City of Palo Alto

Municipal Regional Stormwater Permit Annual Report

FY 2022 – 2023

September 30, 2023

CITY OF PALO ALTO

CITY OF PALO ALTO

September 30, 2023

Ms. Eileen White
Executive Officer
San Francisco Bay Regional Water Quality Control Board
1515 Clay Street, Suite 1400
Oakland, CA 94612

Subject: **City of Palo Alto**
FY 2022-2023 Annual Report

Dear Ms. White:

This letter and Annual Report with attachments is submitted by **City of Palo Alto** pursuant to Permit Provision C.22.a of the Municipal Regional Stormwater NPDES Permit (MRP), Order R2-2022-0018, NPDES Permit No CAS612008 issued by the San Francisco Bay Regional Water Quality Control Board. The Annual Report provides documentation of activities conducted during FY 2022-2023 and consists of the following:

A. Certification Statement
B. Annual Report Form
    - Table of Contents
    - Completed Annual Report Form Sections
C. Appendix
    - Table of Contents
    - Appendices

The City of Palo Alto notes that the significant increase in permit requirements–such as C.11, C.12 and C.17–pose significant additional staff and financial resource challenges. Some provisions may require additional regional coordination, funding, and time for requirements to be met.

Please contact Pam Boyle Rodriguez at (650) 329-2421 regarding any questions or concerns.

Regards,

DocuSigned by:
Brad Eggleston
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Brad Eggleston
Director, Department of Public Works
City of Palo Alto

City of Palo Alto
FY 2022-2023 ANNUAL REPORT

Certification Statement

"I certify, under penalty of law, that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to ensure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted, is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

Signature by Duly Authorized Representative:

DocuSigned by:
Brad Eggleston
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10/2/2023

Brad Eggleston — Date
Director, Public Works Department
City of Palo Alto

FY 22-23 Annual Report
Permittee Name: City of Palo Alto

Table of Contents

Section **Page**

List of Acronyms

ABAG – Association of Bay Area Governments

BAPPG – Bay Area Pollution Prevention Group

BASMAA – Bay Area Stormwater Management Agencies Association

BMP – Best Management Practice

CASQA – California Stormwater Quality Association

CCAG – Creek Connections Action Group

CDS – Continuous Deflective Separator

CFL – Compact Fluorescent Light

CWEA – California Water Environment Association

DO – Dissolved Oxygen

DPR – Department of Pesticide Regulation

EPA – Environmental Protection Agency

ERP – Enforcement Response Plan

FOG – Fats, Oil, and Grease

FY – Fiscal Year

GPM – Gallons per Minute

HHW – Household Hazardous Waste

HM – Hydromodification Management

ICID – Illicit Connection/Illegal Discharge

IDDE – Illicit Discharge Detection and Elimination

IND AHTG - Industrial and Commercial Ad Hoc Task Group

IPM – Integrated Pest Management

LID – Low Impact Development

MRP – Municipal Regional Permit

MS4 – Municipal Separate Storm Sewer System

N/A – Not Applicable

NOI – Notice of Intent

NPDES – National Pollution Discharge Elimination System

NPS – Nonpoint Source

O & M – Operation and Maintenance

PSA – Public Service Announcement

RWQCB/Water Board – Regional Water Quality Control Board

RWQCP – Palo Alto Regional Water Quality Control Plant

SCVURPPP/Program – Santa Clara Valley Urban Runoff Pollution Prevention Program

SCVWD – Santa Clara Valley Water District

SF – square feet

SIC – Standard Industrial Code

SMaRT – Sunnyvale Materials Recovery and Transfer Station

SOP – Standard Operating Procedure

SWIDS – Storm Water Infiltration Device System

SWPPP – Storm Water Pollution Prevention Program

TBD – To Be Determined

URMP – Urban Runoff Management Plan

VTA – Santa Clara Valley Transportation Authority

WMI – Watershed Management Initiative

WUPPP – Water Utility Pollution Prevention Plan

YCS – Youth Community Service

ZLI – Zero Litter Initiative

Section 1 – Permittee Information

Background Information					
Permittee Name:	City of Palo Alto				
Population:	68,834 (2020)				
NPDES Permit No.:	CAS612008				
Order Number:	R2-2022-0018				
Reporting Time Period (month/year):	July 2022 through June 2023				
Name of the Responsible Authority:	Julie Weiss			**Title:**	Manager, Watershed Protection Group
Mailing Address:	1900 Embarcadero Rd., #205				
City:	Palo Alto	**Zip Code:**	94303	**County:**	Santa Clara County
Telephone Number:	(650) 329-2117		**Fax Number:**		
E-mail Address:	Julie.Weiss@cityofpaloalto.org				
Name of the Designated Stormwater Management Program Contact (if different from above):	Pam Boyle Rodriguez			**Title:**	Stormwater Compliance Program Manager
Department:	Watershed Protection Group, Environmental Services Division, Public Works Department				
Mailing Address:	1900 Embarcadero Rd., #205				
City:	Palo Alto	**Zip Code:**	94303	**County:**	Santa Clara
Telephone Number:	(650) 329-2421		**Fax Number:**		
E-mail Address:	Pamela.boylerodriguez@cityofpaloalto.org				

Section 2 – Provision C.2 Reporting Municipal Operations

Program Highlights
Highlight/summarize activities for reporting year:

Summary:
During the reporting year, the City continued its participation in the Program's Municipal Maintenance AHTG. Refer to the C.2 Municipal Maintenance section of SCVURPPP's FY 22-23 Annual Report for a description of activities implemented at the countywide and/or regional level.

C.2.a. ►Street and Road Repair and Maintenance

Place a **Y** in the boxes next to activities where applicable BMPs were implemented. If not applicable, type **NA** in the box and provide an explanation in the comments section below. Place an **N** in the boxes next to activities where applicable BMPs were not implemented for one or more of these activities during the reporting fiscal year, then in the comments section below provide an explanation of when BMPs were not implemented and the corrective actions taken.

Y	Control of debris and waste materials during road and parking lot installation, repaving, repair, or maintenance activities from polluting stormwater
Y	Control of concrete slurry and wastewater, asphalt, pavement cutting, and other street and road maintenance materials and wastewater from discharging to storm drains from work sites
Y	Sweeping, vacuuming, and/or other dry methods to remove debris, concrete, or sediment residues, and spills or leaks, from work sites upon completion of work

Comments:
All contractors that provide urban and rural road repair work to the City must follow stormwater BMPs. In addition, the City's Stormwater Inspector conducts site visits at larger City projects that last longer than a month. Public Works Building Inspectors notify stormwater staff if they detect any potential stormwater issues.

C.2.b. ►Sidewalk/Plaza Maintenance and Pavement Washing

Place a **Y** in the boxes next to activities where applicable BMPs were implemented. If not applicable, type **NA** in the box and provide an explanation in the comments section below. Place an **N** in the boxes next to activities where applicable BMPs were not implemented for one or more of these activities during the reporting fiscal year, then in the comments section below provide an explanation of when BMPs were not implemented and the corrective actions taken.

Y	Control of polluted wash water and non-stormwater from pavement, sidewalk and plaza cleaning, mobile cleaning, outdoor pressure washing operations, and washing down of trash areas and gas station or mobile fueling service areas from discharging to storm drains
Y	BMPs for washing down outside areas of human habitation include sanitizing procedures
Y	Implementation of the BASMAA Mobile Surface Cleaner and California Stormwater BMP Handbook (or similar) Program BMPs

Comments:
Power washing in the downtown area is conducted by a contractor that must adhere to appropriate BASMAA surface cleaning best management practices (BMPs). The contract includes language requiring stormwater BMPs. Downtown maintenance staff help monitor that these BMPs are used.

C.2.c. ►Bridge and Structure Maintenance and Graffiti Removal

Place a **Y** in the boxes next to activities where applicable BMPs were implemented. If not applicable, type **NA** in the box and provide an explanation in the comments section below. Place an **N** in the boxes next to activities where applicable BMPs were not implemented for one or more of these activities during the reporting fiscal year, then in the comments section below provide an explanation of when BMPs were not implemented and the corrective actions taken.

Y	Control of discharges from bridge and structural maintenance activities directly into surface waters or storm drains
Y	Control of non-stormwater and wash water discharges from graffiti removal activities
Y	Proper disposal for wastes generated from bridge and structure maintenance and graffiti removal activities
Y	Employee training on proper capture and disposal methods for wastes generated from bridge and structural maintenance and graffiti removal activities
Y	Contract specifications requiring proper capture and disposal methods for wastes generated from bridge and structural maintenance and graffiti removal activities

Comments:
The City does not encounter significant graffiti issues; however, staff is trained to use the BASMAAA Mobile Surface Cleaner BMPs when needed.

C.2.e. ►Rural Public Works Construction and Maintenance

Does your municipality own/maintain rural[1] roads?	X	**Yes**		**No**

If your answer is **No**, then skip to **C.2.f**.

Place a **Y** in the boxes next to activities where applicable BMPs were implemented. If not applicable, type **NA** in the box and provide an explanation in the comments section below. Place an **N** in the boxes next to activities where applicable BMPs were not implemented for one or more of these activities during the reporting fiscal year, then in the comments section below provide an explanation of when BMPs were not implemented and the corrective actions taken.

Y	Control of road-related erosion and sediment transport from road design, construction, maintenance, and repairs in rural areas
Y	Identification and prioritization of rural road maintenance based on soil erosion potential, slope steepness, and stream habitat resources
N/A	Constructing roads and culverts that do not impact creek functions, including migratory fish passage
Y	Inspection of rural roads for structural integrity and prevention of impact on water quality
Y	Maintenance of rural roads adjacent to streams and riparian habitat to reduce erosion, replace damaging shotgun culverts, and address excessive erosion
Y	Re-grading of unpaved rural roads to slope outward where consistent with road engineering safety standards, and installation of water bars as appropriate
Y	Inclusion of measures to reduce erosion, provide fish passage, and maintain natural stream geomorphology when replacing culverts or designing new culverts or bridge crossings

Comments (including listing increased maintenance in priority areas):

The City of Palo Alto does not have any rural roads that cross creeks or are unimproved.

[1]Rural means any watershed or portion thereof that is developed with large lot home-sites, such as one acre or larger, or with primarily agricultural, grazing or open space uses.

C.2.f. ►Corporation Yard BMP Implementation

Place an **X** in the boxes below that apply to your corporation yard(s):

	We do not have a corporation yard.
	Our corporation yard is a filed NOI facility and regulated by the California State Industrial Stormwater NPDES General Permit.
X	We have a **Stormwater Pollution Prevention Plan (SWPPP)** for the Corporation Yard(s).

(For FY 22-23 Annual Report only) Provide links to the Corporation Yard SWPPP or include it in the FY 22-23 Annual Report**. A copy of the Palo Alto Municipal Service Center Stormwater Pollution Prevention Plan is attached.**

Place an **X** in the boxes below next to implemented SWPPP BMPs to indicate that these BMPs were implemented in applicable instances. If not applicable, type **NA** in the box. If one or more of the BMPs were not adequately implemented during the reporting fiscal year then indicate so and explain in the comments section below:

X	Control of pollutant discharges in stormwater such as wash water
X	Routine inspection of corporation yard(s) in August or September to ensure non-stormwater discharges have not entered the storm drain system and pollutant discharges are prevented to the maximum extent practicable
X	Containment of all vehicle and equipment wash areas through plumbing to sanitary sewer or other collection method
X	Use of dry cleanup methods when cleaning debris and spills from corporation yard(s) or collection and disposal of all wash water to sanitary sewer or other location where it does not impact surface or groundwater if wet cleanup methods are used
X	Require private companies/contractors to use dry cleanup methods when cleaning debris and spills from corporation yard(s) or collect and dispose of all wash water to sanitary sewer or other location where it does not impact surface or groundwater if wet cleanup methods are used
X	Cover and/or berm outdoor storage areas containing pollutants

Comments:

The City of Palo Alto's Corporation Yard (Municipal Service Center) practices are reviewed on an annual basis by coordinated efforts between Utilities Department, Public Works Operations & Maintenance (PWOM) and Public Works Environmental Services staff. Appropriate stormwater BMPs are jointly identified and implemented for daily work tasks. The Stormwater Investigator visits the MSC regularly to ensure BMPs are in place, and responsible departments address non-compliant issues. The Stormwater Investigator follows up ten days later to ensure compliance and provides support as needed.

If you have a corporation yard(s) that is not an NOI facility, for inspection results for your corporation yard(s), complete the following table, provide a narrative above, or attach a summary including the following information:

Corporation Yard Name	Corp Yard Activities w/ site-specific SWPPP BMPs	Inspection Date[2]	Inspection Findings/Results	Date and Description of Follow-up and/or Corrective Actions
City of Palo Alto Municipal Service Center	• Good housekeeping practices are used at the MSC such as weekly street sweeping and trash pickup by contractor. • Work crews remove trash from work trucks daily / weekly as needed. • Work crews use drip pans for any leaking vehicles. Supervisors send in vehicles for repair if leaks are found on vehicles. • Spills are cleaned up immediately using dry methods and waste material is properly contained and disposed of through the City's Hazardous Waste Program. • Crews wash vehicles at contained wash pad facility. • Paint buckets are rinsed and rinse water contained to sanitary sewer. Please refer to the MSC SWPPP dated August 2023 for a complete list of site-specific BMPs.	9/6/2022	1. Loose fine sediment adjacent to storm drain. 2. Assorted loose garbage/debris on ground in various areas. 3. Uncovered and overflowing garbage and recycling bins and containers. 4. Uncover bags of fertilizer/mortar 5. Missing label to sanitary connection 6. Roof condensate on asphalt 7. Uncovered 30-yard bins 8. Recent oil spill 9. Scrap metal bin uncovered	1. Swept and removed sediment. 2. Picked up & dispose appropriately. 3. Closed lids on all open bins and containers. Picked up materials from ground. 4. Picked up and stored appropriately. 5. Installed appropriate label. 6. Redirect water condensate to adjacent plant containers. 7. Covered bins when not being actively used. 8. Cleaned up oil spill by using approved methods. 9. Moved scrap metal bin into the interior of the building. 9/26/2022: Inspection confirmed all corrective actions were completed as required.

[2] Minimum inspection frequency is once a year between August 1 and September 30.

C.2.h. ►Staff Training

Dates of Training	Training Topics Covered	Total number of Permittee maintenance staff	Permittee maintenance staff who attended training	
			Number	Percent
	The Public Works Maintenance Operations team consists of 19 staff and 2 managers.	21		
9/8/2022	Stormwater Pollution Prevention: Stormwater Best Management Practices and Corporation Yard SWPPP (in-house training)		10	48%
2/16/2023	HAZWOPER and spill response training (maintenance staff)		11	52%

Comments:

In addition to the above trainings, the Stormwater Team staff gave presentations to the Public Works, Utilities, Transportation and Planning Departments on MRP 3.0 updates during the current reporting year.

Section 3 – Provision C.3 Reporting New Development and Redevelopment

C.3.a.ii. ► New Development and Redevelopment Performance Standard Implementation Summary Report

(For FY 22-23 Annual Report only) Provide a brief summary of the methods of implementation of Provisions C.3.a.i.(1)-(8)).

Summary:

1) Municipality's legal authority to implement C.3: The City of Palo Alto has adequate legal authority to implement the requirements of provision C.3. The Palo Alto Municipal Code Chapter 16.11 (Storm Water Pollution Prevention) was amended in December 2010 to comply with the requirements of MRP Section C.3 and an update is in process to provide details regarding the new requirements in the current permit.

2) Municipality's development review and permitting procedures, including use of conditions of approval or other enforceable mechanisms: The City of Palo Alto has adequate procedures to impose conditions of approval for Provision C.3. compliance. A designated staff person on the Stormwater Team reviews medium and large-sized development projects to ensure MRP provisions and stormwater quality protection are addressed. Consequently, this staff also reviews C.3 projects and reviews all requirements except sizing, which is reviewed by a third party hired by the project applicant. The third-party reviewer must sign and stamp a certification statement that the project drawings and sizing calculations are compliant per the MRP. Public Works Engineering staff reviews the third party submittal and the required operations and maintenance agreement. Both must be approved before issuing a Building Permit. In addition, Stormwater staff imposes Conditions of Approval on project applicants during the discretionary permitting process (architectural and planning review) and the building permit process. Building Permits are not issued until Stormwater staff ensures all requirements have been addressed, including those reviewed by Public Works Engineering, with whom staff coordinates plan review.

3) How water quality effects and mitigation measures are addressed in environmental reviews (e.g., CEQA): Environmental assessments of land development projects are conducted using the State of California's standard Environmental Impact Assessment checklist. Appropriately trained Planning Department staff or designated consultants review water quality impacts (construction stage and post-construction) of land development projects as part of their environmental assessment process. The standard CEQA checklist used includes C.3 and stormwater issues in both the biological resources and hydrology and water quality sections. Furthermore, Planning staff consults with Stormwater staff as needed.

4) C.3 training for staff in appropriate departments, and interdepartmental training: Stormwater staff provided an update on new C.3 requirements to staff in the following departments: Public Works, and Planning and Building, Utilities and Community Services (Parks). In addition, fact sheets were provided as reference documents. When C.3 training is provided by the Santa Clara Valley Urban Runoff Pollution Prevention Program (SCVURPPP), staff directly involved in C.3 plan review and maintenance inspections attend. Copies of training materials are provided to those staff who are unable to attend. Finally, Stormwater staff updates all appropriate staff as new information regarding the C.3 provision is made available during the permit term.

   During this past reporting year, Stormwater staff worked on new manuals for Green Stormwater Infrastructure specifications and maintenance procedures. Staff from relevant departments have been involved in providing feedback and document review and will receive training when the documents are finalized.

5) Outreach/education efforts to staff, developers, contractors, construction site operators and owner/builders: SCVURPPP has developed three fact sheets regarding new C.3 requirements that have been shared with City staff, and which the Planning Department has shared with developers. Stormwater staff also shares information regarding new requirements with project applicants through the plan review process.

6) How the municipality encourages site design measures at unregulated projects subject to Planning/Building Department review: During review of planning entitlement and building permit applications, Planning staff provides information regarding potential site design measures with the project applicants using a checklist. In addition, Palo Alto's Zoning ordinance for the R-1 zone has had a requirement to reduce impervious surface in the front yards of single-family homes since 2005. Section 18.12(h) states that single family homes shall have "minimum permeable surface in the front yard and that a minimum of 60% of the front yard shall have a permeable surface that permits water absorption directly into the soil." In addition, the City of Palo Alto has a stormwater rebate program to encourage installation of rain barrels, cisterns, pervious pavement, and rain gardens at residential and commercial sites.

7) How the municipality encourages source control measures at unregulated projects subject to Planning/Building Department review: During review of planning entitlement and building permit applications, Planning staff provides information regarding potential site design measures with the project applicants using a checklist. Stormwater staff conducts careful plan review of development projects, which includes ensuring ordinance requirements regarding storm drain stenciling, appropriate outdoor storage, covered trash enclosures, prohibitions for washing floor mats and equipment outside, plumbing swimming pools to the sanitary sewer, covered parking areas, and wash areas to the sanitary sewer, among other items.

8) General Plan revisions (if needed) to integrate water quality/watershed protection with water supply, flood protection, habitat protection, groundwater recharge, and other sustainable development principles and policies: The City's Comprehensive Plan, updated in 2017, established several priority policies regarding water quality and watershed protection. Four examples include: 1) Policy T-4.7 Require new residential development projects to implement best practices for street design, stormwater management and green infrastructure; 2) Policy T-5.8 Promote vehicle parking areas designed to reduce stormwater runoff, increase compatibility with street trees and add visual interest to streets and other public locations; 3) Policy N-4.10 Reduce pollution in urban runoff from residential, commercial, industrial, municipal, and transportation land uses and activities; and 4) Policy N-4.13 Encourage Low Impact Development (LID) measures to limit the amount of pavement and impervious surface in new development and increase the retention, treatment and infiltration of urban stormwater runoff.

C.3.b.iv.(1) ► Regulated Projects Approved with No Provision C.3 Stormwater Treatment Requirements

(For FY 22-23 Annual Report only) Provide a complete list of development projects that were approved with no Provision C.3 stormwater treatment requirements under a previous MS4 permit and have not begun construction by July 1, 2022. Fill in attached table **C.3.b.iv.(1)** or attach your own table including the same information.

C.3.b.iv.(2) ►Regulated Projects Reporting

Fill in attached table **C.3.b.iv.(2)** or attach your own table including the same information.

C.3.e.iv. ►Alternative or In-Lieu Compliance with Provision C.3.c.

Is your agency choosing to require 100% LID treatment onsite for all Regulated Projects and not allow alternative compliance under Provision C.3.e.?		**Yes**	X	**No**

Comments (optional):

The alternative compliance option has been used for a City project. The City plans to work on a private option later in the permit term.

C.3.e.v ► Special Projects Reporting

1. In FY 2022-23, has your agency received, but not yet granted final discretionary approval of, a development permit application for a project that has been identified as a potential Special Project based on criteria listed in MRP Provision C.3.e.ii(2) for any of the three categories of Special Projects (Categories A, B or C)?		**Yes**	X	**No**
2. In FY 2022-23, has your agency granted final discretionary approval to a Special Project? If yes, include the project in both the **C.3.b.iv.(2)** Table, and the **C.3.e.v.** Table.		**Yes**	X	**No**

If you answered "Yes" to either question,

1) Complete Table C.3.e.v.
2) Attach narrative discussion of 100% LID Feasibility or Infeasibility for each project.

C.3.g.vi.(1) ► Hydromodification Management (HM) Applicability Maps (CCCWP Permittees only)

(For FY 22-23 Annual Report only) Has your agency prepared new HM Applicability Maps or equivalent information?		**Yes**	X	**No**

Comments:

This requirement does not apply to SCVURPPP permittees, and therefore, does not apply to the City of Palo Alto.

C.3.g.vi.(2) ► Hydromodification Management (For CCCWP Permittees only)

(For FY 22-23 Annual Report only) Submit a Technical Report consisting of a HM Management Plan describing how the CCCWP Permittees will implement the HM Standard specified in Provision C.3.g.iii.

Comments:

This requirement does not apply to SCVURPPP permittees, and therefore, does not apply to the City of Palo Alto.

C.3.h.v.(2). ► List of Newly Installed[1] Stormwater Treatment Systems and HM Controls

On an annual basis, before the wet season, provide a list of newly installed (installed within the reporting period) stormwater treatment systems and HM controls to the local mosquito and vector control agency and include a copy of that information in the Annual Report. The list shall include the facility locations and a description of the stormwater treatment measures and HM controls installed.
(Optional) Also complete Table C.3.h.v.(2) ► Reporting Newly Installed Stormwater Treatment Systems and HM Controls

1. Did your agency provide the list of newly installed Stormwater Treatment Systems and HM Controls to the Vector Control agency, either individually or through the Countywide Program? (If no, provide an explanation.) **The City of Palo Alto does not have any projects to report for FY 22-23.**		**Yes**	X	**No**
2. Is a copy of the communication, including the list of newly installed treatment/HM measures, included in your Annual Report?		**Yes, See Appendix 3-1**	**X**	**No, see SCVURPPP Annual Report for a copy of the communication and list.**

[1] "Newly Installed" includes those facilities for which the final installation inspection was performed during this reporting year.

C.3.h.v.(3)(a) – (c) and (f) ► Installed Stormwater Treatment Systems Operation and Maintenance Verification Inspection Program Reporting

Site Inspections Data	Number/Percentage
Total number of Regulated Projects (including offsite projects, and Regional Projects) in your agency's database or tabular format at the end of the previous fiscal year (FY 21-22)	115
Total number of Regulated Projects (including offsite projects, and Regional Projects) in your agency's database or tabular format at the end of the reporting period (FY 22-23)	115
Total number of Regulated Projects (including offsite projects, and Regional Projects) for which O&M verification inspections were conducted during the reporting period (FY 22-23). Include only stormwater related inspections.	115
Percentage of the total number of Regulated Projects (including offsite projects, and Regional Projects) inspected during the reporting period (FY 22-23). Include only stormwater related inspections.	100%[2]

C.3.h.v.(3)(d)-(e) ► Installed Stormwater Treatment Systems Operation and Maintenance Verification Inspection Program Reporting

Provide a discussion of the inspection findings for the year and any common problems encountered with various types of treatment systems and/or HM controls. This discussion should include a general comparison to the inspection findings from the previous year.

Summary:

For FY 22-23, the City's Stormwater Investigator inspected 100% of properties within the City's jurisdiction that have stormwater treatment systems. This frequency will continue as resources allow in order to minimize maintenance neglect or errors and ensure treatment systems perform as designed. Annual inspections allow the Stormwater Investigator to build effective working relationships with facility owners and property managers, providing guidance and receiving cooperation in return, resulting in the treatment devices being maintained according to both City and industry standards.

Provide a discussion of the effectiveness of the O&M Program and any proposed changes to improve the O&M Program (e.g., changes in prioritization plan or frequency of O&M inspections, other changes to improve effectiveness program).

Summary:

The City of Palo Alto O&M verification inspection program continues to result in compliant inspections and associated follow-up as needed. As with plan review, development project applicants are also required to retain an independent 3rd party to visit the project site within 45 days of the installation of the stormwater treatment systems to verify that the treatment measures were installed in accordance with the approved plan design. After project completion, Stormwater staff conducts subsequent annual inspections per a Santa Clara County-recorded Maintenance Agreement. For City projects, an internal Maintenance Agreement ensures long-term maintenance of City facilities. Continued communication

[2] Based on the number of Regulated Projects in the database or tabular format at the end of the previous fiscal year, per MRP Provision C.3.h.ii.(6)(b).

with other City Departments ensures that new properties and City right-of-way locations with stormwater treatment systems are identified and maintained. Treatment system addresses are mapped in a County-wide geographic information systems-based database.

The City established an annual inspection fee, which covers staff time and ensures that adequate resources are available to conduct regular inspections and associated follow-up and billing for all facilities. This program continues to be effective in cost recovery and successful compliance. Staff tracks time spent on each site from beginning to end of communication with the property contact in order to assess accurate cost effectiveness.

In FY 23-24, Stormwater staff will begin to use a cloud-based inspection software application to improve documentation and map the locations of all stormwater treatment measures. In addition, staff will evaluate its inspection program and identify any improvements that need to be made.

C.3.i. ►Required Site Design Measures for Small Projects and Smaller Detached Single Family Home Projects

On an annual basis, discuss the implementation of the requirements of Provision C.3.i, including ordinance revisions, permit conditions, development of standard specifications and/or guidance materials, and staff training.

Summary:

BASMAA prepared standard specifications in four fact sheets regarding the site design measures listed in Provision C.3.i, which the City uses as a resource for project applicants. Stormwater staff have modified internal procedures and checklists to require all applicable projects to implement at least one of the site design measures listed in Provision C.3.i. Projects are reviewed by Stormwater staff to ensure projects meet requirements. However, frequently, projects install more than one of the required C.3.i. measures. Comments are documented in Conditions of Approval and are enforced per the Condition, if necessary.

C.3.j.iii. ► No Missed Opportunities

On an annual basis, submit a list of green infrastructure projects, public and private, that are planned for implementation during the permit term and infrastructure projects planned for implementation during the permit term that have potential for green infrastructure measures. Include the following information:

- A summary of planning or implementation status for each public and private green infrastructure project that is not also a Regulated Project as defined in Provision C.3.b.ii. (see C.3.j.iii.(2) Table B - Planned Green Infrastructure Projects).
- A summary of how each public infrastructure project with green infrastructure potential will include green infrastructure measures to the maximum extent practicable during the permit term. For any public infrastructure project where implementation of green infrastructure measures is not practicable, submit a brief description of the project and the reasons green infrastructure measures were impracticable to implement (see C.3.j.iii.(2) Table A - Public Projects Reviewed for Green Infrastructure).

The City's Stormwater staff engage with Capital Improvement Program (CIP) project managers on an ongoing basis to determine the feasibility of implementing green stormwater infrastructure in their project planning to ensure there are no missed opportunities. Staff will continue to seek

leveraging opportunities with planned CIP projects to maximize GSI throughout the City by attending planning meetings and reaching out to staff during the annual budgeting process.

Summary of Planning or Implementation Status of Identified Projects:
See attached Tables C.3.j.iii.(2)-A and C.3.j.iii.(2)-B for the required information.

C.3.j.iv.(2) ► Participate in Processes to Promote Green Infrastructure

On an annual basis, report on the goals and outcomes during the reporting year of work undertaken to participate in processes to promote green infrastructure.

Comments:

Please refer to SCVURPPP's FY 22-23 Annual Report for a summary of efforts conducted to help regional, State, and federal agencies plan, design, and fund incorporation of green infrastructure measures into local infrastructure projects, including transportation projects.

C.3.j.v.(1)(a) ► Non-Regulated (Green Infrastructure) Projects Reporting

Fill in attached table **C.3.j.v.(1)(a)** with information on non-regulated GI projects that have completed construction during the reporting period or attach your own table including the same information.

Comments:

There are no non-regulated (green infrastructure) projects constructed during the Fiscal Year to report for FY 22-23.

C.3.j.v.(1)(c) and (d) ► Tracking and Mapping Tools

Certify in the 2023 Annual Reports that the tracking and mapping tools have been completed and are being implemented. In each Annual Report, provide summary reports on the implementation of the tracking and mapping tools and provide a link to the component which is available to the public.

Has your agency completed developing Green Infrastructure tracking and mapping tools, and are they being implemented?	X	**Yes**		**No**

Comments:

Please refer to the Program's FY 22-23 Annual Report for a summary of implementation of the tracking and reporting tools and a link to the component which is available to the public.

C.3.j.v.(3) ► Numeric Retrofit Requirements

In each Annual Report, report on progress made towards the retrofit requirements described in Provision C.3.j.ii.(2).

Please refer to the following projects for a summary of the City's progress made toward meeting our numeric retrofit requirements for Provision C.3.j.ii(2).

Rinconada Park Improvements - The City completed construction in Spring 2022 on a bioretention area to treat runoff from the Lucie Stern Community Center's roof and approximately one third the length of Hopkins Avenue with a total post project treated area of 31,880 square feet of impervious surface.

East Meadow Drive and Circle Upgrades – This project is upsizing storm drain piping to increase capacity and will install a bioretention area to also treat an area prone to flooding on East Meadow Circle from East Meadow Drive to Paloma Street. The project design phase is complete, and construction is anticipated to start in Fall of 2023. The total post project treated area is 10,899 square feet of impervious surface.

E. Charleston Rd./San Antonio Rd. – This project is improving pedestrian safety and motor vehicle operations by improving the configuration of the intersection. A bioretention area will be installed to treat approximately 5,110 square feet of City ROW. Construction is anticipated to begin in late 2023.

Newell Road/San Francisquito Creek Bridge Replacement – This project is to replace the Newell Road Bridge. The project is installing two bioretention areas to treat 11,484 square feet of City ROW. Construction is anticipated to begin in Spring 2024.

Public Safety Building – This is a new construction project for the City's public safety departments. Construction is still in progress and anticipated construction completion is in late 2023. Although this project is a Regulated Project, City staff was able to leverage the project to treat part of the street ROW's impervious surfaces beyond the required stormwater treatment. Approximately 14,809 square feet of offsite impervious area is being treated by this project.

Please refer to SCVURPPP's FY 22-23 Annual Report for a summary of progress made towards the retrofit requirements described in Provision C.3.j.ii.(2) at the countywide level.

C.3.j.v.(5) ► Alternative Green Infrastructure Techniques for Rural Communities

Permittees whose jurisdictions are dominated by rural areas may collectively submit a proposal, subject to the Executive Officer's approval, for the use of alternative green infrastructure techniques.				
Is your jurisdiction a rural community that is participating in a program to develop a proposal to use alternative green infrastructure techniques?		**Yes**	X	**No**
If yes, include a copy of the proposal in the FY 22-23 Annual Report. NA				

C.3.j.v.(6) ► One-time Offset of Numeric Implementation Retrofit Requirements

Permittees with ordinances that require Regulated Projects to treat significantly more impervious surface than the minimum required by Provision C.3.c-d, may offset their Numeric Implementation retrofit requirements by a one-time credit of up to 25 percent, and by no greater than one acre.				
Is your jurisdiction submitting a report to offset numeric implementation retrofit requirements by a one-time credit of up to 25 percent?		**Yes**	X	**No**
If yes, include a copy of the report in the FY 22-23 Annual Report. Permittees may not use the offset prior to Executive Officer approval of the report. NA				

C.3.b.iv.(1) ►Regulated Projects Approved with No Provision C.3 Reporting Table

(For FY 22-23 Annual Report only) Fill in table below or attach your own table including the same information

Project Name Project No.	**Project Location[3], Street Address**	**Type of Stormwater Treatment System Required**	**Specific Exemption Granted[4]**
NA	NA	NA	NA

[3] Include cross streets
[4] Pursuant to Provision C.3.b.i.(2)(a) and (b) (i.e., any Regulated Project that was previously approved with a vesting tentative map approved or conditionally approved, as allowed by State law;

C.3.b.iv.(1) ►Regulated Projects Approved with No Provision C.3 Reporting Table

(For FY 22-23 Annual Report only) Fill in table below or attach your own table including the same information

Project Name Project No.	Project Location[3], Street Address	Type of Stormwater Treatment System Required	Specific Exemption Granted[4]

Comments:

The City does not have any Regulated Projects that were approved with no Provision C.3. stormwater treatment requirements under a previous MS4 permit and that have not begun construction by July 1, 2022.

any Regulated Projects for which the Permittee has no legal authority to require changes to previously granted approvals; and any Regulated Project exempted from the LID requirements of Provision C.3.c as is provided with a stormwater treatment with media filters that comply with the hydraulic sizing requirements of Provision C.3.d.

C.3.b.iv.(2) ►Regulated Projects Reporting Table (part 1) – Projects Approved During the Fiscal Year Reporting Period

Project Name Project No.	Project Location[5], Street Address	Name of Developer	Project Phase No.[6]	Project Type & Description[7]	Project Watershed[8]	Total Site Area (Acres)	Total Area of Land Disturbed (Acres)	Total New Impervious Surface Area (ft^2)[9]	Total Replaced Impervious Surface Area (ft^2)[10]	Total Pre-Project Impervious Surface Area[11] (ft^2)	Total Post-Project Impervious Surface Area[12] (ft^2)
Private Projects											
2850 W Bayshore Rd	2850 W Bayshore Rd	Summerhill Homes	NA	48 new 3-story condos	Matadero	2.34	2.34	0	70,345	86,452	70,345
1700 Embarcadero	1700 Embarcadero	Swickard Auto Group	NA	New 2-story Mercedes dealership in SFHA	San Francisco Bay	2.54	2.54	0	89,513	92,450	89,513
1036 E Meadow	1036 E Meadow	Google	NA	Site Improvements	Adobe	3.13	0.12	5,393	0	123,258	128,651
1310 Bryant	1310 Bryant	Castilleja School	N/A	New Underground garage (phase 1), Expand classroom with new pool (phase 2 pending)	San Francisquito	1.69	1.69	117	11,656	12,083	12,200
Public Projects											
Boulware Park and Birch Street Property Renovation Project	410 Fernando Ave	City of Palo Alto	NA	Renovation and expansion of Boulware Park	Matadero	2.6	2.6	19,577	22,611	22,611	42,188
Comments: NA											

[5] Include cross streets
[6] If a project is being constructed in phases, indicate the phase number and use a separate row entry for each phase. If not, enter "NA".
[7] Project Type is the type of development (i.e., new and/or redevelopment). Example descriptions of development are: 5-story office building, residential with 160 single-family homes with five 4-story buildings to contain 200 condominiums, 100 unit 2-story shopping mall, mixed use retail and residential development (apartments), industrial warehouse.
[8] State the watershed(s) in which the Regulated Project is located. Downstream watershed(s) may be included, but this is optional.
[9] All impervious surfaces added to any area of the site that was previously existing pervious surface.
[10] All impervious surfaces added to any area of the site that was previously existing impervious surface.
[11] For redevelopment projects, state the pre-project impervious surface area.
[12] For redevelopment projects, state the post-project impervious surface area.

C.3.b.iv.(2) ►Regulated Projects Reporting Table (part 2) – Projects Approved During the Fiscal Year Reporting Period (private projects)

Project Name Project No.	Project Status[13]	Estimated or Actual Completion Date	Source Control Measures[14]	Site Design Measures[15]	Treatment Systems Approved[16]	Type of Operation & Maintenance Responsibility Mechanism[17]	Hydraulic Sizing Criteria[18]	Alternative Compliance Measures[19/20]	Alternative Certification[21]	HM Controls[22/23]
Private Projects										
2850 W Bayshore Rd	7/27/2022 (Application Deemed Complete Date)	TBD	Beneficial landscaping, maintenance, storm drain labeling	Minimize impervious surfaces, cluster structures, self-retaining area	Bioretention	O&M Agreement Recorded with the County	3	NA	Yes - Schaaf & Wheeler	Total post-project impervious area is not greater than the pre-project existing impervious area
1700 Embarcadero	4/5/2023 (Application Deemed Complete Date)	TBD	wash areas, covered dumpster areas, beneficial landscaping, maintenance, storm drain labeling	minimize land disturbed, impervious surfaces, cluster structures, disconnected downspouts, other self-treating areas, interceptor trees	Bioretention	O&M Agreement Recorded with the County	2c	NA	Yes - ENGEO	Total post-project impervious area is not greater than the pre-project existing impervious area
1036 E Meadow	10/4/2022	TBD	wash area drains to ss, covered	minimize disturbed area, impervious	Bioretention	O&M Agreement Recorded with the County	3	NA	No	Project creates less than one acre of

[13] Provide status of project (e.g., application date, application deemed complete date, project approval date).
[14] List source control measures approved for the project. Examples include: properly designed trash storage areas; storm drain stenciling or signage; efficient landscape irrigation systems; etc.
[15] List site design measures approved for the project. Examples include: minimize impervious surfaces; conserve natural areas, including existing trees or other vegetation, and soils; construct sidewalks, walkways, and/or patios with permeable surfaces, etc.
[16] List all approved stormwater treatment system(s) to be installed onsite or at a joint stormwater treatment facility (e.g., flow through planter, bioretention facility, infiltration basin, etc.).
[17] List the legal mechanism(s) (e.g., O&M agreement with private landowner; O&M agreement with homeowners' association; O&M by public entity, etc…) that have been or will be used to assign responsibility for the maintenance of the post-construction stormwater treatment systems.
[18] See Provision C.3.d.i. "Numeric Sizing Criteria for Stormwater Treatment Systems" for list of hydraulic sizing design criteria. Enter the corresponding provision number of the appropriate criterion (i.e., 1.a., 1.b., 2.a., 2.b., 2.c., or 3).
[19] For Alternative Compliance at an offsite location in accordance with Provision C.3.e.i.(1), on a separate page, give a discussion of the alternative compliance site including the information specified in Provision C.3.b.iv.(2)(m)(i) for the offsite project.
[20] For Alternative Compliance by paying in-lieu fees in accordance with Provision C.3.e.i.(2), on a separate page, provide the information specified in Provision C.3.b.iv.(2)(m)(ii) for the Regional Project.
[21] Note whether a third party was used to certify the project design complies with Provision C.3.d.
[22] If HM control is not required, state why not.
[23] If HM control is required, state control method used (e.g., method to design and size device(s) or method(s) used to meet the HM Standard, and description of device(s) or method(s) used, such as detention basin(s), biodetention unit(s), regional detention basin, or in-stream control).

C.3.b.iv.(2) ►Regulated Projects Reporting Table (part 2) – Projects Approved During the Fiscal Year Reporting Period (private projects)

Project Name Project No.	Project Status[13]	Estimated or Actual Completion Date	Source Control Measures[14]	Site Design Measures[15]	Treatment Systems Approved[16]	Type of Operation & Maintenance Responsibility Mechanism[17]	Hydraulic Sizing Criteria[18]	Alternative Compliance Measures[19/20]	Alternative Certification[21]	HM Controls[22/23]
	(Application Deemed Complete Date)		dumpster, storm drain labeling,	area, cluster structures,						impervious surface area.
1310 Bryant	9/13/2022 (Application Deemed Complete Date)	TBD	maintenance, storm drain labeling	minimize land disturbed, impervious areas, pervious pavement	Bioretention	O&M Agreement Recorded with the County	2c	NA	Yes - Schaaf & Wheeler	Project creates less than one acre of impervious surface area.

C.3.b.iv.(2) ►Regulated Projects Reporting Table (part 2) – Projects Approved During the Fiscal Year Reporting Period (public projects)

Project Name Project No.	Approval Date[24]	Date Construction Scheduled to Begin or Date of Completion	Source Control Measures[25]	Site Design Measures[26]	Treatment Systems Approved[27]	Operation & Maintenance Responsibility Mechanism[28]	Hydraulic Sizing Criteria[29]	Alternative Compliance Measures[30/31]	Alternative Certification[32]	HM Controls[33/34]
Public Projects										
Boulware Park and Birch Street Property Renovation Project	10/2021	Construction began: 8/14/2023	Beneficial landscaping, maintenance, storm drain labeling	Cluster structures/ pavement, disconnected downspouts, other self-treating areas, preserved open space	Bioretention	O&M Agreement Recorded with the County	2c	NA	No	Project creates less than one acre of impervious surface area.

[24] For public projects, enter the plans and specifications approval date.
[25] List source control measures approved for the project. Examples include: properly designed trash storage areas; storm drain stenciling or signage; efficient landscape irrigation systems; etc.
[26] List site design measures approved for the project. Examples include: minimize impervious surfaces; conserve natural areas, including existing trees or other vegetation, and soils; construct sidewalks, walkways, and/or patios with permeable surfaces, etc.
[27] List all approved stormwater treatment system(s) to be installed onsite or at a joint stormwater treatment facility (e.g., flow through planter, bioretention facility, infiltration basin, etc.).
[28] List the legal mechanism(s) (e.g., maintenance plan for O&M by public entity, etc.) that have been or will be used to assign responsibility for the maintenance of the post-construction stormwater treatment systems.
[29] See Provision C.3.d.i. "Numeric Sizing Criteria for Stormwater Treatment Systems" for list of hydraulic sizing design criteria. Enter the corresponding provision number of the appropriate criterion (i.e., 1.a., 1.b., 2.a., 2.b., 2.c., or 3).
[30] For Alternative Compliance at an offsite location in accordance with Provision C.3.e.i.(1), on a separate page, give a discussion of the alternative compliance site including the information specified in Provision C.3.b.iv.(2)(m)(i) for the offsite project.
[31] For Alternative Compliance by paying in-lieu fees in accordance with Provision C.3.e.i.(2), on a separate page, provide the information specified in Provision C.3.b.iv.(2)(m)(ii) for the Regional Project.
[32] Note whether a third party was used to certify the project design complies with Provision C.3.d.
[33] If HM control is not required, state why not.
[34] If HM control is required, state control method used (e.g., method to design and size device(s) or method(s) used to meet the HM Standard, and description of device(s) or method(s) used, such as detention basin(s), biodetention unit(s), regional detention basin, or in-stream control).

C.3.b.iv.(2) ►Regulated Projects Reporting Table (part 2) – Projects Approved During the Fiscal Year Reporting Period (public projects)

Project Name Project No.	Approval Date[24]	Date Construction Scheduled to Begin or Date of Completion	Source Control Measures[25]	Site Design Measures[26]	Treatment Systems Approved[27]	Operation & Maintenance Responsibility Mechanism[28]	Hydraulic Sizing Criteria[29]	Alternative Compliance Measures[30/31]	Alternative Certification[32]	HM Controls[33/34]
Comments: This project was not included in the FY21-22 due to ongoing discussion with staff evaluating if additional GSI could be added.										

C.3.h.v.(2). ►Table of Newly Installed[35] Stormwater Treatment Systems and Hydromodification Management (HM) Controls (Optional)

Fill in table below or attach your own table including the same information.

Refer to the SCVURPPP FY 22-23 Annual Report for a copy of the communication to Vector Control. However, the City of Palo Alto did not have any projects to report for this period.

Name of Facility	Address of Facility	Party Responsible[36] For Maintenance	Type of Treatment/HM Control(s)
NA	NA	NA	NA

[35] "Newly Installed" includes those facilities for which the final installation inspection was performed during this reporting year.
[36] State the responsible operator for installed stormwater treatment systems and HM controls.

C.3.e.v. Special Projects Reporting Table

Reporting Period – July 1 2022 - June 30, 2023

Project Name & No.	Permittee	Address	Application Submittal Date[37]	Status[38]	Description[39]	Site Total Acreage	Total Impervious Surface Created / Replaced[40](ft²)	Gross Density DU/Acre	Density FAR	Special Project Category[41]	# of DUs in each AMI Category for Category C	LID Treatment Reduction Credit Available[42]	List of LID Stormwater Treatment Systems[43]	List of Non-LID Stormwater Treatment Systems[44]
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Special Projects Narrative

NA

[37] Date that a planning application for the Special Project was submitted. If a planning application has not been submitted, include a projected application submittal date.
[38] Indicate whether final discretionary approval is still pending or has been granted, and provide the date or version of the project plans upon which reporting is based.
[39] Type of project (commercial, mixed-use, residential), number of floors, number of units, type of parking, and other relevant information.
[40] The total impervious surface in acres created or replaced by the project, which is subject to the treatment requirements listed in Provision C.3.e.ii.(1).
[41] For each applicable Special Project Category, list the specific criteria applied to determine applicability. For each non-applicable Special Project Category, indicate n/a.
[42] For each applicable Special Project Category, state the maximum total LID Treatment Reduction Credit available. For Category C Special Projects also list the individual Location, Density, and Minimized Surface Parking Credits available.
[43] List all LID stormwater treatment systems proposed. For each type, indicate the percentage of the total amount of runoff identified in Provision C.3.d. for the Special Project's drainage area.
[44] List all non-LID stormwater treatment systems proposed. For each type of non-LID treatment system, indicate: (1) the percentage of the total amount of runoff identified in Provision C.3.d. for the Special Project's drainage area, and (2) whether the treatment system either meets minimum design criteria published by a government agency or received certification issued by a government agency, and reference the applicable criteria or certification.

C.3.j.iii.(2) ► Table A - Public Projects Reviewed for Green Infrastructure

Project Name and Location[45]	Project Description	Status[46]	GI Included?[47]	Description of GI Measures Considered and/or Proposed or Why GI is Impracticable to Implement[48]
Baylands Athletic Center Expansion	10.5 acre expansion of the Baylands Athletic Center	Preliminary design	TBD	Baylands Athletic Center is proposed to extend onto the 10.5 acres that was previously part of the golf course. This project is on pause.
Bike Boulevard Project – Phase II	6 miles of residential streets that will be converted into Bike Boulevards.	On hold pending community engagement plan development	No	Due to residents' concerns about transportation improvement projects, this is currently planned to only include basic improvements such as restriping. GSI is not feasible.
Bol Park	Park improvements	No longer being considered	No	This park was considered as a potential concept project to be included in the Santa Clara Valley Stormwater Resource Plan. Since the draft concept consideration, Stormwater Program staff met with neighborhood residents and determined that the project would be infeasible based on public feedback during outreach events.
Churchill Enhanced Bikeway Project: (ECR to west of Caltrain tracks)	Bike transportation improvements	Design Stage (95%); working to develop final plans. Bid project in Fall 2023.	No	Staff considered integration of GSI but could not include due to utility complications and lack of adequate space within City jurisdiction.
Upgrade Downtown Project	Replacement water/gas pipes	On-going construction (estimated completion 2024)	No	GI was infeasible to implement for this project due to the various utility conflicts with replacing water/gas pipes throughout the downtown area.

[45] List each public project that is going through your agency's process for identifying projects with green infrastructure potential.
[46] Indicate status of project, such as: beginning design, under design (or X% design), projected completion date, completed final design date, etc.
[47] Enter "Yes" if project will include GI measures, "No" if GI measures are impracticable to implement, or "TBD" if this has not yet been determined.
[48] Provide a summary of how each public infrastructure project with green infrastructure potential will include green infrastructure measures to the maximum extent practicable during the permit term. If review of the project indicates that implementation of green infrastructure measures is not practicable, provide the reasons why green infrastructure measures are impracticable to implement.

Embarcadero Rd/El Camino Real Intersection Improvements project	Intersection improvements and bike lanes along Embarcadero Rd.	Indefinitely on pause	TBD	If project is approved, staff will consider feasibility of integrating GSI.
East Meadow Drive and Circle Upgrades	Storm drain system upgrades to reduce street flooding	Design Phase complete. Construction anticipated to start in Fall 2023.	Yes	A bioretention area will be installed to treat an area prone to flooding on East Meadow Circle from East Meadow Drive to Paloma Street.
Various City Parks (Byxbee Park, Seale Park, Hoover Park, Ramos Park)	City parks that are scheduled for upgrading and renovating various elements	Will be determined over time; coordination is on-going with staff from that Department.	TBD	Although GI funding is currently not designated for these various City parks, the City identified GI opportunities in terms of underground stormwater storage and bioretention for parks that are scheduled to be upgraded within the next few years.

C.3.j.iii.(2) ► Table B - Planned Green Infrastructure Projects During the Permit Term

Project Name and Location[49]	Project Description	Planning or Implementation Status	Green Infrastructure Measures Included
East Meadow Drive and Circle Upgrades	Storm drain system upgrades to reduce street flooding	Design Phase complete. Construction anticipated to start in Fall 2023.	A bioretention area will be installed to treat an area prone to flooding on East Meadow Circle from East Meadow Drive to Paloma Street.
Embarcadero Road Improvements (East of Alma) Project (Alma to Emerson)	Phased-in road Improvements involving bike and pedestrian enhancements as part of a larger project.	100% Draft Final Plans. Out to Bid in Spring 2024.	Bioretention will be installed to treat a portion of the roadway and intersection
E. Charleston Rd./San Antonio Rd.	Pedestrian improvement at a street corner	Final design stage; construction expected Fall 2023	Bioretention will be installed at street corner to treat parking area and a portion of the street.
Newell Road/San Francisquito Creek Bridge Replacement	Replacement of a bridge	Final Design Phase; Bid Solicitation in Fall/Winter 2023.	Two voluntary bioretention areas are being installed at the corners of Newell Rd. and Edgewood Dr. This project was resumed in the spring of 2019 after being put on hold in FY 16-17 while environmental documentation was developed.

[49] List each planned (and expected to be funded) public and private green infrastructure project that is not also a Regulated Project as defined in Provision C.3.b.ii. Note that funding for green infrastructure components may be anticipated but is not guaranteed to be available or sufficient.

C.3.j.v.(1)(a)►Non-Regulated (Green Infrastructure) Projects Reporting Table – Projects Constructed During the Fiscal Year Reporting Period

Project Location, Street Address	Name of Owner	Project Description	Construction Completion Date	Treatment Measures	Party Responsible for O&M	Hydraulic Sizing Criteria[50]	Total Area Draining to Treatment Measures (ft^2)	Impervious Area Treated (ft^2)	Pervious Area Treated (ft^2)
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Comments:
There are no non-regulated (green infrastructure) projects that were constructed during the Fiscal Year to report for FY 22-23.

[50] See Provision C.3.d.i. "Numeric Sizing Criteria for Stormwater Treatment Systems" for list of hydraulic sizing design criteria. Enter the corresponding provision number of the appropriate criterion (i.e., 1.a., 1.b., 2.a., 2.b., 2.c., or 3).

Section 4 – Provision C.4 Industrial and Commercial Site Controls

Program Highlights and Evaluation
Highlight/summarize activities for reporting year:

Summary:

City of Palo Alto (City) Watershed Protection staff (from both its Stormwater and Pretreatment Groups) actively participates in the Santa Clara Valley Urban Runoff Pollution Prevention Program (SCVURPPP) Industrial and Commercial Ad Hoc Task Group (IND AHTG). City inspectors also communicate regularly with each other regarding issues encountered during inspections and participate in cross-training when feasible.

In FY 22-23, Stormwater staff spent significant time updating its inspection forms for the different business types included on its inspection list and developing a new, cloud-based inspection database to be implemented in FY 22-23. In addition, Stormwater staff also updated its Enforcement Response Plan, which will be codified during the stormwater ordinance update in FY 22-23. Due to staffing shortages, the number of inspections decreased during this past reporting period; however, new staff has been hired and is receiving training to fill in for past shortages. Despite staff shortages, high priority businesses (e.g., industrial and auto service facilities) received annual inspections per the Business Inspection Plan.

Please refer to the C.4. Industrial and Commercial Site Controls section of SCVURPPP's FY 22-23 Annual Report for a description of Program activities implemented.

C.4.b.iii.(1) ► Business License Applications

Provide a brief description below of which Permittee entity or entities are responsible for reviewing and approving business license applications, or provide a link to your website for business license applications.

The City of Palo Alto does not have a business licensing program and does not require business licenses. However, it does have a voluntary registration program, which Stormwater staff use to build its inspection list. In addition, staff refer to local newspapers and online business rating services as well as inspectors' knowledge of the City to enhance its list. The City's Measure K passed in November 2022, which will require collection of a business tax starting in January 2024. Though this effort does not involve a business license, the City will establish a database of tax payers that will be available as a resource.

C.4.d.iii.(1)(a) & (c) ► Facility Inspections

Fill out the following table or attach a summary of the following information. Indicate your reporting methodology below.

	X	Permittee reports multiple, discrete, potential and actual discharges at a site as one enforcement action.
		Permittee reports the total number of discrete potential and actual discharges at each site.

	Number
Total number of inspections conducted (C.4.d.iii.(1)(a))	75
Total number of enforcement actions, or discrete number of potential and actual discharges resolved within 10 working days or otherwise deemed resolved in a longer but still timely manner (C.4.d.iii.(1)(c))	4

Comments:

Four violations were identified during C.4 inspections in FY 22-23, three of which were addressed within 10 working days. The fourth violation required the business operator to purchase a product to protect the private storm drain from equipment condensate runoff which exceeded 10 days to reach compliance.

C.4.d.iii.(1)(b) ► Number of Each Type of Enforcement Conducted

Fill out the following table or attach a summary of the following information.

	Enforcement Action (As listed in ERP)[1]	**Number of Enforcement Actions Taken**
Level 1	Verbal Notice	4
Level 2	Written Notice	0
Level 3	Notice of Non-Compliance	0
Level 4	Compliance Agreement, Criminal Citation, Civil Action	0
Total		4

[1]Agencies to list specific enforcement actions as defined in their ERPs.

C.4.d.iii.(1)(d) ► Frequency of Potential and Actual Non-Stormwater Discharges by Business Category

Fill out the following table or attach a summary of the following information.

Business Category[2]	Number of Actual Discharges	Number of Potential Discharges
Verbal Notice	1	3
Written Notice	0	0
Notice of Non-Compliance	0	0
Compliance Agreement, Criminal Citation, Civil Action	0	0

C.4.e.iii ► Staff Training Summary

Training Name	Training Dates	Topics Covered	No. of Industrial/ Commercial Site Inspectors in Attendance	Percent of Industrial/ Commercial Site Inspectors in Attendance	No. of IDDE Inspectors in Attendance	Percent of IDDE Inspectors in Attendance
In Field Training – 8/16/22, 2 attendees	Aug. 16, 2022	Auto service facility BMP inspections	2	40	-	-
CASQA 2022 conference	Oct 24-26, 2022	Stormwater pollution prevention, best management practices	-	-	2	33
PSE 2023 conference	Jan. 31-Feb. 2, 2023	Stormwater and sanitary sewer pollution prevention, best management practices	1	17	-	-
In-field refresher training	Feb. 27, 2023	Auto service facility BMP inspections	2	40	-	-
Reviewing/ updating Enforcement Response Plan	Oct.-Dec, 2022 (work done over this period on and off)	Stormwater best management practices and enforcement	-	-	1	17

[2]List your Program's standard business categories.

Section 5 – Provision C.5 Illicit Discharge Detection and Elimination

Program Highlights and Evaluation

Highlight/summarize activities for reporting year:

Provide background information, highlights, trends, etc.

Summary:

The City of Palo Alto (City) strives to respond to all illicit discharge complaints in a timely matter. During weekday work hours, Stormwater staff respond to reported illicit discharge complaints (generally within two hours or less), which are received by our team or other departments that then route them to us. After hours, reporting parties are directed by our main phone number and in outreach materials to contact the Police Dispatch non-emergency phone number. On-call Public Works Operations staff are notified and clean up spills as needed, and Stormwater staff investigate the matter on the following business day. The City's Fire Department provides support if an unknown or hazardous substance is encountered.

Discharges are cleaned by appropriate staff immediately if they have entered (or are about to enter) the storm drain system. If feasible, the City directs the responsible party to clean a spill when it is not in the street and has not entered the storm drain. If City staff support is provided, the City typically bills the responsible party for time spent and equipment used on the spill cleanup.

The Stormwater Team provides annual training to regularly participates in the SCVURPPP IND/IDDE Adhoc Task Group. Please refer to the C.5 Illicit Discharge Detection and Elimination section of SCVURPPP's FY 22-23 Annual Report for program details.

C.5.d.iii.(1) ►Spill and Discharge Complaint Tracking

Spill and Discharge Complaint Tracking (fill out the following table or include an attachment of the following information)

	Number
Discharges reported (C.5.d.iii.(1)(a))	18
Discharges reaching storm drains and/or receiving waters (C.5.d.iii.(1)(b))	13
Discharges resolved in a timely manner (C.5.d.iii.(1)(c))	18

Comments:

Eighteen public or inter-departmental complaints of potential or actual discharges were made in FY 22-23. Of these, four complaints were found to be inconclusive by responding staff. Of the 14 remaining, 13 reached the storm drain system, and one directly discharged to a nearby creek. The thirteen that reached the storm drain system were cleaned or contained by the City in a timely manner (less than 10 business days) before any rainfall events and to prevent both potential and actual discharges from reaching receiving waters. The spill that reached the creek occurred as a result of a fire at a Tesla sales and service facility. Two responsible parties were issued administrative actions with monetary penalties. Cost recovery efforts for City crews and equipment deployed to completely remove unwanted materials from the storm drain system are essential for effective compliance. Inspectors confirm that cleanup activities are complete.

A major spill occurred when one or more electric car batteries caught fire at the service department of a Tesla dealership. The City's Fire Department immediately responded to the chemical fire. Soon after, a City Hazardous Material inspector reported to the scene to investigate the property and alerted Stormwater staff of the fire response water that had reached the creek. Public Works staff investigated the creek to determine the point in the creek that the water had reached and installed controls to prevent the water from flowing past that point. Tesla environmental staff responded the same day of the incident and notified a third-party cleanup company. City Fire and Stormwater staff coordinated the cleanup with this company and Tesla staff to remove all the material spilled into the creek, including remaining water. In addition, the creek was flushed clean, and the water was collected and disposed of appropriately. After the cleanup, the City Hazardous Material inspector continued to work with Tesla staff to improve battery storage and establish better practices. Both Fire and Stormwater staff coordinated the enforcement response.

C.5.e.iii.(2)(a)&(c) ► Mobile Sources Inspections and Enforcement

Fill out the following table or attach a summary of the following information.

	Number
Mobile business inspections conducted (C.5.e.iii.(2)(a))	0

Summary of the enforcement actions taken against mobile businesses during the reporting year (C.5.e.iii.(2)(c)).

Summary:

Public Works Watershed Protection Inspectors are trained to look for mobile business operators while working in the field. Inspectors confirm that there are no potential or actual discharges, and when feasible, stop to educate about stormwater protection (and enforce, when necessary). Conversations between inspectors and mobile business operators include discussions about best management practices and potential impacts to water quality.

C.5.e.iii.(2)(b) ► Frequency of Mobile Sources Inspections by Business Type

Fill out the following table or attach a summary of the following information.

Mobile Business Type[1]	**Number Inspected**[2]
NA	0

[1] Including, but not limited to, automobile washing, vehicle fueling, power washing, steam cleaning, graffiti removal, and carpet cleaning.
[2] The number of each type of mobile business inspected.

Section 6 – Provision C.6 Construction Site Controls

C.6.e.iii.(3)(a), (b), (c), (d) ►Site/Inspection Totals

Total number of construction sites requiring inspections during at least part of the Permit year; (C.6.e.iii.1.a)	**Total number of active hillside sites disturbing <1 acre of soil requiring inspection** (C.6.e.iii.1.b)	**Number of High Priority Sites (sites disturbing < 1 acre of soil requiring storm water runoff quality inspection)** (C.6.e.iii. 1.d)	**Number of sites disturbing ≥ 1 acre of soil** (C.6.e.iii.1.c)	**Total number of storm water runoff quality inspections conducted (include only Hillside Sites, High Priority Sites and sites disturbing 1 acre or more)** (C.6.e.iii. 1.e)
13	7	2	4	79

Comments:

The City of Palo Alto (City) uses the 15% permit slope definition for Hillside Sites. The following criteria is used to designate High Priority Sites: City Capital Improvement Program projects that last more than one month; projects adjacent to local waterways; lot line-to-lot line projects with potential material storage issues; and sites with contractors that have histories of poor performance. For FY 22-23, construction activities appear to have slowed down due to the Covid-19 pandemic effects in the City.

C.6.e.iii.(1)(f) ►Construction Related Storm Water Enforcement Actions

Level 1[1]	Verbal Notice	0
Level 2	Written Notice	0
Level 3	Notice of Non-Compliance	0
Level 4	Administrative	0
Total		**0**

[1]For example, Enforcement Level 1 may be Verbal Warning.

C.6.e.iii.(1)(g), ►Illicit Discharges

	Number
Number of illicit discharges, actual and potential, of sediment or other construction-related materials	0

C.6.e.iii.(1)(h) ► Corrective Actions

Indicate your reporting methodology below.

	Permittee reports multiple discrete potential and actual discharges at a site as one enforcement action.
x	Permittee reports the total number of discrete potential and actual discharges on each site.

	Number
Enforcement actions or discrete potential and actual discharges fully corrected within 10 business days after violations are discovered or otherwise considered corrected in a timely period (C.6.e.iii.1.h)	NA

Comments:

Inspection staff did not have any enforcement actions for FY 22-23.

C.6.f.iii ►Staff Training Summary

Training Name	Training Dates	Topics Covered	Total Number of Inspectors (both municipal and non-municipal staff)	No. of Inspectors in Attendance (both municipal and non-municipal staff)
Staff review of SCVURPPP construction plan review sheet	April 30 and May 8, 2023	Stormwater construction best management practices	3	3

Section 7 – Provision C.7. Public Information and Outreach

C.7.g.iii.(1) ► Reporting

Submit a table listing the types of outreach programs implemented during that Permit year along with a brief description. The table should be a cumulative table showing the number, if applicable, of each type of outreach campaigns or events occurring during each Permit year.

Please refer to the C.7 Public Information and Outreach section of the Santa Clara Valley Urban Runoff Pollution Prevention Program (SCVURPPP) FY 22-23 Annual Report for outreach activities conducted Countywide, including the Watershed Watch Campaign, anti-litter campaigns, community outreach, clean-up and citizen involvement events, school assemblies, and other activities.

Public Information and Outreach activities conducted by the City are reported below.

Type of Outreach Program Implemented	Brief Description of Current Year Campaigns	Number of outreach campaigns or events occurring during each Permit Year, if applicable				
		FY 22-23	FY 23-24	FY 24-25	FY 25-26	FY 26-27
C.7.a. Outreach Campaigns	The City of Palo Alto (City) provides outreach to its residents through utility bill announcements, online ad campaigns, and five web pages (cleanbay.org, cityofpaloalto.org/hazwaste, cityofpaloalto.org/gsi, cityofpaloalto.org/stormwater, cityofpaloalto.org/watershed). Outreach during FY 22-23 included seven campaign topics about watershed and stormwater pollution prevention. Each topic is listed below by month: 1. "Wonder what to do with household hazardous waste?" Disposal options for residents (August 2022) 2. "Water YOU going to do about the drought?"	Number of outreach campaigns conducted: 7				

	Stormwater rebates for rain gardens, rain barrels and pervious pavers (November 2022) 3. "Plumbers aren't the guests you're hoping for" Proper disposal of Fats, Oils and Grease (November 2022) 4. "Palo Alto's Public Smoking Ordinance" Smoking is a public health and environmental issue (August 2022, March 2023) 5. "Winter Storm Tips" and Winter Storm Resources" (October 2022) 6. "You are essential to clean water potential" Stormwater pollution prevention (January 2023) 7. "It's almost pool season!" Draining your pool (May 2023)					
C.7.c. Public Outreach and Citizen Involvement Events	Below is a description of the public outreach and citizen involvement events the City conducted in FY 22-23: • Participation in Coastal Clean Up Day (September 2022) and National River Clean Up Day (May 2023) by hosting sites at Adobe and Matadero Creeks. • Conducted in-person event outreach: tabling at the Earth Day Resource Fair and Pollinator Walk (April 2023) and May Fete Parade (May 2023). Table topics included promoting the City's stormwater rebates, less toxic	Number of public outreach and citizen involvement events: 6 Number of household hazardous waste collection days: 61				

	pest management, and a stormwater pollution prevention game. • Workshops and Classes: The City collaborated with BAWSCA and a local nursery to hold a Rain Barrel Workshop (October 2022) and an online Rain Garden Workshop (June 2023). • The City has its own Household Hazardous Waste (HHW) Program and holds weekly HHW Collection events at its permanent HHW Station facility.					
C.7.d. Watershed Stewardship Collaboration	The City collaborated with Environmental Volunteers to host a King Tide Walk (January 2023) and a BioBlitz Citizen Science event (April 2023) at the Baylands Nature Preserve and EcoCenter. The City hosted volunteer workdays with GrassRoots Ecology to maintain green stormwater infrastructure in the Southgate Neighborhood.	Number of events: 13				
C.7.e. School-Age Children Outreach	The City of Palo Alto Watershed Protection Program has provided elementary and middle school classroom education programs since 2000. During COVID, these programs were temporarily reduced due to contracting issues. The curricula for these programs are available online at CleanBay.org. for teachers to download and use in their classrooms.	Number of curriculum packet downloads: 22 downloads, reaching over 700 students				

Type of Outreach Program Implemented	Brief Description	Number of outreach campaigns or events occurring during each Permit Year, if applicable				
		FY 22-23	FY 23-24	FY 24-25	FY 25-26	FY 26-27
C.7.f. Outreach to Municipal Officials	City staff presented the following topics at quarterly Stormwater Management Oversight Committee, which is made up of appointed residents overseeing the Stormwater Fee, meetings: • Update on the new stormwater permit, Green Streets Stewards, and Rebate Program (August 2022) • Update on new stormwater permit continued (September 2022) • Staff informational update on recent storms and response (February 2023) • Staff Update regarding the Embarcadero Road Trash Capture Device Project (April 2023)	Number of presentations: 4				

C.7.g.iii.(2) ► Reporting - Stormwater Pollution Prevention Education				
Is your agency maintaining a website (or referring to a regional website) to provide information on stormwater issues, watershed characteristics, and stormwater pollution prevention approaches?	X	**Yes**		**No**
If no, explain: NA				
Local stormwater point of contact phone number(s)	(650) 329-2122 (main line) (650) 329-2413 (24-hr line for illegal dumping or to report storm drain blockages)			
Local/Regional stormwater website(s)	www.cityofpaloalto.org/watershed, www.cleanbay.org			
Outreach: The City ran several stormwater pollution prevention campaigns, online, in person, and through its Utility bill inserts, which referred to the City's stormwater or CleanBay websites for more information. For regional efforts, please refer to SCVURPPP's C.7 Public Information and Outreach section of the Annual Report for efforts conducted by the countywide program to publicize stormwater points of contact (e.g., program website, hotline, outreach materials, among others).				

Section 9 – Provision C.9 Pesticides Toxicity Controls

C.9.a. ►Implement IPM Policy or Ordinance

Is your municipality implementing its IPM Policy/Ordinance and Standard Operating Procedures?	X	**Yes**		**No**

If no, explain:

N/A

(For FY 22-23 Annual Report only) Provide links to IPM policies or ordinances and IPM standard operating procedures:

The City's Integrated Pest Management Policy is located in Chapter 5-05 of the Policy and Procedures Manual: https://www.cityofpaloalto.org/files/assets/public/sustainability/policies-and-plans/integrated-pest-management-policy-july-2020.pdf

Additional information, resources and Standard Operating Procedures are located on a staff Sharepoint site ("IPM: Less Toxic Pest Management"). A PDF of its contents is attached to this report.

Report implementation of IPM BMPs by showing trends in quantities and types of pesticides used, and suggest reasons for increases in use of pesticides that threaten water quality, specifically organophosphates, pyrethroids, carbamates, fipronil, indoxacarb, diuron, and diamides. A separate report can be attached as evidence of your implementation.

Trends in Quantities and Types of Pesticide Active Ingredients Used[1]

Pesticide Category and Specific Pesticide Active Ingredient Used	Amount[2] of Active Ingredient				
	FY 22-23	FY 23-24	FY 24-25	FY 25-26	FY 26-27
Organophosphates	0				
Active Ingredient Chlorpyrifos	0				
Active Ingredient Diazinon	0				
Active Ingredient Malathion	0				
Pyrethroids (see footnote #2 for list of active ingredients)	0				
Active Ingredient Type X	0				
Active Ingredient Type Y	0				

[1] Includes all municipal structural and landscape pesticide usage by employees and contractors.
[2] Weight or volume of the active ingredient, using same units for the product each year. Please specify units used. The active ingredients in any pesticide are listed on the label. The list of active ingredients that need to be reported in the pyrethroids class includes: metofluthrin, bifenthrin, cyfluthrin, beta-cyfluthrin, cypermethrin, deltamethrin, esfenvalerate, lambda-cyhalothrin, and permethrin.

Carbamates	0				
Active Ingredient Carbaryl	0				
Active Ingredient Aldicarb	0				
Pesticide Category and Specific Pesticide Active Ingredient Used	**Amount**				
	FY 22-23	**FY 23-24**	**FY 24-25**	**FY 25-26**	**FY 26-27**
Indoxacarb	0				
Diuron	0				
Diamides	0				
Active Ingredient Chlorantraniliprole	0				
Active Ingredient Cyantraniliprole	0				
Neonicotinoids	0				
Active Ingredient Imidacloprid	0				
Active Ingredient Acetamiprid	0				
Active Ingredient Dinotefuran	0				
Fipronil	0				

Reasons for increases in use of pesticides that threaten water quality:

N/A

IPM Tactics and Strategies Used:

- Mulching planters with City-supplied mulch
- Mowing/line trimming weeds before they go to seed
- Manually pulling weeds in feasible locations
- Designing planters with large shrub material to out-compete weed growth
- Using weed fabric in newly-installed landscaped areas
- Using traps for controlling gopher and mole populations
- Preventative actions, including improving sanitation and ensuring right-sizing of refuse bins at parks and facilities
- Using primarily exclusion and trapping for structural pests such as yellowjackets, wasps and rodents
- Maintaining 21 pesticide-free parks and facilities and not spraying within 100 feet of any creek or school

C.9.b ►Train Municipal Employees

Enter the number of employees that apply or use pesticides (including herbicides) within the scope of their duties.	2
Enter the number of these employees who received training on your IPM policy and IPM standard operating procedures within this reporting year.	2
Enter the percentage of municipal employees who apply pesticides who have received training in the IPM policy and IPM standard operating procedures within this reporting year.	100%

Type of Training:

None of the fifteen employees involved in parks and tree maintenance applied pesticides in FY 22-23. Parks and Tree maintenance staff received tailgate trainings specific to the City's IPM policy. In addition, Parks staff (Field Service Inspectors) have kept their QAC (Qualified Applicators Certification) current by taking continuing education courses that are provided through various sources like PAPA (Pesticide Applicators Professional Association). Additionally, one Urban Forestry staff member has maintained their QAC and PCA (Pest Control Advisor License) through continuing education courses.

C.9.c ►Require Contractors to Implement IPM

Did your municipality contract with any pesticide service provider in the reporting year, for either landscaping or structural pest control?	X	**Yes**		**No**
If yes, did your municipality evaluate the contractor's list of pesticides and amounts of active ingredients used?	X	**Yes**		**No**

If your municipality contracted with any pesticide service provider, briefly describe how contractor compliance with IPM Policy/Ordinance and SOPs was monitored.

Compliance was monitored by field site visits, consultation with the contractor, observation during and after service.

If your agency did not evaluate the contractor's list of pesticides and amounts of active ingredients used, provide an explanation.

N/A

C.9.d ►Interface with County Agricultural Commissioners

How did your municipality communicate with the County Agricultural Commissioner to: (a) get input and assistance on urban pest management practices and use of pesticides or (b) inform them of water quality issues related to pesticides?

Please refer to Section 9 of the Santa Clara Valley Urban Runoff Pollution Prevention Program (SCVURPPP) FY 22-23 Annual Report for a summary of communication with the Santa Clara County Agricultural Commissioner.

The City has been in direct communications with Santa Clara County Division of Agriculture (SCCA) regarding an invasive weed species that they have been monitoring within the City's limits. The County requested treatment of the invasive weed, which the City did through its landscaping contract. SCCA has been carefully monitoring this weed and communications are on-going.

Did your municipality report any observed or citizen-reported violations of pesticide regulations (e.g., illegal handling and applications of pesticides) associated with stormwater management, particularly the California Department of Pesticide Regulation (DPR) surface water protection regulations for outdoor, nonagricultural use of pyrethroid pesticides by any person performing pest control for hire.		**Yes**	X	**No**

If yes, provide a summary of improper pesticide usage reported to the County Agricultural Commissioner and follow-up actions taken to correct any violations. A separate report can be attached as your summary.

N/A

C.9.e.ii (1) ►Public Outreach: Point of Purchase

Provide a summary of public outreach at point of purchase, and any measurable awareness and behavior changes resulting from outreach (here or in a separate report); **OR** reference a report of a regional effort for public outreach in which your agency participates.

Summary:

Please refer to the C.9 Pesticides Toxicity Control section of the SCVURPPP's FY 22-23 Annual Report for information on point of purchase public outreach conducted countywide and regionally.

C.9.e.ii (2) ►Public Outreach: Pest Control Contracting Outreach

Provide a summary of outreach to residents who use or contract for structural pest control and landscape professionals); **AND/OR** reference a report of a regional effort for outreach to residents who hire pest control and landscape professionals in which your agency participates.

Summary:

Please refer to Section 7 and Section 9 of SCVURPPP's FY 22-23 Annual Report for a summary of outreach to residents and businesses that use or hire structural pest control and landscape professionals. In addition, see the FY 22-23 Watershed Watch Campaign Final Report included within Section 7 of SCVURPPP's FY 22-23 Annual Report.

C.9.e.ii.(3) ►Public Outreach: Pest Control Operators

Provide a summary of public outreach to pest control operators and landscapers and reduced pesticide use (here or in a separate report); **AND/OR** reference a report of a regional effort for outreach to pest control operators and landscapers in which your agency participates.

Summary:

Please refer to the C.9 Pesticides Toxicity Control section of SCVURPPP's FY 22-23 Annual Report for a summary of participation in and contributions towards countywide and regional public outreach to pest control operators and landscapers to reduce pesticide use.

C.9.f ►Track and Participate in Relevant Regulatory Processes

Summarize participation efforts, information submitted, and how regulatory actions were affected; **AND/OR** reference a regional report that summarizes regional participation efforts, information submitted, and how regulatory actions were affected.

Summary:

During FY 22-23, the City participated in regulatory processes related to pesticides through contributions to the countywide Program and CASQA. For additional information, see the Regional Report prepared by CASQA.

Section 10 – Provision C.10 Trash Load Reduction

C.10.a.i ► Trash Load Reduction Summary

For population-based Permittees, provide the overall trash reduction percentage achieved to-date within the jurisdictional area of your municipality that generates problematic trash levels (i.e., Very High, High, or Moderate trash generation). Base the reduction percentage on the information presented in C.10.b i-v and C.10.f.i-ii. Provide a discussion of the calculation used to produce the reduction percentage

Trash Load Reductions	
Percent Trash Reduction in All Trash Management Areas (TMAs) due to **Full Trash Capture Systems** (as reported C.10.b.i)	19.0%
Percent Trash Reduction in all TMAs due to **Control Measures Other than Full Trash Capture Systems** (as reported in C.10.b.iii)[1]	54.5%[2]
Percent Trash Reduction due to **Jurisdictional-wide Source Control Actions**[3] (as reported in C.10.b.v)	0%
Subtotal for Above Actions	**73.5%**
Trash Offsets (Optional)	
Offset Associated with Additional Creek and Shoreline Cleanups (as reported in C.10.f.i)	1.7%
Offset Associated with Direct Trash Discharges (as reported in C.10.f.ii)	0%
Total (Jurisdiction-wide) % Trash Load Reduction through FY 2022-23	**75.2%**

Discussion of Permittee Trash Load Reduction and the Load Reduction Calculation:

The City attained and reported 87% trash load reduction (including trash offsets) in its FY 21-22 Annual Report. During FY 22-23, the City continued to implement a robust trash control measure program (e.g., full trash capture devices). The total (jurisdiction-wide) percent trash load reduction in FY 22-23 is 75.2% (including trash offsets but excluding trash reduction credits for source controls that no longer creditable under MRP 3.0). The most recent version of the City's Baseline Trash Generation Map can be downloaded at http://scvurppp.org/trash-maps/.

[1] See Appendix 10-1 for changes between 2009 and FY 22-23 in trash generation by TMA as a result of Full Capture Systems and Other Measures.

[2] Includes percent load reductions associated with trash control measures reported under: 1) C.10.b.ii(a) for Trash Inspection Program conducted on Private Land Drainage Areas (PLDAs) that addresses trash on private properties; and 2) C.10.b.iii(a) for Other Management Actions mostly addressing trash in the public right-of-way.

[3] To claim a load percentage reduction value, Permittees must provide substantive and credible evidence that new source control actions are being implemented jurisdiction-wide and reduce trash by the claimed value. Permittees may no longer claim source control actions implemented under previous Permits (i.e., foam foodware and single-use plastic bags).

C.10.a.ii(a) ► Full Trash Capture Systems – Population-based Permittees
C.10.c ► Full Trash Capture Systems – Flood Management Agencies

Provide the following:

1) Total number and types of full capture systems (publicly and privately-owned) installed during FY 22-23, and prior to FY 22-23, including inlet-based and large flow-through or end-of-pipe systems, and qualifying low impact development (LID) required by permit provision C.3.
2) Total land area (acres) treated by full capture systems for population-based Permittees and total number of systems for flood management agencies compared to the total required by the permit.

Type of System	# of Systems	Areas Treated[4] (Acres)
Installed in FY 22-23		
Catch Basin Insert Device (Public)	1	5.0
Installed Prior to FY 22-23		
Hydrodynamic Separators (Public)	2	150.5
Hydrodynamic Separators (Private)	3	31.0
Multi-benefit (Bioretention) Treatment Systems (Private)[5]	20	68.2
Device installed by bordering Permittees with treatment areas extending into the City of Palo Alto	--	63.7
Total for all Devices or Systems Installed To-date	**26**	**318.4**
Treatment Acreage Required by Permit (Population-based Permittees)		**84**
Total # of Systems Required by Permit (Flood Management Agencies)		**N/A**

[4] The City's 2009 baseline trash generation map was reevaluated in FY 22-23 to ensure that jurisdictional areas were assigned the appropriate trash generation category when the original baseline map was created. Additionally, the areas treated by existing trash full capture systems were also evaluated and refined based on more accurate information on drainage patterns and the configuration of the City's MS4. Based on these analyses, some drainage boundaries for trash full capture systems were refined. The refined drainage boundaries are reported in this table and in Appendix 10-1. Areas treated include jurisdictional and non-jurisdictional lands (e.g., public K-12 schools and colleges, and freeways).

[5] In accordance with Permit provision C.10.a.iii, stormwater treatment facilities (i.e., bioretention) implemented in accordance with Provision C.3 are deemed a full capture system if the facility, including its maintenance, prevents the discharge of trash to the downstream MS4 and receiving waters and discharge points from the facility, including overflows, are appropriately screened or otherwise configured to meet the full trash capture screening specification for storm flows up to the full trash capture one year, one hour storm hydraulic specification. Based on this definition, the City has applied a conservative assumption to determine which multi-benefit bioretention facilities should be counted as trash full capture systems. Currently, the City only deems bioretention facilities that are constructed after July 1, 2010 and at a size of at least 3% of the drainage management area (DMA) with a 6-inch ponding depth to meet the trash full capture definition. A technical memorandum describing the analysis conducted by the Santa Clara Valley Urban Runoff Program (SCVURPPP) that supports these criteria is included in the SCVRUPPP FY 21-22 Annual Report (see Section 10 of the SCVURPPP report).

C.10.a.ii(b) ►Trash Generation Area Management - Private Lands

Provide a summary of implementation actions and progress towards meeting the July 1, 2025 requirement for all private lands that are moderate, high, or very high trash generating, and that drain to storm drain inlets that Permittees do not own or operate (private), but that are plumbed to Permittees' storm drain systems. Include any trash control measures implemented or caused to be implemented, including full trash capture systems and/or trash discharge control actions equivalent to or better than full trash capture systems.

Summary of Implementation Actions and Progress:

As described in MRP 3.0 Provision C.10.a.ii(b), private properties that 1) generate moderate, high, or very high level of trash, 2) are plumbed to the City's MS4, and 3) are not already addressed by a Full Trash Capture (FTC) system are required to be equipped with a FTC system or be managed by trash control measures equivalent to or better than a FTC system by July 1, 2025. To address trash contributions from these properties, which are referred to as Private Land Drainage Areas (PLDAs), the City has begun the implementation of a PLDA Trash Inspection Program (TIP). Through the TIP, inspections are performed on PLDAs and if the level of trash observed on the property via OVTAs is greater than low trash generation, property owners and/or managers are required to implement additional trash control measures and achieve low trash generation. Trash control measures may include FTC systems or other types of trash control actions. The goal of the TIP is to address trash from all PLDAs in the City by July 1, 2025.

Approximately 67 potential PLDAs have been identified in the City to date and inspections will begin on these PLDAs in FY 2023-24. These 67 potential PLDAs include those that are >10,000 ft^2. The City plans to identify the remaining PLDAs that are less than 10,000 ft^2 and begin inspections on PLDAs in FY 2023-24. The City is prioritizing inspections at PLDAs that are believed to generate the greatest levels of trash.

No trash load reduction is being reported in FY 22-23 associated with PLDAs inspections.

C.10.b.i and ii ► Trash Reduction - Full Capture Systems

Provide the following:

1) Jurisdiction-wide trash reduction in FY 22-23 attributable to full capture systems implemented in each TMA;
2) The total number of full capture systems installed to-date in your jurisdiction;
3) The percentage of systems in FY 22-23 that exhibited significant plugged/blinded screens or were ≥50% full when inspected or maintained;
4) A narrative summary of any maintenance issues and the corrective actions taken to avoid future performance issues; and
5) A certification that each full capture system is operated and maintained to meet full capture system requirements in the permit.

TMA	Jurisdiction-wide Reduction (%)	Total # of Full Capture Systems	% of Systems Exhibiting Plugged/Blinded Screens or ≥ 50% full in FY 22-23	Summary of Maintenance Issues and Corrective Actions
1	0.3%	26		The City's full capture systems are inspected a minimum of twice a year and maintained as needed. If there is more than minimal trash and/or sediment, City crews choose to clean the systems out to ensure their maximum efficiency. Typically, the devices are cleaned out once per year but are cleaned out more often if needed. All private properties with storm water treatment systems that include full capture hydro-dynamic separators are inspected annually during the annual C.3 Operations and Maintenance Inspections. Staff has not observed any issues with operations, indicating that the regular maintenance conducted is adequate.
2	0.4%			
3	1.3%			
4	8.1%			
5	1.5%			
6	0.4%			
7	0.0%			
8	0.0%			
9	0.6%			
10	6.4%			
11	NA			
12	0.0%			
13	0.0%			
Total	**19.0%**			

Certification Statement:
The City of Palo Alto certifies that a full capture system maintenance and operation program is consistently being implemented to maintain all its full capture devices in a manner that meets the full capture system requirements included in the Permit.

Did your agency provide the names and locations of new and existing full trash capture systems to the County vector control agency for FY 2022-23?	X	**Yes**		**No**		**N/A**

C.10.b.iii(a) ► Trash Reduction – Other Trash Management Actions
C.10.c ► Requirements for Flood Control Agencies

Provide a summary of trash control actions other than full capture systems or jurisdictional source controls that were implemented within each TMA, including the types of actions, levels, timing, frequency, and areal extent of implementation, whether actions are new, including initiation date, and information relevant to effective implementation of the action or combination of actions.

TMA	Summary of Trash Control Actions Other than Full Capture Systems
1	• **Street sweeping:** Three times per week with dedicated staff walking ahead of sweepers to blow trash and debris from sidewalks and tree wells and behind parking stops into the street. Subarea 1B is swept weekly during leaf season and every other week during the summer months with parking restrictions in place. • **On-land cleanup:** Downtown Streets Team, a City contractor, picks up litter and debris from sidewalks and public parking lots seven days per week in the business improvement district in TMA 1A. Restaurants applying for encroachment permits for outdoor seating areas are required to keep them clean. Landscaping contractor picks up litter and debris in landscaped areas once per week and in two downtown parks every weekday. Sidewalks are swept using a small-scale sweeper daily and pressure-washed by a BASMAA-certified cleaner monthly. • **Oversight and maintenance of trash bin/container management:** The Downtown Streets Team supports the City's trash hauler contractor, Greenwaste, by picking up around large commercial bins throughout the week. Commercial bins are maintained by Greenwaste six days out of the week and cleaned at its maintenance yard. Trash enclosures are required for major development projects, and maintenance issues are identified through the commercial business inspection program. • **Partial capture:** City's diversion structure to its Regional Water Quality Control Plant is partially located in this TMA. • **Smoking Ordinance:** Prohibition to smoke in downtown business district became effective in 2015. A follow-up ordinance in 2017 adopted revisions to the City's existing Smoking and Tobacco Regulations to prohibit smoking in designated public spaces, including outdoor dining areas, entryways, public events, recreation areas, and service areas and multi-family residential units. Signs were installed in FY 17-18 to inform the public about these regulations and continue to be installed as needed. The City has also adopted a Tobacco Retail Permit Ordinance in partnership with Santa Clara County Department of Health (the most recent iteration of this ordinance was adopted in 2020). While this ordinance targeted teen health concerns, it is anticipated to also result in a reduction in litter from single-use flavored tobacco products.
2	• **Street sweeping:** Three times per week (except for a small primarily residential area); parking lots swept weekly. • **On-land cleanup:** City staff and contractors pick up litter and debris in landscaped areas once per week, medians at California Avenue twice a week, tree wells weekly, and the Caltrain Station roundabout weekly. A park in the area has daily litter pickup Monday-Friday. • **Smoking Ordinance:** Signs were installed in FY 17-18 to inform the public about these regulations and continue to be installed as needed.
3	• **Street sweeping**: Street sweeping weekly during leaf season; every other week during summer months. • **On-land cleanup:** Weekly in landscaped areas at perimeter of shopping center. Shopping Center staff picks ups trash daily within the property.

	• **Partial capture:** Wet well located at Embarcadero Road and C.3 devices at shopping center help to keep trash from entering the City's storm drain system. • **Oversight and maintenance of trash bin/container management**: Trash enclosures were built as part of new development at the site. Litter bins well maintained by shopping center staff. In FY 15-16, extensive effort on right size/right service was conducted to improve management of shopping center waste. • **Smoking Ordinance:** Prohibition to smoke in business district became effective in 2015, and in multi-family dwellings and other public areas in 2017.
4	• **Street sweeping**: Weekly on El Camino Real and during leaf season; every other week during summer months in remaining area. • **On-land cleanup:** Along El Camino Real, contractor picks up trash from landscaped areas and Los Robles Park weekly.
5	• **Street sweeping**: Entire area weekly. • **On-land cleanup**: Contractors pick up litter from landscaped areas along El Camino Real weekly. • **Oversight and maintenance of trash bin/container management**: Bus stop litter cans maintained by VTA. • **Smoking Ordinance**: Prohibition to smoke in business districts became effective in 2015. Follow-up ordinance in 2017 adopted revisions to the City's existing Smoking and Tobacco Regulations to prohibit smoking in designated public spaces, including outdoor dining areas, entryways, public events, recreation areas, and service areas and multi-family residential units. New non-smoking signs were installed in highly visited areas of TMA 5.
6	• **Street sweeping**: Weekly during leaf season; every other week during summer months. • **On-land cleanup**: Shopping center staff/contractors maintain the shopping center. City contractors maintain landscaped area at the electrical substation on Quarry Rd.
7	• **Street sweeping**: Weekly during leaf season; every other week during summer months except when early leaf fall requires weekly. • **On-land cleanup**: Parks department contractors perform cleanups at TMAs 7b and 7d. Shopping centers have staff conducting trash clean-up. • **Oversight and maintenance of trash bin/container management**: C.3 features capture trash and are inspected annually.
8	• **Street sweeping**: Weekly during leaf season; every other week during summer months except when early leaf fall requires weekly. • **On-land cleanup**: Janitorial staff picks up litter on school grounds. For non-jurisdictional public middle and elementary schools, City staff collects trash and empties trash bins from playing fields at 16 elementary and middle schools 5 days a week. • **Partial treatment**: several private schools have C.3 devices, including a vortex separator. • **Oversight and maintenance of trash bin/container management**: GreenWaste, the City's hauler works with schools on 'right size' bins and waste sorting. City staff inspects all middle and high schools every five years.

	• **Outreach**: City's contractor has been conducting extensive outreach program at schools, including several programs focused on litter. However, due to contractor staffing issues the contract was terminated. In addition, due to competing budget constraints, a solicitation process for new school outreach will be pursued next fiscal year.
9	• **Street sweeping:** Weekly for larger public parking lots; streets swept weekly during leaf season and every other week during summer months. • **On-land cleanup**: Contractors and City staff maintain Parks and playing fields five days per week. • **Oversight and maintenance of trash bin/container management:** Trash enclosure installed at the Art Center. For Rinconada, Greer, and Mitchell Parks, service for refuse (trash) bins increased from once per week during Fall and Winter seasons to twice per week (Monday and Friday) during Spring and Summer seasons. In FY 21-22, the Parks Department moved a waste station in Rinconada Park to a new, heavily used picnic area, which will be monitored to determine reduction of trash overflows within the park.
10	• **Street Sweeping**: Weekly during leaf season; every other week during summer months except when early leaf fall requires weekly. • **On-Land Cleanup: Areas 10 a, b, and g have weekly litter pick up. One of the City's hot spot areas located in this TMA** (10E) is cleaned twice a year. Other portions are cleaned as needed. • **Oversight and maintenance of trash bin/container management:** Trash enclosures are required for major development projects, and maintenance issues are identified through the commercial business inspection program. A portion of this TMA drains to the City's diversion structure, which diverts stormwater to the Regional Water Quality Control Plant. • **New Large Trash Capture Device: I**n FY 20-21, the City entered into an agreement with Caltrans to install a large device in Subarea 10C. The City anticipates for it to be installed in Spring 2023.
11	• **Street sweeping**: Weekly during leaf season; every other week during summer months. Municipal Service Center is swept weekly. • **On-land cleanup**: One of the City's hot spot areas located in this TMA is cleaned twice a year. The remainder of the area is cleaned as needed. • **Oversight and maintenance of trash bin/container management:** Municipal Service Center is maintained via its Stormwater Pollution Prevention Plan and is inspected once per year. The automotive maintenance facility is inspected two additional times annually. Staff outreach has been conducted regarding litter.
12	• **Street sweeping**: weekly during leaf season; every other week during other months. • **On-land cleanup**: A portion of TMA is cleaned monthly; other portions as needed. • **Parking restrictions**: Parking restrictions were established to reduce litter from parked vehicles. On March 17th, 2020, parking enforcement was paused in residential and commercial corridors through the September 2021 due to the Covid- 19 pandemic. • **Municipal collaboration**: City collaborates with neighboring East Palo Alto and Menlo Park as needed to address issues of street trash and illegal dumping.
13	• **Street sweeping**: Weekly during leaf season; every other week for the summer months.

	• **On-land cleanup**: Some landscaped medians maintained by Parks Division weekly.
All TMAs	• **Street sweeping**: The street sweeping schedule did not change due to the Covid-19 pandemic, as it was deemed essential for the City's health and safety. • **Parking restrictions:** Although parking enforcement was paused in residential and commercial districts throughout the Covid-19 pandemic, enforcement regarding street sweeping continued, as it was deemed essential for the City's health and safety. Parking enforcement of citywide on-street and off-street parking restrictions in commercial and residential districts, including all Residential Preferential Parking areas, resumed on Friday, Oct. 1, 2021. • **Storm drain Inlet cleaning:** Inlets are cleaned annually in October and during pipeline cleaning on a year-round basis. This schedule remained the same during the Covid-19 pandemic, as it was deemed essential. • **Uncovered loads:** City's Municipal Code requires covered loads. Trash hauling contract requires covered loads. Tarp distribution program is conducted at SMaRT station in Sunnyvale. • **Anti-Littering and Illegal Dumping response:** The City has PaloAlto311, a multi-platform solution to report issues, including illegal dumping. Requests are tracked and resolved through this App. This App is listed on the City's homepage. • **Trash enclosure requirement**: Trash enclosures are required at all new commercial and multi-family facilities. In FY 19-20, staff increased plan review procedures and oversight to ensure that enclosures were appropriately designed for optimal stormwater prevention. • **Oversight and maintenance of trash bin/container management:** City's Fats, Oil & Grease Inspector investigates restaurants and their outdoor trash management areas on a regular basis to improve the compliance and management of these areas. In addition, commercial facility inspectors conduct stormwater/trash inspections according to associated inspection frequency identified in the City's Business Inspection Plan. • **Outreach:** City staff conducts an extensive outreach program, including tabling events regarding stormwater pollution prevention. Several of these events revolve around Earth Day, all of which were cancelled again in FY 21-22 due to the Covid-19 pandemic. The City anticipates these events to resume in FY 22-23. • **Smoking Ordinance:** Ordinance revisions to the City's existing Smoking and Tobacco Regulations in 2017 to prohibit smoking in designated public spaces, including outdoor dining areas, entryways, public events, recreation areas, and service areas and multi-family residential units. The City has also adopted a Tobacco Retail Permit Ordinance in partnership with Santa Clara County Department of Health (the most recent iteration of this ordinance was adpopted in 2020). While this ordinance targeted teen health concerns, it is anticipated to also result in a reduction in litter from single- use flavored tobacco products. • **Plastics Reduction Ordinance:** In June 2019, City Council adopted an ordinance to limit the use of disposable (plastic) foodware items, which became effective January 1, 2020. The banned items include plastic straws, utensils, stirrers, beverage plugs and produce bags. All food establishments and farmers markets are affected as well as retail service establishments that use produce bags. Enforcement of this new ordinance has been by complaint only due to the Covid- 19 pandemic.

	• **Rethink Disposable Program:** In 2016, the City contracted with Clean Water Action and Clean Water Fund to have the organizations implement their Rethink Disposable program, a technical assistance program that helps food businesses implement best practices to reduce waste and cut costs by minimizing disposable product usage. In FY21-22, the Rethink Disposable team visited 59 restaurants. They scoped out opportunities to switch disposable foodware to reusable counterparts, completed the foodware ordinance checklist, and attempted to make contact with a decision maker. Four businesses made commitments to implement reusable foodware and accepted technical assistance from the ReThink Disposable team. These businesses included: Tootsies , Jing Jing, Gourmet, World Wrapps, and Kung Fu Tea .

C.10.b.iii(b) ► Trash Reduction – Other Trash Management Actions

Provide the following:

1) A summary of the on-land visual assessments in each TMA (or control measure area), including the street miles or acres available for assessment (i.e., those associated with VH, H, or M trash generation areas not treated by full capture systems), the street miles or acres assessed, the % of available street miles or acres assessed, and the average number of assessments conducted per site within the TMA; and
2) Percent jurisdictional-wide trash reduction in FY 22-23 attributable to trash management actions other than full capture systems implemented in each TMA; OR
3) Indicate that no on-land visual assessments were performed.

If no on-land visual assessments were performed, check here **and state why:**	X	**Explanation:** No OVTAs were conducted in TMAs 7, 8, 11, 12, or 13 because either limited street lengths are available for assessments or no additional/enhanced other control measures have been implemented. No OVTAs were conducted in TMA 4 because moderate, high or very high trash generating areas are treated by full capture systems.

TMA ID or *(as applicable)* Control Measure Area	**Total Street Miles[6] Available for Assessment**	**Summary of On-land Visual Assessments**			**Jurisdictional-wide Reduction (%)**
		Street Miles Assessed	**% of Available Street Miles Assessed**	**Avg. # of Assessments Conducted at Each Site**	
1	6.0	2.0	33%	5.9	13.6%
2	3.6	0.8	22%	6.3	3.5%
3	0.4	0.4	100%	5.0	6.3%
4	0.0	NA	NA	NA	NA
5	2.5	0.8	34%	5.8	1.9%
6	1.0	0.8	79%	5.0	3.1%
7	0.8	0.0	0%	0.0	0.0%
8	1.7	0.0	0%	0.0	0.0%
9	2.4	0.4	16%	5.0	5.2%
10	6.3	1.1	17%	5.6	21.0%
11	0.1	0.0	0%	0.0	0.0%
12	0.3	0.0	0%	0.0	0.0%
13	0.2	0.0	0%	0.0	0.0%
Total		**6.3**	**--**	**--**	**54.5%[7]**

[6] Street miles are defined as the street length and do not include street median curbs.
[7] Percent trash load reduction reported here does not include load reductions associated with the City's Trash Inspection Program on PLDAs.

C.10.b.v ► Trash Reduction – Source Controls

Provide a description of each jurisdiction-wide trash source control action implemented to-date other than those addressed under previous Permits (i.e., foam foodware and single-use plastic bags). For each new control action, identify the trash reduction evaluation method(s) used to demonstrate on-going reductions, summarize the results of the evaluation(s), and estimate the associated reduction of trash within your jurisdictional area. Note: There is a maximum of 10% total credit for source controls.

Source Control Action	Summary Description & Dominant Trash Sources and Types Targeted	Evaluation/Enforcement Method(s)	Summary of Evaluation/Enforcement Results To-date	% Reduction
N/A	N/A	N/A	N/A	N/A

C.10.d ►Long-Term Trash Load Reduction Plan

State (Y/N) if your agency met the 90% compliance benchmark and submit an updated Long-term Trash Load Reduction Plan in accordance with Permit Provision C.10.d.ii.

Did your agency **meet the 90% compliance benchmark** as of June 30, 2023 without the use of source control credits or creek/shoreline cleanup and direct discharge control offsets?		**Yes**	X	**No**		**N/A**
If your agency **checked "No" above**, did your agency develop an updated Trash Load Reduction Plan and submit it as an attachment to this Annual Report?		**Yes**	X (see below)	**No**		**N/A**

If your agency **checked "Yes" above AND significantly revised your Trash Load Reduction Plan**, include a summary of the significant revisions below. Significant revisions include any changes made to primary or secondary trash management areas (TMAs), baseline trash generation maps, control measures, or time schedules identified in your Plan. Indicate whether your trash generation map was revised and, if so, what information was collected to support the revision. If your map was revised, attach it to your Annual Report or provide a link to the map.

Summary Descriptions of Significant Revisions Made to 2014 Trash Load Reduction Plan	Associated TMA
The City's Updated Trash Load Reduction Plan was submitted to the Regional Water Board in June 2023, consistent with MRP 3.0 requirements. In the Updated Plan, the City describes actions planned to achieve the 90% and 100% trash load reduction benchmarks and associated schedules.	All

C.10.f.i ► Trash Reduction Offsets –Creek and Shoreline Cleanups (Optional)

Provide a summary description of creek and shoreline cleanups conducted at a minimum frequency of twice per year, and sufficient to demonstrate sustained improvement of the creek or shoreline area, the volume of trash removed, and the offset claimed in FY 22-23. Provide the number and frequency of cleanups conducted, locations and cleanup dates.

Offset Program	Summary Description of Actions and Assessment Results	Volume of Trash (CY) Removed/Controlled in FY 22-23	Offset (% Jurisdiction-wide Reduction)
Additional Creek and Shoreline Cleanups (Max 10% Offset)	Adobe Creek Hot Spot was cleaned three times during FY22-23 (i.e., September 17, 2022, December 17, 2022, and May 20, 2023) Volume Removed: 9/2022 – 155 gallons / 0.77 CY 2/2022 – 160 gallons /0.79 CY 5/2023 – 200 gallons / 1.00 CY Matadero Creek Hot Spot was cleaned three times during FY22-23 (i.e., September 17, 2022, December 17, 2022, and May 20, 2023) Volume Removed: 9/2022 – 125 gallons / 0.62 CY 12/2022 – 150 gallons /0.75 CY 5/2023 – 120 gallons / 0.60 CY	4.5 CY	1.7%

C.10.f.ii ► Trash Reduction Offsets – Direct Trash Discharge Controls

For those Permittees with a Direct (Trash) Discharge Control (offset) Program (DDCP) approved by the Water Board Executive Officer, provide a summary description of the trash controls implemented, the volume of trash removed via the DDCP, and the offset claimed in FY 22-23. Attach a report that includes the following:

- For Permittees whose DDCPs address significant discharges from **unsheltered homeless populations**, include a narrative description and quantitative information for the following for the current year and for each prior year of the permit term:
    - The estimated number of people experiencing unsheltered homelessness in their jurisdiction;
    - the estimated number of people experiencing unsheltered homelessness living within approximately 500 feet of receiving waters;
    - the estimated portion of those populations provided housing as described in Provision C.10.f.ii.b.(i);
    - the estimated portion of those populations served with the services described in Provision C.10.f.ii.b.(i);
    - the number and scope of sanitation controls and services provided to homeless encampments;
    - the number and scope of trash controls and services provided to homeless encampments; and

C.10.f.ii ► Trash Reduction Offsets – Direct Trash Discharge Controls

- the number and scope of sanitary cleanouts and other services provided to RVs.

- For Permittees whose DDCPs address significant discharges from **illegal dumping sites**, include a narrative description and quantitative information for the following for the current year and for each prior year of the permit term:
  - The total number of active illegal dumping sites;
  - the number of active illegal dumping sites within approximately 500 feet of receiving waters;
  - the number of illegal dumping sites where trash was collected and the amount of material collected;
  - dumping vouchers (or equivalent) provided (and who they are provided to);
  - dumping vouchers (or equivalent) used; and
  - outreach and education provided to the public regarding illegal dumping and the availability of dumping vouchers (or equivalent).

- For Permittees whose DDCPs address significant discharges from **both unsheltered homeless populations and illegal dumping sites**, include a narrative description and quantitative information for all of the elements listed above for the current year and for each prior year of the permit term.

Offset Program	Summary Description of Actions and Assessment Results	Volume of Trash (CY) Removed/Controlled in FY 22-23	Offset (% Jurisdiction-wide Reduction)
Direct Trash Discharge Controls (Max 15% Offset)	N/A	N/A	N/A

Appendix 10-1. Baseline trash generation and areas addressed by full capture systems and other control measures in Fiscal Year 22-23[1].

TMA	2009 Baseline Trash Generation (Acres)					Trash Generation (Acres) in FY 22-23 After Accounting for Full Capture Systems					Jurisdiction-wide Reduction via Full Capture Systems (%)	Trash Generation (Acres) in FY 22-23 After Accounting for Full Capture Systems and Other Control Measures[3]					Jurisdiction-wide Reduction via Other Control Measures (%)	Jurisdiction-wide Reduction via Full Capture AND Other Control Measures (%)
	L	M	H	VH	Total	L	M	H	VH	Total		L	M	H	VH	Total		
1	100	75	9	0	184	101	74	9	0	184	0.3%	175	9	0	0	184	13.6%	**13.9%**
2	97	51	0	0	148	100	48	0	0	148	0.4%	124	23	0	0	148	3.5%	**3.9%**
3	2	0	17	0	18	4	0	14	0	18	1.3%	7	12	0	0	18	6.3%	**7.5%**
4	129	26	8	0	164	164	0	0	0	164	8.1%	164	0	0	0	164	0.0%	**8.1%**
5	79	45	2	0	127	88	37	2	0	127	1.5%	96	30	0	0	127	1.9%	**3.4%**
6	11	61	0	0	71	14	58	0	0	71	0.4%	37	35	0	0	71	3.1%	**3.6%**
7	21	11	0	0	32	21	11	0	0	32	0.0%	21	11	0	0	32	0.0%	**0.0%**
8	68	22	0	0	90	68	22	0	0	90	0.0%	68	22	0	0	90	0.0%	**0.0%**
9	146	55	0	0	202	150	51	0	0	202	0.6%	189	13	0	0	202	5.2%	**5.8%**
10	247	208	2	0	457	293	162	2	0	457	6.4%	443	14	0	0	457	21.0%	**27.4%**
11	21	0	0	0	21	21	0	0	0	21	0.0%	21	0	0	0	21	0.0%	**NA[2]**
12	0	0	5	0	5	0	0	5	0	5	0.0%	0	0	5	0	5	0.0%	**0.0%**
13	12373	5	0	0	12378	12373	5	0	0	12378	0.0%	12373	5	0	0	12378	0.0%	**0.0%**
Totals	**13293**	**560**	**44**	**0**	**13897**	**13396**	**468**	**32**	**0**	**13897**	**19.0%**	**13718**	**173**	**6**	**0**	**13897**	**54.5%**	**73.5%**

[1] Due to rounding, total acres and percentages presented in this table may be slightly different than the sum of the acres/percentages in the corresponding rows/columns (e.g., differ by 1 acre or 0.1%).

[2] "NA" indicates that the TMA has no moderate, high, or very high trash generating areas (i.e., all low trash generation and/or non-jurisdictional) and therefore no additional trash control measures are needed.

[3] Includes control measures implemented to address trash on: 1) Private Land Drainage Areas (PLDAs) as reported in C.10.b.ii(a); and 2) public right-of-way areas as reported in C.10.b.iii(a).

Section 11 – Provision C.11 Mercury Controls

C.11.a ► Assess Mercury Load Reductions from Stormwater

Submit documentation confirming that all control measures effectuated during the previous Permit term for which load reduction credit was recognized continue to be implemented at an intensity sufficient to maintain the credited load reduction.

Summary:

Please refer to the Santa Clara Valley Urban Runoff Pollution Prevention Program's (SCVURPPP) Mercury and PCBs Control Measures Update Report attached to that FY 2022-23 Annual Report.

C.11.b.iii (1), (2) ► Program for Source Property Identification and Abatement

Report progress on the acreage of land areas investigated, including progress toward investigation of 100 percent of old industrial land uses. The reporting shall indicate what action was taken for the parcels investigated (e.g., abatement, referral, enforcement, etc.). Permittees shall submit all supporting data and information including referral reports.

Summary:

Please refer to SCVURPPP's Mercury and PCBs Control Measures Update Report attached to that FY 2022-23 Annual Report.

Report on ongoing O&M activities associated with all past contaminated property referrals. Prior to all new referrals, Permittees shall submit, for staff review and comment, a detailed description of the enhanced O&M plan for the referred properties.

Summary:

Please refer to the SCVURPPP's Mercury and PCBs Control Measure Update Report attached to that FY 2022-23 Annual Report.

C.11.c.iii (2) ► Program for Control Measure Implementation in Old Industrial Areas

Submit an account of control measure and stormwater diversion implementation consistent with the plan submitted in March 2023 and any modifications thereto. Include maps of the areas treated, the acreage of catchments addressed, and a description of all control measures, installed treatment devices and routing facilities for each treated catchment.

Summary:

Please refer to SCVURPPP's Old Industrial Area Control Measure Update Report attached to that FY 2022-23 Annual Report.

C.11.d.iii (1) ► Mercury Collection and Recycling Implemented throughout the Region

Report on efforts to promote recycling of mercury-containing products and efforts to increase effectiveness of those recycling efforts. Report on the mass of mercury-containing material collected throughout the region along with an estimate of the mass of mercury contained in recycled material using the methodology contained in load reduction accounting system described and cited in the Fact Sheet.

Summary:

City staff participate in Countywide and regional efforts to support achieving mercury load reductions to the San Francisco Bay, including in SCVURPPP's Pollutants of Concern Ad Hoc Task Group. Please refer to SCVURPPP's Mercury and PCBs Control Measures Update Report attached to that 2022-23 Annual Report for regional details.

The following describes the City of Palo Alto's activities to reduce mercury loads through its Household Hazardous Waste Collection Program:

The City of Palo Alto collects mercury wastes, including fluorescent lamps, thermostats, thermometers, and batteries through its Household Hazardous Waste (HHW) Program. The City's HHW Program began in 1983 when it became the second jurisdiction in the State to provide collection of HHW to its residents in response to community concerns about toxic wastes in the environment. In September of 2013, the City celebrated the opening of a permanent HHW drop-off station at its Regional Water Quality Control Plant with added storage capacity and increased hours to make it more convenient for residents and small businesses to drop off hazardous wastes. Drop-off events for Palo Alto residents and businesses occur every Saturday and on the first Friday of the month.

Outreach for this program includes a website (www.cityofpaloalto.org/hazwaste), an HHW hotline, ad campaigns, and a partnership with the County HHW Program and a local hardware store to serve as a drop-off site for fluorescent bulbs. In FY 22-23, the City continued the campaign "Wonder? – What to do with CFLs?" to inform residents of proper disposal options for mercury-containing light bulbs. The ad was posted on social media once in FY 22-23.

In FY 22-23, 5,125 pounds of mercury containing lamps (fluorescent bulbs and CFLs), and 7 pounds of other mercury containing waste (including thermostats, thermometers, novelties, etc.) were collected and recycled. Batteries (button cell batteries) that contain mercury are also accepted.

C.11.g ► Fate and Transport Study of Mercury: Urban Runoff Impact on San Francisco Bay Margins

Submit a workplan describing how information needs for the mercury discharge from urban runoff studies will be obtained and describe the studies to be performed with a preliminary schedule. Report on the status of the studies in the FY 22-23 Annual Report.

Summary:

Please refer to SCVURPPP's FY 22-23 Annual Report for the workplan.

C.11.h ► Implement a Risk Reduction Program
Report on the status of the risk reduction program, including a brief description of actions taken, an estimate of the number of people reached, and why these people are deemed likely to consume Bay fish.
A summary of SCVURPPP and regional accomplishments for this sub-provision, including a brief description of actions taken, an estimate of the number of people reached, and why these communities are deemed likely to consume Bay fish are included in SCVURPPP's FY 2022-23 Annual Report.

Section 12 – Provision C.12 PCBs Controls

C.12.a ► Assess PCBs Load Reductions from Stormwater

Submit documentation confirming that all control measures effectuated during the previous Permit term for which load reduction credit was recognized continue to be implemented at an intensity sufficient to maintain the credited load reduction.

Summary:

Please refer to the Santa Clara Valley Urban Runoff Pollution Prevention Program's (SCVURPPP's) *Mercury and PCBs Control Measures Update Report* attached to that FY 22-23 Annual Report.

C.12.b.iii (1), (2) ► Program for Source Property Identification and Abatement

Report progress on the acreage of land areas investigated, including progress toward investigation of 100 percent of old industrial land uses. The reporting shall indicate what action was taken for the parcels investigated (e.g., abatement, referral, enforcement, etc.). Permittees shall submit all supporting data and information including referral reports.

Summary:

Please refer to SCVURPPP's *Mercury and PCBs Control Measures Update Report* attached to that FY 22-23 Annual Report.

Report on ongoing O&M activities associated with all past contaminated property referrals. Prior to all new referrals, Permittees shall submit, for staff review and comment, a detailed description of the enhanced O&M plan for the referred properties.

Summary:

Please refer to SCVURPPP's *Mercury and PCBs Control Measures Update Report* attached to that FY 22-23 Annual Report.

C.12.c ► Program for Control Measure Implementation in Old Industrial Areas

Submit an account of control measures and stormwater diversion implementation consistent with the plan submitted in March 2023 and any modifications thereto. Include maps of the areas treated, the acreage of catchments addressed, and a description of all control measures, installed treatment devices and routing facilities for each treated catchment.

Summary:

Please refer to SCVURPPP's *Old Industrial Area Control Measure Update Report* attached to that FY 22-23 Annual Report.

C.12.d.iii (1), (2), (3) ► Program for Controlling PCBs from Bridges and Overpasses

In the 2022 Annual Report or the Annual Report immediately following availability of the specification, include a description of the Caltrans specification for managing PCBs-containing materials in bridge or roadway expansion joints during roadway replacement or repair.
Summary: Please refer to SCVURPPP's FY 2022-23 *Annual Report* for a description of the Caltrans specification.
Submit an inventory of bridges in the program area that includes bridge ownership and the bridge roadway replacement schedule.
Summary: Please refer to SCVURPPP's FY 2022-23 *Annual Report* for the inventory of bridges and overpasses in the Santa Clara Valley, including ownership and replacement schedule.
Submit documentation confirming the use of the Caltrans specification (once it is available) during all instances of bridge roadway replacement or repair in their jurisdiction during the reporting year and provide an estimate of the volume of material managed and total PCBs mass load reduced resulting from implementation of the specification.
Summary: The Caltrans specification was not available for implementation during FY 22-23.

C.12.e.iii (1), (2), (4) ► Program for Controlling PCBs from Electrical Utilities

Does your municipality own an electrical utility? If yes, follow the directions below.	**X**	**Yes**		**No**
Submit the estimated PCBs loads avoided (along with supporting documentation) resulting from the removal of municipally owned PCBs-containing oil-filled electrical equipment (OFEE) through maintenance programs and system upgrades for the period 2002 to the beginning of this permit term (2023).				
Summary: Please refer to SCVURPPP's FY 2022-23 *Annual Report* for the estimated PCBs load avoided in FY 2002–23.				
Submit a description of the improved spill response and reporting practices implemented by municipally owned electrical utilities.				
Summary: Please refer to SCVURPPP's FY 2022-23 *Annual Report* for a description of the improved spill response and reporting practices.				
Submit a summary of the actions undertaken during the FY 22-23 that remove municipally owned PCBs-containing OFEE along with loads avoided and the details of the calculations and assumptions used to estimate the load reduced.				

Summary:

Please refer to SCVURPPP's FY 2022-23 *Annual Report* for a summary of maintenance programs and system upgrades that removed PCBs-containing OFEE from municipally-owned electrical utilities and loads avoided.

C.12.g ► Manage PCB-Containing Materials and Wastes During Building Demolition Activities

Permittees seeking exemption from Provision C.12.g requirements based on lack of application structures must submit documentation, such as historic maps or other historic records, that clearly demonstrates that the only structures that existed pre-1980 were single-family residential and/or wood-frame structures.

Did your agency obtain an exemption from Provision C.12.g requirements?		**Yes**	X	**No**

Discuss enhancements to construction site control programs to minimize migration of PCBs from demolition activities into the MS4.

Summary:

To minimize migration of PCBs from demolition/deconstruction activities into the City of Palo Alto's MS4, the City is implementing pre-construction project inspections and demolition/deconstruction phase inspections during dry and wet seasons to enhance our construction site control program. The City will also require applicants to conduct daily street sweeping during the demolition/deconstruction phase, covering of demolition/deconstruction debris during wet and dry season, and other demolition/deconstruction project specific BMPs on a per project basis as need is determined by the inspector.

Please refer to the SCVURPPP's FY 22-23 Annual Report for:

- Documentation of the number of applicable structures in each Permittee's jurisdiction for which a demolition permit was applied for during the reporting year;
- A running list of the applicable structures that applied for a demolition permit since July 1, 2019, the number of samples each structure collected, and the concentration of PCBs in each sample;
- The project address, the demolition date, and a brief description of the PCBs-containing materials for each applicable structure with a PCBs concentration 50 mg/kg or greater; and
- The address, date building was constructed, and date of demolition for each structure that was constructed or remodeled between the years 1950 and 1980 and requires emergency demolition to protect public health and/or safety.

C.12.i ► Fate and Transport Study of PCBs: Urban Runoff Impact on San Francisco Bay Margins

Submit a workplan describing how information needs for the PCBs discharge from urban runoff studies will be obtained and describe the studies to be performed with a preliminary schedule. Report on the status of the studies in the FY 22-23 Annual Report.

Comments:

Please refer to SCVURPPP's FY 22-23 Annual Report for the workplan.

C.12.j ►Implement a Risk Reduction Program

Report on the status of the risk reduction program, including a brief description of actions taken, an estimate of the number of people reached, and why these people are deemed likely to consume Bay fish.

Comments:

A summary of SCVURPPP and regional accomplishments for this sub-provision, including a brief description of actions taken, an estimate of the number of people reached, and why these people are deemed likely to consume Bay fish are included in that FY 22-23 Annual Report.

Section 13 – Provision C.13 Copper Controls

C.13.a.iii (1), (2), (3) ► Manage Waste Generated from Cleaning and Treating of Copper Architectural Features				
Do you have adequate legal authority to prohibit the discharge of wastewater to storm drains generated from the installation, cleaning, treating, and washing of copper architectural features, including copper roofs?	X	Yes		No

Summary:

Adequate legal authority was certified previously in the FY 15-16 Annual Report.

Provide a summary of how copper architectural features are addressed through the issuance of building permits.

Summary:

Since January 1, 2003, architectural copper has not been permitted for use in the City of Palo Alto (City). Specific Ordinance language is contained in Palo Alto Municipal Code Section 16.09.180:

"On and after January 1, 2003, copper metal roofing, copper metal gutters, copper metal down spouts, and copper granule containing, asphalt shingles 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, gutters and downspouts on historic structures are exempt, provided that the roofing material used shall be pre-patinated at the factory. For the purposes of this exemption, the definition of "historic" 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."

Provide summaries of permitting and enforcement activities to manage waste generated from cleaning and treating of copper architectural features, including copper roofs, during construction and post-construction.

Summary:

City staff continues to regularly review plans for submitted development projects to ensure all regulations and Code requirements are met, including the Section mentioned above. A fact sheet regarding this requirement is also provided to applicants through the City's Development Center, and permit applicants are informed of the requirement early in the permitting process.

C.13.b.iii (1), (2), (3) ► Manage Discharges from Pools, Spas, and Fountains that Contain Copper-Based Chemicals

Do you have adequate legal authority to prohibit the discharge to storm drains of water containing copper-based chemicals from pools, spas, and fountains?	X	Yes		No

Summary:

Adequate legal authority was certified previously in the FY 15-16 Annual Report.

Report how copper-containing discharges from pools, spas, and fountains are addressed to accomplish the prohibition of the discharge.

Summary:

Ordinance language to manage copper-containing chemicals is contained in Palo Alto Municipal Code Section 16.09.205:

"It shall be unlawful to discharge water from cooling systems, pools, spas, fountains boilers and heat exchangers to the storm drain system." In addition, for new construction, the following requirement is included in Palo Alto Municipal Code Section 16.09.180: "Discharge drains for swimming pools, spas and fountains shall not be connected directly to the storm drain system or to the sanitary sewer system. When draining is necessary the discharge will be allowed by way of either:

(A) A hose or other temporary system shall be directed into a sanitary sewer (not storm drain system) clean out. A sewer clean-out shall be installed in a readily accessible area;

(B) A fixed pipe with an air gap and receiving sink directed to the sanitary sewer."

Provide summaries of any enforcement activities related to copper-containing discharges from pools, spas, and fountains.

Summary:

City staff continues to regularly review plans for submitted development projects to ensure all regulations and Code requirements are met, including the Section mentioned above. Additionally, educational information regarding appropriate pool draining is posted on the City's website at cleanbay.org/our-programs/residents. Finally, if a complaint regarding a potential pool discharge is made, the City's Stormwater Inspector or an alternate inspector will respond as soon as is possible and will provide enforcement as needed.

C.13.c.iii ►Industrial Sources Copper Reduction Results

Based upon inspection activities conducted under Provision C.4, highlight copper reduction results achieved among the facilities identified as potential users or sources of copper, facilities inspected, and BMPs addressed.

Summary:

Industrial facilities and automotive facilities are inspected at minimum annually with attention paid to outdoor storage and other potential exposure of copper to stormwater or drainage of water that may contain copper (such as cooling towers). There were no associated issues in FY 22-23.

Section 15 – Provision C.15 Exempted and Conditionally Exempted Discharges

C.15.b.iii.(3) ► Ongoing Implementation Practices

Annually report on the following ongoing practices:

- Ensuring proper BMPs and SOPs are included in contracts for non-municipal (contracted) staff hired by Permittees to assist with containment and cleanup, and to assist with prevention and mitigation of adverse impacts, of discharges associated with firefighting emergencies; and
- Evaluating the adequacy of large industrial sites' BMPs and SOPs for the prevention, containment and cleanup of emergency firefighting discharges into storm drains and receiving waters within Permittees' jurisdictions and cause those BMPs and SOPs to be improved as appropriate.

Summary:

Efforts are underway to address these two tasks in the BAMSC Regional Firefighting Discharges Work Group. Please refer to Santa Clara Valley Urban Runoff Pollution Prevention Program's (SCUVRPP) FY 22-23 Annual Report for a summary of the Work Group's two meetings held FY 22-23 and progress towards development of the Regional BMP Report. We anticipate fully implementing these tasks with guidance provided in the Regional BMP Report. City staff are evaluating how to implement these tasks internally and are providing input for the Regional Report through participation in the SCVURPPP IND/IDDE AHTG and the BAMSC Work Group.

C.15.b.vi.(2) ► Irrigation Water, Landscape Irrigation, and Lawn or Garden Watering

Provide implementation summaries of the required BMPs to promote measures that minimize runoff and pollutant loading from excess irrigation. Generally, the categories are:

- Promote conservation programs
- Promote outreach for less toxic pest control and landscape management
- Promote use of drought tolerant and native vegetation
- Promote outreach messages to encourage appropriate watering/irrigation practices
- Implement Illicit Discharge Enforcement Response Plan for ongoing, large volume landscape irrigation runoff.

Summary:

The City of Palo Alto's (City) Utilities Department promotes water conservation (cityofpaloalto.org/water) as well as the use of drought-tolerant and native vegetation through several programs:

- Landscape efficiency requirements for new development and implementation of the State's Water Efficient Landscape Ordinance[1].

[1] Ordinance language can be accessed at cityofpaloalto.org/files/assets/public/planning-amp-development-services/current-planning/mwelo-submittals-and-guidelines_04092020.pdf

- Landscape rebate programs through the City's cost-sharing partnership with Valley Water**,** which can be accessed at watersavings.org. Offerings to residents and businesses include various rebates such as for landscape and lawn to mulch conversions and technical
- A Utility Portal (cityofpaloalto.org/Departments/Utilities/Customer-Service/MyCPAU-Account-Login) where customers can access and monitor their water, gas, and electric usage. Also, a new water management portal (cityofpaloalto.org/watersmart) where customers can access home water reports with comparisons to similar-sized households and personalized water-saving recommendations is now available.
- Workshops on water conservation, pest control, rainwater harvesting, and other related topics. The City has been partnering with the Bay Area Water Supply and Conservation Agency (BAWSCA) to offer virtual landscape workshops for residents to learn how to save water and improve the sustainability of their landscape from the comfort of home. We held 5 webinars and 2 in-person workshops; attendance was strong, with 197 residents participating over the course of the year.
- Demonstration Gardens at Lucie Stern Community Center and Palo Alto City Hall, both City facilities.
- The City of Palo Alto's permanent water use restrictions and State rules prohibiting wasteful actions remain in effect. The current focus is on education and outreach, including reminding customers about permanent water use restrictions and providing resources to achieve efficient water use. When Utility staff receives information about potential water waste, the customer is contacted and left door hangers when the customer is not available at their residence or business. Water waste in Palo Alto is prohibited (Palo Alto Municipal Code Section 12.32.010). Water waste response includes eliminating landscape irrigation runoff through outreach and enforcement. Residents and businesses may seek assistance or report water waste at cityofpaloalto.org/311, drought@cityofpaloalto.org, or (650) 496-6968.
- Outreach information is provided through the following: a website (cityofpaloalto.org/water), an online Utilities e-newsletter (regarding updates on programs, events and important news), utility bill inserts, and Facebook, Twitter, and Instagram social media accounts.
- Outreach tabling events in FY 22-23 included the Midtown Ice Cream Social, City's Making Better Choices Sustainability event, City Earth Day event, SAP's Earth Day event, and Palo Alto Art Center's Water Family Day.

Please refer to the C.3 New Development and Redevelopment, C.7. Public Information and Outreach, and C.9. Pesticide Toxicity Control sections of SCVURPPP's FY 22-23 Annual Report as needed.

Section 15 – Provision C.15 Exempted and Conditionally Exempted Discharges

C.15.b.iii.(3) ► Ongoing Implementation Practices

Annually report on the following ongoing practices:

- Ensuring proper BMPs and SOPs are included in contracts for non-municipal (contracted) staff hired by Permittees to assist with containment and cleanup, and to assist with prevention and mitigation of adverse impacts, of discharges associated with firefighting emergencies; and
- Evaluating the adequacy of large industrial sites' BMPs and SOPs for the prevention, containment and cleanup of emergency firefighting discharges into storm drains and receiving waters within Permittees' jurisdictions and cause those BMPs and SOPs to be improved as appropriate.

Summary:

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Summary:

The City of Palo Alto's (City) Utilities Department promotes water conservation (cityofpaloalto.org/water) as well as the use of drought-tolerant and native vegetation through several programs:

- Landscape efficiency requirements for new development and implementation of the State's Water Efficient Landscape Ordinance[1].

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- Workshops on water conservation, pest control, rainwater harvesting, and other related topics. The City has been partnering with the Bay Area Water Supply and Conservation Agency (BAWSCA) to offer virtual landscape workshops for residents to learn how to save water and improve the sustainability of their landscape from the comfort of home. We held 5 webinars and 2 in-person workshops; attendance was strong, with 197 residents participating over the course of the year.
- Demonstration Gardens at Lucie Stern Community Center and Palo Alto City Hall, both City facilities.
- The City of Palo Alto's permanent water use restrictions and State rules prohibiting wasteful actions remain in effect. The current focus is on education and outreach, including reminding customers about permanent water use restrictions and providing resources to achieve efficient water use. When Utility staff receives information about potential water waste, the customer is contacted and left door hangers when the customer is not available at their residence or business. Water waste in Palo Alto is prohibited (Palo Alto Municipal Code Section 12.32.010). Water waste response includes eliminating landscape irrigation runoff through outreach and enforcement. Residents and businesses may seek assistance or report water waste at cityofpaloalto.org/311, drought@cityofpaloalto.org, or (650) 496-6968.
- Outreach information is provided through the following: a website (cityofpaloalto.org/water), an online Utilities e-newsletter (regarding updates on programs, events and important news), utility bill inserts, and Facebook, Twitter, and Instagram social media accounts.
- Outreach tabling events in FY 22-23 included the Midtown Ice Cream Social, City's Making Better Choices Sustainability event, City Earth Day event, SAP's Earth Day event, and Palo Alto Art Center's Water Family Day.

Please refer to the C.3 New Development and Redevelopment, C.7. Public Information and Outreach, and C.9. Pesticide Toxicity Control sections of SCVURPPP's FY 22-23 Annual Report as needed.

Section 17 – Provision C.17 Discharges Associated with Unsheltered Homeless Populations

C.17.a.iii.(1) ► Regional Best Management Practice Report

(For FY 22-23 Annual Report only) Collectively submit, acceptable to the Executive Officer, a best management practice report as described in Provision C.17.a.i.(2)

Summary:

Please refer to the Regional BMP Report submitted by BAMSC on behalf of all MRP Permittees to the Water Board Executive Officer and included in the Santa Clara Valley Urban Runoff Pollution Prevention Program's (SCVURPPP) FY 22-23 Annual Report.

C.17.a.iii.(2) ► BMP Implementation and Effectiveness Evaluation

(For FY 22-23 and FY 24-25 Annual Reports only) Submit a map identifying the approximate location(s) of unsheltered homeless populations within your jurisdiction, including homeless encampments and other areas where other unsheltered homeless people live.

Summary:

A map showing the count of unsheltered populations by census tracts in relation to storm drain inlets and existing streams, rivers, flood control channels, and other surface water bodies within our jurisdiction is included in Appendix 17-1. The map was developed using the point-in-time survey count data provided by the County of Santa Clara. Due to privacy and safety concerns, the County did not provide location data below the census tract level for this publicly available report.

The point-in-time survey count reflects the on-the-ground reality of the few days the count was done. The maps are not designed or meant to be an accurate real-time count of the total number of people experiencing homelessness and where they are, as the unhoused community moves, shrinks as people connect to housing services, and grows if others fall into the homelessness experience.

(For FY 22-23 and FY 24-25 Annual Reports only) Report on the best management practices being implemented and include the effectiveness evaluation reporting required in Provision C.17.a.ii.(3) and additional actions or changes to existing actions that the Permittee will implement to improve existing practices.

Summary:

As estimated by the Santa Clara County 2022 Point-in-Time (PIT) count, the City of Palo Alto (City) has a total unsheltered population of roughly 263. This number includes a count of unsheltered individuals sleeping outdoors on the street, at bus and train stations, in parks, tents, and other make-shift shelters, and in vehicles (e.g., cars and recreational vehicles). At the time the 2022 PIT count was conducted, these unsheltered individuals were observed in the following census tracts within City's boundary – 5046.01, 5093.04, 5107, 5108.02, 5108.03, 5110, 5111, 5114, 5116.08, 5115.01, and 5117.05 These census tracts include areas (e.g., city streets, parks) that are within the City's jurisdiction, and other areas (e.g., freeways, expressways, creeks) that are outside the City's jurisdiction. The City's Public Works, Community Services, and Police Departments, and the City Manager's Office coordinate inter-departmentally and with the County of Santa Clara Office of Supportive Housing to provide BMPs and support services to unsheltered populations located within our jurisdiction. In addition, the City partners with Move Mountain

View to manage the City's safe parking program, which includes congregational sites operated in coordination with various faith-based organizations and one site in cooperation with the City and Santa Clara County. The City also contracts with the Downtown Streets Team, a non-profit organization that works with unhoused (or at risk of being unhoused) people to provide case management and job training, to help pick up trash and clean the downtown area. For unsheltered populations located in areas that are not in the City's jurisdiction, the City coordinates with Santa Clara County, applicable agencies (e.g., Stanford University, Caltrans, etc.), and nonprofit organizations to provide available support.

The City implements the following best management practices (BMPs) and programmatic efforts to address non-stormwater discharges from unsheltered populations located within our jurisdiction:

BMP/Programmatic Effort	Effectiveness Evaluation	Changes Planned
Trash collection and disposal: Public trash cans are available at all parks and downtown areas.	In FY 22-23, the public trash cans located at parks were emptied at different frequencies based on the amount of visitation, with servicing requested once cans are more half full. Cans at the busiest parks are emptied daily, while less busy parks are serviced up to five days a week. The public cans in the downtown area are serviced at a frequency of 2-6 times per week, depending on service need.	The City will continue to collect trash as needed.
Encampment cleanups: The City's Public Works Operations staff routinely conducts cleanups throughout the City per request.	In FY 22-23, Public Works removed 32.1 tons of trash from cleanup locations throughout the city.	The City will continue conducting trash cleanups as needed.
Safe parking for RVs and/or individuals living in cars: The City offers safe parking at one facility and encourages safe parking on private properties, several of which are located at religious institutions.	This location is owned by the City and operated by Move Mountain View, a local organization that provides services to unhoused populations. The County provides funding to this organization to assist in operating this location. This location provides parking for 12 vehicles and is at capacity. An onsite permanent structure provides toilets, showers and	The City will continue to provide this safe parking location.

BMP/Programmatic Effort	Effectiveness Evaluation	Changes Planned
	laundry facilities. The parking area is full each night, indicating that the BMP is effective.	
Portable toilets and handwashing stations: The City provided portable toilets and handwashing stations during the COVID-19 pandemic at six locations as part of the City's COVID-19 emergency response efforts. Since the conclusion of the City's state of emergency from COVID-19, the City no longer has the portable toilets and handwashing stations available.	The City is not currently providing portable toilets/handwashing stations.	No change is proposed at this time as local agencies, including the City's libraries and community centers, have expanded open hours again after the COVID-19 state of emergency concluded. The open hours are similar to what was previously available for restrooms pre-pandemic.
Coordination with Santa Clara County Office of Supportive Housing (OSH): The City coordinates with the Santa Clara County Office of Supportive Housing and the Continuum of Care (CoC) Program to provide housing to unsheltered individuals. There is a process in place to refer unsheltered populations to the County's supportive housing system. This system will extend to the new shelter currently under construction as part of the state Homekey program, which will be a wrap-around services transitional housing (interim) shelter.	• The City has provided hundreds of staff hours toward Homekey supportive housing, which so far has included project coordination, internal and external coordination, and plan review and approvals. The City will continue to be involved through project construction and support the development once completed. • In FY 22-23, City staff attended bi-monthly coordination meetings convened by the City's Office of Human Services in FY 22-23. These meetings include staff from OSH, representatives from the faith-based community with safe parking programs, older adult service providers and nonprofits that provide service to unhoused residents. These coordination meetings resulted in increased communication, the ability to identify and address "gaps" (service and funding), and better partnership on joint efforts, including a resources fair for unhoused individuals and an affordable housing resource fair. • The County Continuum of Care receives and processes referrals from many organizations and agencies, including City of Palo Alto first responders. In 2022, these referrals resulted in 212	City staff will continue to attend coordinating meetings and to coordinate with the County regarding services for unsheltered individuals.

BMP/Programmatic Effort	Effectiveness Evaluation	Changes Planned
	Palo Alto-affiliated people being actively enrolled in emergency shelter programs. • At its inception, the City participated in TRUST CAB, a Trusted Response Urgent Support Team (TRUST) Community Advisory Board based in Palo Alto, which includes TRUST staff, Santa Clara County staff, community members with lived experience, and service providers. The monthly meeting is a working meeting to share data, discuss lessons learned, and improve service delivery. The CAB is now transitioning to a more formal model, with City staff stepping back and encouraging Palo Alto community members to step forward to serve on the Board.	
Funding Initiatives: We use funds from the following sources to provide supportive services through direct service providers and non-profit organizations: • City's Human Services Resource Allocation Process • City's Emerging Needs Funds • City's Affordable Housing Fund • Community Development Block Grant (CDBG)	• The activities supported by City funding includes non-profit contracts and monies to support development of affordable housing and to provide food (breakfast/lunch, grocery gift cards, food pantry), backpack medicine, peer-to-peer outreach and workforce development services and stipends. • City-administered CDBG funding supports non-profit organizations to provide affordable housing and services such as case management to secure affordable housing and employment, housing search assistance, fair housing and senior daycare.	No changes are being planned.
Coordination and contracting with non-profit organizations: The City contracts with two organizations to provide services to the City's unhoused population or to support City staff. The Downtown Streets Team provides support to City staff by helping to pick up trash around the downtown area from sidewalks, plazas and parking lots. In addition, through a pilot effort, the City is contracting with LifeMoves, a non-profit organization to	We provided the following services to unsheltered individuals: • Through the City contract with a local non-profit, provide various services, including outreach, case management, shelter access and housing navigation services. • The City's Community Services Department liaisons with local non-profit organizations to assist with providing a safety net of services and also supports tenant landlord mediation	The City will continue to partner with local non-profits to offer services to unsheltered populations.

BMP/Programmatic Effort	Effectiveness Evaluation	Changes Planned
provide an outreach worker to provide services to those individuals and families who are unhoused. The City also participates in several meetings, workshops and community efforts to strengthen relationships with key stakeholders.	services and a landlord registry to ensure the City has contact information for residents to solve legal disputes.	
Internal Coordination: The City hired an Assistant to the City Manager in 2022 to, among other responsibilities, coordinate City-wide activities pertaining to unhoused populations and affordable housing. Stormwater staff coordinate efforts with the following departments to inform other staff about stormwater requirements and BMPs that help reduce stormwater discharges from unsheltered populations: • City Manager's Office • Police Department • Community Services • Public Works Operations and Environmental Services (Stormwater) • Library Services	• The Assistant to the City Manager coordinates with staff as needs arise related to the unhoused and community concerns. This position also helps lead the effort to establish supportive housing with on-site services (Homekey) in partnership with Life Moves, a local non-profit organization that supports the unhoused populations in the Silicon Valley. Homekey will provide 88 units for the unhoused while providing supportive services. • The Library Department provides public space accommodations and provides an abundance of information on housing and services for the unhoused. • Public Works provides clean-up services for trash and other water-quality related issues to protect the SF Bay. • The Stormwater Team has provided information to key City staff about stormwater permit requirements.	• The Assistant to the City Manager will continue to coordinate with other departments to offer support services to unsheltered individuals. • The Library Department will investigate how to better use its space to be more actively supportive and investigate whether resources being provided can be improved. • The Stormwater Team will begin to attend quarterly meetings to gather information about unhoused needs and the intersection with this requirement.
Standard Operating Procedures: regarding how to respond to illicit discharges from encampments and/or RVs, including cleaning storm drains and addressing human waste discharges.	Not available	In FY 23-24, these procedures will be developed at the regional level with permittee representation from throughout the SF Bay Area.

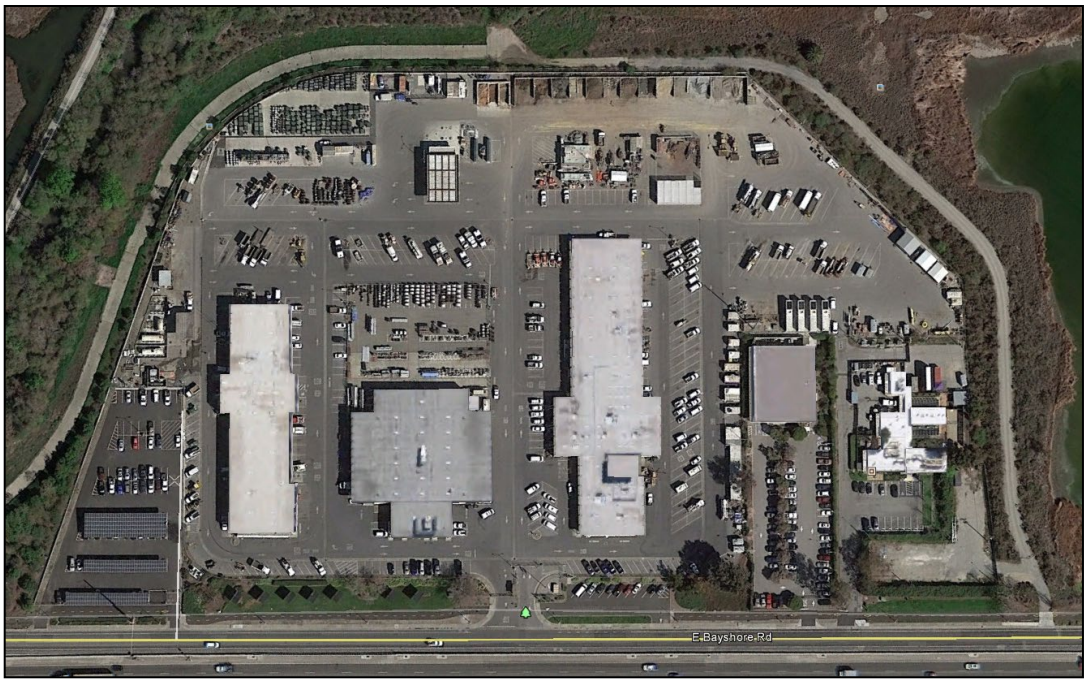
Appendix Table of Contents

Appendix 2-1

CITY OF PALO ALTO

Municipal Services Center

Stormwater Pollution Prevention Plan



Prepared by the City of Palo Alto
Revised August 2023

Table of Contents

1.0 Plan Purpose and Regulatory Background

The City of Palo Alto has prepared this Stormwater Pollution Prevention Plan (SWPPP) for its corporation yard, the Municipal Services Center (MSC), to meet its Municipal Regional Stormwater National Pollutant Discharge Elimination System (NPDES) Permit requirements under Provision C.2. The SWPPP Identifies potential site pollutants and outlines the Best Management Practices (BMPs) used to minimize pollutant discharges to the storm drain system.

1.1 The Municipal Regional Stormwater NPDES Permit

On May 11, 2022, the California Regional Water Quality Control Board (San Francisco Bay Region) adopted revisions to the Municipal Regional Stormwater NPDES Permit No. CAS612008 (MRP 3.0). The permit is effective beginning July 1, 2022, for a term of 5 years. Provision C.2 Municipal Operations of the Permit requires that all permittees prepare, implement, and maintain a site-specific Stormwater Pollution Prevention Plan (SWPPP) for their corporation yards.

The City of Palo Alto has prepared this SWPPP to comply with the MRP 3.0 Provision C.2.f Corporation Yard BMP Implementation. This provision also requires annual inspections prior to each wet season, and the submittal of documentation of the inspections in the Annual Report to the Regional Water Quality Control Board in September.

1.2 Industrial Waste Discharge Permit

Discharges to the sanitary sewer and storm drains are also regulated in the Palo Alto Municipal Code Section 16. The Municipal Service Center (MSC) facility has been issued an Industrial Waste Discharge Permit for the vehicle wash station by the City's Watershed Protection Group (WPG), Public Works Department, and is inspected annually by WPG staff.

1.3 Stormwater Pollution Prevention Plan (SWPPP)

The SWPPP identifies potential pollutants related to municipal vehicle maintenance, heavy equipment and maintenance vehicle parking areas, and material storage facilities and recommends that Best Management Practices (BMPs) be utilized to minimize pollutant discharge to the storm drain system. BMPs include structural controls, or physical structures designed to reduce pollutants in stormwater runoff, as well as procedures and policies to ensure that operations are conducted in a manner that eliminates and/or minimizes the introduction of pollutants into the storm drain system.

1.4 SWPPP Goals and Objectives

This SWPPP describes the MSC and its operations, identifies municipal activities and associated pollutant sources at the facility. The SWPPP identifies appropriate BMPs or pollution control measures to reduce the discharge of pollutants in stormwater runoff. It also contains a facility map, references relevant parts of other plans, and provides for periodic review of this SWPPP.

The SWPPP has two major objectives:

1. to **identify sources of pollution** that affect the quality of stormwater discharges and authorized non-stormwater discharges at the MSC; and

2. to describe and **ensure implementation of BMPs** to reduce or prevent pollutants in MSC stormwater discharges and prohibit non-stormwater discharges such as wash waters from vehicles and equipment cleaning (except non-stormwater discharges exempted or conditionally exempted by the MRP).

The expected result from following this SWPPP is to ensure that stormwater discharges and authorized non-stormwater discharges do not adversely impact human health or the environment.

1.5 Stormwater Pollution Prevention Team

The Stormwater Pollution Prevention Team is responsible for developing, implementing and revising the SWPPP. Each team member is familiar with the management, operations, and activities at the MSC and ensures that staff in their department is trained in proper SWPPP implementation. The team members and their responsibilities are listed below in Table 1.

Table 1
Responsibility List

Name	Title	Responsibility
Public Works Department – Environmental Services Division		
Sarah Fitzgerald	Acting Manager, Environmental Control Programs x6980	• Review and update SWPPP if needed, coordinate SWPPP execution, conduct inspections, provide information to Watershed Protection Group for annual report • Hold annual SWPPP Team Meeting
TBD	Environmental Specialist TBD	• Coordinate SWPPP execution, conduct inspections, provide information to Watershed Protection Group for annual report

Pamela Boyle-Rodriguez, Elise Sbarbori, Chris Fujimoto, Brad Hunt, Olivia Trevino	Watershed Protection Group (Stormwater) x2122	• Perform annual stormwater MSC inspection • Assist in conducting training • Prepare and submit annual report to SF Bay Regional Water Quality Control Board
Sam Engelage	Watershed Protection Group (Pretreatment) x2123	• Perform Pretreatment inspections of vehicle service area and sampling of wash pad discharge
Public Works Department – Public Services Division		
Mike Wong	Division Manager, Public Services x6989	• Implement the SWPPP in his work areas; ensure that staff is trained in SWPPP practices and procedures. Inspect work areas and document results for compliance with SWPPP.
Oscar Godinez	Manager, Maintenance Operations PWS x5935	• Implement the SWPPP in his work areas; ensure that staff is trained in SWPPP practices and procedures. Inspect work areas and document results for compliance with SWPPP.
Roger Nguy	Manager, Municipal Operations, Public Services x6913	• Implement the SWPPP in his work areas; ensure that staff is trained in SWPPP practices and procedures. Inspect work areas and document results for compliance with SWPPP.
Danitra Bahlman	Fleet Manager x5920	• Maintain vehicle wash pad. Implement the SWPPP in her work areas; ensure that staff is trained in SWPPP practices and procedures. Inspect work areas and document results for compliance with SWPPP.
Terry McMahon	Assistant Fleet Manager x6948	• Implement the SWPPP in his work areas; ensure that staff is trained in SWPPP practices and procedures. Inspect work areas and document results for compliance with SWPPP.
Community Services Department – Open Space, Parks & Golf Division		
Daren Anderson	Division Manager, Open Space, Parks & Golf for Community Services x6950	• Implement the SWPPP in his work areas; ensure that staff is trained in SWPPP practices and procedures. Inspect work areas and document results for compliance with SWPPP.

Marc Ribeiro Miguel Chacon	Manager, Community Services (Parks) x6910 Manager, Community Services (Parks) x6918	• Implement the SWPPP in his work areas; ensure that staff is trained in SWPPP practices and procedures. Inspect work areas and document results for compliance with SWPPP.
Utilities Department – Electric Operations Division		
Jorge Silva	Manager, Electric Operations x6932	• Implement the SWPPP in his work areas; ensure that staff is trained in SWPPP practices and procedures. Inspect work areas and document results for compliance with SWPPP.
Utilities Department		
David Bostwick	Utility Safety Officer x2494	• Coordinate SWPPP execution, conduct inspections, and ensure that staff is trained in SWPPP practices and procedures. Inspect Utilities work areas and document results for compliance with SWPPP.
Administrative Services Department – Stores Warehouse		
Ted Hess	Supervisor, Stores Warehouse x6926	• Implement the SWPPP in his work areas; ensure that staff is trained in SWPPP practices and procedures. Inspect work areas and document results for compliance with SWPPP.

In addition to the SWPPP team members listed above, all MSC crew supervisors and managers are responsible for:

- implementing the SWPPP BMPs and pollution prevention measures,
- record-keeping (training records, equipment cleaning, sampling and analyses, if necessary, visual inspections or logs, audits, etc.), submitting data and records to SWPPP team members; and
- employee training

2.0 Municipal Service Center

2.1 Facility Description

The City of Palo Alto is the owner and operator of the MSC, located at 3201 East Bayshore Road, Palo Alto, a 16-acre facility dedicated to the operation, support, and maintenance of municipal services and activities. It is the primary operations facility for the Public Works Public Services Department (Street & Sidewalk Repair, Sign & Painting Shop, Street Sweeping,

Stormwater Collection System, Fleet and Equipment Management, and Facilities Maintenance Services); Open Space, Parks & Golf Division; Utilities Departments; Stores Warehouse, and Environmental Services Division. The MSC houses administrative offices, workshops and equipment storage areas for all services rendered. Primary operating hours are from 5:30 a.m. to 5:00 p.m., Monday through Friday. Access to the fueling area at the facility is available to authorized persons 24 hours per day, 7 days per week. The MSC has operated at this location since 1967.

The MSC facility has three main buildings and the electrical distribution SCADA building. The surface of MSC is paved asphalt concrete. The paved areas are used to store supplies, materials, equipment, and provide parking for City and employee personal vehicles. The MSC is surrounded by wetland areas, including Egret Pond and Mayfield Slough. A levee was constructed around the facility to prevent potential flooding from the adjacent marsh and Matadero Creek.

Typical activities conducted at the MSC include:

- repair and maintenance of vehicles and equipment
- construction, building, and maintenance activities for facilities
- equipment and material storage for the Utilities, Public Works, and Community Services Departments
- staging of City-generated hazardous wastes for disposal
- vehicle fueling at fuel stations (natural gas, gasoline, and diesel)
- shipping, receiving, and storage of materials at the Stores Warehouse
- storage of temporary diesel generators
- Utility operations
- SCADA operations

2.2 Site Map

Figure 1 provides a site map of the MSC that shows the location of the following features:

- the facility boundary
- the outline of all stormwater drainage areas within the facility boundaries
- direction of flow of each drainage area
- buildings and other permanent structures
- storage or disposal areas for significant materials
- stormwater discharge outfalls
- location of stormwater inlets contributing to each outfall
- structural runoff controls
- impervious surfaces (roof tops, asphalt, concrete)
- names and locations of receiving waters
- locations where the following activities are exposed to stormwater:

  - fixed fueling operations
  - vehicle and equipment maintenance and/or cleaning areas
  - loading/unloading areas
  - waste storage or disposal areas
  - liquid storage tanks
  - equipment operating areas
  - storage areas
- secondary containment, oil/water separators, diversion barriers, etc.
- dust or particulate generating areas

2.3 Stormwater and Sanitary Sewer Systems

The following section describes Municipal Service Center drainage systems, including the sanitary sewer and storm drain systems, and identifies potential non-stormwater discharges.

2.3.1 Wastewater and Sanitary System

Wastewater is discharged into the sanitary sewer system from building restrooms, kitchens, overflow from the recirculating vehicle wash pad (containing a recirculating pretreatment system) located at the north side of the facility, and the manhole at the sign shop which is dedicated to the disposal of paint rinsate. Wastewater flows through the City sanitary sewer system to the Palo Alto Regional Water Quality Control Plant for treatment.

2.3.2 Storm Drain System

The MSC site map (Figure 1) shows the direction of flow across the site and the location of the storm drain inlets, including those with an oil/water separator. Stormwater runoff is conveyed to the storm drain inlets and discharged into the vegetative swale adjacent to Matadero Creek and the Palo Alto Flood Basin.

2.3.3 Exempted and Conditionally Exempted Non-Stormwater Discharges

Provision C.15 of the MRP describes exempted and conditionally exempted non-stormwater discharges. The MSC non-stormwater discharges may include:

- Planned, Unplanned, and Emergency discharges of the potable water system, such as fire hydrant flushing, testing of potable water systems; pipe breaks and firefighting activities;
- Air conditioning condensate
- Irrigation water;

Staff will use the following BMPs to minimize impacts from the above discharges:

- directing discharges to landscaping where possible
- dechlorination, with the use of de-chlor tablets
- sediment controls, such as wattles, filter fabric, filter socks, and others.

Discharges from the potable water system will comply with the City's Water Utility Operation and Maintenance Discharge Pollution Prevention Plan (WUDPPP), which includes procedures to mitigate impacts from planned and unplanned discharges in accordance with the Potable Water General Permit. Notification of the Regional Board and monitoring may be required.

2.4 Other Existing Facility Plans

Other existing facility plans that include the location of hazardous materials and spill response measures include the *Hazardous Materials Business Plans* (HMBPs), the *Spill Prevention Control and Countermeasure Plan* (SPCC), the *Hazardous Waste Contingency Plan,* the *Procedures for Emergency Responses to Spills and Releases Plan, Fuel Spill at City Facilities Plan* and the *Water Utility Operation and Maintenance Discharge Pollution Prevention Plan (WUDPPP).* A brief description of each plan and the group responsible for maintaining the plan is listed below.

Hazardous Material Business Plans/Various
Individual HMBPs have been prepared for the structures at MSC (including the fuel stations and underground storage tanks) and uploaded to the California Environmental Reporting System (CERS) database (cers.calepa.ca.gov). The HMBPs include the location and quantity of hazardous materials stored at the MSC and are updated annually.

Hazardous Waste Contingency Plans/Environmental Services
The contingency plans document emergency coordinator contact information, the location of emergency equipment and evacuation plans. Location-specific hazardous waste contingency plans are included in the HMBPs.

Spill Prevention Control and Countermeasure Plan/Utilities, Public & Environmental Services
The SPCC describes the configuration of site aboveground and underground storage tanks and preventative measures to assure that any spills are contained, and countermeasures are established to prevent spills that could reach aquatic receptors such as the nearby creeks and San Francisco Bay.

Procedures for Emergency Response to Spills and Releases/Palo Alto Fire Department, Public & Environmental Services
This document provides guidance to staff responding to hazardous waste incidents that involve more than minor spill cleanup. The PERSR document describes the roles of the

Public Services Division, Palo Alto Fire Department, Utility Department, Electric Operations, and the contractors that have formal arrangements with Environmental Services Division for the management of City-generated hazardous waste and emergency response services.

Water Utility Operation and Maintenance Discharge Pollution Prevention Plan/Utilities
The Water Utility Operation and Maintenance Discharge Pollution Prevention Plan (WUDPPP) describes best management practices designed to reduce water pollution from discharges associated with water utility operation and maintenance activities such as planned (e.g., blow off and hydrant flushing), unplanned (e.g. water line break) and emergency discharges.

3.0 Potential Pollutant Sources and Building Usage

The City of Palo Alto began evaluating the MSC operations/activities and conducting facility inspections in the early 1990s, in accordance with emerging State and Federal regulations that emphasized stormwater pollution prevention. The City identified work areas and onsite processes that could contribute to stormwater pollution.

The sections below describe areas and processes of concern, potential pollutants, best management practices (BMPs), and structural controls for mitigating stormwater pollution.

3.1 Potential Pollutants from Exterior Sources

3.1.1 Fuel and Fuel Storage Area

Fuel storage areas include a fueling station, two separate compressed natural gas (CNG) storage tank areas, covered fuel dispenser islands and buried diesel and gasoline fuel tanks.

The active fueling station is located on the eastern portion of the MSC as shown in Figure 1.

Potential Pollutants:

- Diesel
- Gasoline
- Trash

Structural Controls:

- The fuel tanks are buried with secondary containment to prevent potential release of chemicals in cases of leaks or spills. Leak detection instruments are maintained and monitored by Equipment Maintenance staff.

- The fueling area is covered.

BMPs:

- Good housekeeping practices: street sweeping (weekly, by Public Services), trash pickup (weekly, by Maintenance staff or contractor)
- Spill response: spill kits are available by fuel dispenser islands and staff are trained on spill cleanup
- Material and chemical storage: Liquids and solids which have the potential to enter the storm drains are stored inside and out of the rain in secondary containment

3.1.2 Utilities Storage Areas

The City of Palo Alto owns and operates its own utilities, including electric, water and gas distribution systems, and wastewater collection system.

The Utilities Department stores and manages hazardous materials and equipment at MSC in two main areas. The transformer storage area is in the northeastern portion of the MSC and contains both new and used electrical equipment such as transformers, capacitors, and switches. Special wastes such as treated wood waste and asbestos-containing transite pipe are contained in covered roll-off bins located on the southeastern side of MSC.

Potential Pollutants:

- Mineral oil from oil-filled electrical equipment
- Polychlorinated biphenyls (PCBs) from older utility equipment
- Arsenic and creosote from treated utility poles
- Asbestos from transite piping
- Trash

Structural Controls:

- The transformer storage area is located at the northeast corner of the facility and consists of two sloped concrete areas dissected by a concrete grated trench drain extending the entire length of the down-slope side of the pads on either side. The trench drain flows to a 2,000-gallon oil-water separator, which discharges to the storm drain system. The function of the oil-water separator is to contain any spills of mineral oil from the transformers and treat stormwater from the transformer storage area prior to discharge to the storm drain system.
- The oil/water separator is checked, maintained and cleaned (remove collected sediments and oil) at a minimum of twice per year by an outside contractor under the direction of the Electrical Operations Manager, Utilities and coordinated by the Manager, Environmental Control Programs, Environmental Services Division (Zero

Waste / Hazardous Waste). Environmental Services Division Zero Waste / Hazardous Waste maintains records of the waste shipping documents.

- The asbestos and treated wood waste bins are covered with a lid, tarp, or canopy structure for storage and proper disposal.

BMPs:

- Street sweeping - weekly, by Public Services
- Trash pickup - weekly, by Maintenance staff or contractor. Trash containers to be covered at all times and emptied when full.
- Trash in work trucks or equipment is disposed of at the end of each day in the appropriate trash, recycling or compost containers.
- Vehicle leaks are contained using a drip pan and reported immediately to Fleet Services.

If Electric Operations staff encounter a piece of electrical equipment during maintenance or operations activities containing PCB-contaminated oil, e.g., transformers, switches, capacitors, or bushings, the electrical equipment shall be replaced with non-PCB containing equipment. The following is the standard procedure for the identification, handling and storage of electrical transformers and equipment:

- Electrical equipment (e.g., transformers, switches, capacitors, and bushings) removed from service will be sampled (if possible) to determine PCB concentration levels.

- After sampling, the electrical equipment designated for disposal is dated, marked for disposal, and transferred to the staging area.

- Leaking oil-filled electrical equipment, regardless of its PCB concentration, is drained and pumped into drums prior to storage in the staging area.

- Non-leaking, oil-containing PCB-free and PCB-contaminated equipment earmarked for disposal is stored on the transformer containment pad awaiting shipment off-site.

- The staging area adjacent to the hazardous waste storage buildings is inspected daily for signs of leaks or spills. In the event of a spill or leak, the affected area is cleaned up immediately, and the collected materials are disposed of as a hazardous waste. A kit with spill control materials is kept accessible in the staging area.

3.1.3 Aggregate Material Storage Bunkers

The southeastern side of MSC contains materials storage bunkers that are used for storage of raw materials, including sand, aggregates, mulch and landscaping materials, as well as street sweeping wastes, excavation spoils, and asphalt and concrete spoils.

Potential Pollutants:

- Sediment
- Sand, aggregates, mulch, and other landscaping materials
- Leaves
- Trash
- Excavation spoils
- Asphalt and concrete spoils

Structural Controls:

- The aggregate materials storage bunkers are sloped; the slope acts as a berm and ensures rainwater does not transport materials to storm drains.
- The storm drain located behind the bunkers has rock socks placed around it with filter fabric installed. The storm drain is checked periodically, and rock socks are replaced as needed.

BMPs:

- Street sweeping wastes and excavation spoils are temporarily stored in the bulk storage bunkers. Sweeping wastes are disposed of on a weekly schedule and are transported offsite to an appropriate disposal facility.
- A designated staff person ensures the bunker area is kept clean

3.1.4 Painting Materials and Equipment Storage

The painting materials and equipment storage area consists of a cargo container, stencil storage area, and paint storage area. Only equipment is stored in the cargo container. Paint is stored at the paint storage area across from the cargo container.

Potential Pollutants:

- Paint
- Paint Remover (Biodegradable)
- Concrete sealer
- Tack oil

Structural Controls:

- The paint storage area is comprised of two dry sumps. Paint is stored over the sumps. The paint storage area (paint containers and sumps) is surrounded by chain link fence enclosures covered with metal roofs.

BMPs:

- In the event of a leak or spill, the area shall be immediately cleaned up using dry cleaning methods (i.e., use of rags or absorbents).

- If filled with rainwater, the sumps will be visually inspected and emptied using a vacuum truck, then discharged to the sanitary sewer. This activity shall be conducted under the direction of the Maintenance Operations Manager, Public Services Division.

3.1.5 Stores Yard and Loading/Unloading Docks

Inert materials such as concrete boxes, concrete and plastic piping, and spools of electric wire are stored outside on the uncovered blacktop and inside the chain-linked fenced area behind building B.

Potential Pollutants:

- Trash
- Sediment
- Chemicals
- Other accidental spills

Structural Controls:

- The shipping and receiving area outside the Stores Warehouse has a dry sump at the base of the loading dock. Because this area is used to load and unload materials and chemicals or pollutants could be released during a spill, the sump is not connected to the sanitary sewer or the storm drain.

BMPs:

- Spilled material that collects in the sump is recovered and disposed of properly.
- When the sump fills with rainwater, it is emptied using vacuum equipment and discharged to landscaping or sanitary sewer. If there are signs of contamination (sheen, odor, debris), the collected water is containerized in a 55-gallon drum for proper disposal. This sump is maintained and cleaned by Public Services Division/Facilities.
- The stores yard is cleaned and reorganized twice a year, usually in spring and fall. The materials stored outside are inert, designed to be used outdoors (corrosion resistant), and are stored for a short period until they are needed.

3.1.6 Hazardous Waste Handling and Storage

The Hazardous Waste Storage Area is located near the northeast corner of the facility, and consists of a metal building, three waste storage sheds and a fenced-in outdoor storage area. Hazardous waste generated at the MSC is stored at the hazardous waste lockers.

Routine hazardous wastes generated at the MSC are diesel fuel/asphalt emulsion, batteries, hydrocarbon-contaminated absorbent, PCB and PCB-free transformer oil, paints, and solvents. All hazardous waste and lockers are appropriately labeled and marked per CCR Title 22 regulations. Hazardous waste is accumulated for a maximum of 90 days before being shipped off-site to disposal/recycling facilities.

Potential Pollutants:

- Paint
- Mercury (fluorescent lights, high intensity discharge (HID) lights)
- Oil & grease
- Diesel
- Mineral oil
- Waste oil containing Polychlorinated-biphenyls (PCBs)
- Metals (nickel, cadmium, lead)

Structural Controls:

- Wastes are properly labeled and placed in the appropriate storage area:
    - Shed 1 is used to store universal wastes such as fluorescent lights.
    - Shed 2 is used to store corrosives (acids, bases), oxidizers, batteries, and cleaning products.
    - Shed 3 is used to store flammable materials such as oils, paints, and gasoline.
    - Shed 4 is used to store 55-gallon drums of diesel-asphalt emulsions, mineral oil, PCB containing oil, and oily debris.
    - The gated concrete pad is used to store drums of used aerosol containers and large paint containers. Only universal waste or paint is stored in this area.
- All sheds have a roof and locking door.
- Shed 1 has a concrete containment berm.
- Sheds 2, 3, and 4 have secondary containment flooring in case of a spill.
- Only universal waste or paint is stored in the concrete area. The waste is properly contained and/or covered by a tarp.

BMPs:

- The hazardous waste storage areas are kept locked. Staff must contact the Environmental Specialist (x6980) or the Environmental Control Programs Manager (x6980) to schedule an appointment to drop off the hazardous waste at the storage shed.

- Containers are inspected for leaks or bulging before being accepted
- Hazardous wastes are stored in secondary containment
- Spill kits are kept in chemical storage areas

3.1.7 Parks Equipment and Storage Area

The Open Space, Parks and Golf Department stores equipment in the MSC yard. The equipment is stored outside, east of the MSC building C, or inside the garage at the end of building C (also located on the east side).

Potential Pollutants:

- Oil & grease
- Gasoline
- Pesticides
- Fertilizers

Structural Controls:

- Chemicals are stored in designated storage cabinets.
- Some equipment is stored inside the garage.

BMPs:

- Spills are cleaned immediately using dry methods; waste materials are properly contained and disposed of in the hazardous waste accumulation area
- Staff places drip pans under leaking equipment pending repair

3.1.8 Tree Department Storage Area

The Tree Department has a storage area on the eastside of building C. The area is used to store plants, stumps, and chemicals.

Potential Pollutants:

- Sediment
- Herbicides
- Pesticides
- Chlorine (potable water)

Structural Controls:

- Chemicals are stored inside a secondary hazardous materials storage bin.

BMPs:

- Solid debris is swept up when generated.
- During stump cutting, the Project Manager requests a street sweeper to sweep around storage area to remove any solids.
- The plant storage area is surrounded by straw wattles. The area is monitored to ensure no overwatering.

3.1.9 Wash Pad

The vehicle wash pad is located in the northern portion of the MSC and is used for cleaning of vehicles and equipment. The wash pad has a treatment system that cycles wash water and discharges to sanitary sewer.

Potential Pollutants:

- Diesel and vehicle fluids
- Organic and metal debris that washes off equipment and vehicles
- Detergents and other cleaning supplies
- Chlorine (potable water)

Structural Controls:

- The wash pad is constructed of concrete and graded so all wash water and stormwater runoff flow through a treatment system to the sanitary sewer. There is no connection between the wash pad and the storm drain system. The pad is partially covered.
- The wash pad area contains a “pre-wash” pad for removal of heavy solids. The effluent from the “pre-wash” pad is discharged to the sanitary sewer, and the settled solids are removed and disposed.

BMPs:

- In-house vehicle washing at the MSC facility (including vehicle exteriors and engine cleaning) is conducted at the wash pad which connects to the sanitary sewer.
- Vehicles are cleared of debris prior to leaving the work site.
- The wash pad is covered by an Industrial Waste Discharge Permit. Watershed Protection Group staff inspects the vehicle service portion of MSC and conducts sampling of the wash pad twice a year.
- Signage reminds users to turn off hoses when finished rinsing.

3.1.10 Parking Lots

Various areas around the MSC are designated as parking for various types of vehicles and equipment. The various areas and types of vehicles stored include:

- Vehicles stored around building A, B, and C include:
  - Personal vehicles and work vehicles
- South side of MSC:
  - Work trucks, back-hoes, trailers
  - Cranes, vacuum trucks
- North side of MSC:
  - Vehicles under repair, including heavy equipment
  - Asphalt equipment
  - Dump trucks and trailers
- West side of MSC:
  - Parking for city vehicles, staff, and visitors
  - Work vehicles
- East side of MSC:
  - Street sweepers, garbage trucks, lawn mowers, vacuum trucks, tree trimming trucks, etc.

Potential Pollutants:

- Fuel and vehicle fluids
- Trash and sediment

BMPs:

- Street sweeping occurs weekly
- Good Housekeeping:
  - Trash in back of work trucks or on equipment is kept containerized and disposed of at the end of each day in the appropriate trash, recycling or compost containers
  - Leaks are contained using a drip pan and reported immediately to facility maintenance.

3.2 Buildings

<u>The facility consists of the following structures:</u>

- Building “A,” which functions as a warehouse and citywide distribution center for supplies, materials and equipment;
- Building “B,” which houses administrative offices and workshops for fleet, and facility maintenance operations; and

- Building "C," which houses administrative offices and workshops utilized for general Public Works and Utilities maintenance operations.

3.2.1 Building A: Stores and Parks Department Administration Offices

Building A is comprised of two structures: the Stores Warehouse and the Parks Department Administration Building. The two buildings are linked together by a canopy and walkway. This area is also the receiving area for supplies and materials for MSC. The Stores Warehouse contains materials and supplies for the various departments located at MSC. Inert materials such as concrete boxes, concrete and plastic piping, and spools of electric wire are stored outside behind building A on an uncovered blacktop and chain-linked fenced area.

3.2.2 Building B: Repair and Maintenance of Vehicles and Equipment

City vehicles and equipment are maintained and repaired by the staff of the Equipment Management Division, Public Works Department under the direction of the Fleet Manager. Maintenance and repair work occurs in the maintenance shop. Only tire and minor repair operations are conducted outside the building. Shop personnel conduct and document inspections as required to ensure compliance with hazardous materials storage and waste regulations.

3.2.3 Building C: Public Services, Utilities, and Parks and Recreation Shops

Building C is comprised of a variety of workshops, including a sign and paint shop, meter shop, welding shop, parks maintenance shop, tree department shop and transformer shop.

BMPs for all site buildings:

- When paint buckets are rinsed with water, all rinse waste is placed into a designated sanitary sewer manhole located in front of the sign & paint shop, under authorization of the Palo Alto Regional Water Quality Control Plant.
- Sweep up any work debris using a broom and dustpan. Place into trash, or if hazardous, properly contain and notify the Environmental Services Department for proper disposal.
- Transformer repair or oil removal from transformers is performed inside the transformer shop.

4.0 Best Management Practices

The purpose of this section is to describe overall site BMPs implemented at the MSC.

4.1 General Best Management Practices

4.1.1 Good Housekeeping and Preventative Maintenance

The City implements good housekeeping and preventative maintenance measures that provide a foundation to implement the SWPPP and maintain a clean and orderly work environment. These measures reduce the potential for materials to come in contact with stormwater. Preventive maintenance involves the regular inspection, testing, and cleaning of facility equipment and operational systems, which helps uncover conditions that might lead to a release of materials and allows for prevention of such a release.

Each department is assigned responsibility for keeping its area of the MSC yard clean and orderly. Inspections are conducted on a routine basis. Preventative maintenance of equipment and systems occurs before and after use and inspected on a minimum weekly schedule.

Prohibitions:

- Vehicle or equipment, rinsing, washing, or cleaning should occur at the vehicle wash pad.
- No process water or non-stormwater shall be discharged to the storm drain system.

4.1.2 Stormwater Accumulation Areas

If stormwater collects in areas of potential contamination such as sumps, tanks, containment systems, etc., the following steps shall be taken:

- Inspect storage tanks, sumps, and pipes for signs of leaks or spills.

- Check the accumulated stormwater for visual evidence of contamination (i.e., oil sheen or discoloration). If petroleum products are present, pump the liquid into a tank truck or storage vessels, and dispose of offsite as appropriate. For guidance, contact the Public Works Manager, Environmental Control Programs.

- If there is no evidence of contamination, manually operate the sump pump and discharge to the nearest sanitary sewer inlet. Remain in the area while pumping.

4.1.3 MSC Facility Sweeping

The MSC facility is swept regularly using a mechanical sweeper under the direction of the Maintenance Operations Manager, Public Services. The bulk storage bins and fueling station are swept weekly due to a high potential for stormwater pollution. The wash pad area is swept weekly or as needed.

4.1.4 Storm Drain Inserts/Inlet Marking

All storm drain inlets are labeled with “No Dumping! Flows to Creek or Bay”, and contain inlet inserts to minimize larger pollutants such as sediments, trash and organics from entering the storm drain system. Filter fabrics and rock socks are placed around perimeter storm drain inlets. Storm drain catch basins and pipelines are cleaned using a vacuum truck or manually cleaned annually prior to the rainy season. This activity is conducted under the direction of the Maintenance Operations Manager, Public Services.

4.1.5 Employee Training

Employee training is a major component in ensuring the success of the SWPPP.

Employee training includes informing personnel at all levels of responsibility of the components and goals of the SWPPP and implementation of BMPs. Employee training is conducted annually and documented. The SWPPP team members in each department/division are responsible for SWPPP training of staff.

The Public Works Manager, Environmental Control Programs will be responsible for the following:

- Posting the SWPPP on the City server in an accessible location
- Sending a link to members on the SWPPP team
- Ensuring that updates to the SWPPP are communicated to all team members
- Conducting an annual meeting to review SWPPP updates and discuss ongoing training

4.1.6 Spill Response

In cases of a minor or significant spill, leak, fire or explosion, designated staff will implement the MSC **Procedures for Emergency Response to Spills and Releases**. One of the BMPs implemented is the three-step cleaning method which specifies the following order of cleaning; 1) clean up spills with rags or other absorbent materials; 2) sweep floor using dry absorbent materials; and 3) mop and dispose of mop water in the sanitary sewer. Spill kits containing absorbent sweep and rags/pads are located through the MSC in areas where spills potentially could occur.

For serious spills and releases, the Palo Alto Fire Department (911 or 650-329-2413) is the first responder and if required for severe incidents, spills beyond the capability of staff to clean up, the Environmental Services Division has a hazardous waste contractor on-call 24-hours, 7-days a week. If this contractor is needed, contact the Environmental Control Programs Manager at x6980.

4.1.7 Inspections and Reporting

Annual Stormwater Inspection: WPG staff conducts an annual inspection of the MSC facility in September. During the inspection, the Environmental Specialist or Environmental Control Programs Manager takes photographs and notes regarding any issues found and sends an email to each department with a photo and a description the identified areas of concern. Each department is expected to correct the issue within ten days. The inspection report is recorded in the stormwater compliance database and a summary is provided to the Regional Water Quality Control Board in the City's Annual Stormwater Report. Environmental Services Division conducts follow-up inspections if needed.

Visual Stormwater Inspections: The team members for each section of the yard conduct routine visual stormwater inspections.

4.2 Soil Erosion

Since most the MSC is either paved or contains buildings or other structures, soil erosion is not a problem during large storm events (or for non-stormwater discharges). The only areas of concern relating to soil erosion are the landscaped grassy area along East Bayshore Road and storm drain outfalls near Matadero Creek and the Flood Basin where stormwater will discharge in large volumes. These discharge areas are designed to flow such that soil erosion does not occur.

4.3 Record Keeping

This SWPPP is reviewed annually and updated as-needed. All records related to significant spills, employee training sessions and annual stormwater inspections are retained at for at least three years.

An annual pre-inspection site walk is conducted by the Environmental Control Programs Manager and/or the Environmental Specialist, consisting of:

- A visual inspection of all potential pollutant sources for evidence of, or the potential for, pollutants to enter the storm drain system.
- A visual inspection of equipment needed to implement the SWPPP, such as spill kits and response equipment.
- Relay findings to Managers overseeing works areas needing corrective action

Action	Frequency	Responsible Person
Review and Update SWPPP	Annually – August/September	Manager, Environmental Services Group

Site Pre-Inspection Walk	Annually – August/September	Manager, Environmental Services Group
Site Stormwater Inspection	Annually – September	Watershed Protection Stormwater Investigator

Sample Record Keeping and Reporting Forms

The following pages contain sample forms for the record keeping and reporting associated with the SWPPP. The following forms are not required.

- Significant Spill Report
- Non-stormwater Inspection Report
- Employee Training

5.0 SWPPP Forms

SIGNIFICANT SPILL REPORT

Date of Occurrence: _____

Discovered by Whom: _____

Location: _____

Material Type & Volume: _____

_____

_____

Cause of Spill: _____

_____

_____

_____

Corrective Action Taken: _____

_____

_____

_____

_____

Agencies/Persons Contacted: _____

_____

_____

_____

_____

_____

Signature

NON-STORMWATER INSPECTION REPORT

Date of Inspection: _____ Time: _____

Inspected by (printed name): _____

Signature: _____

Description of type of inspection (check those that apply):

___ visual observation ___ dye tests ___ smoke tests ___TV line survey

___ analysis of accurate schematics ___ sampling/monitoring

Observations/Results: _____

_____

_____

_____

_____

_____

_____

_____

_____

_____

Are there any non-stormwater discharges? ☐ yes ☐ no

Is the discharge authorized under this permit? ☐ yes ☐ no

Is the discharge covered under another National Pollutant Discharge Elimination System (NPDES) permit? ☐ yes ☐ no

Are significant structural changes required to eliminate the discharge? ☐ yes ☐ no

EMPLOYEE TRAINING RECORDS

Date of Session: _____ Time: _____

Trainer: _____ _____
(printed) (Signature)

Attendees (names, printed):	Signature:
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

Topics Covered: _____

_____

_____

_____

_____

_____

_____

_____

6.0 Figure 1 – Site Map

Water Channels

MATERIAL BUNKERS

STORM DRAIN OUTFALL

CNG STORAGE 30,000 CF

POLICE/FIRE EVIDENCE STORAGE LOCKER

15,000-GAL. GASOLINE UST (T-1)

15,000-GAL. DIESEL UST (T-2)

5,000-GAL. DIESEL FUEL UST (GREEN) (T-3)

TRANSFORMER PAD TRENCH DRAIN

NEW TRANSFORMER STORAGE AREA

FIREWORKS LOCKER

EMERGENCY SHUTDOWN SW.

OIL/WATER SEPARATOR (ELECTRIC OPS)

U4

WASTE TRANSFORMER STORAGE AREA

MAINTENANCE STORAGE

PW HAZADOUS WASTE ACCUMULATION AREA

FLAMMABLE DRUM LOCKER

P2

OIL DRUM STORAGE (UTILITIES)

FIRE EXTINGUISHER

DIESEL DISPENSER D-2

EQ2

HIGH FLOW DISPENSER

CNG DISPENSER D-6

GAS/DIESEL DISPENSER D-3

TRANSFORMER (E)

PROPANE TANK STORAGE CAGE

P3

PW STORAGE CONTAINERS

TRAFFIC PAINT STORAGE AREA

PWS STORMDRAIN TRAILER

PWS SIDEWALK TRAILER

ASPHALT TRAILER

TREE AREA

PARKS CONTAINERS NO HAZARDOUS STORAGE

SATELLITE ACCUMULATION (WGW) DIESEL/ASPHALT EMULSION

#3

U3

STORM DRAIN OUTFALL

CULVERT

SATELLITE ACCUMULATION DIESEL/ASPHALT EMULSION

P1

VEHICAL WASH STATION

FORMER FUEL STORAGE AREA (TO BE DECOMMISSIONED)

DIESEL FUEL

GASOLINE

COMPRESSED NATURAL GAS STORAGE 30,000 CF

FACILITIES PAINT SHOP

EQ1

FACILITIES MAINTENANCE SHOP

B7

B6

B-5

B-1

B-2

B-3

B-4

OFFICES

EQUIPMENT MAINTENANCE SHOP

PARTS ROOM

NEW OIL UST (1000 GAL)

WASTE OIL UST (1000 GAL)

OIL ROOM

UPSTAIRS STORAGE AREA

WASTE OIL FILTERS

OFFICE

FABRICATION SHOP

BUILDING B

BUILDING B SECOND FLOOR

EMERGENCY SHUTDOWN SW. (CNG)

FLAMMABLE CABINET

WASTE ANTIFREEZE CONTAINER

EMPLOYEE PARKING

MATADERO CREEK

PARKS DEPT. STORAGE TRAILER

A3

PURCHASING STORAGE YARD NO HAZARDOUS CHEMICALS

EMERGENCY GENERATOR & DIESEL FUEL TANK

EMERGENCY RESOURCES FOR PW (AROPOD)

WASTE HID LAMP STORAGE

SPILL KIT

A2

A1

STORES WAREHOUSE

LOADING PLATFORM

BUILDING A

ELECTRICAL SHUT-OFF FOR ENTIRE FACILITY

FLAMMABLE CABINET

PARKS & REC SHOPS

NATURAL GAS COMPRESSOR & CYLINDERS STORAGE

C6

C5

C4

C7

C3

C2

C8

C1

PAINT SHOP

SIGN SHOP

SWEEP SHOP

STORMDRAIN CONCRETE ASPHALT SHOP

ACETYLENE CYLINDER RACK

OXYGEN CYLINDER STORAGE RACK

GENERAL SHOP

GAS METER SHOP

WATER METER SHOP NO HAZARDOUS CHEMICALS

ENTRANCE TO OFFICE

OFFICES NO HAZARDOUS MATERIAL

PW LUNCHROOM

SURVEY OFFICE

EMPLOYEE LOCKERS

ELECTRIC METER SHOP NO HAZARDOUS CHEMICALS

C9

C10

TRANSFORMER SHOP

OFFICES

FLAMMABLE CABINET

TRAFFIC SIGNAL SHOP NO HAZARDOUS CHEMICALS

BUILDING C

GUARD HOUSE

CULVERT

STORM DRAIN OUTFALL

E BAYSHORE ROAD

BAYSHORE FREEWAY (US HWY 101)

SCADA UNDERGROUND DIESEL FUEL TANK (2250 GAL)

S1

NATURAL GAS GENERATORS

EMERGENCY SHUT-OFF SWITCHES (EXTERNAL)

EMERGENCY SHUT-OFF SWITCHES (INTERNAL)

Cogen #3

#1 #2 #3 #4

U2

WGW MAINTENANCE STORAGE

#2

WELD AREA

FENCELINE

TRANSFORMERS

C11

WG1

W2

WT5

U1

#1

CP12

WW3

WT6

FIRE EXTINGUISHER 100LB CO2

UTILITY CONTROL CENTER BUILDING

OFFICES

SCADA EMERGENCY GENERATOR

ABSORBENT/SPILL CLEANUP MATERIALS IN DRUMS

ANIMAL SERVICES & PLACEMENT CENTER BUILDING

EMPLOYEE PARKING

STORM DRAIN OUTFALL

LEGEND

- FIRE ALARM PULL BOX
- WATER SHUT-OFF
- ELECTRICAL SHUT-OFF
- GAS SHUT-OFF
- VEHICLE FUELING SYSTEM SHUT OFF
- UNDERGROUND TANK MONITORING STATION
- FLAMMABLE CABINET
- CHEMICAL STORAGE CONTAINMENT
- CATCH BASIN (FLOWS TO CREEK)
- CATCH BASIN (FLOWS TO FLOOD BASIN)

SITE MAP – MUNICIPAL SERVICE CENTER

CITY OF PALO ALTO, CALIFORNIA

CITY OF PALO ALTO INCORPORATED APRIL 1, 1894 CALIFORNIA

Approved for the City of Palo Alto:

Project Manager

Date

APPROVED:

DATE

ENGINEER

R.C.E. _____ EXP. _____

	BY	DATE
DRAWN	RTN	02/09/10
CHECKED		
REVIEWED		

MSC

SITE PLAN

CITY OF PALO ALTO CALIFORNIA

SHEET 1 OF 1 SHEETS

Scale : 1"=70'

VERIFY SCALE

SCALE IS FOR SIZE C (22" X 17")

FILE NO.

Appendix 9-1

Palo Alto's Less-toxic Pest Management Program

SharePoint Site for City Employees

Table of Contents

Attachments and Additional Resources

I. Introduction

This document summarizes the City of Palo Alto's (the City) SharePoint Site for Less-toxic Pest Management Program. This site is used to educate City staff and contractors on Integrated Pest Management (IPM) and provide resources, including factsheets and Standard Operating Procedures when performing IPM practices on City property.

Providing City staff with these resources helps the City meet the Stormwater NPDES permit requirements and ensures that maintenance on City properties is not contributing to pollution in stormwater runoff.

The City's IPM Policy, SOPS, BMPS, and related information are available for all City staff on the City's SharePoint Site. See Attachments I-vi for resources provided to City staff.

II. Home: Palo Alto's Less-toxic Pest Management Program

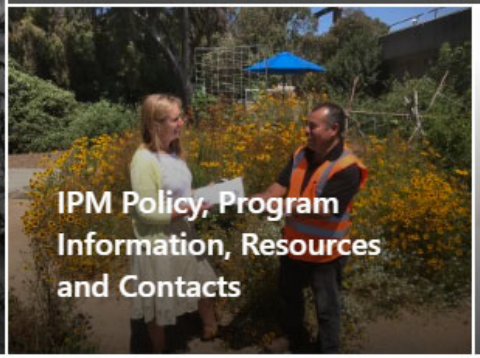
CITY OF PALO ALTO

Palo Alto's Less-toxic Pest Management Program

Palo Alto has maintained an award-winning Integrated Pest Management Program (IPM) since 2001. For more than 20 years staff in Parks, Open Space, Facilities, Trees, Watershed Protection, and Utilities have worked together to improve pest management and protect water quality in local creeks and San Francisco Bay. Palo Alto adopted an Integrated Pest Management (IPM) Policy in 2001 to guide the City's less-toxic pest control program, both of which are requirements of the Municipal Regional Stormwater Permit. Specific goals are to:

- Use science-based strategies to prevent structural and landscape pests
- Use least-toxic pesticides as a last resort if prevention efforts fail to protect human health and the environment

- Reduce both the total amount and the toxicity of pesticides that are used



III. What to Do About Pests At Your Facility

CITY OF PALO ALTO

What to do About Pests at Your Facility

1. **For indoor or structural pest problems** (e.g., ants, roaches, rodents, wasps on buildings), call Public Works - Facilities at x6900 (if you work at the RWQCP call Pestec directly using the number below). However, before you call Facilities know that the main reasons pests enter buildings are to access food, water, and shelter. They enter through building cracks and door gaps. Check to see that:

   • Waste and recycling bins are clean and emptied daily
   • Work areas are clutter free with no food or drink residue
   • Food is stored in sealed containers or in the refrigerator
   • Caulk cracks where ants enter

   If you think you need a monthly service, Facilities may recommend a professional service such as Pestec (contact Mikail Price at 408-564-6196 ext. 3001). Per City policy, all service providers must be EcoWise or GreenShield certified. P-cards or purchase orders can be used to pay for these services.
2. **Stinging insects:** how to identify a stinging insect, who to call, and what to do.

   • Public Outreach flyer about bees and bee swarms
   • Post this sign on City property where there are active bee colonies

3. **How to order pesticides and pest management supplies** at MSC and Regional Water Quality Control Plant Stores. Both MSC and RWQCP stores are stocked with pre-approved pest control options. The codes to order these supplies through SAP are provided below for your convenience:

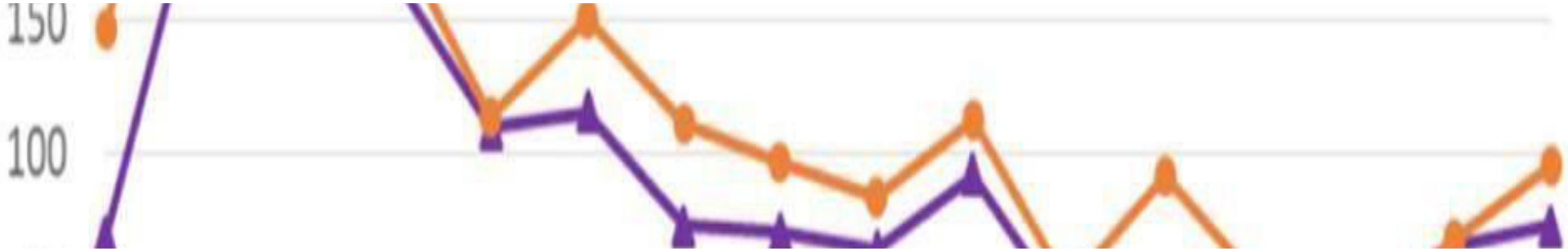
   • Terro Ant Killer II, 051100
   • Yellow Jacket Trap w/Attractant, 051104
   • Essentria Wasp, Hornet & Yellow Jacket Spray, 051110

   If the item you need to treat your specific pest issue is not available at the City's stores, please reach out to Julie Weiss, PWD - Watershed Protection, at 650-329-2117 prior to p-carding your purchase from an outside vendor to confirm it complies with the City's IPM policy.
4. **Pest management technical advice for landscape and facilities managers:**

   • **Technical assistance:** A technical consultant is available to address chronic and urgent pest management needs. Call Julie Weiss, PWD-Watershed Protection, at 650-329-2117 for more information.
   • **Licensed pest control advisor (PCA):** Call Peter Gollinger, PWD-Trees, at 650-496-6946 for assistance with identifying pest problems, pest prevention recommendations, and least-toxic pesticide options and directions for use.

IV. Track Staff and Contractor Pesticide Applications for Annual Reporting

CITY OF PALO ALTO



Track Staff and Contractor Pesticide Applications

City Staff are required to submit pesticide use information each year for both their team and any contractors. The City uses this information to track its pesticide use, set pest management priorities for the year ahead, respond to public information requests, and generate monthly report forms for the Santa Clara County Agricultural Commissioner's Office.

- Pesticide Use Database
- Contractor Reporting Form. This form must be provided to contractors who apply pesticides on City property and they must provide to the IPM Coordinator.
- Integrated Pest Management Program Reports. Public Works–Watershed Protection drafts reports on City pest management pesticide use reports every three years, as staffing resources allow. This report details pesticide use trends, program priorities, and history. View the 2016 report.

V. IPM Policy, Program Information, Resources and Contacts

CITY OF PALO ALTO

Additional Information and Resources

1. **Integrated Pest Management Policy**

2. **RoundUp (glyphosphate) staff and public information:** There has been extensive press coverage about glyphosphate - the active ingredient in most RoundUp products. The City has committed to reducing the use of RoundUp and providing staff and public education about how, where, and when glyphosphate products are used. The following factsheets are provided for staff use and are periodically updated:

   • Staff glyphosphate use
   • Public factsheet for glyphosphate use
   • History of glyphosphate listing as a Prob 65 chemical

3. **Where to learn more about pest control:**
   • Our Water Our World: Helpful to staff, but geared towards the general public. This website provides quick factsheets and professional guidance from pest control experts and water quality professionals (funded by Bay Area stormwater programs). They also produced this wonderful less toxic product list.
   • University of California Davis Integrated Pest Management: This is the go-to site for detailed information

about common structural an landscape pests. Information leverages the most recent science from University of California Agriculture and Natural Resources.

4. **Santa Clara County Vector Control:** The county Vector Control will provide mosquito services. They can be reached at 408-918-4770. The County monitors the Palo Alto Flood Basin regularly for mosquito activity and will contact the City if spraying is needed. Vector Control practices IPM and uses least-toxic pesticides when chemical control is needed.

5. **Contracts with IPM requirements:** Landscaping contracts and structural pest control services have IPM requirements. Contact Julie Weiss for more information, x2117.

6. **Stormwater permit requirements and pest management for City staff:** Municipal Regional Stormwater NPDES Permit, page 91. Permit includes several requirements for municipal operations, staff training, reporting, pesticide restriction, public outreach, controlling pesticides at the source, and engaging in state and federal regulatory revisions to reduce pesticide toxicity in creeks and the San Francisco Bay.

7. **Recent public information campaigns:** (more outreach samples available upon request)

   - Preventing Fleas and Ticks (August 2020)
   - Oh Rats! (February 2020)
   - Problems with Ants? (March 2019)
   - Get the Buzz on Bees (April 2018)

VI. City of Palo Alto IPM Program History and Accomplishments

CITY OF
PALO
ALTO

IPM Program Accomplishments

The City of Palo Alto received the "IPM Innovator" award in 2003 and 2011 by the California Department of Pesticides Regulation. Since 2001, the City has:

1. Created 21 pesticide-free parks and facilities. Current parks include: Bol Park,Boulware Park, Cameron Park, El Palo Alto Park, Hopkins Creekside Park, Monroe Park, Sarah Wallis Park, Scott Park, Terman Park, Werry Park. **Facilities include**: Ventura Community Center, Adobe Creek Substations, Animal Services, Children's Theater, Hale Well Substations, Matadero Well Station, San Francisquito Creek Pump Station (excludes aquatic portions). MSC, is not a pesticide free site, but pesticide applications are restricted around gutters and near creeks.
   *In addition, there is no spraying allowed within 100ft of any playground or any creeks.
2. Performed facility repairs and updated maintenance practices that improved rodent control and allowed the City to discontinue routine monthly spraying for ants (ant sprays are the number one source of pesticide toxicity in Bay Area creeks).
3. Discontinued the use of poison rodent baits (which cause wildlife poisoning).
4. Reduced herbicide use by as much as 90% in some years from baseline levels by using mulch and weed prevention strategies.
5. Used innovative techniques for tree pests, such as power washing trees to remove tussock moth caterpillars.
6. Created pest management plan templates and held staff training for gophers, ground squirrels, ants, bees, yellow-jackets, and weed control.

7. Created pest management factsheets.
8. Funded regional outreach programs and workshops that increased public use of less-toxic pest control products (such as OurWaterOurWorld.org, GreenGardener, and EcoWise Certified).
9. Produced annual reports with detailed information about pest management trends and priorities since 2001.

Attachment i.

Contractor Pesticide Use Log

City of Palo Alto Contractors Pesticide Use Log
Pesticide Trade Name:
EPA ID#
Active ingredient
% Active Ingredient:
Formulation (e.g.,granules, liquid):

:

Date Applied	Location	Account Contact	Target Pest	Mechanical removal and/or preventative action taken	Amount	Units (check which unit measurement is used)						Mix ratio (for liquid pesticide applications)
						oz	fluid oz	cc	grams	gallons	lbs	

Attachment ii.

Bees and Stinging Insects

CITY OF
PALO
ALTO

GET THE BUZZ ON BEES

Pesticides, disease and other factors have hit honey bee populations hard in recent years. Here's what you can do to help bees and other important pollinators.

BEE SAFE, BEE SMART, AND BE GOOD TO BEES:

Bee safe with garden pest control. Visit **ourwaterourworld.org** for pest-specific tips and products used by Bay Area pest control experts. Less-toxic pest control is good for bees and other beneficial insects, birds, people, pets and our local creeks.

Bee smart. If pesticides are needed, read the label and ditch products that contain imidiacloprid, clothianidin and other systemic chemicals, and fungicides containing chlorthalonil. These pesticides are a major culprit in harming bee populations.

Bee hospitable with food and water. Plant a diversity of flowers in your yard that bloom throughout the year for a continuous bee food supply. Provide a shallow dish of water or bird bath with stones in the water to serve as islands where bees can land and drink.

Buy organically grown plants at nurseries which aren't treated with systemic pesticides. The nectar and pollen of plants treated with systemic pesticides can harm or kill bees with doses as low as 3-4 billionths of a gram per bee.

Our native bees want your love, too. Leave patches of unmulched bare soil in your yard for these often solitary, ground nesting bees. Look online to buy or make a bee nest.

Bee curious! Check out our gardening workshops at **cityofpaloalto.org/workshops** and join us at Palo Alto's Earth Day Festival, Saturday April 14, 9am-1pm, **cityofpaloalto.org/earthday.**

www.cleanbay.org • 650.329.2122

REGIONAL WATER QUALITY CONTROL PLANT

BEE COLONY AHEAD

CITY OF PALO ALTO

Please enjoy watching this colony from a distance. Thanks for helping to protect our local bees.

STINGING INSECT PEST MANAGEMENT

Bees, Wasps, and Yellowjackets

In general, stinging insect pest control should be handled by a pest control professional such as Pestec. If there is ever an immediate risk to staff or the public from stinging insects call Pestec. PCards can be used for the service.

CONTACTS

Pest Control Contractor
Pestec
(408) 564-6196, ext. 3001
pestec.com

Integrated Pest Management Coordinator
Julie Weiss
(650) 329.2117
julie.weiss@cityofpaloalto.org
Public Works–Watershed Protection

CITY OF PALO ALTO

Overview:

The information below provides guidance on identifying pests, how and when to take action, and who to call for more information or help. This following guidance is based on the City's **Integrated Pest Management (IPM) Policy**–also known as "less-toxic pest control." The goal of the IPM policy is to reduce both the amount and the toxicity of pesticides used on City property to minimize risk to staff and to protect water quality in creeks and San Francisco Bay.

To prevent or address stinging insect concerns:

1. **An annual maintenance schedule should be established in early spring to prevent stinging insects from reoccurring in problem areas,** e.g., knocking down paper wasp nests with a pole, and baiting/trapping for yellowjackets in early spring. Information is provided in the table below for staff to provide preventative and low-risk stinging insect problems;

2. **Hire a pest control company to handle stinging insect concerns, especially for yellowjackets. Pestec is most-frequently used by the City.** If vendors other than Pestec are used they must be **"IPM Certified"** per the City's Municipal Regional Stormwater Permit and staff hiring the contractor must notify the City's IPM Coordinator so that pesticide application information is provided to the City after the service;

3. **If a pest control company is unavailable and an urgent situation arises,** staff may purchase the suggested pesticide from Stores listed on the pest pages below. If the Stores product is not available and an alternative product is urgently needed to protect staff or the public, staff may receive supervisor approval to purchase an over-the-counter pesticide with a PCard.

   Notify the City's IPM Coordinator after the Purchase is made to receive an email authorizing the purchase to include with end-of-month PCard administration. Pesticides are not otherwise allowed for PCard purchase due to strict requirements of the City's Municipal Regional Stormwater Permit;

4. **Information about any staff or contractor application of a pesticide must be entered into the City's pesticide database after application.** See the **City's IPM Sharepoint page** for more information.

IF A STAFF MEMBER IS STUNG, remove stinger as quickly as possible. Wash the wound and treat it with ice or antihistamine. If the sting is followed by severe symptoms or if it occurs on the neck or mouth, seek medical attention immediately. Swelling in these areas of the body can cause suffocation.

Wasps/Paper Wasp

- Most wasp species are identified by long, dangling legs, brown-black and yellow bodies and gawky flight patterns
- Nests are made out of papery material, connected to eaves, bushes, or unusual objects

ASSESS RISK

Wasps are usually not aggressive but will sting if stepped on or swatted. If their nests are not causing a safety hazard leave them in place. Move slowly and quietly around agitated wasps and they will usually ignore you. Cone and caution tape off the area around the nests. Wait until evening or early morning to treat as wasps will be less active when cold. Wasp "guards" are few and slow. If nests are in areas where no staff or public harm is likely, then no action is necessary.

PREVENTION AND PHYSICAL CONTROL

In early Spring, knock down new nests in problem areas when it is cold or early in the morning with a stream of water, soapy water spray, or long pole. Clear away nest fragments remaining on structure or wasps may rebuild nests. Use wasp traps and bait (available at Stores) in early spring to get ahead of the problem.

CHEMICAL CONTROL (PESTICIDE)

Pesticides are not usually needed because a jet of water, or soapy water usually knocks down and destroys the nest. If soapy water cannot be applied, use:

1. Eco Exempt/Essentria Jet Wasp and Hornet Killer (available at Stores); (2-phenethyl proprionate 2%, rosemary oil 3%); or,
2. Only as a last resort and if a pest control professional is not available, over-the-counter sprays may be used. Staff must contact the IPM Coordinator to approve the Purchase for end-of-month P-Card reporting.

If a professional is needed to remove the nest, call Pestec at (408) 564-6196, ext. 3001.

CITY OF PALO ALTO

Yellowjackets

- Yellow and black striped body
- Fast fliers
- Most nest in ground
- Others nest in structures
- Aggressive, defensive of nest
- Up to 15,000 per nest

ASSESS RISK

Yellowjackets are more aggressive than most bees and wasps. If there is an immediate risk to staff or the public call Pestec (pest control company) for removal at (408) 564-6196, ext. 3001. PCards can be used for the service. Nests that are off-trail and do not post a public risk should not be destroyed.

PREVENTION

Avoid population build-up which starts in early spring and peaks in mid-summer:

- Trap yellowjackets with bait traps in February or March. Spring populations build up slowly and peak in summer so early season trapping is effective. Traps and the chemical attractants are in Stores or can be purchased at local hardware stores. Place baits 200 feet from the area to be protected in intervals of 150 feet.
- Place caution tape around the area to prevent human interaction with the nest.
- Use trash cans that have spring-loaded, or self-closing lids.
- Remove trash and clean trash cans frequently to reduce odors.
- Clean up other garbage sources that may be attracting yellowjackets to the area.
- See **attached yellowjacket factsheet** for more information.

CHEMICAL CONTROL (PESTICIDE)

Staff should avoid destroying yellowjacket nests and instead call Pestec for service at (408) 564-6196, ext. 3001.

If using a pesticide to destroy a nest is urgent wear protective clothing, veil, legal safety gloves, and eye protection and use one of these products when it is cold or early in the morning:

1. Eco Exempt/Essentria Jet Wasp and Hornet Killer; (2-phenethyl proprionate 2%, rosemary oil 3%); or,
2. Only as a last resort and if a pest control professional is not available, over-the-counter sprays may be used. Staff must contact the IPM Coordinator to approve the Purchase for end-of-month P-Card reporting.

CITY OF PALO ALTO

Bees

ASSESS RISK

1. Are bees swarming?

Only European honey bees swarm. If bees are clumping together on a sign or in vegetation, or flying in circles in a group, then they pose very low danger of stinging although the visually dramatic display can be alarming to the public. After the swarm has settled, place temporary stakes at least 15 feet away from the swarm, and use caution tape to keep people away. Do not try to remove the swarm, unless it does not disperse in three to four days. Public Information to share about bee swarms and a sign to post for pedestrians when bee swarms or colonies are present is located at the City's **Sharepoint page.**

2. Are bees in a colony? (living in a tree or building)

A. Determine if colony can remain in place (check with a supervisor if unsure). Assess:

- Is the colony located above six feet? (less risk when the bees are flying back and forth)?
- Is the colony in an area that is likely to be stepped on?
- Are small children frequently in the area?
- Is the colony located in a high traffic public area, such as the base of a tree next to a sidewalk?
- Is the colony likely to get larger and pose more of a risk?
- Is the colony particularly aggressive even when not provoked?
- Have stings been reported?
- Are residents amenable to keeping the colony in place and educating their neighbors?

B. If colony is to remain intact, determine if caution tape is needed around the colony site. A sign about the colony can be printed from the City's **Sharepoint page** and posted in the vicinity to inform pedestrians.

C. If contractor or staff determine that the colony should be relocated, relocation should take precedence over destruction by contacting the **Santa Clara County Bee Guild.**

D. If the colony poses a threat, cannot be transferred, and must be destroyed: The City staff person responding to the call contacts the City's IPM Coordinator and Contractor to discuss actions taken to avoid destruction. If the IPM Coordinator is not available, the person responding to the call should make a decision based on the current risk under the advisement and notify the IPM Coordinator afterward.

E. The location of the colony determines who pays for its removal (e.g., in a utility box, Utilities pays for it; in a tree next to a sidewalk Public Works/Trees covers cost).

CONTROLLING YELLOWJACKETS AROUND YOUR HOME

CONTROL YELLOWJACKETS AROUND YOUR HOME WITH THESE ECO-FRIENDLY PRODUCTS

Traps	Rescue!	Disposable Yellowjacket Trap, Reusable Yellowjacket Trap, OrnamenTrap Yellowjacket Trap
	Victor	Yellow Jacket Trap With Bait, Poison Free Yellow Jacket and Flying Insect Trap With Bait
	Seabright	Yellow Jacket and Wasp Trap and Bait: (800) 284-7363, www.seabrightlabs.com

Yellowjackets can be annoying and intimidating pests at picnics and around the barbecue, especially in late summer. On the positive side, they prey on many other insect pests such as caterpillars and flies.

Before you take steps to get rid of yellowjackets around your house or yard, be sure the problem is yellowjackets! Less aggressive flying insects, such as paper wasps, mud daubers, and honeybees, are often mistaken for yellowjackets.

YELLOWJACKET OR PAPER WASP?

Most often, paper wasps are mistaken for yellowjackets. Yellowjackets are shorter and rounder than paper wasps. A paper wasp's body is longer and thinner, with long, dangling legs. Yellowjacket nests are round and are enclosed in a papery shell with a small entrance hole at the bottom. They build their nests in abandoned rodent burrows and other holes in the ground, in attics, in wall voids, and in shrubs and trees. Sometimes they hang their nests from eaves. Paper wasp nests usually hang from eaves or porch ceilings and look like tiny umbrellas filled with six-sided cells.

Yellowjacket

Paper wasp

Yellowjacket nest

Paper wasp nest

Yellowjackets don't usually sting when they are looking for food—unless their nest is disturbed by a direct blow or the wasps inside detect vibrations. Mowing the lawn near an underground nest, construction work near a nest in a wall void, or even walking near a nest can provoke an attack by one or more yellowjackets. This is especially true if the nest has been disturbed before.

GETTING RID OF YELLOWJACKETS

If you often find several yellowjackets in your home, you may have a nest inside your walls. To protect yourself and your family from getting stung, call your local vector control district or a pest control company for help getting rid of the nest. Look for a pest control company that specializes in less-toxic pest control methods.

The pest control professional should only need to use poison bait if you have very large numbers of yellowjackets.

Keep yellowjackets from building a nest in your house.

- **Seal holes and cracks in foundations, walls, roofs, and eaves.**
- **Cover attic and crawl space vents with fine mesh insect screen.**
- Yellowjackets scavenge for meat and sweet foods and drinks in outdoor garbage and recycling bins. **Clean recyclables before throwing them in the bin and keep garbage cans clean and tightly covered.**

TRAPPING YELLOWJACKETS

Trapping can help control yellowjackets if there aren't too many. You can find both disposable and reusable traps in home and garden centers.

- **Follow label directions** for setting traps, disposing of trapped yellowjackets, and cleaning reusable traps.
- A **few hours before you bring food outdoors, set traps around the edge of your yard.** Make sure traps are well away from picnic areas, to lure yellowjackets away from people and food.
- **If one of the traps is not attracting yellowjackets, move it.** If you see yellowjackets but none of the traps is attracting them, try changing the bait.
  - **In the spring and early summer, yellowjackets are looking for protein**. Use strong-smelling baits such as tuna-flavored cat food.
  - **In late summer and fall, yellowjackets need sugar.** Use grenadine, or the sweet-smelling bait that comes with the traps.
- Putting out traps in early spring may capture queens and reduce the number of nests in the area.

AVOIDING YELLOWJACKET STINGS

If you have a yellowjacket in your house, do NOT make the yellowjacket mad by swatting at it! Wait until it lands on a flat surface, and then place a glass or plastic container over the insect. Slide a stiff piece of paper under the opening of the container and either seal the container and place it in the freezer overnight to kill the yellowjacket, or take the covered container outside and release the insect.

When a yellowjacket comes near:

- **Stay calm—or at least move slowly**. Slow, gentle motions that mimic the movement of a branch in the breeze will be more likely to get the yellowjacket to leave.
- **You can brush a yellowjacket off with a piece of paper or some other object** as long as you move slowly and deliberately.
- **Do not squash a yellowjacket.** When crushed, many kinds of yellowjackets give off a chemical that can cause other nearby yellowjackets to attack.

Yellowjackets can be a problem in May and June, but they are most irritable and aggressive late in the summer. Follow these tips to help prevent stings:

- **Wear protective clothing when mowing grass** if you think there might be underground nests nearby.
- **Outdoors, keep soft drinks or other sugary drinks in closed containers.** Use cups with lids and straws, and always look before you sip. Do not carry snacks containing meat or sugar in open containers.
- **Do not wear perfumes.** Use unscented products on your hair and body.
- **Avoid going barefoot,** especially when walking on grass or other groundcover.
- **Always check for yellowjackets on wet towels or wet clothing left outside before you pick them up.**
- **Wear light-colored clothing without patterns.**
- **If you are allergic to yellowjacket stings, avoid outdoor cooking and eating,** and wear clothing that covers as much skin as possible. Carry an epinephrine kit (available by prescription) at all times.

WWW.OURWATEROURWORLD.ORG

Common home and garden pesticides are found in stormwater runoff, treated wastewater, and in local waterways, sometimes at levels that can harm sensitive aquatic life. **Our Water Our World** is a joint effort by water pollution prevention agencies, participating retail stores, and pesticide distributors and manufacturers—working together to reduce the risks associated with pesticide use.

Our Water Our World fact sheets and store displays educate residents about less-toxic pest management. For the rest of the series of fact sheets, visit **www.OurWaterOurWorld.org**. Look for the ***Eco-friendly*** tag next to less-toxic products in participating stores and nurseries. See the *Pesticides and Water Quality* fact sheet for information on active ingredients in common pesticides that may cause water quality problems.

Pest control strategies and methods described in this publication are consistent with integrated pest management (IPM) concepts, and are based on scientific studies and tests in actual home and garden settings. Use suggested products according to label directions and dispose of unwanted or leftover pesticides at a household hazardous waste collection facility or event. For more information on pesticide disposal, visit **www.earth911.com**. No endorsement of specific brand name products is intended, nor is criticism implied of similar products that are not mentioned.

For more information, contact:

Bio-Integral Resource Center (BIRC), 510.524.2567, www.birc.org
University of California Cooperative Extension Master Gardeners in your area
University of California IPM website, www.ipm.ucanr.edu

February 2020

Stinging Insect Pest Management (Bees, Wasps and Yellowjackets)

In general, stinging insect pest control should be handled by a pest control professional such as Pestec. If there is ever an immediate risk to staff or the public from stinging insects call Pestec. PCards can be used for the service.

Contacts:
Pestec (pest control contractor): (408) 564-6196, pestec.com
Integrated Pest Management Coordinator: Julie Weiss, (650) 329.2117, Public Works–Watershed Protection

Overview:
The information below provides guidance on identifying pests, how and when to take action, and who to call for more information or help. This following guidance is based on the City's Integrated Pest Management (IPM) Policy–also known as "less-toxic pest control." Here is a link to the existing policy and the revised policy anticipated to be adopted in summer 2020. The goal of the IPM policy is to protect water quality in local creeks and San Francisco Bay, and to minimize risk to staff who use pesticides by reducing both the amount and the toxicity of pesticides used on City property.

To prevent or address stinging insect concerns:

1) an annual maintenance schedule should be established in early spring to prevent stinging insects from reoccurring in problem areas, e.g., knocking down paper wasp nests with a pole, and baiting/trapping for yellow jackets in early spring. Information is provided in the table below for staff to provide preventative and low-risk stinging insect problems;

2) hire a pest control company to handle stinging insect concerns, especially for yellowjackets. Pestec is most-frequently used by the City. If vendors other than Pestec are used they must be "IPM Certified" per the City's Municipal Regional Stormwater Permit and staff hiring the contractor must notify the City's IPM Coordinator so that pesticide application information is provided to the City after the service;

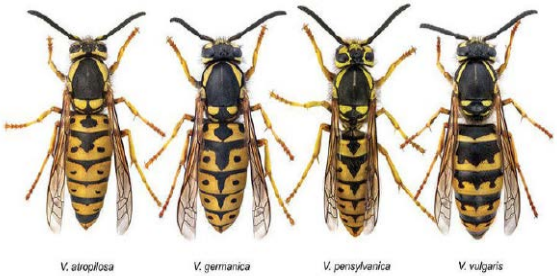
3) if a pest control company is unavailable and an urgent situation arises, staff–with supervisor approval– may purchase a recommended pesticide listed in *Table 1– Stinging Insect Management Protocol* from Stores, or as a last resort from a hardware store with a PCard. If a PCard purchase is made, notify the City's IPM Coordinator to receive an email authorizing the purchase to include with end-of-month PCard administration. Pesticides are not otherwise allowed for PCard purchase due to strict requirements of the City's Municipal Regional Stormwater Permit;

4) information about any staff application of a pesticide must be entered into the City's pesticide database after application.

If a staff member is stung, remove stinger as quickly as possible. Wash the wound and treat it with ice or antihistamine. If the sting is followed by severe symptoms or if it occurs on the neck or mouth, seek medical attention immediately. Swelling in these areas of the body can cause suffocation. For allergic individuals who carry an epinephrine injection device, this is only used according to a physician's instructions.

Table 1–Stinging Insect Management Protocol	
Identify Pest	**What to do**
Wasps/Paper Wasp  • Most wasp species are identified by long, dangling legs, brown-black and yellow bodies and gawky flight patterns • Nests are made out of papery material, connected to eaves, bushes, or unusual objects	**<u>Assess Risk</u>** Wasps are usually not aggressive but will sting if stepped on or swatted. If their nests are not causing a safety hazard leave them in place. Move slowly and quietly around agitated wasps and they will usually ignore you. Cone and caution tape off the area around the nests. Wait until evening or early morning to treat as wasps will be less active when cold. Wasp "guards" are few and slow. If nests are in areas where no staff or public harm is likely, then no action is necessary. **<u>Prevention and Physical Control</u>** In early Spring, inspect structure perimeter eaves and knock down new nests when it is cold or early in the morning with a stream of water, soapy water spray, or long pole. Clear away nest fragments remaining on structure or wasps may rebuild nests. Wasp traps can be used in spring to get ahead of the problem, too. **Chemical Control** (pesticide) Pesticides are not usually needed because a jet of water, or soapy water usually knocks down and destroys the nest. If soapy water cannot be applied, use: 1) Eco Exempt/Essentria Jet Wasp and Hornet Killer; (2-phenethyl proprionate 2%, rosemary oil 3%); or, 2) EcoSMART Organic TM Insecticide Wasp and Hornet Killer (Peppermint oil 1%, phenethyl propionate 0.5%, carbon dioxide (propellant)); 3) As a last resort only, staff may select another over-the counter wasp and yellowjacket killer. If assistance is needed call Pestec at (408) 564-6196.

Yellowjackets



- Yellow and black striped body
- Fast fliers
- Most nest in ground, others nest in structures
- Aggressive, defensive of nest.
- Up to 15,000 per nest

Assess Risk

Yellowjackets are more aggressive than most bees and wasps. **If there is an immediate risk to staff or the public call Pestec (pest control company) for removal at (408) 564-6196.** PCards can be used for the service. Nests that are off-trail and do not post a public risk should not be destroyed.

Prevention:

Avoid population build-up which starts in early spring and peaks in mid-summer:

- Use trash cans that have spring-loaded, or self-closing lids;
- Remove trash and clean trash cans frequently to reduce odors. Clean up other garbage sources that may be attracting yellowjackets to the area;
- Trap yellowjackets with bait traps in February or March with. Traps and the chemical attractants are in Stores or can be purchased at local hardware stores. Alternative bait can include fresh chicken, or cat food but this can be messy and more time-consuming. Place baits 200 feet from the area to be protected in intervals of 150 feet. Spring populations build up slowly and reach their peak in mid to late summer so early season trapping is effective;
- Place caution tape around the area to prevent human interaction with the nest.
- See attached yellowjacket factsheet for more information.

Chemical Control (pesticide use)

Staff should avoid destroying yellowjacket nests and instead call Pestec for service at (408) 564-6196. If using a pesticide to destroy a nest is urgent wear protective clothing, veil, legal safety gloves, and eye protection and use one of these products when it is cold or early in the morning:

1. Eco Exempt/Essentria Jet Wasp and Hornet Killer; (2-phenethyl proprionate 2%, rosemary oil 3%); or,
2. EcoSMART Organic TM Insecticide Wasp and Hornet Killer (Peppermint oil 1%, phenethyl propionate 0.5%, carbon dioxide (propellant));
3. Only as a last resort and if a pest control professional is not available, other sprays may be used.

Bees

Assess Risk

1. **Are bees swarming?** Only European honey bees swarm. If bees are clumping together on a sign or in vegetation, or flying in circles in a group, then they pose very low danger of stinging although the visually dramatic display can be alarming to the public. After the swarm has settled, place temporary stakes at least 15 feet away from the swarm, and use caution tape to keep people away. Do not try to remove the swarm, unless it does not disperse in three to four days. Public Information to share about bee swarms is available to email or post is located here and a sign about the colony can be printed and posted in the vicinity to inform pedestrians.

2. **Are bees in a colony (e.g., living in a hole in a tree or building)?**
   a. Determine if colony can remain in place (check with a supervisor if unsure). Assess:
      - Is the colony located above six feet? (less risk when the bees are flying back and forth)?
      - Is the colony in an area that is likely to be stepped on?
      - Are small children frequently in the area?
      - Is the colony located in a high traffic public area, such as the base of a tree next to a sidewalk?
      - Is the colony likely to get larger and pose more of a risk?
      - Is the colony particularly aggressive even when not provoked?
      - Have stings been reported?
      - Are residents amenable to keeping the colony in place and educating their neighbors?

   b. If colony is to remain intact, determine if caution tape is needed around the colony site. A sign about the colony can be printed and posted in the vicinity to inform pedestrians.

   c. If contractor or staff determine that the colony should be relocated, relocation should take precedence over destruction by contacting the Santa Clara County Bee Guild www.beeguild.org.

   d. If the colony poses a threat, cannot be transferred, and must be destroyed:
      - The City staff person responding to the call contacts the City's IPM Coordinator and Contractor to discuss actions taken to avoid destruction. If the IPM Coordinator is not available, the person responding to the call should make a decision based on the current risk under the advisement and notify the IPM Coordinator afterward.

   e. The location of the colony determines who pays for its removal (e.g., in a utility box, Utilities pays for it; in a tree next to a sidewalk Public Works/Trees covers cost).

CONTROLLING YELLOWJACKETS AROUND YOUR HOME

CONTROL YELLOWJACKETS AROUND YOUR HOME WITH THESE ECO-FRIENDLY PRODUCTS

Traps	Rescue!	Disposable Yellowjacket Trap, Reusable Yellowjacket Trap, OrnamenTrap Yellowjacket Trap
	Victor	Yellow Jacket Trap With Bait, Poison Free Yellow Jacket and Flying Insect Trap With Bait
	Seabright	Yellow Jacket and Wasp Trap and Bait: (800) 284-7363, www.seabrightlabs.com

Yellowjackets can be annoying and intimidating pests at picnics and around the barbecue, especially in late summer. On the positive side, they prey on many other insect pests such as caterpillars and flies.

Before you take steps to get rid of yellowjackets around your house or yard, be sure the problem is yellowjackets! Less aggressive flying insects, such as paper wasps, mud daubers, and honeybees, are often mistaken for yellowjackets.

YELLOWJACKET OR PAPER WASP?

Most often, paper wasps are mistaken for yellowjackets. Yellowjackets are shorter and rounder than paper wasps. A paper wasp's body is longer and thinner, with long, dangling legs. Yellowjacket nests are round and are enclosed in a papery shell with a small entrance hole at the bottom. They build their nests in abandoned rodent burrows and other holes in the ground, in attics, in wall voids, and in shrubs and trees. Sometimes they hang their nests from eaves. Paper wasp nests usually hang from eaves or porch ceilings and look like tiny umbrellas filled with six-sided cells.

Yellowjacket

Paper wasp

Yellowjacket nest

Paper wasp nest

Yellowjackets don't usually sting when they are looking for food—unless their nest is disturbed by a direct blow or the wasps inside detect vibrations. Mowing the lawn near an underground nest, construction work near a nest in a wall void, or even walking near a nest can provoke an attack by one or more yellowjackets. This is especially true if the nest has been disturbed before.

GETTING RID OF YELLOWJACKETS

If you often find several yellowjackets in your home, you may have a nest inside your walls. To protect yourself and your family from getting stung, call your local vector control district or a pest control company for help getting rid of the nest. Look for a pest control company that specializes in less-toxic pest control methods.

The pest control professional should only need to use poison bait if you have very large numbers of yellowjackets.

Keep yellowjackets from building a nest in your house.

- **Seal holes and cracks in foundations, walls, roofs, and eaves.**
- **Cover attic and crawl space vents with fine mesh insect screen.**
- Yellowjackets scavenge for meat and sweet foods and drinks in outdoor garbage and recycling bins. **Clean recyclables before throwing them in the bin and keep garbage cans clean and tightly covered.**

TRAPPING YELLOWJACKETS

Trapping can help control yellowjackets if there aren't too many. You can find both disposable and reusable traps in home and garden centers.

- **Follow label directions** for setting traps, disposing of trapped yellowjackets, and cleaning reusable traps.
- A **few hours before you bring food outdoors, set traps around the edge of your yard.** Make sure traps are well away from picnic areas, to lure yellowjackets away from people and food.
- **If one of the traps is not attracting yellowjackets, move it.** If you see yellowjackets but none of the traps is attracting them, try changing the bait.
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- **Do not wear perfumes.** Use unscented products on your hair and body.
- **Avoid going barefoot,** especially when walking on grass or other groundcover.
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- **Wear light-colored clothing without patterns.**
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University of California Cooperative Extension Master Gardeners in your area
University of California IPM website, www.ipm.ucanr.edu

February 2020

Attachment iii.

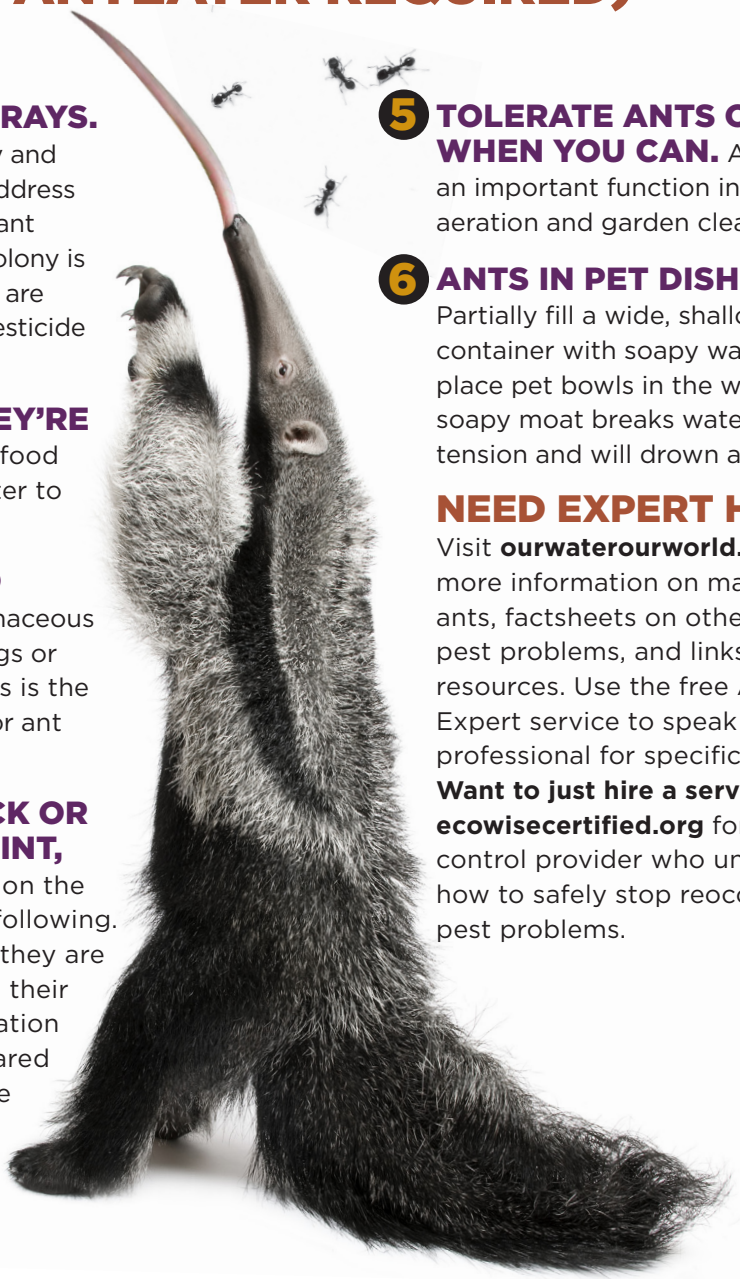
Ants

CITY OF
PALO
ALTO

PROBLEMS WITH ANTS?

MANAGE SEASONAL ANTS LIKE A PRO.

(NO ANTEATER REQUIRED)



1 DON'T USE ANT SPRAYS. Sprays expose your family and pets to pesticides. They address less than 1% of the actual ant infestation (most of the colony is underground), and sprays are the top source of creek pesticide pollution in the Bay Area.

2 REMOVE WHAT THEY'RE AFTER. Clean up ants, food and spills with soapy water to remove their scent trail.

3 CAULK HOLES AND CRACKS. Apply diatomaceous earth (DE) in wall openings or cracks before sealing. This is the most effective measure for ant proofing your home.

4 IF YOU CAN'T BLOCK OR FIND AN ENTRY POINT, place an ant bait station on the trail the ants have been following. Resist killing the ants as they are carrying the bait back to their nest. Remove the bait station when ants have disappeared so you don't attract more ants into your house.

5 TOLERATE ANTS OUTSIDE WHEN YOU CAN. Ants serve an important function in soil aeration and garden cleanup.

6 ANTS IN PET DISHES? Partially fill a wide, shallow container with soapy water and place pet bowls in the water. The soapy moat breaks water surface tension and will drown ants.

NEED EXPERT HELP?

Visit **ourwaterourworld.org** for more information on managing ants, factsheets on other common pest problems, and links to more resources. Use the free Ask-the-Expert service to speak with a professional for specific advice. **Want to just hire a service?** Visit **ecowisecertified.org** for a pest control provider who understands how to safely stop reoccurring pest problems.

WWW.CLEANBAY.ORG 650.329.2122

REGIONAL WATER QUALITY CONTROL PLANT

Individuals with disabilities who require accommodations to access City facilities, services or programs, or who would like information on the City's compliance with the Americans with Disabilities Act (ADA) of 1990, may contact the City's ADA Coordinator at (650) 329-2550 (voice) or email ada@cityofpaloalto.org. 07/18 Printed on 100% post-consumer recycled paper, bleached without chlorine.

Attachment iv.

Rodents

CITY OF
PALO
ALTO

OH RATS!

KEEP RODENTS OUT OF THE HOME AND KIDS, PETS AND WILDLIFE SAFE.

Poison baits are often flavored or scented like food. This poses life-threatening risks to children if they are accidentally consumed. Pets and wildlife, such as owls, hawks and bobcats, are also sickened and often die when they feed directly on the bait, or when they receive secondary poisoning by eating a poisoned rodent.

Use these safer approaches recommended by professionals:

1. **REMOVE RODENT SHELTER, FOOD AND WATER.** Keep food in the refrigerator or in puncture-proof containers with tight-fitting lids. Do not leave pet food out overnight. Remove rodent habitat like ivy and debris, and store lumber away from structures at least 18 inches above the ground. Keep vegetation at least three feet away from buildings. Clean up over-ripe fruit off the ground.
2. **BLOCK POINTS OF ENTRY.** Sprinkle baby powder or flour along suspected areas to detect rodent tracks. Mice can squeeze through openings as small as a pencil diameter. Stuff scouring pads and copper mesh into large gaps and seal holes with cement, spackle or caulk. Use door sweeps and weather stripping for doors and windows.
3. **IF ABSOLUTELY NECESSARY,** use snap traps properly-sized for the rodent problem you have. Bait with peanut butter and place traps in active rodent areas with the trigger facing the wall and out-of-reach from kids, pets and wildlife. **Never use glueboards.** They are inhumane, can easily harm other animals, and may result in having to address a still-living but trapped animal.
4. **SECURE DEAD RODENTS, NESTS AND DROPPINGS IN A SEALED PLASTIC BAG AND DISPOSE IN THE OUTDOOR TRASH.** Wear rubber gloves and wipe all surfaces with hydrogen peroxide or other disinfectant.
5. **NEED TO HIRE A PROFESSIONAL?** Visit **ourwaterourworld.org** and click on "Pest Control Operators" to find companies that use least-toxic rodent control, or use our free ***Ask Our Expert*** service to speak with a professional.

For more information about less toxic pest control, visit **ourwaterourworld.org**

REGIONAL WATER QUALITY CONTROL PLANT

For more information about Palo Alto's Watershed Protection Programs visit cleanbay.org or call (650) 329-2122.

Attachment v.

Other Pesticide Information and Our Water Our World Resources

CITY OF PALO ALTO

2020 OWOW Product List by Manufacturer

Product Name (alphabetical)	Active Ingredient
Actinovate AG	Streptomyces lydicus
Actinovate Lawn & Garden	Streptomyces lydicus
Actinovate SP	Streptomyces lydicus
Advance 360A Dual-Choice Bait Station	Abamectin
Agricultural Lime	Dolomite or oyster shell lime
Alaska Organic Fertilizer	Organic fertilizer line
Alaska Fish Emulsion	Fish solids fertilizer
Alfalfa Meal	100% organic alfalfa meal
Amdro Mouse Trap	Snap trap
Amdro Rat Trap	Snap trap
Amdro Mole, Vole, and Gopher Blocker wire	Mesh wire
Answer Boric Acid Insect Dust Kills Roaches by JT Eaton	Orthoboric acid
Aphid Alarm	Non-toxic lure (Pheromone)
Asian Ladybug Lures	Pheromone
Arborjet Eco-1 Garden Spray Vegan insect,disease&mite	Linseed Oil, Thyme Oil, Peppermint Oil
Atlas Fish Emulsion	Organic
Avenger Weed Killer	d-limonene
Avert DF Dry Flowable Cockroach Bait	Abamectin
Avon -Skin -So- Soft	IR3535
Avon -Skin -So-Soft Bug Guard plus Picaridin	Picaridin
AXXE Broad Spectrum Herbicide	Ammonium Nonanoate
AzaGuard	Azadirachtin
Aza Max	Azadirachtin
Azasol by Arborjet	Azadirachtin
Azatrol Hydro	Azadirachtin
Azera Garden by Monterey (see Monterey Products)	Azadirachtin, Pyrethrins
Bat Guano, various brands	100% organic bat guano
Bed Bug Detection System	Monitoring device for bedbugs
Bed Bug Patrol	Clove oil,peppermint oil,sodium laurel sulfate
Beneficial Bug Booster	Pheromones
Biocare Aphid and Whitefly Trap	Sticky trap
Biocare Birdseed Moth Trap	Pheromones
BioCare BioGlue Sticky Insect Glue	Sticky glue for insect trapping
BioCare Bug Stix (for gnats and other small bugs)	Sticky trap

2020 OWOW Product List by Manufacturer

Product Name (alphabetical)	Active Ingredient
BioCare Clothes Moth Trap	Pheromones plus sticky trap
Biocare Cockroach Trap	Pheromones plus sticky trap
Biocare Codling Moth Trap	Pheromones plus sticky trap
Biocare Earwig Trap	Container for attractants
Biocare First Response Bed Bug Monitor	Sticky trap for monitoring with heat pack and pheromone
Biocare Flea Trap	Light plus sticky trap
Biocare Flour and Pantry Pest Trap	Pheromone trap
Biocare Fly Trap	Trap plus lure
Biocare Fruit Fly Counter Trap	Sticky trap with lure
Biocare Glass Kitchen Fruit Fly Trap	Pheromones plus sticky trap
Biocare Gnat Stix	Yellow sticky traps
Biocare Indoor & Outdoor Stink Bug Traps	Pheromone lure and sticky trap
Biocare Kitchen Fruit Fly Trap	Pheromones
Bio Care Naturals Garden Fungicide	Clove oil, potassium sorbate inerts: potassium bicarbonate,soap, glycerol, water
BioCare Naturals Home Protect Kill and Repel	Lemon Grass Oil , garlic oil. inerts: citric acid, vanillin, soybean oil, isopropal
Bio Care Naturals Weed and Grass Killer	Citric acid inerts: sodium acetate, vinegar, glycerol , water, isopropol
Biocare Silverfish and Spider Trap	Sticky trap plus protein bait
Biocare Window Fly Trap	Sticky trap plus lure
Biocare Yellowjacket and Wasp Trap	Trap plus lure
BioSafe AXXE Broad Spectrum Herbicide	Ammonium Nonanoate
Biosafe Disease Control	Hydrogen Peroxide
Biosafe Mold & Mildew Control	Hydrogen Peroxide, Peroxyacetic Acid
BioSafe Weed & Grass Killer	Ammonium Nonanoate
BioSafe Weed Control	Ammonium Nonanoate
Bio-Turf	Blood meal, bone meal, feather meal
Bird B Gon Flash Tape	Refelective tape
Bird Scare Tape	Reflective tape
Bird X Irritape	Reflective tape
Bird X Scare Eye	Eye ballon bird deterrent
Bird X Stainless Steel Spikes	Deterrent spikes
Bite Blocker, see mosquito fact sheet	Soybean oil, coconut oil, geranium oil
Black Flag Fly Motel	Sticky trap
Black Flag Fly Paper	Attractant and sticky trap
Black Flag Fly Stik	Attractant and sticky trap

2020 OWOW Product List by Manufacturer

Product Name (alphabetical)	Active Ingredient
Black Flag Pantry Pest Trap	Pheromone and sticky trap
Black Flag Window Fly Trap	Sticky trap
Black Flag Roach Motel	Pheromones or sticky trap
Black Gold Potting Mix	Organic
Blood Meal, various brands	100% organic blood meal
Bone Meal, various brands	100% organic bone meal
Bonide Products Listed Below:	
All Seasons Horticultural & Dormant Spray Oil	Mineral Oil
Bat Magic repels bats	Peppermint oil, spearmint oil
Boric Acid Roach Powder	Orthoboric acid
Bulb Dust	Cedar oil , garlic powder, dried blood
Bug and Slug	Iron phosphate, Spinosyn A&D
Burn Out Fast Acting Weed and Grass Killer	Citric acid , clove oil
Captain Jack's Deadbug Brew	Spinosyn A and D
Captain Jack's Deadbug Brew Dust	Spinosyn A and D
Citrus, Fruit & Nut Orchard Spray	Pyrethrins, sulfur
Copper Fungicide	Copper octanoate
Diatomaceous Earth Crawling Insect Killer	Diatomaceous earth
Go-Away Deer and Rabbit Repellent	Capsaicin and other capsaicinoides
Go Away- Rabbit, Dog and Cat Repellent	White Pepper, cinnamon oil, thyme oil
Go-Away Scent-inal Deer Repellent	Peppermint oil, cinnamon oil, clove oil
Home Safe Household Insect Killer	Cedarwood oil, Citronella oil, clove oil
Hot Pepper Wax Animal Repellent, Shot Gun	Capsaicin
Insecticidal Soap	Potassium salts of fatty acids
Insecticidal Soap for Houseplants	Potassium salts of fatty acids
Insecticidal Super Soap	Potassium salts of fatty acids, spinosad
Maize Weed Preventer	Corn gluten meal
Mite X	Cottonseed oil, clove oil, garlic extract, sorbitol, oleic acid, lauric acid, stearic acid, molasses, sucrose
Mite-x for Houseplants	Cottonseed oil, clove oil, garlic extract, sorbitol, oleic acid, lauric acid, stearic acid, molasses, sucrose
Molemax	Castor oil, fuller's earth and water
Molemax hose end	Castor Oil
Moss Max	Potassium soap of fatty acid
Mosquito Beater wsp	Bacillus thuringiensis israelensis
Mosquito Beater Area Mosquito Repellent hose- end	Cedar oil, citronella oil, sodium lauryl sulfate, geranium oil, lemon grass oil

2020 OWOW Product List by Manufacturer

Product Name (alphabetical)	Active Ingredient
Mosquito Beater Area Mosquito Repellent granule	Citronella oil, garlic, geranium oil, cedarwood oil, lemongrass oil
Mosquito Plunks SWP	Bacillus thuringiensis israelensis
Mouse Magic repellent	Peppermint oil, spearmint oil
Neem Oil	Clarified hydrophobic extract of neem oil
Rat Magic repels rodents	Cedar oil, castor oil, clove oil,
Revenge Fly Beater Repellent	Cedar Oil, Citronella Oil, Clove oil
Revenge Granular Ant Bait	Orthoboric Acid
Revenge Liquid Ant Bait, 4 refillable stations	Boric Acid 5.4%
Revenge Prefilled, Liquid Ant Baits 3 pack	Disodium octaborate tetrahydrate 1%
Revenge No Escape Huge Fly Reel	Attractant and sticky tape
Revenge No Escape Mini Fly Reel	Attractant and sticky tape
Revitalize Biofungicide	Bacillus amyloliquefaciens
Rose Rx 3 in 1	Clarified hydrophobic extract of neem Oil
Sea Kelp	Liquid kelp
Scent-inal Deer Repellent System	Peppermint oil, cinnamon oil, clove oil
Slug Magic	Iron phosphate
Snake Stopper	Oils of cedar, cinnamon, and clove
Sulfur Plant Fungicide	Sulfur
Thuricide	Bacillus thuringiensis "kurstaki"
Tomato and Vegetable 3 in 1 ready to spray	Sulfur, pyrethrins
Tomato and Blossom spray	Calcium
Weed Beater Fe	Iron HEDTA (FeHEDTA)
Wilt Stop	Pinene
Botanicare Hydroguard Bacillus root inoculant	Microbial product
Botanicare PURE Natural and Organic Plant Food	Organic
Bug Blaster	Nozzle for blasting off bugs with water
Bug Buster -O (Also see under Monterey Products)	Pyrethrins
Buggy Beds Bed Bug Glue Trap	Sticky trap
Bush Doctor Products see under Fox Farm	
Care Free Mosquito Free Water	Potassium sorbate, sodium lauryl sulfate, (Inerts are citric acid, sorbitol, yeast and water)
Catch Master Bed Bug Detection System	Monitor and trap for bedbugs
Cedar Zone Insect Repellent	Cedar oil, sodium laurel sulfate
Cedar Zone Prill Insect Repellent	Cedar oil
Central Coast Products Green Cleaner	Soybean oil 8001-22-7,sodium laurel sulfate68585-47-7

2020 OWOW Product List by Manufacturer

Product Name (alphabetical)	Active Ingredient
Chickety Doo Doo	Poultry manure
ClimbUp Insect Interceptor	Monitor and barrier for bedbugs
Cloud Cover	Natural polymer
Combat Products Listed Below:	
Ant Killing Bait	Hydramethylnon (containerized bait only)
Source Kill 4 Ant killing bait stations	Hydramethylnon (containerized baits only)
Liquid Ant Bait stations	Disodium octaborate tetrahydrate
Roach Killing Bait (for large Roaches)	Hydramethylnon (containerized bait only)
Roach Killing Bait (for Small Roaches)	Hydramethylnon (containerized bait only)
Roach Prevention (for large or small roaches)	Hydramethylnon (containerized bait only)
Source Kill 5 for roaches	Hydramethylnon (containerized bait only)
Contech Cat Stop Sprinkler	Sprinkler deterrent
Contech Mini Scare Crow Cat repelling sprinkler	Sprinkler deterrent
Contech Scare Crow Motion Activated Sprinkler	Sprinkler deterrent
Contech Window Fly Trap	Food scent lure and trap
Contech Slugs Away Slug and Snail Electronic Fence	Electronic Screen
Copper Soap Fungicide	Copper octanoate
Copper Tape (various types)	Copper barrier for slugs and snails
Corry's Slug and Snail Copper Tape Barrier	Copper foil barrier for slugs and snails
Cottonseed Meal , variuos brands	100% organic cottonseed meal
Cueva Copper Soap Fungicide	Copper octanoate
Cutter Lemon Eucalyptus Insect Repellent	Oil of lemon eucalyptus
Cutter Natural Bug Control rts	Lemon grass oil, potasium sorbate
Cutter Naturals Fogger Outdoor	Lemon grass oil
Cutter Naturals Insect Repellent	Geraniol, soybean oil, sodium laurel sulfate, potassium sorbate
Cutworm Shield	Plastic sheath for stems
CVS Ant Killer Bait	Sodium tertraborate, ortho boric acid
CYD-X	Cydia pomonella granulovirus
DEKKO Silverfish Paks	Boric acid
Deer Away, Havahart	Putrescent whole egg solids
Deer Away Big Game Repellent, Havahart	Putrescent whole egg solids
Deer Off! (see Havahart Deer Off! below)	Capsicum, Garlic, Putrescent whole eggs solids
Deer Scram (by Epic)	Dried blood, garlic,whole pepper, cloves
Deer Stopper	Whole eggs, oils of rosemary, mint,sodium chloride,potassium sorbate

2020 OWOW Product List by Manufacturer

Product Name (alphabetical)	Active Ingredient
De Fence by Havahart Deer & Rabbit Repellent	Putrescent whole egg solids, dried blood
Diatect V Organic Insect Control	Silicon Dioxide, pyrethrins
Diatomaceous Earth	DE
Diggit hand weeder	Dandelion and weed hand tool
Doktor Doom Spider Mite Knockout	Pyrethrins
Dolomite Lime	Dolomite lime
Down to Earth Organic Fertilizers	Organic fertilizer line
Chelated Micronutrient Plant Food	Organic and natural
Organic Fertilizers	Organic and natural fertilizer line
Bat Guano	Organic
Blood Meal	Organic
Bone Meal	Organic
Compost Maker	Organic and natural
Cottonseed Meal	Organic
Fish Bone Meal	Organic
Fish Meal	Organic
Kelp Meal	Organic
Liquid Solution	Organic and natural
New Life All Purpose Fertilizer	Organic and natural
Seaweed Extract	Organic and natural
Dr. Earth Organic Acid Lover's Fertilizer	Organic and natural
Dr. Earth Organic Bud and Bloom Starter Fertilizer	Organic and natural
Dr. Earth Organic Bulb Food	Organic and natural
Dr. Earth Organic Flower Garden Fertilizer	Organic and natural
Dr. Earth Organic Fruit Tree Fertilizer	Organic and natural
Dr. Earth Organic Palm , Tropical, and Hibiscus Fertilizer	Organic and natural
Dr. Earth Organic Rose and Flower Fertilizer	Organic and natural
Dr. Earth Organic Starter Fertilizer	Organic and natural
Dr. Earth Organic Tomato , Vegetable, and Herb Fertilizer	Organic and natural
Dr. Earth Super Natural Lawn Fertilizer	Organic and natural
Dr. Earth Final Stop Disease Control Fungicide	Rosemary oil, cloves, clove oil, peppermint oil, malic acid
Dr. Earth Final Stop Fruit Tree Insect Killer	Rosemary oil, sesame oil, peppermint oil, malic acid, garlic extract
Dr. Earth Final Stop Pest Control Killer	Rosemary oil, seame oil, peppermint oil, thyme oil, cinnamon oil, garlic extract
Dr. Earth Final Stop Rose & Flower Insect Killer	Rosemary oil, seasme oil, peppermint oil, thyme oil, cinnamon oil, malic acid, garlic extract

2020 OWOW Product List by Manufacturer

Product Name (alphabetical)	Active Ingredient
Dr. Earth Final Stop Slug and Snail Killer	Rosemary oil, seame oil, peppermint oil, thyme oil, cinnamon oil, garlic extract
Dr. Earth Final Stop Vegetable Insect Killer	Rosemary oil, seame oil, peppermint oil,thyme oil, cinnamon oil,malic acid, garlic extract
Dr. Earth Final Stop Yard & Garden Insect Killer	Rosemary oil, sesame oil, peppermint oil, thyme oil. cinnamon oil, garlic extract
Dr. Earth Final Stop Weed & Grass Herbicide	Citric acid, cinnamon oil, soybean oil, rosemary oil, sesame oil, thyme oil
Dr. T's Products Listed Below:	
Cobweb Eliminator	Sodium laurel sulfate, coriander
Deer & Rabbit Repelling Granules	Putrescent whole egg solids,oils of garlic, mint
Flea and Tick Repelling Granules	Oils of mint, lemmon grass,cedar, cinnamon
Mole Out Repelling Granules	Castor oil
Natural RX	Oils of mint,garlic,lemon grass
Whole Control Mole and Vole repellent	Castor oil
Drop in the Bucket Mouse Trap	Trap and lure set
DUSTMITE and FLEA CONTROL	Disodium Octaborate Tetrahydrate (carpet treatment)
Dynamite Mater Maker	Organic, slow release
Dynamite Organic All Pupose Fertilzer	Organic, slow release
E.B. Stone Products Listed Below:	
Compost Maker	Natural and organic
Fish Emulsion with Kelp	Organic
E.B. Stone Naturals Ag Lime	Dolomite lime
E.B. Stone Naturals Granular Gypsum	Natural calcium
E.B. Stone Naturals PH Adjustor plus	Sulfur
E.B. Stone Soil Sulfur	Sulfur
E.B. Stone Naturals Sul Po Mag	Sulfate of potash magnesia
Alfalfa Meal	Organic
All Purpose Plant Food	Organic and natural
Azalea Camellia, and Gardenia Food	Organic
Bat Guano	Organic
Bone Meal	Organic
Blood Meal	Organic
Bulb Food	Organic and natural
Citrus and Fruit Tree Food	Organic and natural
Cottonseed Meal	Organic
Fruit, Berry and Vine Food	Organic and natural
Hibiscus and Palm Food	Organic and natural

2020 OWOW Product List by Manufacturer

Product Name (alphabetical)	Active Ingredient
Japanese Maple Food	Organic and natural
Kelp Meal	Organic
Nature's Way Lawn Food	Organic and natural
Rhody, Azalea, and Camellia Food	Organic and natural
Rose and Flower Food	Organic and natural
Sure Start	Organic and natural
Tomato and Vegetable Food	Organic and natural
Tree and Shrub Food	Organic and natural
Ultra Bloom	Organic and natural
Earth Juice	Liquid organic fertilizer line
Earth-tone insecticides	See Espoma
Eco Logic Products by Liquid Fence:	
Eco Logic Ant and Roach Killer 2	Lemongrass oil
EcoLogic Bed Bug Killer 2	Lemongrass oil
Eco Logic Flying Insect Killer 2	Lemongrass oil
Eco Logic Home Insect Control 2	Lemongrass oil, potassium sorbate
Eco Logic Lawn and Yard Insect Killer RTU 3	Lemongrass oil , potassium sorbate
Eco Logic Lawn Insect Granular 2	Mint Oil, geraniol
Eco Logic Weed and Grass Killer 3	Rosemary oil,cinnamon oil, sodium laurel sulfate
Ecology Works Dust Mite and Flea Control	Disodium Octaborate Tetrahydrate (carpet treatment)
Ecoscraps All Purpose Plant Food	Natural and Organic
Ecoscraps Herbs and Leafy Greens Plant Food	Natural and Organic
Ecoscraps Rose and Flower Plant Food	Natural and Organic
Ecoscraps Tomato and Vegetable Plant Food	Natural and Organic
EcoSMART Ant and Roach Killer 2	Rosemary oil, cinnamon oil
EcoSMART 3 in 1 Rose and Flower Care rtu	Rosemary oil,thyme oil, sodium laurel sulfate,peppermint oil
EcoSMART Flying Insect Killer	Peppermint oil, cinnamon oil, sesame oil
EcoSMART Garden Insect Killer	Rosemary oil, peppermint oil, thyme oil, clove oil
EcoSMART Insect Killer Granules	Clove oil, thyme oil, corn cob, wintergreen oil
EcoSMART Mosquito Fogger	Gerinol, rosemary oil, peppermint oil
EcoSMART Organic Insect Dust	2-Phenethyl Proprionate, thyme oil
EcoSMART Organic Garden Fungicide	Rosemary oil, sodium laurel sulfate
EcoSMART Organic Home Pest Control	2-Phenethyl proprianate,: clove oil, rosemary oil, peppermint oil, thyme oil
EcoSMART Lawn Insect Killer	2-Phenethyl proprianate,: sodium laurel sulfate, eugenol, thyme oil, sesame oil

2020 OWOW Product List by Manufacturer

Product Name (alphabetical)	Active Ingredient
EcoSMART Mosquito and Tick Control	2-Phenethyl proprianate: sodium laurel sulfate, peppermint oil, rosemary oil, eugenol, thyme oil, sesame oil
EcoSMART Spider Blaster	Rosemary oil
EcoSMART Weed and Grass Killer	2-Phenethylproprianate,eugenol,sodium laurel sulfate
Enforcer Products Listed Below:	
Overnite Flea and Insect Trap	Trap
Overnite Flea and Insect Trap refills	Lure and sticky pad
Roach Ridd with Boric Acid	Boric acid
Escar-Go	Iron phosphate
Espoma Bone Meal	Bone meal
Espoma Citrus Tone	Organic
Espoma Dried Blood	Dried Blood
Espoma Bloom	Organic
Espoma Earth-tone 3 in 1 Disease Control	Sulfur, pyrethrins
Espoma Earth-tone Garden Fungicide	Copper octanoate
Espoma Earth-tone Insect Control	Pyrethrins, canola oil
Espoma Earth-tone Slug and Snail Control	Iron phosphate
Espoma Flower-tone	Organic
Espoma Garden Lime	Pelletized dolomite lime
Espoma Garden Sulfur	Sulfur
Espoma Garden-tone	Organic
Espoma Grow!	Organic
Espoma Holly Tone	Organic
Espoma Organic Brand 3 in 1 Neem Oil	Clarified Hydrophobic Extract of Neem Oil
Espoma Organic Iron-tone	Organic and natural
Espoma Organic All Seasons Lawn Food	Organic and natural
Espoma Organic Fall Winterizer Lawn Food	Organic and natural
Espoma Organic Summer Revitalizer Lawn Food	Organic and natural
Espoma Plant Tone	Organic
Espoma Start!	Organic
Exel LG Systemic Fungicide	Mono& di-potassium salts of phosphorous acid
Facinations Spider Catcher	Grab device for catch and release
Ferti-lome Natural Guard - see Natural Guard	
Ferti-lome MoleGo rts	Castor oil
Ferti-lome MoleGo Granules	Castor oil

2020 OWOW Product List by Manufacturer

Product Name (alphabetical)	Active Ingredient
Ferti-lome Triple Action Insecticide, Miticide,Fungicide	Pyrethrins, clarified hydrophobic extract of neem oil
Fiesta Turf Weed Killer	Iron HEDTA (FeHEDTA)
Final Flight Fly Trap	Fly Trap and pheromone lure
Final Flight Fly Lure	Pheromone attractant
Fish Meal , various companies	Organic
Fly and Bug Ribbon	Sticky ribbon
Fox Farm Products Listed Below:	
Big Bloom Liquid Plant Food	All organic
Bush Doctor Force of Nature Fungicide	Cottonseed oil, corn oil, garlic oil
Bush Doctor Force of Nature Miticide	Cottonseed oil, corn oil, garlic oil
Bush Doctor Kelp Me Kelp	Kelp
Bush Doctor Sledge Hammer	Saponin derived from Yucca schidigera
Happy Frog Jump Start & Happy Frog Products	All organic
Peace of Mind Products	All organic fertlizer line
Fresh Cab Botanical Rodent Repellent	Balsam fir oil
Garden Elements Natural and Organic Fertilizers	Organic and slow release
Garden Elements Natural and Organic Fruit Tree and Vine	Organic and slow release
Garden Elements Natural and Organic Rhody,Azalea, and Holly	Organic and slow release
Garden Elements Natural and Organic Starter	Organic and slow release
Garden Elements Natural and Organic Tomato and Vegetable	Organic and slow release
Garden Lime	Dolomite or oyster shell
Garden Safe	See Schultz Products
Garden Tech Worry Free Brand ready to use dust	Pyrethrins
Gardener and Bloome G&B Organics Fertilizers Kellogg's	Organic and natural
Gardener and Bloome G&B Organics All Purpose	Organic and natural
Gardener and Bloome G&B Organics Azalea Camellia	Organic and natural
Gardener and Bloome G&B Organics Bud and Bloom	Organic and natural
Gardener and Bloome G&B Organics Citrus and Fruit Tree	Organic and natural
Gardener and Bloome G&B Organics Palm, Tropical, Hibiscus	Organic and natural
Gardener and Bloome G&B Organics Paradise	Organic and natural
Gardener and Bloome G&B Organics Rose and Flower	Organic and natural
Gardener and Bloome Fertilizers from Kelloggs	Organic and natural
Gardeneer Tree Wrap	Protective limb and trunk wrap
Garlic Barrier	Garlic

2020 OWOW Product List by Manufacturer

Product Name (alphabetical)	Active Ingredient
Garlic Research Lab Mosquito Barrier	Garlic, citric acid , potassium sorbate
Get Lost Wasp Natural Deterrent	Visual nesting deterrent
Gnatrol	Bacillus thuringiensis isrealensis
goGnats!	Cedar oil, sodium laurel sulfate
Gonzo Dead End Gopher Trap (the quickset revenge	Trap
Gonzo Gopher Shield	Wire netting barrier
Gopher Hawk	Snare trap for gophers and moles
Gopher Scram (by Epic)	Castor oil, dried blood ,linseed oil,clove oil,garlic oil
Gourmet Liquid Ant Bait (for Ant Pro System)	Disodium Octaborate Tetrahydrate 1%
Gourmet Liquid Ant Bait Prefilled Ready to Use Bait Station	Disodium Octaborate Tetrahydrate 1%
Grampa's Weeder Tool	Long handle weed remover
Granular Soil Sulfur	Sulfur
Green it Corn Gluten Weed Preventer hose end (by Environmental Factor)	Corn gluten meal
Green Sand	Green sand
Green Cleaner by Central Coast Garden Products	Soybean oil (8001-27-7), sodium laurel sulfate (68585-47-7)
Green Cure Fungicide	Potassium bicarbonate
Grow More Products Listed Below:	
Diatomaceous Earth	Diatomaceous Earth
Fish Meal	Organic slow release fertilizer
Herb Food	Organic
Soft Rock Phosphate	Natural mineral
Seaweed Extract	Liquified organic kelp
Vegetarian All Purpose	Organic
Grow Power Pure and Natural Snail and Slug Away	Cinnamon oil
Gypsum	Gypsum
HAXNICK'S Slug Busters Slug and Snail Trap	Plastic trap
HAXNICK'S Strim Guard Tree Trunk Protector	Plastic sheath
Harris Ant Baits	Sodium Tetraborate Decahydrate (Borax)
Harris Bed Bug Barrier Tape	Sticky barrier
Harris Bed Bug Killer Diatomaceous Earth	Silocon dioxide from diatomaceous earth, other elemental oxides
Harris Bed Bug Powder	Malic acid, 2-Phenethylpropionate
Harris Irresistable Lure Bed Bug Traps	Sticky traps
Harris Famous Boric Acid Roach Tablets	Boric acid
Harris Bed Bug Traps early detection	Trap and lure

2020 OWOW Product List by Manufacturer

Product Name (alphabetical)	Active Ingredient
Harris Irristable Lure Roach Traps	Trap and lure
Harris Iresistable Lure Spider Traps	Trap and lure
Harris Borax Liquid Ant Killer	Sodium Tertraborate Decahydrate (Borax)
Harris Pantry Moth Trap	Trap and lure
Harris Rat Gator Rodent Trap	Snap trap
Harris Rodent Repellent spray	Peppermint Oil, Cinnamon Oil
Harris Termite Powder	Disodium Octaborate Tetrahydrate
Havahart Critter Ridder	Oil of black pepper,piperine,capsaicin
Havahart Deer Off!	Capsaicin and related capsaicinoids, garlic
Havahart De-Fence	Putrescent whole egg solids
Havahart Mole Repellent	Castor oil
Havahart Critter Ridder Sprinkler	Motion detector sprinkler
Havahart Snake Sheild repelling granules	Cedar Oil, Cinnamon Oil , Clove Oil Soduium Laurel Sulfate
Hinder Deer and Rabbit Repellent	Ammonium soaps of higher fatty acids
Hot Pepper Wax Insect Repellent	Capsaicin
Hot Shot Bed Bug Glue Trap	Sticky trap
Hot Shot Bed Bug and Flea Killer Powder	Silicon dioxide
Hot Shot Bed Bug Interceptor	Bed Bug barrier trap
Hot Shot Max Attrax Roach Killing Powder	Boric Acid powder
Hot Shot Natural Ant and Roach Killer	Lemon Grass Oil
Hot Shot Natural Flying Insect Killer	Lemon Grass Oil
Hot Shot Natural Home Insect Control	Lemon Grass Oil , potassium sorbate
Hot Shot Natural Wasp and Hornet Killer	Lemon Grass Oil
Indoor Fly Stick	Sticky trap
Intruder The Better Mouse Trap	Snap trap
IV Organics 3 IN 1 Plant Guard paint	Castor oil, Cinnamon oil, Clove Oil, Cedarwood oil, Garlic Oil, Peppermint Oil , Rosemary oil
IV Organics 3 IN 1 Plant Guard spray	Castor oil, Cinnamon oil, Clove Oil, Cedarwood oil, Garlic Oil, Peppermint Oil , Rosemary oil
Jobes Fertilizer Spikes (various types)	Encapsulated fertilizer
Jobe's Orgainics Fertilizer Spikes All Purpose	Organic
Jobe's Organics Fertilizer Spikes For Containers& Bedding Plants	Organic
Jobe's Fertilizer Spikes for Roses& Flowering Shrubs	Organic
Jobe'sOrganics Fertilizer Spikes For Vegetables	Organic
Jobe's Organics All Purpose	Organic and slow release
Jobe's Organics Azalea, Camellia, Rhododendron	Organic and slow release

2020 OWOW Product List by Manufacturer

Product Name (alphabetical)	Active Ingredient
Jobe's Organics Compost Starter	Organic and slow release
Jobe's Organics Fast Start	Organic and slow release
Jobe's Organics Fruit and Citrus	Organic and slow release
Jobe's Organics Palm	Organic and slow release
Jobe's Organics Rose and Flower	Organic and slow release
Jobe's Organics Vegetable and Tomato	Organic and slow release
John & Bob's Soil Optimizer	Organic
JH Biotech Inc- Aqua Power 5-1-1	Organic
JMS Stylet Oil	Paraffinic oil
J.T. Eaton Answer Boric Acid Insect Dust	Orthoboric acid
J.T. Eaton Fly Paper	Sticky paper
JT Eaton Jaws Rat and Chipmunk Trap	Snap trap
JT Eaton Kills Bed Bugs (DE)	Silicon dioxide from diatomaceous earth
JT Eaton Kills Roaches Boric Acid Insect Dust	Orthoboric acid
JT Eaton Liquid Ant Bait	Boric acid
JT Eaton Spider and Cricket Glue Traps	Glue trap
JT Eaton Stick- A-Fly glue trap	Sticky glue trap
Jungle Formula Outdoor &Camping Spray Repellent	IR3535 (DEET Free)
KM Ant Pro Ant Control System bait and stations	Disodium octaborate tetrahydrate liquid plus separate trap
Kaligreen	Potassium bicarbonate
Kellog Organic Plus All Purpose Fertilzer	Organic and natural
Kellogg Organic Plus Fish & Kelp Fertilizer	Organic and natural
Kellogg Organic Plus Fruit Tree Fertilizer	Organic and natural
Kellogg Organic Plus Lawn Food	Organic and natural
Kellog Organic Plus Palm,Tropical, Hibiscus	Organic and natural
Kellog Organic Plus Rhododendron, Azalea, Camellia Fertilizer	Organic and natural
Kellogg Organic Plus Rose & Flower Fertilizer	Organic and natural
Kellogg Organic Plus Tomato, Vegetable, Herb	Organic and natural
Kelp Meal, various companies	Organic kelp meal
Kelp Sealife	Organic liquid kelp
Lilly Miller Products Below: (Also check under Worry Free)	
Alaska Fish Fertilizer	Organic
Alaska Organic Fertlizer	Organic fertilizer line
Compost Maker	Blood meal, bone meal, kelp meal, dried poultry waste

2020 OWOW Product List by Manufacturer

Product Name (alphabetical)	Active Ingredient
Lawn Rescue	Composted poultry litter
Moss Out for Roofs and Patios new formula (no zinc)	Ammoniated soap of fatty acids
Moss Out for Roofs and Walkways (no zinc)	Ammoniated soap of fatty acids
Multicote Fertilizer	Slow release fertlizer
Kness Nooski Mouse Trap	Trap
Kness Nooski Rat Trap	Trap
Kness Pro-tech Multiple Catch Mouse Trap	Live catch trap
Kness Pro-tech Tip Trap	Live catch mose trap
Liqui-Cop	see Monterey Products below
Liquid Fence Eco Logic Products: see EcoLogic	
Liquid Fence Animal Repellent	Cornmint oil, cinnamon oil, castor oil, garlic oil
Liquid Fence for Deer or Rabbits rtu	Putrescent egg solids, garlic, sodium lauryl sulfate, potassium sorbate
Liquid Fence Repellent Concentrate (deer & rabbits)	Garlic, potassium sorbate, sodium lauryl sulfate
Liquid Fence Dog & Cat Repellent	Citronella oil, eugenol, garlic oil, sodium lauryl sulfate, cinnamon oil, geraniol
Liquid Fence Mole Repellent	Castor oil, sodium laurel sulfate
Liquid Fence Mole and Vole Repellent	Castor oil, sodium laurel sulfate
Liquid Fence Plus Deer and Rabbit Repellent	Garlic,potassium sorbate,sodium laurel sulfate,seaweed extract
Liquid Fence Wasp and Hornet Killer	Mint oil, citronella oil, lemongrass oil, geraniol, eugenol, peppermint
Liquid Fence Yard Net Repellent	Citronella Oil, Cedarwood Oil, Lemongrass Oil, Sodium Laurel Sufate, Peppermint Oil, Eugenol, Potassium Sorbate
Liquid Fence Yard Net Granules	Citronella, cedar, lemongrass
Liquid Net The Ultimate Repellent from Liquid Fence	Citronella, cedarwood, lemon grass&geraniol oils, sodium laurel sulfate,peppermint oil, eugenol
Liquid Net Wipes for People (from Liquid Fence)	Citronella,cedarwood, lemon grass& geraniol oils, sodium laurel sulfate, pepermint oil, eugenol, lime juice, wintergreen oil
Liquinox Fish Emulsion	Fish solids
Maggies Farm Simply Effective Ant Killer	Borax
Maggies Farm Simply Effective Ant and Roach Gel	Abamectin B1
Maggies Farm Simly Effective Ant and Roach Killer spray	
Maggies Farm Simply Effective Carpenter Ant & Insect Killer	Thyme oil, 2-phenethyl proprianate , rosemary oil
Maggies Farm Simply Effective Farm,Flea, Tick, &Mosquito Killer	Thyme oil, 2-phenethyl proprianate , rosemary oil
Maggies Farm Simply Effective Flying Insect Killer	Cottonseed oil, peppermint oil, thyme oil, lemongrass oil
Maggies Farm Simply Effective No Spill Ant Kill	Borax
Maggies Farm Simply Efective Snail, Slug & Insect Bait	Orthoboric acid
Master Nursery Pestfighter Oil	Paraffinic oil
Maxicrop Fish Fertilizer (by Ohstrom)	Organic fish solids
Maxicrop Original Liquified Seaweed(by Ohstrom)	Organic kelp

2020 OWOW Product List by Manufacturer

Product Name (alphabetical)	Active Ingredient
Maxicrop Soluable Powder (by Ohstrom)	Organic
Max Attrax Roach Killing Powder	Boric acid powder
Merrill's All Natural Compost Tea	Organic
Messina Animal Stopper aerosol	Putrescent whole egg solids, mint oil, rosemary oil, cinnamon oil
Messina Wildlife Cat Stopper	Castor oil, mint oil, cinnamon oil, geranium oil, lemongrass oil
Messina Wildlife Deer Stopper	Mint oil, rosemary oil, putrescent whole egg solids,
Messina Widlife Deer Stopper Barrier Ribbbon	Mint oil, rosematy oil,putrescent whole egg solids
Messina Wildlife Dog Stopper	Geraniol, castor oil, mint oil
Messina Wildlife Mole and Vole Stopper	Castor Oil, mint oil, rosemary oil, sodium laurel sulphate
Messina Wildlife Plot Saver Liquid Deer Repellent	Whole egg solids,rosemary oil,mint oil, sodium chloride, potassium sorbate
Messina Wildlife Rabbit Stopper Repellent	Mint oil, rosemary oil, putrescent whole egg solids, cinnamon oil
Messina Wildlife Squirrel Stopper Repellent	Mint oil, cinnamon oil, rosemary oil, putrescent whole egg solids.
Metanaturals	Organic plant nutrients
Miracle Gro Fertilizer Spikes (various types)	Encapsulated fertilizer
Miracle Gro Performance Organics All Purpose Plant Food (granular&hose end)	Organic and slow release
Miracle Gro Nature's Care Disease Control	Copper Octanoate
Miracle Gro Nature's Care Insecticidal Soap	Potassium salts of fatty acids
Miracle Gro Nature's Care Garden Insect Control	Pyrethrins, canola oil
Miracle Gro Nature's Care 3 in 1 Insect , Disease, Mite	Sulfur, pyrethrins
Miracle Gro Nature's Care Slug and Snail	Iron phosphate
Miracle Gro Nature's Care Raised Bed Plant Food	Organic and slow release
Miracle Gro Nature's Care Rose and Flower Food	Organic and slow release
Miracle Gro Nature's Care Vege, fruit, & Flower	Organic and slow release
Miracle Gro Organic Choice All Purpose	Composted poultry litter
Miracle Gro Organic Choice Blood Meal	Blood meal
Miracle Gro Organic Choice Bone Meal	Bone meal
Mole & Gopher Med, CHASE Liquid	Castor oil
Mole Scram (by Epic)	Castor Oil, citronella oil, garlic oil
Molecat (kills burrowing pests on contact)	CO2 cartridges plus delivery device
Mole X	Garlic, white pepper, citric acid
Mole Zap	CO2 cartridges plus delivery device
Monterey Products Listed Below:	
All Natural 3 in 1 Garden Insect Spray	Rosemary, clove oil
All Natural Disease Control	Rosemary,cloves and clove oil, peppermint, malic acid

2020 OWOW Product List by Manufacturer

Product Name (alphabetical)	Active Ingredient
All Natural General Purpose Garden Spray	Rosemary, peppermint, clove and clove oil, malic acid, sesame and sesame oil, thyme, cinnamon and cinnamon oil
All Natural Lawn Grub Control	Rosemary, sesame, peppermint, thyme, cinnamon,garlic
All Natural Mite and Insect Control	Rosemary, sesame, sesame oil, peppermint, thyme, cinnamon, cinnamon oil, malic acid
All Natural Mole Repellent	Castor oil, sodium laurel sulfate
All Natural Slug and Snail Spray	Rosemary, sesame, peppermint, cinnamon, garlic
All Natural Yard & Patio Insect Spray	Rosemary, sesame, peppermint, thyme, cinnamon, garlic
Ant Control	Iron Phosphate, SpInosyn A &Spionosyn D
Azera Gardening	Azadirachtin, Pyrethrins
BiCarb Old Fashioned Fungicide	Potassium carbonate
B.t.	Bacillus thuringiensis" kurstaki"
Bug Buster-O	Pyrethrins
Citrus Leafminer Trap and Lure	Pheramone lure and sticky trap
Codling Moth Trap and Lure	Pheromones
Complete Disease Control Brand	Bacillus amylolique faciens strain D747
Deluxe Tree Borer Moth Trap and Lure	Pheromones
Dr. Iron (granular only)	Elemental sulfur, iron oxide
Epsom Salts	Natural
Liqui-Cop RTS	Copper diammonia diacetate complex Bis (acetate-o) diammine copper
Liquid Copper Fungicide rtu	Copper octanoate
Fish and Poop	Fish solids, bat guano
Fruit Tree Spray Plus	Pyrethrins, clarified hydrophobic extract of neem oil
Garden Insect Spray	Spinosad, mix of Spinosyn A & Spinosyn D
Garden Insect Spray RTU	Spinodad, potassium salts of fatty acids
Herbicidal Soap	Ammoniated soap of fatty acids
Horticultural Oil	Mineral Oil
Indoor Fly Traps	Sticky trap
Lady Bug Attractant	Pheromones
Mole Repellent	Castor oil, sodium lauryl sulfate
Nematode Control	Saponins of Quillaja saponaria
Neem Oil ready to spray	Clarified hydrophobic extract of neem oil
Olive Fruit Fly Trap and Lure	Pheromones
Pantry Pest Trap	Pheromone lure and sticky trap
Peach Tree Borer Trap and Lure	Pheromone lure and sticky trap
PyGanic	Pyrethrins

2020 OWOW Product List by Manufacturer

Product Name (alphabetical)	Active Ingredient
Rose and Flower Spray Plus	Pyrethrins, clarified hydrophobic extract of neem oil
Sluggo Slug and Snail Bait	Iron phosphate
Sluggo Maxx	Iron phosphate
Sluggo Plus	Iron phosphate, spinosad
70% Neem Oil	Clarified hydrophobic extract of neem
Spider Trap	Sticky trap
Sticky Whitefly Traps	Sticky traps
Take Down	Pyrethrins, canola oil
Yellow Sticky Traps	Sticky trap
Mosquito Barrier	See Garlic Research Labs and Victor Products
Mosquito Bits by Summit	Bt israelensis
Mosquito Dunks by Summit	Bt israelensis
MQ7 Indoor / Outdoor Insect Control	Cedar oil
MQ7 Mosquito Outdoor Control	Cedar oil
Mouse -X	Corn gluten meal, potassium chloride
Mulch	Various types (e.g., fir bark)
Murphy's Naural Lemon Eucalyptus Oil Spray	Lemon, eucalyptus
N-Sulate	Frost protection blanket
Natria Slug & Snail Killer Bait	Iron phosphate
Natria Rose and Flower Insect	Sulfur, pyrethrins
Natria Lawn Weed Control	Iron HEDTA (FeHEDTA)
Natria Insect, Disease, Mite	Sulfur, pyrethrins
Natria Insecticidal Soap	Potassium salts of fatty acids
Natria Neem Oil	Clarified hydrophobic extract of neem oil
Natria Weed and Grass Killer	Ammoniated soap of fatty acid
Natria Grass and Weed Killer with Root Kill	Ammoniated soap of fatty acid, Maleic hydrazide
Natural Guard by Ferti-lome Bug,Slug, and Snail Bait	Iron phosphate, Spynosin A and Spinosyn D
Natural Guard by Ferti-lome Caterpillar Spray with Bt	Bacillus thuringiensis kurstaki
Natural Guard by Ferti-lome Copper Soap Fugicide	Copper Octanoate
Natural Guard by Ferti-lome Diatomaceous Earth	Diatomaceous Earth
Natural Guard by Ferti-lome Horticulural Oil	Canola Oil
Natural Guard by Ferti-lome Insecticidal Soap	Potassium Salts of Fatty Acids
Natural Guard by Ferti-lome Lawn Shield and Insect Repellent	Cedar Oil
Natural Guard by Fertilome Lawn Weed Killer selective	HEDTA

2020 OWOW Product List by Manufacturer

Product Name (alphabetical)	Active Ingredient
Natural Guard by Ferti-lome Grass and Weed Killer Non-Selective	Amoniated Soap of Fatty Acids
Natural Guard by Fertilome Neem Oil	Clarified Hydrophobic Extract of Neem Oil
Natural Guard by Ferti-lome Slug and Snail Bait	Iron Phosphate
Natural Guard by Fertilome Spinosad	Spynosin A , Spinosyn D
Natural Guard by Ferti-lome Spinosad Soap	Poatssium Salts of Fatty Acids, Spinosyn A, Spinosyn D
Nature's Avenger Weed and Grass Killer (discontinued)	d-Limonene
Nature's Creation Liquid Organic Lawn Food	Organic
Natures Defense All Purpose Organic Granular Animal Repellent by Wieser	Garlic, cinnamon, clove, rosemary, peppermint,white pepper, thyme oils
Nature's Defense Deer Repellent by Weiser	Garlic oil, cinnnamon oil
Nature's Own Helper (by Monterey)	Cottonseed oil, alkylphenoxy polyethoxy ethanol & IPA
Nature's Solution Organic Ancient Humates	Humates
Nature's Solution Organic Compost Tea	Organic
Nature's Solution Organic Sea Kelp	Organic sea kelp
Nature's Solution Organic Worm Castings	Organic worm castings
Nature's Touch Lawn and Garden Insect Killer	Garlic, clove oil, cinnamon, cedar oil, cinnamon oil
Neptune's Harvest Organic liquid fertilizers	Organic fertilizer line
Neptune's Harvest Seaweed Fertilizer	100% organic
Neptune's Harvest Fish Fertilizer	100% organic
Night Watch CO2 Bed Bug Monitor and Trap	Bed bug monitor and trap with CO2
No Natz gnat and mosquito repellent	Rosemary oil, Lemongrass oil
Not Tonight Deer	Egg white solids
Oak Stump Apple Maggot Traps	Pheromone trap
Oak Stump Codling Moth Trap	Pheromone trap
Oak Stump Yellow Jacket and Wasp Trap	Trap
Oak Stump Yellow Jacket JT-36	Traps
Oak Stump Slug Trap and Lure	Trap with vegetable protein lure
OFF!	Please refer to mosquito fact sheet
OFF! Clean Feel with Picaridin	Picaridin wipes
OFF! Family Care Insect Repellent ll	Picaridin
Orbit Yard Enforcer	Animal deterrent sprinkler
Organic labs products:	
Organocide Organic Fungicide RTU	Potassium bicarbonate
Organocide Organic 3 in 1 Garden Spray	Sesame oil
Organocide Plant Doctor	Mono- and Di-potassium Salts of Phosphorous Acid

2020 OWOW Product List by Manufacturer

Product Name (alphabetical)	Active Ingredient
Organocide Worm and Caterpillar	Bacillus thuringiensis "kustaki"
Ortho Animal B Gon rtu	Putrescent whole egg solids, rosemary oil, peppermint oil
Ortho Deer B Gon Deer and Rabbit repellent rtu	Putrescent whole egg solids, cinnamon oil,clove oil.
Ortho Deer B Gon Deer and Rabbit repellent granules	Putrescent whole egg solids, cinnamon oil,clove oil.
Ortho Dog and Cat B Gon granules	Geraniol, castor oil, peppermint oil
Ortho Dog and Cat B Gon rtu	Geraniol, castor oil, peppermint oil
Ortho Ground Clear Weed & Grass Killer	Ammonium nonanoate
Ortho Mole B Gon Mole and Vole repellent	Castor oil, geraniol, peppermint oil
Orho Home Defense Ant and Roach Killer with Essential Oils Aerosol	Sodium laurel sulfate, cinnamon oil, geraniol, castor oil, cornmint oil, clove oil
Ortho Home Defense Bed Bug Killer with Essential Oils Aerosol	Sodium lauryl sulfate, cinnamon oil, geraniol, caster oil, cornmint oil, clove oil
Ortho Home Defense Bed Bug Trap and Lure	Sticky trap and lure
Ortho Home Defense Crawling Bug Killer with Essential Oils Aerosol	Sodium laurel sulfate, cinnamon oil, geraniol, castor oil, cornmint oil, clove oil
Ortho Home Defense Crawling Bug Killer with Essential Oils rtu	Sodium laurel sulfate, cinnamon oil, geraniol, castor oil, cornmint oil, clove oil
Ortho Home Defense Flying Bug Killer with Essential Oils Aerosol	Sodium laurel sulfate, cinnamon oil, geraniol, castor oil, cornmint oil, clove oil
Ortho Home Defense Max press and set mouse trap	Snap trap
Ortho Home Defense Max press and set rat trap	Rat trap
Ortho Home Defense Perimeter Protection	Spearmint oil, lemongrass oil, palm oil, Vit. E
Ortho Insect, Mite, and Disease 3 in 1	Sulfur, pyrethrins
Ortho Insect Killer Tree and Shrub Concentrate	Spinosad (spinonsyn A &D)
Ortho Liquid Ant Bait	Spinosad (spinonsyn A &D)
Ortho Roach Bait	Hydramethylnon (containerized bait station only)
Osmocote Products Listed Below:	
Outdoor and Indoor Plant Food	Encapsulated fertilizer
Vegetable and Bedding	Encapsulated fertilizer slow release
Oyster Shell /Oyster Shell Lime	Oyster shell lime
Pantry Pest Trap	Sticky trap
Pest-A-Cator Squeeze and Set Mouse Trap	Snap trap
Pest No More Aphid &Whitefly Trap	Sticky trap
Pest No More Clothes Moth Trap	Attractant plus sticky trap
Pest No More Flea Trap	Light/sticky trap
Pest No More Flour &Pantry Moth Trap	Attractant plus sticky trap
Pest No More Fruit Fly Trap	Attractant plus sticky trap
Pest No More House Fly and Filth Fly Trap	Attractant plus sticky trap
Pest No More Plant Sticky Stix	Attractant plus sticky trap

2020 OWOW Product List by Manufacturer

Product Name (alphabetical)	Active Ingredient
Pest No More Silverfish Trap	Attractant plus sticky trap
Pest No More Spider & Crawling Insect Trap	Attractant plus sticky trap
Pest No More Window Fly Trap	Attractant plus sticky trap
Pest Wizard Citrus Leaf Miner Trap	Pheramone sticky trap
Pest Wizard Codling Moth Trap &More	Pheramone sticky trap
Pest Wizard Cucumber Beetle Lure	Lure to be used with sticky traps
Pest Wizard Stink Bug Trap Kit	Use for Consperse Stink Bugs not for trapping Brown Marmorated Stink Bugs
Pest Wizard Western Flower Thrips Trap	Lure with sticky trap
PIC Ant Killer Bait	Sodium tetraborate, orthoboric acid
PIC Boric Acid Roach Powder	Orthoboric acid
PIC Boric Acid Roach Killer Gel	Orthoboric acid
PIC Fly Ribbon	Sticky tape
Plant Pro Tec Deer and Rabbit	Oil of garlic
Plant Pro Tec Dog and Cat Repellent	Oil of garlic
Plant Pro Tec Gopher and Mole	Oil of garlic
Planet Food	Organic
Pharm Solutions Weed Pharm Fast Acting Weed and Grass Killer	Vinegar
Planter's Paper	Paper mulch
Plantskydd	Bloodmeal
Poison Ivy Defoliant by St. Gabriel	Clove oil, sodium lauryl sulfate. Inerts are vinegar, citric acid, mineral oil, lecithin, water
Pond Care Aquatic Planting Media	100% mineral
Pond Care Herbal Aphid Control	Mint oil, thyme oil
Pond Plus	Bti
Preen Vegetable Garden Weed Preventer	Corn Gluten Meal
Prestrike Granules Mosquitoes	Methoprene
Pre-strike Mosquito Control	Methoprene
Primal Plant Food	Organic fertilizer
Procidic broad spectrum fungicide bacteriacide for fruits and vegetables	Citric acid
Procidic 2 broad spectrum fungicide bacteriacide for Cannabis	Citric acid
Proof Bed Bug Protection	Cold pressed neem oil
Protect -A-Bed Matress Cover	Encasement to protect against bed bugs
Proven Winners timed release fertilizer	Slow release fertilizer
Pulverize Weed, Brush, and Vine Killer by Messina's	Ammoniated Soap of Fatty Acids, Maleic hydrazide
Pulverize Weed & Grass Killer by Messina's	Ammoniated Soap of Fatty Acids

2020 OWOW Product List by Manufacturer

Product Name (alphabetical)	Active Ingredient
Pulverize Weed Killer (Kills Weeds Not Lawns) by Messina's	Iron HEDTA (FeHEDTA)
Pure Kapow! Natural Fungicide and Insecticide Spray	Lemongrass oil, castor oil
PYGanic Gardening	Pyrethrins
Quick Kill Mosquito Bits	Bacillus thuringiensis isrealensis
Rabbit Scram by Epic	Dried blood, white pepper, garlic, cloves
Raid Products Listed Below:	
Ant & Roach with Essential Oils	Geraniol, lemon grass oil
Ant Baits III bait station	Avermectin
Bed Bug Detector and Trap	Sticky traps
Clothing Moth Trap	Sticky trap and lure
Disposable Yellowjacket Trap	Plant based attractant
Double Control Ant Baits II	Avermectin B1
Flea Killer Plus Trap	Light/sticky trap
Double Control Small Roach	Abamectin
Large Roach Baits	Abamectin
Double Control Sm Roach Plus Egg Stoppers	Abamectin, methoprene
Max Roach Bait	Abamectin, avermectin
Outdoor Ant Spikes	Avermectin B1
Radius 102 NGR weeder	Dandelion and weed remover hand tool
Radius 205 Pro Weeder	Long handled weed remover
Raticator Plus	Electronic rat trap
Rat- X	Corn gluten meal, sodium chloride
Rat-X Bait Discs	Corn gluten meal, sodium chloride, citric acid, puetresent egg solids, soybean oil
Rat Zapper Ultra Rodent Trap	Electronic rat trap
Red Dragon Flame Weeder	Propane flamer
Repel!	See mosquito fact sheet
Repel Oil of Lemon Eucalyptus (see mosquito fact sheet)	Oil of lemon eucalyptus
Repel II for Dogs and Cats	d-limonene, dihydro-5-pentyl-2 (3H) – furanone, dihydro-5-heptyl-2 (3H) furanone, mineral oil
Repellex Products Listed Below:	
Deer Repellent (deer, elk, moose, rabbits)	Dried blood
Deer Repellent – Fruit & Vegetable	Putrescent egg solids
Mole and Gopher Repellent	Castor oil
No-See-Em (for mosquitoes)	Lemon grass oil, citronella oil, peppermint oil, geraniol, sodium lauryl sulphate
Root Saver Vole and Mole Repellent	Castor oil, sodium laurel sulfate, potassium sorbate

2020 OWOW Product List by Manufacturer

Product Name (alphabetical)	Active Ingredient
Rescue Products by Sterling International	
Rescue Ant Baits	Sodium tertraborate decahydrate (Borax)
Rescue Fly Tape	Visual lure sticky trap
Rescue Fly Trap (some are disposable)	Trap plus attractant sucrose, putrescent egg solids, yeast, trimethylamine, indole
Rescue Fly Trap attractant	Sucrose, putrescent egg solids, yeast, trimethylamine, indole
Rescue Big Bag Fly Trap	Trap with attractant sucrose, putrescent egg solids, yeast, trimethylamine, indole
Rescue Fruit Fly Trap	Trap plus sodium laurel sulfate
Rescue Fruit Fly Trap refills	Sodium laurel sulfate
Rescue Go Clip Mosquito Shield repellent	Clove oil, lemongrass oil, peppermint oil, cinnamon oil
Rescue Ornamen Fly Trap	Trap with attractant
Rescue OrnameN Fly Tap attractant	Sucrose, putrescent egg solids, yeast, trimethylamine, indole
Rescue OrnamenYellowjacket Trap	Trap with attractant heptyl butyrate
Rescue Ornamen Yellowjacket attractant	Heptyl-butyrate
Rescue Pop Fly Trap	Scent lure and trap
Rescue Stink Bug Trap	Trap and lure
Rescue Trap Stik for Biting Flies	Sticky trap with visual pattern attractant
Rescue TrapStik for Flies	Sticky trao with visual pattern attractant
Rescue Trap Stik for Wasps	Sticky trap with visual pattern
Rescue Trap Stik for Wasps, Mud Daubers, Carpenter Bees with Bird Guard	Sticky trap with visual pattern plus bird guard
Rescue WHY Spray	Lemongrass oil, clove oil,rosemary oil
Rescue WHY Trap for Wasps, Hornets, Yellowjackets	Pheromones
Rescue Why Attractant	Pheromones
Rescue WHY Yellowjacket and Wasp Spray	Lemongrass oil, clove oil, rosemary oil, geranium oil
Rescue Yellowjacket Trap (some are disposable)	Trap with pheromone
Rescue Yellowjacket Attractant	Pheromones
Rescue Yellowjacket Go-Clip repellent	Clove oil, lemongrass oil, geranium oil, rosemary oil
Rescue Yellowjacket Trap Ornamental	Trap with attractant heptyl- butyrate
Revenge Products by Bonide:	
Revenge Liquid Ant Bait with 4 refillable stations	Boric Acid 5.4%
Revenge Prefilled, Liquid Ant Bait Stations	Disodium octaborate tetrahydrate 1%
Revenge Gopher Trap	Stab trap
Revenge No Escape Fly Catcher ribbon	Sticky ribbon
Revenge No Escape Jumbo Fly Catcher	Sticky ribbon
Revenge No Escape Mini Fly Reel	Sticky tape

2020 OWOW Product List by Manufacturer

Product Name (alphabetical)	Active Ingredient
Revenge No Escape Window Fly Catcher	Sticky board
Ringer Lawn Food	Organic fertilizer
Ringer Lawn Restore	Blood meal, Bone meal, Feather meal
Rittenhouse Rocket Weeder	Long handled weed remover
Roach Motel	Sticky trap
Roach Prufe	Ortho boric acid
Rodent Sheriff repellent	Peppermint oil, sodium laurel sulfate
Rodent Terminator	Electronic rodent tap
Ro-Pel (animal, rodent and bird)	Benzyldiethyl (2,6 xylyl carbamoyl methyl) ammonium saccharide, thymol
Ro-Pel (outdoor dog, cat, bird repellent granules)	Thymol, peppermint oil, white pepper
Safer Brand Products Listed Below: (Also check under Victor Products)	
All Purpose Fertilizer w/ Fish Emulsion	Organic
3 in 1 Garden Spray	Potassium salts of fatty acids, sulfur
Ant and Crawling Insect Killer	Diatomaceous Earth
Ant and Roach Killer 2 aerosol	di-Limonene, pyrethrins, potassium salts of fatty acids
BioNEEM	Azadiractin
Bug Patrol	Pyrethrins, potassium salts of fatty acids
Caterpillar Killer for Trees, Shrubs, Vegetables Concentrate II	Bacillus thuringiensis" kurstaki"
Clothes Moth Alert	Sticky trap with pheromones
Crawling Insect Killer	Diatomaceous earth
Deluxe Yellowjacket Trap	Trap plus lure
Disposable Sticky Whitefly Trap	Sticky trap
Disposable Yellowjacket Trap	Traps with protein bait
End All Insect Killer	Potassium salts fatty acid, neem extract, pyrethrins
Fast Acting Weed and Grass Killer	Potassium salts of fatty acids
Flower & Garden Insecticidal Soap	Potassium salts of fatty acids
Flying Insect Killler	di--Limonene, pyrethins, potassium salts of fatty acids
Fruit and Vegetable Insect Killer ll	Potassium salts of fatty acids
Garden Dust	Bacillus thuringiensis" kurstaki "
Garden Fungicide.	Sulfur
Grub Killer rts	Azadiractin
Houseplant Insect Spray	Potassium salts of fatty acids
Insect Killer	Pyrethrins, potassium salts of fatty acids
Insecticidal Soap	Potassium salts of fatty acids

2020 OWOW Product List by Manufacturer

Product Name (alphabetical)	Active Ingredient
Insect Killing Soap	Potassium salts of fatty acids
Insect Killing Soap with seaweed extract	Potassium salts of fatty acids
Insect Killing Soap Concentrate II	Potassium salts of faty acids
Moss and Algae	Potassium salts of fatty acids
Multipurpose Insecticidal Soap	Potassium salts of fatty acids
No Wilt Plant Shield	Natural polymer
Pantry Pest Trap	Sticky trap w/pheromone
Pyrethrin and Insecticidal Soap Concentrate II	Pyrethrins, potassium salts of fatty acids
Rose and Flower Insect Killer	Potassium salts of fatty acids
Slug and Snail Copper Barrier Tape	Copper barrier
Sticky Traps for Houseplants	Sticky trap
Sticky Whitefly Trap	Sticky rap
Superfast Weed and Grass Killer	Potassium salts of fatty acids
Surefire Yellowjacket Trap	Trap with protein bait
"The Pit" Trap	Trap for snails
Tomato and Vegetable Insect Killer rtu	Pyrethrins, potassium salts of fatty acids
Wasp and Hornet Killer	D-Limonene, pyrethrins, potassium salts fatty acids
Yard and Garden Insect Killer	Pyrethrins, potassium salts of fatty acids
Yellowjacket and Wasp Trap	Protein bait in trap
Yellowjacket Attractant	Protein bait
Safer Gro Products Listed Below:	
Ant Out	Clove oil, cottonseed oil
Biorepel	Garlic extract
Mildew Cure	Cottonseed oil, clove oil, garlic oil
No Moss	Oils of cottonseed,clove,garlic
Pest Out	Cottonseed oil, clove oil, garlic extract
Weed Zap	Cinnamon oil, clove oil
Sawyer Picaridin Insect Repellent	Picaridin
Schultz Products Listed Below:	
Azalea,Camellia,Rhododendron,Slow Release	Slow release
Blood Meal	Dried blood
Bone meal	Organic
Bulb Food Slow Release Plant Food	Slow release
Citrus & Palm Natural Organic Plant Food	Organic

2020 OWOW Product List by Manufacturer

Product Name (alphabetical)	Active Ingredient
Evergreen Tree and Shrub Slow Release	Slow release
Extended Feed All Purpose Plant Food	Slow release
Extended Feed Flower and Vegetable Plant Food	Slow release
Garden Safe All Purp Natural Org Plant Food	Organic
Garden Safe Ant and Roach Killer	Boric acid powder
Garden Safe Azalea & Rhody Nat Org Pl Fd	Organic
Garden Safe Bt Worm and Caterpillar Killer	Bacillus thuringiensis kurstaki
Garden Safe Fungicide 3	Clarified hydrophobic extract of neem oil
Garden Safe Crawling Insect Killer containing Diatomaceous Earth	Silicon Dioxide
Garden Safe Insecticidal Soap	Potassium salts of fatty acids
Garden Safe Liquid Bloom Plant Food	Organic
Garden Safe Moss and Algae Killer	Potassium salts of fatty acids
Garden Safe Neem Oil Extract	70% Clarified hydrophobic extract of neem oil
Garden Safe Organic Granular and Liquid Fertilizer	Organic fertilizer line
Garden Safe Rose & Flower Nat Org Plant Food	Organic
Garden Safe Slug and Snail Bait	Iron phosphate
Garden Safe Weed and Grass Killer	Ammoniated soap of fatty acids
Multicote (4 month and 9 month)	Encapsulated fertilizer slow release
Scoot Mole Repellent	Castor oil
Scott's Natural Lawn Food	Hydrolized feather meal, bone meal, blood meal, sulfate of potash
Scott's Organic Choice Lawn Food	Organic
Scott's 3 in 1 Moss Control	Potassium salts of fatty acids
Scram for Cats by Epic	Cedar oil, citronella oil, garlic oil, rosemary oil, dried blood
Scram for Dogs by Epic	Dried blood, garlic oil, cedar oil, rosemary oil, peppermint oil
Seabright Leaf Miner Trap	Sticky trap
Seabright Roach Free System	Sticky trap and boric acid bait
Sea Pal Fish Emulsion	100% organic
Serenade Garden Disease Control	Bacillus subtilis
Serenade Lawn Disease Control	Bacillus subtilis
Shake Away Cat Deterrent granules	Garlic oil, calcium carbonate
Shake Away Deer Repelling granules	Garlic oil, calcium carbonate
Shake Away Mouse Repellent packs	Mint oil, castor oil, rosemary oil
Shake Away Small Animal Deterrent granules	Garlic oil, calcium carbonate
Shake Away Rodent Repelling granules	Garlic oil, calcium carbonate

2020 OWOW Product List by Manufacturer

Product Name (alphabetical)	Active Ingredient
Shot Gun Mole & Gopher Repellent	See Bonide above
Sluggo Slug and Snail Bait	Iron phosphate
Sluggo Maxx	Iron phosphate
Sluggo Plus	Iron phosphate, spinosad
Slug Saloon	Slug trap w/malted barley attractant
Slug Shield	Copper netting
Snail Barr	Copper tape
Snailer Slug and Snail Trap	Snail and slug trap w/ barley attractant
Snake Scram by Epic	Clove oil, cedar oil, cinnamon oil, oil of rosemary, garlic oil
SNS -203 All Natural Pesticide Concentrate soil drench/foliar spray	Clove oil, rosemary oil, polyglycerol oleate, lauric acid
SNS 209- All Natural Systemic All Natural Pest Control Concentrate	Rosemary extract, rosemary oil
Soil Moist	Crosslinked polyacrylamide
Southern Ag Triple Action Neem Oil	Clarified hydrophobic extract of neem oil
Southern Ag Thuricide BT Caterpillar Killer	Bacillus thuringiensis "kurstaki"
Snake Scram (by Epic)	Clove oil, cedar oil, cinnamon oil, oil of rosemary, garlic oil
Spring Star Biocare Earwig Trap	Trap
Spring Star Biocare Flour and Pantry Pest Trap	Pheramone sticky trap
Spring Star Biocare Gnat Stix	Yellow sticky trap
Springstar Thrips Trap	Blue sticky trap
Squirrel Away by C&S	Capsaicin and capsaicinoids
St, Gabriel Organics Good Diatomaceous Earth Insect Dust	Silocon dioxide from diatomaceous earth, other elemental oxides
St. Gabriel Organics Holey Moley Mole Repellent	Castor oil
St. Gabriel Organics Insect Dust Diatomaceous Earth	Silicon dioxide, other elemental oxides, moisture
Stay -Away Ant repellent from Earthkind	Lemongrass oil, peppermint oil, thyme oil
Stay-Away Mice Repelllent from Earthkind	Rosemary oil, spearmint oil, cedarwood oil
Stay-Away Moth (clothesmoth) repellent from Earthkind	Geraniol extract, geranuim oil, cedar oil
Stay-Away Spider repellent from Earthkind	Citronella oil, lemongrass oil, rosemary oil
Sticky Traps (for whitefly, mealybug, house plants or other small insects)	Sticky traps
Stoller Natur'l Oil	Soybean oil
Stop Bugging Me! Bed Bug spray	Cedar oil, sodium laurel sulfate, geraniol, sodium chloride.
Stop Bugging Me! Lawn &Garden outdoor pest spray	Cedarwood oil, 2-Phenethyl propionate, peppermint oil, eugenol, sodium laurel sulfate
Summit Year Round Spray Oil	Mineral oil
Sustane	Dried poultry litter
Sweeney's All Seasons Deer Repellent	Dried Blood

2020 OWOW Product List by Manufacturer

Product Name (alphabetical)	Active Ingredient
Sweeney's Dead Set Mole Trap	Plunger trap
Sweeney's Deer Repellent	Capsaicin, garlic, butyl mercaptin
Sweeney's Dog and Cat Repellent	Capsaicin, casaicinpoids
Sweeney's Gopher Trap	Stab trap
Sweeney's Mole and Gopher Repellent 2X	Castor oil
Sweeney's Small Animal Repellent	Citric acid, potassium sorbate, sodium laurel sulfate, cinnamon oil, white pepper
Sweeney's Small Animal Repellent Granules	Castor oil, citronella oil, clove oil, cedar oil, dried blood, putrescent egg solids
Sweet Earth Organic Fertilizers	Organic fertilizer line
Tanglefoot Bird Repellent	Polybutene
Tanglefoot Bird Repeller Ribbon	Foil tape repellent
Tanglefoot Codling Moth Trap	Pheromone/sticky trap
Tanglefoot Fruit Fly Trap (indoors)	Food scent lure and jar
Tanglefoot Fly Traps for Windows	Food scent lure and sticky trap
Tanglefoot Pantry Pest Trap	Pheromones
Tanglefoot Pest Barrier	Castor oil, natural gum resins, vegetable wax
Tanglefoot Pre-coated Sticky Tree Bands	Sticky bands for trees
Tanglefoot Tangle Guard Banding Material	Banding material to use with tanglefoot
Tanglefoot Tangle-Trap Sticky Coating aerosol	Sticky coating for traps
Tanglefoot Tangle Trap Sticky Coating Paste Formula	Castor oil, natural gum resins, veg wax
Tanglefoot Tangle Trap Sticky Whitefly Traps	Sticky trap
Tanglefoot Tree Care Kit	Castor oil, natural gum resins, veg wax, cardboard band
Tanglefoot Whitefly & Insect Traps for Houseplants	Small sticky yellow cards on stick for houseplants
Tanglefoot Window Fly Trap	Lure plus sticky board
Tappin Roots Essential Care	Natural and organic
Tapppin Roots Natural	Natural and Organic
TAT Fly Paper	Roisin – rubber – mineral oil
Terminix Mouse Multicatch System	Multicatch trap
Terminix Ultimate Protection Crawling Insect Killer	Geraniol, cinnamon oil
Terminix Ultimate Protection Flying Insect Killer	Geraniol
Terminix Ultimate Protection Stinging Insect Killer	Geraniol
Terro Ant Killer II Liquid Baits	Sodium tetraborate decahydrate (borax)
Terro Ant Killer ll Liquid	Sodium tertraborate decahydrate (borax)
Terro Cobweb Eliminator	Sodium Lauryl Sulfate, Coomint Oil, Citronella Oil, Rosemary Oil
Terro Fly Catcher ribbon	Rosin, rubber, mineral oil

2020 OWOW Product List by Manufacturer

Product Name (alphabetical)	Active Ingredient
Terro Fruit Fly Traps	Scent attractant and trap
Terro Ant Killer II Indoor Liquid Bait Station	Sodium tetraborate decahydrate (borax)
Terro Multipurpose Insect Bait	Boric acid
Terro Ant Killer II Outdoor Liquid Bait Stakes	Sodium tetraborate decahydrate (borax)
Terro Ant and Roach Baits trap	Sodium tertaboarate decahydrate (borax), Abamectin
Terro Multisurface Liquid Ant Bait	Sodium tetraborate decahydrate (borax)
Terro Pantry Pest Traps	Pheromone trap
Terro Perimeter Ant Bait Plus	Boric acid
The Ecology Works Dustmite and Flea Control	Disodium octaborate tetrahydrate (carpet treatment)
The Giant Destroyer Garlic Tunnel Tubes Mole and Gopher Repellent	Garlic oil
The Planket	Protective frost cloth
The Snailer	Trap plus malted barley bait
The Ultimate Flea Trap (Victor)	Light/sticky trap
Thuricide see under Bonide	Bacillus thuringiensis "kurstaki"
Thuricide BT for Caterpillars(see under Southern AG	Bacillus thuringiensis "kurstaki"
Time Out for Roaches and Ants	Sodium laurel sulfate, mint oil, citronella oil
Tom Cat Animal Repellent	Sodium laurel sulfate, oils of peppermint, cinnamon, garlic
Tom Cat Deer Repellent	Sodium laurel sulfate, oils of peppermint, garlic, cinnamon
Tom Cat Live Catch Mouse Trap	Trap and release
Tom Cat Mole and Gopher Repellent rts	Castor oil
Tom Cat Mole and Gopher Relellent granules	Castor oil
Tom Cat Mole Trap	Stab trap
Tom Cat Multiple Catch Mouse Trap	Trap live
Tom Cat Mouse Trap	Snap Trap
Tom Cat Mouse Attractant Gel	Aromatic attractant
Tom Cat Spin Trap for mice	Spin trap
Tom Cat Rat Trap	Snap Trap
Tom Cat Rodent Repellent aerosol	Sodium laurel sulfate, peppermint oil, cinnamon oil, garlic oil
Tom Cat Rodent Repellent Granules	Peppermint oil, sodium laurel sulfate, garlic oil
Total Home Ant Killer bait by CVS	Sodium Tetraborate Decahydrate Boric Acid
Ultra Clear Biological Pond Clarifier	Bacillus subtilis, non pathenogenic nitrosomas and nitrobacter nitrifying bacteria
Uncle Ian's Dog and Cat Repellent	Blood meal
Uncle Ian's Mole and Gopher , Deer, Rabbit,Squirrel	Dried blood , capsicum
Uncle Ian's Organic Slug and Snail Bait (barrier repellent)	Dried blood , chili powder

2020 OWOW Product List by Manufacturer

Product Name (alphabetical)	Active Ingredient
Vectobac	Bt israelensis
Victor Products Listed Below:	
Black Box Gopher Trap	Kill trap
Electronic Mouse Traps	Electric shock trap with batteries
Electronic Rat Trap	Electronic shock trap with batteries
Flea Killer Insectigone (with diatomaceous earth)	Silicon dioxide from diatomaceous earth
Fly Catcher ribbon	Sticky trap
Fly Magnet	Trap with attractant organic
Gopher Trap	Kill trap
Indoor Fly Trap	Sticky Trap
Kill Vault mouse trap	Kill trap
Liquid Ant	Orthoboric acid
Liquid Ant Killing system	Borate, borax, boric acid
M-2 Smart Kill WiFi Electronic Rat Trap	Electronic shock rat trap uses batteries
Mosquito Barrier	Garlic, potassium sorbate
Mole Trap	Stab trap
Mouse & Rat Repellent	Castor Oil, Sodium lauryl sulfate, Peppermint Oil, Citonella Oil, Cinnamon Oil
Mouse Trap	Stab trap
Out O' Sight Mole Trap	Stab trap
Poison Free Insect Magnet	Pheromones and sticky trap
Power Kill Rat Trap	Snap trap
Quick Kill Mouse Trap	Snap trap
Quick set Mouse Trap	Snap trap
Rat Away Rat and Mouse Repepellent	Castor oil, cinnamon oil, peppermint oil, citronella oil, citric acid
Roach and Ant Killing Powder	Boric acid, german cockroach pheromone
Roach Killing Powder	Boric acid
Roach Magnet	Sticky trap w/ pheromones
Scent -Away Natuarl Rodent Repellent Packs	Peppermint oil
Smart Kill -WiFi Electronic Mouse Trap	Electronic shock mouse trap uses batteries
Tri-Kill Mouse Trap	Snap Trap
Ultimate Flea Trap	Sticky trap
Window Fly Scoop	Glue trap
Yellowjacket and Flying Insect Trap	Trap with attractant
Yellowjacket Magnet	Trap with attractant

2020 OWOW Product List by Manufacturer

Product Name (alphabetical)	Active Ingredient
Yellowjacket Trap	Trap with pheromone
Vigoro Products Listed Below:	
ACR	Slow release fertlizer
All Purpose	Slow release fertlizer
Evergreen Spikes	Slow release fertlizer
Flower and Vegetable	Slow release fertlizer
Fruit Nut and Citrus Spikes	Slow release fertlizer
Lawn Food	Slow release fertlizer
Palm and Ixora Spikes	Slow release fertlizer
Tree and Shrub	Slow release fertlizer
Timed Released Flower and Veg Plant Food	Slow release - feeds up to 6 months
Vole X	Corn gluten meal, sesame, sodium chloride, citric acid
Weed Block Fabric	Fabric barrier cloth
Weed Block Natural	Paper mulch
Whitney Farms Insecticidal Soap 1	Potassium salts of fatty acids
Whitney Farms 3-in-1 Rose and Flower Care	Sulfur, pyrethrins
Whitney Farms Lawn Weed Killer 1	Iron HEDTA (FeHEDTA)
Whitney Farms Outdoor Insect Killer	Pyrethrins, canola oil
Whitney Farms Slug and Snail Killer	Iron phosphate
Whitney Farms Weed and Grass Killer	Soybean oil
Whitney Farms Fertilizers:	
Alfalfa Meal	organic
Organic and Natural All Purpose Plant Food	organic and all natural
Azalea, Rhodo, and Camelia Food	100% organic and all natural
Bat Guano	100% organic and all natural
Blood Meal	100% organic and all natural
Bone Meal	100% organic and all natural
Bulb Food	100% organic and all natural
Citrus & Avocado Food	100% organic and all natural
Cottonseed Meal	100% organic and all natural
Dolomite Lime	Dolomite lime
Jersey Green Sand	100% mineral natural
Kelp Meal	Kelp
Lawn Food	Blood meal, bone meal, feather meal, poultry waste, sulpomag

2020 OWOW Product List by Manufacturer

Product Name (alphabetical)	Active Ingredient
Magnesium Sulphate	Sulfate of potash magnesia (natural)
Natural Organics	Organic
Rose Food	100% organic and all natural
Smart Start Plant Food Packets	100% organic and all natural
Tomato & Vegetable Food	100% organic and all natural
Weisers Nature's Defense Products see under: Nature's Defense	see under Nature's Defense
Worry Free Brand Outdoor Dog,Cat, and Bird Repellent	White pepper, peppermint oil, & thyme oil
Worry Free Brand Home Pest Control	Pyrethrins, canola oil
Worry Free Brand Insecticidal Soap	Potassium salts of fatty acids
Worry Free Brand Ready to Use Dust by Garden Tech	Pyrethrins
Worry Free Brand Spring and Summer Lawn Food	Organic
Worry Free Brand Moss and Algae	Sodium lauryl sulfate, citric acid
Worry Free Brand Slug and Snail Bait	Iron phosphate
Worry Free Brand Organic Weed and Grass Killer Concentrate	d-limonene
Worry Free Organic Weed and Grass Killer RTU	d-limonene
WOW	Corn gluten meal
Xcalibur Yellowjacket Bait	Pheromone bait
Zap-A-Roach	Boric acid
Zevo Ant, Roach & Fly	Geraniol, lemon grass
Zevo Ant, Roach & Spider	Geraniol, cinnamon oil
Zevo Fly, Gnat & Fruit Fly	Geraniol
Zevo Flying Insect Trap	
Zevo Wasp, Hornet & Yellowjacket	Geraniol

Our Water Our World

2019 How Less-Toxic Products Work

Remember to read the label on the pesticide container. The label is the law.

1. ***Bacillus thuringiensis israelensis* (Bti)**
   Bacteria toxic to larvae such as mosquitoes and black flies. Bti works within hours: the dunks stay effective for 30 days, the bits for two weeks. Mosquito Bits are currently labeled for fungus gnats.
   - **Mosquito Bits**
   - **Mosquito Dunks**

2. ***Bacillus thuringiensis kurstaki* (Btk or Bt)**
   Bacteria that destroy the gut of the caterpillar. After feeding on a sprayed leaf, the caterpillars fall off and die within a few days. Btk only affects leaf- and flower-eating caterpillars and doesn't harm lady beetles and other beneficials.
   - **Southern AG Caterpillar Killer**

3. **Boric Acid**
   Disrupts the action of bacteria in the insect's gut, which interferes with digestion and leads to starvation. Boric acid is slow acting, so after feeding on liquid bait, ants return to their nest and share it with nest-mates. Cockroaches get an extra dose of boric acid by eating the shed skins and droppings of their buddies that have dined on the bait.
   - **Amdro Outdoor Liquid Ant Bait Stations**
   - **Harris Roach Tablets**
   - **Max Attrax Boric Acid Powder**
   - **Terro Liquid Ant Bait Stations**

4. **Castor oil**
   Repels moles and gophers. Must be reapplied every six weeks.
   - **Tom Cat Mole and Gopher Repellent (spray and granules)**

5. **Citric Acid and clove oil**
   Acts as a top killer for weeds and grasses. Works in cool weather.
   - **Bonide Burn Out**

6. **Citric acid, oils of cinnamon, soybean, rosemary, sesame and thyme**
   Acts as a crack-and-crevice top kill for smaller weeds and grasses. Works well in relatively warm temperatures when weeds are growing.
   - **Dr. Earth Final Stop Weed and Grass Herbicide**

7. **Combination products with two insecticides: Pyrethrins and Canola Oil**
   Pyrethrins are extracted from the pyrethrum daisy. They instantly kill insects and break down quickly in the presence of sunlight, which means they don't leave residue that harms lady beetles. **Canola oil** suffocates soft-bodied insects and their eggs without leaving a toxic residue for the lady beetles.
   - **Nature's Care Garden Insect Control**

8. Combination products with an insecticide, miticide, and fungicide

Sulfur and pyrethrin combination. Sulfur disrupts the metabolic processes of fungi and can act as a stomach poison for mites. **Pyrethrins** are extracted from the pyrethrum daisy. They instantly kill insects and break down quickly in the presence of sunlight, which means they don't leave a toxic residue that harms beneficials such as lady beetles.

- **Bonide Citrus Fruit and Nut Orchard Spray**
- **Bonide Tomato and Vegetable 3 in 1**
- **Nature's Care 3 in 1 Insect Disease and Mite**
- **Ortho Insect, Mite and Disease 3 in 1**

9. Copper Octanoate

Copper soap effective on powdery mildew, rust, black spot of roses, and certain vegetable diseases. Also a good dormant spray for peach leaf curl.

- **Bonide Copper Fungicide**
- **Nature's Care Garden Disease Control**

10. Corn gluten meal and sodium chloride

Less-toxic rat and mouse killer that does not endanger non-target animals like birds and pets.

- **Mouse X**
- **Rat X**

11. Diatomaceous Earth (DE)

Absorbs the waxy layer on the surface of the insect's skin and dehydrates them. Effective if kept dry. Inhaling DE and other dusts can result in lung irritation, so make sure customers are aware of this.

- **Hot Shot Bed Bug and Flea Killer Powder**
- **Safer Ant and Crawling Insect Killer**

12. Dried blood meal, capsicum

Repels animals and must be applied for 5 consecutive days. Lasts 4 weeks.

- **Uncle Ian's Dog and Cat Repellent**
- **Uncle Ian's Mole, Gopher, Deer, Rabbit & Squirrel Repellent**

13. Horticultural Oils

Mineral oil applied during the dormant season to kill mite and insect eggs, or during the growing season to suffocate mites and soft-bodied insects. Oils also prevent powdery mildew from growing on healthy leaves.

- **Bonide All Seasons Spray Oil**

14. Insecticidal Soap: Potassium Salts of Fatty Acids

Disrupts the cell membranes on the insect's body causing it to dehydrate and die.

- **Nature's Care Insecticidal Soap**

15. Iron Phosphate Baits

Binds the gut of the snail or slug. They crawl to a hidden place to die. Used in organic gardening and is safe to use around pets and in vegetable gardens. Also acts as a fertilizer.

- **Sluggo**

16. Lemongrass Oil

Lemongrass oil works as a contact insecticide and repellent.

- **Ecologic Ant and Roach Killer**
- **Ecologic Flying Insect Killer**

17. Maleic Hydrazide

A plant growth regulator and herbicide that inhibits sprout and bud growth by depressing cell division in plants.

- **Natria Grass and Weed Killer**

18. Neem Oil (clarified hydrophobic extract of neem oil)

An insecticide and fungicide derived from seeds of the neem tree. It acts as a repellent, anti-feedent, and egg-laying deterrent. Within a few days of exposure, insects starve and die. It also protects plants from some fungal diseases if sprayed on healthy foliage.

- **Bonide Rose Rx 3 in 1**
- **Southern Ag Triple Action Neem Oil**

19. Rosemary oil, peppermint oil, thyme oil, malic acid, cinnamon, garlic extract

These essential oils have a synergistic effect against insects and knock them down quickly. Remember to read the label as certain plants are sensitive to these oils, resulting in burned leaves.

- **Dr. Earth Final Stop Rose and Flower Insect Killer**
- **Dr. Earth Final Stop Vegetable Garden Insect Killer**
- **Dr. Earth Yard and Garden Insect Killer**

20. Sesame oil

Suffocates soft-bodied insects and can leave a protective coating on leaves against some fungal diseases.

- **Organocide**
- **Organocide Bee Safe Insect Killer**

21. Sodium lauryl sulfate, peppermint oil, cinnamon oil, garlic oil

Repels mice and rats.

- **Tomcat Rodent Repellent**

22. Spinosad

The active ingredient is derived from a naturally occurring soil-dwelling bacterium which disrupts an insect's neurotransmissions causing rapid excitation of the insect's nervous system. In the bait form for ants it is a low enough dose to give them time to get back to share with the nest.

- **Captain Jack's Dead Bug Brew**

TIPS FOR WORKING WITH CUSTOMERS

- Less-toxic products may take longer to work than their more toxic counterparts.
- Timing the application is important since many less-toxic products break down quickly. Know the target pest's life cycle so you apply the pesticide at the best time.
- Remember to spot treat—you don't always have to spray the whole plant.
- Apply soaps and oils in the early morning or late afternoon to avoid burning plants. Soaps are less effective in hard water because the minerals bind the fatty acids that are used to manage pests.
- If releasing beneficial insects, give them time to find the pests. Don't immediately spray pesticides, even insecticidal soap, or you'll kill the beneficials. (Some less-toxic products such as Bt are not broad spectrum, so beneficial insects are less at risk.)

OUR WATER — OUR WORLD

Weed Killer Recommendations

Here are some recommendations for eco-friendly weed killers.

ADIOS Eco-Friendly Post-Emergent Selective Broadleaf Weed Control: Available as RTU, concentrate and granules and is OMRI listed and certified organic. Active ingredients are sodium chloride and potassium chloride. Second and third applications may cause salt buildup if rainfall/irrigation are limited.

Avenger: Non-selective weed killer for weeds, grasses and broadleaf plants. Active ingredient is d-limonene. OMRI Listed and Organic Certified, and used in organic farming. This comes in a concentrate and can be used around pets.

AXXE: Broad spectrum, non-selective contact herbicide using Ammonium Nonanoate (ammoniated pelargonic salts) to manage weeds, grasses, mosses and lichens. Fast acting and OMRI listed.

BioSafe Weed Control RTU: This is an herbicidal soap for broadleaf weeds and grasses that is safe to use around pests and children. Active ingredient is Ammonium Nonannoate, a fatty acid. It is OMRI listed.

BurnOut Weed and Grass Killer Concentrate: This Bonide product is a non-selective weed and grass killer that will kill roots. Active ingredients are citric acid and clove oil. Works at low temperatures and is organic certified.

Ferti-Lome

- **Natural Guard Grass and Weed Killer Non-Selective**: Fast acting herbicidal soap using Ammoniated Soap of Fatty Acids. Use when warm and dry. Can also be used on algae and moss.
- **Natural Guard Lawn Weed Killer**: Iron HEDTA selectively controls/suppresses broadleaf weeds. Most effective when weeds are small.

Monterey Herbicidal Soap: A non-selective weed, algae and moss killer using Ammoniated Soap of Fatty Acids. Best used on small, new growth during warmer weather.

Natria

- **Lawn Weed Control**: Active ingredient Iron HEDTA kills broadleaf weeds in lawns.
- **Lawn Weed & Disease Control**: Kills broadleaf weeds in lawns; active ingredient is Iron HEDTA.

- **Grass & Weed Killer**: Kills weeds and grasses; active ingredient is Ammoniated Soap of Fatty Acids and this product is certified for organic gardening.
- **Grass & Weed Control With Root Kill**: Kills weeds and grasses; active ingredients are Ammoniated Soap of Fatty Acids to kill weeds and maleic hydrazide to suppress growth from roots.

Pulverize

- **Weed and Grass Killer**: Active ingredient is Ammoniated Soap of Fatty Acids. This is a non-selective top kill for grasses and broadleaf weeds. Works in cooler temperatures.
- **Weed, Brush and Vine Killer**: A non-selective weed and vegetation killer. Active ingredients are Ammoniated Soap of Fatty Acids and Maleic Hydrazide. The soap kills top growth. Maleic Hydrazide prevents the weeds from re-sprouting for several months. May need several applications.
- **Weed Killer**: Active ingredient is Iron HEDTA. This is a selective broadleaf weed killer for use in lawns. Best applied when weeds are small.

Safer Weed and Grass Killer: A contact killer herbicidal soap that uses Potassium Salts of Fatty Acids to kill weeds and unwanted grasses. OMRI listed and does not persist in the environment.

Whitney Farms Lawn Weed Killer: Active ingredient in this broadleaf weed killer is iron HEDTA. Comes in 32 oz. and 1 gallon ready to use.

Attachment vi.

Herbicide and Glyphosate

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Glyphosate (Roundup®): Milestones Prior to the Prop 65 Listing July 2017[1]

As of July 7, 2017, the California EPA added glyphosate (commonly known as Roundup®) to California's Proposition 65 List (Prop 65). This followed an announcement in 2015 by the International Association for Research on Cancer (IARC) that glyphosate was identified as a "probable carcinogen." Following IARC's announcement, the California EPA was bound by state law to list glyphosate as known to the state to cause cancer under the Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65). This law requires that substances identified by the IARC automatically be listed as known to cause cancer under Proposition 65. Prop 65 requires businesses to notify Californians about significant amounts of chemicals in the products they purchase, in their homes or workplaces, or that are released into the environment. Prop 65 also prohibits California businesses from knowingly discharging significant amounts of listed chemicals into sources of drinking water. While Prop 65 requires businesses to provide exposure warnings, government agencies are exempt from the warning requirements.

The table below presents the major milestones leading to the addition of glyphosate on California's Prop 65 List. It also presents the activity and milestones of glyphosate evaluations from the US Environmental Protection Agency (US EPA), as well as several international milestones.

Date	Milestone
1974	Glyphosate was originally registered for use in the United States.
1985	On the basis of tumors in mice, the US EPA originally classified glyphosate as possibly carcinogenic to humans.[2]
1991	After a re-evaluation of the mouse study, the US EPA changed its classification to evidence of non-carcinogenicity in humans. [3]
2004	United Nations' Food and Agriculture Organization concluded (and affirmed by Germany's pesticide regulatory officials) that research does not provide evidence to show that glyphosate causes cancer.[4]
2014	US EPA reviewed over 55 epidemiological studies conducted on the possible cancer and non-cancer effects of glyphosate. US EPA concluded that this body of research does not provide evidence to show that glyphosate causes cancer, and it does not warrant any change in US EPA's cancer classification for glyphosate.[5]
2015	Health Canada's Pest Management Regulatory Agency did not classify glyphosate as a carcinogen, but changed their rating to: "Low level of concern due to benign nature of tumors observed at the limit dose and lack of oncogenicity[6] in other studies."[7]
March 2015	The International Agency for Research on Cancer (IARC), the specialized cancer

[1] Document prepared by Stephanie Hughes, PE for City of Palo Alto
[2] http://www.iarc.fr/en/media-centre/iarcnews/pdf/MonographVolume112.pdf
[3] http://www.iarc.fr/en/media-centre/iarcnews/pdf/MonographVolume112.pdf
[4] Technical Memorandum to City of Palo Alto, Dr. Susan Kegley, May 2015
[5] Technical Memorandum to City of Palo Alto, Dr. Susan Kegley, May 2015
[6] Tumor-inducing
[7] Technical Memorandum to City of Palo Alto, Dr. Susan Kegley, May 2015

Date	Milestone
	agency of the World Health Organization, announced that based on their assessment of scientific data, the IARC would classify glyphosate as "probably carcinogenic to humans" (Group 2A).[8] *In addition to glyphosate (CAS No. 1071-83-6)*, the IARC monograph indicated the following chemicals are "also relevant: 38641-94-0 (glyphosate-isopropylamine salt) 40465-66-5 (monoammonium salt) 69254-40-6 (diammonium salt) 34494-03-6 (glyphosate-sodium) 81591-81-3 (glyphosate-trimesium)," because these salts dissociate to free glyphosate.
September 4, 2015	The California Environmental Protection Agency's Office of Environmental Health Hazard Assessment (OEHHA) prints a notice of intent to list glyphosate as known to the state to cause cancer under the Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65). "This action is being proposed pursuant to the "Labor Code" listing mechanism… **The law requires that certain substances identified by the International Agency for Research on Cancer (IARC) be listed as known to cause cancer under Proposition 65**." [9, 10]
September 12, 2015	Relevant glyphosate data available to US EPA at that time for glyphosate were reevaluated, including studies submitted by the registrant and studies published in the open literature. The agency performed this evaluation in support of Registration Review in accordance with the 2005 Guidelines for Carcinogen Risk Assessment, classified glyphosate as "Not Likely to be Carcinogenic to Humans"[11]
October 20, 2015	Written comments on the Prop 65 proposal were due for submitted to OEHHA. OEHHA received 9,183 comments.
November 2015	The European Food Safety Authority (EFSA) determined that glyphosate was unlikely to pose a carcinogenic hazard to humans. [12]
January 12, 2016	OEHHA was sued by Monsanto Company to prevent the listing of glyphosate. The Fresno County Superior Court ruled in OEHHA's favor. Monsanto appealed the decision and asking the Court of Appeal to issue a stay that would block the listing while the appeal is pending.
May 2016	The Joint Food and Agriculture Organization (FAO)/WHO Meeting on Pesticide Residues (JMPR), another subdivision of the WHO along with IARC, concluded that glyphosate was unlikely to pose a carcinogenic risk to humans from exposure through the diet [13]
September 2016	As part of US EPA's periodic review of pesticide registrations required under the

[8] From the Monograph Volume 112, "Group 2A means that the agent is probably carcinogenic to humans. This category is used when there is limited evidence of carcinogenicity in humans and sufficient evidence of carcinogenicity in experimental animals. Limited evidence means that a positive association has been observed between exposure to the agent and cancer but that other explanations for the observations (called chance, bias, or confounding) could not be ruled out. This category is also used when there is limited evidence of carcinogenicity in humans and strong data on how the agent causes cancer."

[9] https://oehha.ca.gov/proposition-65/crnr/notice-intent-list-tetrachlorvinphos-parathion-malathion-glyphosate

[10] "Health and Safety Code section 25249.8(a) incorporates California Labor Code section 6382(b)(1) into Proposition 65. The law requires that certain substances identified by the International Agency for Research on Cancer (IARC) be listed as known to cause cancer under Proposition 65. Labor Code section 6382(b)(1) refers to substances identified as human or animal carcinogens by IARC."

[11] Glyphosate Issue Paper: Evaluation of Carcinogenic Potential, US EPA, September 2016 (summarizing past US EPA review history, including this 2015 result).

[12] Glyphosate Issue Paper: Evaluation of Carcinogenic Potential, US EPA, September 2016

[13] Glyphosate Issue Paper: Evaluation of Carcinogenic Potential, US EPA, September 2016

Date	Milestone
	law, it published "Glyphosate Issue Paper: Evaluation of Carcinogenic Potential." [14] The findings include "For cancer descriptors, the available data and weight-of-evidence clearly do not support the descriptors "carcinogenic to humans", "likely to be carcinogenic to humans", or "inadequate information to assess carcinogenic potential". For the "suggestive evidence of carcinogenic potential" descriptor, considerations could be looked at in isolation; however, following a thorough integrative weight -of-evidence evaluation of the available data, the database would not support this cancer descriptor. **The strongest support is for "not likely to be carcinogenic to humans" at doses relevant to human health risk assessment."** These findings were submitted to the FIFRA Scientific Advisory Panel for further review (see December 2016).
December 2016	As part of US EPA's periodic review of pesticide registrations required under the law, a FIRFA Scientific Advisory Panel held a public meeting to address the scientific issues associated with EPA's current evaluation of the carcinogenic potential of glyphosate (see September 2016). They presented feedback to EPA about their findings about exposure between glyphosate and various cancers. Amongst the findings, while there was general agreement that there is "no reliable evidence of an association between glyphosate exposure and any solid tumor, or between glyphosate exposure and leukemia or Hodgkin's lymphoma" However… "some Panel members also noted that the epidemiologic data are still limited, and that none of the studies is of glyphosate manufacturing workers or others who may be relatively highly exposed. This was felt to be a critical data-gap." The Panel also agreed with US EPA that available studies do not link glyphosate exposure to multiple myeloma. Some Panel members supported the Agency conclusion that "the association between glyphosate exposure and risk of non-Hodgkin's lymphoma cannot be determined based on the available data," although for somewhat different reasons than provided by US EPA. [15]
March 2017	OEHHA posted both a response to comments [16] as well as a Notice that glyphosate would be added to the list of chemicals known to the state to cause cancer for purposes of Proposition 65 with a delayed effective date due to the pending case, *Monsanto et al v OEHHA et al*., Fifth District Court of Appeal, case number F075362. In the Response to Comments, OEHHA clarified that based on California's current Prop 65 law, OEHHA cannot make an independent interpretation of the findings of IARC, but rather must simply list a chemical once "IARC has identified the specific chemical or substance as a known or potential human or animal carcinogen by classifying it in IARC groups 1, 2A or 2B, based on sufficient animal or human evidence." OEHHA also proposed a "safe harbor level for exposures to the chemical." This is meant to help businesses determine whether they need to provide a warning. [17]

[14] http://src.bna.com/iE2
[15] https://www.regulations.gov/document?D=EPA-HQ-OPP-2016-0385-0526
[16] https://oehha.ca.gov/media/downloads/crnr/0317responsetocomments.pdf

Date	Milestone
Jun 26, 2017	OEHHA published a notice indicating that Monsanto's challenge was unsuccessful in the trial court. Although the case has been appealed, no stay of the listing has been granted. Therefore, OEHHA added glyphosate to the Proposition 65 list effective July 7, 2017.[18]
July 7, 2017	Effective date of the Proposition 65 listing.
Ongoing	Some individual countries (e.g., France, Sweden) have been moving to ban glyphosate based on the IARC decision, while other countries (e.g., Japan, Canada) have continued to support their conclusion that glyphosate is unlikely to pose a carcinogenic risk to humans. [19]
Pending	Glyphosate is undergoing registration review, US EPA's periodic review of pesticide registrations required under the law to ensure that each pesticide continues to satisfy the statutory safety standard for registration. US EPA is currently scheduled to publish the draft glyphosate human health and ecological risk assessments for public comment in 2017. This directly follows the FIFRA SAP meeting (see December 2016).[20]

[17] See "Response to Comments" and this factsheet: https://oehha.ca.gov/media/downloads/crnr/sudfacts03112016_0.pdf

[18] https://oehha.ca.gov/proposition-65/crnr/glyphosate-listed-effective-july-7-2017-known-state-california-cause-cancer#_ftn3

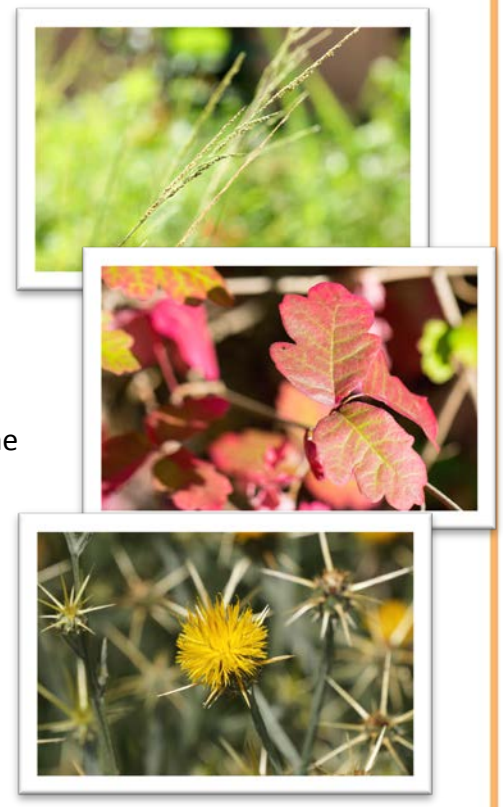
[19] Glyphosate Issue Paper: Evaluation of Carcinogenic Potential, US EPA, September 2016

[20] https://www.epa.gov/pesticides/scientific-advisory-panel-report-glyphosate-available and OPP Docket # EPA-HQ-OPP-2016-0385

How pesticide applicators can reduce exposure risks from glyphosate and other herbicide use.

Glyphosate–the active ingredient in Roundup and other marketed herbicides–was identified as a "probable carcinogen" by the International Association for Research on Cancer (IARC)– a World Health Organization agency. This conclusion was based on cell studies, a link between tumors in mice and rats who were fed glyphosate, and a possible link to non-Hodgkin's lymphoma in agricultural workers who mix and apply glyphosate many times each year.

There is disagreement over the IARC decision. European and the United States Environmental Protection Agency do not consider glyphosate to be a carcinogen, but the California Environmental Protection agency has stated that it will list it as such. Despite this mixed response, there is agreement that reducing pesticide exposure reduces risk to staff who apply pesticides.



Bermuda grass, poison oak and yellow star thistle are common weeds that may be controlled, in part, by herbicides such as glyphosate.

What you need to know

The best way to avoid pesticide exposure is to stop weeds before they start so that the need for chemical control is avoided, and to wear personal protective equipment when glyphosate applications are absolutely necessary. The City has an Integrated Pest Management Policy* to minimize both the amount and toxicity of pesticides used. City staff have reduced RoundUp use by as much as 89% depending on the years compared.

Best practices for weed prevention:

- Define tolerance level for weeds;
- Design landscapes wisely to avoid bare soil and out-compete weed species;
- Use mulch and landscape fabrics to suppress weeds;
- Modify watering to reduce vegetation growing in unwanted locations;
- Reduce “seed bank” by removing flowering weeds before they seed;
- Pull weeds manually getting as much of the plant parts as possible to avoid regrowth;
- When appropriate consider weed removal using goats, solarization, and flaming in gravel areas;
- Use chemical control as a last resort;
- Never spray within 100 feet of any playground or creeks at all sites;
- Do not spray within three days of expected rain.

To reduce personal exposure risk from glyphosate and other pesticides:

- Read the label before handling. This is often overlooked and can result in using too much product use or incorrect product use that results in reapplication and more exposure to pesticides;
- Wear protective eyewear that adheres to ANSI Z87.1 - 2010 standards;
- Wear gloves that are 14 mil thick or greater unless they are made from barrier laminate or polyethylene;
- Mix outdoors in an area with good light and ventilation;
- Stand upwind of the pesticide during application;
- When removing the concentrated product from a container, keep the container below your waist;
- If you splash or spill while mixing or loading, stop immediately, remove contaminated clothing and wash thoroughly with detergent and water, clean up the spill.

When and where are glyphosate or other herbicides used?

Chemical control is sometimes needed to stop the spread of invasive weeds that can overtake native plants and to control weeds such as thistles and foxtails which harm dogs and trail users. City of Palo Alto staff and contractors use glyphosate only when necessary in spot treatments (applying the herbicide to each weed). Currently, glyphosate is used in select planter beds, fence lines, and cracks in hardscapes as needed–typically two times per year. Notification signs are posted during herbicide applications.

Pesticide-free parks

The City of Palo Alto also operates twelve pesticide-free parks and several pesticide-free facilities including Bol Park, Boulware Park, Cameron Park, El Palo Alto Park, Flood Basin (excludes aquatic portions), Hopkins Creek Side Parquets, Monroe Park, Sarah Wallis

Park, Scott Park, Terman Park, Ventura Park, Werry Park, as well as the Children's Theater, Animal Services, Children's Library, Mitchell Park Library and Community Center, the Regional Water Quality Control Plant and several pump and well stations. The City will expand the number of pesticide free parks and facilities as funding, site-conditions and public expectations allow. At parks that are not yet entirely "pesticide free" management practices have evolved over the years to reduce the amount of glyphosate and other pesticides that are used. In addition, Palo Alto staff and contractors are prohibited from spraying within 100 feet of any playground or creek and must follow all pesticide label directions.

For more information, ask your supervisor, or contact Julie Weiss in PWD–Watershed Protection, x2117.

*http://cityconnect/civica/filebank/blobdload.asp?BlobID=2286.

CITY OF PALO ALTO

RoundUp® use in City of Palo Alto parks

How the City of Palo Alto reduces glyphosate and other herbicide exposure

Bermuda grass, poison oak and yellow star thistle are common weeds that may be controlled, in part, by herbicides such as glyphosate.

The International Association for Research on Cancer announced in 2015 that glyphosate–the active ingredient in Roundup® and other herbicides–was identified as a "probable carcinogen." This conclusion was based on cell studies, a link between tumors in mice and rats who were fed glyphosate, and a possible link to non-Hodgkins lymphoma in studies of agricultural workers who mix and apply glyphosate many times each year. The study did not look at the limited incidental public exposure that might occur in a park setting.

Should I be concerned about glyphosate exposure in Palo Alto parks?

A detailed review of scientific literature was performed by the Pesticide Research Institute (PRI)–a service that several Bay Area cities consult with to identify least-toxic pest management options. PRI concluded that for the general public exposure to glyphosate from food poses a higher risk than from incidental exposure to glyphosate-treated vegetation (*Susan Kegley, Pesticide Research Institute, The Studies Behind the IARC Cancer Listing for Glyphosate, 2015*). Glyphosate breaks down chemically in approximately 90 days.

CITY OF PALO ALTO

How the City avoids glyphosate and other herbicide use

The best way to avoid pesticide exposure and control weeds is to stop weeds before they start. For more than 20 years the City of Palo Alto has relied on weed prevention as its first line of defense using thick mulches to suppress weeds, mowing and hand removal, solarizing (covering weeds with plastic sheets and letting heat from the sun kill the plants), goat herds, experimenting with least-toxic herbicides that come on to the market, tolerating certain weeds, and modern landscape design that reduces weed growth. Using these strategies, the City of Palo Alto has reduced glyphosate by as much as 89% compared to highest use years. Weed control needs fluctuate yearly based on weather cycles.

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When and where are glyphosate or other herbicides used?

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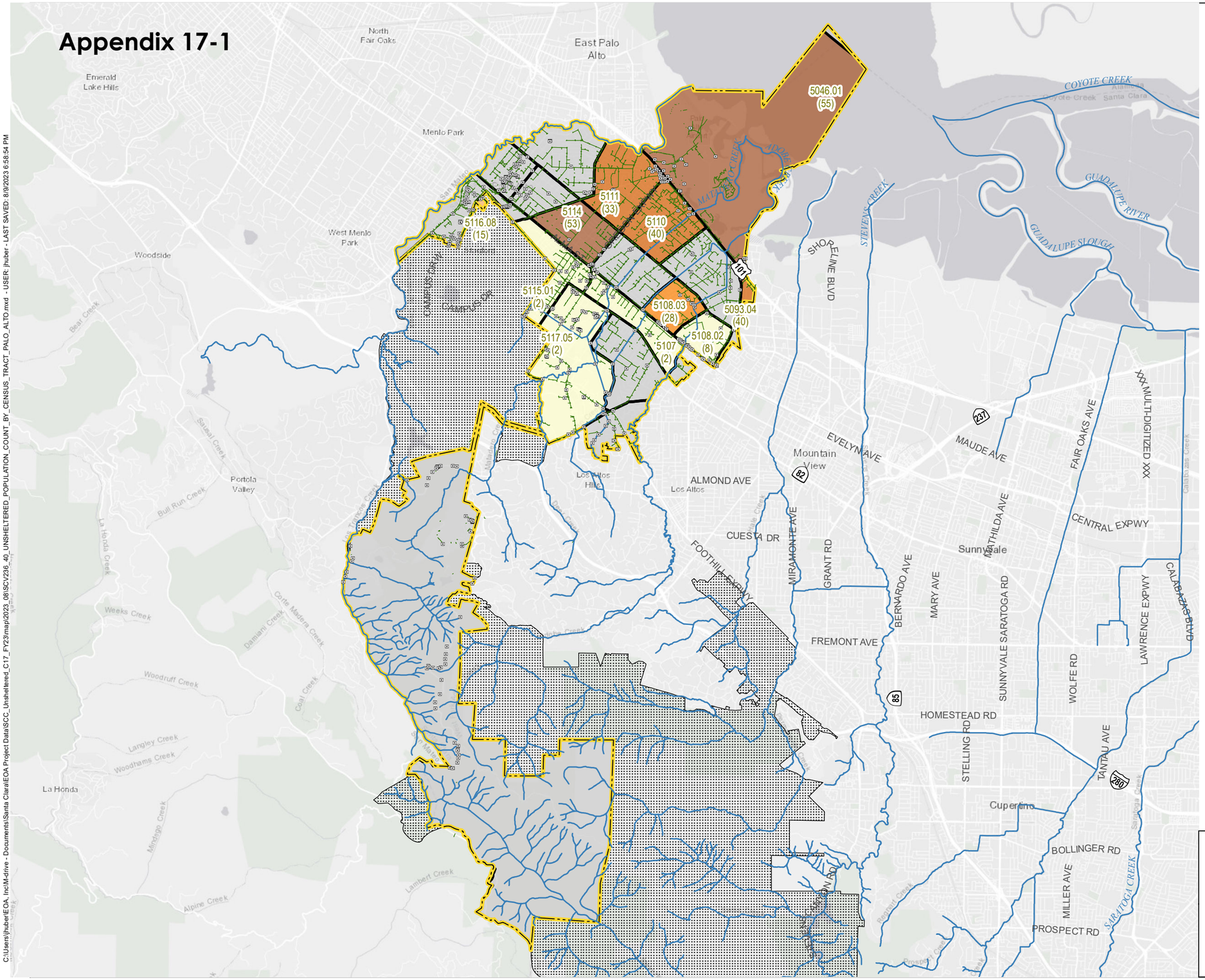
For more information contact:

Julie Weiss
Public Works–Watershed Protection
650.329.2117

Daren Anderson
Open Space Parks & Golf
650.496.6950

Appendix 17-1



LEGEND

- STORM DRAIN INLET
- STORM DRAIN PIPELINE
- CREEK
- NON-JURISDICTIONAL AREA
- CITY BOUNDARY
- CENSUS TRACT

UNSHELTERED POPULATION COUNT BY CENSUS TRACT, WITH CENSUS TRACT ID

- NONE
- >1 TO ≤10
- >10 TO ≤20
- >20 TO ≤30
- >30 TO ≤40
- >40

NOTES

1. THE TOTAL ESTIMATED UNSHELTERED POPULATION IN THE CITY OF PALO ALTO IS **263** BASED ON THE 2022 POINT-IN-TIME COUNT. THE TOTAL COUNT SHOWN ON THE MAP MAY BE SLIGHTLY DIFFERENT THAN THIS TOTAL COUNT REPORTED BECAUSE OF ESTIMATES MADE WITH AVAILABLE DATA FOR COUNTS ASSOCIATED WITH INDIVIDUAL CITIES WHEN CENSUS TRACTS CROSSED CITY BOUNDARIES.

2. UNSHELTERED POPULATION COUNT BY CENSUS TRACT DATA SOURCE: *POINT-IN-TIME REPORT ON HOMELESSNESS CENSUS AND SURVEY RESULTS* PREPARED BY SANTA CLARA COUNTY, 2022

3. AS DEFINED BY SANTA CLARA COUNTY, UNSHELTERED PERSONS ARE INDIVIDUALS OR FAMILIES WITH A PRIMARY NIGHTTIME RESIDENCE THAT IS A PUBLIC OR PRIVATE PLACE NOT DESIGNED FOR OR ORDINARILY USED AS A REGULAR SLEEPING ACCOMMODATION FOR HUMAN BEINGS, INCLUDING A CAR, PARK, ABANDONED BUILDING, BUS OR TRAIN STATIONS, AIRPORT, OR CAMPGROUND.

4. FREEWAYS, EXPRESSWAYS, AND MANY RECEIVING WATER SEGMENTS ARE OUTSIDE OF THE CITY OF PALO ALTO'S JURISDICTION.

5. CENSUS TRACTS MAY NOT ALIGN WITH JURISDICTIONAL BOUNDARIES. UNSHELTERED POPULATION COUNTS ARE APPROXIMATE.

6. BASEMAP SOURCE: ESRI

N

0 7,200 14,400

SCALE IN FEET

Santa Clara Valley Urban Runoff Pollution Prevention Program

PALO ALTO, CALIFORNIA

CITY OF PALO ALTO LOCATION AND COUNT OF UNSHELTERED POPULATION BY CENSUS TRACT

SEPTEMBER 2023

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Calculated Density of Unsheltered Population Counts by Census Tract

Census Tract	Area in Acres	Area in Square Miles	Unsheltered Population	Unsheltered Density (Count/Square Mile)
5108.02	227	0.36	8	23
5108.03	250	0.39	28	72
5114	380	0.59	53	89
5110	491	0.77	40	52
5093.04	54	0.08	40	473
5111	542	0.85	33	39
5107	356	0.56	2	4
5115.01	376	0.59	2	3
5116.08	22	0.03	15	439
5117.05	1151	1.80	2	1
5046.01	2860	4.47	55	12
Total			**278**	