to verify adequate implementation of Construction Site controls and proper disposal of materials. The following PCB control measures shall be implemented as needed and as prescribed by the Director:

- 1) Erosion Control
  - Provide temporary soil stabilization with hydroseeding, soil binders, or erosion control blankets for all disturbed soils within fourteen (14) days of the area becoming inactive.

- Provide temporary soil stabilization with erosion control blankets or geotextiles disturbed soils in the demolition zone when precipitation is predicted.
- Use water and/or dust palliatives to manage dust during the demolition process. Dust control water shall be managed to prevent runoff or collected for proper disposal.
- 2) Run-on and Runoff Control
  - Use earth dikes, drainage swales, and/or other controls to direct run on away from demolition site and debris storage areas.
  - Use earth dikes, drainage swales, and/or other controls to direct runoff from the site to sediment controls.
- 3) Sediment Control
  - Install site perimeter controls (e.g., wattles, silt fences) around the project site.
  - Install perimeter controls (e.g., wattles, silt fences) around the demolition area and debris management areas.
  - Install stabilized entrances to minimize sediment track out.
  - Sweep streets and pavement on the project site and adjacent streets using vacuum or regenerative air sweepers to effectively remove sediment, dust, and debris. Daily sweeping may be needed, using vacuum or regenerative air sweepers to effectively remove sediment, dust, and debris during the general demolition phase. Frequency shall be determined by the Director.
  - Install inlet protection at all onsite and off-site storm drain inlets that receive project runoff.
- 4) Good Site Management
  - Use water and/or dust palliatives to manage dust during the demolition process. Dust control water shall be managed to prevent runoff or collected for proper disposal.
  - Require demolition contractors to sweep project sites and streets around property with street sweepers that effectively removed sediment and dust. Frequency shall be determined by the Director.
  - Use manual tools or tools that employ misters, e.g., wet sanders to generate lower dust volumes. Water shall be collected for proper disposal.
  - Construct work containment zones to prevent spread of potentially Contaminated dust. Use plastic sheeting, vacuum, and/or install a decontamination area.
  - Cover demolition debris with an impermeable liner or place into covered leak-tight debris bins.
  - Properly dispose of wastes (debris, liquid, and any other materials used such as for BMPs). Maintain waste disposal records (e.g., manifests, bills of lading) and submit to the City and U.S. EPA as required.
  - Decontaminate equipment before storing outdoors or using in other parts of the project.
  - Contain decontamination water in covered leak-tight containers inside a Building or inside secondary containment.

### F) Green Stormwater Infrastructure

Per its GSI Plan Framework (June 30, 2017)<sup>27</sup> the City encourages GSI that will reduce loads of Pollutants of concern, including PCBs. Over the next few decades, the City shall reduce the load of PCBs in Stormwater Discharges through various means, with a portion of these load reductions achieved through the installation of GSI measures.

### 19. Copper Controls (MRP Provision C.13; PAMC 16.11.370)

Stormwater Runoff from Buildings and streets picks up copper and other Pollutants. This runoff flows untreated into creeks and the San Francisco Bay (Bay) resulting in thousands of pounds of copper entering the Bay each year. The sources of copper include vehicle brake pads, automotive fluids, wash waters, and architectural Building materials. Copper is an essential nutrient for all plants and animals in low concentrations, but in higher concentrations, copper is toxic to aquatic organisms. Chronic exposure to copper can affect the survival, growth, reproduction, brain function, blood chemistry and metabolism of fish and other living organisms<sup>28</sup>.

The City's Copper Control Program includes:

- Prohibition of Discharges from pools, spas, and fountains that contain copper-based chemicals
- Prohibition of industrial Discharges containing copper to the Storm Drain System
- Prohibition of copper roofing materials

Copper can also be found in sediments near roads and sidewalks, as copper is also found in the dust from copper-based brake pad dust. Sediment control efforts can also contribute to copper reductions. (*Figure 28*). The City's Best Management Practices (BMPs) include street sweeping, inlet maintenance, and construction/landscaping practices to reduce sediment and erosion.



*Figure 28: Examples of Sediment Removal for Copper Control (Source: Santa Clara Valley Urban Runoff Pollution Prevention Program. Copper Reduction webpage. https://scvurppp.org/copper/).* 

### A) Pools, Spas, and Fountains

Discharges from pools, spas, and fountains that contain copper-based chemicals are prohibited from entering the Storm Drain System. Owners of pools, spas, and fountains shall either install a sanitary

<sup>27</sup> The City's Green Stormwater Infrastructure Plan Framework (June 30, 2017) can be found here:

https://www.cityofpaloalto.org/files/assets/public/public-works/environmental-compliance/stormwater-wpg/greenstormwater-infrastructure-gsi/city-of-palo-alto-gsi-plan-framework\_final-with-signature.pdf

<sup>28</sup> Source: Santa Clara Valley Urban Runoff Pollution Prevention Program (SCVURPPP). Copper Reduction webpage. https://scvurppp.org/copper/ sewer connection, including a connection for filter backwash, or divert the Discharge to landscaping if it does not overflow the landscaped area.

A properly maintained pool, spa, and fountain will reduce the need for draining (*Figure 29*). At a minimum, owners of pools, spas, and fountains shall implement the following BMPs<sup>29</sup>:

- i. Clean the pool, spa, or fountain regularly, maintain proper chlorine levels, and maintain water filtration and circulation.
- Manage pH and water hardness to minimize copper pipe corrosion that can stain the surface of the pool and Discharge to local creeks and the Bay.
- iii. Algae shall be controlled without the use of copper algaecides.
- iv. Filters shall be cleaned over landscaping. Material from the filter shall be disposed of in the trash.
- v. Cartridge filters shall be rinsed on a landscaped or dirt area.
- vi. Backwash sand and diatomaceous earth filters shall be rinsed onto landscaped or dirt area. Backwash Discharges shall not flow to the sidewalk, street, gutter, or Storm Drain System.
- vii. If draining to the Sanitary Sewer System cleanout is necessary, contact the City at <u>pretreatment@cityofpaloalto.org</u> for permission and additional information.



Figure 29: City of Palo Alto public outreach on draining pools, spas, and fountains to the sewer (https://www.cityofpaloalto.org/files/assets/public/utilities/bil l-inserts/rwq\_drainsmart-may-2023-ubi-final-interactive-forweb.pdf)

<sup>&</sup>lt;sup>29</sup> Source: Santa Clara Valley Urban Runoff Pollution Prevention Program (SCVURPPP). Draining Pools & Spas factsheet. https://scvurppp.org/wp-content/uploads/2019/11/01\_PoolsBro\_FINAL.pdf

### B) Industrial Sources

Each industrial source in the City shall have BMPs in place to minimize Discharge of copper to the Storm Drain System as required by the Director.

### C) Roofing Materials

Copper metal roofing, copper granule containing asphalt shingles, and copper gutters shall not be permitted for use on any residential, commercial, or industrial Building for which a Building Permit is required. Copper flashing for use under tiles or slates and small copper ornaments are exempt from this prohibition. Replacement roofing and gutters on historic structures are exempt, provided that the roofing material used shall be pre-patinated at the factory. Patination should not be done on-site. For the purposes of this exemption, the definition of "historic"



Figure 30: Example of Copper Roof

shall be limited to structures designated as Category 1 or Category 2 Buildings in the current edition of the Palo Alto Historical and Architectural Resources Report and Inventory (*Figure 30*). During maintenance of copper roofing and gutters on historic structures, the following BMPs shall be implemented prior to activities such as power washing the roof, re-patination, or re-application of impervious coating:

- Block storm drain inlets as needed to prevent runoff from entering storm drains.
- Discharge the wash water to landscaping. If this is not an option, haul the wash water offsite for proper disposal.